PTO-1390 (03-13)
Approved for use through 4/30/2013. OMB 0651-0021
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371

Attorney Docket No. 95770-876349	
U.S. APPLICATION NO. (If known, see 37 CFR 1.5)	
International Application No. PCT/GB2011/052259	International Filing Date 18 November 2011
Priority Date Claimed 1 December 2010	

Title of Invention
SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

First Named Inventor
KELMAN, Alistair Bruce

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). NOTE: The express request under 35 U.S.C. 371 (f) will not be effective unless the requirements under 35 U.S.C. 371(c)(1), (2), and (4) for payment of the basic national fee, copy of the International Application and English translation thereof (if required), and the oath or declaration of the inventor(s) have been received.

2. ☐ A copy of the International Application (35 U.S.C. 371(c)(2)) is attached hereto (not required if the International Application was previously communicated by the International Bureau or was filed in the United States Receiving Office (RO/US)).

3. ☐ An English language translation of the International Application (35 U.S.C. 371(c)(2))

   a. ☐ is attached hereto.

   b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).

4. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).

   a. ☒ is attached hereto.

   b. ☐ was previously filed in the international phase under PCT Rule 4.17(iv)

Items 5 to 8 below concern amendments made in the international phase.

PCT Article 19 and 34 amendments

5. ☐ Amendments to the claims under PCT Article 19 are attached (not required if communicated by the International Bureau)(35 U.S.C. 371(c)(3)).

6. ☐ English translation of the PCT Article 19 amendment is attached. (35 U.S.C. 371(c)(3)).

7. ☐ English translation of annexes (Article 19 and/or 34 amendments only) of the International Preliminary Examination Report is attached (35 U.S.C. 371(c)(5)).

Cancellation of amendments made in the international phase

8a. ☐ Do not enter the amendment made in the international phase under PCT Article 19.

8b. ☐ Do not enter the amendment made in the international phase under PCT Article 34.

NOTE: A proper amendment made in English under Article 19 or 34 will be entered in the U.S. national phase application absent a clear instruction from applicant not to enter the amendment(s).

The following items 9 to 17 concern a document(s) or information included.

9. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.

10. ☒ A preliminary amendment.

11. ☒ An Application Data Sheet under 37 CFR 1.76.

12. ☐ A substitute specification. NOTE: A substitute specification cannot include claims. See 37 CFR 1.125(b).

13. ☒ A power of attorney and/or change of address letter.

14. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13*ter*.2 and 37 CFR 1.821- 1.825.

15. ☐ Assignment papers (cover sheet and document(s)).

16. ☐ 37 CFR 3.73(c) Statement *(when there is an Assignee)*.

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

U.S. APPLN NO. (if known, see 37 CFR 1.5)	INTERNATIONAL APPLICATION No..	ATTORNEY DOCKET No.
	PCT/GB2011/052259	95770-876349

17. ☐ Other items or information:

The following fees have been submitted	CALCULATIONS	PTO USE ONLY
18. ☒ Basic national fee (37 CFR 1.492(a)) **$280**	$280.00	
19. ☒ Examination fee (37 CFR 1.492(c)) If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4) ..... **$0** All other situations **$720**	$720.00	
20. ☒ Search fee (37 CFR 1.492(b)) If the written opinion of the ISA/US or the International preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4) ..... **$0** Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority ..... **$120** International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB ..... **$480** All other situations **$600**	$480.00	
TOTAL OF 18, 19 and 20 =	1480.00	

☐ Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) in an electronic medium or computer program listing in an electronic medium) (37 CFR 1.492(j)).
Fee for each additional 50 sheets of paper or fraction thereof **$400**

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof (round **up** to a whole number)	RATE	
- 100 =	/50 =		x $400	$

Surcharge of **$140.00** for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h)).	$	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	$	
Total claims	11- 20 =		x **$ 80**	$	
Independent claims	1-3 =		x **$420**	$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ **$780**	$	
Processing fee of **$140.00** for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)). +				$	
TOTAL OF ABOVE CALCULATIONS =				$ 1480	
☒ Applicant asserts small entity status. See 37 CFR 1.27. Fees above are reduced by ½.				$ 740	
☐ Applicant certifies micro entity status. See 37 CFR 1.29. Fees above are reduced by ¾. Applicant must attach form PTO/SB/15A or B or equivalent.					
TOTAL NATIONAL FEE =				$ 740	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +				$	
TOTAL FEES ENCLOSED =				$ 740	
				Amount to be refunded:	$
				Amount to be charged	$ 740

Google Exhibit 1004, Page 2 of 523

a. ☐ A check in the amount of $ ___ to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. 20-1430 in the amount of $ _____ to cover the above fees.

c. ☐ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 20-1430.

i. ☐ any required fee.

ii. ☐ any required fee except for excess claims fees required under 37 CFR 1.492(d) and (e) and multiple dependent claim fee required under 37 CFR 1.492(f).)

d. ☒ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. The PTO-2038 should only be mailed or faxed to the USPTO. However, when paying the basic national fee, the PTO-2038 may NOT be faxed to the USPTO.

ADVISORY: If filing by EFS-Web, do **NOT** attach the PTO-2038 form as a PDF along with your EFS-Web submission. Please be advised that this is **not** recommended and by doing so your **credit card information may be displayed via PAIR.** To protect your information, it is recommended paying fees online by using the electronic payment method.

NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File)Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013, and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: A U.S. national stage application may not claim priority to the international application of which it is the national phase. The filing date of a U.S. national stage application is the international filing date. See 35 U.S.C. 363.

Correspondence Address

☒ The address associated with Customer Number: 20350 OR ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone			
Email		Email			

Signature	/darin j gibby/	Date	May 29, 2013
Name (Print/Type)	Darin J. Gibby	Registration No. (Attorney/Agent)	38,464

Google Exhibit 1004, Page 3 of 523

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	95770-876349
	Application Number	
Title of Invention	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Alistair	Bruce	Kelman	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	London	Country of Residence [i]	GB

Mailing Address of Inventor:

Address 1	37 Station Road		
Address 2			
City	London	State/Province	
Postal Code	NW4 4NJ	Country [i]	GB

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	20350		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS		
Attorney Docket Number	95770-876349	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	8	Suggested Figure for Publication (if any)	

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	95770-876349
	Application Number	
Title of Invention	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	20350		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	a 371 of international	PCT/GB2011/052259	2011-11-18

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
1020361.0	GB	2010-12-01	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Google Exhibit 1004, Page 5 of 523

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	95770-876349
	Application Number	
Title of Invention	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date o f filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	95770-876349
	Application Number	
Title of Invention	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

◯ Assignee	◯ Legal Representative under 35 U.S.C. 117	◯ Joint Inventor
◯ Person to whom the inventor is obligated to assign.	◯ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor :

If the Applicant is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Applicant:

Address 1			
Address 2			
City		**State/Province**	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Non-Applicant Assignee Information:

Providing assignment information in this section does not subsitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1

Complete this section only if non-applicant assignee information is desired to be included on the patent application publication in accordance with 37 CFR 1.215(b). Do not include in this section an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest), as the patent application publication will include the name of the applicant(s).

PTO/AIA/14 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	95770-876349
	Application Number	
Title of Invention	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	

If the Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Non-Applicant Assignee:

Address 1	
Address 2	

City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Signature	/darin j gibby/			Date (YYYY-MM-DD)	2013-05-29
First Name	Darin	Last Name	Gibby	Registration Number	38464

Additional Signature may be generated within this form by selecting the Add button.

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

PTO/SB/01A (01-09)

Attorney Docket No. 95770-876349

Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

As the below named inventor(s), I/we declare that:

This declaration is directed to:

☒ The attached application, or

☐ Application No._____, filed on _____.

☐ as amended on _____ (if applicable);

I/we believe that I/we am/are the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought;

I/we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above;

I/we acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me/us to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

All statements made herein of my/own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and may jeopardize the validity of the application or any patent issuing thereon.

FULL NAME OF INVENTOR(S)

Inventor one: Alistair Bruce Kelman Date: May 29 2013

Signature: [signature] Citizen of: United Kingdom

Inventor two: _____ Date: _____

Signature: _____ Citizen of: _____

☐ Additional inventors or a legal representative are being named on _____ additional form(s) attached hereto.

65450766V.1

Google Exhibit 1004, Page 9 of 523

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	1

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	Alistair Bruce Kelman
Art Unit	
Examiner Name	
Attorney Docket Number	95770-876349

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US-2010/0054707	3-4-2010	Karaoguz et al.	
	AB	US-2003/0066078	4-3-2003	Bjorgan et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]	Number[4]	Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	AC	PCT	WO2007/119125	A1	10-25-2007	Krzysziof, L. Godzwon		☐
	AD	GB	2464630	A	4-28-2010	IncenTV Ltd		☐

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	AE	International Search Report and Written Opinion of PCT/GB2011/052259 mailed on February 13, 2012, 12 pages.	☐

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 October 2007 (25.10.2007)

PCT

(10) International Publication Number
WO 2007/119125 A1

(51) International Patent Classification:
H04N 7/16 (2006.01)

(21) International Application Number:
PCT/IB2006/050643

(22) International Filing Date: 2 March 2006 (02.03.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/657,905 2 March 2005 (02.03.2005) US

(71) Applicant *(for all designated States except US)*: KONINKLIJKE PHILIPS ELECTRONICS, N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(71) Applicant *(for AE only)*: U.S. PHILIPS CORPORATION [US/US]; 1251 Avenue Of The Americas, New York, New York 10020 (US).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: GODZWON, Krzysztof, L. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(74) Common Representative: KONINKLIJKE PHILIPS ELECTRONICS, N.V.; C/o Glickberg, Yan P.o. Box 3001, Briarcliff Manor, New York 10510-8001 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

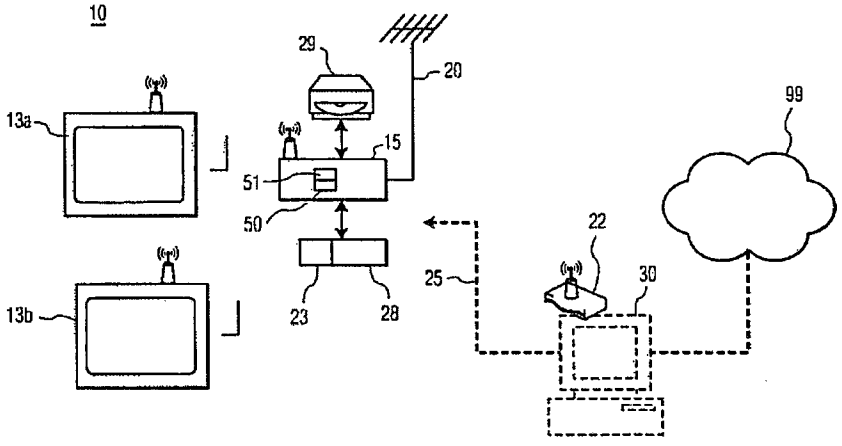
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:
— *with international search report*

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR LIMITING ACCESS TO MULTIMEDIA PROGRAMMING



(57) Abstract: A system and method for limiting a user's access to watch content transmitted or broadcast to a multimedia display device. Specifically, the system enables an administrator to specify limitations on the multimedia display device, e.g., a television, which will limit a user's access. The limits may apply to the television or, to a specific user who has a user key that only allows the user to use the television depending on programmed controls. The limits may specify when the television may be shown, or how much time the television may shown within a period of time; and the limits may specify what services (channels) may be shown during specified times or how much time specified services may be shown within a period of time. The limits additionally specify what themes (event types) may be shown during specified times or how much time specified themes may be viewed by the user. The system enables recording of content according to the restrictions (content or time) to personal recording devices and is further able to restrict viewing access according to the user's age, the ratings of the event or program, or a combination thereof.

WO 2007/119125 A1

Google Exhibit 1004, Page 11 of 523

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Google Exhibit 1004, Page 12 of 523

SYSTEM AND METHOD FOR LIMITING ACCESS TO MULTIMEDIA PROGRAMMING

The present invention relates generally to managing access to multimedia programming, such as by programming a television set top box, and more particularly, to a novel system and method for limiting a user's access to certain programming according to specified time and/or content limits including limiting access to cooperative attached devices like HDD/DVD/VCR. Such a system can control not only a single element, e.g., a DVD, TV, or a set-top-box, but rather, provides a complete solution that enables concurrent controlled access of all of those devices at the same time.

With the advent of Java TV and the ability to have programming logic sit in set top boxes, usage of the television set can be better controlled by programming what and how the device is to be used. The patent literature is replete with disclosures directed to controlling access to television receivers and controlling viewing of programs. Representative patents include:

U.S. Patent No. 5,969,748 describing generally a television schedule system that allows a user to control access to television programs;

U.S. Patent No. 6,025,869 describing generally a TV/video viewing supervision system implementing a programmable channel/time matrix to selectably program hours, programs, and/or channels of TV, VCR, cable TV, satellite TV and/or game viewing;

U.S. Patent Publication No. 2003/0145321 describing generally a method and system for controlling selection of channels and shows for viewing, e.g., via a set-top box; and,

U.S. Patent Publication No. 2003/0014750 describing generally a method and system for controlling access to viewable content on an individual title basis.

One patent in particular WO-9510916 comprehensively describes a television receiver that enables a user to control viewing of programs, block or enable selected programs, enable users to specify programs to be controlled for viewing by using compressed codes and enable blocking from viewing of specific scenes in a program.

Most of these prior art patents focus mainly on a very simple approach, which is enabling entry of some user identification, e.g., a pincode, and specify some restrictions such as time slots when a child can watch TV.

However, none of these references teach the use of a system and method that limits

Google Exhibit 1004, Page 13 of 523

child viewing by preventing a child from uncontrolled access to a multimedia terminal (e.g., a TV), and that additionally limits controlled access of cooperating devices such as DVD/VCR/HDD/PVR or any other storage media/playback device.

Thus, a user or administrator may specify limitations to restrict a user's access to watch television, including: time restrictions, duration restrictions, program restrictions and channel restrictions. The administrator may have an administration key to specify (configure) the limits to different users. Users may have user keys to operate the television. The user/administrator may be able to specify that information about television access by a user may be stored (log file) and to generate reports of what has been accessed.

Thus, it would be highly desirable to provide a timer system for multimedia display device, e.g., a television, that prevents a user from watching the television or like multimedia display device after a selected or specified time has elapsed for the enabled content (e.g., selected list of services).

It would be further highly desirable to provide a timer system for multimedia display device, e.g., a television, that prevents a user from watching the television or like multimedia display device after a selected or specified time has elapsed within the selected (or specified) time slot during a day.

It would be further highly desirable to provide a timer system for multimedia display device, e.g., a television, which prevents a user from watching the television or like multimedia display device by blocking the channel (or alternately, a "service") based on the theme of the current event (or alternately, a "program").

It would be further highly desirable to provide a system for multimedia display device that enables or prevents access to certain events (programs) according to a rating of the events, (e.g., with ratings data coming from an independent provider), or otherwise limits or prevents access to certain events (programs) according to the viewer's age, or a combination of the rating and the viewer's age.

It would be further highly desirable to provide a system for multimedia display device that enables recordation of certain events (programs) to HDD or DVD/VCR/PVR devices according to specified time/content restrictions that includes a feature adapted to filter out advertisement content when recording or when watching the actual program/event.

One aspect of the present invention is directed to addressing the deficiencies in the prior art viewing access control systems by providing additional capability of: specifying

Google Exhibit 1004, Page 14 of 523

limitations on one or more multimedia terminals (e.g., multimedia home platform (MHP), set-top boxes (STB), Personal Video Recorders (PVR), TV or DVD player) to limit a user's access to watch television.

A user or administrator may have an administration key (e.g., pin code) enabling a parent/administrator to specify the limits. The limits may apply to the television or to a specific user who has a user key that only allows the user to use the television depending on the limits. The limits may specify when the television may be shown, or how much time the television may shown on within a period of time; and the limits may specify what services (channels) may be shown during specified times or how much time specified services may be shown within a period of time; and the time limits may specify what themes (i.e., event types such as cartoon, children's, sport, movie, education) may be shown during specified times or how much time specified themes may be shown during a period of time. Multiple limitations may be set for the same user. The administrator may be able to specify that information about television access by a user be stored and to generate reports of what has been accessed (e.g., presentation titles, service, theme, time and time period) in order to monitor the user's access.

Thus, according to a preferred aspect of the invention, there is provided a system and method for enabling supervisory control over viewing of broadcast content on a multimedia terminal, the method comprising the steps of: specifying, via an interface display time constraints for controlling times a viewer is allowed to watch television within a period of time; specifying, via an interface display viewing content restrictions of content capable of being viewed by said viewer within said period of time; monitoring a viewer's access to current broadcast content via said television and access to content that has been previously recorded by said viewer via a recording device that stores recorded broadcast content; and, blocking said viewer's access to current or stored broadcast content that violates said time and viewing content restrictions.

Advantageously, the programming of the "control system" of the present invention may be performed via any other interface, even a web interface. The TV device may have a network connection and running web controlled interface so that a full control is had via a remote located browser. Even a wireless connection could be established and a remote control could also work via, for example, a "Wi-Fi" connection. The TV could also be a controlled by a parent remotely from anywhere if the TV would have a permanent internet connection, i.e., a parent could control online what the children are watching, or statistics,

Google Exhibit 1004, Page 15 of 523

like what my child was watching, how many hours, etc.

Furthermore, advantageously, the system is provided with a feature that indicates to a user how much of allowed time is still available. That is, every user is enabled to see how much of allowed time is still available, and on that basis, be able to plan for the future and choose only the "most-wanted" events/programs, instead of all, for instance.

The objects, features and advantages of the present invention will become apparent to one skilled in the art, in view of the following detailed description taken in combination with the attached drawings, in which:

Figure 1 depicts a high-level block diagram of a television system implementing the timer controls according to the present invention;

Figures 2(a)-2(c) depict a user or administrator's interface for controlling TV viewing functionality for users, e.g., via an exemplary main menu display interface 75 including a TV timer menu choice 80 which, when selected, provides menu choices provided functionality according to the present invention (Figure 2(c));

Figures 3(a)-3(f) depict exemplary menu display interfaces presented for the authorized user/administrator in response to selection of the menu choices 100 provided via the example interface depicted in Figure 2(c) for providing functionality according to the present invention;

Figure 4 provides a high-level flow chart depicting the process flow 200 for controlling the TV viewing times via the set-top box control device implementing the timer controls according to the present invention;

Figure 5 provides a high-level flow chart depicting the user login process flow 203 in an exemplary embodiment of the present invention;

Figure 6 provides a high-level flow chart depicting the viewer time constraint blocking process in an exemplary embodiment of the present invention;

Figure 7 provides a high-level flow chart depicting how the system verifies if the current content (content service) is blocking in an exemplary embodiment of the present invention;

Figure 8 provides a high-level flow chart depicting the system processes employed when a current viewer is playing his/her own recorded content in an exemplary embodiment of the present invention;

Figure 9 provides a high-level flow chart depicting the system processes employed for determining whether the content to be played is from the HDD in an exemplary

Google Exhibit 1004, Page 16 of 523

embodiment of the present invention; and,

Figure 10 provides a high-level flow chart depicting the system processes employed for monitoring users and determining whether blocking should occur in an exemplary embodiment of the present invention.

The present invention is directed to a TV timer control system and methodology that enables a user to control multimedia viewing access of others, e.g., a parent may control viewing access of a child. Referring first to FIG. 1, there is depicted a television system 10, e.g. for a household setting, incorporating program view controls consistent with the invention. System 10 includes one or more multimedia display terminals such as television or like video display monitor 13a, b coupled. Via wireless connection to a set top control device 15, such as the Philips Streamium™ product, providing conventional set-top box functionality with the additional ability to provide Internet content received from a computer device to the wirelessly connected TV devices 13a,b. For example, by utilizing a system remote control device, a user can switch television reception from (TV) broadcast content to broadband Internet content. Using Wi-Fi technology, e.g., wireless technology governed according to IEEE 802.11/a/b/g/n standards, for example, the set also could be used to present photos or video stored on the home computer 30.

The Wi-fi network includes a wireless hub device 22 associated with home computer 30 for wirelessly connecting one or more set top boxes 15 with the one or more television sets 13a,b and the Internet, via a communication signal carrier according to a wireless standard. Thus, the system is adapted to stream video content to the television devices 13a,b via wireless link. All data about a usage of TV is locally stored in the set top box device 15 and the functionality provided enables TV devices to exchange information about the status of the usage.

In the embodiment depicted in FIG. 1, external devices such as a DVD player 28 or high–density disk (HDD) recorder device 29 are connected to this local set top box, e.g., Streamium™ device.

The set top box 15 in the illustrated implementation is a receiver capable of receiving television broadcast signals, e.g., via a television antenna 20, or transmission via cable 25, or direct broadcast satellite (DBS) dish and satellite signal receiver (not shown). Additionally illustrated in system 10 coupled to set top box 15 are the other high density media storage/recorder devices, e.g., high–HDD device 29 and/or technologies for recording television programs, including, for example, recordable optical media (e.g.,

Google Exhibit 1004, Page 17 of 523

CD's, DVD's), magnetic or magneto optical media (e.g., hard or floppy disk drives), solid state memory, etc., for temporary or long term storage of received multimedia content files and may comprise a digital media recording system such as the TiVo™ (Trademark of Philips Consumer Electronics) for recording/playback multimedia broadcast content. Such devices may be interfaced with STB 15 and/or PC 30 via standard cables with communication being handled via existing protocols, e.g., P50. Other devices such as a video-cassette recorder (VCR) 23 and digital video disk (DVD) player 28 (which may be integrated or separate units) may be capable of optionally outputting audio and video signals to television/monitor 13 by passing multimedia content signals through set top box 15, e.g. for wired or wireless transmission to the TV devices 13a,b.

It should be understood that in another embodiment of the invention, each individual TV set may be provided with control functionality according to the invention for exchanging information about usage via network, broadcasting, so each TV set 13a,b possesses updated usage information. That is, in a broad sense, when a user/viewer is subject to a time restriction on one TV set, it is impossible for that user to continue watching the TV program using another one.

Two solutions are possible: 1) if the content is coming from one central "box", then this is a central point for the system and as such, can as master control all other TVs/multimedia terminals in the system; and 2) TVs are all equal and are exchanging information about usage.

Program viewing and viewing controls of television programs and content according to the invention is provided by a control system embodied in software executing in set top box 15 and/or TV devices 13a,b. However, such functionality may be implemented in any number of devices capable of monitoring the viewing of television programs in a television system, including, for example, televisions, PVR's (the TiVo receiver), computers or computing devices 30, VCR's, etc. Further, the television viewing monitor apparatus need not necessarily be capable of directly receiving and/or displaying television programs to viewers, so long as such an apparatus has the capability of detecting what programs are being accessed for viewing by a separate display. In addition, television programs to be viewed may be received from any number of sources, including, but not limited to: RF broadcast sources, cable television sources, satellite television sources, and computer network sources such as a Local or Wide Area Network, or the public Internet 99. Thus, in one embodiment of the invention, a user can access the TV menu via a web

Google Exhibit 1004, Page 18 of 523

interface.

The set top box 15 itself operates under the control of a processor or CPU 50, which is interfaced with a random access memory (RAM) device or like memory storage means 51 comprising the main storage of the set top box (not shown) storing both software and/or firmware applications, components, programs, objects, modules, data structures and program code suitable for execution by the processor, as well as additional data structures required by the processor in controlling the operation of the set top box. Processor 50 may represent one or more processors (e.g., microprocessors or micro-controllers), and may additionally include any supplemental levels of memory, e.g., cache memories, non-volatile or backup memories (e.g., programmable or flash memories), read-only memories, etc. In addition, the memory may be considered to include memory storage physically located elsewhere in set top box 15, e.g., any cache memory in processor 50, as well as any storage capacity used as a virtual memory, e.g., as stored on a mass storage device or on another data processing system coupled to set top box 15 via an external network (not shown).

As the "control system" provides multimedia services (channels) for the home, e.g., according to the emerging Multimedia Home Platform (MHP) standard, the set-top box 15 incorporates all pack digital TV, MP-3, DVD, and a host of other multimedia services into the system. Thus, the CPU 50, via a specific operating system, controls all software and hardware modules on the STB to enable the multimedia home platform MHP. In addition to those mentioned, these include video/graphics engines, Java virtual machines (JVMs), and human interface components.

In operation, as known, RF input from a satellite disk, cable, or antenna is transported to a tuner/demodulator (not shown), which demodulates the signal into a digital A/V stream, e.g., MPEG-2 stream, an MPEG-4 stream (sourced from the Internet) or like digital content stream. A demultiplexer functions to extract the MPEG-2 into its video, audio, subtitle, and data streams. Before being presented to users, video and audio are decompressed by either hardware or software modules. Subtitle data, usually image files with transparent backgrounds, is passed to a dedicated rendering engine (not shown) with direct access to the STB's on-screen display (OSD). The data stream is parsed for content such as system information, digital teletext, or MHP data objects, then routed to hardware/software modules for interpretation and/or execution.

According to the invention, the STB is programmed with exemplary menu display

Google Exhibit 1004, Page 19 of 523

structures used to provide enhanced viewing access control according to the preferred embodiments of the invention. As implemented according to the invention shown in Figure 2(a), a user or administrator, via an exemplary main menu display interface 75, e.g., web-interface, is provided with a main menu including a TV timer menu choice 80 implementing TV viewing/access control limits according to the invention. As shown in Figure 2(b), upon access of the TV timer menu choice 80, the user is expected to enter a password via entry field 85 to provide proper authorization before granting that user viewing/access control. In one embodiment, the user is provided or assigned with an administration key (e.g., pin code) that allows the user/administrator to access the TV viewing/access control functionality and specify viewing limits according to the invention. In one exemplary context, as described herein, a user/administrator may comprise a parent, providing viewing controls for that parent's child or other children viewers. After a user is authenticated as one having authority to program the set-top box control device implementing the timer controls according to the invention, the user may be authorized to set the limits from the administrator control menu 100 as shown in Figure 2(c). As shown in Figure 2(c), the administrator control menu 100 provides TV viewing limit functionality via: 1) content selection menu choice 103; 2) set-time constraints menu choice 106; 3) recordings menu choice 110; and, 4) statistics menu choice 114.

Figures 3(a)-3(f) depict exemplary menu display interfaces presented for the authorized user/administrator in response to selection of the menu choices 100 provided via the example interface depicted in Figure 2(c) for providing functionality according to the present invention. In one exemplary context, a user/administrator may comprise a parent, providing viewing controls for that parent's child or other children viewers.

Figures 3(a)-3(b) depict respective exemplary menu display interfaces 120, 120' presented for the authorized user/administrator in response to selection of the contents selection menu choice 100 of Figure 2(c) for providing content selection limits according to the invention. In a first aspect, the content selection limits option provided via interface 120 of Figure 3(a) include the "selection of allowed channels" menu choice 125 that provides a scrollable list 135 of programming for the television receivers and displays associated selection boxes 136 for selecting/deselecting which broadcast channels are permitted for user viewing. The content selection limits menu provided via interface 120 of Figure 3(a) additionally includes the option to enable/disable the "hide blocked services" option via menu choice 127 for providing functionality to remove from viewing portions

Google Exhibit 1004, Page 20 of 523

all indications that a particular service (channel) is being blocked, or alternatively enumerate only those allowed services/channels, e.g., from 1,..,N etc.. The content selection limits provided via interface 120 of Figure 3(a) additionally includes the option to enable/disable the "filter advertisements" option via menu choice 129 for providing functionality to recognize and filter out advertisements, for example, based on a voice volume basis, so as to prevent watching or recording of any advertisements from programming. In this aspect, when a filtered advertisement is encountered during viewing or recording, the viewer's multimedia display device or terminal may temporarily black out and present a visible dialog indicating that a user wait, while a filtered advertisement is being blocked.

Figure 3(b) depicts a further exemplary menu display interface 120' presented for the authorized user/administrator in response to selection of the contents selection menu choice 100 of Figure 2(c) for providing content selection limits according to the invention. In this further aspect, the content selection limits option provided via interface 120' of Figure 3(b) include the "selection of allowed themes" menu choice 133 that provides a scrollable list 143 of programming for the television receivers and displays associated selection boxes 146 for selecting/deselecting which broadcast event and programming themes are permitted for user viewing. The content selection limits provided via interface 120' of Figure 3(b) additionally includes the option to "select a blocking age" via menu choice 134 for providing functionality to select content only suitable for viewers of a certain age or older as indicated in blocking age entry field 142. The content selection limits provided via interface 120' of Figure 3(b) additionally includes the option to "select a ratings server" via menu choice 137 for providing functionality to lock-out programming according to its "rating" as recognized by a ratings server provided at a user selectable or entered location 145. The content selection limits provided via interface 120' of Figure 3(b) additionally includes the option to "allow events with a rating" via menu choice 139 for providing functionality to allow programming according to a specific "rating" as entered in entry field 147. The fields: "select a ratings server" and "allow events with a rating" are actually coupled. The "select a ratings server" choice is used only to specify from which location rating of the events should be read from - a sort of a "rating server". The second one provides a basic setting, where a user can set a certain level of events, e.g., 1 "star" means a very bad program; 5 stars means a very good one, etc..

Figures 3(c)-3(d) depict respective exemplary menu display interfaces 121, 121',

Google Exhibit 1004, Page 21 of 523

presented for the authorized user/administrator in response to selection of the set time constraints selection menu choice 106 of Figure 2(c) for providing time content limits according to the invention.

In this further aspect, the content selection limits option provided via interface 121 of Figure 3(c) include the "number of hours" menu choice 151 that enables a user/administrator to enter the set time limit, i.e., a total number of hours of viewing time for a viewer. For example, as shown in entry field 171, there is indicated a limit of ten (10) viewing hours for a particular viewer. Via entry fields, the user/administrator is further able to divide the set number of hours according to daily, weekly or monthly periods 172. A further "divide hours equally" menu choice 152 is provided to enable a user/administrator to specify whether the specified "number of hours" of limited viewing is to be divided equally according to the specified daily, weekly or monthly period 172 (by selecting entry field 173). Thus, a child may use the specified hours as the child wants when the "divide hours equally" from menu choice 152 (Figure 3 (c)) is not selected. A further "extendable time" menu choice 154 is provided to enable a user/administrator to specify whether the time limit set is extendible so that a viewer watching a current "real-time" event, for example, may continue to watch the event in case the event exceeds a specified time constraint by selecting entry field 174. In this aspect, it is further possible to specify the time limit is extendible after a certain percentage (N%) of the event viewing time has elapsed (e.g., 50% or 60%). Irrespective of how the time constraints are distributed or whether extendable, a user/administrator is able to specify the time slots in which the viewer is constrained from watching the TV programming in accordance with the programmed limitations. For example, a further "Specify time slots" menu choice 156 is provided for enabling entry of the particular time durations (slots) via entry fields 176, e.g., A.M., P.M., within which a user's viewing limits are constrained.

Figure 3(d) depicts a further exemplary menu display interface 121' presented for the authorized user/administrator in response to selection of the set time constraints selection menu choice 106 of Figure 2(c) for providing time content limits according to the invention. In this further aspect, the set time constraints option provided via interface 121' of Figure 3(d) include the "specify allowed days" menu choice 160 provided for specifying via select/deselect boxes 180 which days of the week a viewing time is not to be limited. Irrespective of when and how the time constraints are distributed or whether they are extendable, a user/administrator is able to specify the percent amount of time may be spent

Google Exhibit 1004, Page 22 of 523

watching TV or broadcast multimedia content according to the allowed themes specified in the scrollable list 143 of display interface 120'. Thus, in the example shown in Figure 3(d), via the "detailed time usage" menu choice 162, a user/administer may specify, via entry fields 182, how a user's total allotted viewing time may be proportioned according to theme; for example, as shown in Figure 3(d), a user is permitted to watch cartoons 30% of the time and educational programs 70% of the time.

Figure 3(e) depicts an exemplary menu display interface 122 presented for the authorized user/administrator in response to selection of the "recordings" selection menu choice 110 of Figure 2(c) for providing recording options according to the invention.

In this further aspect, the recordings option provided via interface 122 of Figure 3(e) include the "Allow recordings" menu choice 163 that includes select/deselect boxes 183, such that, when selected, providing additional time that permits a viewer to record a current program that has exceeded an allotted time limit, e.g., a live broadcast event that has exceeded a specified limit of viewing time for a particular viewer. The further "Recorder" menu choice 165 is further presented having an entry field 185 that specifies to which recording device the additional programming is to be recorded. Via the interface 122 of Figure 3(e), there is further caused for display the "Allow HDD recordings" menu choice 166 that includes select/deselect boxes 186, such that, when selected, permits a viewer to record a program on their HDD storage media. The further "HDD" menu choice 168 is further presented having an entry field 188 that specifies to which HDD recording device the programming is to be recorded.

Figure 3(f) depicts an exemplary menu display interface 122' presented for the authorized user/administrator in response to selection of the "statistics" selection menu choice 114 of Figure 2(c) for specifying that information about television access by a user be stored for later generation of reports of what has been accessed (e.g., presentation titles, service (channel), theme, time and time period) in order to monitor the user's access, according to the invention. The "Enable Statistics" menu choice 167 is thus presented having associated select/deselect boxes 187, such that, when selected, instruct the system to record statistics regarding the restricted person's TV viewing usage for later reporting. The further "Keep History For" menu choice 169 is further presented having an entry field 189 that specifies for how long, e.g., 30 days, statistics and other information regarding the restricted person's TV viewing usage is to be tallied for later reporting. It should be understood that an authorized user may have read access to any of those log files having

Google Exhibit 1004, Page 23 of 523

information detailing their viewing statistics/usage. For example, a user may be able to use a web browser or like device implementing HTTP or like communications protocol. Alternatively, a user log could be accessible on the TV, e.g., via a simple dialog, or via a mobile phone, or via wireless connection, e.g., Bluetooth.

Figure 4 provides a high-level flow chart depicting the process flow 200 for controlling the TV viewing times via the set-top box control device implementing the timer controls according to the present invention.

As shown in Figure 4, a first step is the step of verifying that the current television viewer has the authority to watch the television programming at step 203 irrespective of whether there are other TV control/limits set. Details regarding the viewer authentication process are described herein with respect to Figure 5. If the viewer is not authorized to view television, then the process will cause the TV device to turn off as indicated at step 204. Otherwise, after the viewer is authenticated as currently able to view TV programs, the process proceeds to step 206 where it is determined whether, for that user and current time, any time constraints blocking control features implemented. Details regarding the viewer time constraint blocking process are described herein with respect to Figure 6. If there is a time constraint block feature implemented for that user at that time, then the process will cause the TV device to turn off as indicated at step 204. If there is no time constraint block feature implemented for that user, then the process proceeds to step 207, where a determination is made as to whether the current content intended to be viewed by that viewer is allowed, before actually showing the multimedia/TV broadcast as depicted at step 209. Details regarding the determination of whether the current viewer is allowed to view the current content are described herein with respect to Figure 7. If it is determined that the current viewer is allowed to view the current content, then the process proceeds to step 209, where the multimedia program is presented for display. Otherwise, If it is determined that the current viewer is not allowed to view the current content, then the process proceeds to step 208 which is a process step for blocking presentation of the current multimedia program. Irrespective of whether the current viewer is authorized or not to view the current multimedia programming, the process proceeds to step 211 where a determination is made as to whether the current user is attempting to play his/her own recorded content from an external source. Details regarding the determination of whether the current viewer is desirous of playing his/her own recorded content are described herein with respect to Figure 8. If it is determined at step 211 that the current viewer is attempting

Google Exhibit 1004, Page 24 of 523

to view his/her own recorded content, then the process proceeds to step 212 which is a step of playing the selected content from the selected external source (e.g., DVD). Then the process proceeds to step 216 where a monitor function is performed for monitoring further use of the devices in the TV viewing system to ensure compliance with the controls. Otherwise, if it is determined at step 211 that the current viewer is not attempting to view his/her own recorded content, then the process proceeds to step 213 where a further determination is made as to whether the content to be played is from the HDD provided. Details regarding the process flow for determining whether the content to be played is from the HDD are described herein with respect to Figure 9. If at step 213, it is determined that the current content to be played is from the HDD, then the process proceeds to step 212 where the selected content is played back. Otherwise, if at step 213, it is determined that the current content to be played is not from the HDD, then the process proceeds to monitoring step 216. Details regarding the monitoring process are described herein with respect to Figure 10.

Figure 5 provides an exemplary high-level flow chart depicting the user login process flow 203 executed by the system of the invention when a user turns on the television according to the present invention. As shown in Figure 5, in a next step 222, the user/viewer is asked to enter his/her pincode. At step 224, that pin code is verified by conventional means, such as a table look-up. If the user is authorized at step 224, the process proceeds to step 226 to show a user welcome screen, such as shown in Figure 2. If the user is not an authorized user, as determined at step 224, the process proceeds to step 232 where an error dialog screen is presented. Proceeding next top step 230, if more pincode entry tries are allowed, then the process returns to step 222, so that the user may re-enter his/her pincode and the process repeats. Otherwise, at step 230, if no more pincode entries are allowed, then the process proceeds to step 228 where a goodbye dialog is displayed and the user/viewer is considered not authorized.

Figure 6 provides a high-level flow chart depicting the viewer time constraint blocking process 206 in an exemplary embodiment of the present invention. In the process depicted in Figure 6, the system verifies whether a user time constraints are not blocking. Thus, as shown in a first step 235, a determination is made as to whether the current day is enabled, i.e., the day is an allowed day as programmed for this viewer (see Figure 3(d)). If the current day is enabled, the process proceeds to step 236 where a further determination is made as to whether the time slot settings are blocked as previously programmed (see

Google Exhibit 1004, Page 25 of 523

Figure 3(c)). If the current time slot setting have not been blocked, then the process proceeds to step 238 where a determination is made as to whether the time budget is still available. If time is still budgeted for the current viewer, then the process proceed to step 241 which indicates that no TV blocking is to be performed.

Returning back to step 235, if it is determined that the current day is not enabled, or returning to step 236, if it is determined that the time slot settings are blocked, or returning to step 238, if it is determined that no time budget is available, then the process proceeds to step 239 where a determination is made as to whether the extendible "time" setting has been programmed for this viewer (see Figure 3(c)). If it is determined that the extendible "time" setting has been programmed for this viewer, then the process proceeds to step 240 to check the current usage statistics for this viewer (see Figure 3(f)) and thereafter, to step 245 where a further determination is made as to whether the user has viewed, during this current viewing session, more than N%, e.g., 50% of the current event. If it is determined that the user has seen more than N% of the current event, then the process proceeds to step 249 where a dialog is displayed that current time restriction has been exceeded, but the system will allow user to see event until the end. Thus, the process proceeds to step 241 indicating that no TV blocking is to be performed. Otherwise, returning to step 239, if it is determined that the extendible "time" setting has not been programmed for this viewer, or, returning to step 245, if it is determined that the user has not seen more than N% of the current event, then the process proceeds to step 247 which initiates display of a restriction dialog. Thereafter, the process proceeds to step 250 where a determination is made as to whether the recording setting is enabled for this viewer (see Figure 3(e)). If the recording setting is not enabled, then the process proceeds to step 258 which is the step of blocking the program to prevent further viewing or recording of the current program. Otherwise, at step 250, if it is determined that the recording setting is enabled, then the process proceeds to step 252 where a dialog is displayed to remind the viewer of the availability to make a recording of the event, e.g., via the authorized external recording device. At step 254, a determination is made as to whether the recording has been initiated. If the recording is not initiated, then the process proceeds to step 258 which is the step of blocking the program to prevent further viewing or recording of the current program. Otherwise, if at step 254 it is determined that the user has chosen the recording option, then the process proceeds to step 256 where the recording of the current program is started. Thereafter, the process proceeds to step 258 which enables viewer blocking.

Google Exhibit 1004, Page 26 of 523

Figure 7 provides a high-level flow chart depicting a system process 207 for verifying if the current content (content service) is blocking in an exemplary embodiment of the present invention. In the process depicted in Figure 7, a first step 260 comprises selecting a service, e.g., by switching (e.g., using a remote control) to an enabled channel/service on the basis of the list provided by the administrator. For example, a user would go to a program set forth in the "Select allowed channels" entry section of Figure 3(a). After retrieving the first service, a determination is made at step 262 to determine whether the current content is enabled. If the current content is not enabled, then the process proceeds to step 273 which step depicts the current content as being blocked. Otherwise, at step 262, if the current content is enabled, then the process proceeds to step 264 to determine whether the user age is blocking as previously specified by the parent/administrator in the "Select blocking Age " section of Figure 3(b). If the current age of the user is such that requires blocking to be enabled, then the process proceeds to step 273 which step depicts the current content as being blocked. Otherwise, at step 264, if the current age is not blocking, then the process proceeds to step 265 where the event from the source (server) is retrieved. The process then proceeds to step 266 to determine whether the event rating is such requiring that the content be blocked as previously specified by the parent/administrator in the "Allow events with Rating " section of Figure 3(b). If the event is of a rating such that it requires blocking to be enabled, then the process proceeds to step 273 which step depicts the current content as being blocked. Otherwise, at step 266, if the rating is such that it does not require blocking to be enabled, then the process proceeds to step 267 to determine whether the advertisements filtering function is to be enabled as previously specified by the parent/administrator in the "Filter advertisements" section of Figure 3(a). If the advertisement filter is enabled, then the process proceeds to step 268 in order to turn on the advertisement detection filter. Otherwise, at step 267, if the advertisement filter is not enabled, then the process proceeds to step 275 that depicts the step of enabling the current content to be displayed. Returning to step 268, after advertisement detection is enabled, the process proceeds to step 270 where a determination is made as to whether advertisement is currently being broadcast. If the advertisement is not currently being broadcast, then the process proceeds to step 275 that depicts the step of enabling the current content to be displayed. Otherwise, at step 270, if it is determined that an advertisement is currently being broadcast, then the process proceeds to step 273 which step depicts that the current content (i.e., advertisement) is being blocked.

Google Exhibit 1004, Page 27 of 523

Figure 8 provides a high-level flow chart depicting the system process 211 employed when a current viewer is playing his/her own recorded content in an exemplary embodiment of the present invention. In the process depicted in Figure 8, the system checks whether the external content is present (was previously recorded) and could be played. Thus, at step 280, a check is made to determine the availability of external sources, with step 282 depicting whether the source having recorded content is present. If at step 282 it is determined that the source having recorded content is not present, then the process proceeds to step 297 which depicts the step of bypassing playback/presentation of any external source. Otherwise, at step 282, it is determined that the source having recorded content is present, then the process proceeds to step 283 which depicts the step of reading the local recordings database to check all of the recordings made by the current user and to verify the present content on the external source (media) is present in the list. It should be understood that, the system is provided with functionality to generate for the user a list of recordings that are not in conflict with the current time constraints; thus, if a user still has one (1) hour of allowed time, for instance, then the system will only present recordings with a duration time not longer then 1 hour.

Proceeding to step 285, if it is determined that the external content has not been recorded by the current user, then the process proceeds to step 297 which depicts the step of bypassing playback/presentation of any external source. Otherwise, if at step 285 it is determined that the external content has been recorded by the current user, then the process proceeds to step 288 which depicts the step of checking whether any existing time constraints are applicable and further, whether the duration of the recorded event will not conflict with the current time constraints implemented. Proceeding to step 290, a determination is made as to whether any time constraints are blocking (currently in force). If time constraints are blocking, then the process proceeds to step 297 which depicts the step of bypassing playback/presentation of any external source. Otherwise, if at step 290 it is determined that the time constraints are not blocking, then a dialog is presented with a proposal for the viewer to enable playback/presentation of the program (recorded content).

Figure 9 provides a high-level flow chart depicting the system processes employed for determining whether the whether the content to be played is from the HDD in an exemplary embodiment of the present invention. As shown in a first step 300, there is depicted the step of checking the availability of external sources. Then, at step 303, a determination is made as to whether the source is present and enabled by the

Google Exhibit 1004, Page 28 of 523

parent/administrator in the "Allow Recordings" section of Figure 3(e). If the source is not present, the process proceeds to step 323 where it is determined that nothing is to be displayed. Otherwise, at step 303, if it is determined that the source is present and enabled by the parent/administrator, the process proceeds to step 306 which depicts the step of reading the HDD and generate a list of all recorded events for the current user (e.g., by title). Proceeding next to step 309, a further determination is made as to whether any recordings are present. If no recordings are present, then the process proceeds to step 323 where it is determined that nothing is to be displayed as no content has been recorded. Otherwise, at step 309, if it is determined that the recordings are present, then the process proceeds to step 312 which causes functionality for displaying the list in a user presentation dialog and waiting for a selection of content by the user. Upon receiving a selection of the recorded content by the user at step 312, the process proceeds to step 314 where a determination is made as to whether any time constraints are blocking the selected event. If at step 314 it is determined that time constraints are not blocking the selected recorded event, then the process proceeds to step 327 which causes presentation of a user dialog indicating that the selected event will be played. Otherwise, if at step 314, if it is determined that time constraints are blocking the selected recorded event, then the process proceeds to step 317 which causes presentation of a user dialog indicating the time restriction to be implemented. Continuing to step 320, a further dialog is presented to determine whether the user desires to select a new recorded event. If the user does want to select a new recorded event, then the process proceeds to step 312 to display the list of recorded events from which the user may select and the process repeats. Otherwise, if at step 320 it is determined that a user does not want to select a new event, then nothing will be played as indicated at step 323.

Another control system feature thus is directed to a user that has connected the HDD recorder. It is understood that via the system 10 depicted in Figure 1 background processes may be executed for real-time recordings at any (or all) times, but only according to the user/administrator specification for the enabled content. If the filter for advertisements is enabled, then a child could watch events (e.g., from HDD) continuously, without breaks. Furthermore, however, when the user turns on the TV, the control system will receive notice of the presence of additional recordings present on the HDD (e.g., a list of titles). Thus, even with the implementation of the time constraints, there is still a possibility for the authorized user to watch all interesting events from the whole day/week,

Google Exhibit 1004, Page 29 of 523

and not miss one of them. The system is additionally "self adaptable" as since the HDD cannot record all events, the system may pick "the most probably wanted events". Thus, it is assumed that in the present system that an HDD recorder can record everything from all channels. That is, for example, if a user watches news every day at 7:00, then the system can learn and always record those news programs at that set time. If the user misses it, the system will have recorded it for the user. Thus, if a user has selected in the system presentation menu "Allow HDD recordings" (see Figure 3(e)), this actually enables an HDD "caching", i.e., the system in the background automatically will try to record all events that follow the specified content conditions (see Figures 3(a) and 3(b)). The self-adapting feature according to the invention, thus provisions the HDD recorder with functionality for enabling the user to indicate which content should be recorded with the content specified in the same way as indicated in the content selection menus provided in Figures 3(a) and 3(b). The HDD will make those recordings in the background automatically. Current technology does not allow recordation of everything, because for example those devices have one tuner, and (most of the time) not enough storage capacity. So there are two resulting possibilities: 1) the HDD will automatically (randomly) record events on the basis what the user likes (i.e., has watched) or, it will adapt itself to record more of that kind of programming; or 2) when two (2) themes are enabled, e.g., Cartoons and Educational, a child may watch more cartoons, so the system (HDD) will record more of that kind, rather then educational programs.

Figure 10 provides a high-level flow chart depicting the system monitoring process 216 employed for determining whether any type of blocking should occur. This system check action must be executed after: 1. every "switch" to select a service, e.g., via a remote control; 2. periodically, e.g., once every minute; 3. every content change (when the advertisements detection is turned on); and/or 4. at any event change. As depicted in Figure 10, a first step 400 is the determination of whether there are time constraints blocking for that user and implements the flow processes depicted in Figure 6. If there are time constraints blocking, then the multimedia content is blocked, e.g., by turning off the TV, as indicated at step 408. Otherwise, if there are no time constraints blocking, the process proceeds to step 406 where the determination of whether there are any content constraints blocking for that user and implements the flow processes depicted in Figure 7. If there are content restrictions, then the multimedia content is blocked as indicated at step 412. Otherwise, if there are no content restrictions determined, then the process proceeds to step

Google Exhibit 1004, Page 30 of 523

410 which is the process of enabling presentation of the multimedia content.

Thus, in accordance with the various exemplary embodiments of the invention:

1. The set top box and/or one or more multimedia display devices is programmed to provide a "control system" that allows access to particular channels for a given amount of time. For example, a parent may not care about how much time a child watches a particular educational channel, but may desire to limit access to a particular entertainment channel to an hour a day. Thus, the control system of the invention is additionally provided with a possibility to add or define a number of exclude rules, e.g., allowing certain channels to be watched without the "timing and/or content rules"; or allow certain "themes" to be watched without the "timing rules". Thus, an exclude "list", may be so provided to define any unlimited themes or services.

2. The set top box and/or one or more multimedia display devices is programmed to allow access at the program level for a given period of time. For example, a parent may desire to limit a child to one episode per day of a particular program.

3. The set top box and/or one or more multimedia display devices is programmed to detect the end of a locking condition, for example, to initiate a display (e.g., a banner) at a pre-determined time before the time slot ends, e.g., 5 minutes.

4. The set top box and/or one or more multimedia display devices is additionally programmed to control attached devices like HDD/DVD/VCR/PVR. Thus, at the end of a time slot, the user may record the remainder of an event if it exceeds the allotted time slot, e.g., by recording on a DVD. The content that was recorded may only be seen when the next possible time slot is active.

5. The set top box and/or one or more multimedia display device is additionally programmed to receive programming commands of the "control system" via any other interface, including a web interface. The TV (or associated set top box) maintains a network connection and runs a web controlled interface so that a full control may be performed via a browser. Even a wireless connection could be established and a remote control could also work via, for example, Wi-fi. The TV could also be a controlled by a parent remotely from anywhere if the TV would have a permanent Internet connection. That is, a parent on-line could control via a browser interface what the children are watching, or statistics, like what my child was watching, how many hours, etc. Thus, if a user has a high-speed Internet connection, it could, for example: enable the supervisor to schedule a recording of any event; enable the supervisor to change settings of the system;

Google Exhibit 1004, Page 31 of 523

enable the supervisor to see, via a browser, what the child is currently watching (simple video transmission); enable the supervisor to send messages to the current user, e.g., a user could receive SMS's on a mobile phone with statistics, etc..

6. The set top box and/or one or more multimedia display device is additionally programmed to receive programming commands of the "control system" for limiting a child's viewing time, e.g., 7 hours per week or 1 hour per day. Thus, for example, a parent may specify limitation on a child's television access to: only 7 m – 10 pm on school nights, and only 16 hours per week; and only TV channels 3, 5, 7, 27, 54, and block channel 7 after 9 pm, for example. In another example, it is possible to make a viewing restriction such as enabling a child to watch cartoons only 2 hours per day, and only one hour on Mondays, and only 6 hours during the workweek and 6 hours during the weekend. The child could switch between allowed services during allowed times.

7. The set top box and/or one or more multimedia display device is additionally programmed to receive programming commands of the "control system" for limiting a child's viewing of shows/events based on the theme of the current event, e.g., a parent can manage a child's viewing access by enabling the child to watch every day only 1 hour of events only of a type "Education" and "Cartoon" themes. That is, a filtering mechanism is provided that enables a child to view only channels where events are present with an allowed theme. In one embodiment, these events may be sorted and accessible from a preset 1 to N. Further to this, the system presents the possibility for a user to specify in detail how much of certain event themes, e.g., "Cartoons" and "Education", is allowed, i.e., in what proportions.

8. The set top box and/or one or more multimedia display device is additionally programmed to receive programming commands of the "control system" for programming a flexible setting, so if the current event takes longer then the allowed time a child still could watch it or record it until the end. Thus, for example, a parent can provide a "flexible" setting, which enables a possibility to see the current event till the end. Thus, for example, a parent can provide a "flexible" setting, which enables a possibility to see the current event till the end. For example, when a current event takes longer then 1 hour and the event exceeds the current left 1 hour restriction, a child is still allowed to watch it until the end (but only under some conditions, e.g., a child has already seen a minimum of. 50% of the event). In this context, if a timeout occurs (i.e., a child watches TV longer than an allowed time), there is still a possibility to record the event to any connected media storage

Google Exhibit 1004, Page 32 of 523

(HDD recorder).

Thus, for example, a dialog could pop-up with a question to record the event in a media storage device and present it to the child. When a child starts watching the TV the next day, the system presents the recorded portion to the child. In an example home network situation in a household comprising multiple TV and/or multimedia display devices, the system provides for the exchange of information between all TV's, so that a child will not be able to continue watching TV on another TV after a time or content restriction has been placed in effect.

9. The set top box and/or one or more multimedia display device is additionally programmed to recognize advertisements, for example, on a voice volume basis, and a TV may be equipped with, for example, the hard-disk device (HDD) for recording content without any advertisements. That is, a parent could set an option to disallow watching any advertisements.

10. The set top box and/or one or more multimedia display device is additionally programmed to block the viewing of content on the basis of the viewer's age, or block the viewing of content based on a ratings data, as provided via an external or third-party rating service, e.g., via the Internet.

11. With respect to MHP, or any other form of interactivity, there is the possibility to run applications on the television device. It is possible that some interactive content (like applications) would violate the (enabled) content rules. Thus, it is understood that the control system of the invention provides a function to filter the interactivity (like "Xlets", or websites using a TV web browser) on the "content selection" basis or, the possibility to completely turn it off. The system may further filter "interactive content" or filter it on the basis of "content selection", e.g., an Xlet that represents advertisements, Xlets with games, etc.. The system thus includes additional functionality to filter all interactive content, such as "teletext" pages, MHEG pages for digital TV, etc....,

While there has been shown and described what is considered to be preferred embodiments of the invention, it will, of course, be understood that various modifications and changes in form or detail could readily be made without departing from the spirit of the invention. It is therefore intended that the invention be not limited to the exact forms described and illustrated, but should be constructed to cover all modifications that may fall within the scope of the appended claims.

Google Exhibit 1004, Page 33 of 523

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent is:

CLAIMS:

1. A method (200) for providing supervisory control over viewing of multimedia content via a multimedia terminal device (13a, 13b) comprising:

specifying, via an interface display (121, 121') time constraints (151, 156) for controlling times a viewer is allowed to watch said multimedia terminal within a period of time;

specifying, via an interface display (120, 120') viewing content restrictions (125, 135) of content capable of being viewed by said viewer within said period of time;

monitoring (216) a viewer's access to current broadcast content via said multimedia terminal and access to content that has been previously recorded by said viewer via a recording device that stores recorded broadcast content (163, 183); and,

blocking (208, 258, 273, 323, 412) said viewer's access to current or stored broadcast content that is violative of said time and viewing content restrictions.

2. The method as claimed in Claim 1, further comprising the step of defining an exclude list indicating any viewing content themes or services that are not to be content restricted.

3. The method as claimed in Claim 1, wherein said specifying of time constraints includes specifying allowed user viewing times (171, 172) a multimedia terminal may be utilized by a viewer within a predetermined period of time.

4. The method as claimed in Claim 3, wherein said specifying of time constraints includes specifying (152, 173) that a number of viewing hours is to be divided equally among the predetermined period of time.

5. The method as claimed in Claim 1, wherein said specifying of time constraints includes specifying (154, 174) whether time for viewing allowed content may be extended if an allowed program currently being viewed exceeds time of an allowed viewing period or time slot.

6. The method as claimed in Claim 1, wherein said specifying of time constraints

Google Exhibit 1004, Page 34 of 523

includes specifying days (160, 180) a multimedia terminal may be utilized by a viewer and allowed viewing time slots within those days.

7. The method as claimed in Claim 1, wherein said specifying of viewing content restrictions includes specifying content themes (133, 143, 162, 182) a viewer is allowed to watch and according to what percentage specified content themes may be viewed.

8. The method as claimed in Claim 1, further including a step of specifying, via an interface display (120, 120') a minimum age (134, 142) below which a viewer is subject to said time constraints and content restrictions.

9. The method as claimed in Claim 1, wherein said specifying of viewing content restrictions includes specifying a minimum program rating (137, 139, 145, 147) below which a viewer is subject to said content restrictions.

10. The method as claimed in Claim 7, further including a step of specifying, via an interface display (122) an authorization enabling a user to record viewing content (163,165, 183, 185) via a recording device (23, 28, 29).

11. The method as claimed in Claim 10, further including a step of enabling a viewer to define viewing content to be recorded, said viewing content to be recorded according to said specified content theme.

12. The method as claimed in Claim 1, further including a step of specifying, via an interface display (122') an authorization to maintain and store a history of a viewer's viewing access over a period of time for subsequent generation of a report (167,169, 187, 189).

13. The method as claimed in Claim 1, wherein said step of monitoring (216) a viewer's access to current or recorded broadcast content includes a step of periodic checking viewer's access to said current broadcast or recorded content.

14. The method as claimed in Claim 1, wherein said step of monitoring (216) a viewer's access to current or recorded broadcast content includes a step of checking viewer's access to said broadcast content in response to a viewer's switching access to another current broadcast or recorded content.

15. The method as claimed in Claim 10, wherein said step of enabling a user to record

Google Exhibit 1004, Page 35 of 523

viewing content includes the additional step of specifying whether advertisements may be filtered out of the broadcast content when recording (120, 129).

16. A supervisory control system (10) for controlling a user's viewing of content via a multimedia terminal device (13a, 13b) comprising:

means (15, 30) for receiving user input commands specifying time constraints (151, 156) for controlling times a viewer is allowed to watch said multimedia terminal within a period of time, and specifying viewing content restrictions (125, 135) of content capable of being viewed by said viewer within said period of time;

control means (15, 50, 51) for monitoring (216) a viewer's access to current broadcast content via said multimedia terminal and access to content that has been previously recorded by said viewer via a recording device that stores recorded broadcast content (163, 183), said control means comprising means for blocking (208, 258, 273, 323, 412) said viewer's access to current or stored broadcast content that is violative of said time and viewing content restrictions.

17. The system as claimed in Claim 16, wherein said specified time constraints includes allowed user viewing times (171, 172) a multimedia terminal may be utilized by a viewer within a predetermined period of time.

18. The system as claimed in Claim 16, wherein said specified time constraints includes an allocation of additional time (154, 174) for extending viewing of allowed content when an allowed program currently being viewed exceeds time of an allowed viewing period or time slot.

19. The system as claimed in Claim 16, wherein said specified time constraints includes specified days (160, 180) a multimedia terminal may be utilized by a viewer and allowed viewing time slots within those days.

20. The system as claimed in Claim 16, wherein said specified viewing content restrictions includes specified content themes (133, 143, 162, 182) a viewer is allowed to watch and according to what percentage specified content themes may be viewed.

21. The system as claimed in Claim 16, wherein said means for receiving user input commands further received user input commands specifying a minimum age (134, 142) below which a viewer is subject to said time constraints and content restrictions.

22. The system as claimed in Claim 20, wherein said means for receiving user input

Google Exhibit 1004, Page 36 of 523

commands further receives user input commands specifying an authorization enabling a user to record viewing content (163,165, 183, 185) via a recording device (23, 28, 29).

23. The system as claimed in Claim 22, further including a means for enabling a viewer to define viewing content to be recorded, said viewing content to be recorded according to said specified content theme.

24. The system as claimed in Claim 16, further including means for maintaining and storing a history of a viewer's viewing access over a period of time for subsequent generation of a report.

25. The system as claimed in Claim 16, wherein said control means for monitoring a viewer's access to current or recorded broadcast content includes a means for periodically checking viewer's access to said current broadcast or recorded content.

26. The system as claimed in Claim 16, wherein said control means for monitoring a viewer's access to current or recorded broadcast content includes a means for checking viewer's access to said broadcast content in response to a viewer's changing access to a current broadcast or recorded content.

27. The system as claimed in Claim 22, wherein said means enabling a user to record viewing content includes filter means for filtering out advertisements from the broadcast content when recording (120, 129).

28. The system as claimed in Claim 16, further comprising a network connection (30, 99) communicatively coupled with said means (15) for enabling entry of said user input commands specifying said time constraints and content restrictions from a remote location.

29. The system as claimed in Claim 16, wherein said network connection includes a wired (25) or wireless connection (22).

30. The system as claimed in Claim 29, wherein said network connection includes a public or private network (99).

31. The system as claimed in Claim 16, wherein said multimedia terminal device includes a television (13a, 13b).

Google Exhibit 1004, Page 37 of 523

32. The system as claimed in Claim 16, wherein said recording device that stores recorded broadcast content comprises a high-density disk storage media (29).

33. The system as claimed in Claim 16, wherein said recording device (29) comprises a personal video recorder.

34. A method (200) for providing supervisory control over viewing of content via a multimedia terminal device comprising:

authenticating a user (203) attempting to access current multimedia content via or recorded multimedia content said multimedia terminal device;

in response to an authenticated viewer's attempted access to current broadcast program, checking (400) whether the current time is within a period of time (151, 156) previously specified as being restricted such that that viewer is not allowed to watch multimedia terminal;

in further response to an authenticated viewer's attempted access to current broadcast program, checking (406) whether the broadcast content or recorded content is in compliance with previously specified viewing content restrictions (125, 135) for that viewer within a current period of time; and,

blocking (412) said viewer's access to current or stored broadcast content that is violative of said time and viewing content restrictions, or otherwise, enabling said viewer to view accessed content.

35. The method as claimed in Claim 34, wherein, when viewing an allowed broadcast event within a pre-determined allotted viewer time slot, a further step of detecting an end of said pre-determined allotted viewer time slot and generating for display on said multimedia terminal a message notifying said viewer of an impending termination of said pre-determined allotted viewer time slot.

36. The method as claimed in Claim 35, wherein, after receiving said message notifying said viewer of an impending termination of said pre-determined allotted viewer time slot, a further step of enabling said viewer to record a remainder of an event if it exceeds allotted time slot.

37. The method as claimed in Claim 36, further comprising enabling said viewer to view remaining recorded content of said event within a subsequent allotted viewer time slot.

