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 for the 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-00079	1/21/2022	for the Western District of Texas (Waco Division)

PLAINTIFF	DEFENDANT
VideoLabs, Inc. and VL Collective IP LLC	Amazon.com, Inc. and Amazon Web Services, Inc.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	See Attachment A		
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		
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
10/11/2022 Doc #91 Sealed MEMORANDUM OPINION AND ORDER GRANTING 39 Opposed Sealed Motion to Transfer Venue Pursuant to 28 U.S.C. 1404(a).

CLERK	(BY) DEPUTY CLERK	DATE
PHILIP J. DEVLIN		10/11/2022

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**

Netflix v. VL Collective
IPR2023-00891
Netflix Ex. 1002

ATTACHMENT A

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1. U.S. 6,880,156	4/12/2005	VL Collective IP LLC
2. U.S. 7,266,682	9/4/2007	VL Collective IP LLC
3. U.S. 7,440,559	10/21/2008	VL Collective IP LLC
4. U.S. 7,769,238	8/3/2010	VideoLabs, Inc.
5. U.S. 7,970,059	6/28/2011	VideoLabs, Inc.
6. U.S. 8,139,878	3/20/2012	VideoLabs, Inc.
7. U.S. 8,605,794	12/10/2013	VL Collective IP LLC

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 for the 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
	1/21/2022	for the Western District of Texas (Waco Division)

PLAINTIFF	DEFENDANT
VideoLabs, Inc. and VL Collective IP LLC	Amazon.com, Inc. and Amazon Web Services, Inc.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	See Attachment A		
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		
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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**

ATTACHMENT A

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1. U.S. 6,880,156	4/12/2005	VL Collective IP LLC
2. U.S. 7,266,682	9/4/2007	VL Collective IP LLC
3. U.S. 7,440,559	10/21/2008	VL Collective IP LLC
4. U.S. 7,769,238	8/3/2010	VideoLabs, Inc.
5. U.S. 7,970,059	6/28/2011	VideoLabs, Inc.
6. U.S. 8,139,878	3/20/2012	VideoLabs, Inc.
7. U.S. 8,605,794	12/10/2013	VL Collective IP LLC

The United States Patent and Trademark Office
PATENT TRIAL AND APPEAL BOARD

A petition has been filed in Patent Number 8,605,794, Application Number 11/918,276 on 6/7/2022 (Date).

The Case Number is IPR2022-01086.
(IPR, CBM, PGR, DER #)

To view the documents filed in this petition, go to https://ptab.uspto.gov.

Use the Search PTAB tab and enter the Patent Number or the Trial or Case Number and select the Search button.

Questions regarding this notice should be directed to the Patent Trial and Appeal Board at 571-272-7822.

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 District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
22-cv-229-CFC	2/23/2022	District of Delaware

PLAINTIFF	DEFENDANT
VideoLabs, Inc. and VL Collective IP LLC	Netflix Inc.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 8,139,878 B2	3/20/2012	VideoLabs, Inc.
2	US 7,440,559 B2	10/21/2018	VL Collective IP LLC
3	US 7,233,790 B2	6/19/2007	VideoLabs, Inc.
4			
5			

In the above---entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY
5/6/2022	☑ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 8,605,794 B2	12/10/2013	VL Collective IP LLC
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 District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
	10/13/2021	District of Delaware

PLAINTIFF	DEFENDANT
STARZ ENTERTAINMENT, LLC	VL COLLECTIVE IP, LLC and VIDEOLABS, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,233,790	6/19/2007	VIDEOLABS, INC.
2	7,440,559	10/21/2008	VL COLLECTIVE IP, LLC
3	8,605,794	12/10/2013	VL COLLECTIVE IP, LLC
4	RE43,113	1/17/2012	VIDEOLABS, INC.
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		
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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

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
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US

CONFIRMATION NO. 4022

21186
SCHWEGMAN LUNDBERG & WOESSNER, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

POA ACCEPTANCE LETTER

OC000000105392583

Date Mailed: 01/29/2019

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 01/22/2019.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/vnguyen/

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
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US

CONFIRMATION NO. 4022

POWER OF ATTORNEY NOTICE

30596
HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

OC000000105392554

Date Mailed: 01/29/2019

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 01/22/2019.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/vnguyen/

MODIFIED PTO/SB/80 (11-08)
Approved for use through 11/30/2011. 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 PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☒ Practitioners associated with the Customer Number:

21186

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used.