Google Exhibit 1004, Page 38 of 523

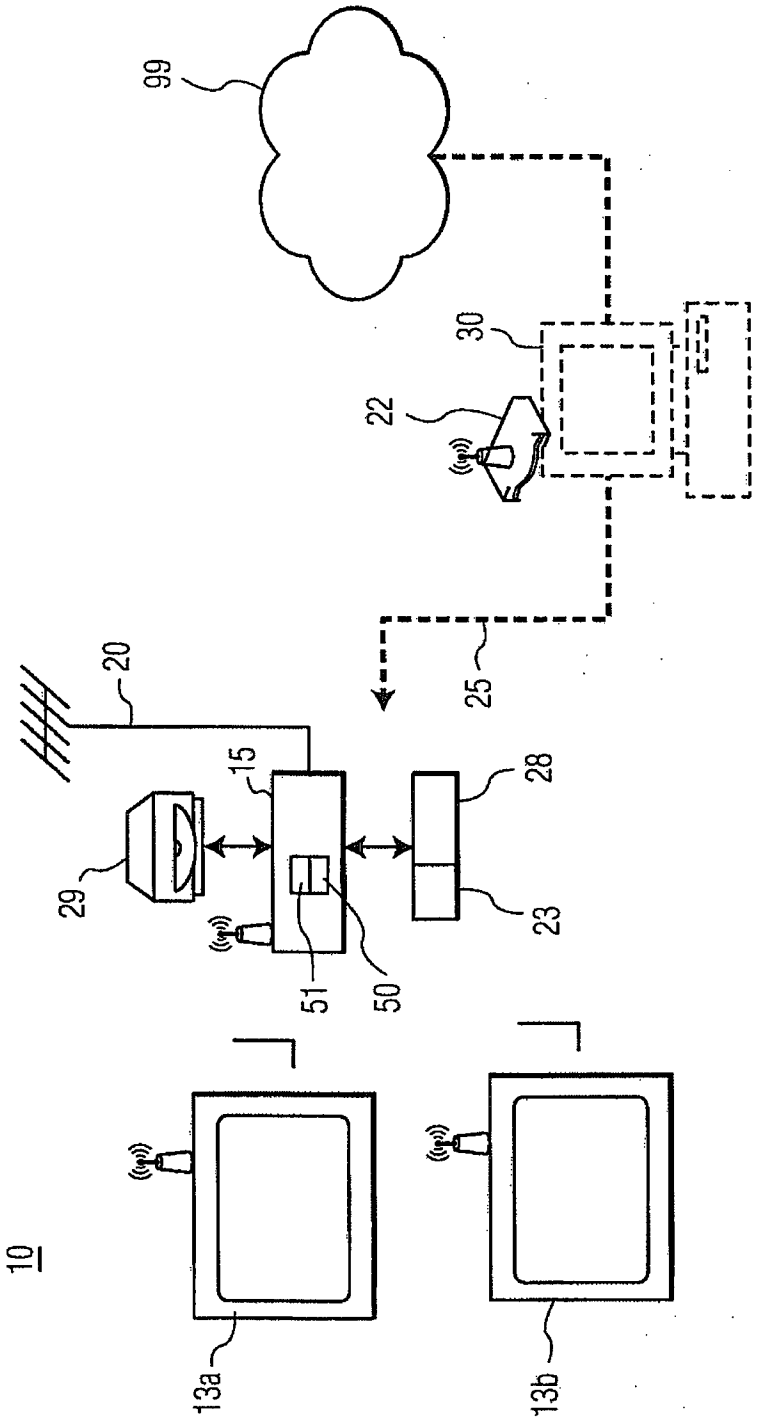


FIG. 1

Google Exhibit 1004, Page 39 of 523

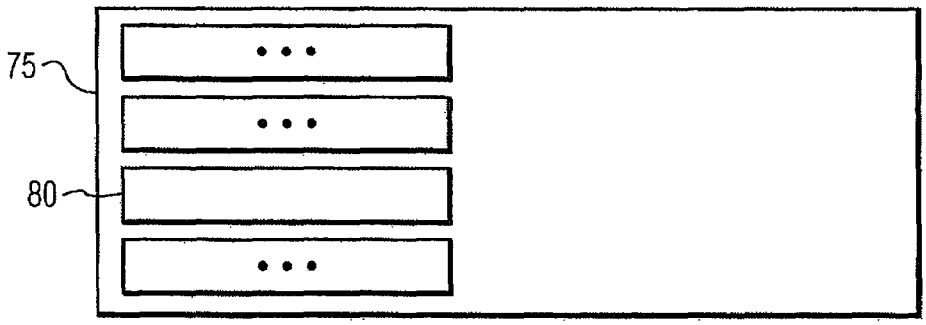


FIG. 2A

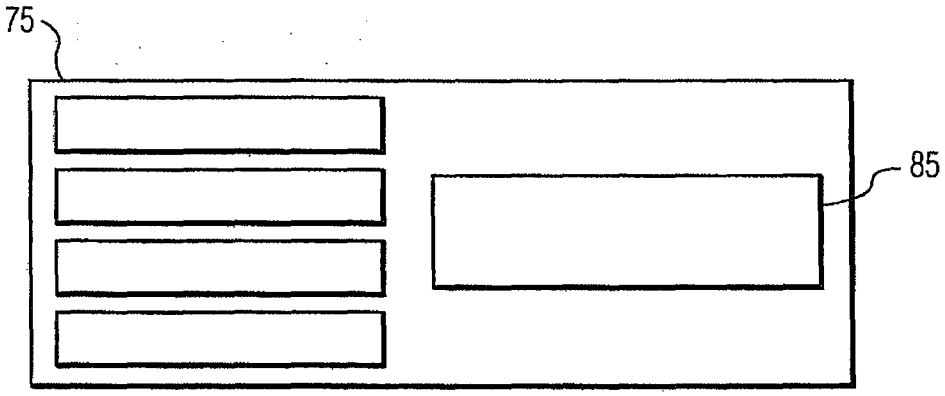


FIG. 2B

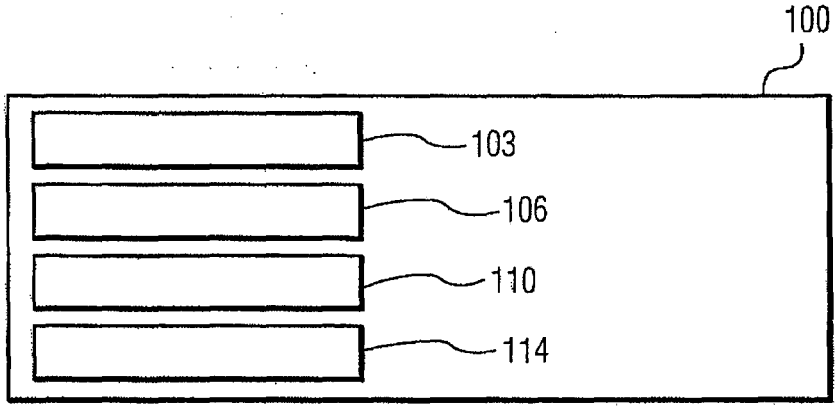


FIG. 2C

Google Exhibit 1004, Page 40 of 523

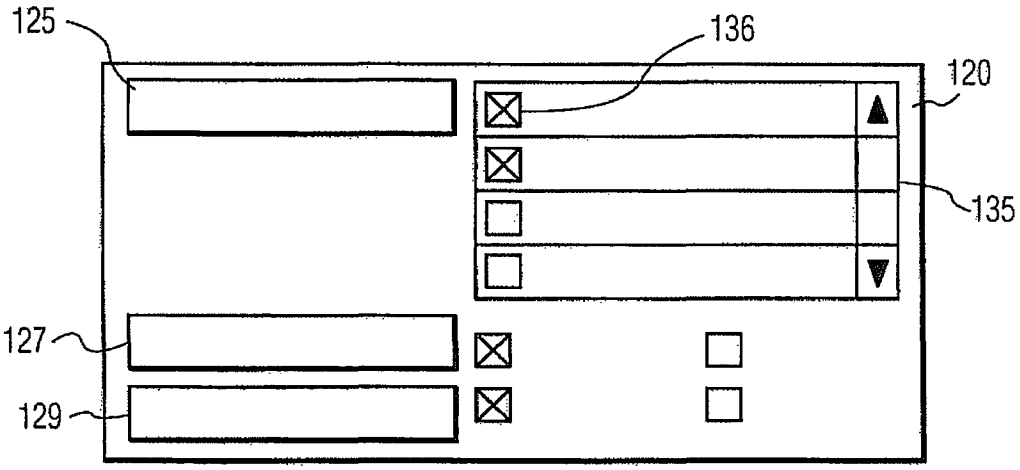

125
136
120
135
127
129

FIG. 3A

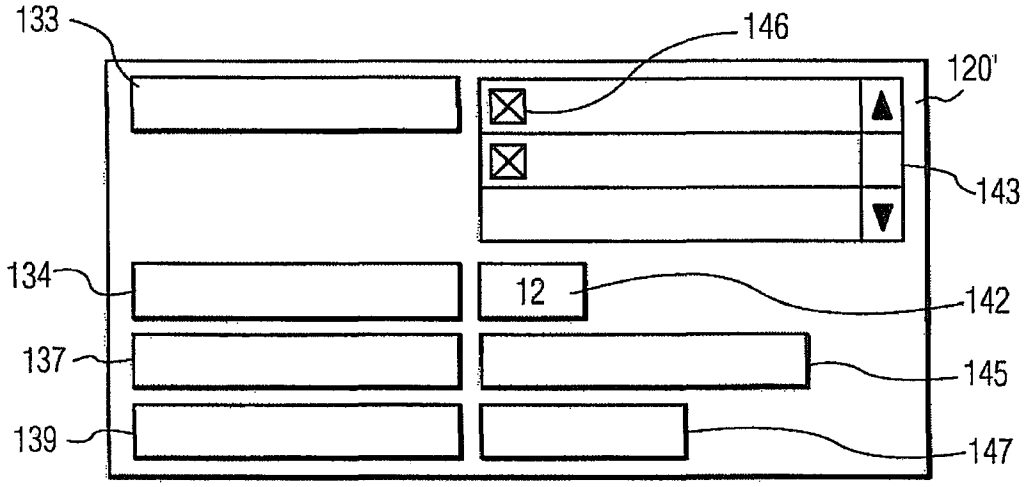

133
146
120'
143
134
12
142
137
145
139
147

FIG. 3B

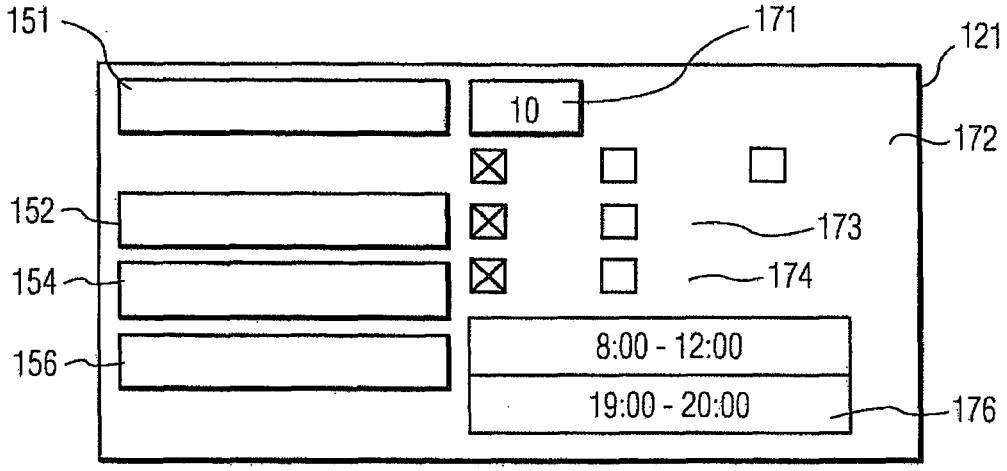

151
171
121
10
172
152
173
154
174
156
8:00 - 12:00
19:00 - 20:00
176

FIG. 3C

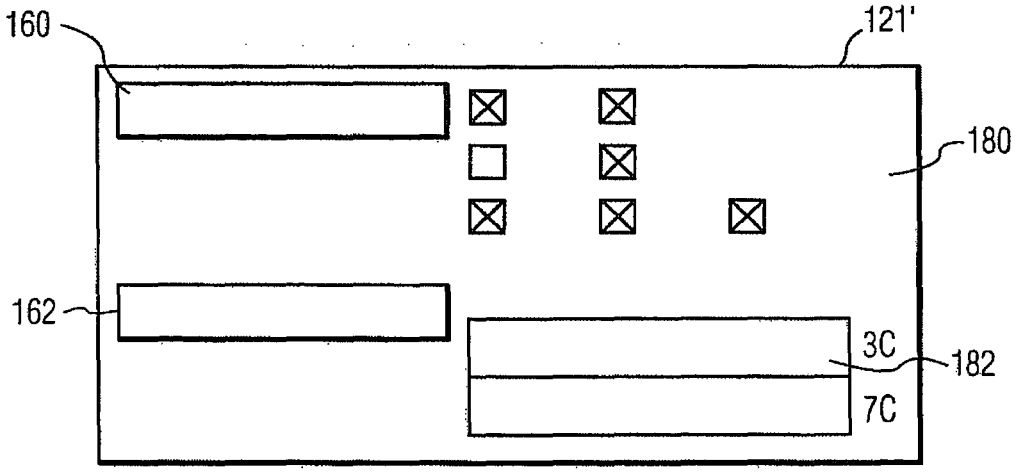

160
121'
180
162
3C
182
7C

FIG. 3D

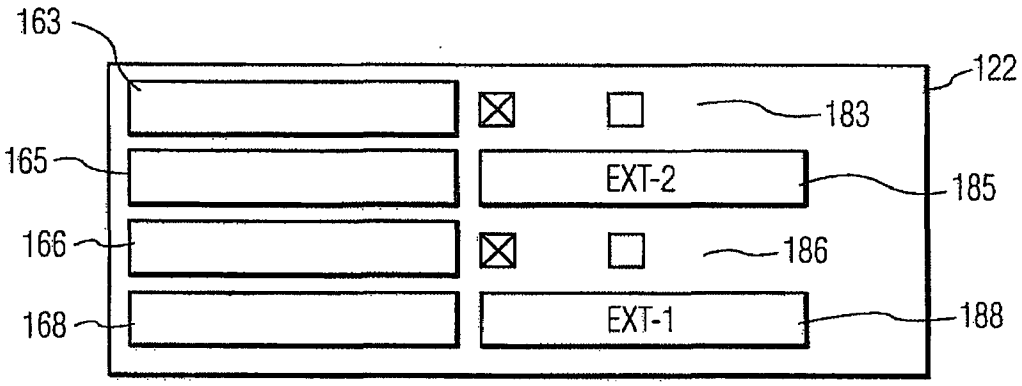

163
122
183
165
EXT-2
185
166
186
168
EXT-1
188

FIG. 3E

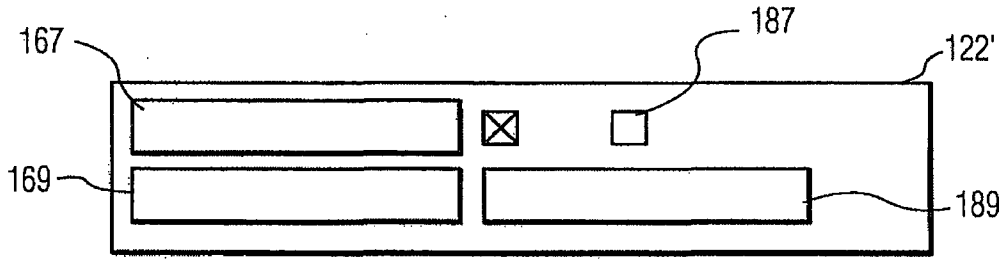

167
187
122'
169
189

FIG. 3F

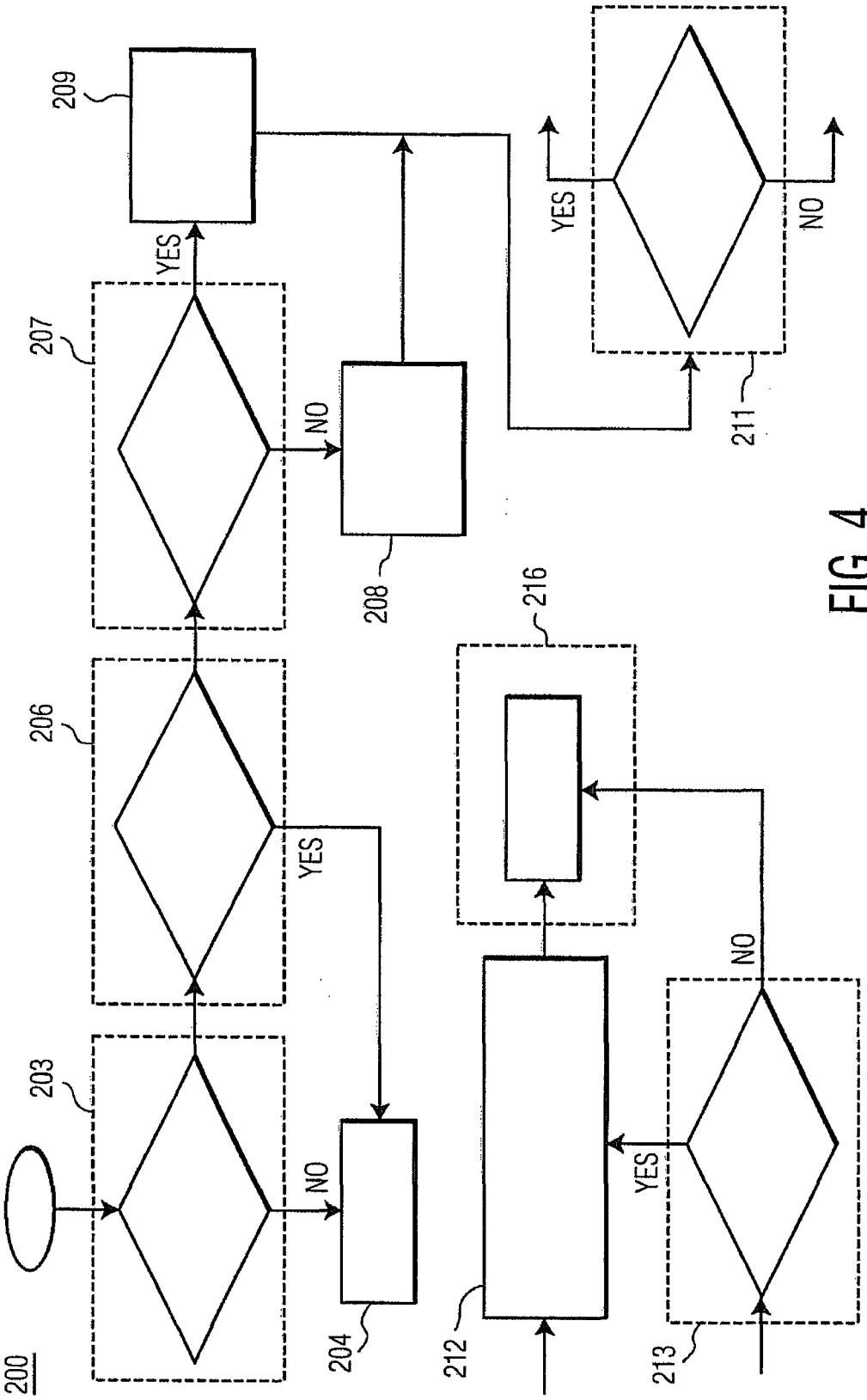


FIG. 4

Google Exhibit 1004, Page 44 of 523

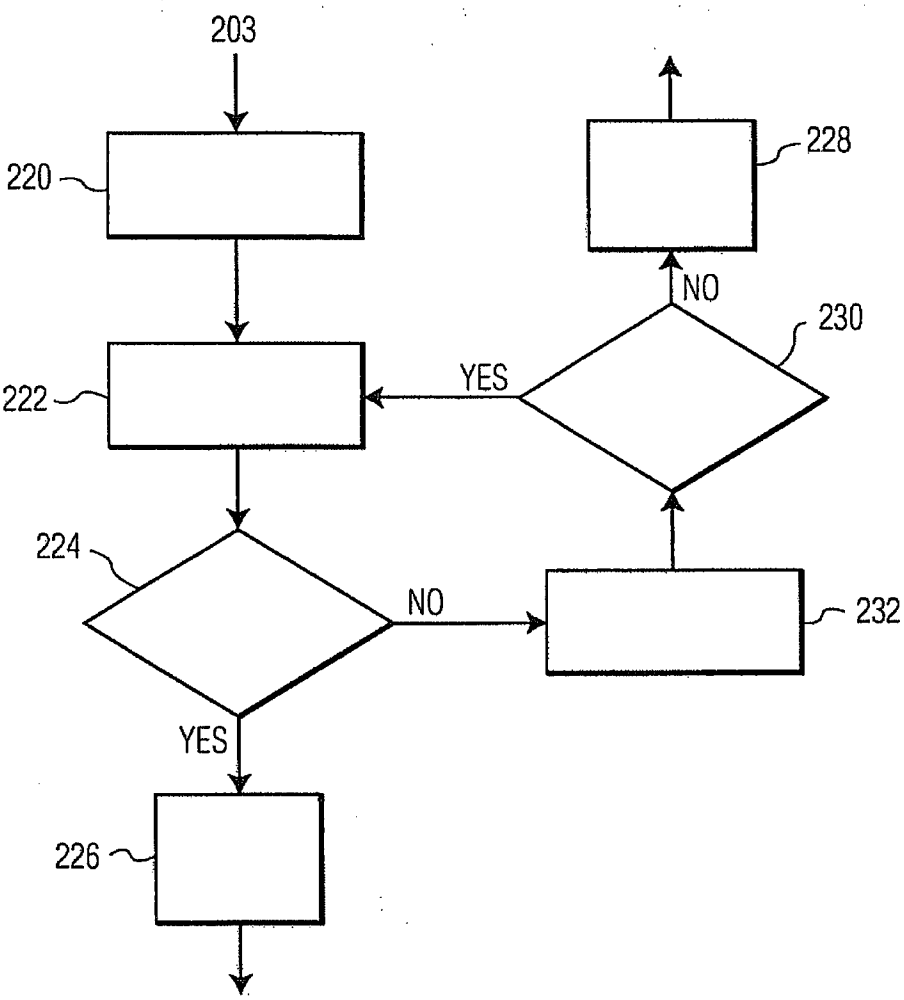


FIG. 5

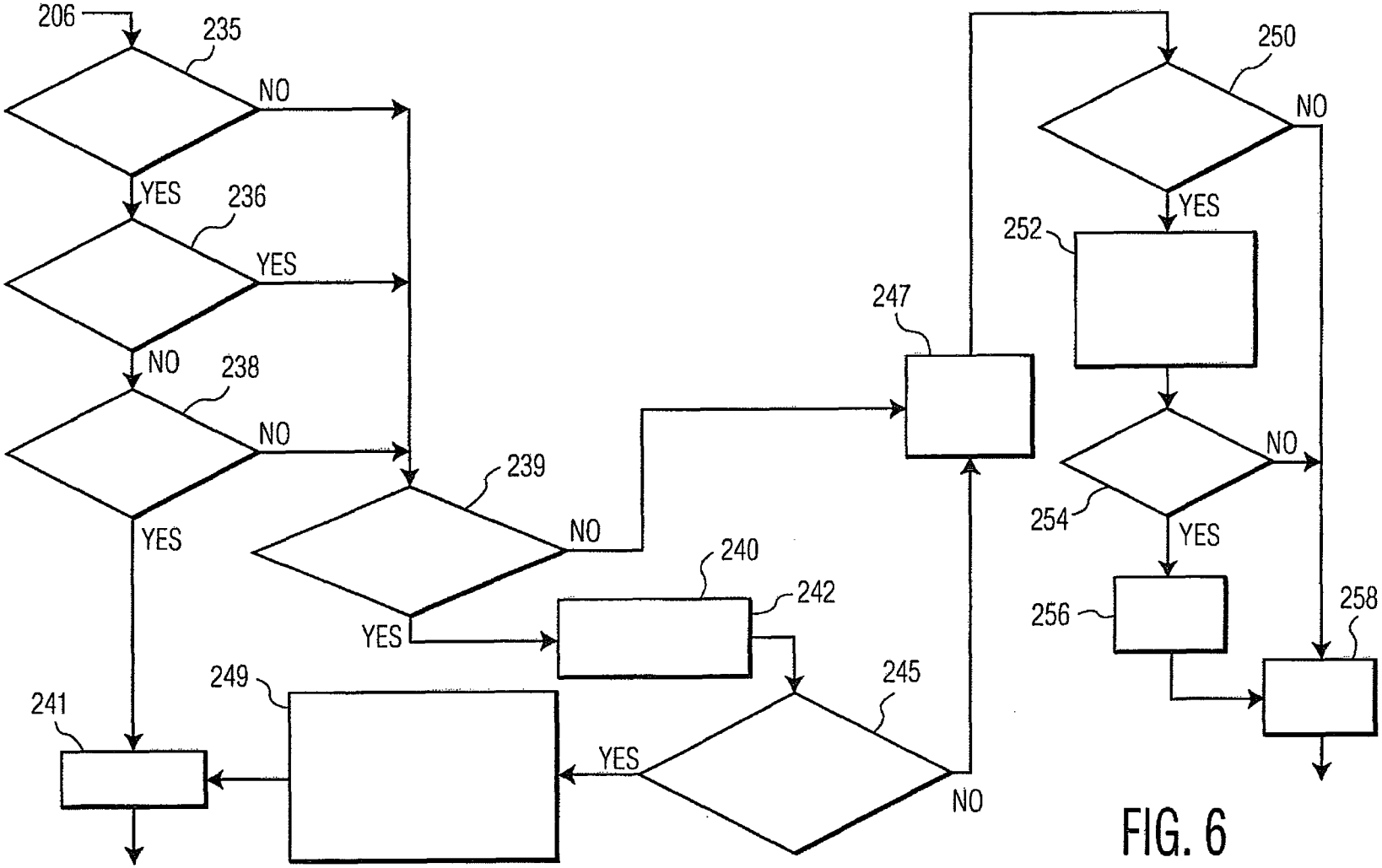

206
235
NO
YES
236
YES
NO
238
NO
YES
239
NO
YES
240
242
247
250
NO
YES
252
NO
254
YES
256
258
245
YES
NO
249
241

FIG. 6

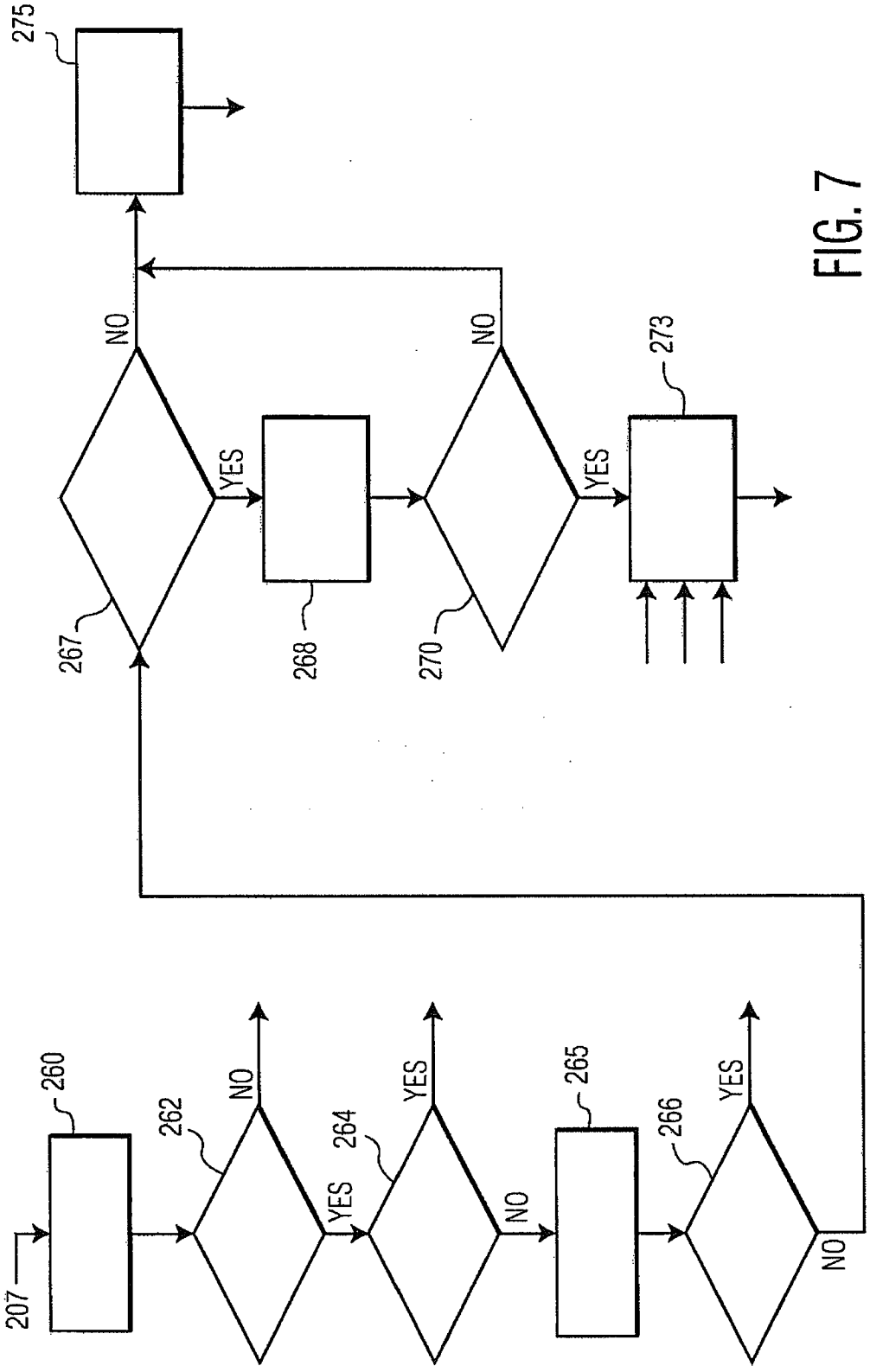


FIG. 7

Google Exhibit 1004, Page 47 of 523

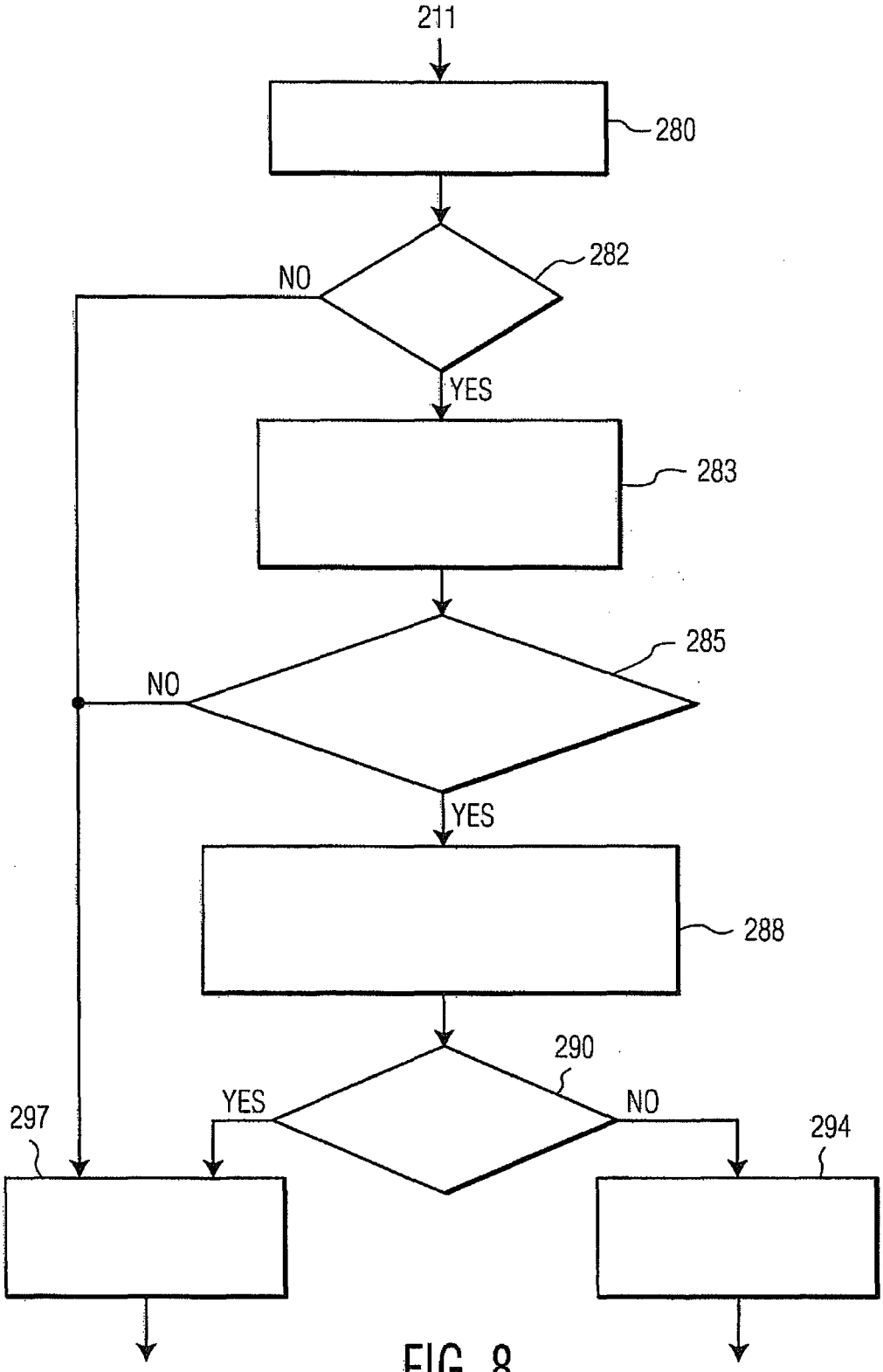


FIG. 8

Google Exhibit 1004, Page 48 of 523

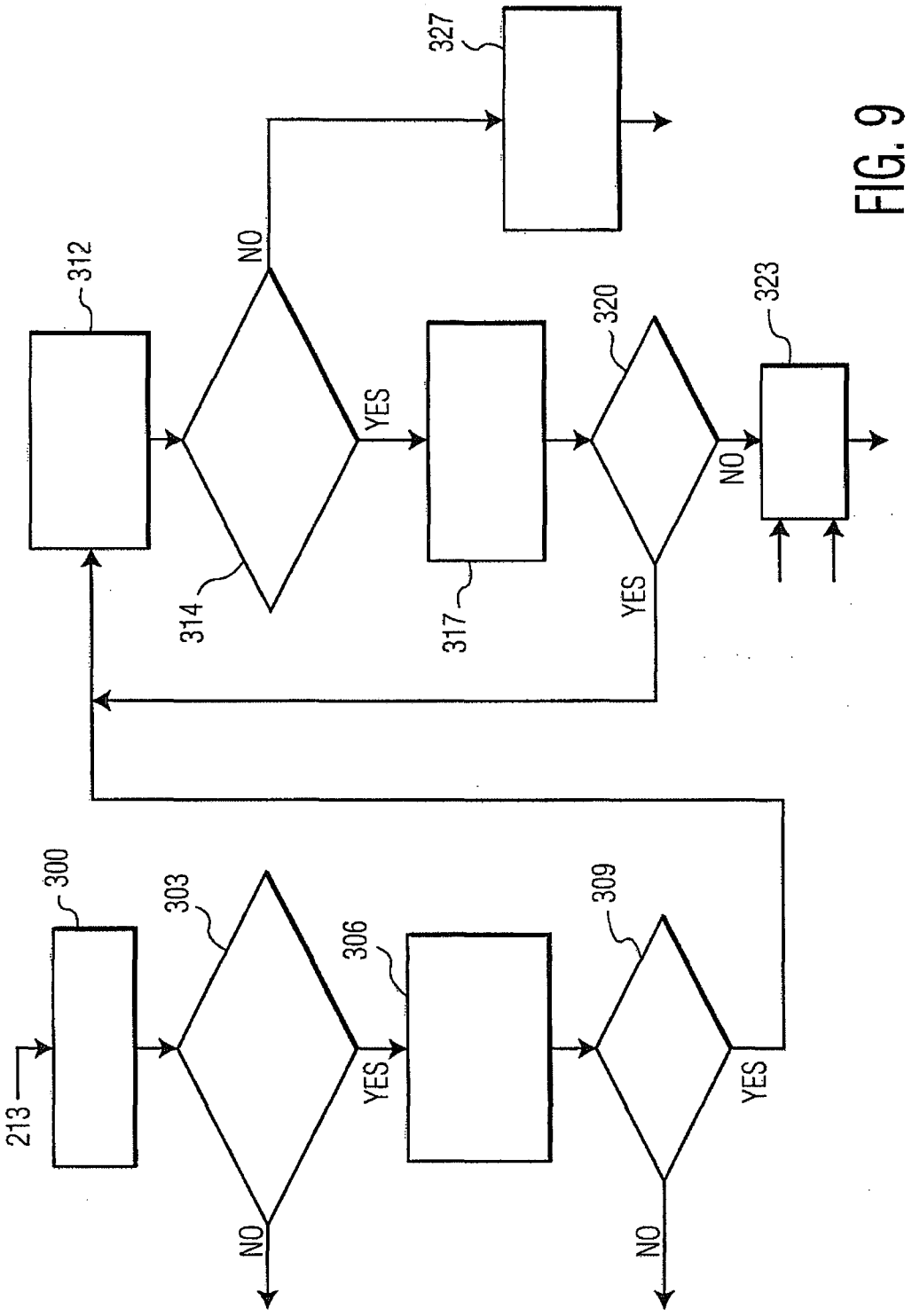

213
300
303
NO
306
YES
309
NO
YES
312
314
NO
YES
317
320
NO
323
327

FIG. 9

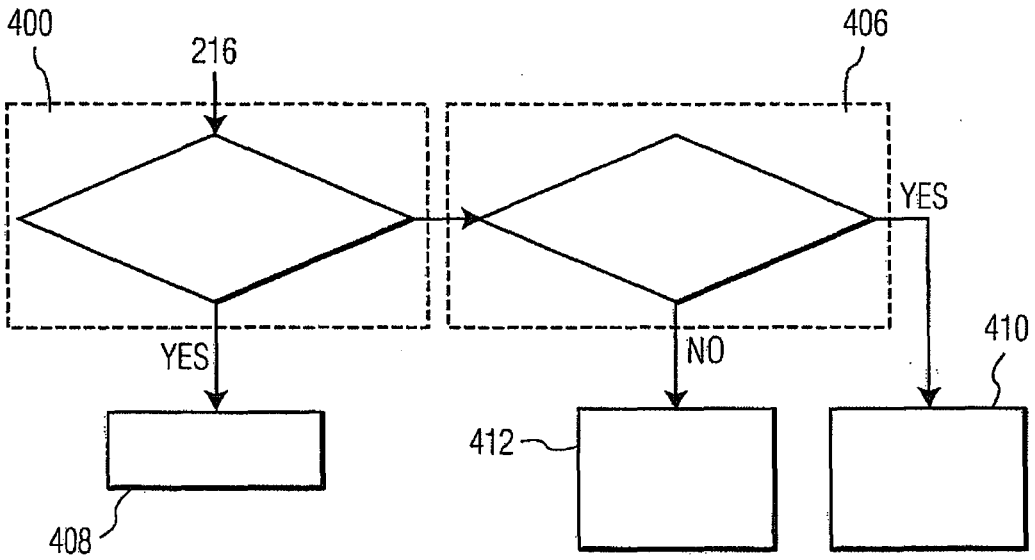


FIG. 10

Google Exhibit 1004, Page 50 of 523

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2006/050643

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04N7/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/110491 A1 (RODRIGUEZ ARTURO A [US] ET AL) 12 June 2003 (2003-06-12) paragraphs [0049] - [0051]; figure 2	1-6,8,9, 12-19, 21,24-37
Y	 paragraphs [0061], [0062] paragraphs [0064], [0065] paragraphs [0092], [0093]; figure 8 paragraphs [0094] - [0102]; figures 9-17 paragraph [0103]; figure 18 paragraphs [0105] - [0107]; figure 20 paragraph [0117]; figure 26 paragraph [0118]; figure 27 paragraphs [0125], [0126]; figure 29c	10,11, 22,23

-/--

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 March 2007	29/03/2007

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Goy, Sébastien

Form PCT/ISA/210 (second sheet) (April 2005)

Google Exhibit 1004, Page 51 of 523

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/124973 A1 (SIE JOHN J [US] ET AL) 3 July 2003 (2003-07-03) paragraphs [0043], [0047]	1-9, 12-21, 24-30, 32-37
Y	paragraphs [0032], [0035] paragraph [0058] paragraph [0059] paragraphs [0073] - [0077]	10,11, 22,23
A	US 2004/010798 A1 (GALLI DOREEN [US] ET AL) 15 January 2004 (2004-01-15) paragraphs [0003], [0004] paragraph [0012] paragraphs [0021] - [0028]; figure 3 paragraphs [0035], [0036]; figure 4	1-3,8,9, 12,13, 16,17, 21,24, 25,33
A	US 6 777 828 B1 (ROTHSTEIN RONALD J [US]) 17 August 2004 (2004-08-17) column 2, lines 9-36 column 3, lines 1-7	3,17, 28-30
A	EP 1 499 113 A2 (BRITISH SKY BROADCASTING LTD [GB]) 19 January 2005 (2005-01-19) paragraphs [0023], [0024] paragraph [0055]	15,27,32
E	WO 2006/070343 A (NDS LTD [GB]; SILVER YONATAN [IL]; SMITH PERRY [IL]; ATLOW SHABTAI [IL]) 6 July 2006 (2006-07-06) page 12, line 20 - page 15, line 16	36,37

Google Exhibit 1004, Page 52 of 523

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2006/050643

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003110491 A1	12-06-2003	CA 2470131 A1 EP 1466478 A1 WO 03051054 A1 US 2007006273 A1	19-06-2003 13-10-2004 19-06-2003 04-01-2007
US 2003124973 A1	03-07-2003	US 2004221303 A1	04-11-2004
US 2004010798 A1	15-01-2004	NONE	
US 6777828 B1	17-08-2004	NONE	
EP 1499113 A2	19-01-2005	NONE	
WO 2006070343 A	06-07-2006	NONE	

Google Exhibit 1004, Page 53 of 523

(12) UK Patent Application (19) GB (11) 2464630 (13) A

(43) Date of A Publication 28.04.2010

(21) Application No: 1000338.2

(22) Date of Filing: 11.01.2010

(51) INT CL:
H04N 7/173 (2006.01) *G06F 17/30* (2006.01)
H04N 5/00 (2006.01) *H04N 7/16* (2006.01)

(56) Documents Cited:
WO 2009/036028 A3 US 7584223 B1
US 6850252 B1 US 6611813 B1
US 20090254971 A1 US 20090222853 A1
US 20090222851 A1 US 20080288975 A1
US 20060293954 A1 US 20060085816 A1
US 20040237098 A1

(58) Field of Search:
INT CL G06F, H04N
Other: Online: WPI, EPODOC, TXTEN

(71) Applicant(s):
IncenTV Ltd
(Incorporated in the United Kingdom)
Ground Floor, Boundary House, 4 County Place, New London Road, Chelmsford, Essex, CM2 0RE, United Kingdom

(72) Inventor(s):
William Stanley Poel
Alistair Bruce Kelman
Christopher Martin Poel

(74) Agent and/or Address for Service:
Vivien Irish
33 St Saviourgate, YORK, YO1 8NQ, United Kingdom

(54) Title of the Invention: **An improved set top box and system for the provision of enhanced television services**
Abstract Title: **Targeted advert insertion in an STB**

(57) A Set Top Box (STB) 30 for supplying television services to a consumer's TV 50 comprises a digital feed assembler 34 which inserts advertisements into programmes. The adverts can have limitations as to time and/or date of showing and may be further restricted eg by postcode. The commercials can be targeted at specified consumer characteristics to a predetermined level of accuracy (eg 80%) to protect privacy; this is achieved by use of an enhanced privacy database 46 which stores personal characteristics or data of each STB user and generates for each a pseudo identity. The STB may incorporate a firewall 36 and a decrypter to decrypt encoded television programmes.

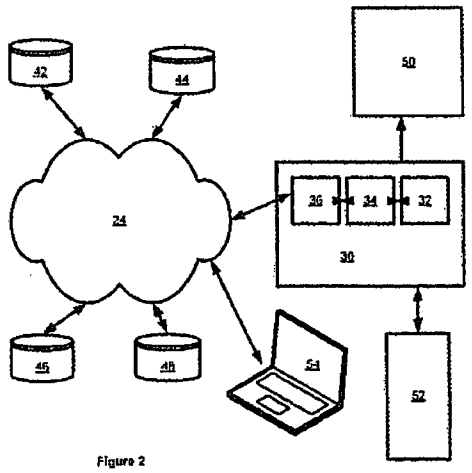


Figure 2

GB 2464630 A

Google Exhibit 1004, Page 54 of 523

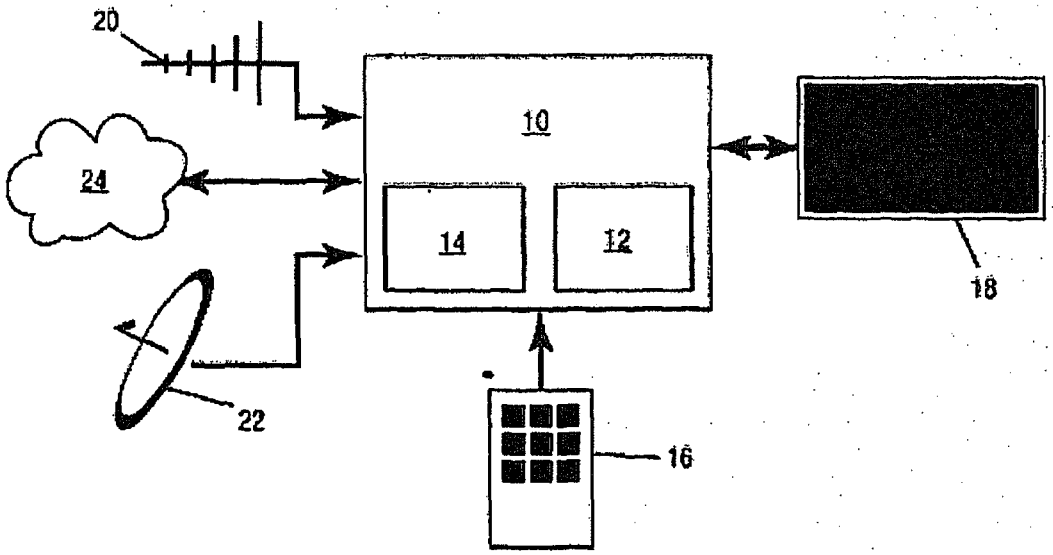


Figure 1

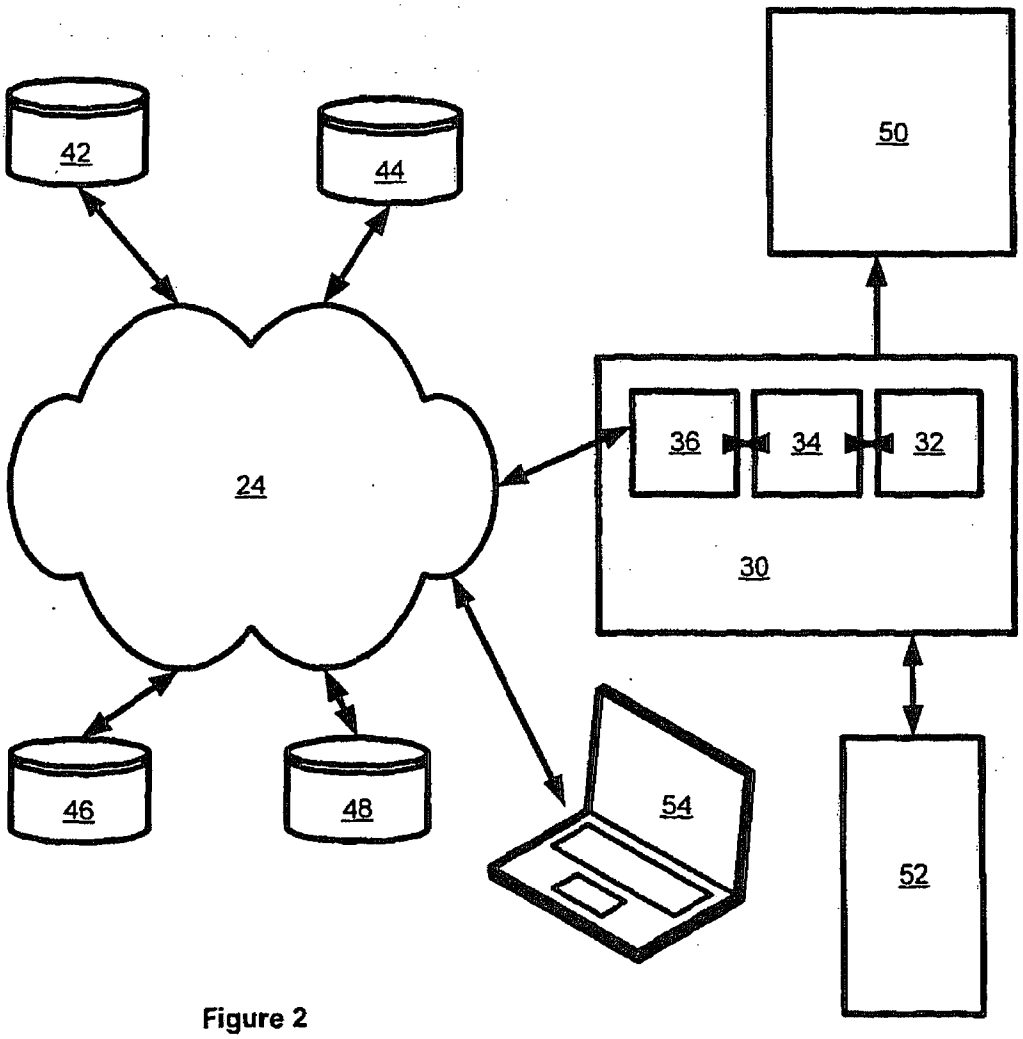


Figure 2

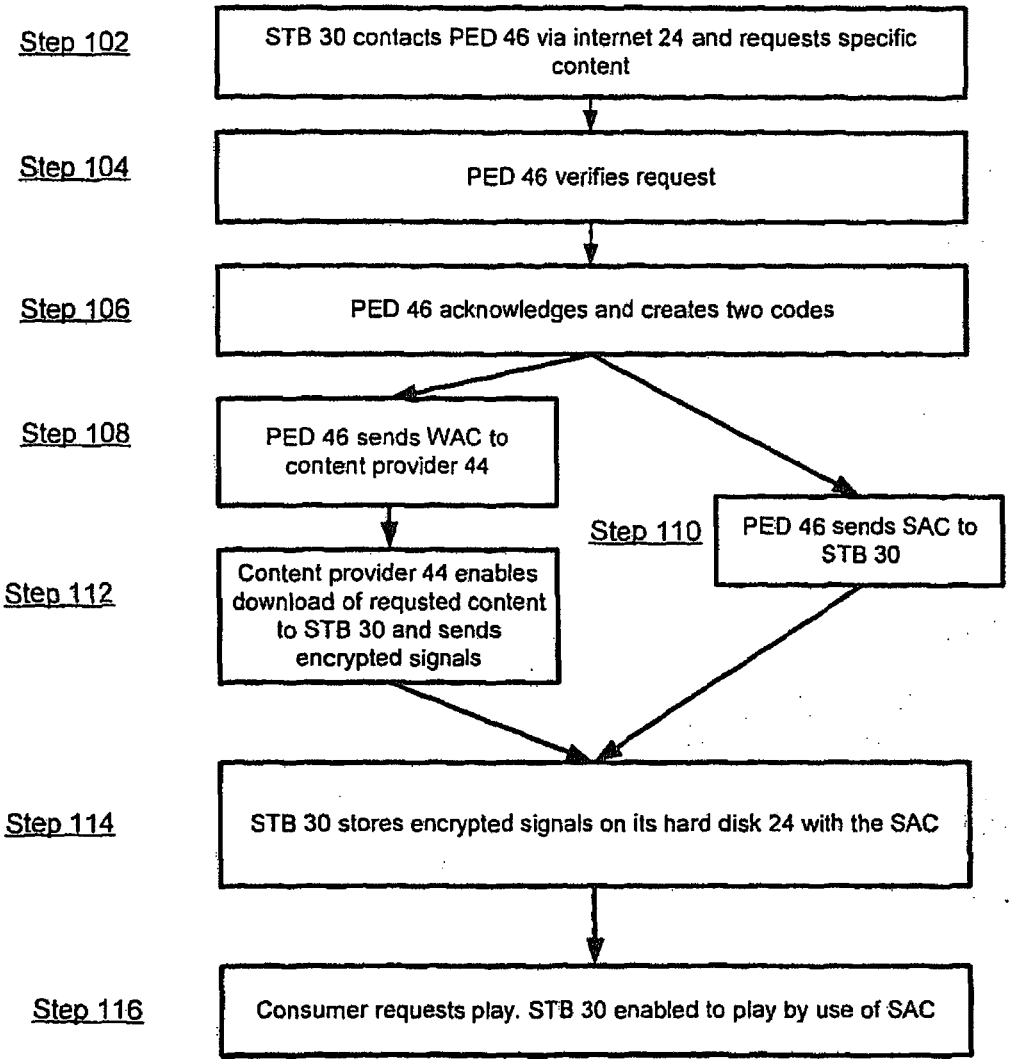

Step 102
STB 30 contacts PED 46 via internet 24 and requests specific content
Step 104
PED 46 verifies request
Step 106
PED 46 acknowledges and creates two codes
Step 108
PED 46 sends WAC to content provider 44
Step 110
PED 46 sends SAC to STB 30
Step 112
Content provider 44 enables download of requsted content to STB 30 and sends encrypted signals
Step 114
STB 30 stores encrypted signals on its hard disk 24 with the SAC
Step 116
Consumer requests play. STB 30 enabled to play by use of SAC

Figure 3

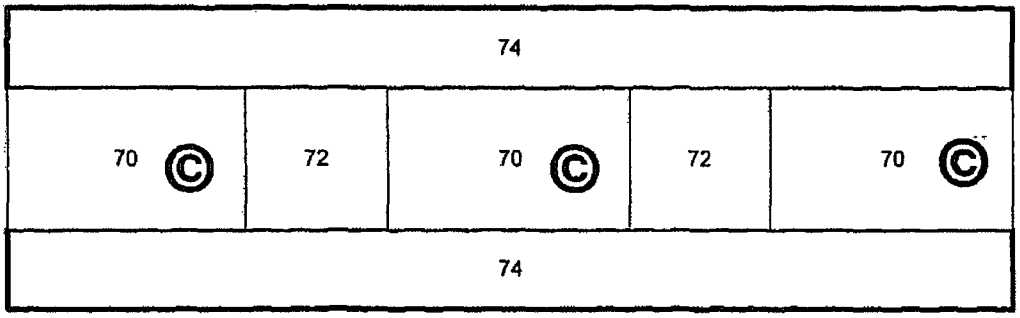


Figure 4A

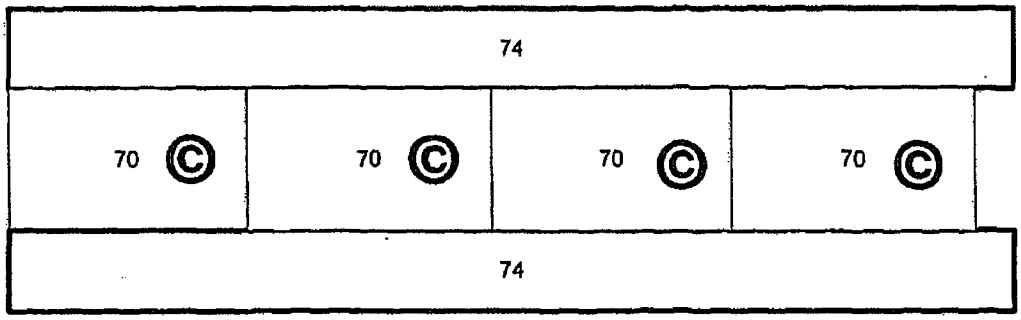


Figure 4B

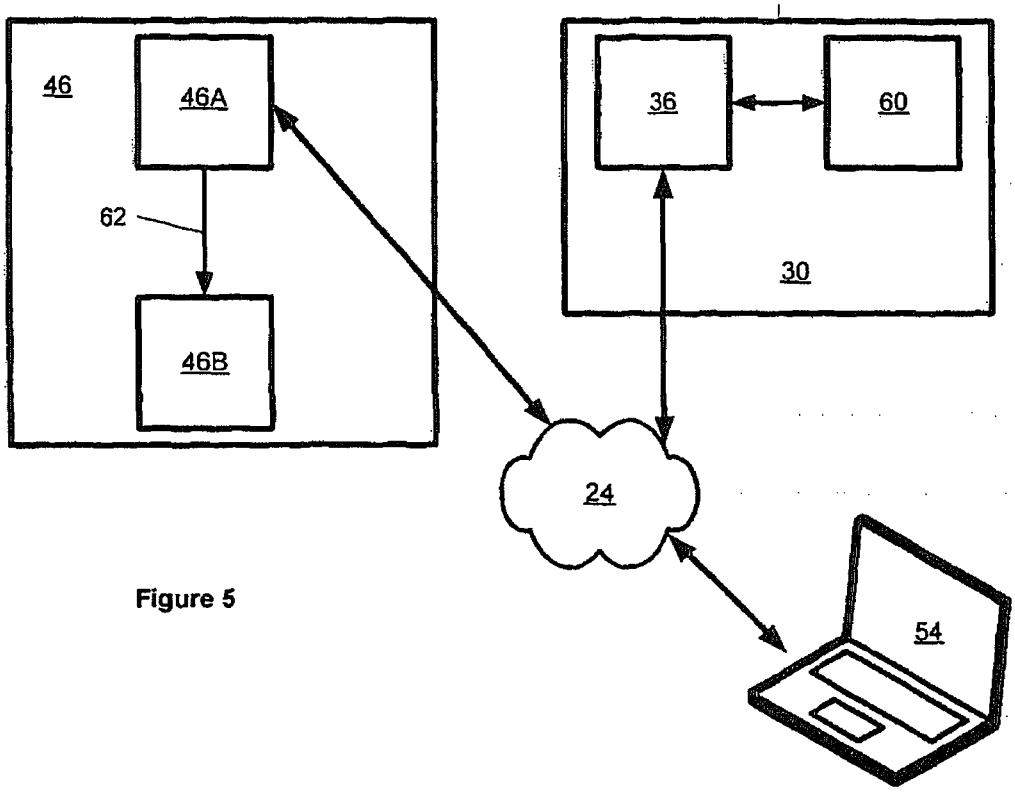


Figure 5

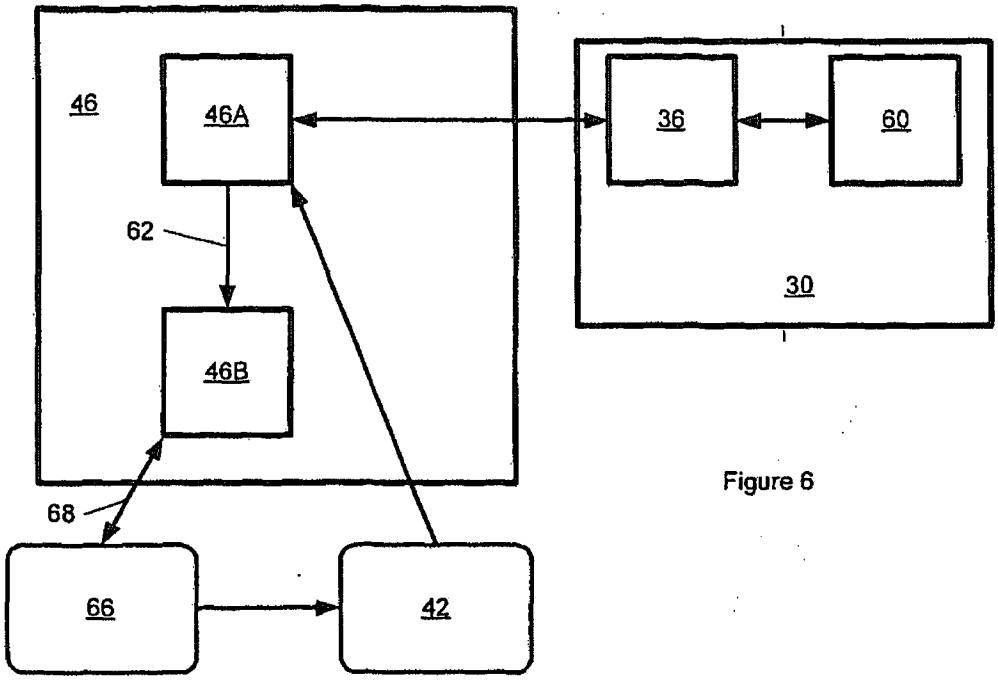


Figure 6

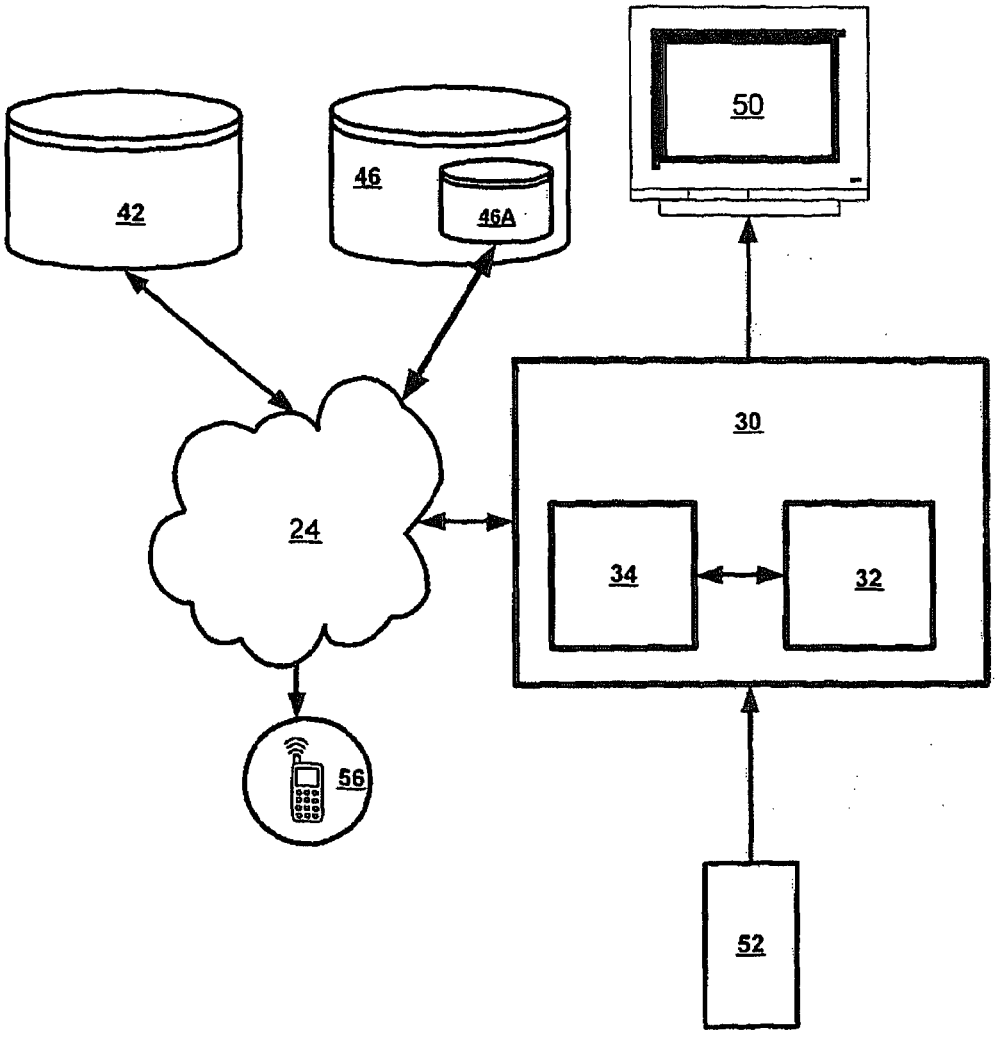


Figure 7

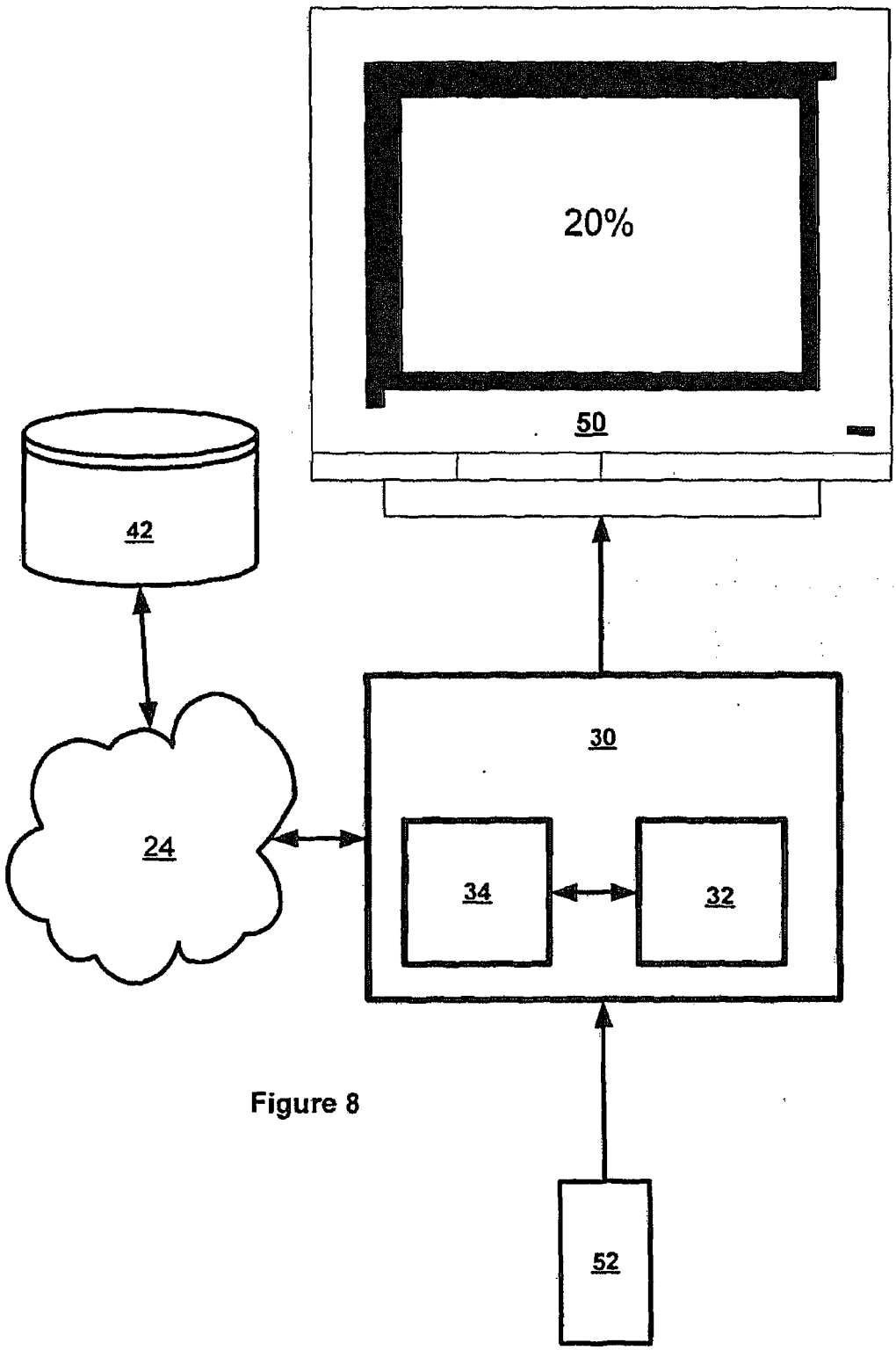


Figure 8

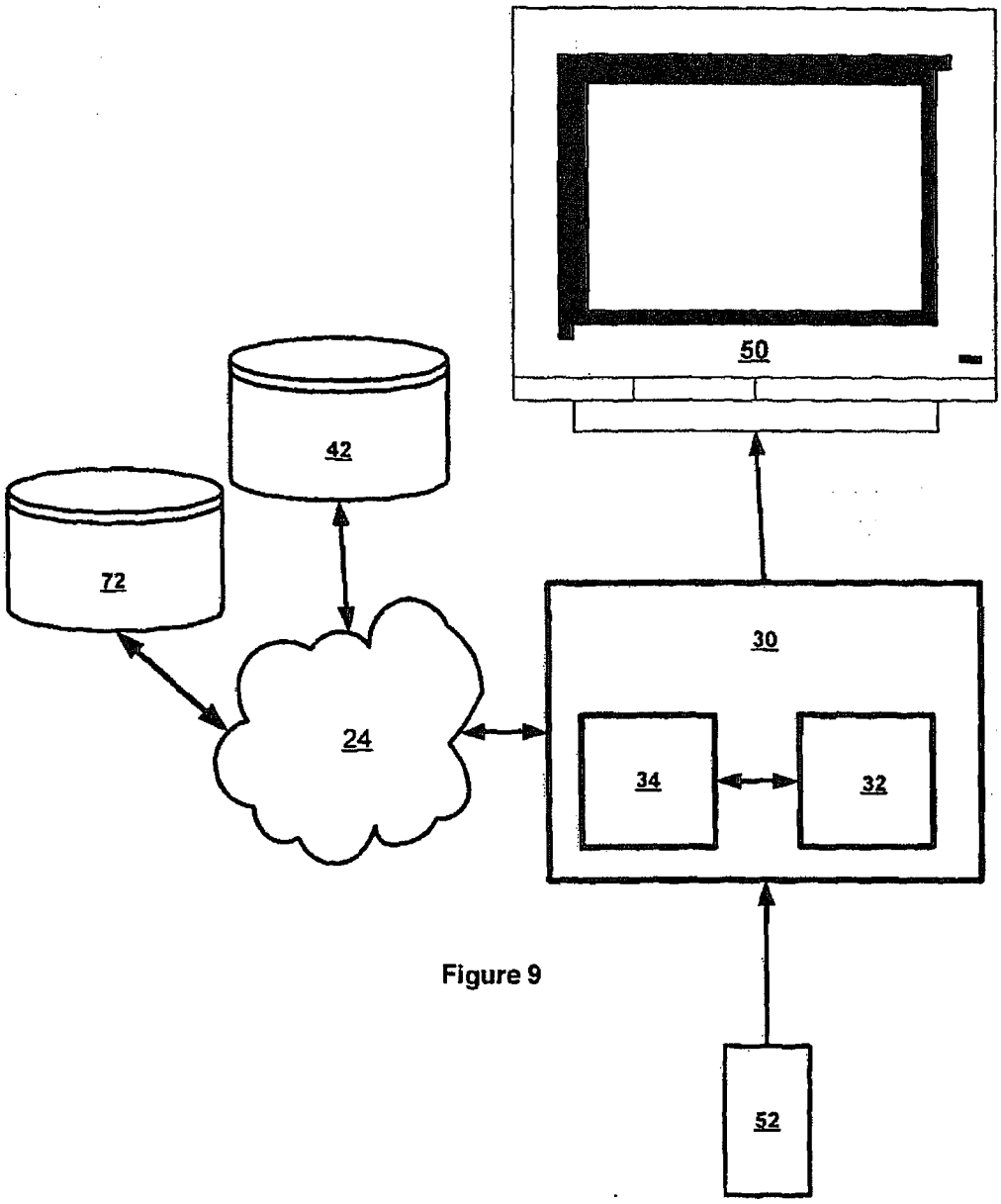


Figure 9

The following terms are registered trademarks and should be read as such wherever they occur in this document:

Paypal

Google Exhibit 1004, Page 64 of 523

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
P8991.wop		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/GB2011/052259	18/11/2011	01/12/2010
Applicant		
KELMAN, ALISTAIR BRUCE		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language**, the international search was carried out on the basis of:
      [X] the international application in the language in which it was filed
      [ ] a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. [ ] This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box No. II)

3. [ ] **Unity of invention is lacking** (see Box No III)

4. With regard to the **title**,
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,
   a. the figure of the **drawings** to be published with the abstract is Figure No. 3
      [ ] as suggested by the applicant
      [ ] as selected by this Authority, because the applicant failed to suggest a figure
      [X] as selected by this Authority, because this figure better characterizes the invention
   b. [ ] none of the figures is to be published with the abstract

Google Exhibit 1004, Page 65 of 523

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2011/052259

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04N21/45 H04N21/433 H04N21/458 H04N21/475 G11B27/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H04N G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 464 630 A (INCENTV LTD [GB] STEVE TV LTD [GB]) 28 April 2010 (2010-04-28) figures 2, 4a page 3, line 1 - line 7 page 4, line 12 - line 16 page 5, line 14 - line 19 page 8, line 6 - line 27 page 11, line 27 - page 12, line 25 -----	1-11
X Y	US 2010/054707 A1 (KARAOGUZ JEYHAN [US] ET AL) 4 March 2010 (2010-03-04) figures 1,2,4 paragraph [0018] - paragraph [0027] -----	1-8,11 9,10
	-/--	

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
2 February 2012	13/02/2012

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Berthelē, P

1

Form PCT/ISA/210 (second sheet) (April 2005)

Google Exhibit 1004, Page 66 of 523

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2011/052259

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/066078 A1 (BJORGAN STEPHEN [US] ET AL) 3 April 2003 (2003-04-03)	1,3,4
A	figures 2,3,6 paragraph [0038] - paragraph [0043] paragraph [0065] paragraph [0078] -----	2,5-11
Y	WO 2007/119125 A1 (KONINKL PHILIPS ELECTRONICS NV [NL]; PHILIPS CORP [US]; GODZWON KRZYSZ) 25 October 2007 (2007-10-25) figures 1,3a, 3c, 9 page 9, line 2 - page 10, line 25 page 16, line 29 - page 17, line 25 -----	9,10

1

Form PCT/ISA/210 (continuation of second sheet) (April 2005)

Google Exhibit 1004, Page 67 of 523

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/GB2011/052259

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2464630 A	28-04-2010	NONE	
US 2010054707 A1	04-03-2010	NONE	
US 2003066078 A1	03-04-2003	AU 2002338461 A1	05-11-2002
		EP 1388036 A2	11-02-2004
		US 2003066078 A1	03-04-2003
		WO 02086664 A2	31-10-2002
WO 2007119125 A1	25-10-2007	CN 101171837 A	30-04-2008
		EP 1886499 A1	13-02-2008
		JP 2009503917 A	29-01-2009
		KR 20080026531 A	25-03-2008
		WO 2007119125 A1	25-10-2007

Google Exhibit 1004, Page 68 of 523

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/GB2011/052259	18.11.2011	01.12.2010

International Patent Classification (IPC) or both national classification and IPC
INV. H04N21/45 H04N21/433 H04N21/458 H04N21/475 G11B27/00

Applicant
KELMAN, ALISTAIR BRUCE

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:	Date of completion of this opinion	Authorized Officer
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	see form PCT/ISA/210	Berthelé, P Telephone No. +49 89 2399-4720

Form PCT/ISA/237 (Cover Sheet) (July 2009)

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

   ☐ on paper

   ☐ in electronic form

   b. (time)

   ☐ in the international application as filed

   ☐ together with the international application in electronic form

   ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	2-7, 10
	No:	Claims	1, 8, 9, 11
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-11
Industrial applicability (IA)	Yes:	Claims	1-11
	No:	Claims	

2. Citations and explanations

see separate sheet

Google Exhibit 1004, Page 70 of 523

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1 GB 2 464 630 A (INCENTV LTD [GB] STEVE TV LTD [GB]) 28 April 2010 (2010-04-28)

D2 US 2010/054707 A1 (KARAOGUZ JEYHAN [US] ET AL) 4 March 2010 (2010-03-04)

D3 US 2003/066078 A1 (BJORGAN STEPHEN [US] ET AL) 3 April 2003 (2003-04-03)

D4 WO 2007/119125 A1 (KONINKL PHILIPS ELECTRONICS NV [NL]; PHILIPS CORP [US]; GODZWON KRZYSZ) 25 October 2007 (2007-10-25)

1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claims 1, 3, 4, 8, 9 and 11** is not new in the sense of Article 33(2) PCT.

1.1 Document D1 discloses (the references in parentheses applying to this document):

a system for providing advertisements during time-shifted viewing/listening (page 5, line 14 - line 19) comprises:

means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements (ibidem);

means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header relating to a time of day at which that advert may be viewed/not viewed (page 8, line 6 - line 27; page 11, line 27 - page 12, line 25);

means to supply a real-time clock signal; and means to read said headers and said clock signal (implicit from the function supported by the STB 30);

arranged so that an advertisement is provided during time-shifted viewing/ listening in accordance with its header and the real time of day (page 11, line 27 - page 12, line 25).

Therefore the subject-matter of **claim 1** is not new.

1.2 Document D1 further discloses:
A Personal Video Recorder (PVR) for use in a system according to any preceding claim comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers. (page 3, line 1 - line 7)

Therefore the subject-matter of **claim 8** is not new.

1.3 For the sake of completeness, it is also pointed out that the subject-matter of independent **claim 1** is also not new over the disclosure of documents D2 (figures 1,2,4; paragraph [0018] - paragraph [0027]).

1.4 The supplementary features of dependent **claims 9 and 11** do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty, the reasons being as follows:

1.5 **Claim 9** - D1 discloses (see page 11, line 27 to 28: "the advertisements stored [...] include various codes. One code may prevent showing before 9pm") that an information may prevent to display an advertisement at a time of the day.

1.6 **Claim 11** - The subject-matter of claim 11 correspond to that of claim 8.

2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claims 2 to 7 and 10** does not involve an inventive step in the sense of Article 33(3) PCT.

Dependent claims 2 to 7 and 10 do not contain any features which, in combination with the features of any claim to which they refer meet the requirements of the PCT in respect of inventive step, the reasons being as follows:

2.1 **Claims 2 and 6** - The additional features in these claims do not relate to technical matter. Consequently, they will not be taken into account for the assessment of inventive step.

Google Exhibit 1004, Page 73 of 523

2.2 **Claims 4, 5, 7 and 10** - The subject-matter of these claims corresponds to implementation details of no inventive significance regarding the transmission and playback of commercials for a given TV broadcast system. (see also e.g. D3)

3 The subject matter of claims 1 to 21 addresses a problem in the field of computer architecture and therefore claims 1 to 21 have industrial applicability.

Re Item VII.

Certain defects in the international application

4 In order to meet the requirements of Rule 5.1(a)(ii) PCT, the relevant prior art, i.e. the documents D1 - D4 noted above, should be acknowledged by reference and briefly discussed in the introductory part of the description.

5 Independent claim **1** is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

6 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Re Item VIII

Certain observations on the international application

7 Claims 1 and 8 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined for the following reasons:

Although claims 1 and 8 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

Google Exhibit 1004, Page 74 of 523

8 In claim 1, the term "header" for an advertisement is unclear, i.e. not self-explanatory, and can only be understood, if it is set into the right context which is missing in the actual formulation of the claims. Therefore the definition of the subject-matter of said claims is unclear, Article 6 PCT.

Google Exhibit 1004, Page 75 of 523

Possible steps after receipt of the international search report (ISR) and written opinion of the International Searching Authority (WO-ISA)

General information	For all international applications filed on or after 01/01/2004 the competent ISA will establish an ISR. It is accompanied by the WO-ISA. Unlike the former written opinion of the IPEA (Rule 66.2 PCT), the WO-ISA is not meant to be responded to, but to be taken into consideration for further procedural steps. This document explains about the possibilities.
Amending claims under Art. 19 PCT	Within 2 months after the date of mailing of the ISR and the WO-ISA the applicant may file amended claims under Art. 19 PCT directly with the International Bureau of WIPO. The PCT reform of 2004 did not change this procedure. For further information please see Rule 46 PCT as well as form PCT/ISA/220 and the corresponding Notes to form PCT/ISA/220.
Filing a demand for international preliminary examination	In principle, the WO-ISA will be considered as the written opinion of the IPEA. This should, in many cases, make it unnecessary to file a demand for international preliminary examination. If the applicant nevertheless wishes to file a demand this must be done before expiry of 3 months after the date of mailing of the ISR/WO-ISA or 22 months after priority date, whichever expires later (Rule 54bis PCT). Amendments under Art. 34 PCT can be filed with the IPEA as before, normally at the same time as filing the demand (Rule 66.1 (b) PCT). If a demand for international preliminary examination is filed and no comments/amendments have been received the WO-ISA will be transformed by the IPEA into an IPRP (International Preliminary Report on Patentability) which would merely reflect the content of the WO-ISA. The demand can still be withdrawn (Art. 37 PCT).
Filing informal comments	After receipt of the ISR/WO-ISA the applicant may file informal comments on the WO-ISA directly with the International Bureau of WIPO. These will be communicated to the designated Offices together with the IPRP (International Preliminary Report on Patentability) at 30 months from the priority date. Please also refer to the next box.
End of the international phase	At the end of the international phase the International Bureau of WIPO will transform the WO-ISA or, if a demand was filed, the written opinion of the IPEA into the IPRP, which will then be transmitted together with possible informal comments to the designated Offices. The IPRP replaces the former IPER (international preliminary examination report).
Relevant PCT Rules and more information	Rule 43 PCT, Rule 43bis PCT, Rule 44 PCT, Rule 44bis PCT, PCT Newsletter 12/2003, OJ 11/2003, OJ 12/2003

Google Exhibit 1004, Page 76 of 523

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Filer:	Darin J. Gibby/Connie Larson
Attorney Docket Number:	95770-876349

Filed as Small Entity

U.S. National Stage under 35 USC 371 Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Basic National Stage Fee	2631	1	140	140
Natl Stage Search Fee - Report provided	2642	1	240	240
Natl Stage Exam Fee - all other cases	2633	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**740**

Electronic Acknowledgement Receipt

EFS ID:	15899744
Application Number:	13990372
International Application Number:	PCT/GB11/52259
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	Darin J. Gibby/Connie Larson
Filer Authorized By:	Darin J. Gibby
Attorney Docket Number:	95770-876349
Receipt Date:	29-MAY-2013
Filing Date:	
Time Stamp:	18:23:47
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$740
RAM confirmation Number	5577
Deposit Account	201430
Authorized User	KILPATRICK TOWNSEND & STOCKTON, LLP

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. 1.492 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Google Exhibit 1004, Page 79 of 523

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		95770-876349-ads-dec-poa-prelimamd-ids.pdf	3413051 ea00b95a36257695e23ec8cac268048a4e0caa4c	yes	84

Multipart Description/PDF files in .zip description

Document Description	Start	End
Transmittal of New Application	1	3
Application Data Sheet	4	8
Oath or Declaration filed	9	9
Power of Attorney	10	10
Preliminary Amendment	11	11
Claims	12	14
Applicant Arguments/Remarks Made in an Amendment	15	15
Transmittal Letter	16	17
Information Disclosure Statement (IDS) Form (SB08)	18	18
Foreign Reference	19	61
Foreign Reference	62	72
Other Reference-Patent/App/Search documents	73	84

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	33474 a2d77a5a8a09dd561c37138cac47a6810bd43fc9	no	2

Warnings:

Information:

Total Files Size (in bytes):	3446525

Google Exhibit 1004, Page 80 of 523

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/81 (07-12)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO ONE OR MORE OF THE JOINT INVENTORS AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	
Filing Date	
First Named Inventor	Alistair Bruce Kelman
Art Unit	
Examiner Name	
Title	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

NOTE: This form may be filed by *pro se* inventors (*i.e.*, prosecuting the application without a registered patent practitioner) who are identified as the Applicant in the above-identified application. For a Power of Attorney to one or more registered patent practitioners, see form PTO/AIA/82.

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ I hereby appoint the following joint inventor(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Please recognize or change the correspondence address for the above-identified application to:

☒ The address associated with Customer Number. (If applicable): 20350
-To Request A Customer Number see form PTO/SB/124

OR

☐ Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Inventor.

SIGNATURE of Inventor

Signature		Date	May 29 2013
Name	Alistair Bruce Kelman	Telephone	+44 7709 191491

NOTE: Signatures of all the inventors are required. Submit multiple forms if more than one signature is required, see below*. See 37 CFR 1.4 for signature requirements and certifications.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on May 29, 2013.

TOWNSEND and TOWNSEND and CREW LLP

By: /connie larson/
Connie Larson

PATENT
Attorney Docket No.: 95770-876349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No. Not Yet Assigned
Alistair Bruce Kelman	Examiner: Not Yet Assigned
Application No.: Not Yet Assigned	Technology Center/Art Unit: Not Yet Assigned
Filed: Not Yet Assigned	PRELIMINARY AMENDMENT
For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	
Customer No.: 20350	

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Prior to examination of the above-referenced application, please enter the following amendments and remarks:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 5 of this paper.

Google Exhibit 1004, Page 83 of 523

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Original) A system for automating compliance with local broadcasting regulations applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header related to at least one broadcasting regulation;

rules database means containing rules relating to said local broadcasting regulations;

clock means to supply a real-time clock signal; and

control means arranged to read said headers and said clock signal and said rules database and to apply said at least one regulation to each advertisement before it is shown.

2. (Original) A system according to claim 1 in which said at least one local broadcasting regulation forbids the provision of certain types of advertisement before a certain time of day, the header includes a keyword, and the control means checks the keyword against the rules database.

3. (Original) A system according to claim 1 in which said at least one local broadcasting regulation forbids the provision of certain types of advertisement before a certain time of day, and the header indicates a time of day validity.

Google Exhibit 1004, Page 84 of 523

4. (Original) A system according to claim 1 in which said at least one local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and the header indicates a day of the week validity.

5. (Currently amended) A system according to ~~any preceding~~ claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.

6. (Original) A system according to claim 5 in which a response by a consumer is rewarded by money or money's worth.

7. (Currently amended) A system according to ~~any preceding~~ claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

8. (Currently amended) A Personal Video Recorder (PVR) for use in a system according to ~~any preceding~~ claim 1, comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

9. (Original) A PVR according to claim 8 arranged to read the real-time clock, to read the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.

10. (Original) A PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

Google Exhibit 1004, Page 85 of 523

11. (Currently amended) A television set incorporating a Personal Video Recorder according to ~~any one of~~ claim[s] 1 ~~8, 9 or 10~~.

 Google Exhibit 1004, Page 86 of 523

REMARKS

Claims 5, 7, 8 and 11 have been amended. As amended, claims 1-11 are similar to claims 1-11 in the corresponding PCT application (more specifically, the amended claims received by the IB on April 2, 2012 and published with the PCT application) except that multiple claim dependencies have been eliminated in order to comply with U.S. practice. Examination of the claims, as amended, is respectfully requested.

Respectfully submitted,

/darin j gibby/
Darin J. Gibby
Reg. No. 38,464

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 303-571-4000
Fax: 415-576-0300
DJG/cl

65460724V.1

Google Exhibit 1004, Page 87 of 523

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on May 29, 2013.

KILPATRICK TOWNSEND & STOCKTON LLP

By: /connie larson/
Connie Larson

PATENT
Attorney Docket No.: 95770-876349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Alistair Bruce Kelman

Application No.: Not Yet Assigned

Filed: Not Yet Assigned

For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Customer No. 20350

Confirmation No: Not Yet Assigned

Examiner: Not Yet Assigned

Art Unit: Not Yet Assigned

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.97 and §1.98

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The references cited on attached form PTO/SB/08A are being called to the attention of the Examiner. Copies of the foreign references are enclosed. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Also enclosed is a copy of the International Search Report and the Search/Examination report corresponding to the PCT application.

Applicant believes that no fee is required for submission of this statement, since it is being submitted prior to the first Office Action. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,

/darin j gibby/
Darin J. Gibby
Reg. No. 38,464

KILPATRICK TOWNSEND & STOCKTON LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: 303-571-4000
Fax: 303-571-4321
DJG/cl

65460826V.1

Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

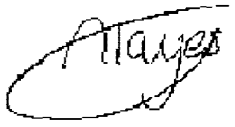
I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as stored electronically on the Patents Electronic Case file System in connection with patent application GB1020361.0 filed on 1st Dec 2010

The Patents Electronic Case-file System is compliant with British Standard BS10008 - *Evidential weight and legal admissibility of information stored electronically* and ISO15801 - Electronic imaging – information stored electronically, recommendations for trustworthiness and reliability.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed 

Dated 25th January 2012

UK Intellectual Property Office is an operating name of the Patent Office

INTELLECTUAL PROPERTY OFFICE

2010015506
K813757 E83598
02/12/2010 20.00 ECARD

Patents Form 1
Patents Act 1977 *(Rule 12)*

Request for grant of a patent

Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

Application number GB1020361.0

1.	Your reference	**AK 004**
2.	Full name, address and postcode of the applicant or of each applicant Patents ADP number *(if you know it)*	**Kelman, Mr Alistair** **37 Station Road** **London NW4 4NJ** **United Kingdom**
3.	Title of the invention	**System for providing improved facilities in time-shifted broadcasts**
4.	Name of your agent *(if you have one)* "Address for service" to which all correspondence should be sent. This may be in the European Economic area or Channel Islands (see warning note below) *(including the postcode)* Patents ADP number *(if you know it)*	**Irish, Mrs Vivien** **-** **33 St Saviourgate** **York YO1 8NQ** **United Kingdom**
5.	Priority declaration: Are you claiming priority from one or more earlier-filed patent applications? If so, please give details of the application(s)	

Country	Application number	Date of filing	Date available on PDAS

6.	Divisionals etc: Is this application a divisional application, or being made following resolution of an entitlement dispute about an earlier application. If so, please give the application number and filing date of the earlier application	Number of earlier UK application	Date of filing *(day / month / year)*
7.	Inventorship: (Inventors must be individuals not companies) Are all the applicants named above also inventors? If yes, are there any other inventors?	**Yes** **No**	
8.	Are you paying the application fee with this form?	**Yes**	

Google Exhibit 1004, Page 91 of 523

9. Accompanying documents: please enter the number of pages of each item accompanying this form.

Continuation sheets of this form

Description:	**11**
Claim(s):	**2**
Abstract:	**2**
Drawing(s):	**3**

If you are not filing a description, please give details of the previous application you are going to rely upon

Country	Application number	Date of filing	Date available on PDAS

10. If you are also filing any of the following, state how many against each item.

Priority documents:	**0**
Statement of inventorship and right to grant of a patent (Patents Form 7):	**0**
Request for search (Patents Form 9A):	**0**
Request for substantive examination (Patents Form 10):	**0**
Any other documents (please specify):	

11. I/We request the grant of a patent on the basis of this application.

Date: **01 Dec 2010**

12. Name, e-mail address, telephone, fax and/or mobile number, if any, of a contact point for the applicant

Irish, Mrs Vivien
Email: virish@theiet.org
Telephone: 01904 679 778

Warning

After an application for a patent has been filed, the Comptroller will consider whether publication or communication of the invention should be prohibited or restricted under section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you are resident in the United Kingdom and your application contains information which relates to military technology, or would be prejudicial to national security or the safety of the public, section 23 of the Patents Act 1977 prohibits you from applying for a patent abroad without first getting written permission from the Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked. Until such time or until the revocation of any direction, for any such application the address for service referred to at part 4 above must be in the United Kingdom.

Although you may have an address for service in the Channel Islands, any agent instructed to act for you must reside or have a place of business in the European Economic Area or Isle of Man.

System for providing improved facilities in time-shifted broadcasts.

Background to the invention

This invention relates to a system for supplying viewers of time-shifted programmes, previously broadcast on television or on radio, with improved facilities during an advertising break, and relates especially to a system which includes the supply of interactive advertisements, and optionally the provision of a loyalty points system.

In many countries there are regulations laid down by the broadcasting authorities which specify the minimum time between advertising breaks in programmes, the maximum length of an advertising break, the maximum number of seconds of advertising which can be broadcast within an hour's viewing. In addition, the time of day at which some adverts may be shown may also be strictly controlled. For example, if the advertisement is advertising alcoholic drinks containing more than 1.2% alcohol and the advertising regulator responsible is OFCOM then under the Broadcast Committee of Advertising Practice Rules on Scheduling of Television Advertisement the advertisement may not be shown at a time when children under 10 are likely to be viewing - i.e. before 7.30pm, sometimes referred to as the "watershed". A feature of advertising charging is that certain slots are more valuable than others, eg shortly after 7.30pm, and premium prices for use of those slots can be charged.

If a programme is recorded and viewed at a different time of day, it contains all of the adverts which were originally broadcast, some of which may be unsuitable for that time. One result is that children may see inappropriate adverts, and another is that advertisers are at present not allowed to charge for the time-shifted viewing of adverts. For example, a recording of a football or cricket game broadcast late at night might contain advertisements for alcohol or gambling or medicines or specific other goods and services which it would be inappropriate to show in the early evening when children might be watching the advertisements. While parental controls in the viewing hardware are able to control and inhibit the showing of sexual or violent programmes to children there are no controls which can remove unsuitable advertisements from time-shifted programming.

Google Exhibit 1004, Page 93 of 523

Technical Field

With the arrival of digital television it has been necessary for viewers with existing television sets to purchase a specialist piece of equipment to decode digital and audio broadcasts. This is known as a Set Top Box. It converts the digital broadcast signal into a format which can be displayed on a visual display unit or television set. Set Top Boxes may also contain facilities to decrypt encrypted broadcasts, sometimes by the addition of a smart card authorisation device and facilities which enable them to decode and record digital and audio broadcasts for later viewing. These recording facilities turn Set Top Boxes into Personal Video Recorders (PVRs). In some television sets these facilities may be incorporated into the body of the set.

As shown in Figure 1, a known PVR 10 contains a computer-type hard disc 12 and twin signal decoders/tuners 14. The PVR 10 is controlled by a remote control 16, such as an Infra Red control, and supplies signals to the viewing station such as a TV set or visual display unit 18. The PVR receives broadcast digital television and audio signals from an aerial 20.

The remote control 16 allows the viewer to navigate through the received digital and audio broadcast channels, to call up an on-screen guide to current and forthcoming programmes, either for live viewing or for recording on the hard disc 12 for later viewing, and to set parental controls. The viewer can pause live TV, schedule the recording of programmes into the hard disc 12, and watch one channel while viewing another by use of the twin decoders 14. The remote control 16 can be used to navigate through a series of menus, sub-menus and sub-sub-menus to select TV and radio content for downloading for live viewing or for storage on the hard disc 12.

The known PVR 10 has what is termed a 'backchannel' supplied by means of either a modem 22 or an Internet connection 24 to enable the viewer to communicate with the broadcaster and others to a limited extent. Via this backchannel the viewer is able at his choice to notify the broadcaster which programmes he is viewing or has viewed and which programmes he is storing for later viewing on his hard disk. Additionally, via the modem 22 or Internet connection 24, the broadcaster is able to send commands to the PVR 10 so that it records specific programmes and/or advertisements using one of the twin decoders 14. Alternatively the broadcaster can "push" programmes and advertisements into the PVR 10 directly from the Internet 24. It is well known that a digital television signal and a backchannel each contain highly accurate time information which can be used by

Google Exhibit 1004, Page 94 of 523

equipment in a PVR 10 to synchronise the start or stop of the recording of programmes. This time information although very accurate, can sometimes need a small offset to take account of transmission and digitisation delays. Once corrected by means of an offset perfect synchronisation between actions required by a broadcaster and actions taken by a PVR can take place

Figure 2 is a schematic diagram of a known format of a television programme supported by advertising breaks. As can be seen the programme is broken up into segments 30, 32, 34 which are separated by advertising breaks, 31, 33 which comply in length and timing with local broadcasting regulations.

The arrival of PVRs in homes has led to two problems. First the conventional advertising model of broadcast television has broken down. Once video (and to a lesser extent audio) can be stored for later viewing, the viewer may 'fast forward' through the advertisements. Technological means to inhibit viewers from fast forwarding (by, for example, disabling the fast forward controls when advertisements are being shown) currently meet with viewer dislike.

Second the time-shifting playing of programmes means that the recorded programmes may contain advertisements which are unsuitable for the actual time of viewing.

These two issues are believed to damage the commercial viability of 'free to air' television broadcasting and the enjoyment of the facilities of PVRs by viewers.

It is an object of the invention to provide an improved PVR which improves the viability of 'free to air' television broadcasting while overcoming the viewers' dislike of an inability to fast forward through advertisements. It is a further object of the invention to enable the automatic exclusion of advertisements that should not be shown at the time the programme is being viewed when time-shifted.

Google Exhibit 1004, Page 95 of 523

Brief summary of the invention

According to the invention, a system for providing advertisements during time-shifted viewing/listening comprises:

means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of adverts;

means to supply advertisements within the periodic breaks ;

and means to supply a time-of-day signal;

arranged so that each advertisement contains a header relating to a time of day at which that advert may be viewed/not viewed.

The time of day information in the header may be set in accordance with local broadcasting regulations.

Preferably the header also contains information including the duration and nature of the advert. The nature of the advert may include whether it is passive or interactive or contains the option of loyalty points.

In a system according to the invention, the broadcast video/audio programme is arranged to contain information including the duration of the [segment] of programme currently being broadcast, and the duration of the next advertising break.

Brief description of the drawings

The invention will now be described with reference to the accompanying drawings in which:

Figure 3 is a schematic diagram of a television programme supported by advertising breaks and suitable for time-shifted viewing;

Figure 4 is a Personal Video Recorder modified for use in the present invention;

Figure 5 is a format of a broadcast side channel; and

Figure 6 is a flow chart of steps taken by a PVR during a time-shifted programme viewing.

Detailed description of the drawings

In Figure 3 broadcast programme segments 40, 42, 44 are interleaved with advertisements 41, 43 as in the prior art, and for each segment a real and accurate time-of-day signal is provided, as shown at 46, 48.

Each advert 41, 43 contains a header 50, 52 which records the duration of the advert, any restriction on the time of day at which it may be viewed, and other information about its

Google Exhibit 1004, Page 96 of 523

nature. The header 50 ,52 in each advert contains a series of fields as shown in Table 1:

Table 1

Fields in advertisement headers

Field Name	Activity
Time of Day validity	Code to indicate the time of day when the advert may be shown, Can indicate multiple periods in a day
Days validity	Code to indicate what days of the week can the advert be shown on
Advert identifier	A number with check digit which uniquely identifiers the advert
Frame Length	A number giving the exact length of the advert in frames (25 frames per second)
Start Date	The earliest date and time that the advert can be shown to the viewer
End Date	The latest date and time when the advert can be shown to the viewer
Urgency Matrix	A table of hours linked to a scale of 1 to 15 indicating advertisers' preferred time for inclusion of the advert in a time-shifted programme – the higher the number on the scale the likely it is that the advert will be shown at the selected time. Advertisers pay a premium for a high number in peak time viewing hours
Interactive or Passive	Specifies if a button depression is expected or not.
Showings	Number of occasions when this advert is to be shown
Viewings	Number of times this advert has been selected for viewing on time-shifted programming.
Frequency	Minimum period of time to elapsed before this advert is repeated to viewer
When last selected	Time when the advert was last selected for viewing
Special expiry	Field which when set indicates that notwithstanding anything else this advert is not to be shown
Warnings	Keywords concerning the advert which may be matched against viewing regulations

Google Exhibit 1004, Page 97 of 523

It is to be understood that many of the Fields are optional, depending on the simplicity or complexity of the desired system for permitting time-shifted viewing of advertisements.

Turning now to Figure 4, in a PVR 60 for use in a system according to the invention, the connections to an aerial 20, a modem 22 and the Internet 24 are as in the prior art. The time of day signal is received via the backchannel in either the Internet connection 24 or the connection via the modem 22. This signal is provided in known systems, but is not used in the same manner as in the inventive system. Alternatively the time of day signal is provided by the broadcaster embedded in the broadcast programme, as will be described later. The viewer's TV set 68 and remote control 66 are also shown, the remote having red and green buttons 67R, 67G as is conventional.

The hard disc 62 in the PVR 60 includes three parts, shown in exploded form; an advertisement database 70 which stores advertisements from the broadcast programme; a programme database 80, which stores the broadcast programme segments; and a rules database 90 which stores the rules which apply to broadcast advertisements. The data in the programme and advertisement databases are encrypted, as indicated at 99.

In the advertisement database 70, shown further exploded on the left, each advertisement 41, 43 is stored together with a header 50, 52, the headers being described in Table 1 above. In the programme database 80, as shown on the right, each programme is divided into its segments 40, 42.

In the solid state memory 15 of the PVR 60, there are also a number of registers, of which five are shown as 150, 152, 154, 156 158. Two 150, 152, are each used as a count-down timer; two 154, 156, are used as storage locations for loyalty points earned by a viewer and as a millisecond offset adjustment register respectively; and 158 is used as a buffer memory to hold a series or queue of advertisements ready to be shown to the viewer.

In a simple system, when the owner of the PVR instructs play of a recorded programme, at each advertising break the PVR checks the checks the current time of day, checks the Time of Day validity header in each advert for restrictions on time of playing, and if there is no such restriction, shows the originally broadcast advert at a shifted time. Such an arrangement will permit advertisers to charge for the second viewing, which has previously been forbidden by

Google Exhibit 1004, Page 98 of 523

law. If the advert cannot legally be shown at the time of the time-shifted viewing, it is not played and the PVR checks the next stored advert from the broadcast. The duration of the advertising break can, if necessary, be reduced, unlike a broadcast advertising break. In a small variation, the Days validity header can contain a restriction on day of the week, for example an advert which should not be viewed on a Sunday, and the PVR will be arranged to check this also before showing the advert.

However a system according to the invention permits more complex arrangements, including the provision of additional adverts for viewing during a time-shifted programme.

In one arrangement, when the broadcaster broadcasts the programme with its interleaved advertisements, the broadcaster additionally broadcasts a signal in an encrypted side channel which supplies detailed information concerning the programme being broadcast, specifically the length of the/segment of the programme currently being broadcast and the length of the next advertising break. The format of this side channel signal is illustrated in Figure 5 where 201 is the name of the broadcaster, 203 is the broadcast channel, 205 is the duration in milliseconds of the programme segment to the next advertising break and 207 is the duration in milliseconds of the next advertising break. The encryption is indicated at 99. Each receiving PVR receives this information concerning a programme it is about to record or is currently recording.

Before a time-shifted programme is viewed, the broadcaster sends to the PVRs connected to the system a series of adverts and their headers which are recorded by the PVRs, e.g. in the advertisement database 70 of PVR 60. The series can be sent during the normal broadcasting of programmes, or during a special broadcast at off-peak times, or via the back channel. The adverts may be a mixture of passive adverts when no viewer reaction is requested, and active adverts when a viewer is requested to respond, conveniently by pressing the red and green buttons 67R 67G on the remote control 66 in Fig 4. The viewer may be rewarded for responding e.g. by the award of loyalty points convertible into money or money's worth.

With such advertisements, the full range of Fields shown in Table 1 above can improve the use of an advertising budget. For example, the Frequency Field can set the minimum time between showings to the same viewer; the Urgency Matrix can be used to ensure the showing of adverts at a selected time, such as a car advert to be shown at 20.00 hours plus

Google Exhibit 1004, Page 99 of 523

or minus 15 minutes, when this Field ensures that during a time-shifted viewing including this time, the advert is given high priority; and the Showings and Frequency Fields can be set to prevent the same advert being shown too often to the same viewer.

The Fields in an advert header can be used to ensure that only appropriate adverts are shown during the time-shifted viewing, e.g. the Time of Day Validity and Days Validity will prevent certain adverts, such as those for alcoholic drinks, being shown before e.g. 7.30pm so that children are protected, and that certain adverts are not shown on a Sunday. Even a selected word can be used as a control e.g. the word "politician" can prevent an advert being shown during an election campaign.

Advertising breaks advantageously contain a mix of two types of advertisements: interactive advertisements and passive advertisements. Interactive advertisements are those which request the viewer to respond e.g. by pressing a button on a remote control. Any key depressions received will be recorded by the PVR and sent to the broadcaster. The viewer may be awarded loyalty points for making key depressions in Interactive advertisements, which are convertible into money or money's worth (e.g. pay-per-view programmes) upon redemption by the viewer.

Surrounding the interactive advertisements elsewhere in the advertising break there may be passive advertisements - that is to say advertisements which do not require the viewer to depress a key on his remote control. The viewer receives no loyalty points for watching or listening to a passive advertisement. However the juxtaposition of passive adverts with interactive advertisements ensures that passive advertisements are likely to be viewed or listened to attentively by the viewer. This spill-over of attentiveness increases the value of every passive advertisement to its advertiser and increases the value of the passive advertisement slot.

The flowchart of Figure 6 shows the steps in a PVR to ensure provision of legally acceptable adverts during a time-shifted viewing of a previously broadcast programme, while also providing an advantageous mixture of advertisement types.

In Step 100 the PVR disables the viewer's fast forward facility.

Google Exhibit 1004, Page 100 of 523

In Step 102 the PVR 60 checks the time of day signal and ensures by means of use of the offset register 156 that the PVR 60 is in perfect synchronisation with signals coming from the broadcaster. The PVR then from the rules database 90 determines the appropriate duration of the entire advertising break. The PVR then checks in the rules database 90 the prescribed mix of interactive and passive advertisements for an advertising break of this duration, and stores the duration of the advertising break in a length register 150 in the hard disc (see Fig 4) and stores the total allowable time of interactive adverts in the prescribed break in an interactive register 152. The PVR then selects an advertisement from the store of live and matched advertisements held in its advertisement database 70.

In Step 104 the PVR reads the header information associated with the selected advertisement and checks any time or day of showing restrictions. If there no such restriction then move to Step 106. If there is such a restriction the PVR 60 selects the next advertisement from the advertisement database 70, and continues checking the headers until an advertisement is found of a type which can be shown at the current time of day and move to Step 106. If no suitable advertisements are found go to Step 110

In Step 106 the PVR 60 checks header information indicating if the advert is passive or interactive. If it is an interactive advert its duration is subtracted from the interactive register 152 and if the remaining time is equal to or more than zero, the subtraction is recorded by the register152, the advert is placed in a queue for viewing in the buffer memory 158 and the PVR moves to Step 108. If the time left in the interactive register is less than zero the interactive advert is rejected and the PVR 60 selects the next passive advertisement from the store in the advertisement database 70, subtracts its duration from the length register 150 and moves to Step 108

In Step 108 the PVR checks the length register 150. If the time left is less than a defined number of seconds move to Step 110 else select another advert from the database and return to Step 104.

Step 110 - If there are any interactive advertisements in the advertising break, then sort the adverts so that, where possible, the interactive advertisements are interspersed with passive advertisements and move to Step 112. If there are no interactive advertisements in the advertising break move to Step 114.

Google Exhibit 1004, Page 101 of 523

In Step 112 the PVR 60 shows the stored queued advertisements from the buffer memory 158 to the viewer. During the showing, the PVR records any depressions of the red or green buttons 67R, 67G on the viewer's remote control 66 made during the advertising break and updates the viewer loyalty point register 156. Via the backchannel, the PVR 60 informs the broadcaster which advertisements were shown to the viewer during the advertising break and whether the viewer made any key depressions during the break in response to the interactive advertisements contained in the break.

Step 114 The PVR 60 restores the fast-forward facility and returns the viewer to the time-shifted programme he was watching prior to the advertising break.

It is also possible to use the system according to the invention to supply advertisements which are matched to previously-provided viewer interests. In such a system, a viewer voluntarily provides personal data, such as post code, income level, hobbies and interests and the like. This permits an advertiser to match an advert to that viewer. For example a viewer with an interest in cars can be sent information on books and videos about cars, or special price offers of an actual car. Such adverts will be referred to as matched adverts, while the broadcast advertisements will be referred to as live adverts.

Different numbers of loyalty points can be given at different times of the day - thereby encouraging a viewer to watch a time-shifted programme containing up-to-the-minute advertisements at a specific time of the day to maximise the number of points the viewer receives. By this means viewers can be persuaded to watch a time-shifted programme (and hence advertisements) at a time that they might otherwise not watch the programme.

The advertising break may also contain interactive advertisements which are trailers for other programmes. Depressing the correct button on the remote control while the trailer is being shown will cause the PVR to note that the viewer wishes this programme being trailed to be recorded when it is broadcast so that the viewer can be view it in time-shifted format. While it is not anticipated that loyalty points will normally be awarded for depressing a button on the remote control during a trailer, the proximity of interactive trailers with passive advertisements in the same advertising break is believed to increase the attentiveness with which the passive advertisements are viewed or listened to.

By reason of this method of inserting a combination of interactive and passive

Google Exhibit 1004, Page 102 of 523

advertisements supported by a loyalty points system in a manner which conforms to the advertising regulations which apply for the actual time of viewing, the broadcaster may be able to sell more advertising. The time-shifted viewing becomes a 'shadow channel', and a broadcaster can sell advertising simply on the basis of the time an advertisement is being viewed. Furthermore, if the broadcaster broadcasts a family of channels, the broadcaster's shadow channel would consist of any programme that had been broadcast and recorded on the PVR from any of the broadcaster's channels that was being watched at that precise time.

It is believed that, because most television viewers tend not to make regular extensive searches for new programmes to watch, but tend, when viewing television, to first see what is being broadcast on live television that interests then and then, if there is nothing good to view, seeing what they may have already recorded for time-shifted viewing, the facility to extensively populate a PVR with content from a broadcaster in which advertising slots can be sold based on the time of viewing, will lead to very substantial revenues being generated from a broadcaster's "shadow channel".

The PVR has been illustrated as being separate from a television set, but it may be incorporated into a television set. In a variation the time-shifted programme may be viewed on a visual display unit, for example in a personal computer.

The invention has been described with reference to time-shifted viewing of broadcast television programmes but is also applicable to time-shifted listening to broadcast radio programmes.

Google Exhibit 1004, Page 103 of 523

Claims

1. A system for providing advertisements during time-shifted viewing/listening comprises:

means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

means to supply advertisements within the periodic breaks;

and means to supply a time-of-day signal;

arranged so that each advertisement contains a header relating to a time of day at which that advert may be viewed/not viewed.

2. A system according to claim 1 in which the time of day information in the header is set in accordance with local broadcasting regulations.

3. A system according to claim 1 or claim 2 in which the header also contains information including the duration and nature of the advertisement

4. A system according to any preceding claim in which the advertisements include interactive advertisements to which a response by a consumer is requested.

5. A system according to claim 4 in which a response by a consumer is rewarded by money or money's worth.

6. A system according to any preceding claim in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

7. A Personal Video Recorder (PVR) for decoding broadcast digital video/audio signals for supply to a consumer's viewing unit comprising data storage means, input connection means for connection to a source of video/audio signals and a time-of-day signal; and output means for connection to a consumer's viewing unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

8. A television set incorporating a Personal Video Recorder according to claim 7.

Google Exhibit 1004, Page 104 of 523

9. A system for providing advertisements during time-shifted viewing/listening of broadcast video/audio programmes substantially as described with reference to Figures 3 to 6 of the accompanying drawings.

10. A Personal Video Recorder substantially as described with reference to Figures 4 and 6 of the accompanying drawings.

Google Exhibit 1004, Page 105 of 523

Google Exhibit 1004, Page 106 of 523

Abstract

In a system for time-shifted viewing of television broadcasts, advertisements 41, 43 are provided with headers 50, 52 containing times of day at which that advert may be viewed or not viewed. A Personal Video Recorder (PVR) 60 stores adverts in an advertisement database 70, stores broadcast programme segments in a programme database 80, and broadcast rules in a rules database 90. For viewing of the programme when time-shifted, the PVR checks the the time of day, checks the headers of the adverts, and shows only adverts which are permissibly viewed at that time of day.

Fig 4.

Google Exhibit 1004, Page 107 of 523

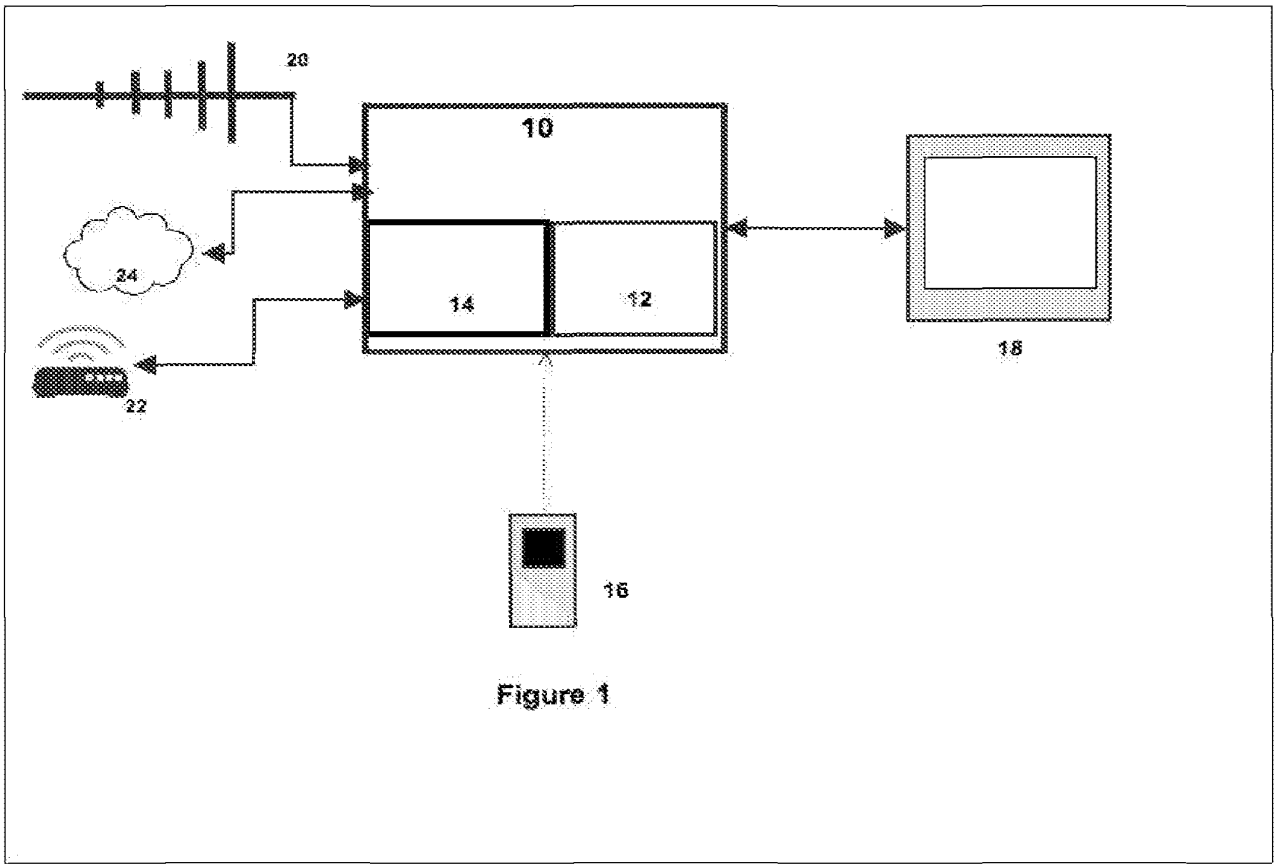


Figure 1

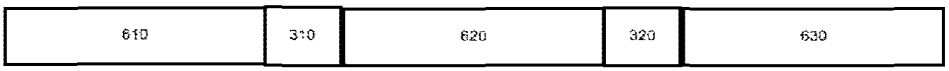


Figure 2

Google Exhibit 1004, Page 108 of 523

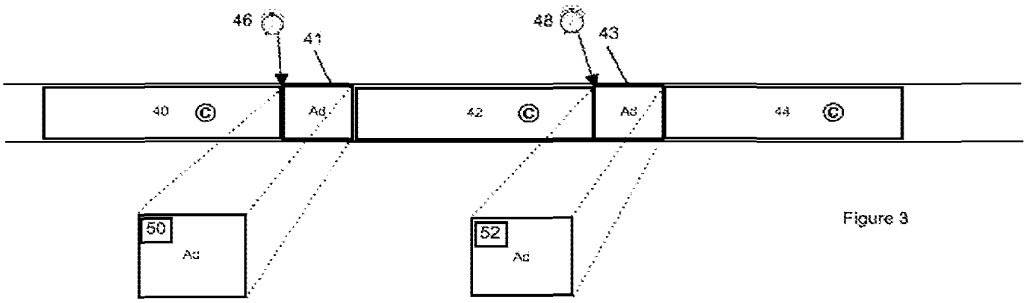


Figure 3

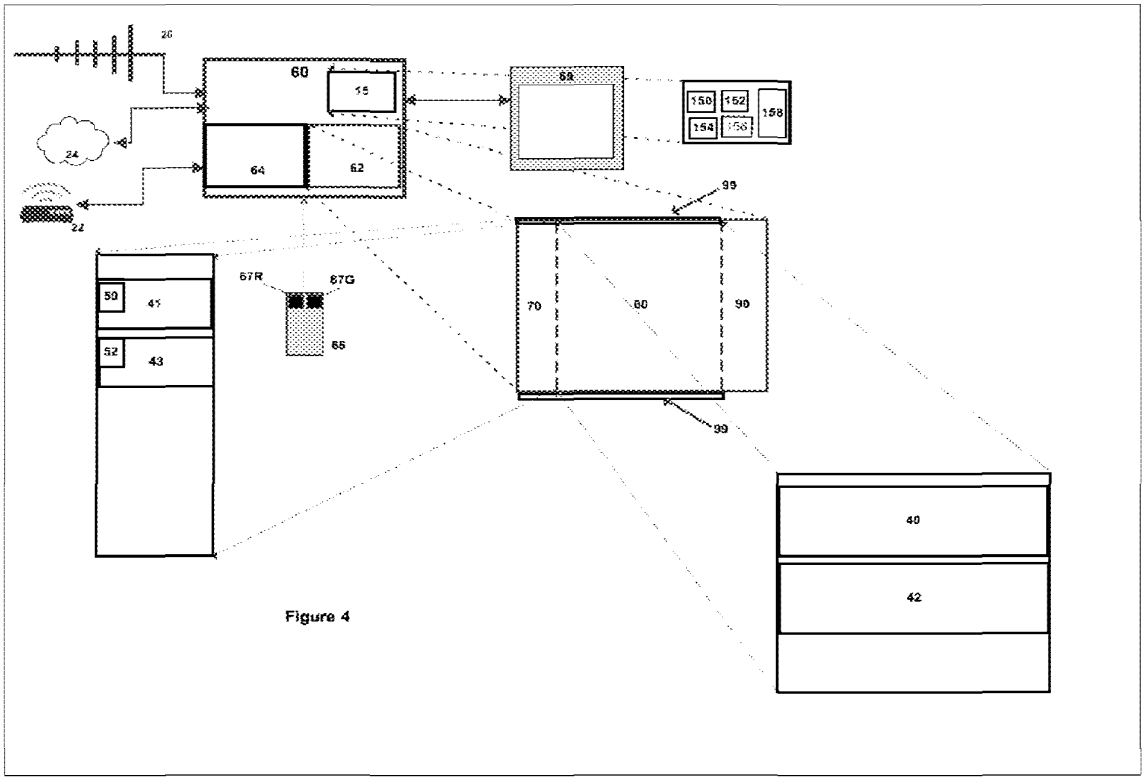


Figure 4

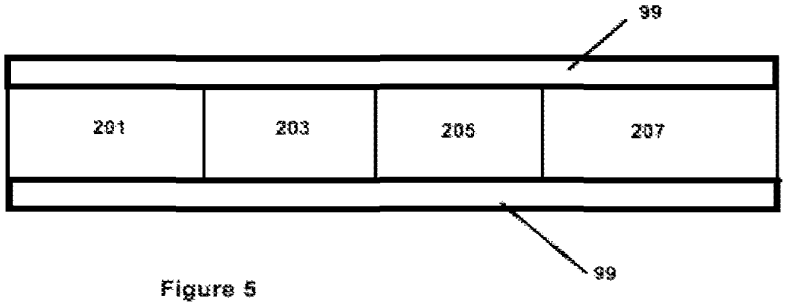


Figure 5

Google Exhibit 1004, Page 109 of 523

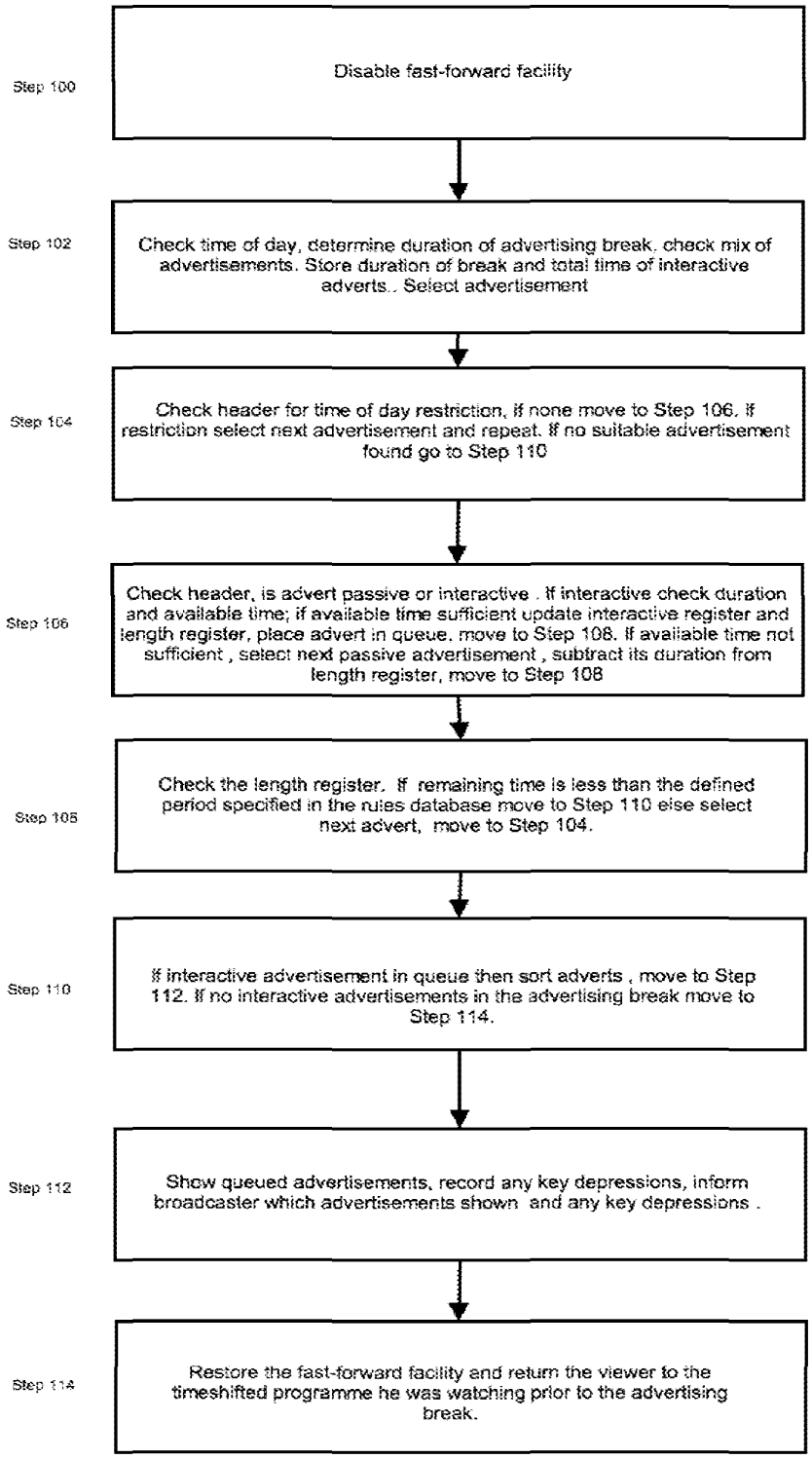


Figure 6

Google Exhibit 1004, Page 110 of 523

WIPO
WORLD
INTELLECTUAL PROPERTY
ORGANIZATION

DOCUMENT MADE AVAILABLE UNDER THE PATENT COOPERATION TREATY (PCT)

International application number:		**PCT/GB2011/052259**
International filing date:		**18 November 2011 (18.11.2011)**
Document type:		**Certified copy of priority document**
Document details:	Country/Office:	**GB**
	Number:	**1020361.0**
	Filing date:	**01 December 2010 (01.12.2010)**
Date of receipt at the International Bureau:		**27 January 2012 (27.01.2012)**

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a),(b) or (b-*bis*)

34, chemin des Colombettes
1211 Geneva 20, Switzerland
www.wipo.int

PCT REQUEST

Print Out (Original in Electronic Form)

0	**For receiving Office use only**	
0-1	International Application No.	PCT/GB2011/052259
0-2	International Filing Date	18 November 2011 (18.11.2011)
0-3	Name of receiving Office and "PCT International Application"	RO/GB

0-4	**Form PCT/RO/101 PCT Request**	
0-4-1	Prepared Using	PCT Online Filing Version 3.5.000.225 MT/FOP 20020701/0.20.5.20
0-5	**Petition** The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	**Receiving Office (specified by the applicant)**	UK Intellectual Property Office (RO/GB)
0-7	**Applicant's or agent's file reference**	P8991.wop
I	**Title of Invention**	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
II	**Applicant**	
II-1	This person is	Applicant and inventor
II-2	Applicant for	All designated States
II-4	Name (LAST, First)	KELMAN, Alistair Bruce
II-5	Address	37 Station Road London NW4 4NJ United Kingdom
II-6	State of nationality	GB
II-7	State of residence	GB

PCT REQUEST

Print Out (Original in Electronic Form)

IV-1	**Agent or common representative; or address for correspondence**	
	The person identified below is hereby/ has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	Agent
IV-1-1	Name (LAST, First)	EVENS, Paul Jonathan
IV-1-2	Address	Maguire Boss 24 East Street St. Ives Cambridgeshire PE27 5PD United Kingdom
IV-1-3	Telephone No.	+44 1480 301588
IV-1-4	Facsimile No.	+44 1480 464405
IV-1-5	e-mail	patents@maguires.co.uk
IV-1-5(a)	E-mail authorization The receiving Office, the International Searching Authority, the International Bureau and the International Preliminary Examining Authority are authorized to use this e-mail address, if the Office or Authority so wishes, to send notifications issued in respect of this international application:	as advance copies followed by paper notifications
V	**DESIGNATIONS**	
V-1	**The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.**	
VI-1	**Priority claim of earlier national application**	
VI-1-1	Filing date	01 December 2010 (01.12.2010)
VI-1-2	Number	1020361.0
VI-1-3	Country	GB
VI-2	**Priority document request**	
	The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1

PCT REQUEST

Print Out (Original in Electronic Form)

VI-3	**Incorporation by reference :** where an element of the international application referred to in Article 11(1)(iii)(d) or (e) or a part of the description, claims or drawings referred to in Rule 20.5(a) is not otherwise contained in this international application but is completely contained in an earlier application whose priority is claimed on the date on which one or more elements referred to in Article 11(1)(iii) were first received by the receiving Office, that element or part is, subject to confirmation under Rule 20.6, incorporated by reference in this international application for the purposes of Rule 20.6.		
VII-1	**International Searching Authority Chosen**	European Patent Office (EPO) (ISA/EP)	
VIII	**Declarations**	Number of declarations	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	**Check list**	Number of sheets	Electronic file(s) attached
IX-1	Request (including declaration sheets)	4	✓
IX-2	Description	14	✓
IX-3	Claims	2	✓
IX-4	Abstract	1	✓
IX-5	Drawings	8	✓
IX-7	TOTAL	29	
	Accompanying Items	Paper document(s) attached	Electronic file(s) attached
IX-8	Fee calculation sheet	-	✓
IX-18	PCT-SAFE physical media	-	-
IX-19	Other	Cover letter	✓
IX-20	**Figure of the drawings which should accompany the abstract**	4	
IX-21	**Language of filing of the international application**	English	

PCT REQUEST

Print Out (Original in Electronic Form)

X-1	**Signature of applicant, agent or common representative**	(PKCS7 Digital Signature)
X-1-1	Name (LAST, First)	EVENS, Paul Jonathan
X-1-2	Name of signatory	GB, Maguire Boss, P. Evens 16381
X-1-3	Capacity (if such capacity is not obvious from reading the request)	(Representative)

FOR RECEIVING OFFICE USE ONLY

10-1	**Date of actual receipt of the purported international application**	18 November 2011 (18.11.2011)
10-2	**Drawings:**	
10-2-1	Received	
10-2-2	Not received	
10-3	**Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application**	
10-4	**Date of timely receipt of the required corrections under PCT Article 11(2)**	
10-5	**International Searching Authority**	ISA/EP
10-6	**Transmittal of search copy delayed until search fee is paid**	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	**Date of receipt of the record copy by the International Bureau**	

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 June 2012 (07.06.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/072999 A1

(51) International Patent Classification:
H04N 21/45 (2011.01) *H04N 21/475* (2011.01)
H04N 21/433 (2011.01) *G11B 27/00* (2006.01)
H04N 21/458 (2011.01)

(21) International Application Number:
PCT/GB2011/052259

(22) International Filing Date:
18 November 2011 (18.11.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1020361.0 1 December 2010 (01.12.2010) GB

(72) Inventor; and
(71) Applicant : **KELMAN, Alistair Bruce** [GB/GB]; 37 Station Road, London NW4 4NJ (GB).

(74) Agent: **EVENS, Paul Jonathan**; Maguire Boss, 24 East Street, St. Ives Cambridgeshire PE27 5PD (GB).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report (Art. 21(3))*
— *with amended claims (Art. 19(1))*

(54) **Title**: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

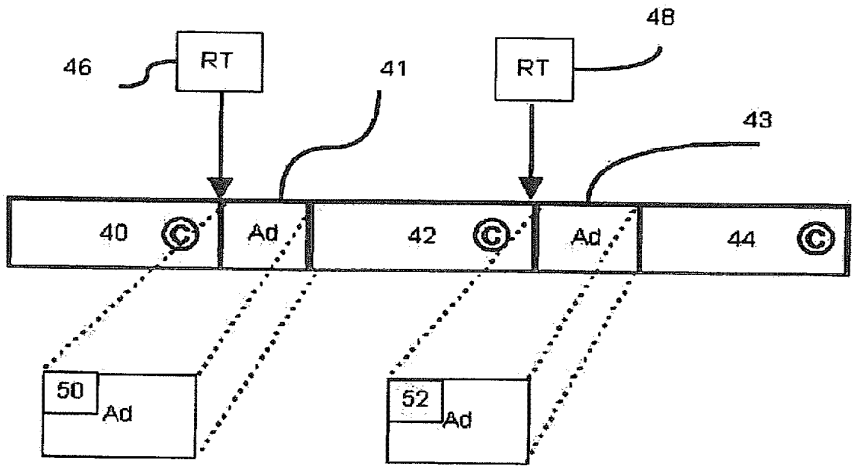


Figure 3

(57) **Abstract**: In a system for time-shifted viewing of television broadcasts, advertisements 41, 43 are provided with headers 50, 52 containing times of day at which that advert may be viewed or not viewed. A Personal Video Recorder (PVR) 60 stores adverts in an advertisement database 70, stores broadcast programme segments in a programme database 80, and broadcast rules in a rules database 90. For viewing of the programme when time-shifted, the PVR checks the time of day, checks the headers of the adverts, and shows only adverts which are permissibly viewed at that time of day.

WO 2012/072999 A1

Google Exhibit 1004, Page 116 of 523

System for providing improved facilities in time-shifted broadcasts.

Background to the invention

This invention relates to a system for supplying viewers of time-shifted programmes, previously broadcast on television or on radio, with improved facilities during an advertising break, and relates especially to a system which includes the supply of interactive advertisements, and optionally the provision of a loyalty points system.

In many countries there are regulations laid down by the broadcasting authorities which specify the minimum time between advertising breaks in programmes, the maximum length of an advertising break, the maximum number of seconds of advertising which can be broadcast within an hour's viewing. In addition, the time of day at which some adverts may be shown may also be strictly controlled. In the UK for example, if the advertisement is advertising alcoholic drinks containing more than 1.2% alcohol and the advertising regulator responsible is OFCOM then under the Broadcast Committee of Advertising Practice Rules on Scheduling of Television Advertisement the advertisement may not be shown at a time when children under 10 are likely to be viewing - i.e. before 7.30pm, sometimes referred to as the "watershed". A feature of advertising charging is that certain slots are more valuable than others, eg shortly after 7.30pm, and premium prices for use of those slots can be charged.

If a programme is recorded and viewed at a different time of day, it contains all of the adverts which were originally broadcast, some of which may be unsuitable for that time. One result is that children may see inappropriate adverts, and another is that advertisers are at present not allowed to charge for the time-shifted viewing of adverts. For example, a recording of a football or

cricket game broadcast late at night might contain advertisements for alcohol or gambling or medicines or specific other goods and services which it would be inappropriate to show in the early evening when children might be watching the advertisements. While parental controls in the viewing hardware are able to control and inhibit the showing of sexual or violent programmes to children there are no controls which can remove unsuitable advertisements from time-shifted programmes.

Technical Field

With the arrival of digital television it has been necessary for viewers with existing television sets to purchase a specialist piece of equipment to decode digital and audio broadcasts. This is known as a Set Top Box. It converts the digital broadcast signal into a format which can be displayed on a visual display unit or television set. Set Top Boxes may also contain facilities to decrypt encrypted broadcasts, sometimes by the addition of a smart card authorisation device and facilities which enable them to decode and record digital and audio broadcasts for later viewing. These recording facilities turn Set Top Boxes into Personal Video Recorders (PVRs). In some television sets these facilities may be incorporated into the body of the set.

As shown in Figure 1, a known PVR 10 contains a computer-type hard disc 12 and twin signal decoders/tuners 14. The PVR 10 is controlled by a remote control 16, such as an Infra Red control, and supplies signals to the viewing station such as a TV set or visual display unit 18. The PVR receives broadcast digital television and audio signals from an aerial 20.

The remote control 16 allows the viewer to navigate through the received digital and audio broadcast channels, to call up an on-screen guide to current and forthcoming programmes, either for live viewing or for recording on the hard disc 12 for later viewing, and to set parental controls. The viewer can pause live TV, schedule the recording of programmes into the hard disc 12, and watch one

channel while viewing another by use of the twin decoders 14. The remote control 16 can be used to navigate through a series of menus, sub-menus and sub-sub-menus to select TV and radio content for downloading for live viewing or for storage on the hard disc 12.

The known PVR 10 has what is termed a 'backchannel' supplied by means of either a modem 22 or an Internet connection 24 to enable the viewer to communicate with the broadcaster and others to a limited extent. Via this backchannel the viewer is able at his choice to notify the broadcaster which programmes he is viewing or has viewed and which programmes he is storing for later viewing on his hard disk. Additionally, via the modem 22 or Internet connection 24, the broadcaster is able to send commands to the PVR 10 so that it records specific programmes and/or advertisements using one of the twin decoders 14. Alternatively the broadcaster can "push" programmes and advertisements into the PVR 10 directly from the Internet 24. It is well known that a digital television signal and a backchannel each contain highly accurate time information which can be used by equipment in a PVR 10 to synchronise the start or stop of the recording of programmes. This time information although very accurate, can sometimes need a small offset to take account of transmission and digitisation delays. Once corrected by means of an offset perfect synchronisation between actions required by a broadcaster and actions taken by a PVR can take place

Figure 2 is a schematic diagram of a known format of a television programme supported by advertising breaks. As can be seen the programme is broken up into segments 30, 32, 34 which are separated by advertising breaks, 31, 33 which comply in length and timing with local broadcasting regulations.

The arrival of PVRs in homes has led to two problems. First the conventional advertising model of broadcast television has broken down. Once video (and to a lesser extent audio) signals can be stored for later viewing, the viewer may 'fast forward' through the advertisements. Technological means to inhibit viewers from

fast forwarding (by, for example, disabling the fast forward controls when advertisements are being shown) currently meet with viewer dislike.

Secondly, the time-shifting playing of programmes means that the recorded programmes may contain advertisements which are unsuitable for the actual time of viewing.

These two issues are believed to damage the commercial viability of 'free to air' television broadcasting and the enjoyment of the facilities of PVRs by viewers.

It is an object of the invention to provide an improved PVR which improves the viability of 'free to air' television broadcasting while overcoming the viewers' dislike of an inability to fast forward through advertisements. It is a further object of the invention to enable the automatic exclusion of advertisements that should not be shown at the time the programme is being viewed when time-shifted.

Brief summary of the invention

According to the invention, a system for providing advertisements during time-shifted viewing/listening comprises:

means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisments;

means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header relating to a time of day at which that advertisement may be viewed/not viewed; and

means to supply a real time clock signal;

arranged so that an advertisement is provided during time-shifted viewing/listening in accordance with its header and the real time of day.

The time of day information in the header may be set in accordance with local broadcasting regulations.

Also according to the invention a Personal Video Recorder (PVR) for use in the

inventive system comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

Preferably the header also contains information including the duration and nature of the advert. The nature of the advert may include whether it is passive or interactive or contains the option of loyalty points.

Brief description of the drawings

The invention will now be described with reference to Figures 3 to 8 of the accompanying drawings in which:

Figure 3 is a schematic diagram of a television programme supported by advertising breaks and suitable for time-shifted viewing;

Figure 4 is a Personal Video Recorder modified for use in the present invention;

Figure 5 is a detailed view of the hard disc of the PVR;

Figure 6 is a detailed view of the solid state memory of the PVR;

Figure7 is a format of a broadcast side channel; and

Figure 8 is a flow chart of steps taken by a PVR during a time-shifted programme viewing.

Detailed description of the drawings

Figure 3

In Figure 3, broadcast programme segments 40, 42, 44 are interleaved with advertisements 41, 43 as in the prior art, and for each segment a Real Time clock signal RT is provided, as shown at 46, 48.

For clarity, only one advertisement is shown in each advertising break between programme segments; in reality there will usually be two or more adverts in each

break.

Each advert 41, 43 contains a header 50, 52 which records the duration of the advert, any restriction on the time of day at which it may be viewed, and other information about its nature. The header 50, ,52 in each advert contains a series of fields as shown in Table 1:

Table 1

Fields in advertisement headers

Field Name	Activity
Time of Day validity	Code to indicate time of day when advert may be shown.
Days validity	Code to indicate the days of the week when advert may be shown
Advert identifier	Number with check digit to uniquely identify the advert
Frame length	Number giving exact length of advert in frames
Start date	Earliest date and time of permitted showing
End date	Latest date and time of permitted showing
Urgency matrix	Table of hours indicating advertiser's preferred time of showing
Interactive or Passive	Specifies if a button depression is expected
Showings	Number of times advert is to be shown
Viewings	Number of times this advert has been shown in time-shifted programme viewing
Frequency	Minimum period to elapse before repeat showing
When last selected	Date and time when advert last selected for viewing
Special expiry	Optional Field
Warnings	Keywords to match against viewing regulations

The Time of Day validity Field may, if required, indicate multiple periods in a day. The Frame Length may work on the standard rate of 25 frames per second. The End Date may be set to coincide with the end of a holiday period. In the Urgency Matrix, there may be an indicator such as a scale of 1 to 15 , with a high number indicating peak time viewing; .advertisers may wish to select and pay more for peak time showing, The Showings Field is included to prevent too frequent showing with the risk of viewer boredom. The Special Expiry Field is included to indicate that this advert should not be shown during time-shifted viewing. The Warnings Field includes keywords, such as those linked to alcoholic drinks, which can be matched against local viewing regulations.

It is to be understood that many of the Fields are optional, depending on the simplicity or complexity of the desired system for permitting time-shifted viewing of advertisements.

Figure 4

Turning now to Figure 4, in a PVR 60 for use in a system according to the invention, the connections to an aerial 20, a modem 22 and the Internet 24 are as in the prior art. A Real Time of day signal RT is received via the backchannel in either the Internet connection 24 or the connection via the modem 22. This signal is provided in known systems, but in the inventive system the signal is used in a different manner. The viewer's TV set 68 and remote control 66 are also shown, the remote having red and green buttons 67R, 67G as is conventional. The PVR 60 has twin decoders/tuners 64, a hard disc 62 and a memory 15 comprising a plurality of registers.

Figure 5

Figure 5 shows in detail the hard disc 62 in the PVR 60 It has three parts, ; an advertisement database 70 which stores advertisements from the broadcast programme; a programme database 80, which stores the broadcast programme segments; and a rules database 90 which stores the rules which apply to broadcast advertisements. The data in the programme and advertisement databases are encrypted, as indicated at 99.

In the advertisement database 70, each advertisement 41, 43 is stored together with a header 50, 52, the headers being described in Table 1 above. In the programme database 80, each programme is divided into its segments 40, 42. The rules database 90 contains rules to control the showing of advertisements at unsuitable times or on unsuitable days of the week and the like.

Figure 6

Figure 6 shows the memory 15 of the PVR 60, in which there are a number of registers, of which five are shown as 150, 152, 154, 156 158. Two registers 150, 152, are each used as a count-down timer; two registers 154, 156, are used as storage locations for loyalty points earned by a viewer and as a millisecond offset adjustment register respectively; and register 158 is used as a buffer memory to hold a series or queue of advertisements ready to be shown to the viewer.

In a simple system, when the owner of the PVR instructs play of a recorded programme, at each advertising break the PVR checks the current Real Time of day RT, checks the Time of Day validity header in each advert for restrictions on time of playing, and if there is no such restriction, shows the originally broadcast advert at a shifted time. Such an arrangement will permit advertisers to charge for the second viewing, which has previously been forbidden by law. If the advert cannot legally be shown at the Real Time of the time-shifted viewing, it is not played and the PVR checks the next stored advert from the broadcast. The duration of the advertising break can, if necessary, be reduced, unlike a broadcast advertising break. In a small variation, the Days validity header can contain a restriction on day of the week, for example an advert which should not be viewed on a Sunday, and the PVR will be arranged to check this also before showing the advert.

However a system according to the invention permits more complex arrangements, including the provision of additional adverts for viewing during a

time-shifted programme.

In one arrangement, when the broadcaster broadcasts the programme with its interleaved advertisements, the broadcaster additionally broadcasts a signal in an encrypted side channel which supplies detailed information concerning the programme being broadcast, specifically the length of the segment of the programme currently being broadcast and the length of the next advertising break. The format of this side channel signal is illustrated in **Figure 7** where 201 is the name of the broadcaster, 203 is the broadcast channel, 205 is the duration in milliseconds of the programme segment to the next advertising break and 207 is the duration in milliseconds of the next advertising break. The encryption is indicated at 99. Each receiving PVR receives this information concerning a programme it is about to record or is currently recording.

Before a time-shifted programme is viewed, the broadcaster sends to the PVRs connected to the system a series of adverts and their headers which are recorded by the PVRs in the advertisement database 70 of PVR 60. The series can be sent during the normal broadcasting of programmes, or during a special broadcast at off-peak times, or via the back channel. The adverts may be a mixture of passive adverts when no viewer reaction is requested, and active adverts when a viewer is requested to respond, conveniently by pressing the red and green buttons 67R, 67G on the remote control 66 in Fig 4. The viewer may be rewarded for responding e.g. by the award of loyalty points convertible into money or money's worth.

With such advertisements, the full range of Fields shown in Table 1 above can improve the use of an advertising budget. For example, the Frequency Field can set the minimum time between showings to the same viewer; the Urgency Matrix can be used to ensure the showing of adverts at a selected time, such as a car advert to be shown at 20.00 hours plus or minus 15 minutes, when this Field ensures that during a time-shifted viewing including this time, the advert is given high priority; and the Showings and Frequency Fields can be set to

prevent the same advert being shown too often to the same viewer.

The Fields in an advert header can be used to ensure that only appropriate adverts are shown during the time-shifted viewing, e.g. the Time of Day Validity and Days Validity will prevent certain adverts, such as those for alcoholic drinks, being shown before e.g. 7.30pm so that children are protected, and that certain adverts are not shown on a Sunday. Even a selected word can be used as a control e.g. the word "politician" can prevent an advert being shown during an election campaign.

Advertising breaks advantageously contain a mix of two types of advertisements: interactive advertisements and passive advertisements. Interactive advertisements are those which request the viewer to respond e.g. by pressing a button on a remote control. Any key depressions received will be recorded by the PVR and sent to the broadcaster. The viewer may be awarded loyalty points for making key depressions in Interactive advertisements, which are convertible into money or money's worth (e.g. pay-per-view programmes) upon redemption by the viewer.

Surrounding the interactive advertisements elsewhere in the advertising break there may be passive advertisements - that is to say advertisements which do not require the viewer to depress a key on his remote control. The viewer receives no loyalty points for watching or listening to a passive advertisement. However the juxtaposition of passive adverts with interactive advertisements improves the chance that passive advertisements are viewed or listened to attentively by the viewer.

Figure 8

The flowchart of Figure8 shows the steps taken in a PVR to ensure provision of legally acceptable adverts during a time-shifted viewing of a previously broadcast programme, while also providing an advantageous mixture of

advertisement types.

In Step 100 the PVR disables the viewer's fast forward facility.

In Step 102 the PVR 60 checks the Real Time of day signal RT and ensures by means of use of the offset register 156 that the PVR 60 is in perfect synchronisation with signals coming from the broadcaster. The PVR then checks the rules database 90 and determines the appropriate duration of the entire advertising break. The PVR then checks in the rules database 90 the prescribed mix of interactive and passive advertisements for an advertising break of this duration, and stores the duration of the advertising break in a length register 150 in the hard disc (see Fig 6) and stores the total allowable time of interactive adverts in the prescribed break in an interactive register 152. The PVR then selects an advertisement from the store of live and matched advertisements held in its advertisement database 70.

In Step 104 the PVR reads the header information associated with the selected advertisement and checks any time or day of showing restrictions. If there no such restriction then move to Step 106. If there is such a restriction the PVR 60 selects the next advertisement from the advertisement database 70, and continues checking the headers until an advertisement is found of a type which can be shown at the current time of day and move to Step 106. If no suitable advertisements are found go to Step 110

In Step 106 the PVR 60 checks header information indicating if the advert is passive or interactive. If it is an interactive advert its duration is subtracted from the interactive register 152 and if the remaining time is equal to or more than zero, the subtraction is recorded by the register152, the advert is placed in a queue for viewing in the buffer memory 158 and the PVR moves to Step 108. If the time T left in the interactive register is less than zero the interactive advert is rejected and the PVR 60 selects the next passive advertisement from

the store in the advertisement database 70, subtracts its duration P from the length register 150 and moves to Step 108

In Step 108 the PVR checks the length register 150. If the time T left is less than a defined number of seconds, move to Step 110 else select another advert from the database and return to Step 104.

Step 110 - If there are any interactive advertisements IA in the advertising break, then the adverts are sorted so that, where possible, the interactive advertisements are interspersed with passive advertisements and move to Step 112. If there are no interactive advertisements IA in the advertising break, move to Step 114.

In Step 112 the PVR 60 shows the stored queued advertisements from the buffer memory 158 to the viewer. During the showing, the PVR records any depressions of the red or green buttons 67R, 67G on the viewer's remote control 66 made during the advertising break and updates the viewer loyalty points register 156. Via the backchannel, the PVR 60 informs the broadcaster which advertisements were shown to the viewer during the advertising break and whether the viewer made any key depressions during the break in response to the interactive advertisements contained in the break.

In Step 114 the PVR 60 restores the fast-forward facility and returns the viewer to the time-shifted programme he was watching prior to the advertising break.

It is also possible to use the system according to the invention to supply advertisements which are matched to previously-provided viewer interests. In such a system, a viewer voluntarily provides personal data, such as post code, income level, hobbies and interests and the like. This permits an advertiser to match an advert to that viewer. For example a viewer with an interest in cars can be sent information on books and videos about cars, or special price offers

of an actual car. Such adverts will be referred to as matched adverts, while the previously broadcast advertisements will be referred to as live adverts.

Different numbers of loyalty points can be given at different times of the day - thereby encouraging a viewer to watch a time-shifted programme containing up-to-the-minute advertisements at a specific time of the day to maximise the number of points the viewer receives. By this means viewers can be persuaded to watch a time-shifted programme (and hence advertisements) at a time that they might otherwise not watch that programme.

An advertising break may also contain interactive advertisements which are trailers for other programmes. Depressing the correct button on the remote control while the trailer is being shown will cause the PVR to note that the viewer wishes this programme being trailed to be recorded when it is broadcast so that the viewer can be view it in time-shifted format. While it is not anticipated that loyalty points will normally be awarded for depressing a button on the remote control during a trailer, the proximity of interactive trailers with passive advertisements in the same advertising break is believed to increase the attentiveness with which the passive advertisements are viewed or listened to.

By reason of this method of inserting a combination of interactive and passive advertisements supported by a loyalty points system in a manner which conforms to the advertising regulations which apply for the actual time of viewing, the broadcaster may be able to sell more advertising. The time-shifted viewing becomes a 'shadow channel', and a broadcaster can sell advertising simply on the basis of the time an advertisement is being viewed. Furthermore, if the broadcaster broadcasts a family of channels, the broadcaster's shadow channel would consist of any programme that had been broadcast and recorded on the PVR from any of the broadcaster's channels that was being watched at that precise time.

It is believed that, because most television viewers tend not to make regular extensive searches for new programmes to watch, but tend, when viewing television, first to see what is being broadcast on live television that interests them and then, if there is nothing good to view, seeing what they may have already recorded for time-shifted viewing. The facility extensively to populate a PVR with content from a broadcaster in which advertising slots can be sold based on the time of viewing, could lead to very substantial revenues being generated from a broadcaster's "shadow channel".

The PVR has been illustrated as being separate from a television set, but it may be incorporated into a television set. In a variation the time-shifted programme may be viewed on a visual display unit, for example in a personal computer.

The invention has been described with reference to time-shifted viewing of broadcast television programmes but is also applicable to time-shifted listening to broadcast radio programmes.

Google Exhibit 1004, Page 130 of 523

Claims

1. A system for providing advertisements during time-shifted viewing/listening comprises:

means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header relating to a time of day at which that advert may be viewed/not viewed;

means to supply a real-time clock signal; and

means to read said headers and said clock signal;

arranged so that an advertisement is provided during time-shifted viewing/listening in accordance with its header and the real time of day.

2. A system according to claim 1 in which the time of day information in the header is set in accordance with local broadcasting regulations.

3. A system according to claim 1 or claim 2 in which the header also contains information on the duration of the advertisement

4. A system according to any preceding claim in which the header also contains information on the nature of the advertisement.

5. A system according to any preceding claim in which the advertisements include interactive advertisements to which a response by a consumer is requested.

6. A system according to claim 5 in which a response by a consumer is rewarded by money or money's worth.

7. A system according to any preceding claim in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

8. A Personal Video Recorder (PVR) for use in a system according to any preceding claim comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

9. A PVR according to claim 8 arranged to read the real-time clock and to read the header of an advertisement and to provide that advertisement to a consumer's viewing/listening unit only when its header does not indicate that it may not be viewed at the real time of day indicated by the clock signal.

10. A PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

11. A television set incorporating a Personal Video Recorder according to any one of claims 8, 9 or 10.

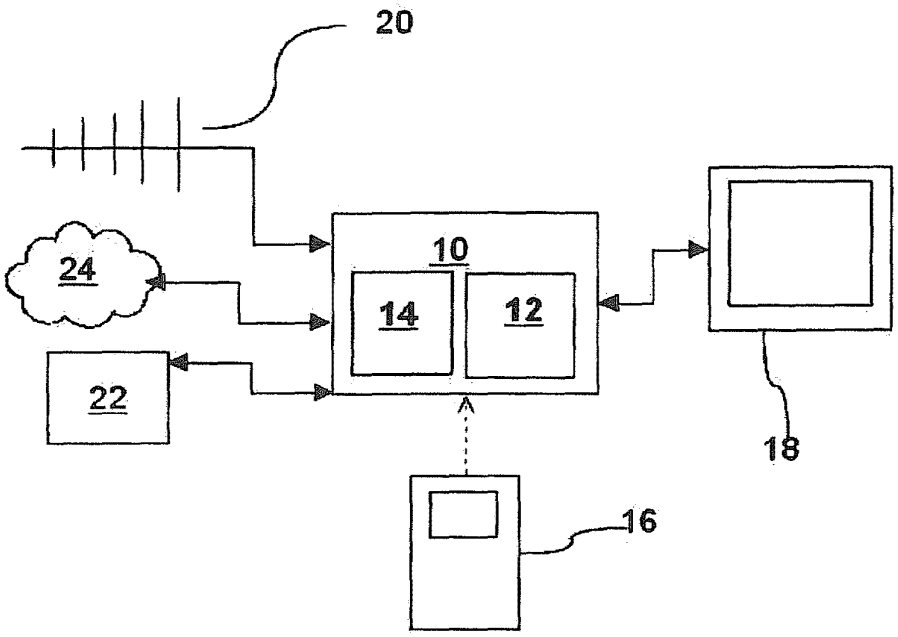


Figure 1

PRIOR ART

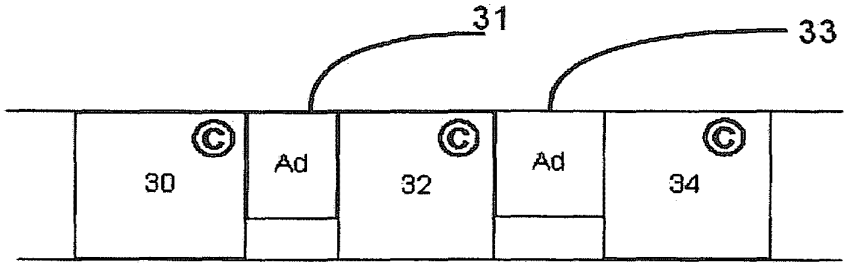


Figure 2

PRIOR ART

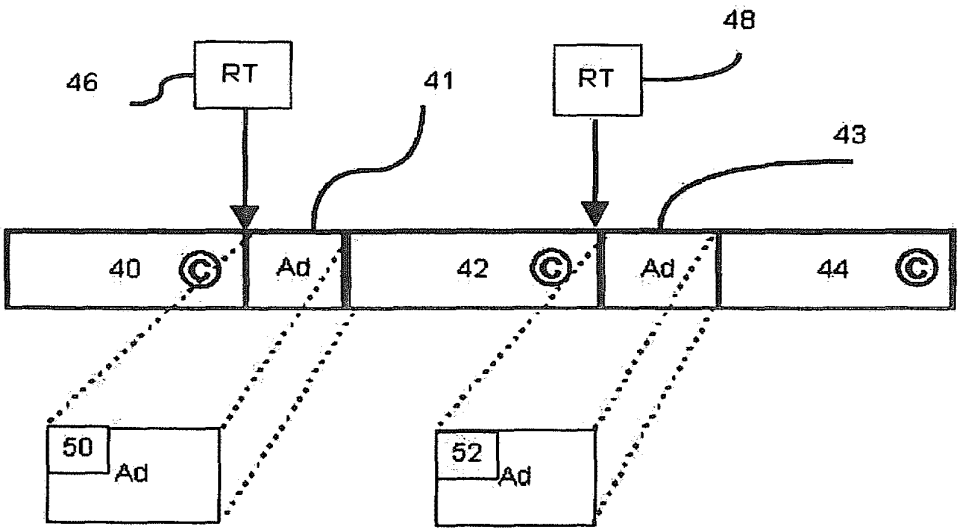


Figure 3

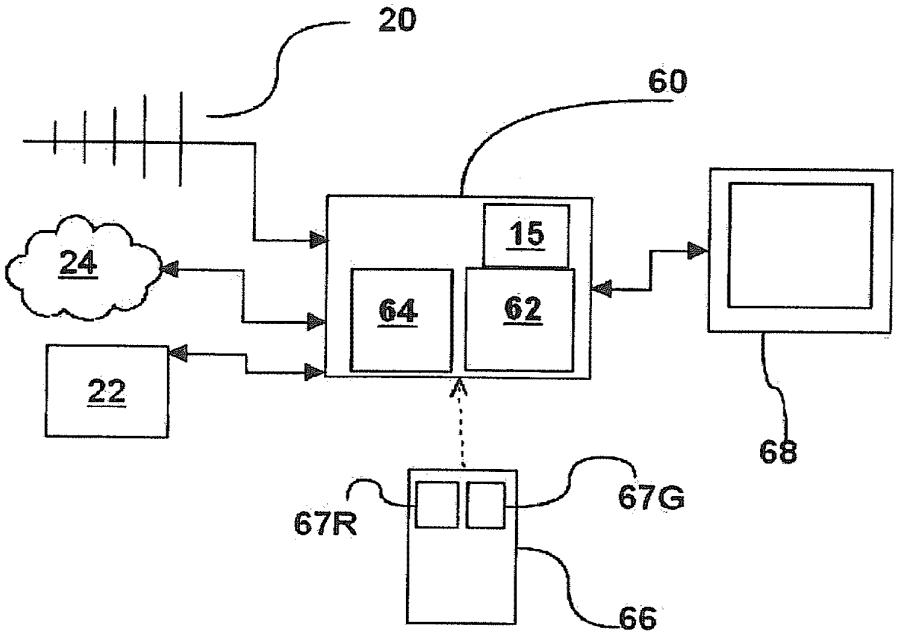


Fig 4

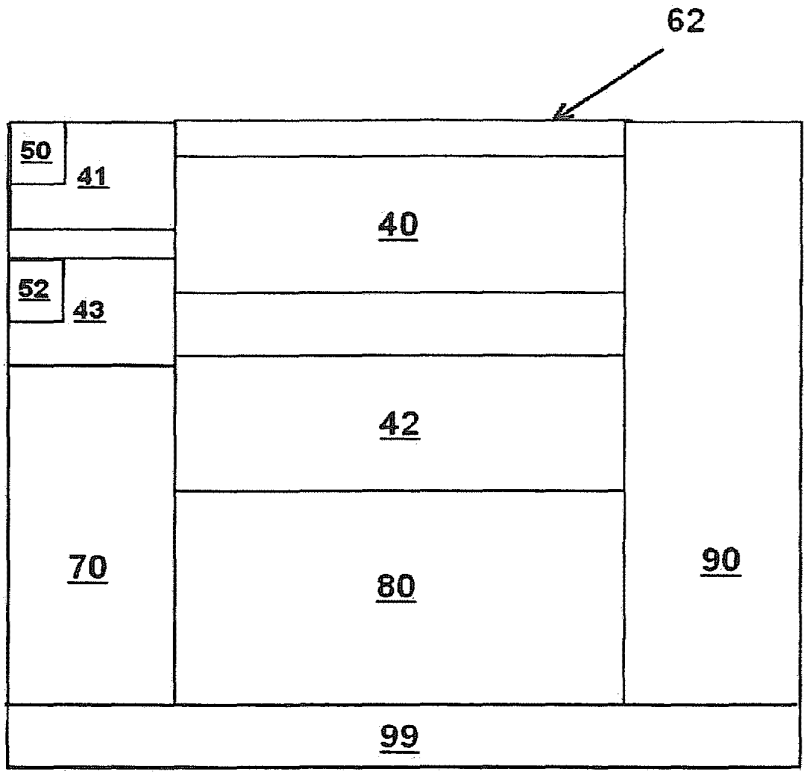


Fig 5

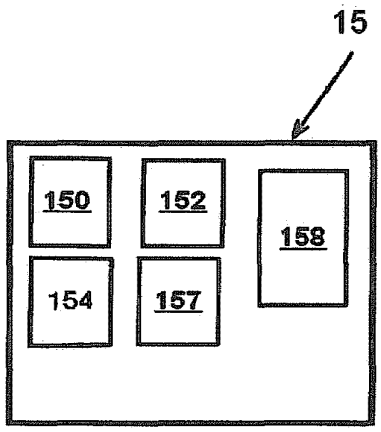


Fig 6

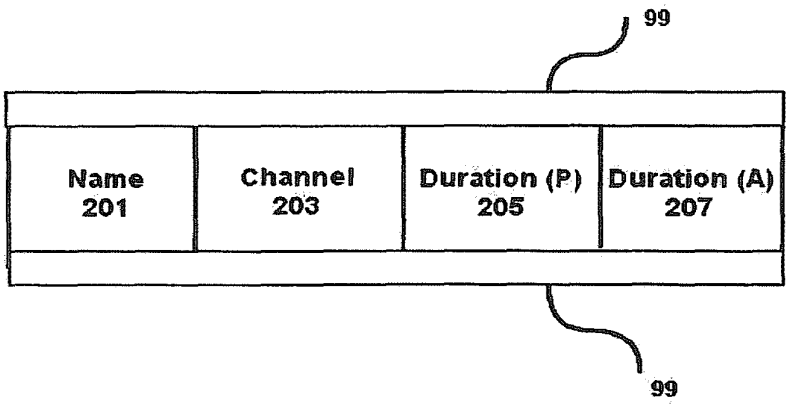


Fig 7

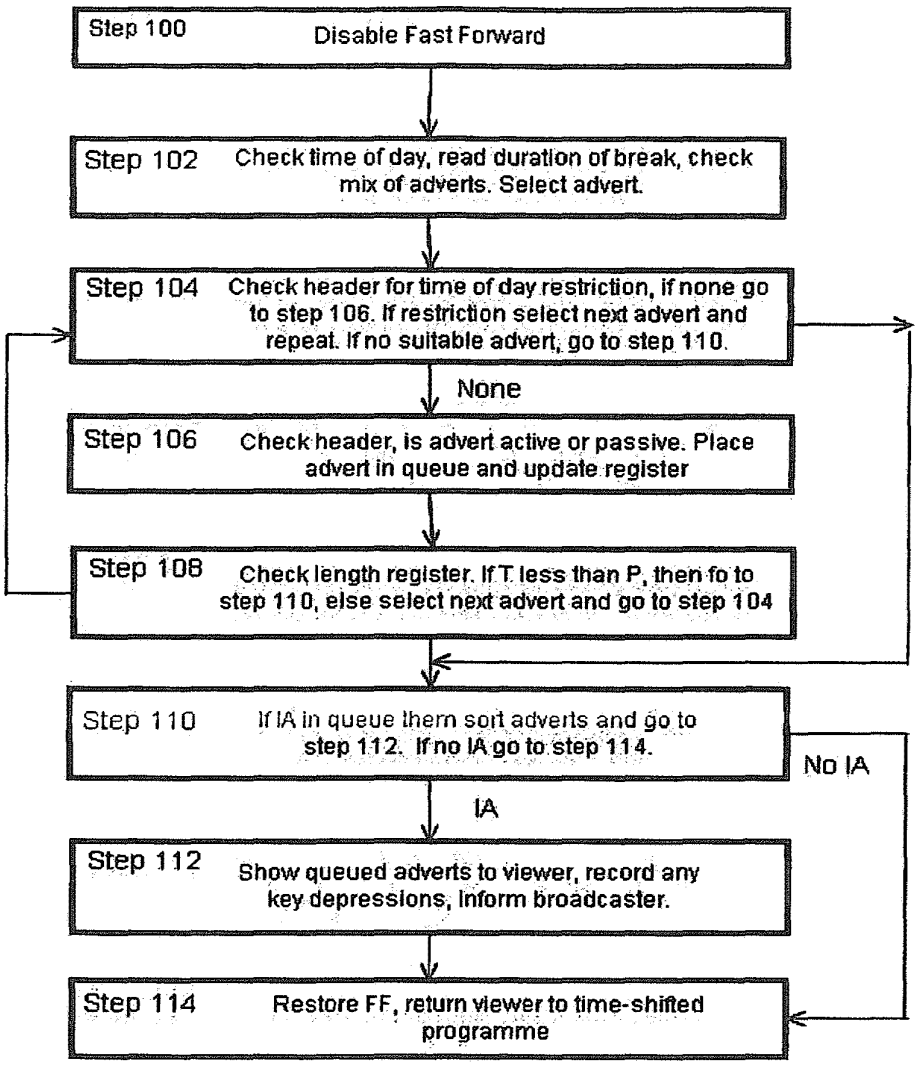

Step 100
Disable Fast Forward
Step 102
Check time of day, read duration of break, check mix of adverts. Select advert.
Step 104
Check header for time of day restriction, if none go to step 106. If restriction select next advert and repeat. If no suitable advert, go to step 110.
None
Step 106
Check header, is advert active or passive. Place advert in queue and update register
Step 108
Check length register. If T less than P, then to to step 110, else select next advert and go to step 104
Step 110
If IA in queue them sort adverts and go to step 112. If no IA go to step 114.
No IA
IA
Step 112
Show queued adverts to viewer, record any key depressions, Inform broadcaster.
Step 114
Restore FF, return viewer to time-shifted programme

Fig 8

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/990,372	Filing Date 05/29/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☒ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	**140**
☒ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	**300**
☒ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	**360**
TOTAL CLAIMS (37 CFR 1.16(i))	11 minus 20 =	* 0	x $40 =	**0**
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	* 0	x $210 =	**0**
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	**800**

APPLICATION AS AMENDED – PART II

AMENDMENT **05/29/2013**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 11	Minus	** 20	= 0	x $40 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	x $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	**0**

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LDRC
/ROBERT TALBERT/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	1

Complete if Known	
Application Number	13/990,372
Filing Date	
First Named Inventor	Alistair Bruce Kelman
Art Unit	
Examiner Name	
Attorney Docket Number	95770-876349

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US-2007/0288951	12-13-2007	Ray et al.	
	AB	US-2003/0121037	6-26-2003	Swix et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	AC	PCT WO2001/82597 A1	11-1-2001	Harada		☐
	AD					☐

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	AE		☐

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
1 November 2001 (01.11.2001)

PCT

(10) International Publication Number
WO 01/82597 A1

(51) International Patent Classification[7]: H04N 5/445, G06F 3/00, 13/00

(21) International Application Number: PCT/US00/30563

(22) International Filing Date:
6 November 2000 (06.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/552,866 20 April 2000 (20.04.2000) US

(71) Applicant and
(72) Inventor: HARADA, Takeshi [JP/US]; 965 East El Camino Real, #811, Sunnyvale, CA 94087 (US).

(74) Agent: JOHNSON, Doyle, B.; Crosby, Heafey, Roach & May, Two Embarcadero Center, Suite 2000, San Francisco, CA 94111-4106 (US).

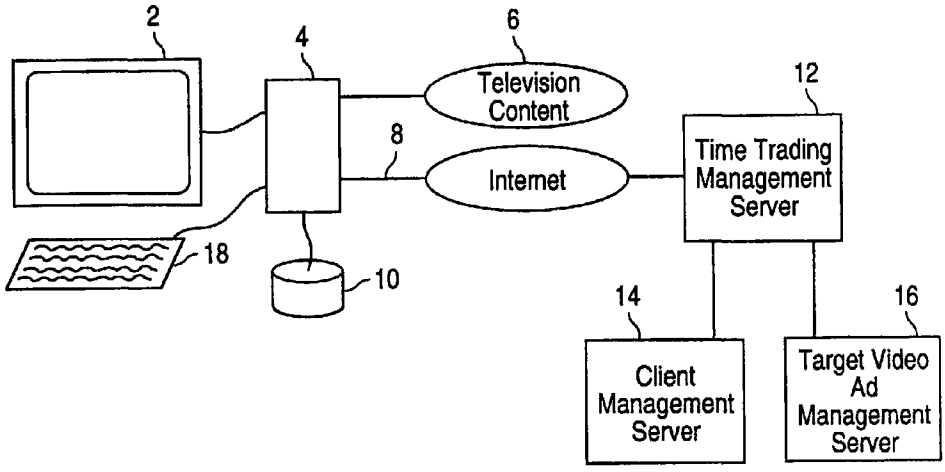
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND SYSTEM FOR VIEWER SELECTABLE ADVERTISING



(57) Abstract: A system and method that allows a program viewer to select the quantity and content of commercials that are viewed, and to exchange the viewer's time for credits against service charges. Additionally, the commercials may be targeted specifically for particular viewers and commercials of objectionable content may be screened. A time trading management server (12) downloads commercials to a viewer's Internet browser device (4) via broadband Internet connection (8), based on the viewer's profile and preferences. A time trading agent tracks the commercials that are viewed, and maintains an account balance for each viewer. Viewer's obtain credits or fees in exchange for viewing the commercials. The credits in turn may be redeemed for payment against the content services, such as television subscription services, pay-per-view movies and the like.

WO 01/82597 A1

Google Exhibit 1004, Page 143 of 523

METHOD AND SYSTEM FOR VIEWER SELECTABLE ADVERTISING

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates generally to the field of television programming, and more particularly to a system and method for allowing a viewer to select a quantity of desired advertising, targeting commercial advertising based on the viewer's preferences, and screening such advertisements.

DESCRIPTION OF THE RELATED ART

In current commercial television systems, advertisers select programs that have a particular viewer demographic, which is likely to be interested in the advertised product or service. The television commercials are placed in the programs according to fixed time intervals, with the advertising rates generally set based upon a program's Nielsen™ rating (as determined by Nielsen Media Research). The television stations earn profits by charging advertising fees, even when the viewer pays to subscribe to a CATV or satellite broadcast system. However, the Nielsen rating system is formulated using only a small statistical sample of all television viewers.

Ideally, commercials could be targeted to particular viewers, based upon each viewer's specific preferences and marketing profile. In the Internet environment, certain Internet Service Providers (ISPs) and Web sites currently provide for discounted services, if a user agrees to submit a marketing profile and receive targeted "banner ads" within existing Web pages, or as part of a custom browser. However, the user is still subjected to advertisements selected by the content or service provider, and has no control over the quantity of ads displayed.

As the Internet moves to broadband services having increased bandwidth, distribution of video programs, such as television shows, movies, sports or the like, currently distributed mainly through commercial broadcast television, CATV or satellite, will also be distributed through the Internet. Viewers will then no longer be limited to watching only a fixed number of channels, but will be able to select particular content of interest (i.e. "video on demand"). There will be various way of distributing the video programs, such as free broadcasting, paid subscriptions, or pay-per-view or pay-per-downloads.

For example, Internet capable "set-top-boxes" are available for browsing the Internet through the television. Other devices are available for specifically "digitally" recording television content, such as devices available from ReplayTV™ or TiVo™. Both Internet browser devices and digital recorders generally include large data storage devices and video decoding capabilities, such as MPEG decoders. Viewers can thus monitor, record, time-shift, alter the viewing order, pause, review, or fast-forward through received content. The viewer can even choose to skip or delete the commercials. Thus, both Internet browser devices and digital recorders provide viewers with new flexibility and freedom to select only the content that they are interested in viewing.

With content delivery via the Internet, the traditional method of distributing television advertisements (commercials) is not as effective. As discussed above, the traditional practice estimates the target demographic based on the time or category of the selected video program and broadcasts a commercial as a part of the television program, with the hope that the viewers actually see the commercial. However, as the number of paid subscription or pay-per-view services increase on both standard television networks and broadband Internet, the viewer has more control over the content. In other words, many viewers may be more willing to pay more to avoid seeing any commercials, or use special recording and/or filtering devices to delete the commercials before viewing the program.

Google Exhibit 1004, Page 145 of 523

From the viewer's perspective, in the traditional commercial television practice, network broadcasters have been selling the viewer's "time" to advertising clients and making money at the viewer's expense. However, once a video program is received by the viewer, the viewer has the right to view, rewind, fast-forward or otherwise manipulate the video program as long as the viewing is for personal and not commercial use. This includes the right to skip or delete any inserted commercials. The user is also free to sell his own viewing time to the advertising clients, if the infrastructure is made to support this new viewing environment.

Also, from the viewer's perspective, the distribution of video programs through the Internet expands the program alternatives for the viewer. However, the Internet is not a controlled media that is censored for general audiences, like the existing television broadcasting systems. Various types of video programs or commercials, including those containing adult content or violent expression, which are not suitable for young children, can be distributed or accessed via the Internet without restriction. Thus, the viewer also needs a new controlled viewing environment to protect his/her home from uncensored and uncontrolled media intrusion, including undesirable commercial advertisement content.

Thus, there is a need for a video broadcasting system that allows viewers to sell their own viewing "time" directly to advertisers, which further allows for the advertisements to be specifically targeted to the viewers based upon their own preferences, and which facilitates a new and controlled viewing environment for each member of the household to censor undesirable commercial content.

SUMMARY OF THE INVENTION

In general, the present invention is a system and method that allows a program viewer to select the quantity and content of commercials that are viewed, and to exchange the viewer's time for credits against service charges. Additionally, the commercials may be targeted specifically for particular viewers

Google Exhibit 1004, Page 146 of 523

and commercials of objectionable content may be screened. In one embodiment, the present invention includes a television or video display device connected to the Internet via a Web-enabled device, and also possibly to standard television distribution systems, such as broadcast television, CATV or a satellite broadcast system. A time trading agent downloads commercials to the viewer, based on the viewer's profile and preferences. The time trading agent tracks the commercials that are viewed, and maintains an account balance for each viewer. It is preferred that the commercials are downloaded separately from the program content and stored in viewer controlled storage (either a local hard-drive or other user accessible storage space, such as Internet file storage).

Viewer's obtain credits or fees in exchange for viewing the commercials. The credits in turn may be redeemed for payment against the content services, such as television subscription services, pay-per-view movies and the like. The time trading agent can provide the advertisers with detailed reports of the viewing frequency and interested demographic groups for particular commercials.

These and other aspects of the invention, as well as further details of specific embodiments, may be more fully understood from the following specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be readily understood by the following detailed description in conjunction with the accompanying drawings, wherein like reference numerals designate like structural elements, and in which:

Figure 1 is a block diagram of a system configured according to an embodiment of the present invention;

Figure 2 is a flowchart of the new viewer registration process, according to an embodiment of the present invention; and

Google Exhibit 1004, Page 147 of 523

Figure 3 is a flowchart of the time trading procedure of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The following description is provided to enable any person skilled in the art to make and use the invention and sets forth the best modes contemplated by the inventor for carrying out the invention. Various modifications, however, will remain readily apparent to those skilled in the art, since the basic principles of the present invention have been defined herein specifically to provide a system and method for allowing a viewer to select a quantity of desired advertising, targeting television advertising based on the viewer's preferences, and screening such advertisements. Any and all such modifications, equivalents and alternatives are intended to fall within the spirit and scope of the present invention.

In general, the present invention is a system and method that allows a program viewer to select the quantity and content of commercials that are viewed, and exchange the viewer's time for credits against service charges. Additionally, the commercials may be targeted specifically for particular viewers and commercials of objectionable content may be screened. It is preferred that the commercials are downloaded separately from the program content and stored in viewer controlled storage (either a local hard-drive or other user accessible storage space, such as Internet file storage). This avoids potential permission issues with content copyright holders, since the viewers are watching their "own" commercials, at times selected by them.

In one embodiment, as shown in Figure 1, the present invention includes a television or video display 2 that is linked with a personal computer (PC) or a dedicated Internet browser device 4, such as a Web-enabled set-top-box, WebTV unit, or other similar "Net-appliance." The PC or Internet browser device is connected to a broadcast television, CATV, or satellite signal 6, and a broadband Internet connection 8, which may be different from the television

Google Exhibit 1004, Page 148 of 523

signal infrastructure. The broadband Internet connection 8 and the television signal 6 may also be provided over the same medium, such as the television coaxial cable, fiber optic cable, satellite service, or other wireless connection. The PC or Internet browser device 4 preferably has a memory buffer and video decoding capability, such as support for MPEG 2. The viewer should also have access to at least 2 GB of data storage, wherein the viewer can store the downloaded data either in a local hard-disk drive 10, or remotely on an Internet data storage site.

A "time trading" service provider 12 (hereinafter "time trading agent") provides each household with an Internet account and a control environment for each member of the household to control the television or video programs, including the commercials, received from broadcast television, CATV, satellite or broadband Internet. The control environment includes a user identification number (ID#) for each participating individual in the household and a main ID# for the household. In order to participate in the time trading service, each household or individual user must use an ID# to access the viewing environment provided by the time trading agent. Any viewing of video programs whether free, paid subscription or pay-per-view will be also managed in the viewing environment based on the ID#. For example, the time trading agent may have agreements with only certain content providers, or may allow the viewer to select any content provider.

As shown in Figure 2, when a new viewer accesses the time trading system, a new viewer demographic profile is created (step 22), and the viewer chooses commercial category preferences (step 24). A new time trading account is then created (step 26). Each viewer in the household may thus have a unique control environment.

Each family has one master household ID# used to configure the system. For example, configuration options may include registering or changing the Internet service, paid subscription or pay-per-view options, commercial time trading settings, or censorship or parental control settings. The viewing history

Google Exhibit 1004, Page 149 of 523

or Internet access log of each ID# can also be accessed using the master ID#. The system configuration menu may include the following options:

Paid video programs -

- List of paid subscription and pay-per-view service providers
- Access and censorship controls based on rating (NC-17, M, R, PG13, PG, G, etc.)

Internet Access -

- List of paid subscription and pay-per-view service providers
- Access and censorship controls based on rating (NC-17, M, R, PG13, PG, G, etc.)

Timing trading -

- Time traded, income or credit points earned, used, and remaining balance
- Target video stream ad insertion instructions

Commercial screening -

- availability of credit programs
- availability of special offerings
- topical preferences
- regional preferences (local or national)

Although no particular user interface is required, the following features are incorporated into the preferred embodiment. Specifically, when the household or individual viewer turns on the system, the screen will ask "TV, Internet, time trading account, special offer, set-up, view log or account balance"? If the household or individual viewer selects Internet, time trading or special offer, the system will request a user ID#. If the user selects set-up, view log or account balance, then the system will ask for the household's

Google Exhibit 1004, Page 150 of 523

master ID#. Currently, it is preferred that the household or individual viewer uses some type of input device, such as an alpha numeric keypad or keyboard 18 to input the ID#.

The time trading account selection shows the cumulative time trading income, cumulative time trading income used, and the outstanding balance of each household or individual ID#. The time trading account also shows the target video stream ad inserting instructions, pre-set and updated under each household or individual ID#.