Name	Registration Number		Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☒ The address associated with Customer Number:

21186

OR

☐ Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address:
Lough Corrib Intellectual Property Limited
Unit 5B Unit 5H
Fingal Bay Business Park
Balbriggan Co Dublin,
Ireland

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	[signature]	Date:	1/1/19
Name	John Quinn	Telephone:	/
Title	Director		

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.**

Electronic Acknowledgement Receipt

EFS ID:	34921319
Application Number:	11918276
International Application Number:	
Confirmation Number:	4022
Title of Invention:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES
First Named Inventor/Applicant Name:	Hermann Hellwagner
Customer Number:	30596
Filer:	Susan Yee/Mandy Brown
Filer Authorized By:	Susan Yee
Attorney Docket Number:	32860-001352/US
Receipt Date:	22-JAN-2019
Filing Date:	21-JAN-2009
Time Stamp:	14:45:24
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		5166_001US1_RPOA_signed.pdf	1498585 2396377a85e308733497e848a5c71e502f19a367	yes	3

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Miscellaneous Incoming Letter	1	1
	Assignee showing of ownership per 37 CFR 3.73	2	2
	Power of Attorney	3	3
Warnings:			
Information:			
	Total Files Size (in bytes):	1498585	

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

Inventor(s): Hermann Hellwagner et al.
Title: METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

Docket No.:	5166.001US1	Serial No.:	11/918,276
Filed:	January 21, 2009	Due Date:	N/A
Examiner:	Abu Sholeman	Group Art Unit:	Unknown
Customer No.:	21186	Confirmation No.:	Unknown

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

We are transmitting herewith the following attached items (as indicated with an "X"):

X Statement Under 37.C.F.R. 3.73(b) (PTO/SB/96) (1 pg.)
X Power of Attorney to Prosecute Applications before the USPTO (PTO/SB/80) (1 pg)

If not provided for in a separate paper filed herewith, please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 19-0743. If applicable, any papers or fees supplied herewith are considered to be timely filed pursuant to 37 C.F.R. § 1.7(a), the response period falling on a Federal Holiday, Saturday or Sunday being extended to the next succeeding business day.

SCHWEGMAN LUNDBERG & WOESSNER, P.A.
Customer No.: 21186

By: /Garth Vivier/
Garth Vivier
Reg. No. 57,313

MODIFIED PTO/SB/96 (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 displays a valid OMB control number.

STATEMENT UNDER 37 C.F.R. 3.73(b)

Applicant/Patent Owner: Hermann Hellwagner et al. Attorney Docket No. 5166.001US1
Application No./Patent No.: 11/918,276 Filed/Issue Date: January 21, 2009
Titled: METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

Lough Corrib Intellectual Property Limited, a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

States that it is:

1. ☒ the assignee of the entire right, title, and interest in;

2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or

3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Hermann Hellwagner, et al. To: Siemens Aktiengesellschaft
The document was recorded in the United States Patent and Trademark Office at
Reel 022169, Frame 0584-0588, or for which a copy thereof is attached.
2. From: Siemens Aktiengesellschaft To: LOUGH CORRIB INTELLECTUAL PROPERTY LIMITED
The document was recorded in the United States Patent and Trademark Office at
Reel 047103, Frame 0709-0715, or for which a copy thereof is attached.
3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.
[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Garth Vivier/ 01/20/2019
Signature Date

Garth Vivier USPTO Reg. No. 57,313
Printed or Typed Name Title

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.**

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 8,605,794 B2
APPLICATION NO. : 11/918276
DATED : December 10, 2013
INVENTOR(S) : Herman Hellwagner

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page

Item (75) should read: Inventors: **Hermann Hellwagner,** Klagenfurt (AT);
Jörg Heuer, Oberhaching (DE);
Andreas Hutter, München (DE);
Michael Ransburg, Maria Rain (AT).