The special offer selection shows any special bonus programs currently available offering additional bonus points. The account balance selection shows the current account balance for the Internet service, the paid subscription or the pay-per-view services. This includes the total charge from the program providers, the total time trading income or credit points, the time trading income or credit points redeemed, and any outstanding charges to be charged to the household account under each household or individual viewer ID#. The viewer's log shows all the viewing and Internet access records for each ID#, which can be audited by the master ID# holder.

The set up menu may consist of the following:

Paid video programs	List of paid subscriptions or pay-per-views
	Access and censorship control set up
Internet Access	Censorship control set up
Time Trading	Time trading set up menu
	Target ad commercial insertion instructions
Commercial screening	Commercial preferences table set up.

The Internet screen may show the following:

List of personalized television, CATV or satellite programs

Google Exhibit 1004, Page 151 of 523

Internet service, paid subscription or pay-per-view programs on CATV, satellite or Internet, including broadband

Index for Internet service, paid subscription or pay-per-view program providers

Bookmarks for preferred Internet sites

Internet search engines

Internet address [URL] input block

The present infrastructure thus facilitates a new viewing environment for the viewer. The viewer can decide whether to view or not view a given video program, including commercials, and can "trade" his/her television commercial viewing time for a fee or for "credit" points to be redeemed against the viewer's Internet service fee, paid subscription fee or pay-per-view fee. Each viewer's control environment under each ID# may have a menu to control the commercial time trading feature for each viewing session, or the master environment can set the time trading options for the other viewers. The time trading agent manages the accumulated, used and remaining income or credit points of each household account and individual viewers by ID#s.

Each viewer also controls how the target video stream commercials are inserted to his/her television or video program viewing. The viewer can choose to delete all regular television commercials, after they are received, and trade all or part of the newly created time slots for the target video stream commercials provided by the time trading agent. The viewer can also choose to pause a pay-per-view movie at selected times, and insert a selected number of target video stream commercials. Commercials are downloaded to the viewer's local storage area (which can either be a local hard drive, or user controlled storage available through the Internet) by the time trading agent. The target video stream ad is controlled via an ad management server. The commercials may then be played locally at the viewer's direction, or automatically at specified intervals as established by the viewer's contract with the time trading agent. The

Google Exhibit 1004, Page 152 of 523

commercials may further contain Web URLs to direct the viewer to an advertiser's web site, where the goods can be immediately purchased. In a preferred embodiment of the present invention, the time trading agent controls the total target video stream commercial insertions per each hour of video program, in order to prevent viewers from "loading up" on commercials while no one is actually viewing the program.

In another embodiment of the present invention, not only is each household's commercial viewing time traded for credit points, but the commercials themselves may be specifically targeted based upon the household's or individual's personal marketing profile or preferences. Based on the advertising client's request to advertise to a specific demographic group, the time trading agent selects the time trading individuals who meets the demographic requirement. Then, each individual may again be screened based upon a pre-registered commercial preference list. The time trading agent then stores the target video stream commercials (or a list of the selected commercials) in a target video stream commercial server under each registered household or individual viewer's ID#. When the household or individual viewer accesses the time trading viewing environment, the target video stream commercials are sent to the viewer's local storage based on a separately controlled priority set-up and any special target video stream commercial insert instructions. The commercials may then be viewed locally at the viewer's direction. A viewing log of the target video stream commercials is monitored by the time trading agent to protect the advertising client's investment and to report the actual hit rate.

An exemplary flowchart of one implementation of the present invention is shown in Figure 3. When a viewer accesses the system, the system verifies that the viewer is registered (step 30). If the viewer is registered, the time trading server selects commercials for download based on the viewer's demographic profile and selected preferences (step 32). The commercials may then be screened according to the viewer's screening preferences (step 34).

Google Exhibit 1004, Page 153 of 523

The commercials are then downloaded to the viewer's local storage area (step 36), and the time trading server monitors the actual views of the commercials (step 38). The viewer has personal control over the timing and frequency of the commercial viewing (step 40, 44). Once the viewer watches a commercial, the time trading server credits the viewer's account, and/or charges the advertiser. The time trading server continues monitoring (step 38), until the viewing session has ended.

In contrast to prior art systems, the present invention allows the viewer, not the network operator, to trade the commercial viewing time for fees or credit points, and allows the viewer to receive commercials directly targeted to the viewer's purchasing preferences. Therefore, targeted video stream commercials may create an environment where advertising clients pay higher per-target-individual advertising costs, but the ads will be delivered to the target demographic group, with some assurance that the ads will actually be viewed.

The time trading system may also may configured to insert commercials according to the traditional "time slot" method, in addition to the commercials selected by the viewer. Furthermore, the credit points may be determined based upon not just the number of commercials viewed, but also based on the type of commercials viewed.

Another feature of the present invention allows the viewers to screen or censor the commercials based upon their content. Each household or individual viewer, using the unique ID#s, can configure a commercial preferences table to control the incoming commercials. The preference table may include:

1. Censorship control - NC-17, M, R, PG13, PG, G, etc.
2. Preference and priority of commercial categories
3. Commercials with special offerings
    a. full movie offer
    b. bonus credits
    c. regular credits

Google Exhibit 1004, Page 154 of 523

d. not participating in the time trading option, but carrying other offers

i. discount product offerings

ii. rebate program offering

iii. other special offerings

In order to participate in the target video stream ad program, each ad must be reviewed by the time trading agent, and authorized with a rating. The screening feature basically screens out all the unrated commercials to protect the household or individual viewer from viewing unclassified commercials. With this feature, the viewer will be protected from the distribution of commercials carrying adult content or violence, not suitable for the household or particular individuals.

The priority scheme by which the registered target video commercials are to be distributed, using the time trading time slots, is determined based on a pre-set priority ranking of each target video stream ad, based upon criteria such as:

a. full pay-per-view movie fee or equivalent credit point offer

b. partial movie fee or equivalent credit point offer

i. bonus fee/points when the viewer sees the target video stream ad

ii. additional fee/bonus if the viewer answers interactive questions as a part of the ad viewing

iii. additional fee/bonus if the viewer agrees to contact regional sales representative after ad viewing

c. base fee or equivalent base credit point offer

d. not participating in the credit program, but carrying other offers

e. no special offers

In a preferred embodiment, no membership fee is assessed to each household. For subscription based services, it is preferred that each household

Google Exhibit 1004, Page 155 of 523

or individual viewer sign-up with the paid subscription service, and then register the subscription with the household's account number and the household or individual viewer's ID# with the time trading agent. The time trading agent acts as a payment service, paying the viewer's subscription and deducting the fee or equivalent credit points used by the household or individual viewer during the month. The time trading agent then provides a monthly statement including the total time traded, the total target video stream commercials viewed, total earnings, usage and ending balance of income or credits earned for each user ID#.

Various fees may be assessed to the advertising clients, including an initial fee to provide a commercial rating and to register the commercial with the system. Additional fees may include:

a. base target video stream ad fee is assessed to all registered target ads based on actual distribution

b. target video stream ad that offers a full movie privilege pays for the entire movie that ad sponsors

c. target video stream ad that offers a bonus fee/credit points will pay a premium based on the bonus/priority package selected

d. target video stream ad that requests a viewer to answer questions, pays an additional bonus fee or credit points when the questions are answered

e. target video stream ad that requests a viewer to contact the regional sales representative pays additional bonus fee or credit points when the viewer agrees to have the representative contact the viewer

f. target video stream ad that offers a standard fee or credit points will pay a premium based on the standard package

g. the fee structure may include premiums based on the actual time that the target video stream ad is viewed

h. the number of web "hits" produced by each commercial having an embedded URL and/or the actual number of purchases

i. advertisers pay premium for enhanced priority

Google Exhibit 1004, Page 156 of 523

Moreover, additional fees can be assessed for reporting services. Each advertising client can purchase various reports, including:

a. target video stream ad rating – all participating advertising clients

b. target video stream ad screening – overall analysis of viewer's preferences for commercial screening and advertising client's position

c. target video stream ad result – targeted demographic analysis, selected individuals, actual individuals that target video stream ads are distributed to

d. recommendation for enhancing the advertising client's target video stream ad's ability to reach more of the targeted demographic group

e. analysis of viewer's actual spending vs target video stream ad viewing

The client management server 14 performs client management tasks, including:

- user ID# registration management
- paid subscription or pay-per-view contract, and account balance management for each ID#
- paid programming access control or censorship management for each ID#
- commercial censorship management for each ID#
- commercial screening table management for each ID#
- internet access censorship management for each ID#
- viewer's paid programming viewing log management for each ID#
- viewer's Internet access log management for each ID#
- time trading set up menu management for each ID#
- time trading account management for each ID#
- target video stream ad insertion instruction management for each ID
- target video stream ad viewing log management for each ID#

Google Exhibit 1004, Page 157 of 523

The target video stream ad management server 16 manages the time trading functions, including:

- video stream file management
- target video stream ad target demographic management
- advertising client contract and account balance management
- bonus program management for each client
- special promotional offering management
- target video stream ad rating management
- master user profile management
- master commercial screening table management
- outstanding target video stream ad listing management based on priority
- target video stream ad hit log management by ID#, user profile and demographic group

Those skilled in the art will appreciate that various adaptations and modifications of the just-described embodiments can be configured without departing from the scope and spirit of the invention. Therefore, it is to be understood that, within the scope of the appended claims, the invention may be practiced other than as specifically described herein.

Google Exhibit 1004, Page 158 of 523

WHAT IS CLAIMED IS:

1. A method for providing video commercial advertisements, the method comprising:

downloading video commercial advertisements to a viewer;

monitoring the viewer's commercial advertisement viewing; and

crediting a viewer's account for commercial advertisements actually viewed.

2. The method of Claim 1, further comprising registering the viewer before downloading any commercial advertisements.

3. The method of Claim 2, wherein registering comprises creating a demographic profile of the viewer.

4. The method of Claim 3, wherein registering comprises creating a viewer preference list.

5. The method of Claim 2, wherein the downloaded video commercial advertisements are stored in a viewer's local data storage area.

6. The method of Claim 5, wherein the viewer's local data storage area is a data storage area on the Internet controlled by the viewer.

7. The method of Claim 5, wherein the time and frequency of viewing the commercial advertisements are controlled by the viewer.

8. The method of Claim 7, wherein the commercial advertisements are inserted into programming automatically, based upon a viewer's agreement.

Google Exhibit 1004, Page 159 of 523

9. The method of Claim 8, wherein the viewer's commercial advertisement viewing is controlled to prevent continuous commercial viewing.

10. The method of Claim 4, wherein the commercial advertisements are targeted to the viewer based upon the viewer's demographic profile and/or preference list.

11. The method of Claim 9, wherein the commercial advertisements are downloaded from the Internet, and the commercial viewing is monitored via the Internet.

12. The method of Claim 11, wherein the commercial advertisements contain world-wide-web (WWW) addresses (URLs).

13. The method of Claim 11, wherein the commercial advertisements contain interactive questions for the viewer.

14. The method of Claim 1, further comprising redeeming the credits as payment for one of pay-per-view service, paid television subscription service, and Internet services.

15. The method of Claim 1, further comprising generating reports on the frequency of viewing and viewer demographic data for each commercial.

16. The method of Claim 5, wherein the commercial advertisements are screened based on the viewer's preferences.

17. A system that provides viewer selection of a quantity of commercial video advertisements to view, the system comprising:

a video display;

Google Exhibit 1004, Page 160 of 523

an Internet browser device connected to the Internet and the video display device;

a local storage area; and

a time trading management server.

18. The system of Claim 19, wherein the time trading management server downloads video commercial advertisements to a viewer's local storage area.

19. The system of Claim 18, wherein the time trading management server monitors the viewer's commercial advertisement viewing.

20. The system of Claim 19, wherein the time trading management server credits a viewer's account balance for commercial advertisements actually viewed.

21. The system of Claim 20, wherein the time trading management server comprises a client management server and a target video ad management server.

22. The system of Claim 20, wherein the system further includes a connection to a television programming broadcast system.

23. A method for generating commercial video advertisement revenue, the method comprising:

downloading video commercial advertisements to a viewer;

monitoring the viewer's commercial advertisement viewing; and

charging an advertiser for commercial advertisements actually viewed by the viewer.

Google Exhibit 1004, Page 161 of 523

24. The method of Claim 23, wherein the viewer controls the viewing time and frequency of the commercial advertisements.

25. The method of Claim 23, further comprising charging an advertiser for reports of viewing statistics of the advertiser's commercial advertisements.

26. A method for allowing viewers to select a quantity of commercial video advertisements to view, the method comprising:

registering a viewer, wherein registering comprises creating a demographic profile of the viewer;

downloading at least one video commercial advertisement to the registered viewer;

monitoring the viewer's commercial advertisement viewing; and

crediting a viewer's account for commercial advertisements actually viewed,

wherein the at least one video commercial advertisement is viewed according to the viewer's instruction.

27. The method of Claim 26, wherein the viewer controls the time and frequency of commercial advertisement viewing.

28. The method of Claim 27, wherein the commercial advertisements are screened based upon the viewer's preferences.

29. The method of Claim 27, wherein the commercial advertisements are targeted based upon the viewer's demographic profile. 30. The method of Claim 26, wherein the commercial advertisements are downloaded to the viewer via the Internet, and the viewer's commercial viewing data is monitored via the Internet.

Google Exhibit 1004, Page 162 of 523

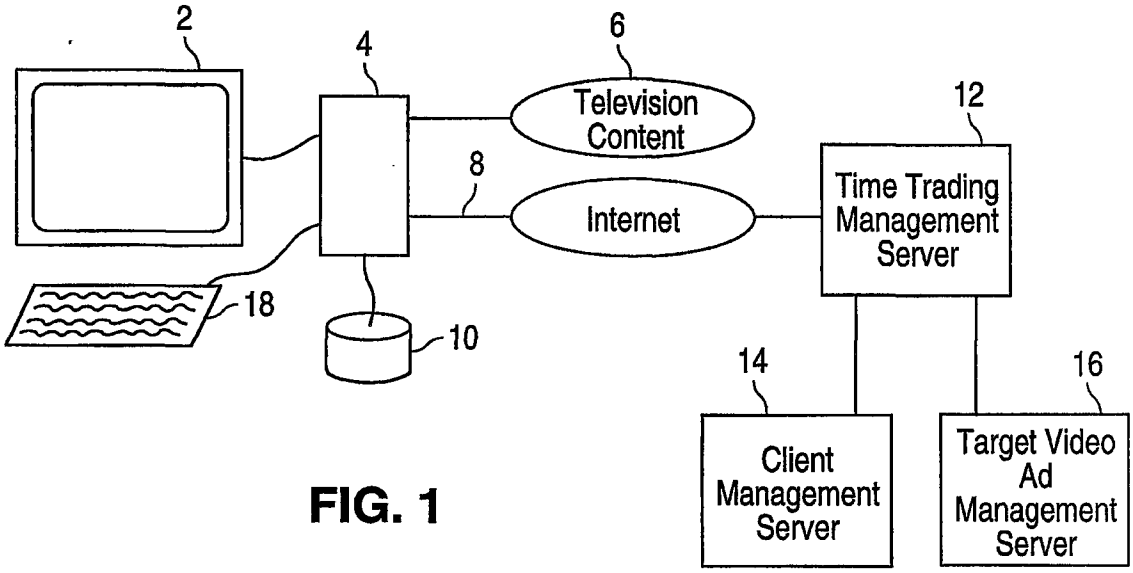


FIG. 1

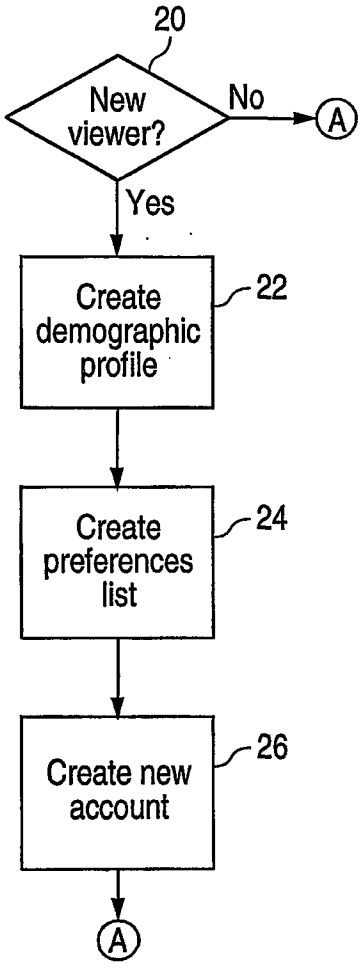


FIG. 2

Google Exhibit 1004, Page 163 of 523

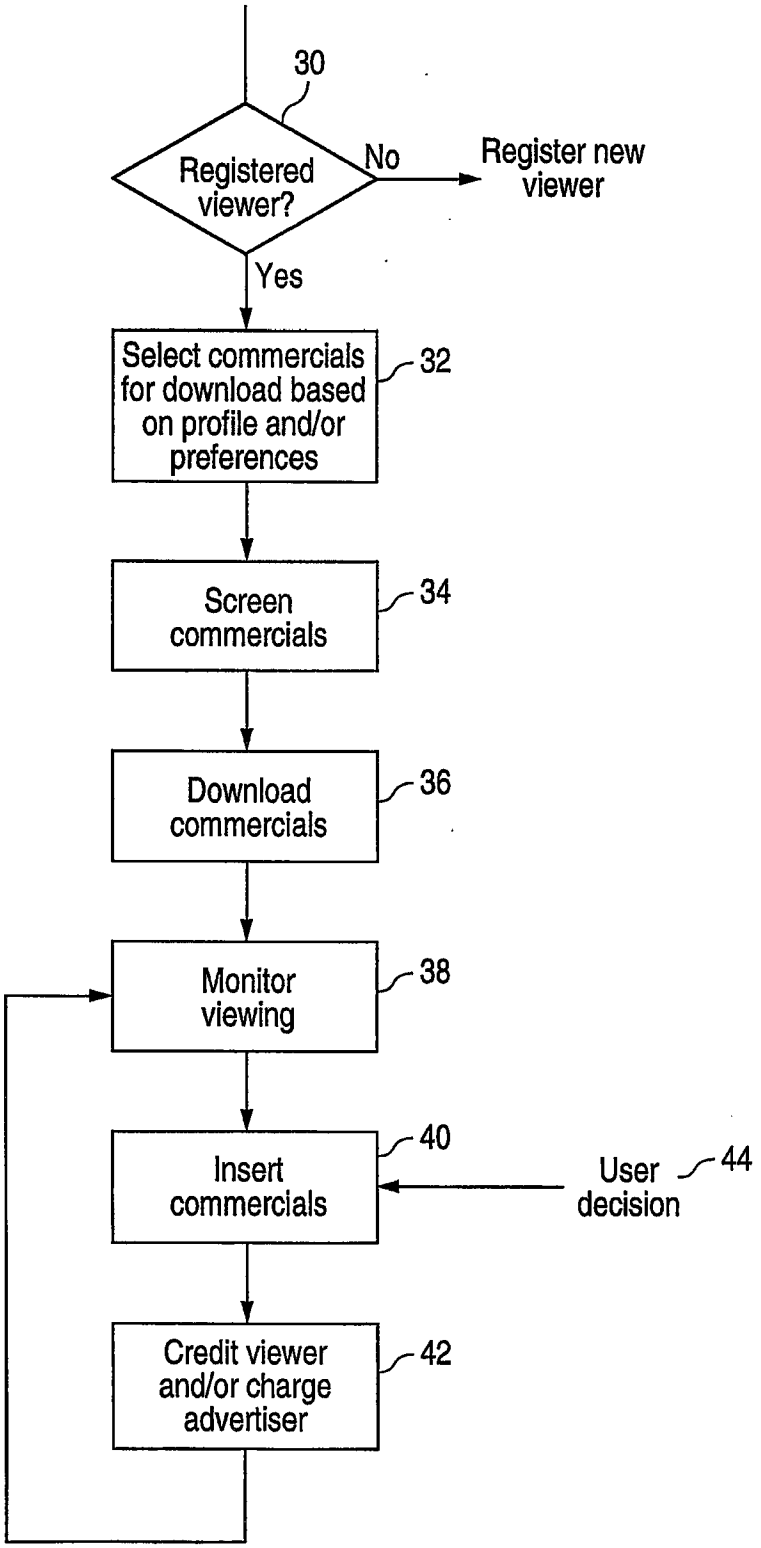


FIG. 3

Google Exhibit 1004, Page 164 of 523

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/30563

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :HO4N 5/445; G06F 3/00, 13/00
US CL :725/46, 45, 44, 42, 40, 38, 51, 61, 86
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 725/46, 45, 44, 42, 40, 38, 51, 61, 86

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST - advertisements, commercials, download, profiles, preferences, viewer, user

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,926,624 A (LEMOLE et al) 28 December 1999, col. 1, lines 57-67, col. 2, lines 1-55; col. 3, lines 16-67, col. 4, lines 1-67, col. 5, lines 1-66	1-30
A	US 6,016,509 A (DEDRICK) 18 January 2000	1-30
A	US 6,014,502 A (MORAES) 11 January 2000	1-30

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 03 JANUARY 2001	Date of mailing of the international search report 05 JUN 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer ANDY FAILE Telephone No. (703) 305 - 4380

Form PCT/ISA/210 (second sheet) (July 1998)★

Google Exhibit 1004, Page 165 of 523

Electronic Acknowledgement Receipt

EFS ID:	16210279
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	Darin J. Gibby/Connie Larson
Filer Authorized By:	Darin J. Gibby
Attorney Docket Number:	95770-876349
Receipt Date:	01-JUL-2013
Filing Date:	
Time Stamp:	19:01:23
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		95770-876349-sids.pdf	915835 9c555d9e317de047ceae8f081a042a8abc5c08d9	yes	26

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	2
	Information Disclosure Statement (IDS) Form (SB08)	3	3
	Foreign Reference	4	26
Warnings:			
Information:			
	Total Files Size (in bytes):	915835	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on July 1, 2013.

KILPATRICK TOWNSEND & STOCKTON LLP

By: /connie larson/
Connie Larson

PATENT
Attorney Docket No.: 95770-876349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Alistair Bruce Kelman

Application No.: 13/990,372

Filed: Not Yet Assigned

For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Customer No. 20350

Confirmation No: 2819

Examiner: Not Yet Assigned

Art Unit: Not Yet Assigned

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.97 and §1.98

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The references cited on attached form PTO/SB/08A are being called to the attention of the Examiner. Copies of the foreign references are enclosed. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Applicant believes that no fee is required for submission of this statement, since it is being submitted prior to the first Office Action. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,

/darin j gibby/
Darin J. Gibby
Reg. No. 38,464

KILPATRICK TOWNSEND & STOCKTON LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: 303-571-4000
Fax: 303-571-4321
DJG/cl

65533269V.1

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
13/990,372	Alistair Bruce Kelman	95770-876349

20350
KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

INTERNATIONAL APPLICATION NO.	
PCT/GB11/52259	
I.A. FILING DATE	PRIORITY DATE
11/18/2011	12/01/2010

CONFIRMATION NO. 2819
371 ACCEPTANCE LETTER

OC000000063324218

Date Mailed: 08/21/2013

NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office in its capacity as a Designated / Elected Office (37 CFR 1.495), has determined that the above identified international application has met the requirements of 35 U.S.C. 371, and is ACCEPTED for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above and the relevant dates are:

05/29/2013	05/29/2013
DATE OF RECEIPT OF 35 U.S.C. 371(c)(1), (c)(2) and (c)(4) REQUIREMENTS	DATE OF COMPLETION OF ALL 35 U.S.C. 371 REQUIREMENTS

A Filing Receipt (PTO-103X) will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE " FILING DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1), (c)(2) and (c)(4) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN ABOVE.** *The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363).* Once the Filing Receipt has been received, send all correspondence to the Group Art Unit designated thereon.

The following items have been received:

- Indication of Small Entity Status
- Copy of the International Application filed on 05/29/2013
- English Translation of the IA filed on 05/29/2013
- Copy of the International Search Report filed on 05/29/2013
- Copy of IPE Report filed on 05/29/2013
- Preliminary Amendments filed on 05/29/2013
- Information Disclosure Statements filed on 05/29/2013
- Oath or Declaration filed on 05/29/2013
- Small Entity Statement filed on 05/29/2013
- Request for Immediate Examination filed on 05/29/2013
- U.S. Basic National Fees filed on 05/29/2013
- Priority Documents filed on 05/29/2013
- Power of Attorney filed on 05/29/2013
- Authorization to Permit Access filed on 05/29/2013

Google Exhibit 1004, Page 170 of 523

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

PATRICIA A BOOKER

Telephone: (571) 272-3882

Google Exhibit 1004, Page 171 of 523

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/990,372	05/29/2013		740	95770-876349	11	1

CONFIRMATION NO. 2819

20350
KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

FILING RECEIPT

OC000000063324217

Date Mailed: 08/21/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Alistair Bruce Kelman, London, UNITED KINGDOM;

Applicant(s)

Alistair Bruce Kelman, London, UNITED KINGDOM;

Power of Attorney: The patent practitioners associated with Customer Number 20350

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/GB11/52259 11/18/2011

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
UNITED KINGDOM 1020361.0 12/01/2010 No Access Code Provided

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 08/19/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/990,372**

Projected Publication Date: 11/28/2013

Non-Publication Request: No

Early Publication Request: No
** **SMALL ENTITY** **

Google Exhibit 1004, Page 172 of 523

Title

SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where

Google Exhibit 1004, Page 173 of 523

the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

Google Exhibit 1004, Page 174 of 523

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/990,372

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	140		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	240		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	11 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	740		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349

CONFIRMATION NO. 2819

20350
KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

PUBLICATION NOTICE

OC00000065271170

Title:SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Publication No.US-2013-0318548-A1
Publication Date:11/28/2013

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Google Exhibit 1004, Page 176 of 523

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 04/28/2014

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
KIM, WILLIAM JW	

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
04/28/2014	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com
mcollins@kilpatricktownsend.com

Office Action Summary	Application No. 13/990,372	Applicant(s) KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	Art Unit 2421	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05/29/2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-11* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-11* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *05/29/2013* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☒ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

The present application is being examined under the pre-AIA first to invent provisions.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 01 July 2013 and 29 May 2013 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Priority

Receipt is acknowledged of certified copies of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Examiner's Comments

The Examiner respectfully draws attention to MPEP 714 (c) (2)-(3) which states:

- (c) *Claims.* Amendments to a claim must be made by rewriting the entire claim with all changes (*e.g.*, additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).

- ...

  - (2) *When claim text with markings is required.* All claims being currently amended in an amendment paper shall be presented in the claim listing, indicate a status of "currently

amended," and be submitted with markings to indicate the changes that have been made relative to the immediate prior version of the claims. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. Only claims having the status of "currently amended," or "withdrawn" if also being amended, shall include markings. If a withdrawn claim is currently amended, its status in the claim listing may be identified as "withdrawn---- currently amended."

- (3) *When claim text in clean version is required.* The text of all pending claims not being currently amended shall be presented in the claim listing in clean version, *i.e.*, without any markings in the presentation of text. The presentation of a clean version of any claim having the status of "original," "withdrawn" or "previously presented" will constitute an assertion that it has not been changed relative to the immediate prior version, except to omit markings that may have been present in the immediate prior version of the claims of the status of "withdrawn" or "previously presented." Any claim added by amendment must be indicated with the status of "new" and presented in clean version, *i.e.*, without any underlining.

The Examiner notes that the Preliminary Amendments filed on 29 May 2013 list several instances of Claims as (Original) that feature significant differences from the corresponding Claims in the original set of Claims field on 29 May 2013 (and present in the parent GB 1020361.0 Foreign Application). In particular, Claims 1-4, are marked as (Original), but feature considerably different claim language from the respective original Claims. While the Examiner will continue examination of the Application with the claims as written in the Preliminary Amendments, the Examiner requests that the Applicant be mindful of properly addressing and indicating any future amendments during the course of Prosecution.

Claim Objections

Claims 1 and 11 are objected to because of the following informalities:

- Claim 1 recites “advertisement supply means... to ***at least one broadcasting regulation***” which may or may not refer to the "local broadcasting regulations" cited in the preamble of the claim. While Examiner will continue examination under the assumption that the claim element does indeed refer to the "local broadcasting regulations", Examiner recommends amending the claim language to recite: “advertisement supply means... to ***at least one local broadcasting regulation***
- Claim 1 recites “rules database... to ***said local broadcasting regulations***” which likely refers to "the at least one (local) broadcasting regulation" as noted above. As the preceding claim element can possibly refer to a single broadcasting regulation, Examiner recommends amending the claim language to recite: “rules database... to ***said at least one local broadcasting regulation***”
- Claim 1 recites “control means…to apply ***said at least one regulation***..." Similar to the previously noted objections, Examiner recommends amending the claim language to recite: “control means…to apply ***said at least one local broadcasting regulation***..."
- Claim 1 recites “control means…to apply said at least one regulation to each advertisement before ***it*** is shown". As currently presented, ‘it’ is ambiguously referring to the advertisement or the at least one regulation. Contextually, Examiner will assume that 'it' refers to 'each advertisement', and will continue

examination under this assumption. However, Examiner recommends amending the claim language to clarify the matter.

- Claim 11 recites "..a Personal Video Recorder according to Claim 1". There is no personal video recorder recited in Claim 1. Examiner suspects Claim 11 should depend off of Claim 8 which does recite a Personal Video Recording according to Claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by **Poel et al. (GB 2464630 A)** (as supplied by the IDS filed 29 May 2013 – hereinafter Poel).

Regarding Claim 1, Poel discloses a system for automating compliance with local broadcasting regulations applicable to advertisements, said advertisements being provided during time-shifted viewing/listening **[Figs. 1-2; pg. 1, lines 1-5: STB has data storage means; pg. 7, line 21 – pg. 8, line 3: DFA (digital feed assembler) of STB decrypts signals received by STB and may insert ads into the programs shown; pg. 12, lines 1-7: user of a STB may request a program at some point in**

time, but not view it until a later date (i.e., may provide time-shift viewing/listening functions] comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements; **[Figs. 1-4A; pg. 1, lines 11-25: STB may receive broadcast video/audio channels; pg. 4, line 19-23: content provider 44; pg. 6, line 25 - pg. 7, line 23: content provider may provide broadcast content to STB, whereby the STB may store the content; pg. 8, lines 17-27: where conventional TV programmes are divided into parts separated by timeslots 72 which are filled with ads by the DFA]**

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header related to at least one broadcasting regulation; **[Figs. 1-4A; pg. 3, lines 19-24: advertiser provides at least one ad to an ad database where the ads have at least one limitation on time of showing, and are inserted into TV programs according to the limitations; pg. 8, lines 17-27: where conventional TV programmes are divided into parts separated by timeslots 72 which are filled with ads by the DFA]**

rules database means containing rules relating to said local broadcasting regulations; **[Figs. 1-2, 6; pg. 4, line 27 – pg. 5, line 8: ad database stores ads, where ad can set criteria for recipients of an ad; pg. 8, lines 6-15: STB may access and download ads onto a local storage/database, where each ad has a date code and time code associated with it; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad]**

clock means to supply a real-time clock signal; **[pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]** and

control means arranged to read said headers and said clock signal and said rules database and to apply said at least one regulation to each advertisement before it is shown. **[Figs. 1-4A; pg. 5, lines 14-19: DFA interleaves ads and television signals; pg. 8, lines 22-27: DFA selects one or more ads stored to insert into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]**

Regarding Claim 2, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which said at least one local broadcasting regulation forbids the provision of certain types of advertisement before a certain time of day, **[pg. 11, lines 27-32: ads may include codes that prevent showing before some certain time]** the header includes a keyword, and the control means checks the keyword against the rules database. **[pg. 8, lines 11-15: ads with codes matching**

characteristics of personal data may be selectively downloaded; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad; pg. 10, lines 5-14: where ads may send extracted records (target groups) along with the advertisements, where the system uses said information to determine to which users/STBs to send the particular ads]

Regarding Claim 3, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which said at least one local broadcasting regulation forbids the provision of certain types of advertisement before a certain time of day, **[pg. 11, lines 27-32: ads may include codes that prevent showing before some certain time]** and the header indicates a time of day validity. **[Figs. 1-2, 6; pg. 4, line 27 – pg. 5, line 8: ad database stores ads, where ad can set criteria for recipients of an ad; pg. 8, lines 6-15: where each ad has a date code and time code associated with it; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad]**

Regarding Claim 4, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which said at least one local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and the header indicates a day of the week validity. **[pg. 8, lines 6-15: where**

each ad has a date code and time code associated with it; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad; pg. 12, lines 18-20: where an ad may be specified to be shown on specific days of the week (like Tuesdays, as in the example provided)]

Regarding Claim 5, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which the advertisements include interactive advertisements to which a response by a consumer is requested. **[Fig. 8; pg. 14, lines 6-13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device)]**

Regarding Claim 6, Poel discloses all the limitations of Claim 5, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses a system according to claim 5 in which a response by a consumer is rewarded by money or money's worth. **[Fig. 8; pg. 13, line8 - pg. 14, line 13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device) in order to receive some voucher or other payment/reward]**

Regarding Claim 8, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses a Personal Video Recorder (PVR) for use in a system according to claim 1 **[Fig. 1; pg. 2, lines 1-7: STB may record broadcast programs in a storage for later viewing – i.e., the STB effectively functions as a PVR]** , comprising data storage means **[pg. 3, lines 1-7: STB has data storage means]**, input connection means for connection to a source of video/audio signals and a real-time clock signal **[pg. 3, lines 1-7: STB has input connection means for connecting to a video/audio signal source; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]**; and output means for connection to a consumer's viewing/listening unit; **[pg. 3, lines 1-7: STB has output means for connecting to a viewing unit]** in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers. **[pg. 2, lines 1-7: STB may record broadcast programs in a storage for later viewing; pg. 8, lines 6-15: STB may access and download ads onto a local storage/database, where each ad has a date code and time code associated with it]**

Regarding Claim 9, Poel discloses all the limitations of Claim 8, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses the PVR according to claim 8 arranged to read the real-time clock, to read the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal. **[Figs. 1-4A; pg. 5, lines 14-19: DFA interleaves ads and television signals; pg. 8, lines 22-27: DFA of STB (as noted above, the STB functions as a PVR) selects one or more ads stored to insert into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]**

Regarding Claim 10, Poel discloses all the limitations of Claim 9, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses the PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response. **[Fig. 8; pg. 14, lines 6-13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device) to ensure a user has actually watched the ad; pg. 13, line 24-26: STB/PVR records when a consumer has viewed an inserted ad]**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 7 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **Poel** as applied to Claim 1 above, and further in view of

Regarding Claim 7, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Poel fails to explicitly disclose in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

Hane, in analogous art teaches in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme

between periodic breaks and the duration of the next periodic break. **[0009: where 'local programming' may be local advertisements; 0067-69: programming may be received where programming information includes cue data that provide notice/timing of 'local segments', where cue data may be used to generate an avail profile that identifies the program, length of local program segments, timing for local program segments, and tone timing and patterns for each monitored program channel – i.e., broadcast data may include information of duration of each segment of the program as well as the duration of each ad break]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel with the teachings of Hane to include in the broadcast data information regarding duration of each segment of a program and the duration of the next periodic break in order to allow for efficient transmission of local programming to particular geographic areas or markets. **[Hane – 0015]**

Claim 11 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **Poel** as applied to Claim 1 above, and further in view of **Dureau et al. (US 2002/0015093 A1)** (hereinafter Dureau).

Regarding Claim 11, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Poel fails to explicitly disclose a television set incorporating a Personal Video Recorder according to Claim 1.

Dureau, in analogous art, teaches wherein a television set may be incorporated with a PVR. **[0036]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel with the teachings of Dureau to incorporate a PVR within a television set as it is widely understood in the art that a receiver-decoder device may be integrated within a monolithic television apparatus or as a separate apparatus from a television. **[Dureau – 0036]**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J. KIM whose telephone number is (571)272-2767. The examiner can normally be reached on M-F: 8:30am - 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. J. K./
Examiner, Art Unit 2421

Notice of References Cited	Application/Control No. 13/990,372	Applicant(s)/Patent Under Reexamination KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	Art Unit 2421	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2002/0015093	02-2002	Dureau et al.	348/38
*	B	US-2004/0205829	10-2004	Hane, John K III.	725/135
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 2819

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/990,372	05/29/2013	725	2421	95770-876349

APPLICANTS

INVENTORS

Alistair Bruce Kelman, London, UNITED KINGDOM;

**** CONTINUING DATA ***************************

This application is a 371 of PCT/GB11/52259 11/18/2011

**** FOREIGN APPLICATIONS ***************************

UNITED KINGDOM 1020361.0 12/01/2010

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **

08/19/2013

Foreign Priority claimed	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
☑ Yes ☐ No	UNITED KINGDOM	8	11	1

35 USC 119(a-d) conditions met ☑ Yes ☐ No ☐ Met after Allowance

Verified and Acknowledged /William J Kim/ Examiner's Signature _____ Initials

ADDRESS

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834
UNITED STATES

TITLE

SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

FILING FEE RECEIVED		
740	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2014/04/16 17:08
L2	382	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L3	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2014/04/16 17:08
L4	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L5	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L6	1446	(TV television) with (incorporated built$1in built adj in) with (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L7	509	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L8	125	L7 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L9	89	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L10	2	(TV television) near3 (program) same (avail) same segment same (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L11	35	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L12	8	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L13	17	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08

L14	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L15	56	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L16	34	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L17	21	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L18	19	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L19	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L20	10	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L21	37	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L22	29	(avail) with (duration length) and (segment) near3 (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L23	11	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L24	414	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L25	2	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L26	3895	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L27	7	L26 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L28	335	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO;	OR	ON	2014/04/16 17:08

			DERWENT			
L29	0	L28 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L30	2387	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L31	10	L30 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L32	2049	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L33	78	L32 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L34	1596	H04N21/458.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L35	40	L34 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L36	175	L34 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L37	466	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08
L38	93	L37 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/04/16 17:08

4/16/2014 5:10:19 PM
C:\Users\wkim1\Documents\EAST\Workspaces\13990372.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	Art Unit
	WILLIAM J KIM	2421

CPC- SEARCHED		
Symbol	Date	Examiner
H04N21/42261, 4325, 44, 44008, 44016, 458, 4784 (text search only - see search notes)	04/16/2014	WJK

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
See EAST Search Notes	04/16/2014	WJK
Inventor Search	04/16/2014	WJK
725/23	04/16/2014	WJK
725 (text search only - see search notes)	04/16/2014	WJK
725/32, 34, 36 (text search only - see search notes)	04/16/2014	WJK

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	**Art Unit**
	WILLIAM J KIM	2421

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	04/16/2014								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	13/990,372
Filing Date	
First Named Inventor	Alistair Bruce Kelman
Art Unit	
Examiner Name	
Attorney Docket Number	95770-876349

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US-2007/0288951	12-13-2007	Ray et al.	
	AB	US-2003/0121037	6-26-2003	Swix et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	AC	PCT WO2001/82597 A1	11-1-2001	Harada		☐
	AD					☐

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	AE		☐

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

/William Kim/ 04/16/2014

ALL REFERENCES CONSIDERED EXCEPT WHERE INDICATED, THE EXAMINER

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	Alistair Bruce Kelman
Art Unit	
Examiner Name	
Attorney Docket Number	95770-876349

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US-2010/0054707	3-4-2010	Karaoguz et al.	
	AB	US-2003/0066078	4-3-2003	Bjorgan et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]	Number[4]	Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
	AC	PCT	WO2007/119125	A1	10-25-2007	Krzysziof, L. Godzwon		☐
	AD	GB	2464630	A	4-28-2010	IncenTV Ltd		☐

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
	AE	International Search Report and Written Opinion of PCT/GB2011/052259 mailed on February 13, 2012, 12 pages.	☐

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

/William Kim/ 04/16/2014

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /WK./

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on June 25, 2014.

KILPATRICK TOWNSEND and STOCKTON LLP

By: /connie larson/
Connie Larson

PATENT
Attorney Docket No.: 95770-876349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No. 2819
Alistair Bruce Kelman	Examiner: William JW Kim
Application No.: 13/990,372	Technology Center/Art Unit: 2421
Filed: May 29, 2013	AMENDMENT
For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	
Customer No.: 20350	

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action having a mailing date of April 28, 2014, please enter the following amendments and remarks:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 4 of this paper.

Google Exhibit 1004, Page 202 of 523

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A system for automating compliance with local broadcasting regulations applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header related to **a local ~~at least one~~** broadcasting **time** regulation **which restricts the time of day at which said advertisement may be shown**;

rules database means containing rules relating to said local broadcasting regulation**[[s]]**;

clock means to supply a real-time clock signal; and

control means arranged to read said headers and said clock signal and said rules database and to apply said **local broadcasting time ~~at least one~~** regulation to each advertisement before **said advertisement [[it]]** is shown.

2. (Currently amended) A system according to claim 1 in which **~~said at least one local broadcasting regulation forbids the provision of certain types of advertisement before a certain time of day, the~~ each** header includes a keyword, and the control means checks the keyword against the rules database.

3. (Cancelled).

4. (Currently amended) A system according to claim **2 [[1]]** in which **a further ~~said at least one~~** local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and **each [[the]]** header **further** indicates a day of the week validity.

 Google Exhibit 1004, Page 203 of 523

5. Previously presented) A system according to claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.

6. (Previously presented) A system according to claim 5 in which a response by a consumer is rewarded by money or money's worth.

7. (Previously presented) A system according to claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

8. (Previously presented) A Personal Video Recorder (PVR) for use in a system according to claim 1 comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

9. (Previously presented) A PVR according to claim 8 arranged to read the real-time clock, to read the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.

10. (Previously presented) A PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

11. (Currently amended) A television set incorporating a Personal Video Recorder according to claim **8** **[[1]]**.

 Google Exhibit 1004, Page 204 of 523

REMARKS

Claims 1, 2, 4 and 11 have been amended and claim 3 has been canceled. Reconsideration of the claims, as amended, is respectfully requested.

Claim Objections

Claims 1 and 11 have been objected to for varies informalities. The Applicant wishes to thank the Examiner for the helpful comments on the wording of claim 1, which has been amended in line with the Examiner's suggestions. The dependency of claim 11 has also been corrected as suggested. Hence, these objections are overcome.

Claim Rejections – 35 USC § 102

Claims 1-6 and 8-10 have been rejected under 35 USC § 102(b) as being anticipated by Poel. Applicant respectfully disagrees as more fully set forth below.

In order to anticipate a claim, the cited reference must disclose all claim limitations. Because the Poel reference fails to teach several important features in claim 1, the rejection under 35 USC § 102(b) is improper.

For example, while Poel may disclose a system for providing advertisements during time-shifted viewing/listening, Poel fails to describe the following limitations:

A system for automating compliance with local broadcasting regulations;

A rules database;

Clock means to supply a real-time clock signal;

Control means to compare headers and a clock signal and a database; and

Means to apply a regulation to each advert before it is shown [at a real time].

Further, the words "broadcasting" and "regulations" do not appear in the text of Poel at all. The headers are not related to any broadcasting regulation. Further, the database is a database of advertisements, and does not contain rules relating to local broadcasting regulations. Thus claim 1 is clearly distinguishable over the disclosure of Poel without amendment.

However, to emphasize the importance of the inventive application of local broadcasting regulations to advertisements in time-shifted programmes, and the novel

Google Exhibit 1004, Page 205 of 523

application of a real-time clock signal in this application, claim 1 has been amended to limit its scope to local broadcasting regulations which forbid the showing of certain advertisements at certain real times of day. The amendment incorporates the wording of former claim 3 and some of the wording of claim 2 into claim 1, and former claim 3 has been deleted. Because this feature is not described in Poel, claim 1 as now amended is further distinguishable. Claims 2, 4-6 and 8-10 depend from claim 1 and are distinguishable for at least the same reasons.

With further regard to the rejection of claim 2, the Office Action's rejection clearly shows that the limitations on time and date are set by the advertisers who provide the advertisements, and not by local regulations. The advertisers set rules such as not showing an advertisement more than once in three days, or showing an advertisement only before e.g., Christmas day. Poel discloses the checking of keywords against a database, but that database is of personal characteristics of target groups for the advertisements, as is made clear in the quoted passage from pages 9 and 10. Hence, claim 2 which claims that the header includes a key word and that the control means checks the key word against the rules database, is distinguishable for this additional reason.

With regard to claim 4, Poel contains no disclosure of any local broadcasting regulation. Hence, claim 4 is distinguishable for this additional reason.

Claim Rejections – 35 USC § 103

Claim 7 has been rejected under 35 USC § 103(a) as being unpatentable over Poel as applied to claim 1, and further in view of Hane. Claim 7 depends from claim 1 which is distinguishable over Poel. Because Hane also fails to teach the limitations of claim 1, claim 7 is distinguishable and in condition for allowance.

Claim 11 has been rejected under pre-AIA 35 USC § 103(a) as being unpatentable over Poel as applied to claim 1, and further in view of Dureau. Claim 11 depends from claim 1 and is also distinguishable for at least the reasons given in connection with claim 1.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Google Exhibit 1004, Page 206 of 523

Further, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment in connection with this paper to Deposit Account No. 20-1430.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

/darin j gibby/
Darin J. Gibby
Reg. No. 38,464

KILPATRICK TOWNSEND and STOCKTON LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 303-571-4000
Fax: 415-576-0300
DJG/cl

66346495V.1

 Google Exhibit 1004, Page 207 of 523

Electronic Acknowledgement Receipt

EFS ID:	19413215
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	Darin J. Gibby/Connie Larson
Filer Authorized By:	Darin J. Gibby
Attorney Docket Number:	95770-876349
Receipt Date:	25-JUN-2014
Filing Date:	29-MAY-2013
Time Stamp:	17:47:31
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		95770-876349-amd.pdf	231904 99109aeff9e1b78ae461652fde00c79e17d1968b	yes	6

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	3
	Applicant Arguments/Remarks Made in an Amendment	4	6
Warnings:			
Information:			
	Total Files Size (in bytes):	231904	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/990,372	Filing Date 05/29/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **06/25/2014**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 10	Minus	** 20	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/LASHAWN MORGAN/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 08/18/2014

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
KIM, WILLIAM JW	

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
08/18/2014	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com

Office Action Summary	Application No. 13/990,372	Applicant(s) KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	Art Unit 2421	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/25/2014*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1,2 and 4-11* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1,2 and 4-11* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *05/29/2013* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☒ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

The present application is being examined under the pre-AIA first to invent provisions.

Response to Arguments

In light of the Amendments to the claims, the former Claim Objections to Claims 1 and 11 have been withdrawn.

Applicant's arguments filed 25 June 2014 have been fully considered but they are not persuasive.

Regarding Applicant's arguments that Poel fails to teach the various limitations of the claims (see Remarks, pg. 4, ¶4- pg. 5, ¶3), the Examiner respectfully disagrees. In particular, Applicant alleges that Poel fails to disclose:

1) A system for automating compliance with local broadcasting regulations;

2) A rules database;

3) Clock means to supply a real-time clock-signal;

4) Control means to compare headers and a clock signal and a database; and

5) Means to apply a regulation to each advert before it is shown [at a real time].

In support of these allegations, Applicant notes: "the words 'broadcasting' and regulations' do not appear in the text of Poel at all." With regard to this particular

argument, the Examiner agrees that those particular words do not appear in the text of Poel at all. However, Examiner directs attention to MPEP 706.02 (V) that states:

> In other words, for anticipation under 35 U.S.C. 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present.

The Examiner further directs attention to MPEP 2111.01 which states:

> Under a broadest reasonable interpretation, words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification. The plain meaning of a term means the ordinary and customary meaning given to the term by those of ordinary skill in the art at the time of the invention.

With this in mind, while the word "broadcasting" in never used by Poel, **[pg. 1, lines 5-9]** clearly indicate that the invention deals with broadcast audio and television signals, and **[pg. 2, lines 1-7]** clearly indicate that the STB of the disclosure may record broadcast programs and advertisements. It would follow, to a person having ordinary skill in the art, that Poel's invention in general deals with broadcasting programs. Furthermore, The Oxford English Dictionary defines regulations as "*n.* 2. *A rule or principle governing behaviour or practice.*" In that sense, regulations would be, by its plain meaning, a rule or criterion to be followed by some practice.

It would appear from Applicant's arguments (see Remarks, pg. 5, ¶2) that the term "local broadcasting regulations" as used in the claims is *intended* to refer to regulations/laws/ordinances created by some regulatory agency with regard to broadcast content (as an example, in the United States, the Federal Communications Commission and ***47 CFR §73.3999*** which is an Enforcement of 18 U.S.C. 1464 putting

restrictions of broadcast transmission of obscene and indecent materials, where paragraph (b) specifies restrictions on times of day during which indecent material may or may not be broadcast). However, as noted in MPEP 2111.01, it is improper to import claim limitations from the specification.

Under BRI, "local broadcasting regulations" could be understood by a person having ordinary skill in the art to refer to general rules/criteria utilized/implemented upon local broadcasting content. As such under BRI, and in light of the aforementioned comments, Poel's disclosure could read on the claimed limitation as the ad criteria cited in the Non-Final Office Action, mailed out on 28 April 2014 (hereinafter, the Non-Final), particularly **[Poel - pg. 4, line 27 - pg.5, line 8; pg. 9, lines 19-29]** disclose that ad criteria (regulations) can be defined and associated with various stored ads within an ad database, where, as previously noted, Poel's disclosure corresponds to broadcast television content. Furthermore, **[Poel - pg. 12, lines 9-22]** disclose that ads may be targeted toward local residents (as opposed to nation-wide broadcast). In this sense, Poel discloses "local broadcasting regulations."

It follows then, that Poel discloses 1) A system for automating compliance with local broadcasting regulations **[Figs. 1-2, pg. 7, line 21—pg. 8, line 3];** 2) A rules database; **[Figs. 1-2, 6; pg. 4, line 27 – pg. 5, line 8: ad database stores ads, where ad can set criteria (regulations) for recipients of an ad; pg. 8, lines 6-15: STB may access and download ads onto a local storage/database, where each ad has a date code and time code associated with it; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad; pg. 12, lines 9-18: ads**

may be targeted toward only certain locations/postcodes] 3) Clock means to supply a real-time clock-signal; **[pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be implicitly understood by a person having ordinary skill in the art from the description that such an action would inherently require some clock means to determine the real time/date]** 4) Control means to compare headers and a clock signal and a database; **[Figs. 1-4A; pg. 8, lines 22-27: DFA selects one or more ads stored to insert into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be implicitly understood that some comparison of the 'real time' and the indicated ad time would be made]** and 5) Means to apply a regulation to each advert before it is shown [at a real time]. **[Figs. 1-4A; pg. 8, lines 22-27: DFA selects one or more ads stored to insert into ad time slots according to appropriate time and date indicators - where it would be implicitly understood by a person having ordinary skill in the art that such a selection/regulation of ads would occur prior to presentation of said ad]**

Regarding Applicant's arguments regarding the rejection of Claim 2 (see Remarks, pg. 5, ¶2), Applicant admits that Poel discloses comparing keywords against a database. In light of the discussion above regarding the relevance of Poel with respect to the interpretation of "local broadcasting regulations", it would follow that Poel's

comparison of keywords against a database does, in fact, teach a comparison of keywords against the database of 'rules relating to said local broadcasting regulations'.

With regard to added limitation of “restrict the time of day at which said advertisement may be shown", **Poel [pg. 11, lines 27-32]** disclose that ads may possess criteria (regulations) that prevent showing before some certain time.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-6, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by **Poel et al. (GB 2464630 A)** (as supplied by the IDS filed 29 May 2013 – hereinafter Poel).

Regarding Claim 1, Poel discloses a system for automating compliance with local broadcasting regulations applicable to advertisements, said advertisements being provided during time-shifted viewing/listening **[Figs. 1-2; pg. 1, lines 1-5: STB has data storage means; pg. 7, line 21 – pg. 8, line 3: DFA (digital feed assembler) of STB decrypts signals received by STB and may insert ads into the programs shown; pg. 12, lines 1-7: user of a STB may request a program at some point in**

time, but not view it until a later date (i.e., may provide time-shift viewing/listening functions] comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements; **[Figs. 1-4A; pg. 1, lines 11-25: STB may receive broadcast video/audio channels; pg. 4, line 19-23: content provider 44; pg. 6, line 25 - pg. 7, line 23: content provider may provide broadcast content to STB, whereby the STB may store the content; pg. 8, lines 17-27: where conventional TV programmes are divided into parts separated by timeslots 72 which are filled with ads by the DFA]**

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header related to a local broadcasting time regulation which restricts the time of day at which said advertisement may be shown; **[Figs. 1-4A; pg. 3, lines 19-24: advertiser provides at least one ad to an ad database where the ads have at least one limitation on time of showing, and are inserted into TV programs according to the limitations; pg. 8, lines 17-27: where conventional TV programmes are divided into parts separated by timeslots 72 which are filled with ads by the DFA; pg. 11, lines 27-32: ads may include codes that prevent showing before some certain time; pg. 12, lines 9-22: where ads can have criteria directed toward particular postcodes/locations]**

rules database means containing rules relating to said local broadcasting regulation; **[Figs. 1-2, 6; pg. 4, line 27 – pg. 5, line 8: ad database stores ads, where ad can set criteria (regulations) for recipients of an ad; pg. 8, lines 6-15: STB may**

access and download ads onto a local storage/database, where each ad has a date code and time code associated with it; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad]

clock means to supply a real-time clock signal; **[pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]** and

control means arranged to read said headers and said clock signal and said rules database and to apply said local broadcast regulation to each advertisement before said advertisement is shown. **[Figs. 1-4A; pg. 5, lines 14-19: DFA interleaves ads and television signals; pg. 8, lines 22-27: DFA selects one or more ads stored to insert into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date and where it would be understood that applying the criteria/regulations on the ad would occur prior to the ad being shown]**

Regarding Claim 2, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses wherein each header includes a keyword, and the control means checks the keyword against the rules database. **[pg. 8, lines 11-15: ads with codes matching characteristics of personal data may be selectively downloaded; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad; pg. 10, lines 5-14: where ads may send extracted records (target groups) along with the advertisements, where the system uses said information to determine to which users/STBs to send the particular ads]**

Regarding Claim 4, Poel discloses all the limitations of Claim 2, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity. **[pg. 8, lines 6-15: where each ad has a date code and time code associated with it; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad; pg. 12, lines 18-20: where an ad may be specified to be shown on specific days of the week (like Tuesdays, as in the example provided)]**

Regarding Claim 5, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which the advertisements include interactive advertisements to which a response by a consumer is requested. **[Fig. 8; pg. 14, lines**

6-13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device)]

Regarding Claim 6, Poel discloses all the limitations of Claim 5, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses a system according to claim 5 in which a response by a consumer is rewarded by money or money's worth. **[Fig. 8; pg. 13, line8 - pg. 14, line 13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device) in order to receive some voucher or other payment/reward]**

Regarding Claim 8, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses a Personal Video Recorder (PVR) for use in a system according to claim 1 **[Fig. 1; pg. 2, lines 1-7: STB may record broadcast programs in a storage for later viewing – i.e., the STB effectively functions as a PVR]** , comprising data storage means **[pg. 3, lines 1-7: STB has data storage means]**, input connection means for connection to a source of video/audio signals and a real-time clock signal **[pg. 3, lines 1-7: STB has input connection means for connecting to a video/audio signal source; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an**

ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]; and output means for connection to a consumer's viewing/listening unit; **[pg. 3, lines 1-7: STB has output means for connecting to a viewing unit]** in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers. **[pg. 2, lines 1-7: STB may record broadcast programs in a storage for later viewing; pg. 8, lines 6-15: STB may access and download ads onto a local storage/database, where each ad has a date code and time code associated with it]**

Regarding Claim 9, Poel discloses all the limitations of Claim 8, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses the PVR according to claim 8 arranged to read the real-time clock, to read the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal. **[Figs. 1-4A; pg. 5, lines 14-19: DFA interleaves ads and television signals; pg. 8, lines 22-27: DFA of STB (as noted above, the STB functions as a PVR) selects one or more ads stored to insert into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the**

description that such an action would necessarily require some clock means to determine the real time/date]

Regarding Claim 10, Poel discloses all the limitations of Claim 9, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses the PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response. **[Fig. 8; pg. 14, lines 6-13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device) to ensure a user has actually watched the ad; pg. 13, line 24-26: STB/PVR records when a consumer has viewed an inserted ad]**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 7 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **Poel** as applied to Claim 1 above, and further in view of

Regarding Claim 7, Poel discloses all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Poel fails to explicitly disclose in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

Hane, in analogous art teaches in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break. **[0009: where 'local programming' may be local advertisements; 0067-69: programming may be received where programming information includes cue data that provide notice/timing of 'local segments', where cue data may be used to generate an avail profile that identifies the program, length of local program segments, timing for local program segments, and tone timing and patterns for each monitored program channel – i.e., broadcast data may include information of duration of each segment of the program as well as the duration of each ad break]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel with the teachings of Hane to include in the

broadcast data information regarding duration of each segment of a program and the duration of the next periodic break in order to allow for efficient transmission of local programming to particular geographic areas or markets. **[Hane – 0015]**

Claim 11 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **Poel** as applied to Claim 1 above, and further in view of **Dureau et al. (US 2002/0015093 A1)** (hereinafter Dureau).

Regarding Claim 11, Poel discloses all the limitations of Claim 8, which are analyzed as previously discussed with respect to that claim.

Poel fails to explicitly disclose a television set incorporating a Personal Video Recorder according to Claim 1.

Dureau, in analogous art, teaches wherein a television set may be incorporated with a PVR. **[0036]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel with the teachings of Dureau to incorporate a PVR within a television set as it is widely understood in the art that a receiver-decoder device may be integrated within a monolithic television apparatus or as a separate apparatus from a television. **[Dureau – 0036]**

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J. KIM whose telephone number is (571)272-2767. The examiner can normally be reached on M-F: 8:30am - 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. J. K./
Examiner, Art Unit 2421
/NATHAN FLYNN/
Supervisory Patent Examiner, Art Unit 2421

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	**Art Unit**
	WILLIAM J KIM	2421

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	04/16/2014	08/01/2014							
	1	✓	✓							
	2	✓	✓							
	3	✓	-							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	Art Unit
	WILLIAM J KIM	2421

CPC- SEARCHED		
Symbol	Date	Examiner
H04N21/42261, 4325, 44, 44008, 44016, 458, 4784 (text search only - see search notes)	04/16/2014	WJK
Updated the above	08/01/2014	WJK

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
See EAST Search Notes	04/16/2014	WJK
Inventor Search	04/16/2014	WJK
725/23	04/16/2014	WJK
725 (text search only - see search notes)	04/16/2014	WJK
725/32, 34, 36 (text search only - see search notes)	04/16/2014	WJK
Updated the above	08/01/2014	WJK
725/27-29 (text search only - see search notes)	08/01/2014	WJK

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/01 15:02
L2	419	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L3	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/01 15:02
L4	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L5	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L6	1519	(TV television) with (incorporated built$1in built adj in) with (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L7	529	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L8	134	L7 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L9	96	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L10	2	(TV television) near3 (program) same (avail) same segment same (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L11	37	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L12	8	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L13	19	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02

Google Exhibit 1004, Page 230 of 523

L14	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L15	58	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L16	35	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L17	22	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L18	20	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L19	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L20	10	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L21	39	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L22	29	(avail) with (duration length) and (segment) near3 (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L23	11	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L24	426	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L25	2	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L26	4063	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L27	8	L26 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L28	356	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO;	OR	ON	2014/08/01 15:02

			DERWENT			
L29	0	L28 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L30	2586	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L31	10	L30 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L32	2170	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L33	84	L32 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L34	1800	H04N21/458.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L35	42	L34 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L36	185	L34 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L37	513	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L38	97	L37 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L39	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/01 15:02
L40	419	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L41	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2014/08/01 15:02
L42	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L43	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L44	1519	(TV television) with (incorporated	US-PGPUB;	OR	ON	2014/08/01

Google Exhibit 1004, Page 232 of 523

		built$1in built adj in) with (DVR PVR recorder)	USPAT; USOCR; EPO; JPO; DERWENT			15:02
L45	529	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L46	134	L45 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L47	96	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L48	2	(TV television) near3 (program) same (avail) same segment same (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L49	37	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L50	8	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L51	19	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L52	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L53	58	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L54	35	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L55	22	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L56	20	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L57	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L58	10	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02

L59	39	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L60	29	(avail) with (duration length) and (segment) near3 (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L61	11	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L62	426	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L63	2	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L64	4063	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L65	8	L64 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L66	356	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L67	0	L66 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L68	2586	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L69	10	L68 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L70	2170	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L71	84	L70 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L72	1800	H04N21/458.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L73	42	L72 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO;	OR	ON	2014/08/01 15:02

			DERWENT			
L74	185	L72 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L75	513	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L76	97	L75 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L77	49	725/27-29.ccls. and (restric$3) with (record$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L78	42	725/27-29.ccls. and (restric$3 limit$3) with (record$3) with (time)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L79	1	725/29.ccls. and (record$3) near4 (content program show media) with (time) adj day	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L80	125	725/29.ccls. and (record$3) near4 (content program show media)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L81	27	725/29.ccls. and (record$3) near4 (content program show media) and (time adj day)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L82	11	725/29.ccls. and (record$3) near4 (content program show media) and (time adj day) and (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02
L83	19	725/29.ccls. and (record$3) near4 (content program show media video) and (time adj day) and (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2014/08/01 15:02

8/ 1/ 2014 3:06:37 PM
C:\ Users\ wkim1\ Documents\ EAST\ Workspaces\ 13990372.wsp

Doc Code: A.NE.AFCP
Document Description: After Final Consideration Pilot Program Request

PTO/SB/434 (05-13)

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

Practitioner Docket No.:	Application No.:	Filing Date:
95770-876349	13/990,372	May 29, 2013
First Named Inventor:	**Title:**	
Alistair Bruce Kelman	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.

1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (*e.g.*, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c).
2. The above-identified application contains an outstanding final rejection.
3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect.
4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection.
5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response.
6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web).
7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.]
8. By filing this certification and request, applicant acknowledges the following:
   - Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0.
   - The examiner will verify that the AFCP 2.0 submission is compliant, *i.e.*, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions:
     - The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, by mailing an advisory action.
     - If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview.
       - The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate.
       - If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116.

Signature	Date
David W. Boyd	October 6, 2014
Name (Print/Typed) David W. Boyd	**Practitioner Registration No.** 50,335

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.*

[✓] * Total of One (1) forms are submitted.

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on October 6, 2014.

KILPATRICK TOWNSEND and STOCKTON LLP

By: Kristin M. Heil

PATENT
Attorney Docket No.: 95770-876349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Alistair Bruce Kelman

Application No.: 13/990,372

Filed: May 29, 2013

For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Customer No.: 20350

Confirmation No. 2819

Examiner: William JW Kim

Technology Center/Art Unit: 2421

AMENDMENT UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action having a mailing date of August 18, 2014, please enter the following amendments and remarks:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 4 of this paper.

Google Exhibit 1004, Page 237 of 523

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown;

rules database means containing rules relating to said local broadcasting time regulation;

clock means to supply a real-time clock signal; and

control means arranged to read said headers and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown.

2. (Previously presented) A system according to claim 1 in which each header includes a keyword, and the control means checks the keyword against the rules database.

3. (Canceled)

4. (Previously presented) A system according to claim 2 in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity.

5. (Previously presented) A system according to claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.

Google Exhibit 1004, Page 238 of 523

6. (Previously presented) A system according to claim 5 in which a response by a consumer is rewarded by money or money's worth.

7. (Previously presented) A system according to claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

8. (Previously presented) A Personal Video Recorder (PVR) for use in a system according to claim 1 comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

9. (Previously presented) A PVR according to claim 8 arranged to read the real-time clock, to read the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.

10. (Previously presented) A PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

11. (Previously presented) A television set incorporating a Personal Video Recorder according to claim 8.

Google Exhibit 1004, Page 239 of 523

REMARKS

Claim 1 is proposed to be amended by this paper, and no claims are proposed to be canceled or added. No new matter is added.

This paper is filed with a Certification and Request for Consideration Under the After Final Consideration Pilot Program 2.0 (AFCP 2.0). Applicant believes the proposed amendments place the application in condition for allowance, and respectfully requests that the amendments be entered and the application as amended be reconsidered in light of the following remarks.

Claim Rejections – 35 USC § 102

Claims 1, 2, 4-6, and 8-10 have been rejected under 35 USC § 102(b) as being allegedly anticipated by Poel.

Applicant thanks the Examiner for pointing out that the wording of claim 1 as submitted with the amendment dated June 25, 2014 does not record Applicant's intention.

The Examiner is indeed correct in the presumption that Applicant intended the term "local broadcasting regulation" to refer to regulations/laws/ordinances created by some regulatory with regard to broadcast content. The Examiner's example of the Federal Communications Commission and 47 CFR § 73.3999, being an Enforcement of 18 USC 1464 putting restrictions of broadcast transmission of obscene and indecent materials, where paragraph (b) specifies restrictions on times of day during which indecent material may or may not be broadcast, is an example of exactly the kind of regulation that Applicant wishes to refer to in claim 1. Other examples are given in the specification, for example at page 1 lines 14-27.

Applicant also thanks the Examiner for the clear explanation that, as noted in MPEP 2111.01, it is improper to import claim limitations from the specification.

Claim 1 is proposed to be amended to include the words "laid down by a broadcasting authority" as a qualification of the term "local broadcasting regulation". This amendment finds support in the specification at least at page 1 lines 14 and 15.

With this clarification to claim 1, it is believed that Rejections under USC § 102 on the ground of anticipation by Poel is no longer applicable. Claims 2, 4-6, and 8-10 depend from claim 1, and are therefore also not anticipated by Poel.

Google Exhibit 1004, Page 240 of 523

Claim Rejections – 35 USC § 103

Claim 7 has been rejected under 35 USC § 103(a) as being allegedly unpatentable over Poel as applied to claim 1, and further in view of Hane. Claim 7 depends from claim 1 which is distinguishable over Poel. Because Hane also fails to teach the limitations of claim 1, claim 7 is distinguishable and in condition for allowance.

Claim 11 has been rejected under 35 USC § 103(a) as being allegedly unpatentable over Poel as applied to claim 1, and further in view of Dureau. Claim 11 depends from claim 1 which is distinguishable over Poel. Because Dureau also fails to teach the limitations of claim 1, claim 11 is distinguishable and in condition for allowance.

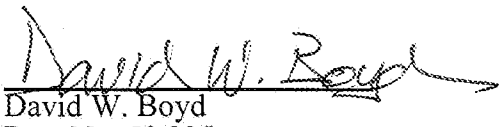
CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Further, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment in connection with this paper to Deposit Account No. 20-1430.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,



David W. Boyd
Reg. No. 50,335

KILPATRICK TOWNSEND and STOCKTON LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 303-571-4000
Fax: 415-576-0300
DJG/cl

66601187V.1

Google Exhibit 1004, Page 241 of 523

Electronic Acknowledgement Receipt

EFS ID:	20334918
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	David Wayne Boyd/Kristin Heil
Filer Authorized By:	David Wayne Boyd
Attorney Docket Number:	95770-876349
Receipt Date:	06-OCT-2014
Filing Date:	29-MAY-2013
Time Stamp:	16:15:31
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	After Final Consideration Program Request	95770-876349_AFCP.pdf	916455 7b3b03684cfc8b566d51c7e6cc5d181d3c499cf7	no	1

Warnings:	
Information:	

Google Exhibit 1004, Page 242 of 523

2		95770-876349_Amendment.pdf	3045196 357ae29e7fd769a5052ffd76130b08c2721108d3	yes	5

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Response After Final Action	1	1
Claims	2	3
Applicant Arguments/Remarks Made in an Amendment	4	5

Warnings:	
Information:	
Total Files Size (in bytes):	3961651

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/990,372	Filing Date 05/29/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	10/06/2014	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 10	Minus	** 20	= 0	X $40 =	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $210 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/DIANE WILLIAMS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 10/29/2014

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
KIM, WILLIAM JW	

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
10/29/2014	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	13/990,372	KELMAN, ALISTAIR BRUCE	
	Examiner	Art Unit	
	WILLIAM J. KIM	2421	

All participants (applicant, applicant's representative, PTO personnel):

(1) *WILLIAM J. KIM*. (3)_____.

(2) *David W. Boyd*. (4)_____.

Date of Interview: *17 October 2014*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Poel, Paxton*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed the patentability of the After-Final submitted Amendments to the Claims. Examiner presented Paxton (US 2004/0158870 A1) as reference that would read on the amended claims. Discussed proposed amendments to the Claims to overcome a combination of Poel and Paxton. No Agreements regarding specific Amendments were reached. Advisory Action will be mailed out and Applicant will file a formal response.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/W. J. K./ Examiner, Art Unit 2421	

Advisory Action

Applicant's request for entry into AFCP 2.0 is acknowledged, but is denied because it fails to put the application into condition for Allowance.

In particular, reference **Paxton et al. (US 2004/0158870 A1)** which is directed toward methods and systems for capture and selective playback of broadcast programs, teaches that service information associated with each broadcast program may include tags that signify whether the given program is subject to any watershed or other regulated periods (see Paxton [0102], [0105-109]), and wherein recorded, previously broadcast content may be made to follow said watershed/regulatory rules (see Paxton [0121], [0128-130]). As such, since the Amendments filed with the AFCP 2.0 request cannot be deemed allowable over the Paxton reference (in combination with the present art of record), the filed Amendments will not be entered.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J. KIM whose telephone number is (571)272-2767. The examiner can normally be reached on M-F: 8:30am - 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. J. K./
Examiner, Art Unit 2421

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 13/990,372	**Applicant(s)** KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	**Art Unit** 2421	**AIA (First Inventor to File) Status** No

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 06 October 2014 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☒ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheeet.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☒ Other: Attached PTO-892 and Interivew Summary.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
    Claim(s) allowed: .
    Claim(s) objected to: .
    Claim(s) rejected: 1,2 and 4-11.
    Claim(s) withdrawn from consideration: .

/NATHAN FLYNN/ Supervisory Patent Examiner, Art Unit 2421	/W. J. K./ Examiner, Art Unit 2421

Google Exhibit 1004, Page 249 of 523

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	13/990,372	KELMAN, ALISTAIR BRUCE	
	Examiner	Art Unit	
	WILLIAM J. KIM	2421	

All participants (applicant, applicant's representative, PTO personnel):

(1) *WILLIAM J. KIM*. (3)_____.

(2) *David W. Boyd*. (4)_____.

Date of Interview: *17 October 2014*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Poel, Paxton*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed the patentability of the After-Final submitted Amendments to the Claims. Examiner presented Paxton (US 2004/0158870 A1) as reference that would read on the amended claims. Discussed proposed amendments to the Claims to overcome a combination of Poel and Paxton. No Agreements regarding specific Amendments were reached. Advisory Action will be mailed out and Applicant will file a formal response.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/W. J. K./ Examiner, Art Unit 2421	

Notice of References Cited	Application/Control No. 13/990,372	Applicant(s)/Patent Under Reexamination KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	Art Unit 2421	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2004/0158870	08-2004	Paxton et al.	725/115
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

DO NOT ENTER: /W.K./

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on October 6, 2014

KILPATRICK TOWNSEND and STOCKTON LLP

By: Kristin M. Heil
Kristin M. Heil

PATENT
Attorney Docket No.: 95770-876349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Alistair Bruce Kelman

Application No.: 13/990,372

Filed: May 29, 2013

For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Customer No.: 20350

Confirmation No. 2819

Examiner: William JW Kim

Technology Center/Art Unit: 2421

AMENDMENT UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action having a mailing date of August 18, 2014, please enter the following amendments and remarks:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 4 of this paper.

Google Exhibit 1004, Page 252 of 523

PTO/SB/30 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Request for Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	13/990,372
Filing Date	May 29, 2013
First Named Inventor	Alistair Bruce Kelman
Art Unit	2421
Examiner Name	William JW Kim
Attorney Docket Number	95770-876349

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. ☐ Other _____

   b. ☑ Enclosed

      i. ☑ Amendment/Reply

      ii. ☐ Affidavit(s)/ Declaration(s)

      iii. ☐ Information Disclosure Statement (IDS)

      iv. ☐ Other _____

2. Miscellaneous

   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

   a. ☑ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 20-1430.

      i. ☑ RCE fee required under 37 CFR 1.17(e)

      ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)

      iii. ☐ Other _____

   b. ☐ Check in the amount of $ _____ enclosed

   c. ☑ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	David W. Boyd	Date	18-Nov-2014
Name (Print/Type)	David W. Boyd	Registration No.	50,335

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature			
Name (Print/Type)		Date	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	13990372
Filing Date:	29-May-2013
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Filer:	David Wayne Boyd/Kristin Heil
Attorney Docket Number:	95770-876349

Filed as Small Entity

U.S. National Stage under 35 USC 371 Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for Continued Examination	2801	1	600	600
		Total in USD ($)		**600**

Electronic Acknowledgement Receipt

EFS ID:	20732701
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	David Wayne Boyd/Kristin Heil
Filer Authorized By:	David Wayne Boyd
Attorney Docket Number:	95770-876349
Receipt Date:	18-NOV-2014
Filing Date:	29-MAY-2013
Time Stamp:	17:32:59
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$600
RAM confirmation Number	4209
Deposit Account	201430
Authorized User	BOYD, DAVID

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. 1.492 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Google Exhibit 1004, Page 256 of 523

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		95770-876349_RCE_Amendment.pdf	3640860 f6431e3f458b54f8596396cc8059b42b3271ce43	yes	7

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	7

Warnings:

Information:

2	Request for Continued Examination (RCE)	95770-876349_RCE.pdf	1004248 bce63366f81113e970db93542d7529adc296837a	no	1

Warnings:

This is not a USPTO supplied RCE SB30 form.

Information:

3	Fee Worksheet (SB06)	fee-info.pdf	30585 9a1b099e995bbe40c3c4283b2c691c1a5bbc7b7e	no	2

Warnings:

Information:

Total Files Size (in bytes):	4675693

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on November 19, 2014

KILPATRICK TOWNSEND and STOCKTON LLP

By: Kristin M. Heil
Kristin M. Heil

PATENT
Attorney Docket No.: 95770-876349

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Alistair Bruce Kelman

Application No.: 13/990,372

Filed: May 29, 2013

For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Customer No.: 20350

Confirmation No.: 2819

Examiner: William JW Kim

Technology Center/Art Unit: 2421

AMENDMENT FOR REQUEST FOR CONTINUED EXAMINATION

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action having a mailing date of August 18, 2014, please enter the following amendments and remarks:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 5 of this paper.

Google Exhibit 1004, Page 259 of 523

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown, and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing;

rules database means containing rules relating to said local broadcasting time regulation;

clock means to supply a real-time clock signal; and

control means arranged to read said ~~headers~~ first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown.

2. (Previously presented) A system according to claim 1 in which each header includes a keyword, and the control means checks the keyword against the rules database.

3. (Canceled)

4. (Previously presented) A system according to claim 2 in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity.

Google Exhibit 1004, Page 260 of 523

5. (Previously presented) A system according to claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.

6. (Previously presented) A system according to claim 5 in which a response by a consumer is rewarded by money or money's worth.

7. (Previously presented) A system according to claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

8. (Previously presented) A Personal Video Recorder (PVR) for use in a system according to claim 1 comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

9. (Currently amended) A PVR according to claim 8 arranged to read the real-time clock, to read the first field in the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.

10. (Previously presented) A PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

11. (Previously presented) A television set incorporating a Personal Video Recorder according to claim 8.

12. (New) A system according to claim 1, wherein the control means is further arranged to update the second field when said advertisement is again shown during time-shifted viewing.

Google Exhibit 1004, Page 261 of 523

13. (New) A PVR according to claim 9, further arranged to update the second field in the header when that advert is provided to the consumer's viewing/listening unit.

Google Exhibit 1004, Page 262 of 523

REMARKS

Claims 1 and 9 are amended by this paper, no claims are canceled, and new claims 12 and 13 are added. No new matter is added.

This paper is filed with a Request for Continued Examination under 37 C.F.R § 1.114. Applicant respectfully requests that the application as amended be reconsidered in light of the following remarks.

Claim Rejections – 35 USC § 102

Claims 1, 2, 4-6, and 8-10 have been rejected under 35 USC § 102(b) as being allegedly anticipated by Poel.

Applicant thanks the Examiner for pointing out that the wording of claim 1 as submitted with the amendment dated June 25, 2014 does not record Applicant's intention.

The Examiner is indeed correct in the presumption that Applicant intended the term "local broadcasting regulation" to refer to regulations/laws/ordinances created by some regulatory with regard to broadcast content. The Examiner's example of the Federal Communications Commission and 47 CFR § 73.3999, being an Enforcement of 18 USC 1464 putting restrictions of broadcast transmission of obscene and indecent materials, where paragraph (b) specifies restrictions on times of day during which indecent material may or may not be broadcast, is an example of exactly the kind of regulation that Applicant wishes to refer to in claim 1. Other examples are given in the specification, for example at page 1 lines 14-27.

Applicant also thanks the Examiner for the clear explanation that, as noted in MPEP 2111.01, it is improper to import claim limitations from the specification.

Claim 1 is proposed to be amended to include the words "laid down by a broadcasting authority" as a qualification of the term "local broadcasting regulation". This amendment finds support in the specification at least at page 1 lines 14 and 15.

With this clarification to claim 1, it is believed that Rejections under USC § 102 on the ground of anticipation by Poel is no longer applicable. Claims 2, 4-6, and 8-10 depend from claim 1, and are therefore also not anticipated by Poel.

Google Exhibit 1004, Page 263 of 523

In addition, claim 1 is amended to recite that the header includes two fields, one of which is "related to the number of times said advertisement has previously been shown during time-shifted viewing". Applicant believes this amendment to further distinguish over Poel.

Claim Rejections – 35 USC § 103

Claim 7 has been rejected under 35 USC § 103(a) as being allegedly unpatentable over Poel as applied to claim 1, and further in view of Hane. Claim 7 depends from claim 1 which is distinguishable over Poel. Because Hane also fails to teach the limitations of claim 1, claim 7 is distinguishable and in condition for allowance.

Claim 11 has been rejected under 35 USC § 103(a) as being allegedly unpatentable over Poel as applied to claim 1, and further in view of Dureau. Claim 11 depends from claim 1 which is distinguishable over Poel. Because Dureau also fails to teach the limitations of claim 1, claim 11 is distinguishable and in condition for allowance.

New Claims

Claims 12 and 13 are newly added, and find support in the specification at least in Table 1.

Google Exhibit 1004, Page 264 of 523

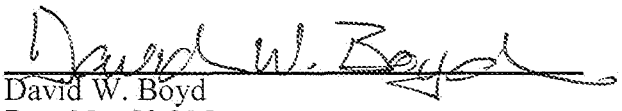
CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Further, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment in connection with this paper to Deposit Account No. 20-1430.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,



David W. Boyd
Reg. No. 50,335

KILPATRICK TOWNSEND and STOCKTON LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel.: 303-571-4000
Fax: 303-571-4321

DWB/kmh

66708457V.1

Google Exhibit 1004, Page 265 of 523

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/990,372	Filing Date 05/29/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **11/18/2014**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/DEBORAH NASH/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 03/23/2015

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER
KIM, WILLIAM JW

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
03/23/2015	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com

Office Action Summary	Application No. 13/990,372	Applicant(s) KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	Art Unit 2421	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/18/2014*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1,2 and 4-13* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1,2 and 4-13* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *05/29/2013* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☒ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

The present application is being examined under the pre-AIA first to invent provisions.

Response to Arguments

Applicant's arguments, see Remarks, filed 18 November 2014, with respect to the rejection(s) of claim(s) 1, 2, 4-6, and 8-1 under 35 USC §102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of **Paxton et al. (US 2004/0158870 A1)** and further in view of **Poslinski (US 2006/0013556 A1)** (hereinafter Poslinski) .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 4-6, 8-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Poel et al. (GB 2464630 A)** (as supplied by the IDS filed 29 May 2013 – hereinafter Poel), in view of **Paxton et al. (US 2004/0158870 A1)** (as cited in the Advisory Action mailed out on 29 October 2014, hereinafter Paxton), and further in view of **Poslinski (US 2006/0013556 A1)** (hereinafter Poslinski).

Regarding Claim 1, Poel discloses a system for automating compliance with local broadcasting regulations applicable to advertisements, said advertisements being provided during time-shifted viewing/listening **[Figs. 1-2; pg. 1, lines 1-5: STB has data storage means; pg. 7, line 21 – pg. 8, line 3: DFA (digital feed assembler) of STB decrypts signals received by STB and may insert ads into the programs shown; pg. 12, lines 1-7: user of a STB may request a program at some point in time, but not view it until a later date (i.e., may provide time-shift viewing/listening functions]** comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements; **[Figs. 1-4A; pg. 1, lines 11-25: STB may receive broadcast video/audio channels; pg. 4, line 19-23: content provider 44; pg. 6, line 25 - pg. 7, line 23: content provider may provide broadcast content to STB, whereby the STB may store the content; pg. 8, lines**

17-27: where conventional TV programmes are divided into parts separated by timeslots 72 which are filled with ads by the DFA]

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation which local broadcasting time regulation restricts the time of day at which said advertisement may be shown; **[Figs. 1-4A; pg. 3, lines 19-24: advertiser provides at least one ad to an ad database where the ads have at least one limitation on time of showing, and are inserted into TV programs according to the limitations; pg. 8, lines 17-27: where conventional TV programmes are divided into parts separated by timeslots 72 which are filled with ads by the DFA; pg. 11, lines 27-32: ads may include codes that prevent showing before some certain time; pg. 12, lines 9-22: where ads can have criteria directed toward particular postcodes/locations]**

rules database means containing rules relating to said local broadcasting regulation; **[Figs. 1-2, 6; pg. 4, line 27 – pg. 5, line 8: ad database stores ads, where ad can set criteria (regulations) for recipients of an ad; pg. 8, lines 6-15: STB may access and download ads onto a local storage/database, where each ad has a date code and time code associated with it; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad]**

clock means to supply a real-time clock signal; **[pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an**

action would necessarily require some clock means to determine the real time/date] and

control means arranged to read said headers and said clock signal and said rules database and to apply said local broadcast regulation to each advertisement before said advertisement is shown. **[Figs. 1-4A; pg. 5, lines 14-19: DFA interleaves ads and television signals; pg. 8, lines 22-27: DFA selects one or more ads stored to insert into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date and where it would be understood that applying the criteria/regulations on the ad would occur prior to the ad being shown]**

Poel fails to explicitly disclose wherein the local broadcasting regulations are laid down by a broadcasting authority.

Paxton, in analogous art, teaches local broadcasting regulations laid down by a broadcasting authority. **[0102, 0105-109: SI associated with each program includes tags relating to content availability/Restrictions, where Restrictions may be imposed on programs by governmental authorities and regulators (i.e., watershed rules) to prevent programs from being replayed during a restricted time period; 0121, 0128-130: stored versions of previously broadcast programs may have playback times restricted]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel with the teachings of Paxton to specify local broadcasting regulations laid down by a broadcasting authority in order to allow content providers/owners to enforce and remain within statutory restrictions with regard to broadcast restrictions for time-shifted playbacks of said broadcasts. **[Paxton – 0071; 0102; 0130]**

Poel and Paxton fail to explicitly disclose a second field related to the number of times said advertisement has previously been shown during time-shifted viewing.

Poslinski, in analogous art, teaches a second field related to the number of times said advertisement has previously been shown during time-shifted viewing. **[0134-139: in time-shifted viewing, system may have counters to indicate the number of times that a commercial has been fully viewed]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel and Paxton with the teachings of Poslinski to keep track of the number of times an advertisement has been shown during time-shifted viewing in order to ensure that commercials/advertisement are viewed in full by users viewing recorded content. **[Poslinski – 0134-139]**

Regarding Claim 2, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses wherein each header includes a keyword, and the control means checks the keyword against the rules database. **[pg. 8, lines 11-15: ads**

with codes matching characteristics of personal data may be selectively downloaded; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad; pg. 10, lines 5-14: where ads may send extracted records (target groups) along with the advertisements, where the system uses said information to determine to which users/STBs to send the particular ads]

Regarding Claim 4, Poel, Paxton, and Poslinski disclose all the limitations of Claim 2, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity. **[pg. 8, lines 6-15: where each ad has a date code and time code associated with it; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad; pg. 12, lines 18-20: where an ad may be specified to be shown on specific days of the week (like Tuesdays, as in the example provided)]**

Regarding Claim 5, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which the advertisements include interactive advertisements to which a response by a consumer is requested. **[Fig. 8; pg. 14, lines 6-13: ad may include interactivity to which a user is asked to respond (in the**

example provided, the user is asked to press a green button on a remote control device)]

Regarding Claim 6, Poel, Paxton, and Poslinski disclose all the limitations of Claim 5, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses a system according to claim 5 in which a response by a consumer is rewarded by money or money's worth. **[Fig. 8; pg. 13, line8 - pg. 14, line 13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device) in order to receive some voucher or other payment/reward]**

Regarding Claim 8, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel, Paxton, and Poslinski discloses a Personal Video Recorder (PVR) for use in a system according to claim 1 **[Poel – Fig. 1; pg. 2, lines 1-7: STB may record broadcast programs in a storage for later viewing – i.e., the STB effectively functions as a PVR; Paxton – 0002-8: relating to playback of recorded programs, where PVRs and DVRs are known means for recording; Poslinski – 0036-38: system associated with commercial handling using a PVR/DVR/equivalent]** , comprising data storage means **[Poel – pg. 3, lines 1-7: STB has data storage means]**, input connection means for connection to a source of video/audio signals and a real-time clock signal **[Poel – pg. 3, lines 1-7: STB has input**

connection means for connecting to a video/audio signal source; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]; and output means for connection to a consumer's viewing/listening unit; **[Poel – pg. 3, lines 1-7: STB has output means for connecting to a viewing unit]** in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers. **[Poel – pg. 2, lines 1-7: STB may record broadcast programs in a storage for later viewing; pg. 8, lines 6-15: STB may access and download ads onto a local storage/database, where each ad has a date code and time code associated with it]**

Regarding Claim 9, Poel, Paxton, and Poslinski disclose all the limitations of Claim 8, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses the PVR according to claim 8 arranged to read the real-time clock, to read the first field in the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal. **[Figs. 1-4A; pg. 5, lines 14-19: DFA interleaves ads and television signals; pg. 8, lines 22-27: DFA of STB (as noted above, the STB functions as a PVR) selects one or more ads stored to**

insert into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]

Regarding Claim 10, Poel, Paxton, and Poslinski disclose all the limitations of Claim 9, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses the PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response. **[Fig. 8; pg. 14, lines 6-13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device) to ensure a user has actually watched the ad; pg. 13, line 24-26: STB/PVR records when a consumer has viewed an inserted ad]**

Regarding Claim 12, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poslinski discloses wherein the control means is further arranged to update the second field when said advertisement is again shown during time-shifted viewing. **[0134-139: in time-shifted viewing, system may have counters to indicate**

the number of times that a commercial has been fully viewed – i.e., the counter will be updated every time a commercial is fully viewed]

Regarding Claim 13, Poel, Paxton, and Poslinski disclose all the limitations of Claim 9, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poslinski discloses a PVR according to claim 9, further arranged to update the second field in the header when that advert is provided to the consumer's viewing/listening unit. **[0134-139: in time-shifted viewing, system may have counters to indicate the number of times that a commercial has been fully viewed – i.e., the counter will be updated every time a commercial is fully viewed]**

Claim 7 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **Poel, Paxton, and Poslinski** as applied to Claim 1 above, and further in view of **Hane, III (US 2004/0205829 A1)** (hereinafter Hane).

Regarding Claim 7, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Poel, Paxton, and Poslinski fail to explicitly disclose in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

Hane, in analogous art teaches in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break. **[0009: where 'local programming' may be local advertisements; 0067-69: programming may be received where programming information includes cue data that provide notice/timing of 'local segments', where cue data may be used to generate an avail profile that identifies the program, length of local program segments, timing for local program segments, and tone timing and patterns for each monitored program channel – i.e., broadcast data may include information of duration of each segment of the program as well as the duration of each ad break]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel, Paxton, and Poslinski with the teachings of Hane to include in the broadcast data information regarding duration of each segment of a program and the duration of the next periodic break in order to allow for efficient transmission of local programming to particular geographic areas or markets. **[Hane – 0015]**

Claim 11 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **Poel, Paxton, and Poslinski** as applied to Claim 1 above, and further in view of **Dureau et al. (US 2002/0015093 A1)** (hereinafter Dureau).

Regarding Claim 11, Poel, Paxton, and Poslinski disclose all the limitations of Claim 8, which are analyzed as previously discussed with respect to that claim.

Poel, Paxton, and Poslinski fail to explicitly disclose a television set incorporating a Personal Video Recorder according to Claim 1.

Dureau, in analogous art, teaches wherein a television set may be incorporated with a PVR. **[0036]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel, Paxton, and Poslinski with the teachings of Dureau to incorporate a PVR within a television set as it is widely understood in the art that a receiver-decoder device may be integrated within a monolithic television apparatus or as a separate apparatus from a television. **[Dureau – 0036]**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J. KIM whose telephone number is (571)272-2767. The examiner can normally be reached on M-F: 8:30am - 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. J. K./
Examiner, Art Unit 2421
/NATHAN FLYNN/
Supervisory Patent Examiner, Art Unit 2421

Notice of References Cited	Application/Control No. 13/990,372	Applicant(s)/Patent Under Reexamination KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	Art Unit 2421	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2006/0013556	01-2006	Poslinski, Thomas	386/046
*	B	US-2006/0218617	09-2006	Bradstreet et al.	725/135
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/03/09 15:34
L2	488	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L3	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2015/03/09 15:34
L4	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L5	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L6	1629	(TV television) with (incorporated built$1in built adj in) with (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L7	570	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L8	163	L7 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L9	117	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L10	3	(TV television) near3 (program) same (avail) same segment same (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L11	38	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR;	OR	ON	2015/03/09 15:34

			EPO; JPO; DERWENT			
L12	8	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L13	19	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L14	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L15	64	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L16	39	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L17	22	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L18	20	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L19	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L20	11	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L21	42	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L22	36	(avail) with (duration length) and (segment) near3 (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L23	11	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR;	OR	ON	2015/03/09 15:34

			EPO; JPO; DERWENT			
L24	608	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L25	6	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L26	4775	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L27	8	L26 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L28	447	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L29	0	L28 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L30	3543	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L31	16	L30 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L32	2511	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L33	97	L32 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L34	2186	H04N21/458.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L35	46	L34 and avail	US-PGPUB; USPAT; USOCR;	OR	ON	2015/03/09 15:34

			EPO; JPO; DERWENT			
L36	216	L34 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L37	602	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L38	108	L37 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L39	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/03/09 15:34
L40	488	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L41	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2015/03/09 15:34
L42	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L43	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L44	1629	(TV television) with (incorporated built$1in built adj in) with (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L45	570	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L46	163	L45 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L47	117	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L48	3	(TV television) near3 (program) same	US-PGPUB;	OR	ON	2015/03/09

		(avail) same segment same (duration length)	USPAT; USOCR; EPO; JPO; DERWENT			15:34
L49	38	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L50	8	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L51	19	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L52	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L53	64	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L54	39	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L55	22	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L56	20	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L57	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L58	11	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L59	42	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L60	36	(avail) with (duration length) and	US-PGPUB;	OR	ON	2015/03/09

		(segment) near3 (length duration)	USPAT; USOCR; EPO; JPO; DERWENT			15:34
L61	11	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L62	608	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L63	6	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L64	4775	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L65	8	L64 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L66	447	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L67	0	L66 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L68	3543	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L69	16	L68 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L70	2511	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L71	97	L70 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L72	2186	H04N21/458.cpc.	US-PGPUB;	OR	ON	2015/03/09

			USPAT; USOCR; EPO; JPO; DERWENT			15:34
L73	46	L72 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L74	216	L72 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L75	602	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L76	108	L75 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L77	52	725/27-29.ccls. and (restric$3) with (record$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L78	47	725/27-29.ccls. and (restric$3 limit$3) with (record$3) with (time)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L79	1	725/29.ccls. and (record$3) near4 (content program show media) with (time) adj day	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L80	142	725/29.ccls. and (record$3) near4 (content program show media)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L81	30	725/29.ccls. and (record$3) near4 (content program show media) and (time adj day)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L82	12	725/29.ccls. and (record$3) near4 (content program show media) and (time adj day) and (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L83	21	725/29.ccls. and (record$3) near4 (content program show media video) and (time adj day) and (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L84	9	"725".clas. and (enforc$5) near6	US-PGPUB;	OR	ON	2015/03/09

		(broadcast$3) near3 (regulation rules laws)	USPAT; USOCR			15:34
L85	449	725/22.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L86	1	L85 and (advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L87	10	725/9-21.ccls. and (advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L88	84	(advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L89	60	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L90	29	L89 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L91	403	(advertisement ad commercial) same (time adj shift$3) and (metadata data SI information) same (number times) near3 (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L92	7	L85 and L91	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L93	204	L91 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L94	9007	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L95	112	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed) and (time adj shift$3) with (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L96	4	L85 and L95	US-PGPUB; USPAT;	OR	ON	2015/03/09 15:34

			USOCR; EPO; JPO; DERWENT			
L97	14	L95 and 725/9-21.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L98	11	L97 not L96	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L99	94	(advertisement ad commercial) with (number near3 times) near3 (viewed played aired presented displayed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L100	33	L99 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L101	31	(advertisement ad commercial) with (number near3 times near3 viewed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34
L102	33	(advertisement ad commercial) with ((how number) near3 times near3 viewed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/03/09 15:34

3/9/2015 3:38:19 PM
C:\Users\wkim1\Documents\EAST\Workspaces\13990372.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	Art Unit
	WILLIAM J KIM	2421

CPC- SEARCHED		
Symbol	Date	Examiner
H04N21/42261, 4325, 44, 44008, 44016, 458, 4784 (text search only - see search notes)	04/16/2014	WJK
Updated the above	08/01/2014	WJK
Updated the above	03/09/2015	WJK

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
See EAST Search Notes	04/16/2014	WJK
Inventor Search	04/16/2014	WJK
725/23	04/16/2014	WJK
725 (text search only - see search notes)	04/16/2014	WJK
725/32, 34, 36 (text search only - see search notes)	04/16/2014	WJK
Updated the above	08/01/2014	WJK
725/27-29 (text search only - see search notes)	08/01/2014	WJK
updated the above	03/09/2015	WJK
725/9-21 (text search only - see search notes)	03/09/2015	WJK
725/22 (text search only - see search notes)	03/09/2015	WJK

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	**Art Unit**
	WILLIAM J KIM	2421

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	04/16/2014	08/01/2014	03/09/2015						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	-	-						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12			✓						
	13			✓						

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on August 20, 2015.

KILPATRICK TOWNSEND & STOCKTON LLP

By: Kristin M. Ideal

PATENT
Attorney Docket No.: 95770-876349-000100US
Client Ref. No.: P8991.USP-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Alistair Bruce Kelman

Application No.: 13/990,372

Filed: May 29, 2013

For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Customer No.: 20350

Confirmation No.: 2819

Examiner: William JW Kim

Technology Center/Art Unit: 2421

REQUEST FOR RECONSIDERATION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the Office Action mailed March 23, 2015, please enter the following remarks:

A Listing of the Claims begins on page 2 of this paper.

Remarks/Arguments begin on page 5 of this paper.

Google Exhibit 1004, Page 294 of 523

Claims:

This listing of claims is provided as a convenience; no claim amendments are made:

Listing of Claims:

1. (Previously presented) A system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown, and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing;

rules database means containing rules relating to said local broadcasting time regulation;

clock means to supply a real-time clock signal; and

control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown.

2. (Previously presented) A system according to claim 1 in which each header includes a keyword, and the control means checks the keyword against the rules database.

3. (Canceled)

4. (Previously presented) A system according to claim 2 in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity.

Google Exhibit 1004, Page 295 of 523

5. (Previously presented) A system according to claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.

6. (Previously presented) A system according to claim 5 in which a response by a consumer is rewarded by money or money's worth.

7. (Previously presented) A system according to claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

8. (Previously presented) A Personal Video Recorder (PVR) for use in a system according to claim 1 comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

9. (Previously presented) A PVR according to claim 8 arranged to read the real-time clock, to read the first field in the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.

10. (Previously presented) A PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

11. (Previously presented) A television set incorporating a Personal Video Recorder according to claim 8.

12. (Previously presented) A system according to claim 1, wherein the control means is further arranged to update the second field when said advertisement is again shown during time-shifted viewing.

Google Exhibit 1004, Page 296 of 523

13. (Previously presented) A PVR according to claim 9, further arranged to update the second field in the header when that advert is provided to the consumer's viewing/listening unit.

Google Exhibit 1004, Page 297 of 523

REMARKS/ARGUMENTS

Status of the Claims

Upon entry of the present Request, claims 1, 2, and 4-13 will be pending in this application. No claims are amended, canceled, or added by this paper, and no new matter is added. Based on the following remarks, Applicant respectfully requests reconsideration and allowance of the pending claims.

Rejections under 35 U.S.C. § 103

Claims 1-2, 4-6, 8-10, and 12-13 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over GB 2464630 to Poel, et al. ("Poel") in view of U.S. Patent Application Publication No. 2004/0158870 of Paxton, et al. ("Paxton"), and further in view of U.S. Patent Application Publication No. 2006/0013556 of Poslinski ("Poslinski").

Claim 7 has been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Poel, Paxton, and Poslinski, and further in view of U.S. Patent Application Publication No. 2004/0205829 of Hane ("Hane").

Claim 11 has been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Poel, Paxton, and Poslinski, and further in view of U.S. Patent Application Publication No. 2002/0015093 of Dureau, et al. ("Dureau").

All of the rejections rely on Poel.

Poel was published on April 28, 2010, and the present application was effectively filed December 1, 2010. Thus, Poel was published less than one year before the effective filing date of the present application, and is not a statutory bar.

Without acquiescing to the rejection and in the interest of expediting prosecution, a declaration filed under 37 C.F.R. § 1.132 accompanies this Request evidencing that relevant portions of the Poel reference were invented by Alistair Bruce Kelman, the sole inventor named in the present application. The filing of the declaration should be sufficient to remove Poel from consideration and overcome the rejection. (See MPEP 716.10.) Accordingly, withdrawal of the rejection is respectfully requested.

Google Exhibit 1004, Page 298 of 523

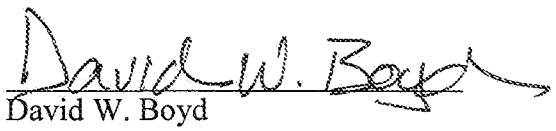
CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Except for the issue fees payable under 37 C.F.R. § 1.18, the Director is authorized to charge any additional fees during pendency of this application, including any required extension of time fees, or credit any overpayment to Deposit Account Number 20-1430. This paragraph is intended to be a constructive petition for extension of time in accordance with 37 C.F.R. § 1.136(a)(3).

If the Examiner believes a telephone conference would expedite prosecution of this application, please contact the undersigned at (303) 571-4000.

Respectfully submitted,



David W. Boyd
Registration No. 50,335

KILPATRICK TOWNSEND & STOCKTON LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel.: 303-571-4000
Fax: 303-571-4321

DWB/kmh

Electronic Patent Application Fee Transmittal

Application Number:	13990372
Filing Date:	29-May-2013
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Filer:	David Wayne Boyd/Kristin Heil
Attorney Docket Number:	95770-876349

Filed as Small Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 2 months with $0 paid	2252	1	300	300
Miscellaneous:				
			Total in USD ($)	**300**

Electronic Acknowledgement Receipt

EFS ID:	23263280
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	David Wayne Boyd/Kristin Heil
Filer Authorized By:	David Wayne Boyd
Attorney Docket Number:	95770-876349
Receipt Date:	20-AUG-2015
Filing Date:	29-MAY-2013
Time Stamp:	16:51:06
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$300
RAM confirmation Number	3440
Deposit Account	201430
Authorized User	BOYD, DAVID

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. 1.492 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Affidavit-traversing rejectns or objectns rule 132	95770-876349_KelmanDecl2.pdf	26178930 a7f116a9cf8c63399afdc80beaa8d59828a0a88a	no	39
Warnings:					
Information:					
2		95770-876349_ReqReconsideration.pdf	1017464 24f7cb33b92348528593d3f0fc15ee6fb3578b9f	yes	6

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	6

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	31002 eda260eced193434d18e81c49ea706e030d089dc	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	27227396		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Confirmation No.: 2819
Alistair Bruce Kelman	Examiner: William JW Kim
Application No.: 13/990,372	Technology Center/Art Unit: 2421
Filed: May 29, 2013	
For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	**DECLARATION UNDER 37 C.F.R. §1.132**
Customer No.: 20350	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Declaration by Alistair Bruce Kelman Under 37 C.F.R. § 1.132

I, Alistair Bruce Kelman, hereby declare as follows:

1. I am the inventor of the subject matter described and claimed in the above-referenced patent application ("the 372 Application").

2. I have reviewed the Office Action mailed March 23, 2015 in the '372 Application. I understand that pending claims 1, 2, and 4-13 stand rejected based in part on UK Patent Application GB 2,464,630, published April 28, 2010, and titled "An Improved Set Top Box and System for the Provision of Enhanced Television Services" ("the '630 Reference"). A copy of the '630 Reference is attached hereto as Exhibit A. In particular, the Examiner is relying in part on Figures 1-4A and 6, and to various pages and lines in the '630 Reference in the rejections of present claims 1, 2, and 4-13.

3. I am a named inventor on the '630 Reference. I invented the subject matter disclosed in all of Figures 1-4A and Figure 6 in the '630 Reference, and I invented the subject matter disclosed in the page and line references cited against **Claim 1** as follows (using the order in which they are applied by the Examiner):-

Page 7 line 21 – page 8 line 3, and page 12 lines 1-7;

Page 4 lines 19 -23, page 6 line 25 -page7 line 23 and page 8 lines 17 – 27;

Google Exhibit 1004, Page 305 of 523

Page 3 lines 19 -24, page 8 lines 17-27, and page 11 lines 27 – 32;
Page 4 line 27 – page 5 line 8, page 8 lines 6 – 15 and page 9 lines 19-29;
Page 11 line 27 – page 12 line 30;
Page 5 lines 14-19, page 8 lines 22-27, and page 11 line 27 – page 12 line 30.

Against **Claim 2**, I invented the subject matter in page 8 lines 11-15, page 9 lines 19-29 and page 10 lines 5-14.

Against **Claim 4**, I invented the subject matter in page 8 lines 6-15 and in page 11 line 27 to page 12 line11.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

Date: 11th August 2015

Alistair Bruce Kelman

Google Exhibit 1004, Page 306 of 523

Exhibit A

GB 2464630 ("Poel")

(12) UK Patent Application (19) GB (11) 2464630 (13) A

(43) Date of A Publication 28.04.2010

(21) Application No: 1000338.2

(22) Date of Filing: 11.01.2010

(51) INT CL:
H04N 7/173 (2006.01) *G06F 17/30* (2006.01)
H04N 5/00 (2006.01) *H04N 7/16* (2006.01)

(56) Documents Cited:
WO 2009/036028 A3 US 7584223 B1
US 6850252 B1 US 6611813 B1
US 20090254971 A1 US 20090222853 A1
US 20090222851 A1 US 20080288975 A1
US 20060293954 A1 US 20060085816 A1
US 20040237098 A1

(58) Field of Search:
INT CL G06F, H04N
Other: Online: WPI, EPODOC, TXTEN

(71) Applicant(s):
IncenTV Ltd
(Incorporated in the United Kingdom)
Ground Floor, Boundary House, 4 County Place, New London Road, Chelmsford, Essex, CM2 0RE, United Kingdom

(72) Inventor(s):
William Stanley Poel
Alistair Bruce Kelman
Christopher Martin Poel

(74) Agent and/or Address for Service:
Vivien Irish
33 St Saviourgate, YORK, YO1 8NQ, United Kingdom

(54) Title of the Invention: **An improved set top box and system for the provision of enhanced television services**
Abstract Title: **Targeted advert insertion in an STB**

(57) A Set Top Box (STB) 30 for supplying television services to a consumer's TV 50 comprises a digital feed assembler 34 which inserts advertisements into programmes. The adverts can have limitations as to time and/or date of showing and may be further restricted eg by postcode. The commercials can be targeted at specified consumer characteristics to a predetermined level of accuracy (eg 80%) to protect privacy; this is achieved by use of an enhanced privacy database 46 which stores personal characteristics or data of each STB user and generates for each a pseudo identity. The STB may incorporate a firewall 36 and a decrypter to decrypt encoded television programmes.

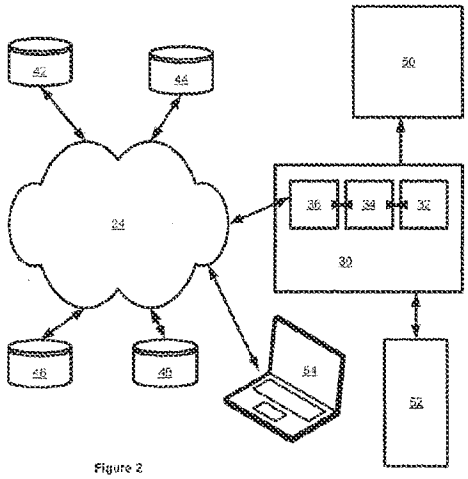


Figure 2

GB 2464630 A

Google Exhibit 1004, Page 308 of 523

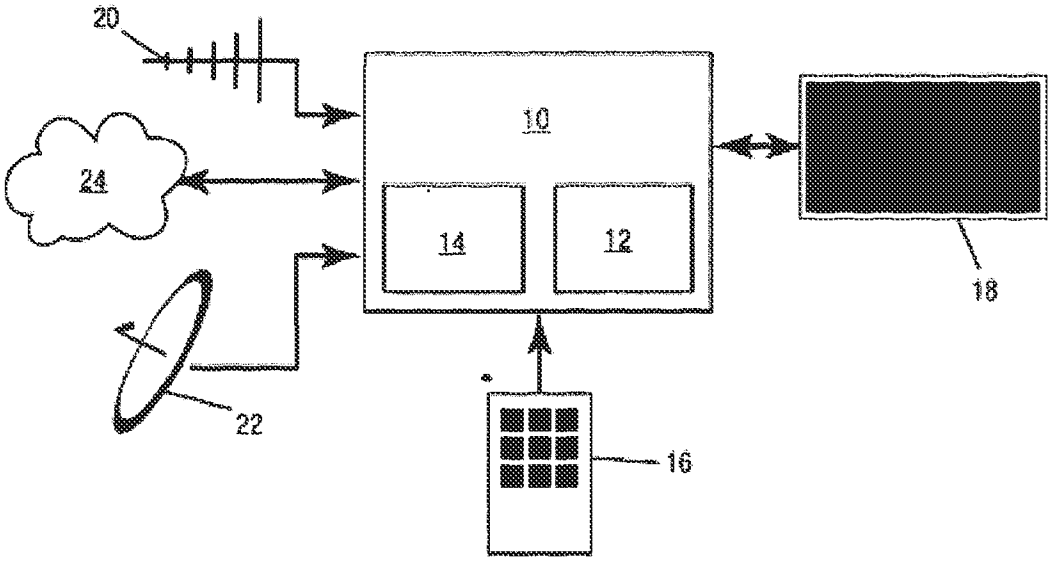


Figure 1

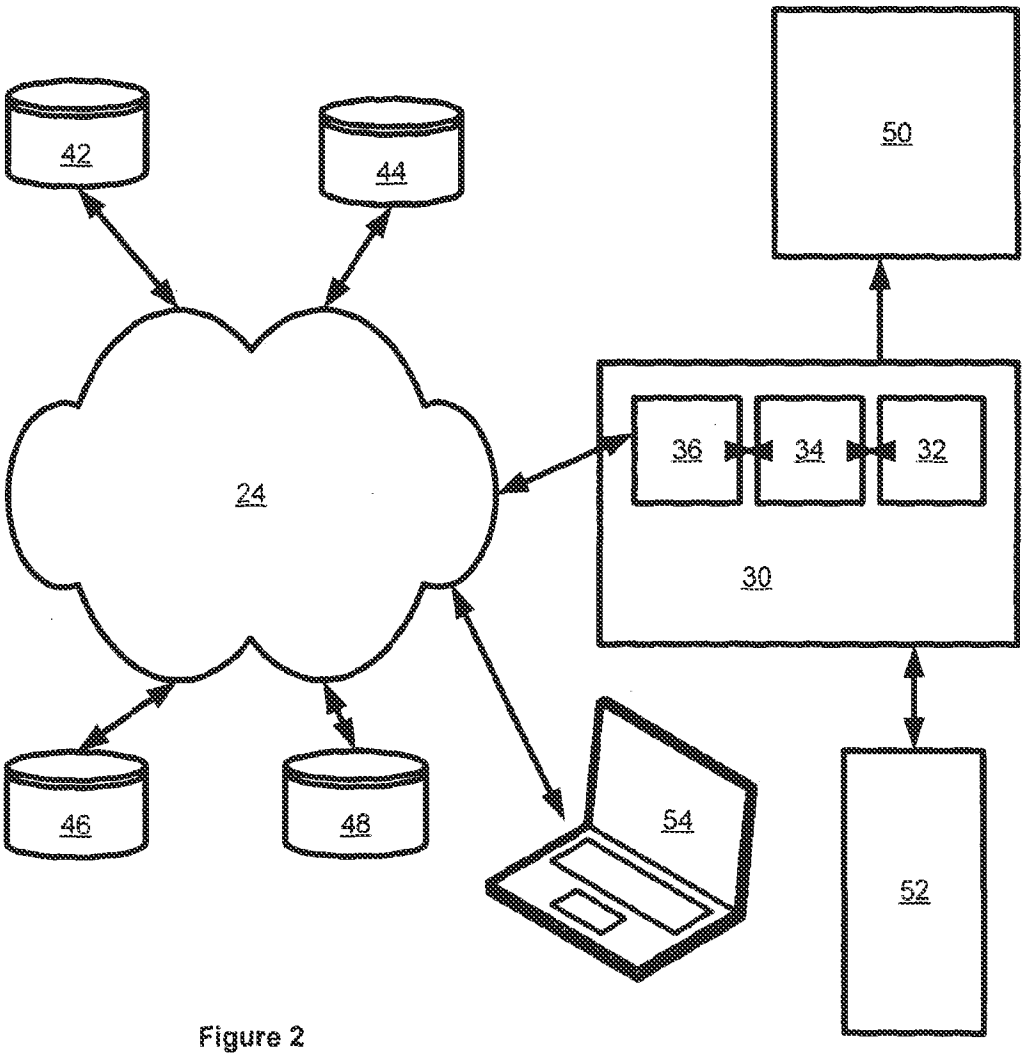


Figure 2

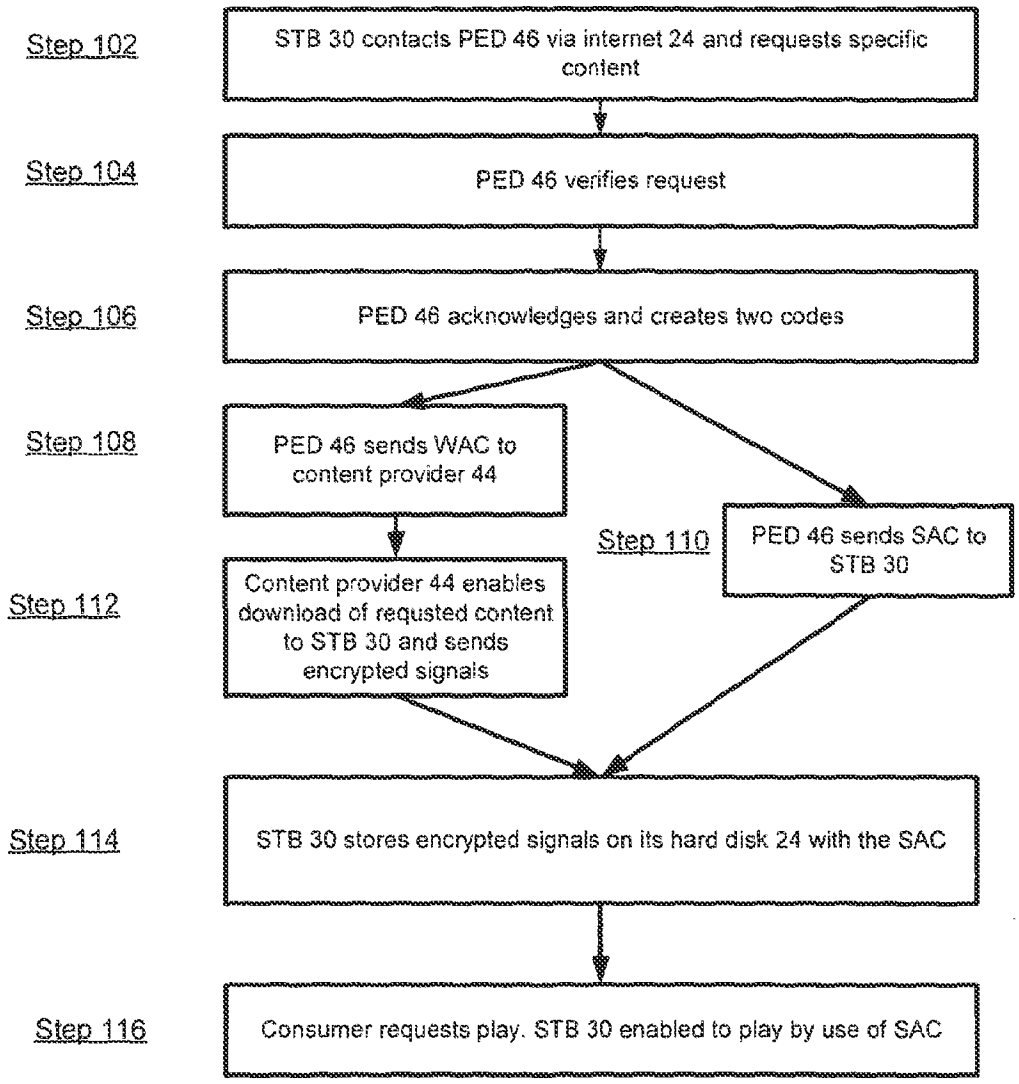

Step 102
STB 30 contacts PED 46 via internet 24 and requests specific content
Step 104
PED 46 verifies request
Step 106
PED 46 acknowledges and creates two codes
Step 108
PED 46 sends WAC to content provider 44
Step 110
PED 46 sends SAC to STB 30
Step 112
Content provider 44 enables download of requsted content to STB 30 and sends encrypted signals
Step 114
STB 30 stores encrypted signals on its hard disk 24 with the SAC
Step 116
Consumer requests play. STB 30 enabled to play by use of SAC

Figure 3

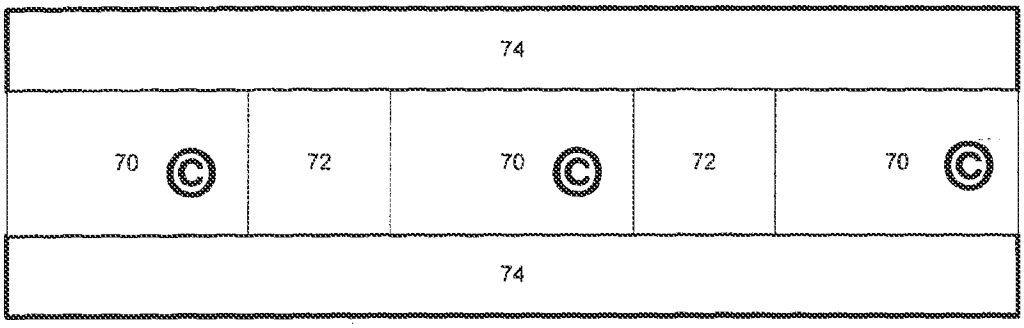


Figure 4A

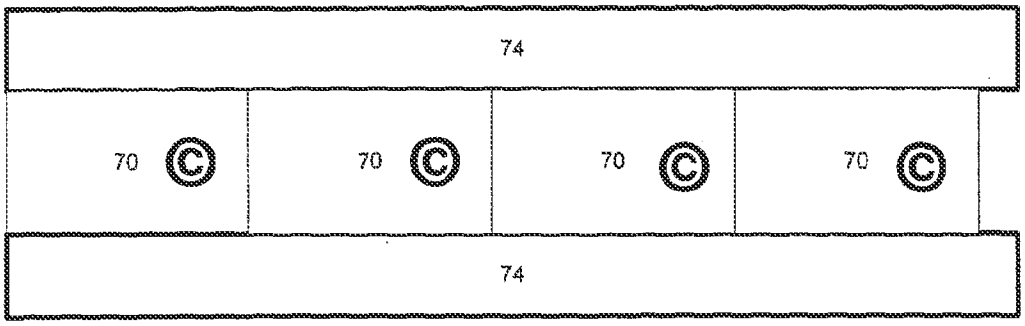


Figure 4B

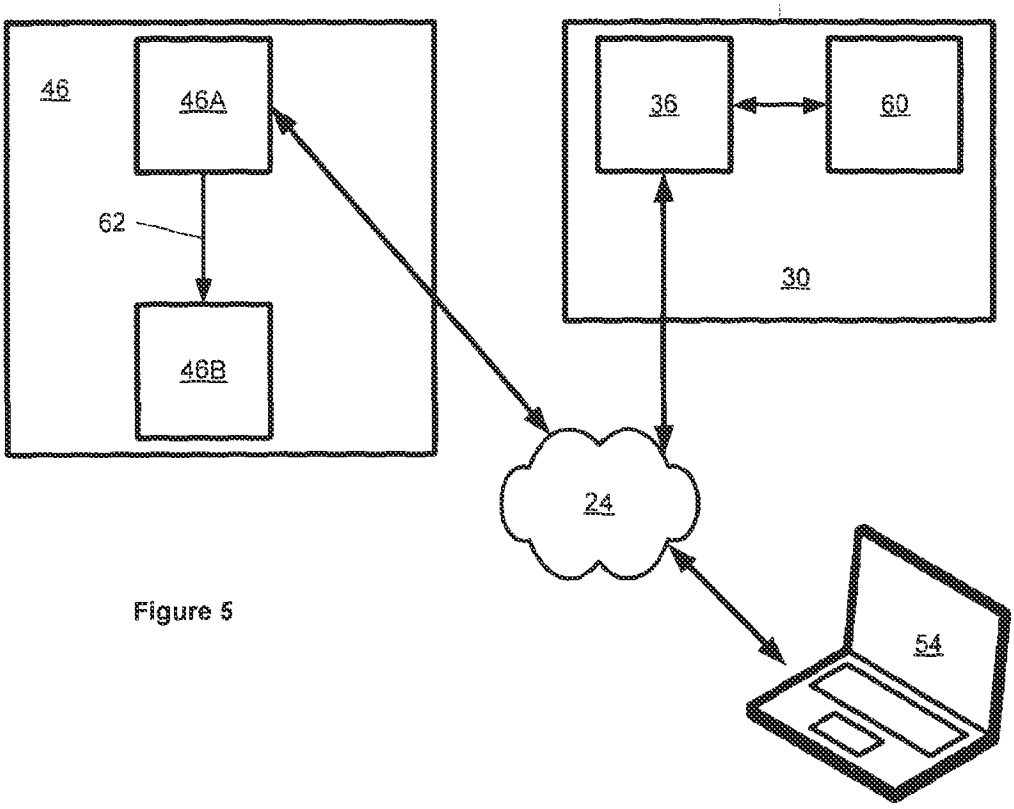


Figure 5

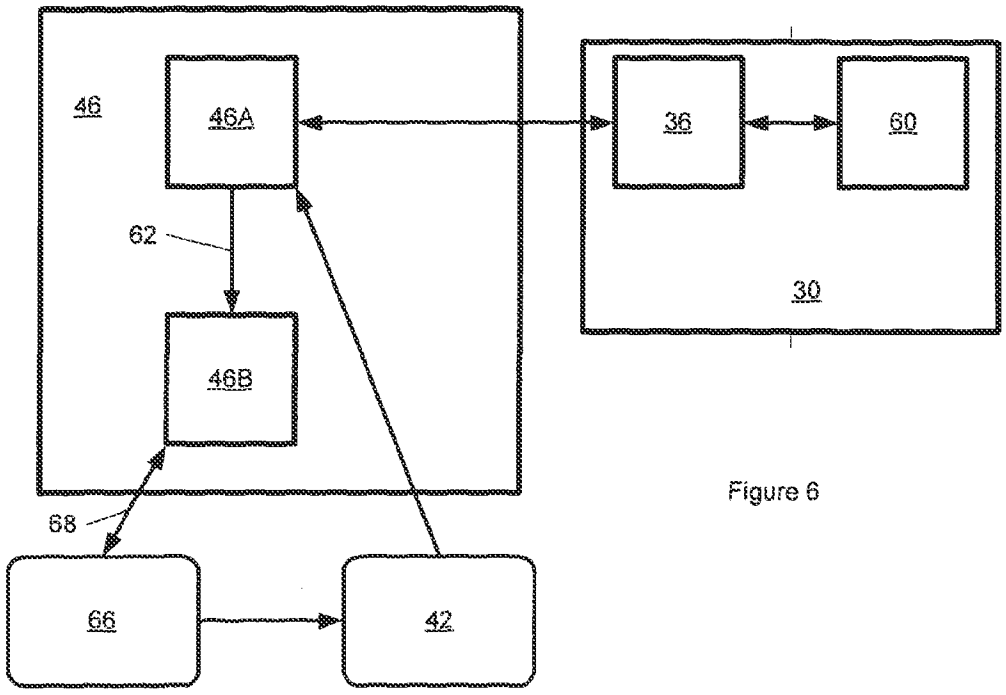


Figure 6

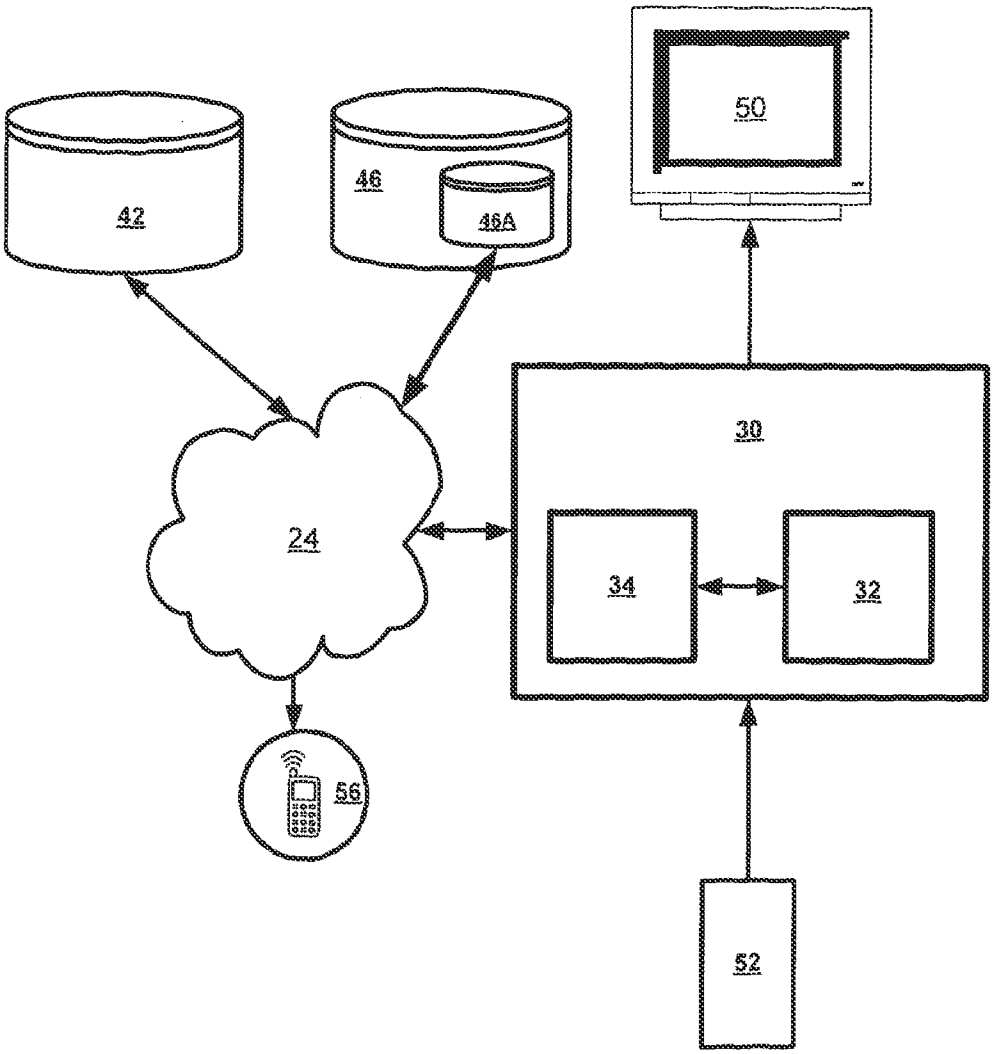


Figure 7

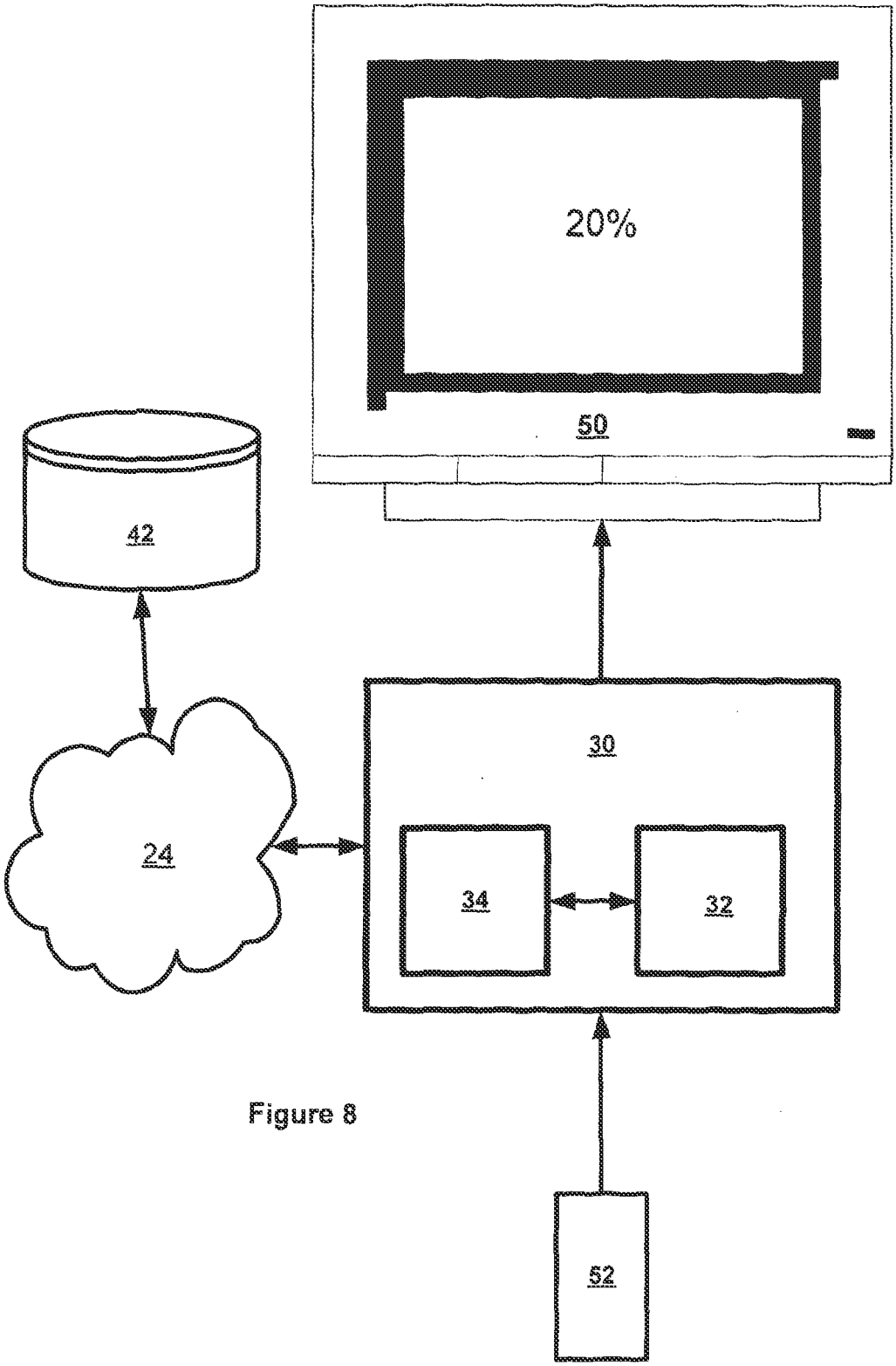


Figure 8

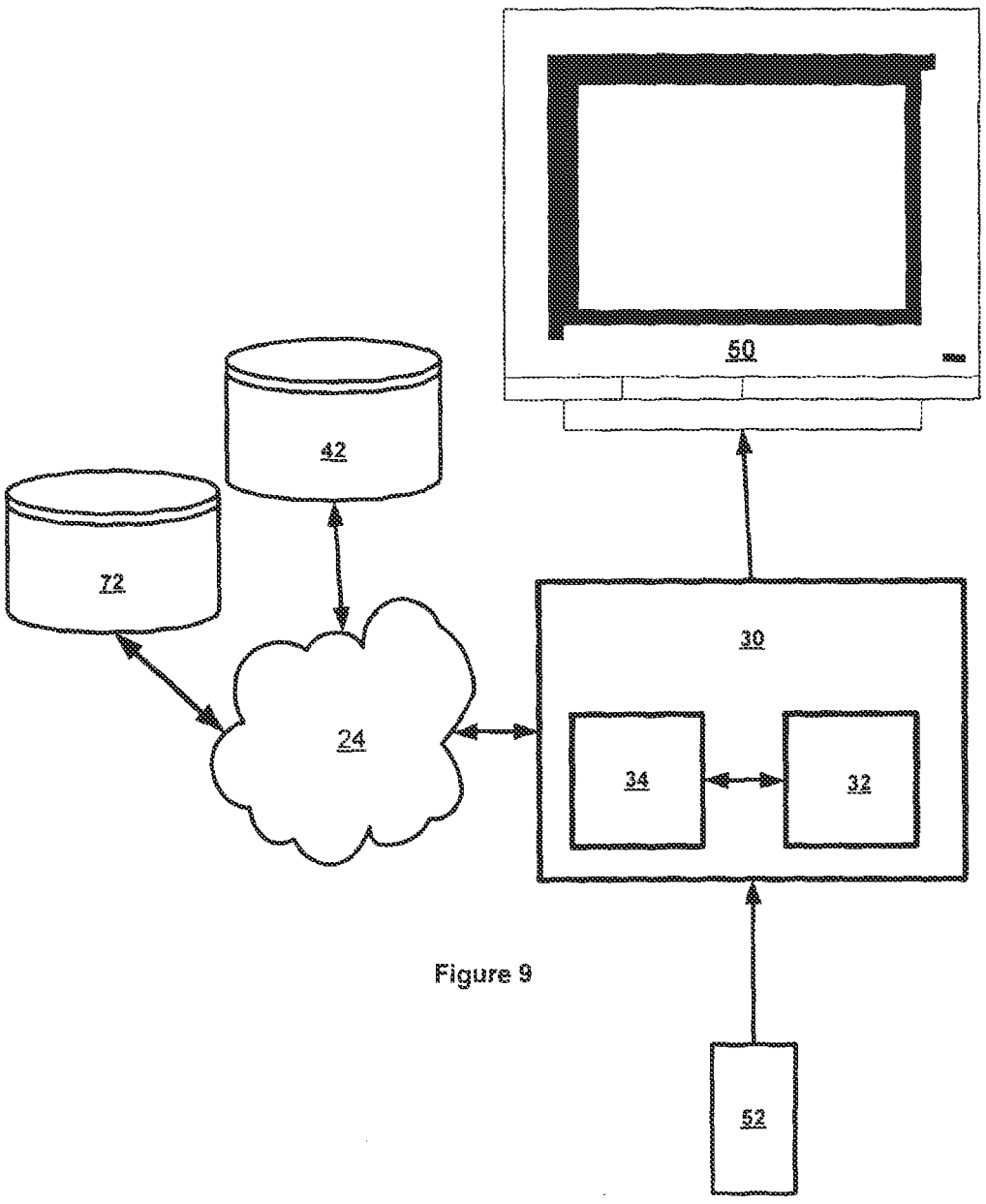


Figure 9

The following terms are registered trademarks and should be read as such wherever they occur in this document:

Paypal

An improved set top box and system for the provision of enhanced television services

BACKGROUND OF THE INVENTION

1. Technical Field

This invention relates to Set Top Boxes (STB) which are purchased by consumers to convert digital broadcast audio and television (TV) signals for supply to the consumer's television set or visual display unit. The invention also relates to services which can be supplied using a STB.

2. Description of the Related Art

As shown in Figure 1, a known STB 10 contains a computer-type hard disc 12 and twin signal decoders/tuners 14. The STB 10 is controlled by a remote control 16, such as an Infra Red control, and supplies signals to the consumer's viewing station such as a TV set or visual display unit 18. The STB receives broadcast digital television and audio signals from an aerial 20 or a satellite dish 22 or from the Internet 24.

The remote control 16 allows the consumer to navigate through the received digital and audio broadcast channels, to call up an on-screen guide to current and forthcoming programmes, either for live viewing or for recording on the hard disc 12 for later viewing, and to set parental controls. The consumer can pause live TV, schedule the recording of programmes into the hard disc 12, and watch one channel while viewing another by use of the twin decoders 14. The STB may contain facilities to decrypt encrypted broadcasts, sometimes by use of a smart card authorisation device (not shown).

With the Internet connection, the remote control 16 can be used to navigate through a series of menus, sub-menus and sub-sub-menus to select TV and radio content for downloading for live viewing or for storage on the hard disc 12.

When supply through the Internet 24 is selected by the consumer, the consumer

Google Exhibit 1004, Page 319 of 523

is able to retrieve video and audio content from the Internet for storage on the STB 10. The commercial operator can additionally send commands to the STB 10 so that it records broadcast programmes and advertisements, selected by the commercial provider, for storage in the hard disc for later viewing. Additionally, programmes and advertisements can be "pushed" into the STB 10 instead of being broadcast. Save for a blanket refusal to accept this service, the consumer cannot control this process

Whatever the source of a programme with associated advertisements, if it is stored for later viewing it is a current practice for consumers to "fast forward" through the adverts, and while it is technically possible to disable fast forward controls during advertisements, this is disliked by consumers. A result is that advertising in association with programmes provided over Internet services is unpopular, given the loss of potential revenue to service providers.

Further, an STB with Internet connection is technically capable of being used to monitor and control what a consumer views, which is a growing concern for democratic institutions. While such monitoring would allow the provision of targeted advertising with 100% accuracy, the loss of privacy is unlikely to be tolerable.

These two issues are believed to inhibit the take-up of STBs by consumers.

It is an object of the invention to provide an improved STB which protects consumer privacy while permitting the provision of targeted advertising services. It is a further object to provide a STB in which the consumer can select from the options of paying for programme content or of having programme content supported by general or by targeted advertising or a blended mixture of paying for content and advertising

Google Exhibit 1004, Page 320 of 523

Brief Summary of the Invention

According to the invention a Set Top Box (STB) for decoding digital transmitted signals for supply to a consumer's viewing unit comprising data storage means; input connection means for connection to a source of digital video and/or audio signals; output means for connection to a consumer's viewing unit; and control means to control operation of the viewing unit; characterised by further comprising a digital feed assembler.

Also according to the invention a system for supplying targeted advertisements to a multiplicity of STBs comprising a privacy enhanced database arranged to store personal data relating to the owner of each STB in a first, identity domain and arranged to generate and store, in a second, pseudo identity domain, at least one pseudo identity for each STB owner.

Further according to the invention a method of providing advertising to consumers of on-demand video and/or audio programmes comprising the steps of:-

a consumer registering with a commercial service provider;

an advertiser providing at least one advertisement to an advertising database, the advertisement having at least one limitation on time of showing;

the consumer requesting a programme;

the commercial service provider providing the requested programme to the consumer and inserting into the programme at least one advertisement in accordance with the limitation on time of showing.

Brief Description of the drawings

The inventions will be described by way of example with reference to the accompanying drawings in which:

Figure 2 illustrates a STB according to the invention connected to a system permitting the supply of privacy–enhanced services;

Figure 3 illustrates by means of a flowchart how the user downloads content

Google Exhibit 1004, Page 321 of 523

from the Internet to the STB of Fig 2;

Figure 4 illustrates the format of first and second types of encrypted feed;

Figure 5 illustrates the process of setting up the STB with personal data;

Figure 6 illustrates the operation of privacy-enhanced services in the downloading of programmes;

Figure 7 illustrates the operation of getting paid for watching adverts;

Figure 8 illustrates the process of receiving vouchers for interacting with adverts; and

Figure 9 illustrates the process of funding programme development using viewing credits.

Detailed description of the preferred embodiment

Figure 2 shows an enhanced STB 30 containing a computer-style hard disc 32, a digital feed assembler 34 and a privacy firewall 36. . The STB 30 supplies television and audio signals to a TV set 50 and is controlled by a remote control 52 such as an IR control. The STB 30 is connected to the Internet 24, and the consumer's laptop 54 is also connectable to the Internet..

The Figure also shows the system for providing privacy-enhanced television services. The commercial operator 42 (shown as a processor) is connected to the Internet 24. A content-provider 44 (shown as a processor) is also connected to the Internet, as are a privacy-enhanced database 46 and an advertisement database 48.

A brief general overview of the operation of the system in fig 2 will be given, followed by detailed descriptions of parts of the system.

The commercial operator 42 controls the operation of the privacy-enhanced television service via the Internet 24. The content-provider 44 supplies commercial television programmes funded by advertising and the programmes are encrypted. The advertisement database 48 stores advertisements ready for insertion by the commercial operator 42 in accordance with its commercial

Google Exhibit 1004, Page 322 of 523

relations with advertisers . The privacy-enhanced database 46 is also controlled by the commercial operator 42 via the Internet 24 and it includes personal data relating to every owner of an STB such as STB 30 who wishes to benefit from the service provided by the commercial operator 42. The owners' personal information is kept private by use of pseudo-identities to which access is permitted. When an advertiser sets criteria for recipients of an advert, the system is arranged to give a less than 100% match, such as a 80% match. Thus perfectly targeted adverts are not possible.

In the STB 30, the privacy firewall 36 blocks access to the STB 30 except by the commercial operator 42, and then only in accordance with privacy rules set by the owner of the STB 30.

The Digital Feed Assembler (DFA) 34 receives encrypted television signals from the Internet 24 through the firewall 36 and decrypts them for provision to the TV 50; the signals are stored in the hard disc 32 of STB 30 for immediate or later viewing. The DFA 34 also, when privacy rules set by the owner of STB 30 permits, interleaves advertisements from the advertising database 48 with the television signals.

On initial purchase of the STB 30, the consumer plugs it in and it automatically registers itself via the Internet 24 by logging its Internet Protocol (IP) address and its unique serial number in the privacy enhanced database 46. The database 46 returns a confirmatory signal to the STB 30, providing a unique code which is stored by the STB and can be called up at any time. If the consumer does not wish to benefit from privacy-enhanced services, no personal data is entered by the consumer and the STB operates in the same way as a prior art STB as shown in figure 1. The owner of the STB can at any time decide to benefit from the enhanced services by registering, as will now be described.

Google Exhibit 1004, Page 323 of 523

For a consumer who does wish to have privacy-enhanced services via the STB 30, instructions are provided when the STB is purchased. The consumer uses the laptop 54 to call-up the registered anonymous STB 30 on screen and to start a personal registration process in the privacy enhanced database 46 via the Internet 24. The unique code number of the STB is displayed on the TV screen 50 and the consumer enters this into database 46 via the laptop 54. Suppose the consumer wishes to accept advertising material in return for free programmes via the Internet; the consumer is asked for their name, address, postcode, number of people in the household, their sexes, and whether they are adult or children; the information is supplied to the privacy database 46, which will be described in detail below.

If the consumer decides to receive television service from the system operator 42 but does not wish to see any advertisements, a fee relating to the unique code number of the STB 30 is paid by any suitable means, such as a debit/credit/card payment over the Internet or the use of Paypal or similar service. The fee can be topped up at any time. The privacy-enhanced database 46 accepts, registers and keeps track of the fees but does not permit any withdrawals of money.

Figure 3 illustrates the process to authorise downloading of encrypted signals to STB 30; there is a three-way handshake involving the STB 30, the privacy-enhanced database (PED) 48 and the content provider 44.

In step 102 the STB 30 requests the down load of a specific programme provided by the content provider 44. The programme can be requested by selection from a menu which can be called up on the TV screen 50 by use of the remote 52; this extra feature in the remote is provided by the electronic programme guide software within the STB 30. Following selection of the programme, additional software within the STB 30 takes the STB's unique code (which was generated upon registration of the STB), takes the unique identity

Google Exhibit 1004, Page 324 of 523

code associated with the specific programme and creates an encrypted data packet which the STB 30 sends across the Internet to the privacy enhanced database (PED) 46.

In step 104 upon receipt of this encrypted data packet the privacy enhanced database 46 decrypts it, extracting the STB's unique code and the unique identity code associated with the specific programme. If these are found to be valid the privacy enhanced database will authorise the downloading of the specific programme to the STB 30. In this example the specific programme is hosted (in the conventional sense of running the servers on which the programmes are located) by the content provider 44.

In step 106, the privacy enhanced database 46 sends a request acknowledgement to the STB 30 and creates two codes; a Website Authorisation Code WAC is sent to the content provider 44 in step 108, and a STB AuthorisationCode SAC is sent to the STB 30 in step 110.

In step 112, on receipt of the WAC the content provider 44 enables the download of the requested programme in encrypted form and sends it to STB 30;

In step 114, the STB 30 stores the encrypted material together with the SAC in the hard disc 32 which acts as a buffer store.

In step 116, the consumer requests viewing of the programme by calling up a menu on the TV 50 by use of the remote control 52 and selecting the programme for immediate viewing

The DFA (digital feed assembler) 34, which is an appropriately-programmed processor now assumes control of the STB 30; the DFA has two main functions:-

Google Exhibit 1004, Page 325 of 523

1. to decrypt encrypted signals and supply them to the TV 50;
2. in certain circumstances controlled by the STB owner to insert advertisements into TV programmes shown on TV 50;

The second function is controlled by the consumer when setting up the STB 30 initially; if the consumer has authorised the viewing of advertisements and has provided personal data to the PED 46, then the STB 30 accesses the advertisement database 48 at intervals and downloads advertisements for storage in the hard disc 32; each advertisement has a date code and a time code associated with it. Alternatively the STB 30 may receive the advertisements by selectively downloading broadcast advertisements which contain codes that match the characteristics of the personal data recorded in the PED 46 and storing those with their date codes and time codes on the hard disk 32.

The signals supplied to the STB in step 112 of Figure 3 may be represented as in Figure 4A; as is conventional in TV programmes supported by advertising, the programme or copyright content 70 is divided into parts separated by time slots 72. The fact that the copyright material is encrypted is indicated at 74.

The DFA 34 decrypts the copyright material 70 and sends it to the TV 50. For each time slot 72 the DFA 34 selects one or more advertisements from the advertisements stored in hard disc 32 and having appropriate time and date indicators, and provides them to TV 50. The viewer sees a programme with advertisements at intervals, as is known in conventionally-provided commercial TV.

Figure 4B shows the situation for a consumer who has decided not to see advertisements; the copyright material 70 is not separated by time slots and the consumer views the programme without interruption.

Google Exhibit 1004, Page 326 of 523

The operation of the privacy-enhanced database 46 will now be described with reference to Figure 5, which illustrates both the hardware and the directions of information flows. The database 46 includes an identity domain 46A which is accessed by each STB owner to record personal data, and a pseudo identity domain 46B which is not accessible by the STB owners.

When the owner of STB 30 wishes to benefit from enhanced television services according to the invention, the owner's laptop 54 is used to enter personal data into the STB 30 through connecting to the identity domain 46A of the PED 46 via the Internet 24, which sends the data to the STB 30 over the Internet 24. This personal data passes through the privacy firewall 36 in STB 30. A copy is retained in the identity domain 46A of the privacy enhanced database 46. From this copy of the personal data, the identity domain 46A generates one or more pseudo-identities for each provider of real data and stores them in the pseudo-identity domain 46B. It will be seen that the information flow arrow 62 is unidirectional; there is no information flow from domain 46B to 46A.

Figure 6 illustrates the position once the STB 30 has been registered and the user has supplied it with some personal data so that advertisements can be targeted. Suppose now that an advertiser 66 informs the commercial operator 42 of the criteria of a target group, such as males between 30 and 70 having a specific postcode. Advertisers will have pre-registered with the commercial operator and in accordance with the terms of their registration will be entitled to access the pseudo-identity domain 46B as shown by the arrow 68. Under these terms the advertisers 66 can access the pseudo-identity domain 46B, enter the criteria and in return receive a required number of entries in the form of pseudo identities; the advertiser cannot access the real identities in domain 46A.

There is a further level of privacy for STB owners. It is a novel feature of this aspect of the present invention that it is never possible to target specific

Google Exhibit 1004, Page 327 of 523

consumer groups precisely and accurately, because the system is designed to target consumer groups only to a certain level of probability, which is always less than 100%. The level may be set at eg 80%.

The pseudo-identity domain 46B is arranged to assess the probability of the records extracted by the advertiser meeting the criteria set by that advertiser and, if the probability exceeds 80%, further records are extracted from the domain 46B, (for example records in which the post code is matched but the age range is not) and mixed with the first-extracted records until the probability of the criteria being met is less than 80%.

The advertiser 66 then sends the extracted records together with the advert to the commercial operator 42 who sends this information to the domain 46A. Domain 46A decodes the real identities and sends the advert to those STBs.

All communications are via the internet 24, not shown in this figure.

The generation of pseudo identities will now be described. Suppose that the database 44 is loaded with a number of consumer records from STB owners, eg name, address, postcode or zipcode, number of people in the household including their sex and whether they are adult or not. (It will be appreciated that this is similar to the information requested when registering a household appliance such as a washing machine for warranty). It is assumed that the information supplied by each consumer is correct, but this can be checked on a mass basis from the publically available trusted sources of information such as Census Records, Council Tax Registration details and Voter Registration. By use of such records, the probability of each record being correct can be assessed by known techniques taking into account factors such as the age of the database with which a comparison is made, the legal penalty for supplying false information to a public database, and the benefit to the consumer for supplying accurate information to a public database.

Google Exhibit 1004, Page 328 of 523

The assessment of the probability of the personal information supplied by STB owners being correct is by use of Bayes' Theorem. In a simple situation involving discrete distributions, Bayes' theorem relates the conditional and marginal probabilities of events A and B, where B has a non-vanishing probability, the relationship being given by:

$$P(A/B) = \frac{P(B/A)P(A)}{P(B)}$$

Each term in Bayes' theorem has a conventional name:

P(A) is the prior probability or marginal probability of A. It is "prior" in the sense that it does not take into account any information about B.

P(A/B) is the conditional probability of A, given B. It is also called the posterior probability because it is derived from or depends upon the specified value of B.

P(B/A) is the conditional probability of B given A.

P(B) is the prior or marginal probability of B, and acts as a normalising constant.

In the present invention, A may be the probability that the viewer watching a particular STB is male, and B may be the probability that the viewer watching a particular STB is between the ages of 30 and 70.

The assessed probability of correctness of each item of data supplied by each STB owner to identity domain 46A is used to calculate one or more pseudo identities for each actual identity, and the pseudo identities are stored in the pseudo identity domain 46B. This domain is not accessible by the STB owners, or indeed by anyone other than the commercial operator 42.

The advertisements stored in the advertisement database 48 and downloaded to hard disc 32 include various codes. One code may prevent showing before 9pm. Another code may allow the advert to be shown not more than once in three days. Yet another code may set date limits so that it must be shown before eg Christmas Day.

Google Exhibit 1004, Page 329 of 523

A substantial advantage of the provision of advertisements according to the invention is that the adverts will be different on repeated viewing of the programme. Further, if a consumer requests a programme before Christmas but does not view it until after the New Year, the DFA 34 in the consumer's STB 30 will assemble only appropriate advertisements, eg those relating to a New Year Sale.

A further advantage is that the adverts can be targeted; the privacy-enhanced database 44 includes personal data provided by all STB owners and an advert can be targeted using any type of data.

For example, an advert includes coding indicating that it is to be shown only to consumers having a specified postcode; this can be used by local businesses to advertise their services only to local residents; the charge made by the content provider 44 for such an advert will be much less than the cost of traditional nation-wide TV advertising, which has previously been prohibitive for local businesses. In combination with a timing indicator, a local restaurant whose bookings are low on Tuesday evenings could place an advert to be shown early on Tuesdays up to a specified time, the advert reading "If you make a booking for this evening and give the following codeword (to show that the advert is the origin of the booking) then you will receive a 20% discount on your bill".

Since the advert codes can include time-of-showing, it is possible using the invention to hold dynamic auctions for prime time slots. Suppose an auction is held for a 30 second time slot in a time interval between 8pm and 8,30pm. The auction runs until 7.30pm, and the advert of the winner is inserted into the advertising database 48 in a prioritised manner so that it is downloaded immediately to STBs for showing in the prime time slot, provided the STB owner is in fact watching TV during that time interval.

Google Exhibit 1004, Page 330 of 523

An advantage of use of the invention is that, when a STB is registered, it can be provided with a customised Home Page. When the remote control 52 is used to navigate through a programme guide displayed on the TV 50, the display can be arranged to contain programmes and playlists based on personal choices, which can be registered by the STB user, or generated from the user's viewing statistics. For multi-users such as a family, each person can have an individual Home Page selectable on the TV screen.

A privacy-enhanced system according to the invention may also be used to provide direct financial benefits, such as cash, money-off vouchers and the like. For this the consumer must supply his mobile 'phone number. This is shown in **Figure 7.** The system to which the STB 30 is connected now includes a mobile phone 56, whose number is registered in the privacy-enhanced database 44. This is information which has not previously been provided or used in this description.

The mobile 56 is used to receive payments from the system provider 42, because in effect the consumer is being paid to watch TV with adverts; the arrangement is shown in Figure 7. The STB 30, TV 50 and remote 52 are as shown in figure 2; the STB is connected to the Internet 24 and the STB owner's mobile 56 is connected either to the Internet 24 or on a mobile network which supports SMS messaging. The system now includes a viewer credit database which is located in the identity domain 46A of the privacy enhanced database 46 When the consumer watches an advert inserted into programmes by the STB 30 (rather than "fast forwarding" through the advert), this fact is recorded by the STB and a signal is sent to the commercial operator 42; for watching the adverts, the consumer receives an electronic payment which is recorded in the Identity Domain 46A shown in Figure 7. Upon the instruction of the consumer the reward could be transferred to the mobile 56 as a barcode. The barcode can be used for purchases in a shop or restaurant etc (on condition that the shop or restaurant is a participator in the advertiser's programme and is

Google Exhibit 1004, Page 331 of 523

prepared to accept the barcode as a mode of payment for goods or services). Alternatively the rewards for watching and responding to advertisements could be accumulated in the Identity Domain 46A and used as credits for use in the STB 30 to watch downloaded content without adverts, as described with reference to Figure 4B.

The arrangement may also be used for benefits such as money-off vouchers as shown in **Figure 8.** An advert includes in the last ten seconds it is shown the message "Press the green button on your remote for a 20% voucher off your next purchase" (of the product just advertised); if the consumer presses the green button, an electronic voucher is delivered to the mobile 56 as a barcode. Naturally other benefits can be offered such as free entry into a raffle. Such an arrangement helps to ensure that the consumer does in fact watch the adverts supplied to the TV 50.

The same facility can be used to fund the creation of new copyright material; this is shown in **Figure 9.** Suppose a creator wishes to produce a new video or audio programme with consumer support, ie support from fans. The creator makes available the option of viewers earning credits by responding to advertisements. The system now includes a viewer credit database 72 connected to the Internet 24. In this embodiment the consumer responds to an advertisement-linked message on the TV screen reading "Press the green button on your remote control to buy a share in a (specified new programme, for 500 credits". The consumer builds up credits, by responding to other advertisements, which are recorded in the viewer credit database 72; in effect, the creator benefits instead of the consumer, from watching advertisements. When the appropriate total of credits is reached, the consumer/fan can directly fund the programme development because the credit total is transferred to the creator. Once the programme is made, the consumers who funded it could be granted a share of royalties derived from the programme. The credit database can also be used to refund the credits in the event that the programme is not made..

Google Exhibit 1004, Page 332 of 523

While the invention has been described with reference to the full range of possible services, the choice lies with the consumer on registration. As explained above, if a consumer does not make any contact with the privacy-enhanced database and its services, the STB will operate in the same way as a prior art STB.

In another variation, the consumer may be asked to agree to viewing statistics from the STB being sent to the system operator 42. The consumer may agree, in which case he will be given full access to the statistics and will have the right to delete entries is he should so wish. Such statistics may be used by advertisers to send, for example, adverts about books on golf to viewers who watch golf programmes.

An important difference from prior art STBs is that with an STB associated with a privacy-enhanced database, the consumer has complete control over the video and audio material provided to his TV. Programme providers cannot monitor which programmes and/or adverts the consumer receives and cannot control which programmes are supplied to the STB.

Further, an advertiser can sell his adverts to consumers without the use of a distributor or other intermediary.

Yet further, consumers, programme creators, advertisers, broadcasters and set top box makers can participate in a trusted digital content platform in which each consumer controls access to his personal data, unless he specifically permits access to it.

While the Figures show programmes provided through the Internet, use of aerials and satellite dishes can also be incorporated so that broadcast programmes can include targeted advertising with the permission of the

Google Exhibit 1004, Page 333 of 523

broadcaster. While the invention has been described with reference to television services, the same service may be applied to radio.

Google Exhibit 1004, Page 334 of 523

CLAIMS

1. A Set Top Box (STB) for decoding digital transmitted signals for supply to a consumer's viewing unit comprising data storage means; input connection means for connection to a source of digital video and/or audio signals; output means for connection to a consumer's viewing unit; and control means to control operation of the viewing unit; characterised by further comprising a digital feed assembler.

2. A STB according to claim 1 in which the digital feed assembler is arranged to decrypt received encrypted signals for supply to an associated viewing unit.

3. A STB according to claim 2 in which the digital feed assembler is arranged to insert advertisements into the decrypted signals.

4. A STB according to any preceding claim further comprising means to store personal data relating to the owner of the STB.

5. A STB according to claim 4 further comprising a privacy firewall.

6. A system for supplying targeted advertisements to a multiplicity of STBs according to any preceding claim comprising a privacy enhanced database arranged to store personal data relating to the owner of each STB in a first, identity domain and arranged to generate and store, in a second, pseudo identity domain, at least one pseudo identity for each STB owner.

7. A system for supplying targeted advertisements according to claim 6 in which the privacy enhanced database is arranged to pass personal data unidirectionally from the identity domain to the pseudo identity domain.

Google Exhibit 1004, Page 335 of 523

8. A system for supplying targeted advertisements according to claim 6 or claim 7 further comprising an advertisement database.

9. A system for supplying targeted advertisements according to claim 8 in which the privacy enhanced database, the advertisement database and the STBs communicate via the Internet.

10. A method of providing advertising to consumers of on-demand video and/or audio programmes comprising the steps of:-

a consumer registering with a commercial service provider;

an advertiser providing at least one advertisement to an advertising database, the advertisement having at least one limitation on time of showing;

the consumer requesting a programme;

the commercial service provider providing the requested programme to the consumer and inserting into the programme at least one advertisement in accordance with the limitation on time of showing.

11. A method according to claim 10 in which the time of showing limitation is a time of day.

12. A method according to claim 10 in which the time of showing limitation is a date.

13. A method according to any one of claims 10, 11 or 13 in which the consumer is rewarded for watching an advertisement.

14. A method of providing targeted advertisements in video and/or radio programmes comprising the steps of :-

a multiplicity of consumers supplying personal data to a first, identity domain of a privacy enhanced database;

Google Exhibit 1004, Page 336 of 523

said database generating at least one pseudo identity for each consumer and storing the pseudo identities in a second, pseudo identity domain of the privacy enhanced database;

an advertiser specifying personal characteristics of a target consumer to the pseudo identity domain and requesting a number of pseudo identities;

the database supplying the requested number of pseudo identities which match the specified characteristics to a predetermined level less than 100%;

the advertiser supplying a targeted advertisement;

the privacy enhanced database retrieving the real identities corresponding to the pseudo identities and sending the targeted advertisement to those consumers.

15. A method according to claim 14 in which the predetermined level is 80%.

16. A method according to any one of claims 10 to 15 in which the video and/or audio programmed are encrypted programmes provided over the Internet.

Google Exhibit 1004, Page 337 of 523

Application No: GB1000338.2 **Examiner:** Richard Baines

Claims searched: 1 **Date of search:** 9 March 2010

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X,Y	X: 1 - 4 Y: 5	WO2009/036028 A3 (DISNEY) - abstract, figure and paragraphs 36, 55, 60 & 62
X,Y	X: 1 - 4 Y: 5	US2009/0222853 A1 (AT&T) - abstract, figure 2 and paragraphs 34, 45, 48, 50, 52 & 57
X,Y	X: 1 - 4 Y: 5	US2008/0288975 A1 (CHEN) - abstract, figure 5 & 6 and paragraphs 64, 66, 66 & 72
Y	5	US2004/237098 A1 (AT&T) - abstract

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC[X] :

Worldwide search of patent documents classified in the following areas of the IPC

H04N

The following online and other databases have been used in the preparation of this search report

Online: WPI, EPODOC

International Classification:

Subclass	Subgroup	Valid From
H04N	0007/173	01/01/2006
H04N	0005/00	01/01/2006
H04N	0007/16	01/01/2006

Intellectual Property Office is an operating name of the Patent Office

Application No: GB1000338.2 **Examiner:** Richard Baines

Claims searched: 14 **Date of search:** 18 March 2010

Patents Act 1977
Further Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
A	-	US2009/0254971 A1 (PINPOINT)
A	-	US6850252 B1 (HOFFBERG)

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC[X] :

Worldwide search of patent documents classified in the following areas of the IPC

G06F; H04N

The following online and other databases have been used in the preparation of this search report

Online: WPI, EPODOC, TXTEN

International Classification:

Subclass	Subgroup	Valid From
H04N	0007/173	01/01/2006
G06F	0017/30	01/01/2006
H04N	0005/00	01/01/2006
H04N	0007/16	01/01/2006

Intellectual Property Office is an operating name of the Patent Office

Application No: GB1000338.2 **Examiner:** Richard Baines

Claims searched: 10 **Date of search:** 18 March 2010

Patents Act 1977
Further Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	10 - 13	US6611813 B1 (LISTEN.COM) - abstract and paragraphs 3, 6, 7, 9, 10 & 23
X	10 - 12	US2009/0222851 A1 (TALMI) - abstract, figures 1 & 3 and paragraphs 59, 85 & 95
X	10 - 12	US2006/0293954 A1 (ANDERSON) - abstract and paragraphs 2, 13, 80 & 292
X	10 - 12	US2006/0085816 A1 (FUNK) - abstract, figure 4 and paragraphs 2, 11, 40 & 48

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC[X] :

Worldwide search of patent documents classified in the following areas of the IPC

H04N

The following online and other databases have been used in the preparation of this search report

Online: WPI, EPODOC, TXTEN

International Classification:

Subclass	Subgroup	Valid From
H04N	0007/173	01/01/2006
G06F	0017/30	01/01/2006
H04N	0005/00	01/01/2006

Intellectual Property Office is an operating name of the Patent Office

Subclass	Subgroup	Valid From
H04N	0007/16	01/01/2006

Application No: GB1000338.2 **Examiner:** Richard Baines

Claims searched: 6 **Date of search:** 18 March 2010

Patents Act 1977
Further Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
Y	6, 8 & 9	WO2009/036028 A3 (DISNEY) - abstract, figure and paragraphs 36, 55, 60 & 62
Y	6, 8 & 9	US2009/0222853 A1 (AT&T) - abstract, figure 2 and paragraphs 34, 45, 48, 50, 52 & 57
Y	6, 8 & 9	US2008/0288975 A1 (CHEN) - abstract, figures 5 & 6 and paragraphs 64, 66 & 74
Y	6, 8 & 9	US7584223 B1 (HP) - abstract, figures 1, 3 & 24, column 5 lines 42 - 47, column18 lines 12 - 21 and column 65 lines 3 - 21

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC[X] :

Worldwide search of patent documents classified in the following areas of the IPC

G06F; H04N

The following online and other databases have been used in the preparation of this search report

Online: WPI, EPODOC, TXTEN

International Classification:

Subclass	Subgroup	Valid From
H04N	0007/173	01/01/2006
G06F	0017/30	01/01/2006
H04N	0005/00	01/01/2006

Subclass	Subgroup	Valid From
H04N	0007/16	01/01/2006

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/990,372	Filing Date 05/29/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT

08/20/2015	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/YOLANDA A. MIDDLETON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 10/19/2015

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
KIM, WILLIAM JW	

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
10/19/2015	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com

Office Action Summary	Application No. 13/990,372	Applicant(s) KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	Art Unit 2421	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/20/2015*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1,2 and 4-13* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1,2 and 4-13* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

The present application is being examined under the pre-AIA first to invent provisions.

Response to Arguments

Applicant's arguments filed 20 August 2015 have been fully considered but they are not persuasive.

Applicant asserts that the present application was effectively filed 01 December 2010 (the date of priority benefits provided by Foreign Priority application UK 1020361.0), and that reference Poel would not meet the statutory bar set as a result (see Remarks, pg. 5, final two ¶s). Examiner draws attention to MPEP 2133 (II) which states:

> If one discloses his or her own work more than 1 year before the filing of the patent application, that person is barred from obtaining a patent. In re Katz, 687 F.2d 450, 454, 215 USPQ 14, 17 (CCPA 1982). ***The 1-year time bar is measured from the U.S. filing date***. Thus, applicant will be barred from obtaining a patent if the public came into possession of the invention on a date before the 1-year grace period ending with the ***U.S. filing date***. It does not matter how the public came into possession of the invention.

Examiner also draws attention to MPEP 706.02 (VI) which states:

> The effective filing date of an invention claimed in a U.S. application may be determined as follows:
> …

(D) If the application claims foreign priority under 35 U.S.C. 119(a)-(d) or 365(a) or (b), the definition of the effective filing date of a claimed inventions depends on whether any claim in the application is subject to the first inventor to file provisions of the AIA. See 35 U.S.C. 100(note) and MPEP §§ 2159 et seq. for guidance on this determination.

…

In examining applications subject to pre-AIA 35 U.S.C. 102, ***the effective filing date is the filing date of the U.S. application***, unless situation (A) or (B) as set forth above applies. ***The effective filing date is not the filing date of the foreign priority document***, although the filing date of the foreign priority document may be used to overcome certain references. See MPEP §§ 706.02(b) and 2136.05.

Examiner further draws attention to MPEP 1893.03 which states:

An international application designating the U.S. has two stages (international and national) with the filing date being the same in both stages. Often the date of entry into the national stage is confused with the filing date. It should be borne in mind that the filing date of the international stage application is also the filing date for the national stage application. Specifically, 35 U.S.C. 363 provides that

> *An international application designating the United States shall have the effect,* ***from its international filing date under Article 11 of the treaty****, of a national application for patent regularly filed in the Patent and Trademark Office* except as otherwise provided in section 102(e) of this title.

Similarly, PCT Article 11(3) provides that

> ...an international filing date shall have the effect of a regular national application in each designated State as of the international filing date, which date shall be considered to be the actual filing date in each designated State.

37 CFR 1.496(a) , first sentence, reads “International applications which have complied with the requirements of 35 U.S.C. 371(c) will be taken up for action based on the date on which such requirements were met.” ***Thus, when the file***

> ***wrapper label or PALM bib-data sheet and filing receipt are printed, the information is read from the PALM data base and the information printed in the filing date box is the date of receipt of 35 U.S.C. 371(c)(1), (c)(2) and (c)(4) requirements rather than the actual international filing date***.

Thus, in light of the above, contrary to Applicant's assertion, the *effective U.S. filing date* of the application is the 371 date of PCT/GB11/52259, which is 18 November 2011. Thus, the Poel reference, which was published 28 April 2010 meets the statutory bar.

Furthermore, MPEP 2133.02 (II) states:

> A rejection under pre-AIA 35 U.S.C. 102(b) ***cannot be overcome by affidavits and declarations under 37 CFR 1.131 (Rule 131 Declarations), foreign priority dates, or evidence that applicant himself invented the subject matter***. Outside the 1-year grace period, applicant is barred from obtaining a patent containing any anticipated or obvious claims. In re Foster, 343 F.2d 980, 984, 145 USPQ 166, 170 (CCPA 1965).

As such, in light of the above, the declaration under 37 C.F.R. §1.132 submitted by Applicant on 20 August 2015 is not sufficient to remove the Poel reference from consideration and fails to traverse or overcome the rejection of record. The rejections of record are maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 4-6, 8-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Poel et al. (GB 2464630 A)** (as supplied by the IDS filed 29 May 2013 – hereinafter Poel), in view of **Paxton et al. (US 2004/0158870 A1)** (as cited in the

Advisory Action mailed out on 29 October 2014, hereinafter Paxton), and further in view of **Poslinski (US 2006/0013556 A1)** (hereinafter Poslinski).

Regarding Claim 1, Poel discloses a system for automating compliance with local broadcasting regulations applicable to advertisements, said advertisements being provided during time-shifted viewing/listening **[Figs. 1-2; pg. 1, lines 1-5: STB has data storage means; pg. 7, line 21 – pg. 8, line 3: DFA (digital feed assembler) of STB decrypts signals received by STB and may insert ads into the programs shown; pg. 12, lines 1-7: user of a STB may request a program at some point in time, but not view it until a later date (i.e., may provide time-shift viewing/listening functions]** comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements; **[Figs. 1-4A; pg. 1, lines 11-25: STB may receive broadcast video/audio channels; pg. 4, line 19-23: content provider 44; pg. 6, line 25 - pg. 7, line 23: content provider may provide broadcast content to STB, whereby the STB may store the content; pg. 8, lines 17-27: where conventional TV programmes are divided into parts separated by timeslots 72 which are filled with ads by the DFA]**

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation which local broadcasting time regulation restricts the time of day at which said advertisement may be shown; **[Figs. 1-4A; pg. 3, lines**

19-24: advertiser provides at least one ad to an ad database where the ads have at least one limitation on time of showing, and are inserted into TV programs according to the limitations; pg. 8, lines 17-27: where conventional TV programmes are divided into parts separated by timeslots 72 which are filled with ads by the DFA; pg. 11, lines 27-32: ads may include codes that prevent showing before some certain time; pg. 12, lines 9-22: where ads can have criteria directed toward particular postcodes/locations]

rules database means containing rules relating to said local broadcasting regulation; **[Figs. 1-2, 6; pg. 4, line 27 – pg. 5, line 8: ad database stores ads, where ad can set criteria (regulations) for recipients of an ad; pg. 8, lines 6-15: STB may access and download ads onto a local storage/database, where each ad has a date code and time code associated with it; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad]**

clock means to supply a real-time clock signal; **[pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]** and

control means arranged to read said headers and said clock signal and said rules database and to apply said local broadcast regulation to each advertisement before said advertisement is shown. **[Figs. 1-4A; pg. 5, lines 14-19: DFA interleaves ads and television signals; pg. 8, lines 22-27: DFA selects one or more ads stored to insert**

into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date and where it would be understood that applying the criteria/regulations on the ad would occur prior to the ad being shown]

Poel fails to explicitly disclose wherein the local broadcasting regulations are laid down by a broadcasting authority.

Paxton, in analogous art, teaches local broadcasting regulations laid down by a broadcasting authority. **[0102, 0105-109: SI associated with each program includes tags relating to content availability/Restrictions, where Restrictions may be imposed on programs by governmental authorities and regulators (i.e., watershed rules) to prevent programs from being replayed during a restricted time period; 0121, 0128-130: stored versions of previously broadcast programs may have playback times restricted]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel with the teachings of Paxton to specify local broadcasting regulations laid down by a broadcasting authority in order to allow content providers/owners to enforce and remain within statutory restrictions with regard to broadcast restrictions for time-shifted playbacks of said broadcasts. **[Paxton – 0071; 0102; 0130]**

Poel and Paxton fail to explicitly disclose a second field related to the number of times said advertisement has previously been shown during time-shifted viewing.

Poslinski, in analogous art, teaches a second field related to the number of times said advertisement has previously been shown during time-shifted viewing. **[0134-139: in time-shifted viewing, system may have counters to indicate the number of times that a commercial has been fully viewed]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel and Paxton with the teachings of Poslinski to keep track of the number of times an advertisement has been shown during time-shifted viewing in order to ensure that commercials/advertisement are viewed in full by users viewing recorded content. **[Poslinski – 0134-139]**

Regarding Claim 2, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses wherein each header includes a keyword, and the control means checks the keyword against the rules database. **[pg. 8, lines 11-15: ads with codes matching characteristics of personal data may be selectively downloaded; pg. 9, lines 19-29: where advertisers may identify certain criteria for target groups for each ad; pg. 10, lines 5-14: where ads may send extracted records (target groups) along with the advertisements, where the system uses said information to determine to which users/STBs to send the particular ads]**

Regarding Claim 4, Poel, Paxton, and Poslinski disclose all the limitations of Claim 2, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity. **[pg. 8, lines 6-15: where each ad has a date code and time code associated with it; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad; pg. 12, lines 18-20: where an ad may be specified to be shown on specific days of the week (like Tuesdays, as in the example provided)]**

Regarding Claim 5, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses in which the advertisements include interactive advertisements to which a response by a consumer is requested. **[Fig. 8; pg. 14, lines 6-13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device)]**

Regarding Claim 6, Poel, Paxton, and Poslinski disclose all the limitations of Claim 5, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses a system according to claim 5 in which a response by a consumer is rewarded by money or money's worth. **[Fig. 8; pg. 13, line8 - pg. 14,**

line 13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device) in order to receive some voucher or other payment/reward]

Regarding Claim 8, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel, Paxton, and Poslinski discloses a Personal Video Recorder (PVR) for use in a system according to claim 1 **[Poel – Fig. 1; pg. 2, lines 1-7: STB may record broadcast programs in a storage for later viewing – i.e., the STB effectively functions as a PVR; Paxton – 0002-8: relating to playback of recorded programs, where PVRs and DVRs are known means for recording; Poslinski – 0036-38: system associated with commercial handling using a PVR/DVR/equivalent]** , comprising data storage means **[Poel – pg. 3, lines 1-7: STB has data storage means]**, input connection means for connection to a source of video/audio signals and a real-time clock signal **[Poel – pg. 3, lines 1-7: STB has input connection means for connecting to a video/audio signal source; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]**; and output means for connection to a consumer's viewing/listening unit; **[Poel – pg. 3, lines 1-7: STB has output means for connecting to a viewing unit]** in which the data storage means comprises a programme episode database, and an

advertisement database arranged to record the advertisements and their headers. **[Poel – pg. 2, lines 1-7: STB may record broadcast programs in a storage for later viewing; pg. 8, lines 6-15: STB may access and download ads onto a local storage/database, where each ad has a date code and time code associated with it]**

Regarding Claim 9, Poel, Paxton, and Poslinski disclose all the limitations of Claim 8, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses the PVR according to claim 8 arranged to read the real-time clock, to read the first field in the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal. **[Figs. 1-4A; pg. 5, lines 14-19: DFA interleaves ads and television signals; pg. 8, lines 22-27: DFA of STB (as noted above, the STB functions as a PVR) selects one or more ads stored to insert into ad time slots according to appropriate time and date indicators; pg. 11, line 27 – pg. 12, line 30: where the system may use a timing indicator in order to determine when to present an ad – where it would be understood from the description that such an action would necessarily require some clock means to determine the real time/date]**

Regarding Claim 10, Poel, Paxton, and Poslinski disclose all the limitations of Claim 9, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poel discloses the PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response. **[Fig. 8; pg. 14, lines 6-13: ad may include interactivity to which a user is asked to respond (in the example provided, the user is asked to press a green button on a remote control device) to ensure a user has actually watched the ad; pg. 13, line 24-26: STB/PVR records when a consumer has viewed an inserted ad]**

Regarding Claim 12, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poslinski discloses wherein the control means is further arranged to update the second field when said advertisement is again shown during time-shifted viewing. **[0134-139: in time-shifted viewing, system may have counters to indicate the number of times that a commercial has been fully viewed – i.e., the counter will be updated every time a commercial is fully viewed]**

Regarding Claim 13, Poel, Paxton, and Poslinski disclose all the limitations of Claim 9, which are analyzed as previously discussed with respect to that claim.

Furthermore, Poslinski discloses a PVR according to claim 9, further arranged to update the second field in the header when that advert is provided to the consumer's

viewing/listening unit. **[0134-139: in time-shifted viewing, system may have counters to indicate the number of times that a commercial has been fully viewed – i.e., the counter will be updated every time a commercial is fully viewed]**

Claim 7 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **Poel, Paxton, and Poslinski** as applied to Claim 1 above, and further in view of **Hane, III (US 2004/0205829 A1)** (hereinafter Hane).

Regarding Claim 7, Poel, Paxton, and Poslinski disclose all the limitations of Claim 1, which are analyzed as previously discussed with respect to that claim.

Poel, Paxton, and Poslinski fail to explicitly disclose in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

Hane, in analogous art teaches in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break. **[0009: where 'local programming' may be local advertisements; 0067-69: programming may be received where programming information includes cue data that provide notice/timing of 'local segments', where cue data may be used to generate an avail profile that identifies the program, length of local program segments, timing for local program segments, and tone timing and patterns for each monitored**

program channel – i.e., broadcast data may include information of duration of each segment of the program as well as the duration of each ad break]

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel, Paxton, and Poslinski with the teachings of Hane to include in the broadcast data information regarding duration of each segment of a program and the duration of the next periodic break in order to allow for efficient transmission of local programming to particular geographic areas or markets. **[Hane – 0015]**

Claim 11 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over **Poel, Paxton, and Poslinski** as applied to Claim 1 above, and further in view of **Dureau et al. (US 2002/0015093 A1)** (hereinafter Dureau).

Regarding Claim 11, Poel, Paxton, and Poslinski disclose all the limitations of Claim 8, which are analyzed as previously discussed with respect to that claim.

Poel, Paxton, and Poslinski fail to explicitly disclose a television set incorporating a Personal Video Recorder according to Claim 1.

Dureau, in analogous art, teaches wherein a television set may be incorporated with a PVR. **[0036]**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Poel, Paxton, and Poslinski with the teachings of Dureau to incorporate a PVR within a television set as it is widely understood in the art

that a receiver-decoder device may be integrated within a monolithic television apparatus or as a separate apparatus from a television. **[Dureau – 0036]**

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J. KIM whose telephone number is (571)272-2767. The examiner can normally be reached on M-F: 9am- 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. J. K./
Examiner, Art Unit 2421
/NATHAN FLYNN/
Supervisory Patent Examiner, Art Unit 2421

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/10/09 09:36
L2	515	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L3	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2015/10/09 09:36
L4	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L5	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L6	1725	(TV television) with (incorporated built$1in built adj in) with (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L7	588	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L8	169	L7 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L9	125	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L10	3	(TV television) near3 (program) same (avail) same segment same (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L11	41	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR;	OR	ON	2015/10/09 09:36

Google Exhibit 1004, Page 363 of 523

			EPO; JPO; DERWENT			
L12	8	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L13	20	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L14	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L15	70	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L16	41	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L17	22	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L18	21	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L19	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L20	11	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L21	42	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L22	39	(avail) with (duration length) and (segment) near3 (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L23	11	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR;	OR	ON	2015/10/09 09:36

			EPO; JPO; DERWENT			
L24	664	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L25	5	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L26	5289	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L27	9	L26 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L28	532	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L29	0	L28 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L30	4310	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L31	24	L30 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L32	2831	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L33	112	L32 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L34	2614	H04N21/458.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L35	55	L34 and avail	US-PGPUB; USPAT; USOCR;	OR	ON	2015/10/09 09:36

			EPO; JPO; DERWENT			
L36	301	L34 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L37	707	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L38	122	L37 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L39	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2015/10/09 09:36
L40	515	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L41	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2015/10/09 09:36
L42	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L43	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L44	1725	(TV television) with (incorporated built$1in built adj in) with (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L45	588	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L46	169	L45 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L47	125	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L48	3	(TV television) near3 (program) same	US-PGPUB;	OR	ON	2015/10/09

		(avail) same segment same (duration length)	USPAT; USOCR; EPO; JPO; DERWENT			09:36
L49	41	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L50	8	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L51	20	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L52	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L53	70	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L54	41	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L55	22	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L56	21	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L57	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L58	11	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L59	42	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L60	39	(avail) with (duration length) and	US-PGPUB;	OR	ON	2015/10/09

		(segment) near3 (length duration)	USPAT; USOCR; EPO; JPO; DERWENT			09:36
L61	11	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L62	664	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L63	5	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L64	5289	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L65	9	L64 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L66	532	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L67	0	L66 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L68	4310	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L69	24	L68 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L70	2831	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L71	112	L70 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L72	2614	H04N21/458.cpc.	US-PGPUB;	OR	ON	2015/10/09

			USPAT; USOCR; EPO; JPO; DERWENT			09:36
L73	55	L72 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L74	301	L72 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L75	707	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L76	122	L75 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L77	56	725/27-29.ccls. and (restric$3) with (record$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L78	50	725/27-29.ccls. and (restric$3 limit$3) with (record$3) with (time)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L79	1	725/29.ccls. and (record$3) near4 (content program show media) with (time) adj day	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L80	148	725/29.ccls. and (record$3) near4 (content program show media)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L81	31	725/29.ccls. and (record$3) near4 (content program show media) and (time adj day)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L82	13	725/29.ccls. and (record$3) near4 (content program show media) and (time adj day) and (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L83	22	725/29.ccls. and (record$3) near4 (content program show media video) and (time adj day) and (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L84	10	"725".clas. and (enforc$5) near6	US-PGPUB;	OR	ON	2015/10/09

		(broadcast$3) near3 (regulation rules laws)	USPAT; USOCR			09:36
L85	490	725/22.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L86	1	L85 and (advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L87	10	725/9-21.ccls. and (advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L88	88	(advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L89	64	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L90	30	L89 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L91	433	(advertisement ad commercial) same (time adj shift$3) and (metadata data SI information) same (number times) near3 (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L92	7	L85 and L91	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L93	215	L91 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L94	9617	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L95	123	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed) and (time adj shift$3) with (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L96	4	L85 and L95	US-PGPUB; USPAT;	OR	ON	2015/10/09 09:36

Google Exhibit 1004, Page 370 of 523

			USOCR; EPO; JPO; DERWENT			
L97	15	L95 and 725/9-21.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L98	12	L97 not L96	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L99	115	(advertisement ad commercial) with (number near3 times) near3 (viewed played aired presented displayed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L100	37	L99 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L101	31	(advertisement ad commercial) with (number near3 times near3 viewed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36
L102	35	(advertisement ad commercial) with ((how number) near3 times near3 viewed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2015/10/09 09:36

10/9/2015 9:41:21 AM
C:\Users\wkim1\Documents\EAST\Workspaces\13990372.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	**Art Unit**
	WILLIAM J KIM	2421

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	04/16/2014	08/01/2014	03/09/2015	10/09/2015					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	-	-	-					
	4	✓	✓	✓	✓					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	✓	✓	✓					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12			✓	✓					
	13			✓	✓					

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	Art Unit
	WILLIAM J KIM	2421

CPC- SEARCHED

Symbol	Date	Examiner
H04N21/42261, 4325, 44, 44008, 44016, 458, 4784 (text search only - see search notes)	04/16/2014	WJK
Updated the above	08/01/2014	WJK
Updated the above	03/09/2015	WJK
Updated the above	10/09/2015	WJK

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner

SEARCH NOTES

Search Notes	Date	Examiner
See EAST Search Notes	04/16/2014	WJK
Inventor Search	04/16/2014	WJK
725/23	04/16/2014	WJK
725 (text search only - see search notes)	04/16/2014	WJK
725/32, 34, 36 (text search only - see search notes)	04/16/2014	WJK
Updated the above	08/01/2014	WJK
725/27-29 (text search only - see search notes)	08/01/2014	WJK
updated the above	03/09/2015	WJK
725/9-21 (text search only - see search notes)	03/09/2015	WJK
725/22 (text search only - see search notes)	03/09/2015	WJK
Updated the above	10/09/2015	WJK
725 (consulted Chris Grant QAS re: applicability of 1.132 Affidavit)	10/09/2015	WJK

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Google Exhibit 1004, Page 374 of 523

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 11/05/2015

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER
KIM, WILLIAM JW

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
11/05/2015	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	13/990,372	KELMAN, ALISTAIR BRUCE	
	Examiner	Art Unit	
	WILLIAM J. KIM	2421	

All participants (applicant, applicant's representative, PTO personnel):

(1) *WILLIAM J. KIM*. (3)_____.

(2) *David Boyd*. (4)_____.

Date of Interview: *27 October 2015*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *art of record*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussed proposed amendments. Agreement was reached that amending the claim to include subject matter regarding searching for alternative advertisements when a particular advertisement would violate local broadcasting time regulations, or subject matter pertaining to sorting interactive and passive advertisments such that they would be presented to a user in some sort of interspersed fashion would overcome the art of record, but would require further search and consideration to determine patentability. Applicant will file a formal response .

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/W. J. K./	/NATHAN FLYNN/
Examiner, Art Unit 2421	Supervisory Patent Examiner, Art Unit 2421

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

PTO/SB/30 (07-14)
Approved for use through 07/31/2016 OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Request for Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	13/990,372
Filing Date	May 29, 2013
First Named Inventor	Alistair Bruce Kelman
Art Unit	2421
Examiner Name	William JW Kim
Attorney Docket Number	95770-876349-000100US

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, to any international application that does not compy with the requirements of 35 U.S.C 371, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO on page 2.)

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. ☐ Other _____

   b. ☑ Enclosed

      i. ☑ Amendment/Reply

      ii. ☐ Affidavit(s)/ Declaration(s)

      iii. ☐ Information Disclosure Statement (IDS)

      iv. ☐ Other _____

2. Miscellaneous

   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

   a. ☑ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 20-1430 .

      i. ☑ RCE fee required under 37 CFR 1.17(e)

      ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)

      iii. ☐ Other _____

   b. ☐ Check in the amount of $ _____ enclosed

   c. ☑ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	David W. Boyd	Date	6-Jul-2016
Name (Print/Type)	David W. Boyd	Registration No.	50335

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature			
Name (Print/Type)		Date	

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on January 6, 2016.

KILPATRICK TOWNSEND & STOCKTON LLP

By: Christine M. Ehrig

PATENT
Attorney Docket No.: 95770-876349-000100US
Client Ref. No.: P8991.USP-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Alistair Bruce Kelman

Application No.: 13/990,372

Filed: May 29, 2013

For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Customer No.: 20350

Confirmation No.: 2819

Examiner: William JW Kim

Technology Center/Art Unit: 2421

AMENDMENT

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the final Office Action mailed October 19, 2015, please enter the following remarks:

A Listing of the Claims begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

Google Exhibit 1004, Page 379 of 523

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:

programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown, and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing;

rules database means containing rules relating to said local broadcasting time regulation;

clock means to supply a real-time clock signal; and

control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown;

wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.

2. (Currently amended) A system according to claim 1 in which each header includes a keyword, and the control means checks the keyword against the rules database during application of said local broadcasting time regulation to said advertisement.

3. (Canceled)

Google Exhibit 1004, Page 380 of 523

4. (Previously presented) A system according to claim 2 in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity.

5. (Previously presented) A system according to claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.

6. (Previously presented) A system according to claim 5 in which a response by a consumer is rewarded by money or money's worth.

7. (Previously presented) A system according to claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

8. (Previously presented) A Personal Video Recorder (PVR) for use in a system according to claim 1 comprising data storage means, input connection means for connection to a source of video/audio signals and a real-time clock signal; and output means for connection to a consumer's viewing/listening unit; in which the data storage means comprises a programme episode database, and an advertisement database arranged to record the advertisements and their headers.

9. (Previously presented) A PVR according to claim 8 arranged to read the real-time clock, to read the first field in the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.

10. (Previously presented) A PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

11. (Previously presented) A television set incorporating a Personal Video Recorder according to claim 8.

Google Exhibit 1004, Page 381 of 523

12. (Canceled)

13. (Previously presented) A PVR according to claim 9, further arranged to update the second field in the header when that advert is provided to the consumer's viewing/listening unit.

14. (New) A system according to claim 1, wherein the system is a personal video recorder (PVR), and wherein the rules database means is a rules database stored locally in the PVR.

15. (New) A system according to claim 1, wherein the control means is further arranged to, when the application of said local broadcasting time regulation to a particular advertisement indicates that showing the particular advertisement would violate the local broadcasting time regulation, search the advertisements stored in the advertisement supply means until either an advertisement is found that does not violate the local broadcasting time regulation or it is determined that no advertisement stored in the advertisement supply means is suitable for showing under the local broadcasting time regulation.

16. (New) A system according to claim 15, wherein the advertisements stored in the advertisement supply means include advertisements that were broadcast live with a programme being shown during time-shifted viewing and also include advertisements that were received by the system other than in the live broadcast of the programme being shown in time-shifted viewing, and wherein the control means is further arranged to show during time-shifted viewing of the programme a mix of advertisements that were received during the live broadcast of the programme and advertisements that were received other than in the live broadcast of the programme being shown during time-shifted viewing.

17. (New) A system according to claim 1, wherein the control means is further arranged to, when the application of said local broadcasting time regulation to a particular advertisement indicates that showing the particular advertisement would not violate the local broadcasting time regulation;

determine from the header of the particular advertisement that the advertisement is an interactive advertisement;

Google Exhibit 1004, Page 382 of 523

compare the length of the advertisement with a remaining allotted time for showing interactive advertisements;

determine that the length of the advertisement exceeds the remaining allotted time for showing interactive advertisements; and

in response to the determination that the length of the advertisement exceeds the remaining allotted time for showing interactive advertisements, reject the advertisement and select a passive advertisement for showing.

18. (New) A system according to claim 1, wherein the control means is further arranged to determine whether each advertisement stored in the advertisement supply means is interactive or passive, and to sort the advertisements to ensure that interactive advertisements are interspersed with passive advertisements as advertisements are shown during time-shifted viewing.

Google Exhibit 1004, Page 383 of 523

REMARKS/ARGUMENTS

Status of the Claims

Upon entry of the present Amendment, claims 1, 2, and 4-11, and 13-18 will be pending in this application. Claims 1 and 2 are amended by this paper, claim 12 is canceled, and new claims 14-18 are added. No new matter is added.

This Amendment is submitted with a Request for Continued Examination under 37 C.F.R. § 1.114. Applicants respectfully request reconsideration of the application as amended, in light of the following remarks.

Interview

Applicants thank Examiner Kim for the courtesy of the telephone interview conducted October 27, 2015 with Applicants' undersigned representative. During the interview, various proposed amendments and arguments were discussed. While Examiner Kim indicated that all of the amendments herein will require further consideration and no agreement was reached as to the ultimate patentability of any of the claims, it was agreed that at least claims 15-18 overcome the art of record.

Rejections under 35 U.S.C. § 103, Poel, Paxton, and Poslinski References

Claims 1-2, 4-6, 8-10, and 12-13 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over GB 2464630 to Poel, et al. ("Poel") in view of U.S. Patent Application Publication No. 2004/0158870 of Paxton, et al. ("Paxton"), and further in view of U.S. Patent Application Publication No. 2006/0013556 of Poslinski ("Poslinski").

Applicants respectfully traverse because the Office Action has not made out a *prima facie* case of obviousness with respect to these claims. Specifically, the cited references do not disclose each and every element of these claims.

Claim 1 recites in part

> *advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith* ***a header comprising*** *a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown,* ***and a second field***

Google Exhibit 1004, Page 384 of 523

> ***related to the number of times said advertisement has previously been shown during time-shifted viewing***.

At least the portions of claim 1 highlighted above are not shown in the cited references.

The Office Action cites Poslinski for the second field of the header, pointing to Poslinski's paragraphs [0134]-[0139]. (Office Action p. 9). However, Applicants respectfully disagree that the cited passage supports the rejection.

Poslinski does refer to "counters" that are "set up to indicate the number of times that the commercial has been fully viewed." (Poslinski [0139]). However, Poslinski makes no suggestion that these counters are in headers of recorded commercials. In fact, Poslinski is silent as to where the counters may be stored.

However, Poslinski does evince a different data management philosophy, in which a "commercial database" is constructed, including "descriptive data" about each commercial stored in Poslinski's system. (Poslinski [0048]). "The commercial itself is then stored…." (Poslinski [0049]). Poslinski makes no suggestion that the stored commercial data is altered. It would appear that Poslinski's counters are therefore in the additional database, and not in headers of the commercials themselves. At the least, it would not have been obvious in light of Poslinski to place the counters in headers, as Poslinski would lead one to place them in its database, along with other descriptive data about each commercial.

In the interest of expediting allowance, claim 1 is amended to incorporate the elements of claim 12, which is canceled. Thus, claim 1 additionally recites that

> *the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.*

The amendment to claim 1 also makes explicit that the header itself is modified. Poslinski does not disclose this arrangement, and therefore does not support the rejection.

Claim 1 is therefore allowable over the cited references. Claims 2, 4-6, 8-10, and 13 are also believed allowable over the cited references, at least by virtue of their dependence from claim 1.

In addition, at least some of the dependent claims recite additional features not found in the cited references, and are therefore allowable over the cited references for additional reason.

By way of non-limiting example, claim 2 recites that

Google Exhibit 1004, Page 385 of 523

each header includes a keyword, and the control means checks the keyword against the rules database....

This arrangement is described at page 10 lines 7-9 of the specification as filed, which gives the example of the word "politician" being used to "prevent an advert being shown during an election campaign."

The Office Action relies on Poel for this feature, citing portions of Poel's pages 8-10. However, Applicants respectfully disagree that Poel supports the rejection. This portion of Poel describes the intentionally-imperfect selection of advertisements to be sent to a consumer's set top box (STB) based on personal information supplied by the consumer. The advertisement may have "a date code and a time code associated with it", but Poel does not discuss storing a *keyword* in the *header* of a stored advertisement.

In order to further reinforce this distinction, claim 2 is amended to further recite that *the control means checks the keyword against the rules database* ***during application of said local broadcasting time regulation to said advertisement***.

Poel does not disclose using textual information such as a *keyword* in determining whether a particular commercial complies with a broadcasting time regulation.

Rejections under 35 U.S.C. § 103, Poel, Paxton, Poslinski, and Hane References

Claim 7 has been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Poel, Paxton, and Poslinski, and further in view of U.S. Patent Application Publication No. 2004/0205829 of Hane ("Hane").

Claim 7 depends from claim 1. The Office Action relies on Poel, Paxton, and Poslinski to disclose all of the elements of claim 1, but as is explained above, they fail to do so. Hane does not cure the deficiencies of Poel, Paxton, and Poslinski, and claim 7 is allowable over the cited references for at least this reason.

Rejections under 35 U.S.C. § 103, Poel, Paxton, Poslinski, and Dureau References

Claim 11 has been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Poel, Paxton, and Poslinski, and further in view of U.S. Patent Application Publication No. 2002/0015093 of Dureau, et al. ("Dureau").

Google Exhibit 1004, Page 386 of 523

Claim 11 depends from claim 1. The Office Action relies on Poel, Paxton, and Poslinski to disclose all of the elements of claim 1, but as is explained above, they fail to do so. Dureau does not cure the deficiencies of Poel, Paxton, and Poslinski, and claim 11 is allowable over the cited references for at least this reason.

New Claims

Claim 14-18 are added to the application, and are believed allowable over the cited references at least by virtue of their dependence from claim 1, as well as for the novel features they recite.

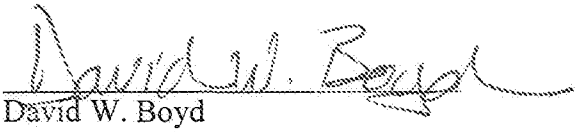
CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Except for the issue fees payable under 37 C.F.R. § 1.18, the Director is authorized to charge any additional fees during pendency of this application, including any required extension of time fees, or credit any overpayment to Deposit Account Number 20-1430. This paragraph is intended to be a constructive petition for extension of time in accordance with 37 C.F.R. § 1.136(a)(3).

If the Examiner believes a telephone conference would expedite prosecution of this application, please contact the undersigned at (303) 571-4000.

Respectfully submitted,



David W. Boyd
Registration No. 50,335

KILPATRICK TOWNSEND & STOCKTON LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel.: 303-571-4000
Fax: 303-571-4321

DWB/kmh
67841562V.1

Google Exhibit 1004, Page 387 of 523

Electronic Patent Application Fee Transmittal

Application Number:	13990372
Filing Date:	29-May-2013
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Filer:	David Wayne Boyd/Kristin Heil
Attorney Docket Number:	95770-876349

Filed as Small Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 2nd and Subsequent Request	2820	1	850	850
		Total in USD ($)		**850**

Electronic Acknowledgement Receipt

EFS ID:	24534033
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	David Wayne Boyd/Kristin Heil
Filer Authorized By:	David Wayne Boyd
Attorney Docket Number:	95770-876349
Receipt Date:	06-JAN-2016
Filing Date:	29-MAY-2013
Time Stamp:	16:05:47
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$850
RAM confirmation Number	2808
Deposit Account	201430
Authorized User	BOYD, DAVID

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 CFR 1.492 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 CFR 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 CFR 1.19 (Document supply fees)

Charge any Additional Fees required under 37 CFR 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 CFR 1.21 (Miscellaneous fees and charges)

Charge any Additional Fees required under 37 CFR 1.492(a) (basic national fee only)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	95770_RCE.pdf	1006459 5da3ab1f070dc1874c001285d623bf28a6a69805	no	1
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2		95770_Amendment.pdf	1142695 f22df19cf9095d91be93772243981e70a6a5f3d8	yes	9

Multipart Description/PDF files in .zip description

Document Description	Start	End
Response After Final Action	1	1
Claims	2	5
Applicant Arguments/Remarks Made in an Amendment	6	9

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30813 5df1e13a116bd92271b7eeed64af83772a924fc9	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	2179967	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/990,372	Filing Date 05/29/2013	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **01/06/2016**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 16	Minus	** 20	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/EVELYN NIMMONS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	13/990,372
	Filing Date	May 29, 2013
	First Named Inventor	Alistair Bruce Kelman
	Art Unit	2421
	Examiner Name	William JW Kim
	Attorney Docket Number	095770-0876349

U.S. PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code [1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code [1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	2008/0307483	A1	12-11-2008	Iida et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number [3]	Country Code [2]	Kind Code [4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T [5]
	2.	2252055	EP	A1	11-17-2010	Sony Europe Ltd.		
	3.	2004/072761	WO	A2	08-26-2004	Video Networks Ltd.		

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T [5]
	4.	European Search Report completed January 15, 2016 for European Patent Application No. EP15195703 filed November 18, 2011, all pages.	

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 252 055 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
17.11.2010 Bulletin 2010/46

(51) Int Cl.:
H04N 7/173 *(2006.01)*

(21) Application number: **09006484.1**

(22) Date of filing: **13.05.2009**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA RS

(71) Applicant: **Sony Europe Limited**
The Heights
Brooklands
Weybridge KT13 0XW (GB)

(72) Inventors:
- **Rodrigues, Jose Alexandre Simoes**
  84028 Landshut (DE)
- **Raesig, Tassilo Volker**
  84028 Landshut (DE)

(74) Representative: **Müller - Hoffmann & Partner**
Patentanwälte
Innere Wiener Strasse 17
81667 München (DE)

(54) A system for retrieval of executable applications for broadcast television

(57) A system for retrieval of executable applications, comprising: a broadcast television receiver apparatus: and a server; wherein the broadcast television receiver apparatus includes a communication unit having an interface for bidirectional communication with a network and adapted to determine channel information from a currently decoded channel carried in a broadcast television signal, the channel information identifying the currently decoded channel, the communication unit being further adapted to send the channel information to a server over the network, and to receive application information from the server, the application information describing a set of applications which are available for execution, and to receive executable code components for the set of applications corresponding to the application information, and wherein the broadcast television receiver apparatus further includes a data processor adapted to execute the application whilst the channel is decoded; and wherein the server is adapted to receive the channel information over the network, to determine the application information by analyzing the channel information, and to send the application information to the communication unit.

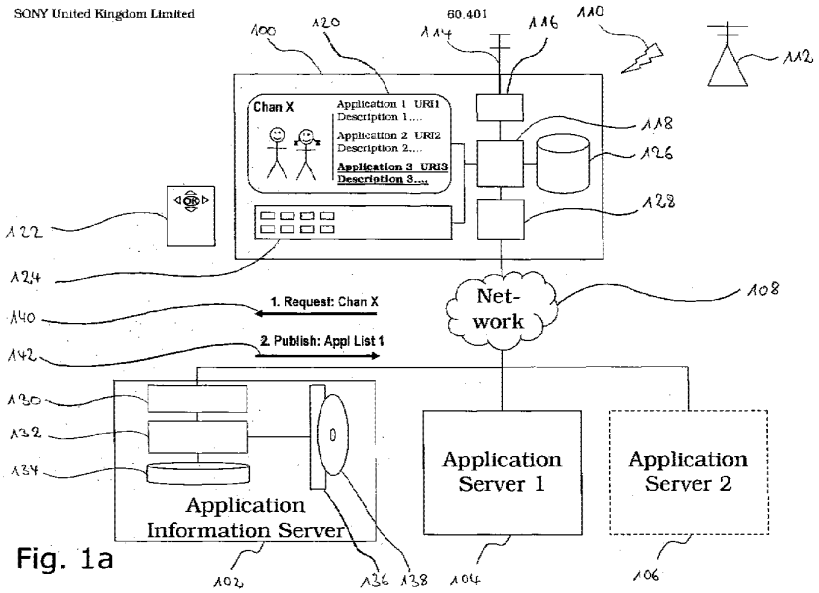


Fig. 1a

EP 2 252 055 A1

Google Exhibit 1004, Page 395 of 523

Description

[0001] An embodiment of the invention relates to a system for retrieval of executable applications. Further embodiments of the invention relate to a broadcast television receiver apparatus, a server, a method, and a computer program product for retrieval of executable applications.

BACKGROUND

[0002] Nowadays, broadcast television receiver apparatuses have been made available, which on the one hand allow receiving broadcast signals, and on the other hand enable access to further networks, such as the internet. Further, the processing power of the television apparatuses has increased. This allows provision of applications and additional content to users of the broadcast television receiver apparatuses.

[0003] It is an object of the invention to provide a system for retrieving executable applications, thereby enhancing the user's television experiences.

[0004] This object is solved by a system, a broadcast television receiver apparatus, a server, a method, and a computer program product according to the independent claims 1, 12, 13, 14, and 15, respectively.

[0005] Further details of the invention will become apparent from a consideration of the drawings and ensuing description.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0006] The accompanying drawings are included to provide a further understanding of embodiments and are incorporated in and constitute a part of this specification. The drawings illustrate embodiments and together with the description serve to explain principles of embodiments. Other embodiments and many of the intended advantages of embodiments will be readily appreciated as they become better understood by reference to the following detailed description. The elements of the drawings are not necessarily to scale relative to each other. Like reference numerals designate corresponding similar parts.

Fig. 1a illustrates an embodiment of a system for retrieval of executable applications, in which a request for content is sent to an application information server and an application list is published by the application information server.

Fig. 1b illustrates the embodiment of Fig. 1a when a download of an application and an interaction with an application server takes place.

Fig. 1c further illustrates the embodiment of Fig. 1a when a channel switch has occurred.

Fig. 2 illustrates data transmission within an embodiment of a system for retrieval of executable applications.

Fig. 3 illustrates a further embodiment of a system for retrieval of executable applications.

Fig. 4 illustrates the determination of content dependent on a channel provider, a channel, and/or a program being watched.

Fig. 5 illustrates the determination of content dependent on meta data of a program being watched.

Fig. 6 illustrates an embodiment of a method of retrieval of executable applications.

DETAILED DESCRIPTION

[0007] In the following, embodiments of the invention are described. It is important to note, that all described embodiments in the following may be combined in any way, i.e. there is no limitation that certain described embodiments may not be combined with others. Further, it should be noted that same reference signs throughout the figures denote same or similar elements.

[0008] It is to be understood that other embodiments may be utilized and structural or logical changes may be made without departing from the scope of the invention. The following detailed description, therefore, is not to be taken in a limiting sense, and the scope of the present invention is defined by the appended claims.

[0009] It is further to be understood that the features of the various embodiments described herein may be combined with each other, unless specifically noted otherwise.

[0010] In Figs. 1a to 1c, a system for retrieval of executable applications including a television apparatus 100 for receiving broadcast television signals (broadcast television receiver apparatus), a server 102 (in the following referred to as "application information server" 102), and further servers 104, 106 (in the following referred to as "first and second application servers" 104, 106) is illustrated. Communication between television apparatus 100, application information server 102, and first and second application servers 104 and 106 may take place over network 108.

[0011] Television apparatus 100 is adapted to receive a broadcast signal 110 (broadcast television signal) transmitted by a broadcast station 112. Broadcast signal 110 may be an analog or a digital television broadcast signal, e.g. in accordance with a DVB, ATSC, ISDB or DMB standard. Accordingly, transmission of the broadcast signal may be realized by terrestrial transmission (DVB-T, DVB-T2, DVB-H, DVB-SH, ATSC, ATSC-M/H, ISDB-T, or T-DMB), by cable transmission (DVB-C, ATSC, ISDB-C), by microwave transmission (DVB-MT,

Google Exhibit 1004, Page 396 of 523

DVB-MC, or DVB-MS), by satellite transmission (DVB-S, DVB-S2, DVB-SH, DVB-SMATV, ISDB-S, or S-DMB) and/or by internet transmission (DVB-IPTV, DVB-IPI).

[0012] In case broadcast signal 110 is a digital television signal, service information (SI) may be transmitted within broadcast signal 110, such as DVB-SI according to the DVB standard. The service information may include various data, such as network information, channel information, program information, time and date information and/or running status information descriptive of programs that are currently aired or that will start in the near future.

[0013] Broadcast signal 110 may be received at television apparatus 100 e.g. by an antenna 114 transmitting broadcast signal 110 to a tuner 116. Tuner 116 may tune to channels and/or services transmitted by broadcast signal 110, thereby decoding the channels. Further, a data processor 118 may be provided for displaying the channel at a display 120, e.g. the currently aired program or event.

[0014] "Channel" should be understood as that which is conventionally understood by a user, e.g. BBC1, ZDF, TF1 or Fox News, which is termed a service in the DVB environment. Program or Event should be understood as broadcast of finite duration on a channel, such as Desperate Housewives, Tuesday 24 March, 18.45 to 19:00 and a channel name or number.

[0015] For allowing a user to interact with television apparatus 100, various input devices may be provided, such as, for example, a remote control 122 and a keypad 124.

[0016] Further, television apparatus 100 may include a storage 126 for storing software and data.

[0017] The software stored in storage 126 may include, for example, an operating system for operating television apparatus 100, and application software to be run e.g. on demand by a user. The application software may, for example, include an application for providing an electronic program guide. Further, the software may include an application execution engine, providing a runtime environment for executing further applications and/or executable code components, such as widgets, gadgets, applets or the like. The further application may, for example, be interpreted by an alternative software stack running on television apparatus 100, e.g. a software stack configured to interpret XML or RSS feeds (as Rich Site Summary, RDF Site Summary, and/or Really Simple Syndication), by which the further applications may be defined.

[0018] The data stored in storage 126 may include content, such as multimedia data, e.g. video data recorded from the broadcast signal, and further multimedia data, such as images, audio/video data (in files or streams), textual data and/or executable applications, such as video games. Further, meta data related to content available for display, and/or a data for running the electronic program guide may also be stored in storage 126. Still further, data related to applications that may be run within the application engine may also be stored, such as data defining an application logic and information to be made available to the user when the application is run.

[0019] For communicating over network 108, e.g. with application information server 102 and first and second application servers 104, 106, a communication unit 128 may be provided at television apparatus 100. This may be integrated in the television apparatus or may be a set top box or side box connectable to the television apparatus.

[0020] Accordingly, also at application information server 102 a communication unit 130 connected to a data processor 132 may be provided. Data processor 132 may further have access to a storage 134 and to a reading unit 136.

[0021] Reading unit 136 may be adapted to read a data storage medium 138, which may, for example, include program instructions. The program instructions, when loaded into data processor 132, may be adapted to cause application information server 102 to perform a method for retrieval of executable applications in accordance with one of the embodiments described herein. The computer program instructions may further be adapted to cause transmission of applications and data over network 108 to television apparatus 100, the applications causing television apparatus 100 to contribute to the method.

[0022] At television apparatus 100, retrieval of executable applications may take place while a channel is being decoded, e.g. being viewed by a user. Decoding the channel may be achieved by tuning tuner 160 to the channel transmitted with broadcast signal 110, e.g. for displaying the channel at display 120 to be viewed by the user.

[0023] Via network 108, television apparatus 100 may have access to a multitude of content and applications. However, it may be of interest for broadcasters and content owners of the broadcast data to control the access to content and applications which may be displayed on connection with the broadcast data. For example, the broadcasters and content owners may want to have an influence and/or to maintain control of what content and applications are made available to the user when watching their channels. Further, there may exist regulations or business rules defining what can and cannot be done in terms of displaying applications and content together with the broadcast signal. This may ensure that the content owner's rights are not infringed when their content is on air. An example of this is the restriction of "overlaying" applications or content over the broadcaster's content.

[0024] For influencing and/or maintaining control of what content and applications are made available to the user when watching the channel, there may exist a definition of what content and applications may be available, e.g. be allowable or even suggested / recommended to be used in connection with the channel. Allowable and/or recommended content and applications may for example be defined by broadcasters, content owners, internet service providers, a manufacturer of television apparatus

Google Exhibit 1004, Page 397 of 523

100 or a provider of application information server 102.

[0025] For example, a broadcaster may want to suggest an application that enables the user to participate at e.g. a voting procedure related to a game show displayed at his channel, so that the voting procedure is to be made available or is recommended. An application available for execution is therefore to be understood as an application which is obtainable, i.e. accessible for execution in conjunction with the decoding of the channel. The application may, for example, be recommended or suggested for being executed in conjunction with the decoding of the channel. For example, access to the application may be given by the application information.

[0026] Further, the broadcaster may want to exclude a competitor's advertisings from being displayed in connection with one of his channels, the competitor's advertizing consequently being not allowed for display in connection with the channel. An application allowable for execution whilst a channel is decoded is therefore to be understood as an application to which a consent for execution in conjunction with the decoding of the channel is given, e.g. by the broadcaster. The consent may be defined by a rule, e.g. a business rule.

[0027] The definitions of the available, allowable and/or recommended content may be implemented, e.g. in a rule set, at application information server 102, as will be described in detail below.

[0028] Channel information may therefore be requested as a basis for retrieving executable applications, executable code components and/or content available, allowable and/or recommended for execution in connection with the channel at television apparatus 100. Consequently, data processor 118 and/or communication unit 128 may analyze the channel currently decoded, and may generate channel information descriptive of the channel.

[0029] To determine the channel information, data processor 118 or communication unit 128 may refer, for example, to service information included in a data stream transmitted by broadcast signal 110. In the service information, the available channels or services may be uniquely identified by a channel identifier, e.g. by a number commonly referred to as "triplet" or triplet information. Triplet information, as used in digital television broadcasting, includes three parts: a first part, also referred to as original network ID (OID), a second part, also referred to as transport stream ID (TSID), and a third part, also referred to as service ID (SID), identifying the channel and/or service. In the case of DVB, the triplet may be written as DVB://OID.TSID.SID. According to the DVB standard, the triplet may be used by television tuners to map a channel to the specific broadcast frequency. In the example, the triplet may be used for determining the channel information. Alternatively, also the channel name or a channel identifier, included e.g. in broadcast signal 110, may be used for generating channel information.

[0030] The channel information may then be transmitted by communication unit 128, providing an interface for bidirectional communication with network 108, to application information server 102, which receives the channel information via communication unit 130.

[0031] Reception of the channel information by application information server 102 may be interpreted as a request for receiving applications that can be accessed (i.e. are available and/or allowable) and executed at television apparatus 100 and that are admitted and/or suggested for use while the channel is received. In the example depicted in Fig. 1a, a first arrow 140 illustrates the request for a list of applications available and/or allowable, e.g. suggested for execution while channel X is being viewed. As mentioned, the applications can e.g. be widgets, gadgets, applets or the like.

[0032] The request may be passed from the communication unit 130 to data processor 132, which may, as a consequence, determine application information based on the channel information. For example, data processor 132 may analyze the channel information and may generate application information descriptive of a set of applications which are available (recommended) and/or allowable for execution whilst channel X is displayed. The application information may be provided, as illustrated in the example by second arrow 142, as a first list of applications.

[0033] The first list of applications may refer to applications to be executed at television apparatus 100 in a stand-alone mode or within a framework, such as the application execution engine mentioned above. The applications may be resident applications which may be stored permanently at television apparatus 100, or temporal applications that may be deleted after having been run, e.g. when a channel switch occurs or when television apparatus 100 is switched off. The applications may provide access to data accessible over network 108, as for example in case of a calendar or clock widget, or of a whether widget providing a whether forecast for a given location, e.g. the location of television apparatus 100. Further, the applications may establish an interactive communication with a further remotely located server, as for example an application for selecting and downloading recipes presented in a cooking show. Still further, the applications may allow transmitting data to a still further remotely located server, as for example a voting widget, allowing voting for candidates of a game show or the like.

[0034] The first list of applications may be transmitted via communication unit 130 over network 108 to television apparatus 100, which may receive the first application list via communication unit 128. The first application list may then be displayed by data processor 118 at display 120. For displaying the first application list in connection with the channel being displayed, the video image may be shrunk, e.g. displayed only on a part of display 120, thereby leaving a space to display the first application list. Alternatively, the list may also be displayed in a transparent manner overlapping a video image currently displayed at the channel.

Google Exhibit 1004, Page 398 of 523

[0035] In the example depicted, the first application list includes applications 1, 2, and 3, and further related information. For example, information of how to access the respective applications may be indicated by unique resource identifiers UR11, UR12 and UR13. The unique resource identifiers may identify locations on a local server, or on a remote host if the applications are provided by a third party. The URIs may therefore indicate where to locate the application resources, such as code, images and/or further content. Further, for each of the applications, additional information, such as descriptions 1, 2, and 3 may be provided, e.g. for supporting the user when selecting an application to be accessed.

[0036] By use of an input means, e.g. remote control 122 or keypad 124 or, alternatively, by speech commands, the user may select one or several of the applications for download and/or execution. In the example depicted in Fig. 1a, the user has selected application 3 highlighted at display 120.

[0037] In the example, the third application may not yet be available locally at television apparatus 100. Therefore, as illustrated in Fig. 1b with third arrow 144, the third application, e.g. executable code components of the third application, may be downloaded over network 108. The location for retrieving the third application may be identified by resource identifier URI3, identifying first application server 104, at which the third application with its application logic and application data may be stored.

[0038] After download, the executable code components of the third application may be executed at data processor 118 and may be displayed in connection with channel X. In the example, the third application implements a voting procedure allowing the user to vote e.g. for candidates in the game show displayed at channel X. The application thereby allows interacting with first application server 104 over network 108. This enables the user to actively contribute to a TV show he is watching.

[0039] As illustrated in Fig. 1c, the user may switch to a further channel, e.g. by using remote control 122 or keypad 124, or by uttering a speech input to television apparatus 100. Upon the channel switch to the further channel Y, a further request for application information may be sent from television apparatus 100 to application information server 102, as indicated by sixth arrow 148. With the further request, channel information identifying channel Y may be transmitted.

[0040] Upon the channel switch to the further channel Y, execution of a certain application (e.g. the third application), which had been executed in conjunction with channel X, may be stopped, since the certain application may not be available, allowable or recommended for execution whilst the further channel Y is decoded.

[0041] Upon this request, application information server 102 publishes a second application list, as indicated with seventh arrow 150. The second application list may include further applications, such as applications 4, 5, and 6, which are available and/or allowable, e.g. suggested for execution while channel Y is displayed.

[0042] As illustrated in the example, the user may select application 5 highlighted at display 120. As indicated in the second application list, application 5 is supposed to be located at second application server 106 identified by URI5. Upon selection, application 5 may be downloaded from second application server 106, as indicated by an eighth arrow 152.

[0043] The embodiment illustrated in Figs. 1a to 1c shows the retrieval of applications which may be related to a channel currently displayed and which are available and/or allowable for use in connection with the channel. The access to the applications is therefore enabled and/or controlled by application information server 102 providing the list of available and/or allowable applications. Consequently, even though applications of a plurality of servers, such as first and second application servers 104, 106, may be accessed, application information server 102 controls the access by collecting and publishing the application information, and thereby may be implemented as a single point of control. Consequently, even though a variety of wide spread applications provided e.g. by third party specialists may be accessed, the access is controlled, based on the channel information, at application information server 102. The application information server 102 may consequently be used for implementing rules such as business rules e.g. in a predefined rule set engine for determining the applications available and/or allowable for use in connection with a given channel. These rules may be accustomed in accordance with legal regulations and/or demands of broadcasters providing the television broadcast signals.

[0044] Fig. 2 illustrates a request for application information and a publishing of the application information in a further embodiment of a system for retrieval of executable applications. The embodiment includes a television apparatus 200 (broadcast television receiver apparatus) and a server 202 (application information server).

[0045] In the example, a request 204 including the channel information and further information as a basis for determining the application information is sent from television apparatus 200 to application information server 202.

[0046] In request 204, the channel information may be encoded as a triplet 111.222.333 descriptive of the channel currently displayed at television apparatus 200. Further in request 204, BBC™ may be identified as a provider of the channel.

[0047] Additionally, a model or type of television apparatus 200 may identified in request 204, e.g. by a device identifier, in the example "XFV-100". The device identifier may further encode a device profile descriptive of a hardware configuration of television apparatus. The device profile may be determined by reading hardware specification data from a memory in the device or a connected device, identifying and transmitting details of a firmware version of a device, actively scanning data storage devices to determine available storage capacity or polling or pinging network connected devices to deter-

Google Exhibit 1004, Page 399 of 523

mine network capacity.

[0048] Further, a subscriber number 4711 identifying e.g. a registered user having subscribed to the service of retrieving application information may be included. Thus, the service of retrieving applications may be coupled to obligations of payment, e.g. for the service of retrieving the application information, or as a basis for billing for the download of applications against payment. The subscriber number may further give access to a user profile stored at application information server 202.

[0049] Still further, the user profile may be transmitted with or updated by request 204, as indicated with a user profile number 0051.

[0050] Additionally, a location of television apparatus 200 may be encoded in request 204. For determining the location at television apparatus 200, various possibilities exist.

[0051] For example, the location may be entered directly by the user, e.g. indicating a postal code or zip code of his home. Further, the location may also be determined by a network address, such as an IP address or the like. Still further, the location may also be determined by analyzing the broadcast signal received at television apparatus 200, e.g. by analyzing the available channels, the mapping of the channels to transport streams, or by analyzing the triplet information. Alternatively, the location of television apparatus 200 may also be determined at application information server 202, e.g. by analyzing the information received with the request, such as the subscriber number.

[0052] As further information, the local time at the location of television apparatus 200 may also be transmitted with request 204. For example, devices of a population of television apparatuses requesting the application information could reside in different time zones. In such a case, some logic could be implemented at the server side for determining the local time of a requesting device. If transmitted with the request, the local time from the device could be used to cross check for accuracy. Further, the local time transmitted could be used for simplifying the determination of the local time. Knowledge of the local time of the requesting device may be helpful for determining applications having a time based rule-set, implementing rules like for example "Don't make the big brother voting widget available until 8PM on Friday, deactivate the widget at 8:30PM".

[0053] When received by application information server 202, request 204 may be passed to a requester 206 implementing a listener process for capturing the information published from television apparatus 200. Further, the listener process may also be adapted to collect corresponding requests for application information, e.g. from a population of client television devices. Requester 206 may preprocess request 204, e.g. by decoding and/or completing the included information, and pass the respective data to a processor 208.

[0054] Processor 208 may determine the application information based on the information received from requester 206. For determining the application information, processor 208 may have access to various data bases, such as for example an application database 210 providing profiles of available applications and including, for example, the respective URIs and descriptions. Further, a meta database 212 providing information on meta data related e.g. to the channels and/or programs may be accessed by processor 208, and a rule set database 214 including, for example, legal regulations and provider regulations for determining which applications are available and/or allowable, e.g. recommended, for execution under predetermined circumstances.

[0055] For example, based on the triplet information, processor 208 may determine the channel and may determine the program currently displayed on the channel. Processor 208 may then query metadata base 212 for obtaining meta data related to the program currently displayed. Based on the meta data, processor 208 may then query application database 210 for identifying applications that may be of interest for a user watching the respective program. Based on the result, processor 208 may further query rule set database 214 for determining all applications that may be allowable for execution while the respective channel and/or program is being displayed. Processor 208 may then provide a list of available and/or allowable applications as application information.

[0056] In any of the database queries of processor 208, the further information transmitted by request 204 may be used.

[0057] For example, information on the provider of the channel may be used for querying rule set database 214. It may, for example, be determined by the provider that while watching one of the provided channels, any applications related to channels of other providers should be excluded from execution.

[0058] Further, the device information may also be used for querying rule set database 214, where it may be determined that for devices with predetermined hardware restrictions, only applications that are adapted to run under the respective restrictions should be proposed. For example, the application logic may be restricted to a predetermined complexity, the application data to a predetermined amount of data, and communication requirements to the network capacity or a communication bandwidth.

[0059] Further, the subscriber number may be used for determining applications to which the user of television apparatus 200 has subscribed or for which the user has paid. Thereby, access to certain applications may only be allowed if a respective fee has been paid.

[0060] Information on the user profile may be used for determining applications of special interest to the user, e.g. by querying application database 210 or meta database 212, which may also include meta data related to the applications. Further, access to applications may also be restricted depending on the user profile, thereby implementing requirements of parental control.

[0061] Further, application information may also be de-

Google Exhibit 1004, Page 400 of 523

termined based on the local time, e.g. by querying application database 210. For example, in the early morning, applications providing information on airport or train schedules may be of particular interest, while at noon, applications related to cooking recipes may be preferred.

[0062] Additionally, information on the location of television apparatus 200 may be used for determining applications that may be of special interest at the location, such as location-based advertisings of theatres, shops, food delivery services or the like. For example, an application may be selected that may enable the user to order food from a local food delivery service. The location of television apparatus 200 may also be used for determining a language to be used by the application and for determining applications provided for certain regions or countries, such as country-related sports information.

[0063] Further, the applications to be run at television apparatus 200 may also be parameterized by the location. For example, an application informing the user about the weather forecast for the next days may be parameterized with the postal codes of the city the user lives in.

[0064] After having determined the set of allowable and/or recommended applications based on the information provided with request 204, processor 208 may generate the application information, e.g. in form of a list. The list may be published to television apparatus 200 by a publisher 216 of application information server 202 as a response 218. Publisher 216 may also publish further lists in response to the request of any client television device of the above mentioned a population of client television devices.

[0065] Response 218 published to television apparatus 200 may include the list of all allowable and/or recommended applications that may be of interest for the user. The list may further include, for each of the applications, an identifier, such as "BBCNewsTicker", an application class, such as "informational", "promotional" or "interactive", and an address, such as an URI, for accessing and/or downloading the application, e.g. application logic and/or application data.

[0066] Further additionally, response 218 may include control information for controlling display and execution of the respective. For example, the control information may define an application or a part of an application which is to be included or excluded from execution under circumstances defined by request 204. Further, the control information may define a part of data of the application which is to be included to or excluded from being displayed.

[0067] For example, this could be an inclusion/exclusion of content in view of parental control requirements, excluding content which is not suitable for display to a child of a certain age, which child may be identified by a personal user profile and/or a personal, e.g. password-protected "log-in" to the television apparatus. Further, the age of the child may be determined based on the program being watched.

[0068] Further, advertisings embedded into the television application may also be included or excluded from being displayed in accordance with demands of a television manufacturer of television apparatus 200 or of a channel provider of the channel being viewed.

[0069] For example, if television apparatus 200 is of a predetermined brand X, the manufacturer of television apparatus 200 may want to exclude any advertisings from his competitors, e.g. to exclude all advertisings for a competing brand Y.

[0070] As a further example, a broadcaster or channel provider may want to exclude any competitor adverts from appearing while a channel provided by the broadcaster is displayed at television apparatus 200. For example, a provider of a channel 1 may demand that no advertisings for events on a channel 2 may appear while viewing channel 1.

[0071] Determination of control information may be based on the rules defined in rule set database 214. It may be defined in view of any data submitted with request 204. For example, the control information may depend on the channel currently displayed at television apparatus 200, the program currently aired by the channel, the provider of the channel and/or the manufacturer of the television apparatus. Further, the control information may be defined for applications, for parts of applications such as application data and/or content, for an entirety of all applications referenced in response 218, and/or for all applications that may be run at television apparatus 200. This allows thoroughly controlling all application content displayed at television apparatus 200 in view of various demands and regulations.

[0072] The control information may include or consist of a "black list", the black list being descriptive of the applications, parts of applications or application data to be excluded from being displayed. Defining the control information as a black list may allow an easy implementation of content control at television apparatus 200, since excluding data from being displayed may be realized by a simple comparison process.

[0073] In order to achieve content inclusion or exclusion, control information may be defined by content control markers used for marking the application content, thereby determining which application content is to be included for or excluded from being displayed. The content control markers may therefore be included into the application logic and/or application data, thereby assuring that the marked content is included to or excluded from being displayed.

[0074] Consequently, control information enables an effective and efficient control of the content displayed at television apparatus 200 by defining text, video and/or audio content to be included to or excluded from display. Thereby, provider requirements, legal regulations and parental control may be guaranteed.

[0075] Fig. 3 illustrates a further embodiment of a system and a method of querying a remote server for a list of applications available and/or allowable to be accessed at a television apparatus while a certain channel is being

Google Exhibit 1004, Page 401 of 523

watched.

[0076] The system includes a television apparatus 300 (broadcast television receiver apparatus) connected over the internet to an application control server 302 and to a first, second, and third television application servers, which television application servers are respectively provided by a first, second, and third television application providers.

[0077] Television apparatus 300 includes a tuner 310 which is capable of tuning to a channel transmitted by a broadcast signal 312, broadcast signal 312 being provided by a terrestrial broadcasting station 314, a broadcasting satellite 316 or by a cable provider 318.

[0078] On a certain event occurring at television apparatus 300, like an activation of a television application catalogue or a channel switch of the channel tuned to and/or displayed, a first process 319 may be performed. Within first process 319, the channel information may be published to application control server 302. For connecting to application control server 302, a connection 320, e.g. an Ethernet or WiFi connection, may be established, and a query 322 including the channel information may be sent to application control server 302 via the internet.

[0079] The channel information, as in the example depicted, may be defined by a channel identifier which may, for example, include the triplet information. Further supporting information may also be published to application control server 302, supporting the identification of allowable television applications. The further supporting information may include program information identifying a program currently transmitted at the channel, for example a program identifier included in service information of broadcasting signal 312, e.g. DVB-SI of a DVB-T/S/C signal. Further, the supporting information may include device identification information, e.g. defined by a device identifier, including, for example, a serial number, a MAC address, a device type or a model of television apparatus 300. Further, the local time may be included in query 322. Further, an IP address of the connected Ethernet port may be included.

[0080] Query 322 may be received by a requester 324 provided as a part of application control server 302, requester 324 implementing the listener process for capturing queries of client television apparatuses. Application control server 302 may then perform a second process 325, including analyzing query 322 for identifying the channel to which television apparatus 300 is currently tuned to, e.g. by analyzing the channel information. Further, the program identifier, device identifier, and the further supporting information may also be used for establishing criteria for television application selection within second process 325, as will be explained in detail below.

[0081] The television application selection may be performed by a television application linking engine 326 at application control server 302. At television application linking engine 326, a rule set may be implemented for defining the criteria for the television application selection. The selection may be carried out by identifying the channel and/or program currently displayed at television apparatus 300, by identifying meta data related to the program and to the provider of the program, by querying television application linking engine 326, by retrieving a list of allowable and/or available, e.g. related applications, such as widgets, gadgets, applets or further applications adapted to be run on television apparatus 300, and by retrieving the uniform resource identifiers (URIs). Further, television application content control markers may be retrieved, e.g. in accordance with the rule set implemented in television application linking engine 326.

[0082] After having determined the allowable and/or available television applications, the result may be published to television apparatus 300. For publishing the results, a response 328 may be generated and sent to television apparatus 300 over the internet. Response 328 may include television application identifiers identifying the television applications allowable and/or available for execution in connection with the channel and/or program currently displayed at television apparatus 300. Further, television application descriptors including, for example, a title and/or a description of the television application may be included. Further, television application batch URIs identifying a respective television application server from which the television application may be retrieved may be included. Additionally, the control information defined by television application content control markers may be included.

[0083] At television apparatus 300, a third process 329 may be preformed. Third process 329 may include displaying the data received with response 328 to the user, thereby informing the user about television applications available and/or allowable for execution in connection with the channel and/or program being watched. Further, the user may be enabled to select and retrieve a desired television application for execution, e.g. in a television application environment/executor 330.

[0084] For retrieving a desired application, one or more of the first, second and third television application servers 304, 306, 308 may be accessed over the internet, e.g. by using the URIs published with response 328, and the respective application may be downloaded. Further, an execution of the application within television application environment/executor 330 may be started.

[0085] During the execution, the video image displayed at the display of television apparatus 300 may be shrunk, such that a graphical user interface of the application selected may be displayed in connection with the program/channel currently displayed. Alternatively, the application may also be performed in the background, or the graphical user interface may be restricted to a small part of the display, located for example in a corner or at a border of the display. Further alternatively, the graphical user interface of the application may also be displayed, e.g. in a transparent manner or as an overlay on a video image currently displayed at the channel.

[0086] When executing the application, television application environment/executor 330 may refer to the con-

Google Exhibit 1004, Page 402 of 523

trol information and/or television application content control markers, e.g. a black list, thereby assuring that television application content is included or excluded in accordance with the control information determined at application control server 302. Consequently, content that is accessed within the television application may be controlled in accordance with the rules as determined at television application linking engine 326.

[0087] Fig. 4 illustrates the process of determining allowable and/or available, e.g. recommended applications. The process may be performed at television application linking engine 326. The example illustrates a mechanism for implementing a rule set for determining the available, e.g. related, and/or allowable applications based on information on the provider, the channel and the program. The mechanism may be implemented by linking data descriptive of the channel provider, the channel and/or the program to allowable and/or available television applications.

[0088] In the example, a channel provider 400, such as BBC™, allows and/or suggests television applications a 402 and b 404 to be executed when any of the BBC™ channels or programs is being watched. This may be defined by link records 406 and 408, respectively.

[0089] Further, when watching any program of a channel 410 provided by channel provider 400, in the example bbc2™, television application e 412 is suggested and/or allowed for execution, as illustrated with a further link record 416.

[0090] Still further, when watching program 414, i.e. program 003 on bbc1™, television application g 418 is further suggested and/or allowed for execution, as illustrated with a still further link record 418.

[0091] Consequently, when watching program 414, i.e. program 003 on bbc1™, then the television application linking engine 326 will include television applications a 402, b 404, and g 418 as television applications allowed and/or suggested for execution in the application information, e.g. in the list included in response 218 of Fig. 2. However, when watching any other program on bbc1™, only television applications a 401 and b 404 will be included. When watching a program on bbc2™, television applications a 401, b 404 and e 412 will be included.

[0092] The mechanism illustrated in Fig. 4, linking available, allowable and/or related television applications to the channel provider, the channel, and/or the program, may also include further criteria, such as the device profile, the location and/or the time of day, or even descriptive information of content items, as will be shown in the following.

[0093] Fig. 5 illustrates an example of linking television applications to descriptive meta data of a program. In the example, a program 500 with program ID 001 is supposed to be displayed, e.g. at television apparatus 300. At application control server 302, meta data 502 descriptive of program 500 is assumed to be available. In the meta data, keywords and person names, such as names of actors, may be identified. These keywords may be linked to respective television applications, as illustrated by person name link 504 and keyword link 506. Thereby, actor television application 508 related to Bruce Willis and horror television application 510 may be identified as being available, e.g. suggested, and/or allowable for being displayed together with program 500 at television apparatus 300.

[0094] In the example, the set of allowable applications depends on meta data 502 associated with program 500 being displayed at television apparatus 300. This allows providing television applications which may be of special interest to a user watching the program.

[0095] Further, the television application may establish an interactive connection with the provider of a program and/or channel, or with a collector of personal recommendations located on the internet, and thereby may allow voting, judging and/or commenting on the content item.

[0096] It should be noted that the linking mechanism illustrated in Figs. 4 and 5 is to be seen as an example, and that various other mechanisms for determining and providing application information and for implementing the rules of determination are possible.

[0097] Fig. 6 illustrates an embodiment of a method that may be performed within any of the systems depicted in Figs. 1a to 3. At B600, channel information is determined, e.g. at a television apparatus (i.e. a broadcast television receiver apparatus), a handheld television receiving device or personal computer, the channel information identifying a channel currently decoded, e.g. displayed at the television apparatus. The channel information is sent to a server. At B602, application information is determined at the server, the application information describing of a set of applications available for being executed at the television apparatus whilst the channel is decoded. Further, the application information is sent to the television apparatus. At B604, it is illustrated to select an application of the set of available applications, and to download the application from a further server. The selection may, for example, be performed by a user of the television apparatus, and may be based on the application information. At B606, the application is being executed while the channel is decoded.

[0098] The embodiment allows maintaining control of what applications are made available to a user of a television apparatus (broadcast television receiver apparatus) and/or are allowable for use when watching certain channels or programs provided by a broadcaster.

[0099] The broadcasters and content owners may on the one hand determine "rules of engagement", which rules may be guaranteed by the access control performed by the server, controlling compliance with the rules.

[0100] On the other hand, access may be allowed to various television applications, e.g. from specialized third parties having experience in the field, thereby enhancing the users television experience.

Google Exhibit 1004, Page 403 of 523

[0101] Although specific embodiments have been illustrated and described herein, it will be appreciated by those of ordinary skill in the art that a variety of alternate and/or equivalent implementations may be substituted for the specific embodiments shown and described without departing from the scope of the described embodiments. This application is intended to cover any adaptations or variations of the specific embodiments discussed herein. Therefore, it is intended that this invention be limited only by the claims and the equivalents thereof.

Claims

1. A system for retrieval of executable applications, comprising:

   a broadcast television receiver apparatus; and
   a server;

   wherein the broadcast television receiver apparatus includes a communication unit having an interface for bidirectional communication with a network and adapted to determine channel information from a currently decoded channel carried in a broadcast television signal, the channel information identifying the currently decoded channel, the communication unit being further adapted to send the channel information to a server over the network, and to receive application information from the server, the application information describing a set of applications which are available for execution, and to receive executable code components for the set of applications corresponding to the application information, and wherein the broadcast television receiver apparatus further includes a data processor adapted to execute the application whilst the channel is decoded; and
   wherein the server is adapted to receive the channel information over the network, to determine the application information by analyzing the channel information, and to send the application information to the communication unit.

2. The system according to claim 1, wherein
   the application information describes a set of applications which are allowable for execution whilst the channel is decoded.

3. The system according to claim 1 or 2, wherein
   the communication unit is further adapted to send program information to the server, the program information being descriptive of a program currently transmitted on the channel; and wherein
   the server determines the application information depending on the program information.

4. The system according to any of the preceding claims, wherein the application information depends on meta data associated with the channel and/or program decoded at the broadcast television receiver apparatus.

5. The system according to any of the preceding claims, wherein
   control information is included in the application information; and wherein
   an application or a part of an application is excluded from execution or a part of data of the application is excluded from being displayed depending on the control information.

6. The system according to any of the preceding claims, wherein the control information comprises a black list, the black list being descriptive of at least one of the application excluded from execution, the part of the application excluded from execution, and the data of the application excluded from being displayed.

7. The system according to any of the preceding claims, wherein the control information depends on at least one of a group including the channel, the program, the provider of the channel, and the manufacturer of the broadcast television receiver apparatus.

8. The system according to any of the preceding claims, wherein the application is accessed by download from a further server over the network.

9. The system according to any of the preceding claims, wherein the application information is determined based on a device identifier and/or a device profile descriptive of a hardware configuration of the broadcast television receiver apparatus.

10. The system according to any of the preceding claims, wherein a location of the broadcast television receiver apparatus is determined and the set of applications is determined based on the location and/or the application is parameterized by the location.

11. The system according to any of the preceding claims, wherein the communication unit is adapted to send further channel information descriptive of a further channel to the server when a channel switch to the further channel occurs.

12. A broadcast television receiver apparatus, including a communication unit having an interface for bidirectional communication with a network and adapted to determine channel information from a currently decoded channel carried in a broadcast television signal, the channel information identifying the currently decoded channel, the communication unit being further adapted to send the channel information to a server over the network, and to receive application information from the server, the application informa-

Google Exhibit 1004, Page 404 of 523

tion describing a set of applications which are available for execution, and to receive executable code components for the set of applications corresponding to the application information;
a data processor adapted to execute the application whilst the channel is decoded.

13. A server, adapted to receive channel information from a broadcast television receiver apparatus over a network, the channel information identifying a channel currently decoded by the broadcast television receiver apparatus, the server further being adapted to determine application information depending on the channel information, the application information describing a set of applications which are available for execution at the broadcast television receiver apparatus whilst the channel is decoded, and the server further being adapted to send the application information to the broadcast television receiver apparatus.

14. Method of providing content, including
determining, at a broadcast television receiver apparatus, channel information identifying a channel currently decoded from a broadcast television signal;
sending the channel information to a server via a network;
determining, at the server, application information describing a set of applications available for being executed at the broadcast television receiver apparatus whilst the channel is decoded;
sending the application information from the server to the broadcast television receiver apparatus via the network;
selecting an application of the set of available applications, and downloading the application from the server or from a further server;
executing the application whilst the channel is decoded.

15. A computer program product including program instructions adapted to cause a computer to execute a method including
determining, at a broadcast television receiver apparatus, channel information identifying a channel currently decoded from a broadcast television signal;
sending the channel information to a server via a network;
determining, at the server, application information describing a set of applications available for being executed at the broadcast television receiver apparatus whilst the channel is decoded;
sending the application information from the server to the broadcast television receiver apparatus via the network;
selecting an application of the set of available applications, and downloading the application from the server or from a further server;
executing the application whilst the channel is decoded.

Google Exhibit 1004, Page 405 of 523

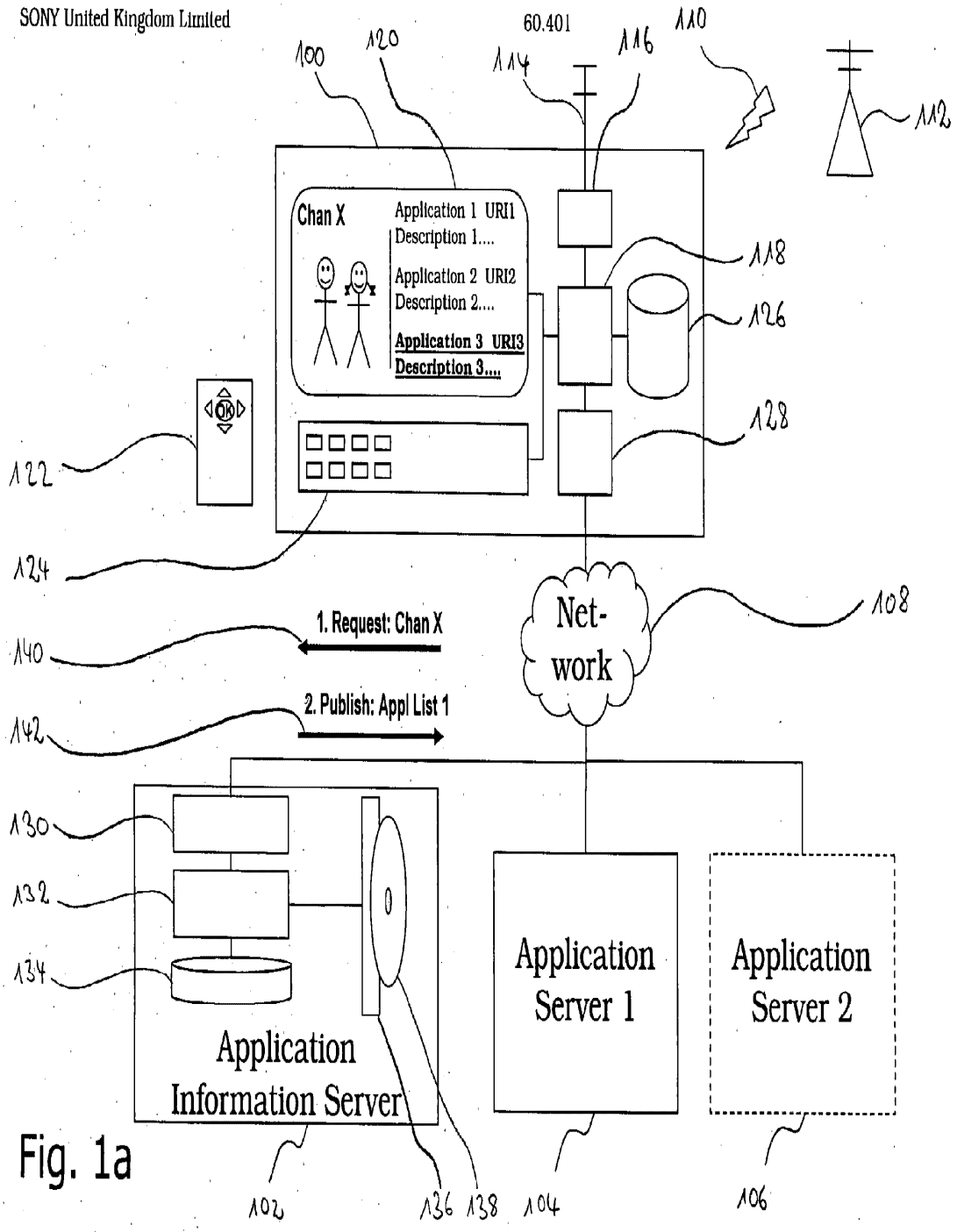


Fig. 1a

EP 2 252 055 A1

Google Exhibit 1004, Page 406 of 523

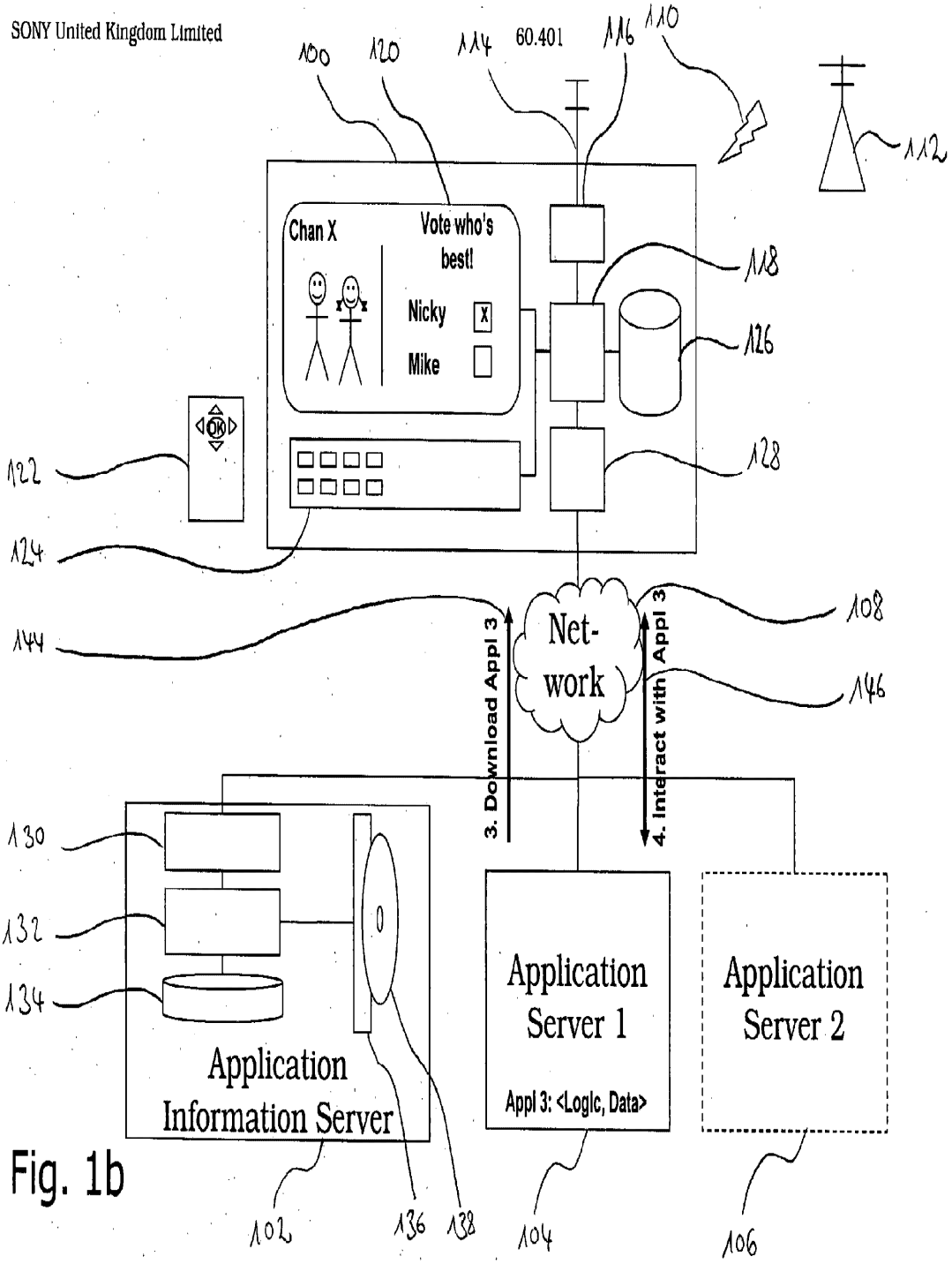


Fig. 1b

EP 2 252 055 A1

Google Exhibit 1004, Page 407 of 523

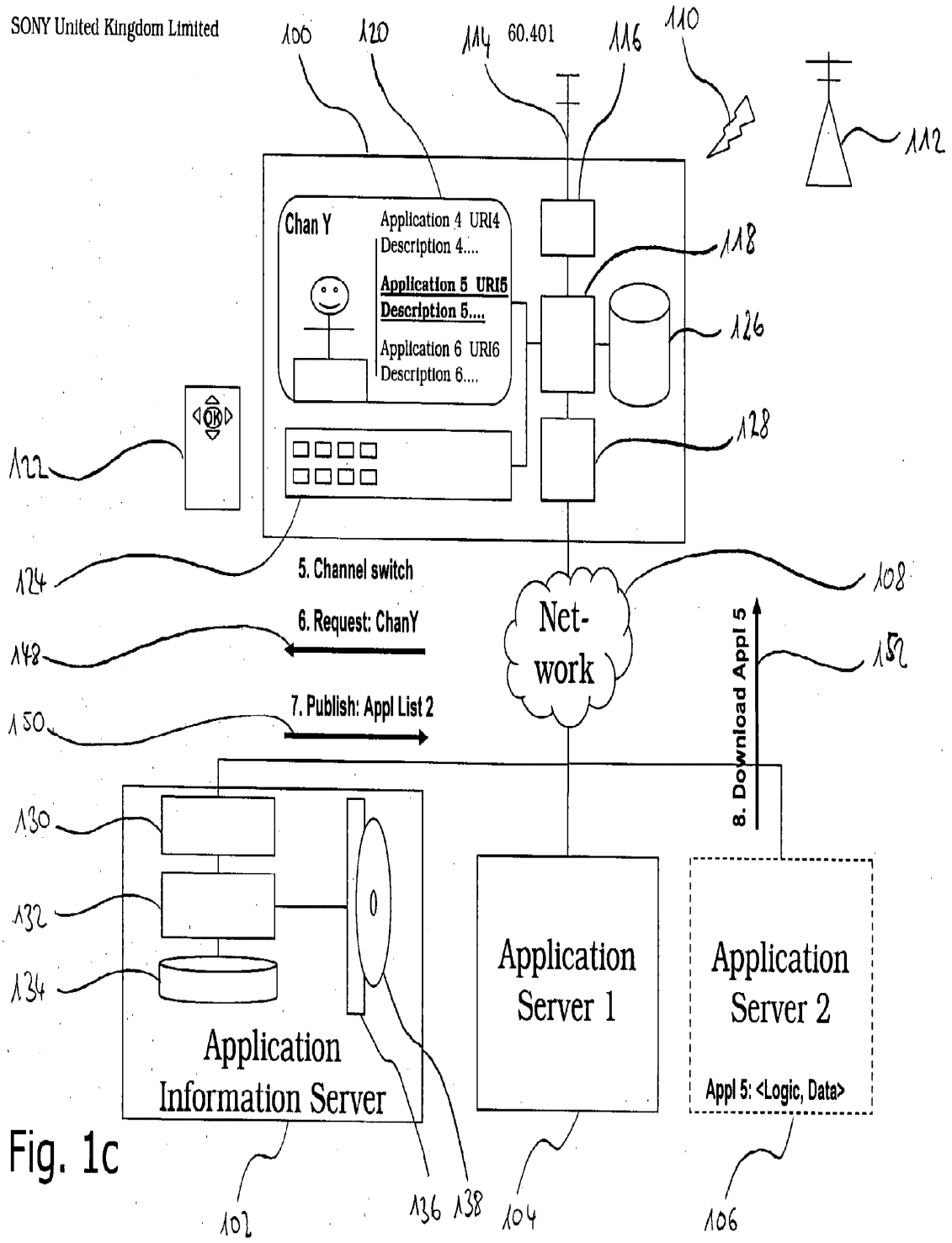


Fig. 1c

EP 2 252 055 A1

Google Exhibit 1004, Page 408 of 523

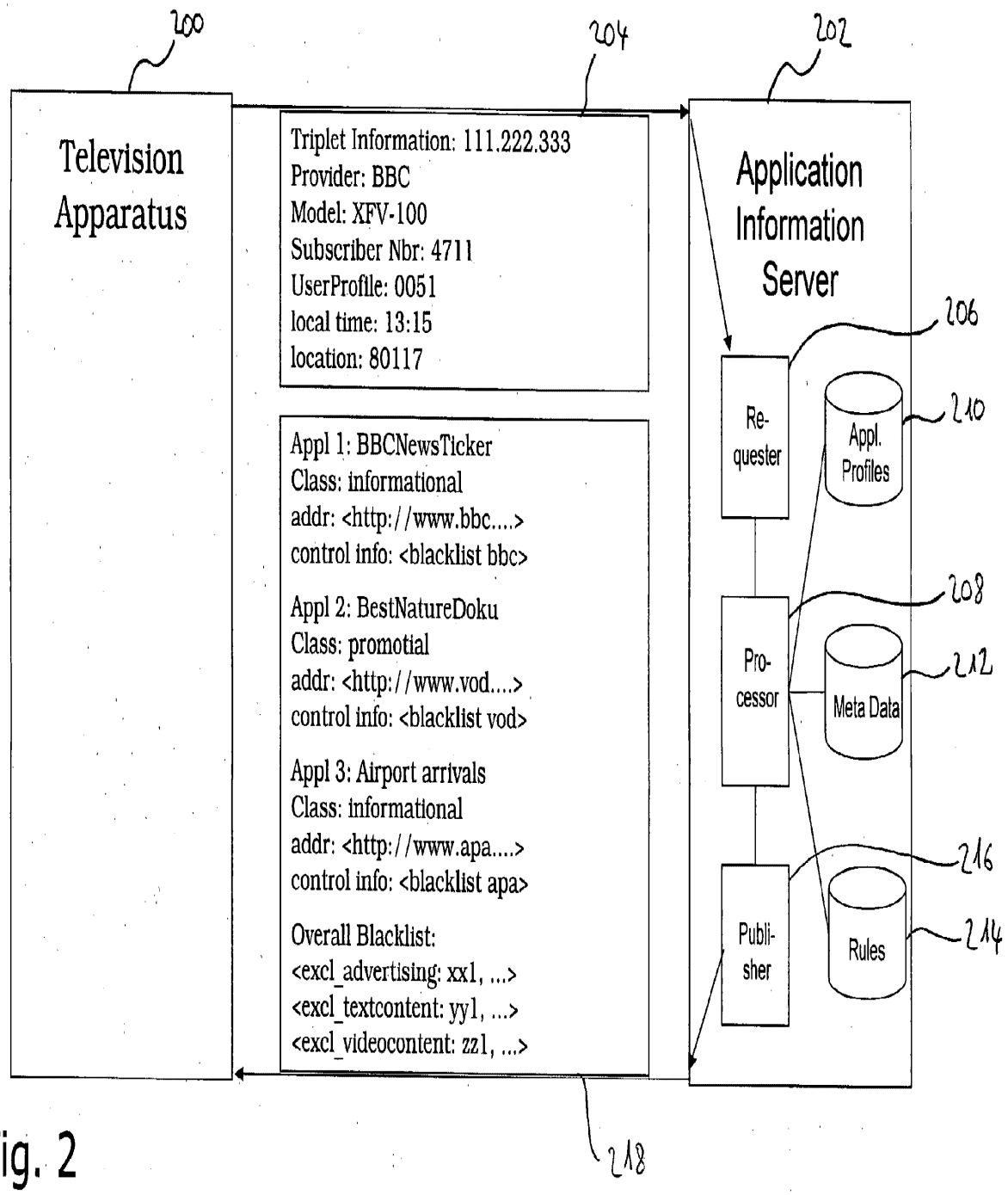


Fig. 2

EP 2 252 055 A1

Google Exhibit 1004, Page 409 of 523

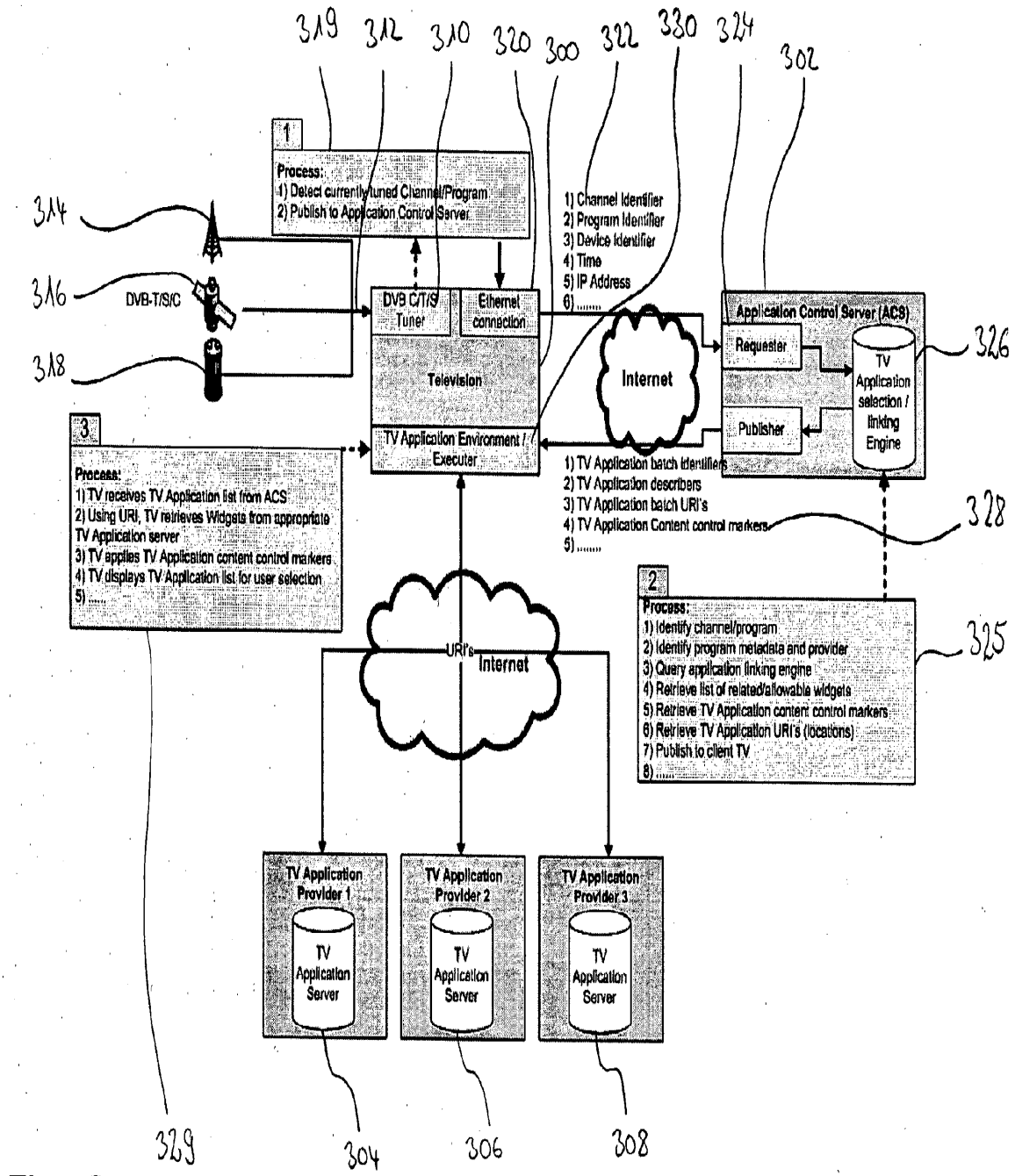


Fig. 3

EP 2 252 055 A1

Google Exhibit 1004, Page 410 of 523

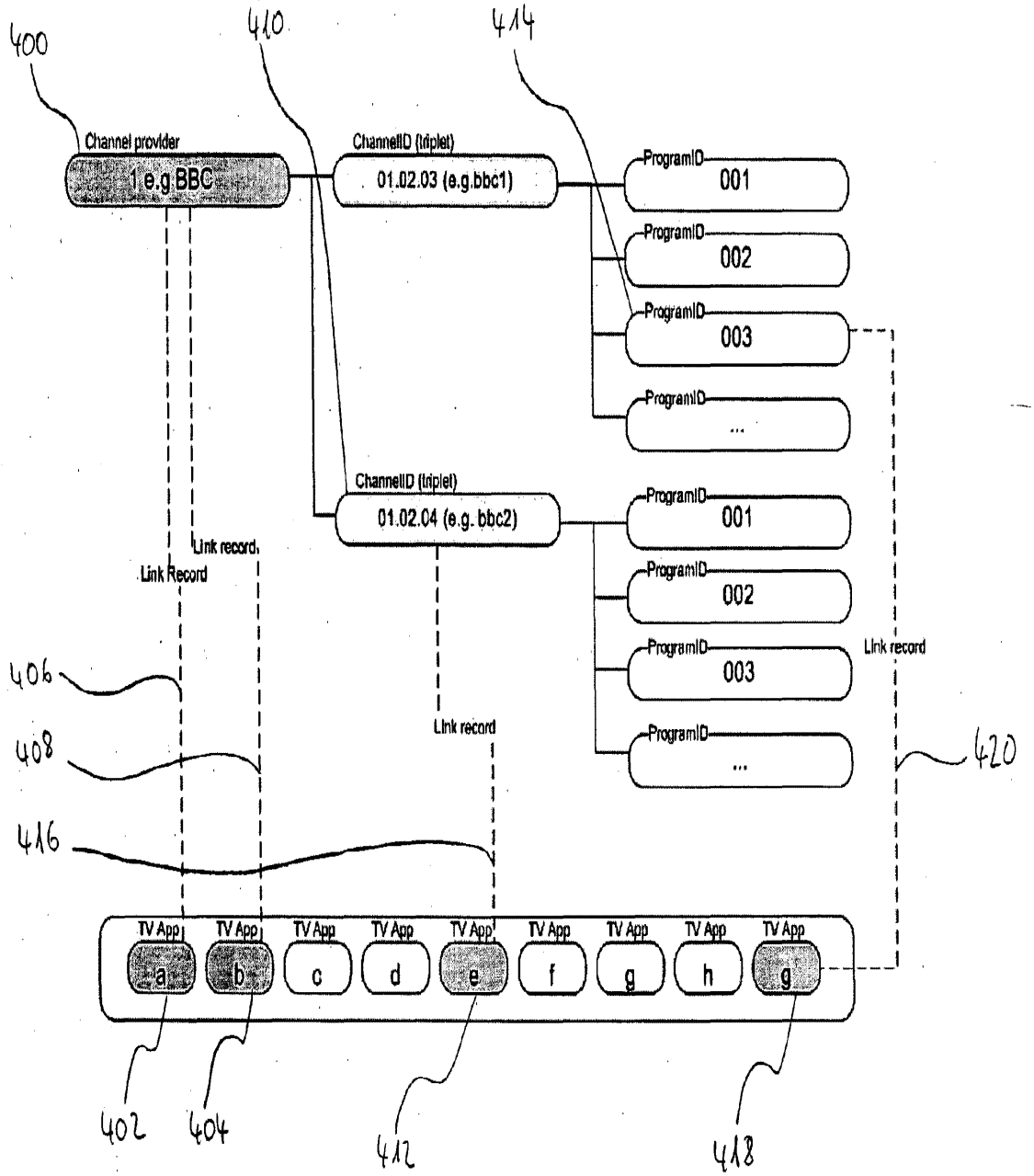


Fig. 4

EP 2 252 055 A1

Google Exhibit 1004, Page 411 of 523

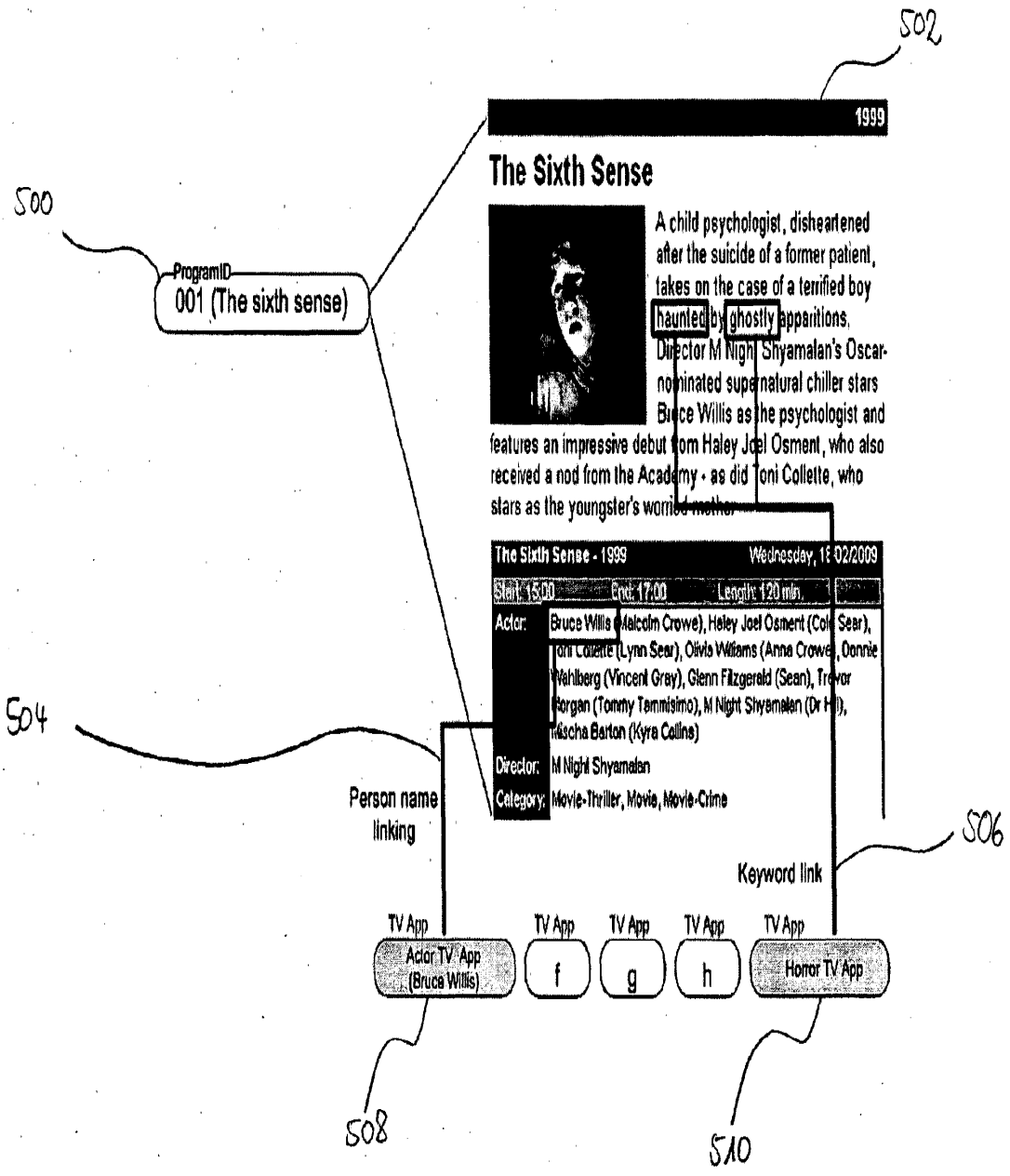


Fig. 5

EP 2 252 055 A1

Google Exhibit 1004, Page 412 of 523

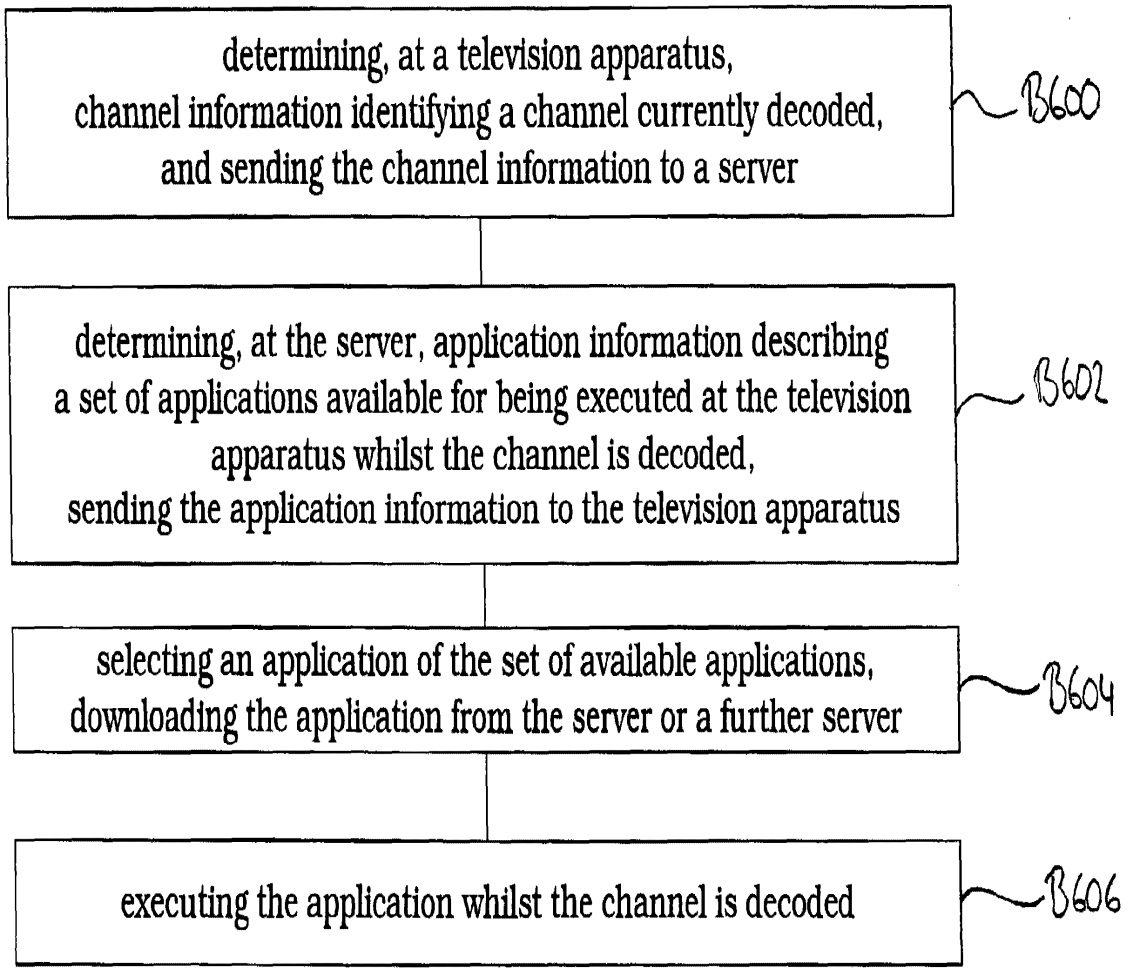


Fig. 6

EP 2 252 055 A1

Google Exhibit 1004, Page 413 of 523

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 09 00 6484

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	EP 2 015 578 A (ALCATEL LUCENT [FR]) 14 January 2009 (2009-01-14) * paragraph [0012] * * paragraph [0033] - paragraph [0036] * * paragraph [0042] - paragraph [0048] * * paragraph [0055] * * paragraph [0062] - paragraph [0070] * * figure 2 *	1-4,8, 10,12-15 5-7,9,11	INV. H04N7/173
Y	US 2008/016529 A1 (KITAGAWA MITSUHIRO [JP]) 17 January 2008 (2008-01-17) * paragraph [0014] * * paragraph [0052] - paragraph [0063] * * paragraph [0072] - paragraph [0091] * * paragraph [0188] - paragraph [0195] * * figures 1-3,15 *	1-15	
Y	WO 2008/115032 A (DREAMER CO LTD [KR]; KIM JOHN [KR]; BAEK WONJANG [KR]; LEE SEONG BAEK) 25 September 2008 (2008-09-25) * paragraph [0008] - paragraph [0012] * * paragraph [0038] - paragraph [0044] * * paragraph [0068] - paragraph [0076] * * paragraph [0087] - paragraph [0101] *	1-15	TECHNICAL FIELDS SEARCHED (IPC) H04N
A	WO 2009/057950 A (PXD INC [KR]; YI CHAE-YONG [KR]; KIM KYUNG-AH [KR]) 7 May 2009 (2009-05-07) * paragraph [0009] - paragraph [0010] * * paragraph [0031] - paragraph [0040] * * paragraph [0046] - paragraph [0050] * * paragraph [0068] - paragraph [0072] * * figures 1,2,4,7 *	1-15	

-/--

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	26 August 2009	Berthelé, P

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

Google Exhibit 1004, Page 414 of 523

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 09 00 6484

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 2009/025464 A (SAMSUNG ELECTRONICS CO LTD [KR]) 26 February 2009 (2009-02-26) * abstract * * paragraph [0033] - paragraph [0036] * * figures 1,3 * -----	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	26 August 2009	Berthelé, P

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

Google Exhibit 1004, Page 415 of 523

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 09 00 6484

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

26-08-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2015578 A	14-01-2009	WO 2008155348 A1	24-12-2008
		FR 2917928 A1	26-12-2008
US 2008016529 A1	17-01-2008	JP 2007318196 A	06-12-2007
WO 2008115032 A	25-09-2008	KR 100812256 B1	10-03-2008
WO 2009057950 A	07-05-2009	KR 20090044506 A	07-05-2009
WO 2009025464 A	26-02-2009	US 2009055877 A1	26-02-2009

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

Google Exhibit 1004, Page 416 of 523

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 August 2004 (26.08.2004)

PCT

(10) International Publication Number
WO 2004/072761 A2

(51) International Patent Classification[7]: G06F

(21) International Application Number:
PCT/GB2004/000461

(22) International Filing Date: 6 February 2004 (06.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0303176.2 12 February 2003 (12.02.2003) GB
10/640,410 13 August 2003 (13.08.2003) US

(71) Applicant: **VIDEO NETWORKS LTD** [GB/GB]; 205 Holland Park Avenue, London W11 4XB (GB).

(72) Inventors: **PAXTON, Brian**; 17 Star Holme Court, Star Street, Ware, Hertfordshire SG12 7EA (GB). **ROBINSON, Dominic, Andrew**; 9 Langthorne Avenue, Stevenage, Hertfordshire SG1 3ND (GB). **LEWIS, Kevin**; 30 Larksway, Bishop's Stortford, Hertfordshire CM23 4DG (GB).

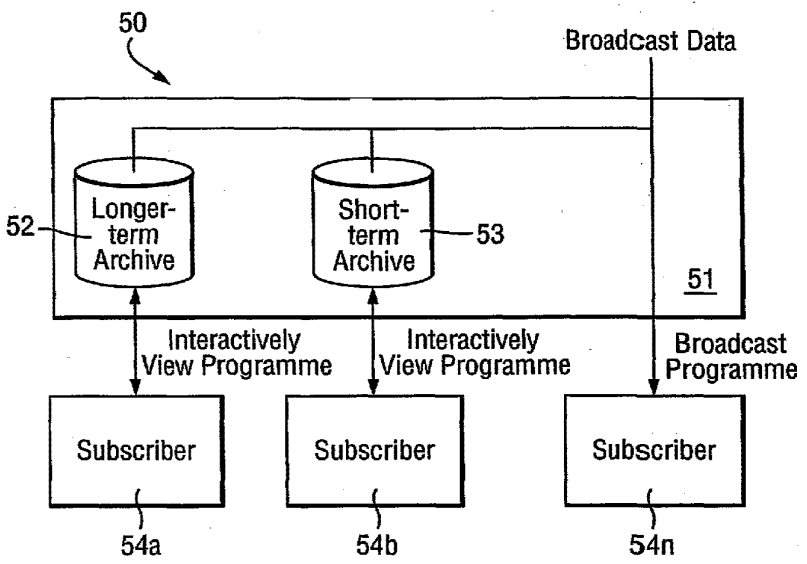
(74) Agent: **GILL JENNINGS & EVERY**; Broadgate House, 7 Eldon Street, London EC2M 7LH (GB).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR IDENTIFICATION AND INSERTION OF ADVERTISING IN BROADCAST PROGRAMMES



(57) Abstract: A broadcast system and method for identification and insertion of advertising in broadcast programmes includes receiving a broadcast data stream, identifying an advertisement in the broadcast data stream, and updating an advertisement schedule including information identifying the advertisement and a location of the advertisement within a programme in the broadcast data stream. On playback, the advertisement or a replacement advertisement is inserted into the programme at the location or at another location within the programme.

WO 2004/072761 A2

Google Exhibit 1004, Page 417 of 523

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

SYSTEM AND METHOD FOR IDENTIFICATION AND INSERTION OF ADVERTISING IN BROADCAST PROGRAMMES

Field of the Invention

The present invention relates to the broadcast of programmes. More particularly, the present invention relates to systems, methods, computer program code, and means for the identification and insertion of advertising in broadcast programmes.

Background to the Invention

A television viewer can receive a television signal in many ways including: VHF/UHF antenna; cable; satellite receiver dish; and copper wire (telephone, power line). The viewer can receive television content directly from content providers, for instance by receiving UHF television signals, or indirectly from a re-broadcaster, for instance from a cable service provider. Re-broadcasters take the output of content providers and re-distribute it.

In broadcast television, advertisements are inserted between sections of main programmes by the broadcaster. Advertisements are often scheduled to air at a particular time to coincide with the scheduled broadcasting of a particular main programme, for example sportsware being advertised during the broadcast televising of sporting events. Broad regional variations can be reflected in the broadcast output of a single television channel by providing different sets of advertisements to respective television transmitters. These regional variations are somewhat limited in that each advertising slot has a predetermined duration.

Advertisements can therefore be broadcast with reference to the context of a corresponding programme event, and to the demographics of the viewers served by any given transmitter, but with very little correlation to the personal context of any particular viewer.

When the viewer makes use of a video cassette recorder (VCR) to "time shift" (i.e., to delay playback), the advertisements are recorded along with the main programme. Recent technological advances, including personal video recording devices (PVRs) and digital video recorders (DVRs), provide viewers with greater flexibility in recording programmes. These so-called 'super-video' devices can provide personalized functionality by building up a profile of TV usage and attempting to record similar programs.

'Super-video' devices are also known to provide a 'time-shift functionality, whereby the broadcast video stream is recorded at the same time as it is being played back, so that a video stream of the main programme being played back can be halted at any desired point and resumed later, even while later parts of the same main programme are being broadcast.

Furthermore, certain PVRs can be configured to allow viewers to fast forward through advertisements so that a main programme can be viewed without the intervening advertisements. While this 'super-video' functionality might be attractive to a viewer, it presents a challenge to broadcasters' advertising revenues. If every viewer used their 'super-video' device to playback the output of commercial television channels, it can be expected that a significant proportion of these viewers would opt never to watch the advertisements at all. Advertising through the television would be correspondingly less effective for advertisers, and advertisements would be placed elsewhere. Consequently, the broadcaster or re-broadcaster would accrue less profit as a result of advertising.

In addition to broadcasting television programmes, certain television suppliers provide subscribers with further "view on demand" facilities (including systems providing "near video on demand" or NVOD and systems providing "video on demand" or VOD). Typically, a broadcaster will offer to broadcast a restricted number of selected events (such as movies), at regular time intervals. Viewers may subscribe to receive a particular broadcast of the event. After subscription, the event will be broadcast directly to the viewer's set top box, using satellite or cable distribution methods, for example. The broadcast times of the events themselves cannot however be controlled by the viewer.

Broadcasters often broadcast "view on demand" events without advertisements. Generally, "view on demand" events command a premium that compensates for any loss in advertising revenue. When, however, view on demand facilities are provided by a re-broadcaster to allow time-shifting, the suppression or lack of advertisements represents a loss of potential revenue-viewers watching the re-broadcast are able to view the programme without paying the original premium and without advertisements.

In many copyright jurisdictions, a "client-side" device, such as a VCR or a super-video device, is treated in a different way from a "server-side" device. As a result, a viewer with a client-side device can effectively make recordings of television programmes for personal use without infringing copyright. Any broadcast service

Google Exhibit 1004, Page 420 of 523

provider using a server-side device that provides a subscriber with the same facility would breach copyright both by recording the broadcast programme and by re-broadcasting the same programme at a later time. Broadcast service providers that wish to provide a time-shift functionality for their subscribers using server-side devices must therefore have a license from the content providers. Since advertising is an important source of revenue for the majority of content providers, it is likely that any potential reduction in advertising effectiveness will result in either a corresponding increase in license royalties or an outright refusal to license.

It would be desirable to provide a rebroadcast service that maintains the advertisements provided by content providers. It would also be desirable to provide a rebroadcast service that increases the effectiveness of advertisements in general.

Summary of the Invention

According to a first aspect of the present invention, a broadcast method comprises the steps of:

receiving a broadcast data stream;

identifying an advertisement in said broadcast data stream; and

updating an advertisement schedule including information identifying said advertisement and a location of said advertisement within a programme in said broadcast data stream.

According to a second aspect of the present invention, a broadcast system comprises:

means for receiving a broadcast data stream;

means for identifying an advertisement in said broadcast data stream; and

means for updating an advertisement schedule including information identifying said advertisement and a location of said advertisement within a programme in said broadcast data stream.

According to a third aspect of the present invention, a broadcast system comprises:

a head end, coupled to receive an input broadcast channel data stream including a programme having an advertisement;

a service information processor, in communication with said head end and retrieving service information associated with said programme and said advertisement including information identifying a location of said advertisement within said programme;

Google Exhibit 1004, Page 421 of 523

a storage server, in communication with said head end and said service information processor, storing a copy of said programme and associating a storage location of said copy with service information associated with said programme;

an advertising server, in communication with said service information processor, storing a copy of said advertisement and further storing a replacement advertisement and service information associated with said advertisement; and

a distribution system, coupled to said storage server and said advertising server, operable to transmit said copy of said programme to a subscriber and to insert a selected replacement advertisement at said location.

According to a fourth aspect of the present invention, a subscriber-initiated method for viewing a programme comprises the steps of:

interacting with a programme schedule displayed on a display device to select a desired programme stored in an archive;

transmitting information identifying the subscriber and information identifying the desired programme;

receiving a uni-cast transmission of said desired programme; and

receiving a uni-cast transmission of a replacement advertisement embedded within said programme, said replacement advertisement different than an advertisement included in a live broadcast of said programme.

According to a fifth aspect of the present invention, a broadcast method comprises:

receiving, from a subscriber, a request to play an archive copy of a programme;

identifying a location of said archive copy of said programme;

selecting at least a first advertisement based at least in part on information associated with said programme; and,

inserting said at least first advertisement into said programme.

Brief Description of the Drawings

Examples of the present invention will now be described in detail with reference to the accompanying drawings, in which:

Figure 1 is a block diagram of an example of a broadcast system;

Figure 2 is a more detailed block diagram showing a number of different components that may be operated by (or on behalf of) a broadcast service provider

Google Exhibit 1004, Page 422 of 523

to allow a subscriber to view both live broadcast programmes and archived programmes on a television.

Figure 3 is a still more detailed block diagram of a broadcast system;

Figures 4A-4D are diagrams depicting data structures in a broadcast data channel stream;

Figure 5 is a flow diagram showing a process for identifying and processing advertisements;

Figure 6 is a flow diagram showing a process for playing a program and inserting advertisements; and,

Figure 7 is a further block diagram of an example of a broadcast system.

Detailed Description

The present invention relates to systems, methods, computer program code and means for the identification and insertion of advertising in broadcast programmes. The present invention may be implemented in a broadcast system such as the broadcast system described in our co-pending International Patent Application No. _____, filed on even date herewith (Attorney Reference No. PJF01633WO). For example, as will be discussed below, the present invention allows the identification and insertion of advertising in programmes broadcast by a broadcast service provider, including programmes broadcast "live" or programmes broadcast from archives (including short and longer-term archives). Upon reading this disclosure, those skilled in the art will recognize that features of invention may be implemented in other broadcast systems as well.

For convenience, and ease of exposition, a number of terms are used herein. For example, the term "subscriber" is used to refer to an individual or entity which has a subscriber relationship with a broadcast service provider to receive and view broadcast data (either live broadcast data or archived broadcast data or both). A subscriber, for example, may be associated with a particular set top box identifying the subscriber. "Subscribers" may also be referred to herein as "users" or "viewers". As used herein, the term "set top box" is generally used to refer to devices associated with subscribers which receive broadcast data from a broadcast data service provider. A set top box may be a dedicated device designed to receive broadcast data, or it may be implemented as a component or function associated with a personal computer or other computing device.

Google Exhibit 1004, Page 423 of 523

The term "broadcast service provider" or "service provider" may be used to refer to an entity (or entities) which operate components of broadcast systems pursuant to embodiments described herein to deliver live broadcast data and archived broadcast data to subscribers. For example, a "broadcast service provider" may be an entity which operates (or is associated with) one or more systems configured to transmit programmes to subscribers. Broadcast service providers operate systems including exchanges or central offices that are configured to deliver digital data to subscribers over the twisted pair communication lines that are present in many households and businesses around the world (e.g., such as telephone or copper wires). Broadcast service providers deliver this data using digital subscriber line ("DSL") techniques. In one illustrative embodiment to be discussed herein, a broadcast service provider delivers digital data using asymmetric DSL ("ADSL") techniques, although those skilled in the art will recognize that other DSL techniques (generally referred to as "xDSL" may also be utilized). Further, although wired communication techniques are discussed, those skilled in the art will appreciate that features of embodiments may also be implemented using wireless techniques.

As used herein, the term "live broadcast data" or "live broadcast programme" refers to broadcast data viewed at the time scheduled and broadcast by the broadcasting entity. As used herein, the term "archived broadcast data" or "archived programmes" refers to broadcast data or programmes which is stored for viewing at a time later than the "live broadcast". The broadcast system can provide two different types of data archives: short-term archives (e.g., where programmes are stored for a relatively short period such as 24-72 hours), and longer-term archives (e.g., where programmes may be stored for a longer time period). For example, longer-term archives may allow storage of programmes indefinitely. As another example, a broadcast service provider may store programmes for up to a set period (e.g., such as one month or one year). As yet another example, a broadcast service provider may periodically query subscribers to determine whether the archived programme should be deleted from the archive.

As used herein, the term "advertisement" is generally used to refer to a promotion or solicitation which generally includes video and audio data (but which may include teletext, video, or audio data) which is embedded or inserted into a stream of broadcast data. Advertisements may be positioned at numerous locations within a broadcast data stream, including at the beginning of programmes, at various times during programmes, at the end of programmes, etc.

Google Exhibit 1004, Page 424 of 523

By way of introduction, an example of the present invention will now be described by first referring to Figure 1, where a depiction of a broadcast system 50 shown. Broadcast system 50 includes one or more broadcast service providers 51 delivering content to one or more subscribers 54a-n. The delivered content can include both broadcast programmes (either live or archived) and advertisements.

Subscribers may receive broadcast programme data in several ways. For example, subscribers (such as subscriber 54n) may receive "live" broadcast programmes; that is, the subscriber way view a programme at the time at which it is being broadcast. As an illustrative example, (which will be continued throughout this description) a "live" broadcast programme may be the "Evening News", broadcast every weeknight starting at 6pm local time. Broadcast system 50 allows subscribers, such as subscriber 54n, to view this programme at its designated time (at 6pm local time). As used herein, (and as further defined below) the term "live" is used to generally refer to the actual and planned time of broadcast of a broadcast programme (and is not necessarily intended to refer to a programme which is both filmed and viewed at the same time). To minimize traffic on the backhaul to the ADSL central office or exchange, these "live" broadcasts are transmitted to subscribers 54 via multicast to avoid duplications of traffic. This increases the system's ability to transmit video and audio programme data to a large number of subscribers without impairing the capacity of the backhaul (and thereby allowing a larger number of subscribers to interact with the system to selectively view archived programmes as described below).

Subscribers may be added to multi-cast broadcasts of programmes using techniques such as those described by Internet Group Management Protocol (IGMP), IETF RFC 3376 (October 2002) (available at www.ietf.org) the contents of which are incorporated herein by reference for all purposes.

These live broadcasts may include advertisements in addition to programmes. For example, the "Evening News" programme may include groups of two or three (or more) advertisements located at the beginning of the programme, every 15 minutes during the programme, and at the end of the programme. Broadcast service provider 51 may capture and identify these advertisements during broadcast and, in some embodiments, may replace some or all of the advertisements with advertisements specifically directed to one or more subscribers 54.

The broadcast system 50 allows subscribers (such as subscriber 54b) to view a programme at some time after the "live" broadcast time. The system can generate

Google Exhibit 1004, Page 425 of 523

and store a short-term archive copy of all broadcast programmes received by broadcast service provider 51. Further details of how this short-term archive copy is generated and stored will be provided below. In general, broadcast service provider 51 includes a storage device 53 (or group of devices) adapted to store copies of broadcast programmes for a number of different broadcast channels. Sufficient storage space is provided to store 24-72 hours of broadcast programmes for a number of different channels. In conjunction with the generation and storage of these short-term archive copies, a schedule of programmes is created. Subscribers wishing to view a programme within 24-72 hours of the time at which it originally aired (that is, after the "live" broadcast) may interact with the schedule of programmes to select the programme and cause the programme to be streamed to the subscriber. These programmes are stored in a manner which allows the subscriber to fast forward, pause, and rewind while viewing the programme. As an example, subscriber 54b may choose to view the "Evening News" at 6:15pm rather than at the "live" broadcast time of 6pm. Further, subscriber 54b may fast forward, rewind, or pause as desired during his viewing of the programme.

The broadcast system 50 further allows subscribers (such as the subscriber 54a) to select particular programmes for longer-term archival. For example, broadcast service provider 51 or a subscriber (such as subscriber 54a as shown in Figure 1) may wish to create a longer-term copy of a particular broadcast of the "Evening News". Subscriber 54a may indicate this desire by communicating with broadcast service provider 51 (e.g., via a set top box or other device as will be discussed further below). A copy of the broadcast may then be stored on a storage device 52 used for longer-term storage of programmes. The copy of the programme is associated with information uniquely identifying the subscriber 54a so that the subscriber 54a may be allowed access to the programme as desired. Subscriber 54a may then view the programme as desired. For example, subscriber 54a may view the particular episode of the "Evening News" weeks after it aired. Subscriber 54a may repeatedly view the same episode until the episode is deleted from the archive (e.g., at the subscriber's request or once an archive period has expired). To reduce storage needs, multiple subscribers may have access to a copy of a program stored in a longer-term archive. For example, information identifying each customer who has requested the creation of a copy of a programme may be given access permissions to share access to an archive.

Google Exhibit 1004, Page 426 of 523

The broadcast system 50 allows each of these types of broadcasts to be selectively delivered to subscribers, providing subscribers with greater choice, control and flexibility in viewing. Subscribers may access these broadcasts via telephone wires such as the copper telephone wires currently installed in many households. The system delivers broadcast and archived programmes to subscribers using asymmetric digital subscriber line (ADSL) techniques (although those skilled in the art will appreciate that other techniques now known or later developed may be used to deliver programmes pursuant to embodiments disclosed herein). Programmes are delivered using encoding schemes such as the widely-used "Moving Picture Experts Group version 2" (MPEG-2) scheme, although those skilled in the art will appreciate that other encoding schemes may also be utilized.

Broadcast data may be delivered from broadcast service provider 51 to subscribers 54 using constant bit rate (CBR) encoding techniques, thereby providing a maximum bitrate that is used for both video and audio data. Applicants have found that the use of CBR encoding provides reliable and consistent content delivery over ADSL networks, despite issues with distance from the ADSL exchange (or "central office") and despite the demands for high bitrates to provide quality video services. Where video bitrates for particular programmes vary, embodiments utilize encoders configured to pad or "stuff" the video data extra (blank) data to create an actual constant bitrate. Further, the backhaul to the ADSL central office or exchange is "overbooked" to assume a particular level of contention which ensures sufficient bandwidth is available to subscribers. For example, the backhaul may be designed such that 33% of all subscribers serviced by the backhaul are assumed to be active at any time. This may be implemented, by reducing the number of subscribers associated with each digital subscriber line access multiplexor (DSLAM) associated with a particular exchange or central office.

Broadcast service provider 51 further operates to identify and capture advertisements in conjunction with the creation of archive copies of broadcast programmes. A variety of different types of information about advertisements may be captured. For example, when a programme is broadcast, broadcast service provider 51 may generate information identifying the location of each advertisement in the programme as well as information identifying details of the advertisement and the advertisement's audio and video data. This information may be stored in longer-term or short-term archives 52, 53 or may be stored in separate advertisement databases (not shown). The information is used when a programme is transmitted to a

Google Exhibit 1004, Page 427 of 523

subscriber for viewing and allows broadcast service provider 51 to identify the point in the transmission where an advertisement should be inserted. This information also allows broadcast service provider 51 to select an appropriate advertisement for insertion (e.g., by targeting a subscriber's particular demographic). That is, broadcast service provider 51 may select different advertisements for insertion into a programme. Different subscribers may be presented with different advertisements. When a program is viewed at different times, different advertisements may be inserted. For example, if a programme is viewed in July, an advertisement for an amusement park may be played; if the programme is viewed in December, an advertisement for a ski area may be displayed. The present invention allows great control over the selection and insertion of advertisements in programmes that are broadcast to subscribers, thereby increasing advertiser revenue and ensuring that time-shifted programmes are able to generate advertising revenues.

Broadcast service provider 51 operates to select appropriate advertisements for insertion into programmes that are transmitted to subscribers. These selected advertisements may be inserted at the location where original advertisements were included during the original broadcast of a programme, or they may be inserted at other locations. For example, a movie which originally contained advertisements every 20 minutes may be transmitted with advertisements every 30 minutes. As another example, a movie which was originally broadcast on demand and which did not include any advertisements may be transmitted by broadcast service provider 51 with a number of advertisements inserted. The advertisements inserted by broadcast service provider 51 include service information which has a link to additional promotional information which is presented to the subscriber when the advertisement is viewed. The broadcast system 50 of the present invention may further be configured to allow subscribers to skip some or all advertisements. For example, broadcast service provider 51 may operate a "premium" service which subscribers may pay additional fees to participate in and which allows participating subscribers to skip or fast forward through advertisements.

Further details of the present invention will now be described by referring to Figure 2. The system of Figure 2 depicts a number of different components that may be operated by (or on behalf of) a broadcast service provider to allow a subscriber to view both live broadcast programmes and archived programmes on a television 9. A number of components of the system of Figure 2 may be operated by, or on behalf of, a service provider offering broadcast and archived programmes to subscribers.

Google Exhibit 1004, Page 428 of 523

Some or all of the components may be implemented on one or more computing devices configured to perform the functions described herein. Although some components are shown as separate devices, some or all of the functionality described herein may be implemented on one or more computing devices or networks of computing devices.

In Figure 2 a broadcast channel source 1 generates a data feed of broadcast channels which are provided to a broadcast distribution head-end (BDHE) 2. For example, broadcast channel source 1 may be any of a number of different types of sources of broadcast data, such as, for example, sources of television, video, audio, or other data. Each data feed includes video and audio information for each channel as well as service information (SI) for each programme broadcast on each channel. The service information includes information about each programme including start time and duration, and a synopsis of the programme.

As used herein, the term "service information" (SI) or "programme specific information" (PSI) refers to information embedded in the MPEG-2 transport stream as additional transport packets having unique packet identifiers. For example, SI may include electronic programme guide information such as the nature of a programme, the timing and channel on which it is located, and other information identifying the type, content, and timing of a particular programme. SI may include additional information such as a "service description table" (or SDT) providing information identifying the service provider of a programme, an "event information table" (or EIT) containing programme names, start times, durations, etc., and other timing and event information.

Broadcast data may be transmitted using a variety of communications media. For example, the broadcast channel source 1 may provide a number of channels of broadcast data as digital or analogue television captured by digital satellite, digital terrestrial, cable, digital subscriber line (xDSL), or as analogue or direct feeds over a network. The broadcast data may be received from a digital source (or is otherwise converted into digital broadcast data prior to receipt by BDHE 2). Further, the digital broadcast data may be encoded using an encoding scheme such as the MPEG-2 encoding scheme, although other encoding schemes may also be utilized. Use of an encoding scheme such as MPEG-2 allows the receipt of digital broadcast data which includes encapsulated MPEG-2 transport stream service information associated with the digital broadcast data. This service information, as will be described further herein, provides for accurate timing of programmes.

Google Exhibit 1004, Page 429 of 523

A number of broadcast channel sources 1 may be utilized in the system of Figure 2. For example, the system may receive dozens or even hundreds of different channel data feeds from various broadcast channel sources. Each channel data feed consists of a number of programmes. These channel data feeds are acquired by BDHE 2. BDHE 2 includes video acquisition equipment and may also include encoders to compress the channel data into a form which is suitable for a set top box to decode and display on a television. The BDHE 2 may also include multiplexing equipment to multiplex the data. The broadcast data is encoded into a digital video broadcast (DVB) standard, such as the MPEG-2 video and audio and encapsulated in an MPEG-2 transport stream. Further details of BDHE 2 will be discussed in conjunction with Figure 3 below.

Following acquisition, encoding and multiplexing, each of the broadcast channels are directed, encapsulated in the MPEG-2 transport stream, to a timeslip server 3 and broadcast schedule server 4 under instruction from a video server manager 5. The same output may be sent to each server. Alternatively, separate data is transmitted to a service information processor (not shown, but which may be configured as part of BDHE 2 or as a separate component) and then used to create schedule information at broadcast schedule server 4. The use of a service information processor will be described further below in conjunction with Figure 3.

Timeslip server 3 is typically a computer system (or network of computer systems) with a storage capacity that allows it to save the data from the broadcast feeds locally. All programmes from each of the broadcast channels are stored at least for a period of time. For example, timeslip server 3 may store 24-72 hours of programming from each of the broadcast channels, allowing subscribers to view programmes from the broadcast channels for some period (e.g., 24-72 hours) after the time the programme is originally broadcast. As will be described further below, timeslip server 3 also operates to allow subscribers to selectively archive broadcast programmes for viewing at a time of their choosing. These longer-term archives may be stored at (or accessible by) archive content server 10.

Although further details will be provided below, in general, the timeslip server 3 receives a number of encoded channels of broadcast data from BDHE 2 and stores the video and audio data for each channel on a disk as a continuous stream. The timeslip server 3 also functions to accurately identify the start and end of each programme as well as the locations where each programme is stored on disk. This information allows the timeslip server 3 to quickly and accurately retrieve

Google Exhibit 1004, Page 430 of 523

programmes when requested by subscribers. Further, the timeslip server 3 functions to store broadcast channel data so that it may be efficiently and accurately rewound or fast-forwarded upon request by subscribers. Further details of these features will be discussed further below.

The broadcast schedule server 4 interacts with the timeslip server 3 (and with other sources of schedule information) to construct an accurate historical schedule of programmes. This schedule information is presented to subscribers who can interact with the schedule to select a desired programme to view or to archive. Broadcast schedule server 4, as will be discussed further below, may create and maintain different types of schedules (e.g., including a long form, or detailed schedule, and a short form, or summary schedule). These schedules may be presented to subscribers and used by subscribers to interactively identify programmes for viewing or archival (e.g., a subscriber may interact with a schedule to select one or more programmes for viewing from the short-term archive, or to select one or more programmes to be stored in the longer-term archive for later viewing).

The video server manager 5 controls the distribution of the digital broadcast data to viewers for live broadcasting of each channel. Video server manager 5 also stores (or has access to) customer information. For example, customer information may include information associating a particular customer or subscriber with the unique identifier assigned to the customer's set top box 8. Customer information may also include information used to track customer viewing preferences, demographic information, etc. Video server manager 5 also stores (or has access to) advertisement information, including advertisement data identifying the location of advertisement slots in programmes that have been archived as well as data identifying the advertisement that was originally broadcast with each programme. Further, video server manager 5 may also store (or have access to) new or replacement advertisements including the video and audio data associated with the advertisement.

Video server manager 5 uses this advertisement data to select a replacement advertisement and provide the replacement advertisement to switching and routing network 6 for transmission to a subscriber in an appropriate location within a programme. Advertisements may be selected for transmission based at least in part on information associated with a subscriber (e.g., such as customer demographic information retrieved from the customer database), information associated with the original advertisement (e.g., a rule may be implemented which ensures that if the

Google Exhibit 1004, Page 431 of 523

original advertising slot was paid for by Coca-Cola, Inc., the replacement advertisement must be a Coca-Cola advertisement), and information associated with the programme (e.g., a rule may be implemented which ensures that if the programme is a cartoon intended for young children, the replacement advertisement cannot be an advertisement targeted to an older audience such as a beer commercial).

Other information may also be provided as will be discussed below. The video server manager 5 provides control of switching and routing facilities 6 including unicast, multicast and broadcast of each channel. Each broadcast channel is transmitted across a network 7 to the set top box 8 which directs the data to the television 9. Network 7 may be any of a number of different types of networks or combinations of networks. For example, network 7 may be a wide area distribution network to local exchanges and local loop delivery using ADSL. Network 7 allows broadcast data to be delivered to subscriber set to boxes 8, and also allows the transmission of data from set top box 8 to switching and routing facilities 6 (e.g., to select programmes for archive, for play of programmes, etc.). Subscribers may also be able to access service or programme information related to the current programme via the set top box 8.

Set top box 8 may be any device configured to receive digital broadcast data at a subscriber's home. Where digital broadcast data is delivered to subscribers via ADSL techniques, set top box 8 includes a modem or receiver allowing the receipt and transmission of data over telephone wires. Where broadcast data is delivered in MPEG formats, set top box 8 includes an ability to decode the received MPEG data. Set top box 8 includes information uniquely identifying the subscriber associated with the set top box. For example, set top box 8 may include a unique identifier such as a digital signature or other cryptographic identifier. This identifier may be provided on a tamper resistant device such as, for example, a smart card. This unique subscriber identifier may be appended to messages transmitted from the set top box 8 to the broadcast service provider, allowing the broadcast service provider to identify the subscriber. Further, the unique identifier may be used in setting up unicast sessions between the switching and routing 6 and individual set top boxes 8. Set top box 8 may be equipped with an infra red or other sensor, allowing a subscriber to interact with set top box 8 using a remote control device.

The system provides subscribers with the ability to view live broadcast programmes, view archived broadcast programmes some period after the initial live

Google Exhibit 1004, Page 432 of 523

broadcast (e.g., for a period of 24-72 hours after initial broadcast), or store and view specific programmes in a longer-term archive for later viewing. For programmes which are viewed after the initial live broadcast, subscribers are able to interactively control the play of the programmes (e.g., subscribers may pause play, fast forward, or rewind as desired). Further, because the system creates an accurate historical programme schedule based on the actual broadcast data received by a broadcast service provider, subscribers can view and interact with a detailed and accurate schedule to select programmes for viewing or for archival. The system also allows the creation of an accurate historical advertisement database, including information identifying the location or position of each advertisement in each programme. This advertisement database may be used to control the insertion (and, if appropriate) replacement of advertisements in programmes broadcast to subscribers. Further, each of these viewing options is provided using relatively low bandwidth technologies such as ADSL, allowing subscribers to view and interact with a wide variety of broadcast programmes over existing home telephone wires.

Further details of the present invention will now be described by reference to Figure 3, where a more detailed example of a broadcast system 50 is shown. Broadcast system 50 includes one or more broadcast channel provider / rights owner(s) 12 which generates (or causes to be generated) broadcast data that is provided to BDHE 2 for distribution to subscribers via a number of set top boxes 8. In this example, digital broadcast channel data is received at BDHE 2 via one or more digital channel sources 30 (e.g., such as digital terrestrial, digital satellite, or digital cable sources). This digital broadcast channel data is received encoded in MPEG (or similar) formats. As shown, digital broadcast channel data received in MPEG-2 format from digital channel source 30 is typically received in a "multiple program transport stream" (or MPTS) (that is, in a transport stream of packets having multiple programmes encoded therein).

This MPTS of channel information is provided to a decoder 31 which decodes the digital broadcast channel data into serial digital information for each channel. Operation of decoder 31 causes the service information associated with individual programmes to be lost. This service information (or at least portions thereof) is preserved by passing the digital broadcast channel data received at digital channel source 30 to a service information ("SI") processor 19. This SI processor 19 may be implemented as part of BDHE 2 or it may be implemented as a separate component in communication with BDHE 2.

Google Exhibit 1004, Page 433 of 523

SI processor 19 receives the digital broadcast channel data in MPTS format and then parses information from each broadcast channel to obtain detailed programme information associated with each channel. For example, SI processor 19 parses incoming data to obtain a "service description table" (SDT) and "event information tables" (EIT) for each broadcast channel. These tables provide information about each programme as well as about upcoming programmes on each channel. For example, the tables provide information identifying the name of the programme, a description of the programme, a duration of the programme, start and end times (scheduled and actual) and information about the programme's genre.

SI processor 19 returns information to BDHE 2 for multiplexing with the video and audio information for each channel. BDHE 2 re-encodes each channel into "single programme transport streams" (or SPTS) using an encoder 32. This encoded audio and video information is associated with the SI information from SI processor 19 using a multiplexor 33. SI processor 19 returns an MPEG transport stream containing programme access table (PAT) and programme map table (PMT) service information as well as private data carried on multiple programme identifiers (PIDs) for each channel. Multiplexor 33 inserts these private PIDs alongside the audio and video data for each channel. To ensure playback consistency, the total bandwidth used by each of the private data PIDs is at a constant bit rate (CBR). In general, the total bandwidth allocated to each private data PID which is re-associated with the audio and video data by multiplexor 33 is kept relatively small in comparison to the video and audio bandwidth.

Each of the MPTS transport streams are then divided into multiple individual single programme transport streams (including SI data for each programme) using a network interface 34. Network interface 34 is an MPEG-2 transport stream aware interface. The multiple single programme transport streams are passed to the switching and routing devices 6 for routing (under direction of the video server manager 5) as live broadcast data to appropriate set top boxes 8.

SI processor 19 also parses broadcast data streams to identify and retrieve information associated with advertisements. Examples of broadcast data streams parsed to retrieve advertisement information will now be provided by briefly referring to Figures 4A-4D. As shown in Figure 4A, a broadcast data stream (such as the stream received at BDHE 2) may include a number of programmes without advertisements (e.g., such as programmes received from a channel which does not receive income from advertisements). Such a broadcast data stream may include

Google Exhibit 1004, Page 434 of 523

EIT information (shown as "E1", "E2" and "E3") separating each programme. EIT information "E1" occurs at time "t1" and has a duration equal to the difference "d" between "t1" and "t2" (the ending time of the programme). This information is extracted by SI processor 19 for use in creating an accurate historical programme schedule (e.g., stored at broadcast schedule server 4) and programme archives.

As shown in Figure 4B, a broadcast data stream may include a number of programmes, each having advertisements placed within the programme. As shown, a programme begins at time "t1" indicated by EIT "E1". Placed within the programme are three advertisements, which are indicated by EIT information "Ea1", "Ea2" and "Ea3", and having times "ta1", etc. This information is extracted by SI processor 19 to create an accurate historical programme schedule as well as to create advertisement information (e.g., which may be stored at, or accessible to, video server manager 5). This advertisement information is used to select and insert advertisements when the programme is played. In particular, on playback, the advertisement information extracted by SI processor 19 is used to identify the appropriate time in a programme at which to insert an advertisement (such as a replacement advertisement targeted to the subscriber).

In particular, in the data stream of Figure 4B, on playback, a playback timer will identify the time ("ta1") during playback at which an advertisement was originally located when the programme was broadcast. Playback of the programme may be paused and an advertisement may be inserted at time "ta1" and played. A second advertisement may be inserted at time "ta2", and a third at "ta3". Play of the programme is resumed at a time equal to "ta1+da1+da2+da3". Additional advertisements may be inserted at times "ta4" and "ta5". For each of the types of data streams of Figure 4, advertisement information extracted by SI processor 19 may also include information which identifies the content of the advertisement. For example, EIT information may include information identifying an advertiser, information identifying the particular commercial, information identifying the target audience, information identifying the dates during which the advertisement should be played, etc. This information, along with the timing and duration information, is stored and used to allow the selection and insertion of advertisements during programme playback.

As shown in Figure 4C, a broadcast data stream may include a number of programmes, each having a block of advertisements embedded within the programme. For example, as shown, a programme begins at time "t1" indicated by

Google Exhibit 1004, Page 435 of 523

EIT "E1". An "ad break" is located within the programme and is identified by EIT information "Ea1" at "ta1". The ad break may be sufficiently large to include more than one advertisement. Unlike the data stream of Figure 4B, the data stream of Figure 4C does not utilize separate EIT information for each individual advertisement.

As shown in Figure 4D, a broadcast data stream may include a number of programmes which have embedded advertisements which are not identified by EIT information. It may not be possible for SI processor 19 to parse and identify these advertisements. As an alternative, the system may utilize other indicators to identify these advertisements. For example, an operator may manually view the broadcast data stream and identify the start and end of each advertisement or block of advertisements.

Referring again to Figure 3, SI processor 19 may be configured to save further bandwidth by selectively parsing and using particular types of service information. For example, subtitle information may be manipulated to reduce bandwidth. As a particular example, SI processor 19 extracts teletext subtitles from the MPTS data received from BDHE 2 by parsing the complete teletext stream and extracting only the subtitle information from the stream. For example, some broadcast systems include teletext subtitles in a particular "page" of teletext information associated with a broadcast. In some systems, the subtitles are include in teletext "page 888". In such an system, SI processor 19 is configured to repackage the "page 888" packets, and optionally inserts a new packet (e.g., such as a "page 100" packet) into the stream using another private data PID (again, in CBR).

The dropped teletext pages may be stored on a teletext server or database (not shown in Figure 3) which can later be queried by a subscriber's set top box 8 during viewing of the broadcast programme. As another example, DVB subtitles (where present) can also be extracted by SI processor 19 to reduce bandwidth. For example, SI processor 19 may parse the subtitle information and translate the subtitles into a bandwidth-reduced form (e.g., the information may be stored on a server and displayed only in response to particular queries from set top boxes 8). In this manner, SI processor 19 can operate in conjunction with BDHE 2 to remove certain types of service information from the transport stream, while ensuring that needed service information remains associated the correct programmes.

SI processor 19 may also be configured to handle radio channels (e.g., by identifying radio channels as having audio-only PIDs). The audio-only PIDs may be passed directly to multiplexer 33 without need for re-encoding. Further, SI processor

Google Exhibit 1004, Page 436 of 523

19 may also be configured to extract interactive applications (which may be stored by video server manager 5 for use on-demand), thereby avoiding the need to use carouselling systems typically used in broadcast environments. In some broadcast environments, such as conventional satellite and cable systems, there is often no back channel which can be used to request interactive applications and associated assets. Previous systems overcome this lack of a back channel by using a carousel. For example, a channel provider repeatedly transmits (or "carousels") the interactive application and associated assets on a separate MPEG PID. These previous systems rely on the set top box to identify, retrieve, and cache this information. This can lead to problems. For example, if a viewer moves within an application, or moves from one application to another, the needed information may not have been cached, and the set top box must wait until the channel provider retransmits the data (or until the data reappears on the carousel).

One protocol which is used to implement such carouselling techniques is specified by the Digital Storage Media Command and Control (DSM-CC) extensions of MPEG-2, Part 6. The present invention allows broadcast systems to broadcast interactive applications without need for such carouselling techniques. Further, alternative versions of interactive applications may be delivered to subscribers based on access rules or permissions established by channel providers or content owners (e.g., to ensure that only the latest version of a particular interactive application is made available to subscribers, etc.).

In addition to providing processed service information to the head-end for recombination with audio and video data for each programme, SI processor 19 also provides the processed service information to broadcast schedule server 4 for use in creating accurate schedule data 15. By utilizing service information based on digital broadcast channel data as it is actually received by BDHE 2, embodiments are able to create a historical schedule with accurate information about the actual start and end times for broadcast programmes on each of the broadcast channels received at BDHE 2. This information may be combined with published schedule data (e.g., such as broadcast schedule data published by broadcast channel providers / channel owners 12) to create schedule data 15 having substantially complete and accurate programme information.

As an example, many programmes, such as live sporting events, have a scheduled broadcast time which is an estimated time. This estimated time is used by the broadcast channel provider / rights owner 12 to produce a programme schedule.

Google Exhibit 1004, Page 437 of 523

Often, however, such programmes may finish early (or late). Embodiments allow the creation of schedule data 15 which accurately identifies the actual schedule for the programme. This information may be utilized to accurately and efficiently archive programmes for later playback (e.g., a sporting event that actually lasts for 47 minutes will be identified as lasting 47 minutes rather than some estimated time such as an hour).

The network interface 34 of BDHE 2 also provides the de-multiplexed SPTS data to timeslip server 3. As shown, timeslip server 3 has a number of different functional components. In particular, each of the de-multiplexed channels of SPTS data are provided to an acquire and store channel 42 which operates to read the received transport stream and store it onto the correct storage location in the next available storage device. Acquire and store channel 42 also operates to wrap around the end of each storage device and to maintain a circular buffer. The transport stream received from BDHE 2 is stored in an unaltered format (i.e., it is stored in the format in which it is received). As depicted, the data is stored in separate storage devices 43, 44 (or storage areas) for each channel. Each storage device (or storage area) is configured to act as a circular or wrap-around buffer sized to store a certain amount of broadcast data (e.g., if the short-term archive function is intended to provide 24 hours of short-term archived programmes, each buffer is sized to accommodate 24 hours of data). When the end of the buffer is reached, the oldest programmes in the buffer are overwritten with the most recent broadcast programmes for each channel.

Acquire and store channel 42 also operates to parse the private data SI packets from the transport stream. The private data SI packets are passed to a schedule table 41, along with storage information identifying where the programme associated with particular SI data is stored. For example, schedule table 41 may include an information record for each programme which includes the SI information for the programme, along with disk location information particularly identifying the disk storage location on which the programme is stored (e.g., such as a buffer location in a particular channel data store such as data stores 43 or 44). The SPTS stream received by acquire and store channel 42 is CBR, allowing acquire and store channel 42 to reliably predict the amount of storage required for each programme and to ensure the timeliness of reading data back off disk upon playout. CBR ensures that the output rate of a stream on playout equals the input rate.

Google Exhibit 1004, Page 438 of 523

Schedule table 41 may be configured to contain information identifying a list of channels, each of which is associated with records containing an event or programme identifier, an event time, and a disk position at which the programme is stored. This allows the start and end times of programmes to be accurately located for playout. The start and end positions are located at programme boundaries. For example, the start and end positions may always be located on a video "group of programmes" (GOP) or audio "packetized elementary stream" (PES) boundary to ensure that playback always begins at a safe point. Programme information in schedule table 41 is removed once the circular buffer of programmes wraps past the programme.

Timeslip server 3 also includes a video and audio stream analyzer 45. Video and audio stream analyzer 45 operates to uniquely identify each video GOP boundary. The streams received by acquire and store channel 42 are parsed to identify these boundaries. The disk position of each GOP on each channel is stored in a GOP list 46. A GOP can span many MPEG transport stream packets (and may typically include approximately 12 video frames, including Intra or I frames, Predicted or P frames, and Bi-directional or B frames). Pursuant to the MPEG-2 standard, a GOP always starts with an I frame. Video and audio stream analyzer 45 is configured to identify these boundaries and to associate them with storage locations. Analyzer 45 further analyzes the streams to identify audio PES packet locations. Those skilled in the art will recognize that embodiments may be used with other standards as well (e.g., by parsing streams to identify boundaries established by those other standards).

Timeslip server 3 also includes a fast forward ("FF")/rewind ("REW") frame extractor 47 which is configured to extract I frames from video streams as they are being stored by timeslip server 3. In this manner, expensive and time consuming searches for I frames in response to subscriber requests are avoided. Both an FF and a REW stream are created by extracting the I frames and wrapping them in an MPEG transport stream. Transport stream timing information including PTS/DTS and PCR clock information are generated by timeslip server 3.

The system may utilize the placement of I frames at the start of each GOP to identify boundaries. GOPs do not necessarily contain the same number of frames; for example, encoders may sometimes terminate a GOP to insert an I frame on scene changes. The system ensures an appropriate FF/REW playback speed by monitoring (and adjusting, if appropriate) the rate at which I frames are stored to disk.

Google Exhibit 1004, Page 439 of 523

Unlike regular program playback, the output rate of FF/REW playback is not determined by the input rate (that is, the FF/REW information need not be stored at the same rate that it will be played back). Instead, the playback rate is configurable by specifying a desired interval between I frames. When writing FF/REW information to database 46, FF/REW frame extractor 47 may drop certain I frames in the feed received from the acquire and store channel 42. In this manner, the playback rate can be configured for consistency.

The time and storage location relationship between the FF/REW streams and the original content stream is stored (e.g., at data store 46) to allow timeslip server 3 to locate the correct FF/REW point when requested and to ensure that after completion of a FF/REW that the correct point of the programme is located to resume play. Playback pacing is controlled by timeslip server 3 by using switching and routing 6 (or other output device) as an accurate timing source (e.g., in an ATM environment, the ATM switch may be used as a timing source).

Timeslip server 3 also includes a playout module 49 to control playout of archived programmes. Playout involves locating the start of a requested programme and streaming the content off the appropriate storage device to the particular set top box 8 associated with the subscriber who requested the content. A request message submitted from a set top box 8 will include information identifying the particular subscriber making the request (as well as information to allow switching and routing devices 6 to set up a unicast session with the set top box). When a subscriber requests a programme, the request is routed to timeslip server 3 through playout module 49 which causes schedule table 41 to be consulted to identify the start point of the requested programme. The start point of each programme is aligned to a GOP or audio PES packet to ensure a clean start to the playback. Playout continues until the end of the programme is reached or until other instructions are received, such as, for example, a request to stop playout, a request to skip, or a request to view another programme.

If a programme is skipped or another programme is selected, the current programme continues to play until the end of the video GOP (or audio PES packet) is reached. Once reached, a message is transmitted to set top box 8 using a private data PID packet warning the set top box 8 of an impending discontinuity. Playback continues from the start of the next programme or nearest GOP (or audio PES) frame to the skip point. Timeslip server 3 may be configured to play back from either the nearest video GOP frame (or audio PES packet), allowing different types of set top

Google Exhibit 1004, Page 440 of 523

boxes to be used with the system (as different set top boxes may respond differently to discontinuities in playout).

As discussed above, the present invention permits subscribers to selectively request the creation of an archive copy of a programme for storage in a longer-term archive. Timeslip server 3, under direction from video server manager 5, may operate to cause one or more programs to be saved by an archive content server 10. For example, a subscriber may request that a particular programme be archived for future viewing by the subscriber. This request is transmitted from the subscriber's set top box 8 to video server manager 5 which causes a request to be sent to the timeslip server 3. When the SPTS packets including the requested programme are received by timeslip server 3, timeslip server 3 functions to initiate the transmission of a copy of the programme to archive content server 10 for storage in an archive data store 17.

These archive features may result in the storage of at least two copies of a programme: one copy in archive data store 17 (the "longer-term" archive, for later retrieval by the subscriber(s) requesting the archival) and one copy in timeslip server 3 (the "short term" archive, for viewing by any subscriber desiring to view a programme during the period in which the system stores broadcast programmes). As a result, the system provides for greater longevity and choice of viewing of programmes. The version stored by timeslip server 3 may be viewed as a more ephemeral content store providing a viewing window of, for example, several days after the programme is broadcast, while the version stored by archive content server 10 may provide for longer term storage and viewing of the programme. That is timeslip server 3 provides a circular buffer of archived programmes for each channel, while archive content server 10 provides dedicated long term storage of selected programmes.

A number of different storage configurations may be used for storing programme information. For example, hard disks or tape drives may be used. Entire disks may be used, or partitioned disks. As a further protection against failure, RAID partitions may be employed. Multiple disks per channel may be used. Multiple redundant disks may be used to store identical content, reducing failure and potentially allowing for automated failover recovery. Further, such a configuration may provide improved overall performance by spreading the load on very popular channels over multiple disks. In this manner, live broadcast data may be delivered to

Google Exhibit 1004, Page 441 of 523

authorized subscribers while generating service information data, archiving programs, and constructing an accurate historical schedule.

Not all channels need be provided to all timeslip servers. For example, the allocation of channels to timeslip servers may be dependent on the popularity of programmes available on that channel. The allocation of channels to timeslip servers is done in such a way to result in the set of timeslip servers being capable of satisfying peak time simultaneous viewing.

Playback of a programme (e.g., either from a longer-term or short term archive) may also include the selection and insertion of advertisements into the programme for transmission to a subscriber. This selection and insertion is performed under control of video server manager 5 which has access to information identifying the location of advertisements in each programme and channel (e.g., based on the information extracted by SI processor 19). Video server manager 5 may also have access to a database of advertisements (e.g., such as ad database 20). Video server manager 5 may select a replacement advertisement for inclusion in a programme transmitted to a subscriber. Further details of this will now be described by first referring to Figure 5, where a flow diagram is shown representing a method according to the present invention. The flow diagram of Figure 5 (and other flow diagrams contained herein) include a number of process steps. These process steps need not be performed in the sequence shown; those skilled in the art will appreciate that different sequences consistent with embodiments discussed herein may be used.

Figure 5 depicts a process 300 for identifying advertisements in a broadcast data stream. Process 300 may be implemented using the broadcast system of Figures 1-3, although those skilled in the art will appreciate that other systems and configurations may also be used. Process 300 begins at 302 where a broadcast data stream is received. For example, in the system of Figure 3, the broadcast data stream is a digital data stream received by BDHE 2.

Processing continues at 304 where advertisements are identified. Advertisements may be identified by SI processor 19. BDHE 2 transmits the data stream to SI processor 19 where service information is parsed and identified. Where advertisements are identified by EIT information (such as the data streams of Figure 4B or 4C discussed above), SI processor 19 identifies the location of each advertisement based on the EIT information. Where EIT information is not provided

Google Exhibit 1004, Page 442 of 523

for advertisements, an operator may be used to monitor the broadcast data stream to identify the location of advertisements in the stream.

Processing continues at 306 where the EIT or other location information is used to create or update a schedule table including advertisement information and location. The EIT information (or manually-captured location information) is provided from SI processor 19 to broadcast schedule server 4 to construct a schedule of advertisements associated with the broadcast schedule created by broadcast schedule server 4. For example, for each programme, an advertising event schedule is created indicating the position of each advertisement in the programme. Information may also be captured identifying details associated with the advertisement (e.g., such as the advertiser, the genre, the target audience, a description or identifier, suggested dates of play, etc.). A copy of the advertisement is also stored. Broadcast schedule server 4 stores schedule information and video server manager 5 stores advertisement data 20. When a programme is played back (as will be discussed below) both sets of information are used to insert advertisements into programmes.

The system may be configured to insert targeted promotions and advertising directed to particular subscribers. For example, such advertising may be inserted at the start, end or at some other point in the playback of programmes from either the short-term or the longer-term archives (or during the multi-cast of live programs to subscribers). Targeting may be achieved by consulting the customer database 14 for information including, but not limited to, subscriber preferences, subscriber viewing history, age, sex and demographic information.

Referring now to Figure 6, a process 400 is shown for selecting and inserting advertisements into a programme (e.g., such as a live broadcast programme or an archived programme). The process 400 is performed using the system of Figures 1-3, although those skilled in the art will appreciate that other systems may utilize features of the present invention to select and insert advertisements into programmes. Process 400 begins at 402 where a request is received from a subscriber to play a programme.

For example, the request received at 402 may be a request to play an archived copy of a programme (e.g., such as a recently-broadcast programme stored in a short-term archive associated with timeslip server 3 or a programme stored in a longer-term archive such as an archive associated with the subscriber maintained by archive content server 10). The request received at 402 includes information

Google Exhibit 1004, Page 443 of 523

identifying the programme. The request also includes information identifying the subscriber (e.g., such as a subscriber identifier or an identifier associated with a set top box assigned to the subscriber)

Processing continues at 404 where a broadcast system operates to identify a location of the requested programme and advertising information associated with the programme. For example, processing at 404 may include determining if the requested programme is a programme in the short-term archive associated with timeslip server 3 or if it is a programme stored in the longer-term archive associated with the archive content server 10. Processing at 404 also includes identifying a storage location of the program, e.g., by consulting schedule table 41 or other resources indicating the particular storage location of the programme. Information about the advertisements associated with the programme are also identified at 404. This advertisement information is the information extracted by the SI processor 19 when the programme was originally broadcast. For example, the advertisement information may include information identifying where advertisements are located in the programme as well as information identifying the length of each advertisement spot and information identifying the advertisement (including the advertiser, the name or identifier of the advertisement, the target audience, the dates during which the advertisement is to be played, etc.).

If the requested programme did not include any advertisements (e.g., the programme was broadcast over a commercial-free channel), processing may continue at 410 where the requested programme is played without inserting any advertisements. Advertisements may be selected for insertion at 408 even if the programme was originally broadcast without advertisements (for example, a movie may have been originally broadcast as a video on demand without advertisements, but will be rebroadcast from an archive with one or more advertisements inserted).

If the requested programme includes advertising, processing continues at 406 where information associated with the subscriber requesting the programme are retrieved. For example, processing at 406 may include retrieving information from customer database 14 to identify demographic and other information associated with the subscriber as well as any entitlement information needed to confirm that the subscriber is authorized to view the requested programme.

Processing continues at 408 where advertisement(s) are selected for insertion. This selection, is performed under control of video server manager 5 in communication with timeslip server 3 (and/or in communication with archive content

Google Exhibit 1004, Page 444 of 523

server 10). The advertisements selected for insertion are the same advertisements which were extracted from the programme when the programme was originally broadcast (e.g., at step 304 of the process of Figure 5). The advertisements selected for insertion are different advertisements than the advertisements which were originally broadcast with the programme. For example, replacement advertisements are selected which more appropriately match the subscriber's demographics or the genre of the programme. Further, the replacement advertisement may be selected to fit in the time slot as originally broadcast (e.g., a 30-second ad is used in a 30-second slot). Other considerations may also be used in selecting advertisements. Replacement advertisements may be inserted into the programme at different locations. For example, a programme may have been broadcast with advertising slots every 20 minutes. A broadcast service provider may determine that the advertising slots are better located every 30 minutes. On playback (at 410), the new timeslots may be used.

Processing continues at 410 where the programme is played back for the subscriber with the selected advertisements inserted into the advertising slots of the programme. If the programme is an archived programme requested from a short-term or longer-term archive, the programme is transmitted to the subscriber via a uni-cast session established with the subscriber's set top box. The video and audio data associated with each advertisement may be multiplexed into the data stream as the programme is being transmitted. The advertisement data is inserted at the position indicated by the EIT information originally extracted from the programme. For example, when the time to play an advertisement occurs (that is, the playback has reached the location where the advertising event time matches the playback time), playback of the archived program is temporarily stopped and the video server manager 5 causes the archive content server (or other server storing advertising content) to play the advertisement selected at 408. If the programme is being played in a uni-cast session, the selected advertisement is also played in the same uni-cast session. When play of the advertisement is complete, the video server manager 5 returns control of playback to the timeslip server 3 for restarting of the programme. The timeslip server 3 restarts playback from the point where the original advertisement would have completed.

An advertisement may be associated with further promotional material (such as a promotional offer). For example, an advertisement (including an advertisement identified at 304 of FIG. 5 and an advertisement selected at 408) may include SI

Google Exhibit 1004, Page 445 of 523

associated with an advertisement may include information identifying one or more promotional links. For example, a sponsor of a programme may provide promotional information or products in association with a programme or in association with a particular advertisement. The advertisement may have SI which includes a link (e.g., such as an Internet URL or the like) to the promotional offer. When such an advertisement is played at 410, the subscriber's set top box displays an indicator that a promotion is associated with the advertisement. The subscriber can view the promotional information by selecting the promotion via a remote control device. If the subscriber selects to view the promotional information, the set top box is routed to the link included in the SI, and the promotional information is displayed. The subscriber may then view the promotional information (which may be, for example, a product offering, a product description, a promotional video, a purchase offer, a link to an operator to make a purchase, etc.). When the subscriber is finished viewing the promotional information, he may return to either the point he left the original advertisement, to the end of the advertisement or to the end of the advertisement break.

This playback and insertion process is repeated until the programme is completed. If multiple advertisements are to be played in series, control will revert to timeslip server 3 after each of the advertisements have been played. Such a series of advertisements may be combined into a single packet or file for insertion into the broadcast data stream, thereby minimizing the need to switch control between the video server manager 5 and the timeslip server 3. The video server manager 5 may also control the selection of the order of play of the advertisements in the series.

Video and audio data associated with each advertisement is also stored at (or accessible to) timeslip server 3, allowing timeslip server 3 to efficiently insert advertisements during playback. Some advertisements in a programme are replaced and some are played in the form as originally broadcast. The ability to FF or REW through an advertisement may be disabled to prevent subscribers from skipping advertisements.

As discussed above, embodiments allow the insertion of targeted advertisements into programs transmitted to subscribers. This targeting may be performed in a number of ways. Referring now to Figure 7, an example of broadcast system 50 is shown in which broadcast service provider 51 maintains (or has access to) customer data and advertising data used to target advertisements and promotions

Google Exhibit 1004, Page 446 of 523

to subscribers 54. For convenience, only selected components of broadcast system 50 are depicted in Figure 7.

In the example depicted, broadcast service provider 51 operates to provide live broadcast data to subscribers 54. Broadcast service provider 51 additionally provides archived programmes to subscribers 54, including programmes from a short term archive 53 and a longer-term archive 52. The transmission of these programmes to particular subscribers is controlled, in part, by video server manager 5. For example, video server manager 5 may consult customer database 14 to determine if a particular subscriber is authorized to view a particular programme or a particular archived copy of the programme or whether the subscriber is authorized to cause a longer-term copy of a programme to be archived. Broadcast service provider 51 may also use this customer data to monitor subscriber viewing habits, identify trends, and select and target advertisements and promotions to individual subscribers.

Customer database 14 includes data identifying individuals having a subscriber relationship with broadcast service provider 51. This data may include, for example: a unique subscriber identifier (which may be the same as, or associated with, a unique identifier of a set top box issued to the subscriber); demographic information of the subscriber (e.g., including the subscriber's age, gender, marital status, family size, etc.); geographic information (e.g., including the subscriber's address); and subscription information (e.g., including information identifying particular channels and entitlements associated with each subscriber). This information may be used by video server manager 5 to control subscriber access to live and archived programmes. Subscription information may also include information specifying whether a subscriber is authorized to make copies of programmes from the subscriber's set top box or television. For example, a subscriber may attach a video cassette recorder or rewritable CD-ROM or a DVR to his television or set top box and make copies of some programmes broadcast using embodiments of the present invention. A subscriber's ability to make copies may be restricted by including copy protection measures in certain programs that are transmitted to the subscriber. The copy protection measures may be specified for particular programmes.

Customer database 14 also includes information about subscriber viewing habits associated with live broadcasts. For example, video server manager 5 tracks and identifies each request received from a subscriber to join a multicast of a live

Google Exhibit 1004, Page 447 of 523

broadcast. Video server manager 5 then captures (and stores in customer database 14) information identifying the name, genre, channel, and broadcast time of each programme requested by each subscriber. In this manner, broadcast service provider 51 may capture, maintain, and track detailed live broadcast viewing information for each subscriber.

Customer database 14 also includes information about subscriber viewing habits associated with programmes stored in short-term and longer-term archives. For example, video server manager 5 tracks and identifies each request received from a subscriber to view a programme stored in short-term archive 53 (e.g., including information identifying the programme name, genre, channel, and time of each request). Video server manager 5 also tracks and identifies each request received from a subscriber to create a copy of a programme for storage in longer-term archive 52, as well as each request to view a programme from the longer-term archive 52 (e.g., including information identifying the programme name, genre, channel, and time of viewing request). In this manner, broadcast service provider 51 is able to create, maintain, and update customer database 14 with relevant and timely information about each subscriber's viewing habits and preferences.

This customer database information associated with each subscriber may be used in conjunction with advertisement and promotional data stored at (or accessible to) broadcast service provider 51. For example, as shown in Figure 7, video server manager 5 is in communication with an advertisement database 20. Advertisement database 20, includes information about a number of different types of advertisements or promotions, and the ability to stream these to a subscriber. For example, advertisement database 20 may include regular broadcast advertisements, such as 30 or 60-second advertisements. Advertisement database 20 may also include banner advertisements created to be displayed across the top or bottom of a television screen. Advertisement database 20 may store the video and audio portions of advertisements in MPEG or other formats. Other types of advertisements or promotions may also be provided.

Advertisement database 20 may include identifying information associated with each advertisement or promotion. For example, each advertisement is identified by a unique identifier. This unique identifier is used by broadcast service provider 51 to track and manage advertisements and promotions. For example, video server manager 5 may request play of a particular advertisement by reference to this unique identifier. Advertisement database 20 may also include other information associated

Google Exhibit 1004, Page 448 of 523

with each advertisement, including information identifying an audience to which the advertisement should be targeted. For example, a brewing company may create a beer advertisement which is intended to be displayed to males aged 21-35. This demographic information identifying the advertisement's intended target audience is stored in advertisement database 20 in a record associated with the advertisement itself. Video server manager 5 uses this information, in conjunction with information from the customer database 14, to provide targeted advertisements to subscribers in conjunction with the transmission of live or archived broadcast data.

For example, when a subscriber joins a multi-cast of a live broadcast programme, the subscriber submits a programme selection request to broadcast service provider 51 through a set top box. This programme selection request message includes information identifying the subscriber (or information identifying the set top box associated with the subscriber). Video server manager 5 utilizes this identifying information to determine if the subscriber has access permission to view the requested programme, and, if so, adds the subscriber to the multi-cast of the program.

Video server manager 5 may also selectively cause one or more advertisements or promotions to be transmitted to the subscriber. These advertisements or promotions may be selected based on information associated with the subscriber, information associated with the programme requested by the subscriber, and/or information associated with the advertisement which was originally broadcast with the programme. For example, if the subscriber is a 25 year-old male, and the subscriber submits a request to view a live broadcast of a sporting event, video server manager 5 may identify one or more advertisements which are targeted to the subscriber (because of the subscriber's demographics, the genre of the programme requested, or a combination of both sets of information). For example, the beer commercial discussed above may be selected (because the subscriber's demographic information matches the target audience information associated with the beer commercial) for broadcast to the subscriber. Video server manager 5 may cause the selected advertisement (or advertisements) to be broadcast to the subscriber in conjunction with the broadcast of the programme by causing the advertisement to be inserted at a location identified by EIT information extracted by SI processor 19 (shown in Figure 3).

Similar targeting may be performed in conjunction with the broadcast of programmes from the short-term or longer-term archives. In this manner, the system

Google Exhibit 1004, Page 449 of 523

allows accurate targeting of advertisements or promotions to subscribers based on information about the subscriber, information about the programme, information about the advertisement or promotion, or a combination of this information. Further, advertisements or promotions may be transmitted to subscribers in a way which prevents the subscriber from skipping or fast-forwarding through the advertisement. For example, advertisements may be transmitted as banner advertisements which are displayed along a top or bottom portion of a screen during a programme.

As another example, advertisements may be transmitted for display during a period in which the subscriber has paused playback of a programme. As yet another example, advertisements may be transmitted for play at the beginning of a requested programme, and must be viewed before the programme is viewed. In this manner, advertisers may accurately target select audiences, reducing inefficiencies related to existing television advertising techniques.

When a subscriber views an archived programme (e.g., from either the short-term or longer-term archives) some or all of the advertisements that were originally broadcast with the live broadcast of the programme are replaced with one or more targeted advertisements which are specifically targeted to the subscriber.

While embodiments have been described with reference to the MPEG-2 standard, those skilled in the art will appreciate, upon reading this disclosure, that other encoding technologies may be utilized. For example, other standards currently used or may also be utilized (e.g., such as MPEG-4 and/or H.264, etc.).

Google Exhibit 1004, Page 450 of 523

Claims:

1. A broadcast method, comprising:

receiving a broadcast data stream;

identifying an advertisement in said broadcast data stream; and

updating an advertisement schedule including information identifying said advertisement and a location of said advertisement within a programme in said broadcast data stream.

2. A broadcast method according to claim 1, further comprising:

extracting service information associated with said programme; and

updating a programme schedule using said service information associated with said programme.

3. A broadcast method according to claim 2, wherein said identifying an advertisement further comprises:

extracting service information associated with said advertisement, wherein said information identifying said advertisement and said location are based on said service information.

4. A broadcast method according to claim 3, further comprising associating said advertisement schedule with said programme.

5. A broadcast method according to any preceding claim, wherein said information identifying a location of said advertisement includes information identifying a location of said advertisement within said programme and a duration of said advertisement.

6. A broadcast method according to any preceding claim, wherein said information identifying said advertisement includes information identifying at least one of: an advertiser, a targeted audience, and a time period for play.

7. A broadcast method according to any preceding claim, further comprising;

creating an archive copy of said programme, said archive copy stored at a location identified by said programme schedule.

Google Exhibit 1004, Page 451 of 523

8. A broadcast method according to claim 7, further comprising:

receiving, from a subscriber, a request for said archive copy of said programme;

identifying a location of said archive copy of said programme using said program schedule; and

identifying said location of said advertisement within said programme.

9. A broadcast method according to claim 8, further comprising:

selecting a replacement advertisement, based at least in part on said programme, said subscriber, and said advertisement information.

10. A broadcast method according to claim 9, further comprising:

transmitting said archive copy of said programme to said subscriber; and

inserting said replacement advertisement at said location within said programme.

11. A broadcast system, comprising:

means for receiving a broadcast data stream;

means for identifying an advertisement in said broadcast data stream; and

means for updating an advertisement schedule including information identifying said advertisement and a location of said advertisement within a programme in said broadcast data stream.

12. A broadcast system according to claim 11, further comprising:

means for extracting service information associated with said programme;

means for extracting service information associated with said advertisement, said information identifying said advertisement and said location of said advertisement based from said service information; and,

means for updating a programme schedule using said service information associated with said programme, said program schedule identifying a storage location of a copy of said programme.

13. A broadcast system according to claim 12, further comprising:

means for uni-casting said copy of said programme to a subscriber; and

Google Exhibit 1004, Page 452 of 523

means for inserting a replacement advertisement in said programme at said location during said uni-casting.

14. A broadcast system, comprising:

a head end, coupled to receive an input broadcast channel data stream including a programme having an advertisement;

a service information processor, in communication with said head end and retrieving service information associated with said programme and said advertisement including information identifying a location of said advertisement within said programme;

a storage server, in communication with said head end and said service information processor, storing a copy of said programme and associating a storage location of said copy with service information associated with said programme;

an advertising server, in communication with said service information processor, storing a copy of said advertisement and further storing a replacement advertisement and service information associated with said advertisement; and

a distribution system, coupled to said storage server and said advertising server, operable to transmit said copy of said programme to a subscriber and to insert a selected replacement advertisement at said location.

15. A broadcast system according to claim 14, wherein said replacement advertisement is selected based at least in part on an identity of said subscriber and an identity of said programme.

16. A subscriber-initiated method for viewing a programme, comprising:

interacting with a programme schedule displayed on a display device to select a desired programme stored in an archive;

transmitting information identifying the subscriber and information identifying the desired programme;

receiving a uni-cast transmission of said desired programme; and

receiving a uni-cast transmission of a replacement advertisement embedded within said programme, said replacement advertisement different than an advertisement included in a live broadcast of said programme.

17. A broadcast method, comprising:

Google Exhibit 1004, Page 453 of 523

receiving, from a subscriber, a request to play an archive copy of a programme;

identifying a location of said archive copy of said programme;

selecting at least a first advertisement based at least in part on information associated with said programme; and,

inserting said at least first advertisement into said programme.

18. A broadcast method according to claim 17, wherein said inserting further comprises:

identifying an advertising slot within said programme; and

inserting said at least first advertisement into said programme in said advertising slot.

19. A broadcast method according to claim 17 or 18, wherein said at least first advertisement includes a link to further promotional materials.

20. A broadcast method according to claim 19, further comprising:

playing said programme and said advertisement for said subscriber, wherein said playing said advertisement causes said further promotional materials to be displayed to said subscriber.

Google Exhibit 1004, Page 454 of 523

Fig.1.

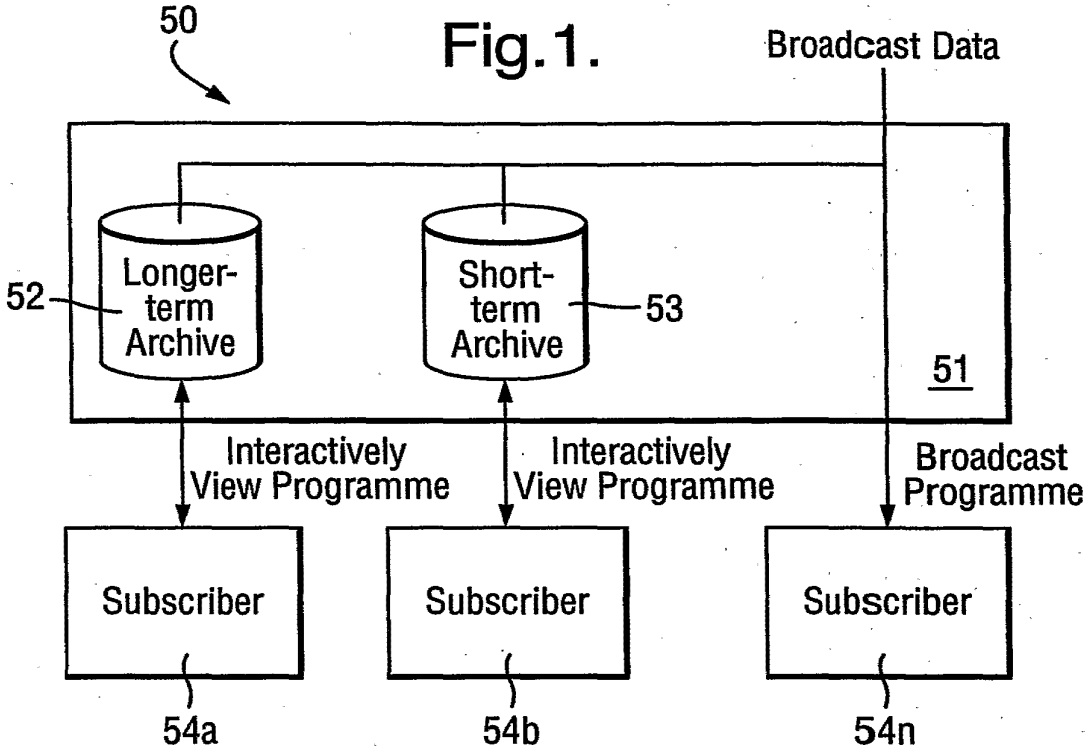
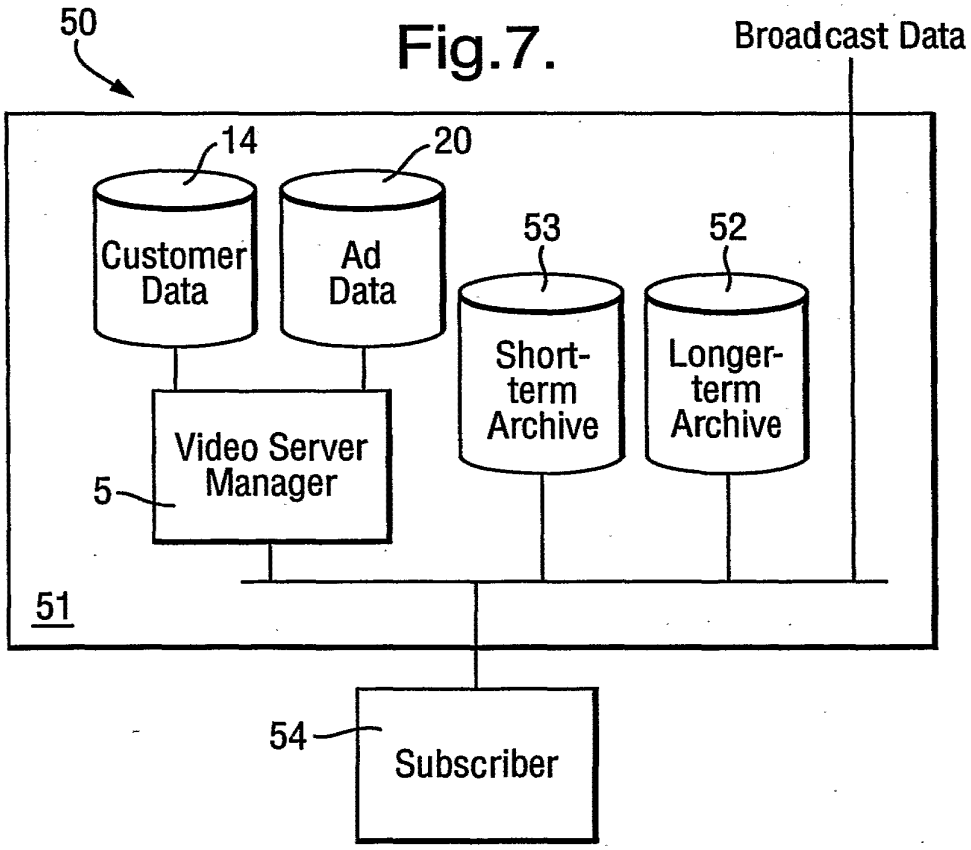


Fig.7.



Google Exhibit 1004, Page 455 of 523

Fig.2.

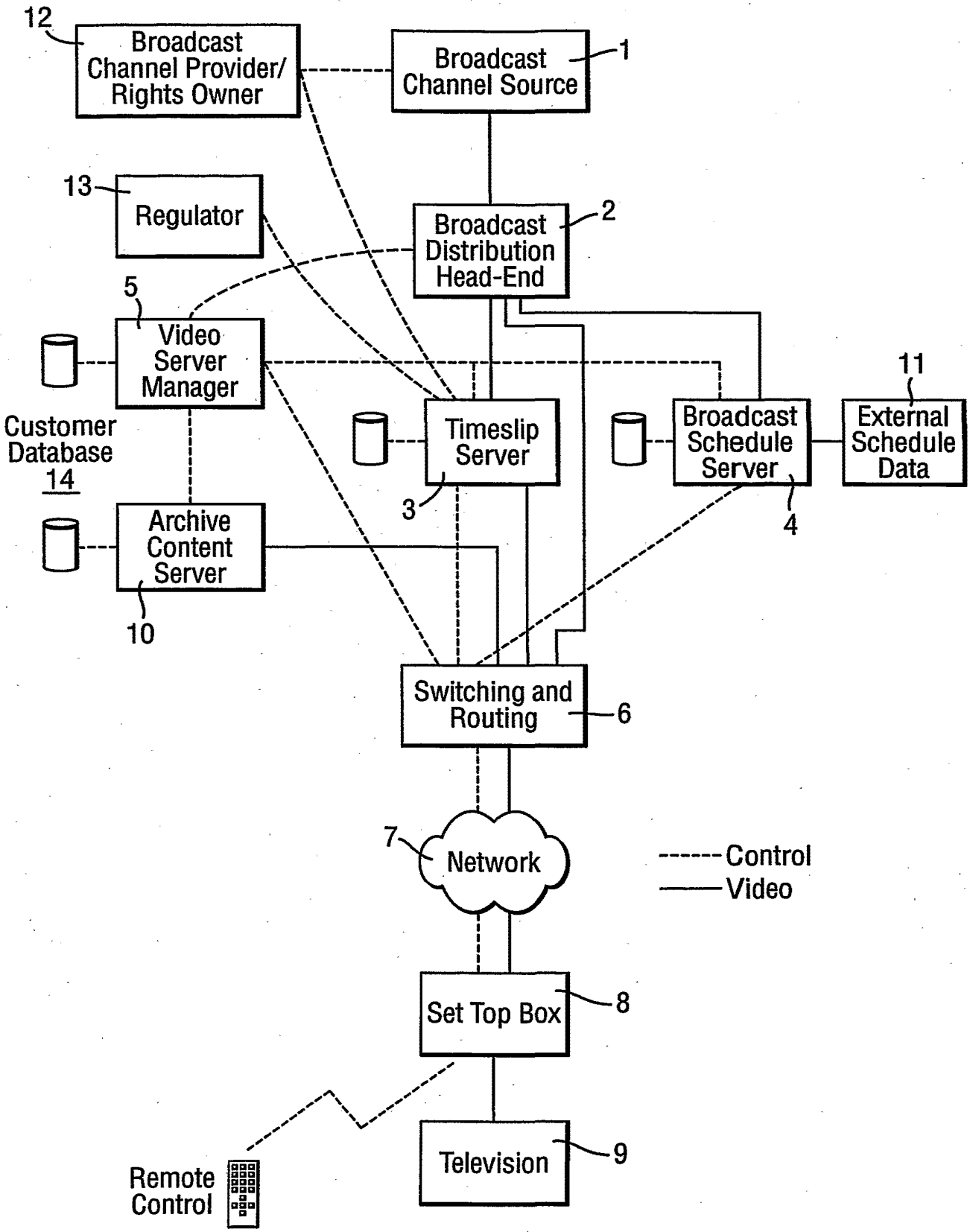
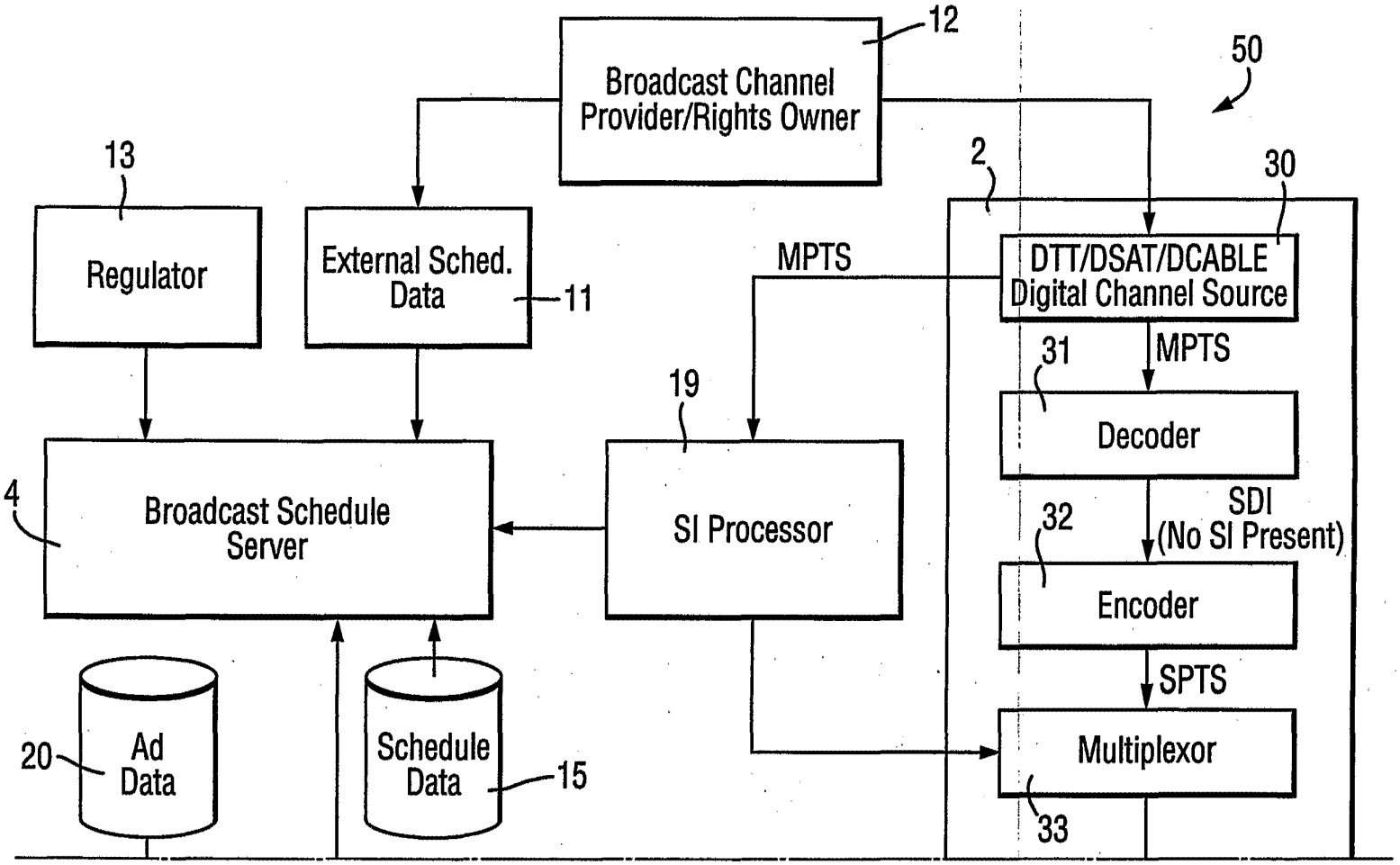

12
Broadcast Channel Provider/ Rights Owner
Broadcast Channel Source
1
13
Regulator
Broadcast Distribution Head-End
2
5
Video Server Manager
Customer Database 14
Timeslip Server
3
Broadcast Schedule Server
4
11
External Schedule Data
Archive Content Server
10
Switching and Routing
6
7
Network
Control
Video
Set Top Box
8
Television
9
Remote Control

Fig.3.



Google Exhibit 1004, Page 457 of 523

Fig.3(Cont.)

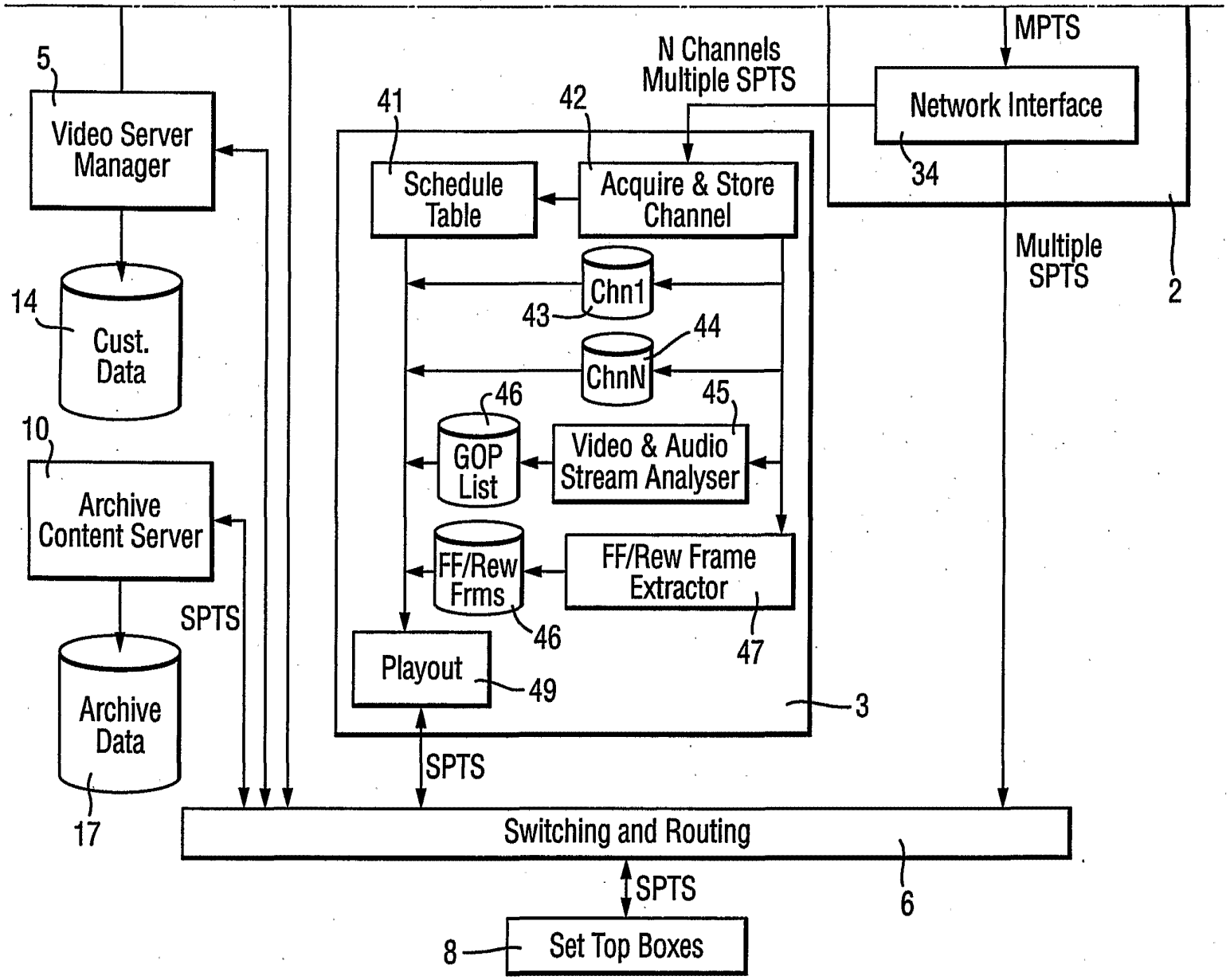

5
Video Server Manager
14
Cust. Data
10
Archive Content Server
SPTS
Archive Data
17
N Channels Multiple SPTS
41
42
Schedule Table
Acquire & Store Channel
Chn1
43
44
ChnN
46
45
GOP List
Video & Audio Stream Analyser
FF/Rew Frms
FF/Rew Frame Extractor
46
47
Playout
49
3
SPTS
MPTS
Network Interface
34
Multiple SPTS
2
Switching and Routing
SPTS
6
8
Set Top Boxes

Fig.4A.

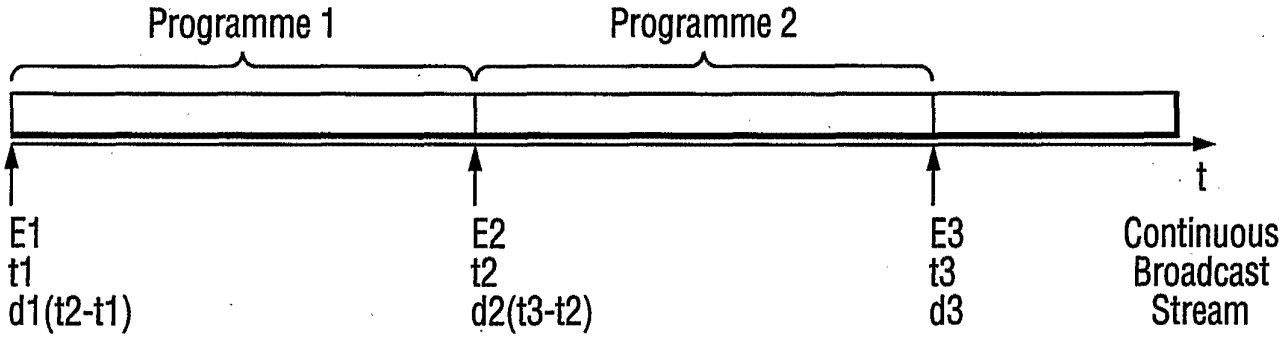

Programme 1
Programme 2
t
E1
t1
d1(t2-t1)
E2
t2
d2(t3-t2)
E3
t3
d3
Continuous
Broadcast
Stream

Fig.4B.

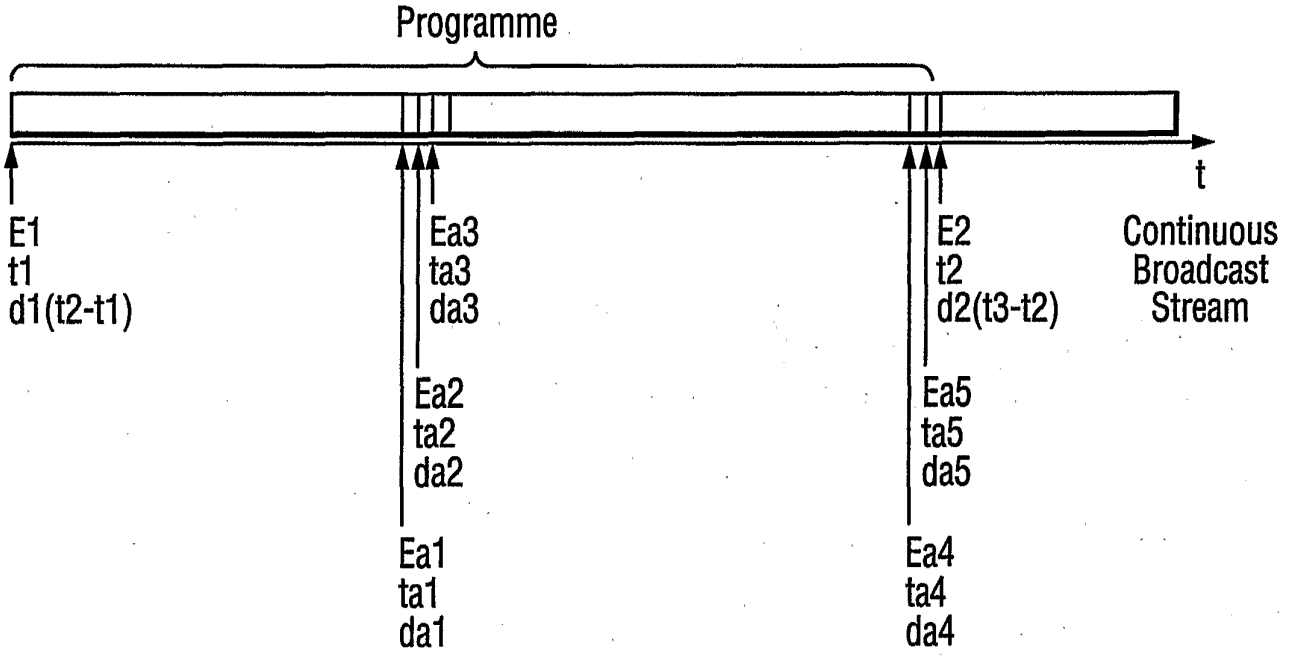

Programme
t
E1
t1
d1(t2-t1)
Ea3
ta3
da3
Ea2
ta2
da2
Ea1
ta1
da1
E2
t2
d2(t3-t2)
Ea5
ta5
da5
Ea4
ta4
da4
Continuous
Broadcast
Stream

Fig.4C.

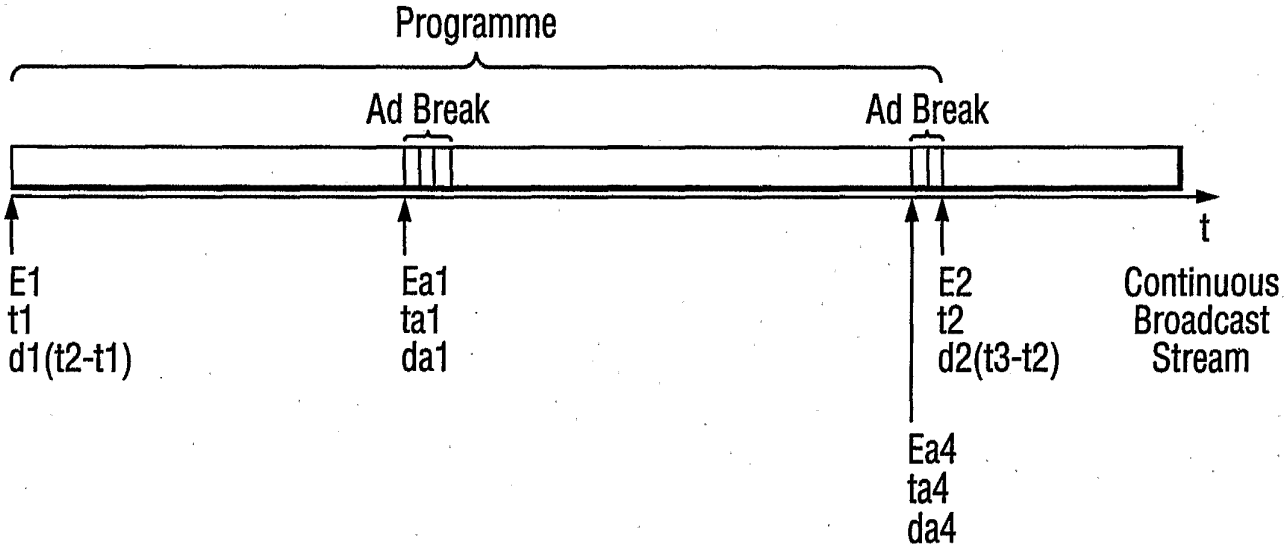
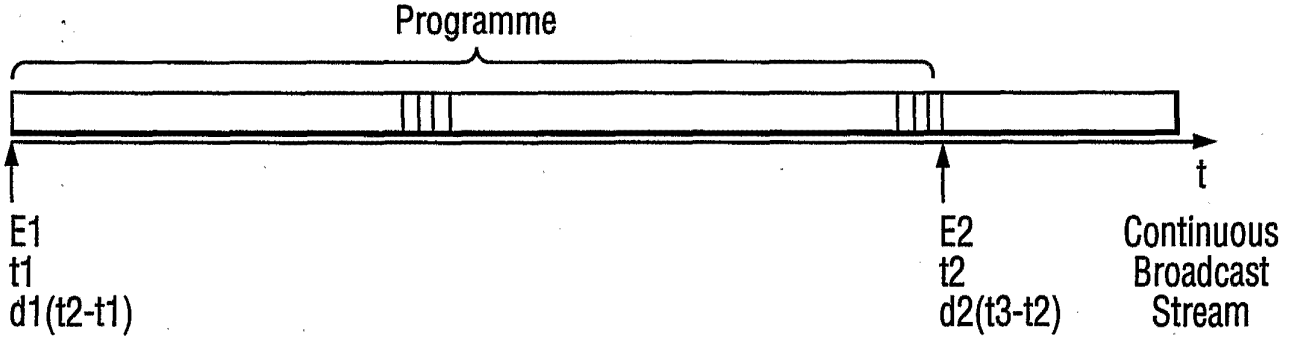


Fig.4D.



Google Exhibit 1004, Page 460 of 523

Fig.5.

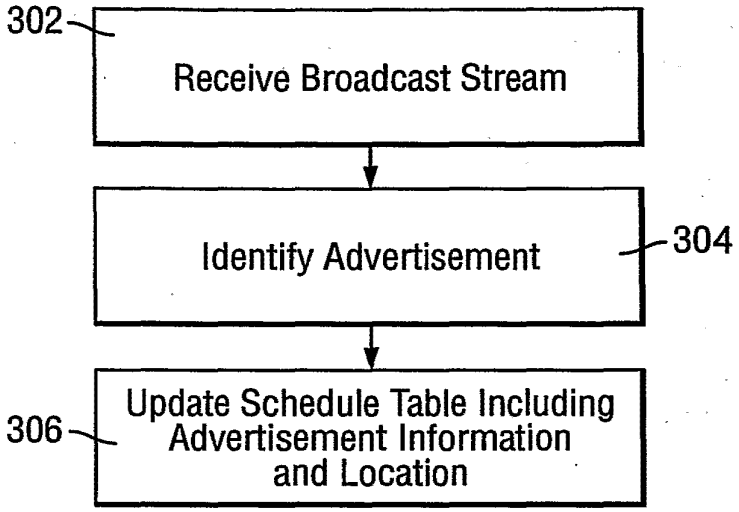
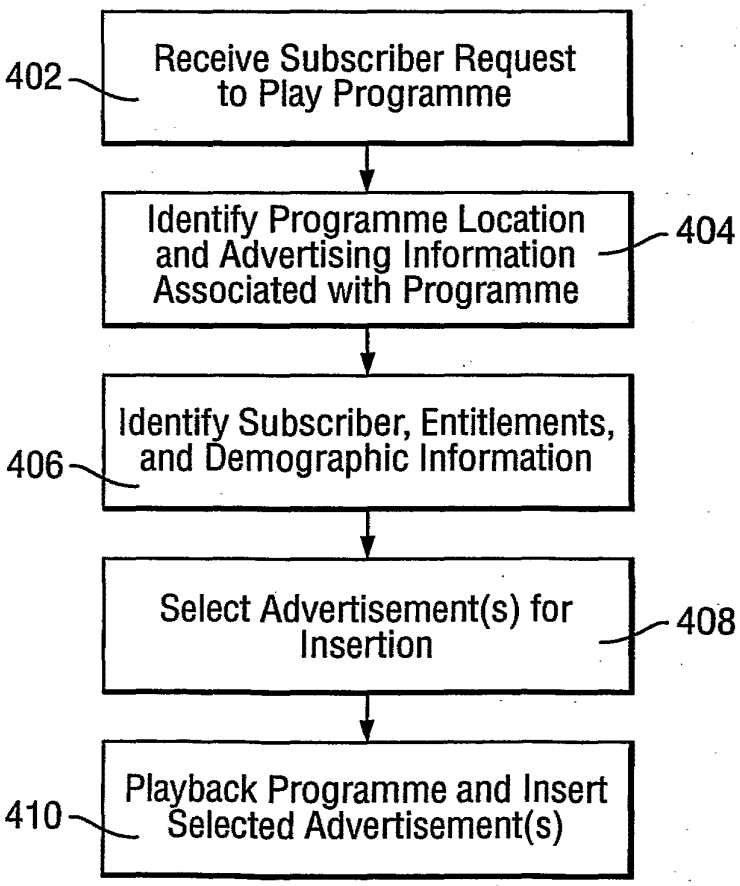

302
Receive Broadcast Stream
Identify Advertisement
304
306
Update Schedule Table Including Advertisement Information and Location

Fig.6.


402
Receive Subscriber Request to Play Programme
Identify Programme Location and Advertising Information Associated with Programme
404
406
Identify Subscriber, Entitlements, and Demographic Information
Select Advertisement(s) for Insertion
408
410
Playback Programme and Insert Selected Advertisement(s)

Electronic Acknowledgement Receipt

EFS ID:	24932153
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	David Wayne Boyd/M. Kellie Kruluts
Filer Authorized By:	David Wayne Boyd
Attorney Docket Number:	95770-876349
Receipt Date:	17-FEB-2016
Filing Date:	29-MAY-2013
Time Stamp:	10:26:51
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2016_02_17_095770_0876349_IDS.pdf	1766267 67cc4203b733a4c11314e3ccd1575b58880fca71	yes	3

	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Transmittal Letter		1	2	
	Information Disclosure Statement (IDS) Form (SB08)		3	3	
Warnings:					
Information:					
2	Foreign Reference	EP_2252055_A1.pdf	1342291 e98769875bb0bb6c12264018b4e2a8986fa33559	no	22
Warnings:					
Information:					
3	Foreign Reference	WO_2004_072761.pdf	2417441 4309e4603f4c7d35de404a2ff74d7c776527fbb3	no	45
Warnings:					
Information:					
4	Non Patent Literature	EPSR_01152016_EP_15195703_2.pdf	4878115 f84108fc912be86103bf0ae35fc7166240a0ab89	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	10404114		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on February 17, 2016

PATENT
Attorney Docket No.: 095770-0876349 (000100US)

KILPATRICK TOWNSEND & STOCKTON LLP

By: /M. Kellie Kruluts/
M. Kellie Kruluts

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Confirmation No.: 2819
Alistair Bruce Kelman	Examiner: William J. W. Kim
Application No.: 13/990,372	Technology Center/Art Unit: 2421
Filed: May 29, 2013	
For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Customer No.: 20350	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

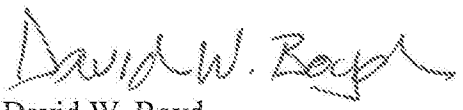
The references cited on attached form PTO/SB/08A are being called to the attention of the Examiner. Copies of the references are enclosed in compliance with the requirements of 37 CFR § 1.98(a)(2).

It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR § 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Applicant believes that no fee is required for submission of this statement. However, if any additional fees are due for the submission of this Information Disclosure Statement, please deduct those fees from Deposit Account No. 20-1430.

Respectfully submitted,



David W. Boyd
Registration No. 50,335

KILPATRICK TOWNSEND & STOCKTON LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 415-576-0200
Fax: 415-576-0300
Attachments

Google Exhibit 1004, Page 465 of 523

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

20350 7590 03/31/2016

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER
KIM, WILLIAM JW

ART UNIT	PAPER NUMBER
2421	

DATE MAILED: 03/31/2016

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

TITLE OF INVENTION: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	06/30/2016

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

20350 7590 03/31/2016
KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

TITLE OF INVENTION: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	06/30/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
KIM, WILLIAM JW	2421	725-023000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

Google Exhibit 1004, Page 467 of 523

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 03/31/2016

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
KIM, WILLIAM JW	

ART UNIT	PAPER NUMBER
2421	

DATE MAILED: 03/31/2016

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 13/990,372	Applicant(s) KELMAN, ALISTAIR BRUCE	
	Examiner WILLIAM J. KIM	Art Unit 2421	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *01/06/2016*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1,2,4-11 and 13-18*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☒ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/W. J. K./	/NATHAN FLYNN/
Examiner, Art Unit 2421	Supervisory Patent Examiner, Art Unit 2421

Allowability Notice

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 17 February 2016 in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Boyd on 21 March 2016.

The application has been amended as follows:

2. (Currently amended) ***[[A]]*** ***The*** system according to claim 1 in which each header includes a keyword, and the control means checks the keyword against the rules database during application of said local broadcasting time regulation to said advertisement.

4. (Currently amended) ***[[A]] The*** system according to claim 2 in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity.

5. (Currently amended) ***[[A]] The*** system according to claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.

6. (Currently amended) ***[[A]] The*** system according to claim 5 in which a response by a consumer is rewarded by money or money's worth.

7. (Currently amended) ***[[A]] The*** system according to claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

8. (Currently amended) A Personal Video Recorder (PVR) for use in a system ***for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening, the PVR*** ~~***according to claim 1***~~ comprising:

data storage means ***storing a programme episode database, an advertisement database, and a rules database, each stored advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown, and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing, wherein the rules database contains rules relating to said local broadcasting time regulation, and wherein the stored programme episodes have periodic breaks for the insertion of advertisements;*** **[[,]]**

input connection means for connection to a source of video/audio signals and a real-time clock signal; **[[and]]**

output means for connection to a consumer's viewing/listening unit; ***and*** ~~***in which the data storage means comprises a programme episode database, an advertisement database arranged to record the advertisements and their headers***~~

control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown during one of the periodic breaks;

wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.

9. (Currently amended) ***[[A]]*** ***The*** PVR according to claim 8 arranged to read the real-time clock, to read the first field in the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.

10. (Currently amended) ***[[A]]*** ***The*** PVR according to claim 9 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

11. (Currently amended) A television set incorporating ***[[a]]*** ***the*** Personal Video Recorder according to claim 8.

13. (Currently amended) ***[[A]]*** ***The*** PVR according to claim 9, further arranged to update the second field in the header when ***[[that]]*** ***said*** advert***isement*** is provided to the consumer's viewing/listening unit.

14. (Currently amended) ***[[A]]*** ***The*** system according to claim 1, wherein the system is a personal video recorder (PVR), and wherein the rules database means is a rules database stored locally in the PVR.

15. (Currently amended) ***[[A]]*** ***The*** system according to claim 1, wherein the control means is further arranged to, when the application of said local broadcasting time regulation to a particular advertisement indicates that showing the particular advertisement would violate the local broadcasting time regulation, search the advertisements stored in the advertisement supply means until either an advertisement is found that does not violate the local broadcasting time regulation or it is determined that no advertisement stored in the advertisement supply means is suitable for showing under the local broadcasting time regulation.

16. (Currently amended) ***[[A]]*** ***The*** system according to claim 15, wherein the advertisements stored in the advertisement supply means include advertisements that were broadcast live with a programme being shown during time-shifted viewing and also include advertisements that were received by the system other than in the live broadcast of the programme being shown in time-shifted viewing, and wherein the control means is further arranged to show during time-shifted viewing of the programme a mix of advertisements that were received during the live broadcast of the programme and advertisements that were received other than in the live broadcast of the program1ne being shown during time-shifted viewing.

17. (Currently amended) ***[[A]]*** ***The*** system according to claim 1, wherein the control means is further arranged to, when the application of said local broadcasting time

regulation to a particular advertisement indicates that showing the particular ad\ advertisement would not violate the local broadcasting time regulation;

determine from the header of the particular advertisement that the advertisement is an interactive advertisement;

compare the length of the advertisement with a remaining allotted time for showing interactive advertisements;

determine that the length of the advertisement exceeds the remaining allotted time for showing interactive advertisements; and

in response to the determination that the length of the advertisement exceeds the remaining allotted time for showing interactive advertisements, reject the advertisement and select a passive advertisement for showing.

18. (Currently amended) ***[[A]]*** ***The*** system according to claim 1, wherein the control means is further arranged to determine whether each advertisement stored in the advertisement supply means is interactive or passive, and to sort the advertisements to ensure that interactive advertisements are interspersed with passive advertisements as advertisements are shown during time-shifted viewing.

Allowable Subject Matter

Claims 1-2, 4-11, 13-18 are allowed.

The following is an examiner's statement of reasons for allowance:

The Prior art fails to disclose, teach, or suggest all of the limitations of the claimed invention. Particularly, the Prior Art fails to disclose, teach, or suggest to "update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing". As such, the Claims are deemed allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM J. KIM whose telephone number is (571)272-2767. The examiner can normally be reached on M-F: 9am- 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. J. K./
Examiner, Art Unit 2421

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	13/990,372	KELMAN, ALISTAIR BRUCE	
	Examiner	Art Unit	
	WILLIAM J. KIM	2421	

All participants (applicant, applicant's representative, PTO personnel):

(1) *WILLIAM J. KIM*. (3)_____.

(2) *David Boyd*. (4)_____.

Date of Interview: *21 March 2016*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *8 and 11*.

Identification of prior art discussed: *Art of record*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Examiner contacted Applicant for an Examiner's Amendment. Particularly, Examiner called to amend Claims 8 and 11 to clarify whether Claims 8 and 11 were intended to be treated as independent or Dependent Claims. Agreement was reached to amend the Claim 8 to fully recite the allowable subject matter of Claim 1, and in turn to interpret Claim 11 as an Independent claim written in short-hand form. Also, agreement was reached to clarify the claims and amend the various recitation of the article 'A' with the article "The" in the various dependendent claims. The full details of the agreed upon Amendment are noted in the attached Examiner's Amendment. Examiner will enter in the Amendment and mail out an Allowability Notice.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/WILLIAM J KIM/ Examiner, Art Unit 2421	

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	Art Unit
	WILLIAM J KIM	2421

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	04/16/2014	08/01/2014	03/09/2015	10/09/2015	03/22/2016				
1	1	✓	✓	✓	✓	=				
2	2	✓	✓	✓	✓	=				
	3	✓	-	-	-	-				
3	4	✓	✓	✓	✓	=				
4	5	✓	✓	✓	✓	=				
5	6	✓	✓	✓	✓	=				
6	7	✓	✓	✓	✓	=				
12	8	✓	✓	✓	✓	=				
13	9	✓	✓	✓	✓	=				
14	10	✓	✓	✓	✓	=				
16	11	✓	✓	✓	✓	=				
	12			✓	✓	-				
15	13			✓	✓	=				
7	14					=				
8	15					=				
9	16					=				
10	17					=				
11	18					=				

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	Art Unit
	WILLIAM J KIM	2421

CPC- SEARCHED		
Symbol	Date	Examiner
H04N21/42261, 4325, 44, 44008, 44016, 458, 4784 (text search only - see search notes)	04/16/2014	WJK
Updated the above	08/01/2014	WJK
Updated the above	03/09/2015	WJK
Updated the above	10/09/2015	WJK
Updated the above	03/22/2016	WJK

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
See EAST Search Notes	04/16/2014	WJK
Inventor Search	04/16/2014	WJK
725/23	04/16/2014	WJK
725 (text search only - see search notes)	04/16/2014	WJK
725/32, 34, 36 (text search only - see search notes)	04/16/2014	WJK
Updated the above	08/01/2014	WJK
725/27-29 (text search only - see search notes)	08/01/2014	WJK
updated the above	03/09/2015	WJK
725/9-21 (text search only - see search notes)	03/09/2015	WJK
725/22 (text search only - see search notes)	03/09/2015	WJK
Updated the above	10/09/2015	WJK
725 (consulted Chris Grant QAS re: applicability of 1.132 Affidavit)	10/09/2015	WJK
Updated the above	03/22/2016	WJK

Google Exhibit 1004, Page 481 of 523

INTERFERENCE SEARCH			
US Class/ CPC Symbol	**US Subclass / CPC Group**	**Date**	**Examiner**
USPC/CPC	Text search of the claims	03/22/2016	WJK

Google Exhibit 1004, Page 482 of 523

EAST Search History

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L124	0	(watershed time adj day) same (regulation law rules) same (ad advertisement commercial) same (trickplay trick adj play time adj shift$3) same (recording)	US-PGPUB; USPAT	OR	ON	2016/03/22 15:38
L125	0	(watershed time adj day) same (regulation law rules restriction) same (ad advertisement commercial) same (trickplay trick adj play time adj shift$3) same (recording)	US-PGPUB; USPAT	OR	ON	2016/03/22 15:38
L126	9	(watershed time adj day) same (regulation law rules restriction) same (ad advertisement commercial) same (recording)	US-PGPUB; USPAT	OR	ON	2016/03/22 15:38

3/22/2016 3:53:32 PM
C:\Users\wkim1\Documents\EAST\Workspaces\13990372.wsp

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	**Art Unit**
	WILLIAM J KIM	2421

CPC						
Symbol					**Type**	**Version**
H04N		21	/	23424	F	2013-01-01
H04N		21	/	4331	I	2013-01-01
H04N		21	/	458	I	2013-01-01
H04N		21	/	4755	I	2013-01-01
H04N		5	/	781	I	2013-01-01
H04N		9	/	87	I	2013-01-01
H04N		21	/	4325	I	2013-01-01
H04N		21	/	44016	I	2013-01-01
			/			
			/			
			/			
			/			
			/			
			/			
			/			

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
			/					
			/					

/WILLIAM J KIM/ Examiner.Art Unit 2421 (Assistant Examiner)	03/22/2016 (Date)	**Total Claims Allowed:** 16	
/NATHAN FLYNN/ Supervisory Patent Examiner.Art Unit 2421 (Primary Examiner)	03/26/2016 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 8

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	**Art Unit**
	WILLIAM J KIM	2421

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION	
CLASS	SUBCLASS	CLAIMED	NON-CLAIMED

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				

/WILLIAM J KIM/ Examiner.Art Unit 2421	03/22/2016	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	16	
/NATHAN FLYNN/ Supervisory Patent Examiner.Art Unit 2421	03/26/2016	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	8

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13990372	KELMAN, ALISTAIR BRUCE
	Examiner	**Art Unit**
	WILLIAM J KIM	2421

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	17												
2	2	11	18												
	3														
3	4														
4	5														
5	6														
6	7														
12	8														
13	9														
14	10														
16	11														
	12														
15	13														
7	14														
8	15														
9	16														

/WILLIAM J KIM/ Examiner.Art Unit 2421 (Assistant Examiner)	03/22/2016 (Date)	**Total Claims Allowed:** 16	
/NATHAN FLYNN/ Supervisory Patent Examiner.Art Unit 2421 (Primary Examiner)	03/26/2016 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 8

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Field

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	13/990,372
Filing Date	May 29, 2013
First Named Inventor	Alistair Bruce Kelman
Art Unit	2421
Examiner Name	William JW Kim
Attorney Docket Number	095770-0876349

U.S. PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code [1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code [1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	2008/0307483	A1	12-11-2008	Iida et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number [3]	Country Code [2]	Kind Code [4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T [5]
	2.	2252055	EP	A1	11-17-2010	Sony Europe Ltd.		
	3.	2004/072761	WO	A2	08-26-2004	Video Networks Ltd.		

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T [5]
	4.	European Search Report completed January 15, 2016 for European Patent Application No. EP15195703 filed November 18, 2011, all pages.	

EXAMINER SIGNATURE

Examiner Signature	/WILLIAM J KIM/	Date Considered	03/15/2016	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

Google Exhibit 1004, Page 487 of 523

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /W.J.K/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2016/03/22 15:38
L2	528	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L3	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2016/03/22 15:38
L4	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L5	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L6	1796	(TV television) with (incorporated built$1in built adj in) with (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L7	612	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L8	173	L7 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L9	137	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L10	3	(TV television) near3 (program) same (avail) same segment same (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L11	44	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR;	OR	ON	2016/03/22 15:38

			EPO; JPO; DERWENT			
L12	9	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L13	21	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L14	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L15	76	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L16	44	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L17	24	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L18	22	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L19	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L20	13	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L21	47	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L22	44	(avail) with (duration length) and (segment) near3 (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L23	12	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR;	OR	ON	2016/03/22 15:38

			EPO; JPO; DERWENT			
L24	708	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L25	6	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L26	5689	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L27	11	L26 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L28	596	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L29	0	L28 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L30	5024	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L31	34	L30 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L32	3056	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L33	119	L32 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L34	3036	H04N21/458.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L35	62	L34 and avail	US-PGPUB; USPAT; USOCR;	OR	ON	2016/03/22 15:38

			EPO; JPO; DERWENT			
L36	319	L34 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L37	796	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L38	128	L37 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L39	1	((Alistair) near2 (Kelman)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2016/03/22 15:38
L40	528	725/23.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L41	0	((Alistair) near2 (Kelman)).as.	US-PGPUB; USPAT; USOCR	OR	ON	2016/03/22 15:38
L42	0	GB2464630.pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L43	2	"20100054707".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L44	1796	(TV television) with (incorporated built$1in built adj in) with (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L45	612	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR recorder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L46	173	L45 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L47	137	(TV television) near6 (incorporated built$1in built adj in) near4 (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L48	3	(TV television) near3 (program) same	US-PGPUB;	OR	ON	2016/03/22

		(avail) same segment same (duration length)	USPAT; USOCR; EPO; JPO; DERWENT			15:38
L49	44	program with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L50	9	program with (avail) with (duration length) and 725/36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L51	21	program with (information data) with (avail) with (duration length)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L52	2	(transmit$4 send$3) near3 (information data) same (avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L53	76	(avail) with (duration length) same (program segment) with (length duration)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L54	44	(avail) with (duration length) same (program segment) with (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L55	24	(avail) with (duration length) same (program segment) with (length duration) and 725/34,36.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L56	22	(avail) with (duration length) same (program segment) with (length duration) and 725/32,34.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L57	4	("20030066078" | "20100054707").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L58	13	(avail) with (duration length) same (program segment) with (length duration) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L59	47	(avail) with (duration length) same2 (metadata meta adj data)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L60	44	(avail) with (duration length) and	US-PGPUB;	OR	ON	2016/03/22

		(segment) near3 (length duration)	USPAT; USOCR; EPO; JPO; DERWENT			15:38
L61	12	(avail) near6 (duration length) and (segment) near3 (length duration) and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L62	708	H04N21/42661.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L63	6	H04N21/42661.cpc. and (ad advertisement) near3 (insert$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L64	5689	H04N21/4325.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L65	11	L64 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L66	596	H04N21/44.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L67	0	L66 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L68	5024	H04N21/44008.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L69	34	L68 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L70	3056	H04N21/44016.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L71	119	L70 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L72	3036	H04N21/458.cpc.	US-PGPUB;	OR	ON	2016/03/22

			USPAT; USOCR; EPO; JPO; DERWENT			15:38
L73	62	L72 and avail	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L74	319	L72 and (avail cue)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L75	796	H04N21/4784.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L76	128	L75 and (interactive near3 (ad advertisement commercial))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L77	56	725/27-29.ccls. and (restric$3) with (record$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L78	51	725/27-29.ccls. and (restric$3 limit$3) with (record$3) with (time)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L79	1	725/29.ccls. and (record$3) near4 (content program show media) with (time) adj day	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L80	150	725/29.ccls. and (record$3) near4 (content program show media)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L81	31	725/29.ccls. and (record$3) near4 (content program show media) and (time adj day)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L82	13	725/29.ccls. and (record$3) near4 (content program show media) and (time adj day) and (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L83	22	725/29.ccls. and (record$3) near4 (content program show media video) and (time adj day) and (DVR PVR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L84	10	"725".clas. and (enforc$5) near6	US-PGPUB;	OR	ON	2016/03/22

		(broadcast$3) near3 (regulation rules laws)	USPAT; USOCR			15:38
L85	495	725/22.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L86	1	L85 and (advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L87	10	725/9-21.ccls. and (advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L88	94	(advertisement ad commercial) same (metadata data SI information) same (number times) near6 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L89	67	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed) same (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L90	30	L89 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L91	461	(advertisement ad commercial) same (time adj shift$3) and (metadata data SI information) same (number times) near3 (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L92	7	L85 and L91	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L93	221	L91 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L94	10071	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L95	132	(advertisement ad commercial) same (metadata data SI information) same (number times) near3 (viewed played aired presented displayed) and (time adj shift$3) with (viewed played aired presented displayed)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L96	4	L85 and L95	US-PGPUB; USPAT;	OR	ON	2016/03/22 15:38

			USOCR; EPO; JPO; DERWENT			
L97	16	L95 and 725/9-21.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L98	13	L97 not L96	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L99	125	(advertisement ad commercial) with (number near3 times) near3 (viewed played aired presented displayed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L100	39	L99 and "725".clas.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L101	31	(advertisement ad commercial) with (number near3 times near3 viewed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L102	35	(advertisement ad commercial) with ((how number) near3 times near3 viewed) and (time adj shift$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L103	56	television and (ad advertisement commercial) with (header) and (header with (count counter))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L104	9985	H04N21/2547,4331,454,458.cpc.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L105	222	L104 and (ad advertisement commercial) same (header) and (header) same (frequency view$3 count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L106	110	L104 and (ad advertisement commercial) same (header) and (header) with (frequency view$3 count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L107	37	L104 and (ad advertisement commercial) with (header) and (header) with (frequency view$3 count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L108	67	L104 and (ad advertisement commercial) with (header) and	US-PGPUB; USPAT;	OR	ON	2016/03/22 15:38

		(header) with (frequency view viewed shown played aired count counter)	USOCR; EPO; JPO; DERWENT			
L109	8	L104 and (ad advertisement commercial) with (header) and (header) with (frequency times adj (view viewed shown played aired) count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L110	374	(ad advertisement commercial) with (header) and (header) with (frequency times adj (view viewed shown played aired) count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L111	94	television and (ad advertisement commercial) with (header) and (header) with (frequency times adj (view viewed shown played aired) count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L112	60	television and (ad advertisement commercial) with (header) and (header) with (times adj (view viewed shown played aired) count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L113	3	L104 and (ad advertisement commercial) with (header) and (updat$3 adjust$3 increment$3 decreas$3) near5 (times adj (view viewed shown played aired) count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L114	207	television and (ad advertisement commercial) with (header) and (updat$3 adjust$3 increment$3 decreas$3) near5 (times adj (view viewed shown played aired) count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L115	167	L104 and (ad advertisement commercial) with (updat$3 adjust$3 increment$3 decreas$3) near5 ((view viewed shown played aired) count counter)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L116	22	L104 and (ad advertisement commercial) with (updat$3 adjust$3 increment$3 decreas$3) near5 (impression)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L117	2	"20080307483".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L118	2	"20140337908".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L119	3	"5774170".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38

L120	3146	ma.inv. and commercial	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L121	73	ma.inv. and commercial with (count number)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38
L122	69	ma.inv. and commercial with (count number)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2016/03/22 15:38
L123	0	(watershed time adj day) same (regulation law rules) same (ad advertisement commercial) same (trickplay trick adj play time adj shift$3) same (recording)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2016/03/22 15:38

3/ 22/ 2016 3:53:38 PM
C:\ Users\ wkim1\ Documents\ EAST\ Workspaces\ 13990372.wsp

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 04/06/2016

KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
KIM, WILLIAM JW	

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
04/06/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Application No. : 13990372
Applicant : Kelman
Filing Date : 05/29/2013
Date Mailed : 04/06/2016

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given two (2) months from the mail date of this Notice within which to respond. This time period for reply is extendable under 37 CFR 1.136(a) for only TWO additional MONTHS.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED.

See attachment(s).

A copy of this notice MUST be returned with the reply. Please address response to "Mail Stop Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450".

/Kam Sin/
Publication Branch
Office of Data Management
(571) 272-4200

Application No. 13990372

IDENTIFICATION OF SPECIFICATION/DRAWING INCONSISTENCIES

☐ On Page of the specification there is a brief description of FIG. , but the drawings filed do not include a drawing with that designation. Applicant must respond either by supplying the omitted drawing or by amending the specification to remove all references to that drawing.

☒ The drawings filed 05/29/2013 include FIG. 1, 2, but the specification's brief description of the drawings does not describe a drawing with that designation. Applicant must respond either by amending the specification to add a brief description of that drawing or by correcting the drawings to remove the drawing in question.

☐ Drawings are present in the application and are referred to in the detailed description of the invention, but the specification does not contain a brief description of the drawings as required by 37 CFR 1.74 and 37 CFR 1.77(b)(8).

☐ Page of the specification refers to FIG. , but no drawing with that designation is described in the brief description of the drawings and no drawing with that designation is present in the application. Applicant must respond either by amending the specification to remove all references to that drawing, or by supplying that drawing and amending the specification to add a brief description of it.

☐ In the reissue application, FIG. , is labeled as "New" but is not described in the reissue specification's brief description of the drawings. Applicant must respond by amending the reissue specification's brief description of the drawings to add a brief description of the new drawing.

☐ OTHER:

☐ COMMENTS:

I hereby certify that this correspondence is being filed via EFS-Web with the United States Patent and Trademark Office on June 2, 2016.

KILPATRICK TOWNSEND & STOCKTON LLP

By: /connie larson/
Connie Larson

PATENT
Attorney Docket No.: 95770-876349 (000100US)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No. 2819
Alistair Bruce Kelman	Examiner: William JW Kim
Application No.: 13/990,372	Technology Center/Art Unit: 2421
Filed: May 29, 2013	
For: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS
Customer No.: 20350	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the Notice to File Corrected Application Papers mailed April 6, 2016, please enter the following amendments and remarks:

Amendments to the Specification begin on page 2 of this paper.

Remarks begin on page 3 of this paper.

Google Exhibit 1004, Page 502 of 523

Amendments to the Specification:

1. Please replace the paragraph immediately following the heading "Brief description of the drawings" on page 5 of the specification as filed with the following amended paragraph:

~~The invention will now be described with reference~~ Reference is made to Figures [[3]] 1 to 8 of the accompanying drawings in which:

2. Immediately following amended paragraph described above, please add the following two new paragraphs:

FIG. 1 shows a known personal video recorder (PVR);

FIG. 2 is a schematic diagram of a known format of a television programme;

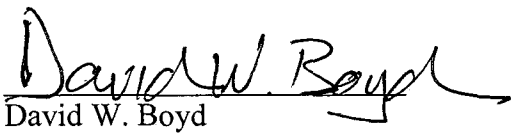
Google Exhibit 1004, Page 503 of 523

REMARKS

In response to the Notice to File Corrected Application Papers (Notice) mailed on April 6, 2016, Applicants submit herewith amendments to the Brief Description of the Drawings section of the specification, to add descriptions of Figures 1 and 2 as required by the Notice. Applicants believe the requirements of the Notice to be fulfilled.

Applicants do not believe any fees are due with this response. However, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment in connection with this response to Deposit Account No. 20-1430.

Respectfully submitted,



David W. Boyd
Reg. No. 50,335

KILPATRICK TOWNSEND & STOCKTON LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 303-571-4000
Fax: 415-576-0300
DWB/cl

68493498V.1

Google Exhibit 1004, Page 504 of 523

Electronic Acknowledgement Receipt

EFS ID:	25950648
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	David Wayne Boyd/Connie Larson
Filer Authorized By:	David Wayne Boyd
Attorney Docket Number:	95770-876349
Receipt Date:	02-JUN-2016
Filing Date:	29-MAY-2013
Time Stamp:	14:33:53
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		95770-876349-response-notice-corrected-app-papers.pdf	65349 b25baf1a08144174b78d353bbe6e60dd6a4fe373	yes	3

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Miscellaneous Incoming Letter	1	1
	Specification	2	2
	Applicant Arguments/Remarks Made in an Amendment	3	3
Warnings:			
Information:			
	Total Files Size (in bytes):	65349	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

20350 7590 06/08/2016

KILPATRICK TOWNSEND & STOCKTON LLP
Mailstop: IP Docketing - 22
1100 Peachtree Street
Suite 2800
Atlanta, GA 30309

EXAMINER
KIM, WILLIAM JW

ART UNIT	PAPER NUMBER
2421	

NOTIFICATION DATE	DELIVERY MODE
06/08/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipefiling@kilpatricktownsend.com
jlhice@kilpatrick.foundationip.com

Response to Rule 312 Communication	Application No. 13/990372	Applicant(s)
	Examiner	Art Unit

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

1. ☒ The amendment filed on *02 June 2016* under 37 CFR 1.312 has been considered, and has been:

a) ☒ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.
Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

D. Fisher

PUBLISHING DIVISION

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

20350 7590 03/31/2016
KILPATRICK TOWNSEND & STOCKTON LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Connie Larson	(Depositor's name)
/connie larson/	(Signature)
June 10, 2016	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	05/29/2013	Alistair Bruce Kelman	95770-876349	2819

TITLE OF INVENTION: SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$480	$0	$0	$480	06/30/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
KIM, WILLIAM JW	2421	725-023000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Kilpatrick Townsend
2 & Stockton LLP
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE	(B) RESIDENCE: (CITY and STATE OR COUNTRY)
Cachebox TV Limited	London, Great Britain

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☒ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature David W. Boyd Date June 10, 2016
Typed or printed name David W. Boyd Registration No. 50,335

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Google Exhibit 1004, Page 509 of 523

Electronic Patent Application Fee Transmittal

Application Number:	13990372
Filing Date:	29-May-2013
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Filer:	David Wayne Boyd/Connie Larson
Attorney Docket Number:	95770-876349

Filed as Small Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**480**

Electronic Acknowledgement Receipt

EFS ID:	26035749
Application Number:	13990372
International Application Number:	
Confirmation Number:	2819
Title of Invention:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS
First Named Inventor/Applicant Name:	Alistair Bruce Kelman
Customer Number:	20350
Filer:	David Wayne Boyd/Connie Larson
Filer Authorized By:	David Wayne Boyd
Attorney Docket Number:	95770-876349
Receipt Date:	10-JUN-2016
Filing Date:	29-MAY-2013
Time Stamp:	17:40:47
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$480
RAM confirmation Number	4666
Deposit Account	201430
Authorized User	KILPATRICK TOWNSEND & STOCKTON, LLP

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 CFR 1.492 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 CFR 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 CFR 1.19 (Document supply fees)

Charge any Additional Fees required under 37 CFR 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 CFR 1.21 (Miscellaneous fees and charges)

Charge any Additional Fees required under 37 CFR 1.492(a) (basic national fee only)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	95770-876349-issue-fee-transmittal.pdf	85211 9917deb1fd77f5093e8c917bfd4a3f80d29b65fe	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30831 0dcffd738339962c7700f9f1e38eed3353754962	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	116042		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/990,372	07/12/2016	9392302	95770-876349	2819

20350 7590 06/22/2016

KILPATRICK TOWNSEND & STOCKTON LLP
Mailstop: IP Docketing - 22
1100 Peachtree Street
Suite 2800
Atlanta, GA 30309

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Alistair Bruce Kelman, London, UNITED KINGDOM;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Doc Code: MES.GIB
Document Description: Certification of Micro Entity Status (Gross Income Basis) PTO/SB/15A (07-14)

CERTIFICATION OF MICRO ENTITY STATUS (GROSS INCOME BASIS)

Application Number or Control Number (if applicable):	Patent Number (if applicable):
13990372	9392302
First Named Inventor:	Title of Invention:
Alistair Bruce KELMAN	System for Providing Improved Facilities in Time-Shifted Broadcasts

The applicant hereby certifies the following—

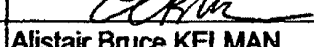
(1) **SMALL ENTITY REQUIREMENT** – The applicant qualifies as a small entity as defined in 37 CFR 1.27.

(2) **APPLICATION FILING LIMIT** – Neither the applicant nor the inventor nor a joint inventor has been named as the inventor or a joint inventor on more than four previously filed U.S. patent applications, excluding provisional applications and international applications under the Patent Cooperation Treaty (PCT) for which the basic national fee under 37 CFR 1.492(a) was not paid, and also excluding patent applications for which the applicant has assigned all ownership rights, or is obligated to assign all ownership rights, as a result of the applicant's previous employment.

(3) **GROSS INCOME LIMIT ON APPLICANTS AND INVENTORS** – Neither the applicant nor the inventor nor a joint inventor, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986 (26 U.S.C. 61(a)), exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

(4) **GROSS INCOME LIMIT ON PARTIES WITH AN "OWNERSHIP INTEREST"** – Neither the applicant nor the inventor nor a joint inventor has assigned, granted, or conveyed, nor is under an obligation by contract or law to assign, grant, or convey, a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

SIGNATURE by an authorized party set forth in 37 CFR 1.33(b)

Signature					
Name	Alistair Bruce KELMAN				
Date	24 December 2019	Telephone	+44 7709191491	Registration No.	

☐ There is more than one inventor and I am one of the inventors who are jointly identified as the applicant. The required additional certification form(s) signed by the other joint inventor(s) are included with this form.

PAGE 1/2 * RCVD AT 12/24/2019 11:10:22 AM [Eastern Standard Time] * SVR:W-PTOFAX-001/26 * DNIS:2736500 * CSID:Sent by WWW.FAX.PLUS * ANI:0000000000 * DURATION (mm-ss):0

Patent # 9,392,302

Application # 13990372

Filing Date: 05/29/2013

Issue Date: 07/12/2016

SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS

Our US patent which was issued on the above date is due for renewal. The payment window for the 3.5 year period is now open. Our company, SafeCast (Cachebox TV Ltd trading as SafeCast) is a Micro Entity and I attach a signed copy of my Certificate of Micro Entity Status. SafeCast is currently seeking to licence its UK and US patents and neither I nor the company have income which exceed the "Maximum Qualifying Gross Income" reported on the USPTO website.

Could you therefore please reclassify SafeCast as a Micro Entity and amend your records accordingly so that SafeCast can pay the $400 renewal fee in a timely manner before a surcharge becomes due at the start of 2020.

yours faithfully

Alistair KELMAN

CEO and Co-Founder (and Sole Inventor of Patent # 9,392,302)

PAGE 2/2 * RCVD AT 12/24/2019 11:10:22 AM [Eastern Standard Time] * SVR:W-PTOFAX-001/26 * DNIS:2736500 * CSID:Sent by WWW.FAX.PLUS * ANI:0000000000 * DURATION (mm-ss):0

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:22-cv-00676	6/27/2022	Western District of Texas, Waco Division

PLAINTIFF	DEFENDANT
SAFECAST LIMITED	AT&T CORPORATION

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 9,392,302	7/12/2016	SAFECAST LIMITED
2			
3			
4			
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:22-cv-00678	6/27/2022	Western District of Texas, Waco Division

PLAINTIFF	DEFENDANT
SAFECAST LIMITED	GOOGLE, LLC

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 9,392,302	7/12/2016	SAFECAST LIMITED
2			
3			
4			
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:22-cv-00680	6/27/2022	Western District of Texas, Waco Division

PLAINTIFF	DEFENDANT
SAFECAST LIMITED	NBC UNIVERSAL, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 9,392,302	7/12/2016	SAFECAST LIMITED
2			
3			
4			
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:22-cv-00677	6/27/2022	Western District of Texas, Waco Division

PLAINTIFF	DEFENDANT
SAFECAST LIMITED	DISH NETWORK CORPORATION

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 9,392,302	7/12/2016	SAFECAST LIMITED
2			
3			
4			
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:22-cv-00679	6/27/2022	Western District of Texas, Waco Division

PLAINTIFF	DEFENDANT
SAFECAST LIMITED	HOME BOX OFFICE, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 9,392,302	7/12/2016	SAFECAST LIMITED
2			
3			
4			
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
. 6:22-cv-00682	6/27/2022	Western District of Texas, Waco Division

PLAINTIFF	DEFENDANT
SAFECAST LIMITED	PARAMOUNT GLOBAL

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 9,392,302	7/12/2016	SAFECAST LIMITED
2			
3			
4			
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Waco Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:22-cv-00683	6/27/2022	Western District of Texas, Waco Division

PLAINTIFF	DEFENDANT
SAFECAST LIMITED	VERIZON COMMUNICATIONS, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 9,392,302	7/12/2016	SAFECAST LIMITED
2			
3			
4			
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above---entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1---Upon initiation of action, mail this copy to Director Copy 3---Upon termination of action, mail this copy to Director
Copy 2---Upon filing document adding patent(s), mail this copy to Director Copy 4---Case file copy