Signed and Sealed this
Twenty-fifth Day of February, 2014

Michelle K. Lee

Michelle K. Lee
Deputy Director of the United States Patent and Trademark Office

PATENT
32860-001352-US

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant(s):	Herman Hellwagner	Patent No.:	8,605,794
Application No.:	11/918,276	Group No.:	2622
Filed:	Jan 21, 2009	Examiner:	Eleni Shiferaw
Issued:	Dec. 10, 2013		
Conf. No.:	4022		
For:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES		

REQUEST FOR CERTIFICATE OF CORRECTION

January 9, 2013

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314
Attn: Certificate of Correction Branch

Sir:

Pursuant to the provisions of 37 C.F.R. § 1.322, please enter the attached Certificate of Correction.

Applicant notes that the **second inventor's last name** of the invention appearing on the page 1 of U.S. Patent No. 8,605,794 is erroneously printed. The correct spelling of the **second inventor's last name** of the invention should read **Heuer**. Applicant respectfully submits the official filing receipt dated March 27, 2009 which notes the correct spelling of the second inventor's last name.

Since the error noted is believed to be the fault of the Patent and Trademark Office, we are not enclosing the $100.00 Certificate of Correction fee. If it is found to be to the contrary, please charge our Deposit Account No. 08-0750.

In view of the foregoing, issuance of the Certificate of Correction is respectfully requested.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, P.L.C.

By:_____
Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

DJD:mah

Enclosures: Certificate of Correction (PTO/SB/44)
Official Filing Receipt

2015904.1

PTO/SB/44 (09-07)
Approved for use through 08/31/2010. OMB 0651-0033 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.
Also Form PTO-1050

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. 8,605,794

APPLICATION NO.: 11/918,276

ISSUE DATE Dec. 10, 2013

INVENTOR(S) Herman Hellwagner

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

(75) Inventors: **Hermann Hellwagner**, Klagenfurt (AT);
Jörg Heuer, Oberhaching (DE);
Andreas Hutter, München (DE);
Michael Ransburg, Maria Rain (AT)

MAILING ADDRESS OF SENDER (Please do not use customer number below):
Harness, Dickey & Pierce, P.L.C.
P.O. Box 8910
Reston, VA 20195

2015930.1

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. 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 1.0 hour 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: Attention Certificate of Corrections Branch, 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 NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
11/918,276	01/21/2009	2622	1060	32860-001352/US	17	2

CONFIRMATION NO. 4022

30596
HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

FILING RECEIPT

OC000000035188968

Date Mailed: 03/27/2009

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**

Applicant(s)

Hermann Hellwagner, Klagenfurt, AUSTRIA;
Jörg Heuer, Oberhaching, GERMANY;
Andreas Hutter, München, GERMANY;
Michael Ransburg, Maria Rain, AUSTRIA;

Power of Attorney: The patent practitioners associated with Customer Number 30596

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/EP2006/060808 03/16/2006

Foreign Applications

GERMANY 10 2005 016 866.3 04/12/2005

If Required, Foreign Filing License Granted: 03/25/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 11/918,276**

Projected Publication Date: 07/09/2009

Non-Publication Request: No

Early Publication Request: No

Title

Method for Synchronizing Content-Dependent Data Segments of Files

Preliminary Class

348

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 (1-866-999-4158).

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Electronic Acknowledgement Receipt

EFS ID:	17871066
Application Number:	11918276
International Application Number:	
Confirmation Number:	4022
Title of Invention:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES
First Named Inventor/Applicant Name:	Hermann Hellwagner
Customer Number:	30596
Filer:	Donald J. Daley/Megan Haff
Filer Authorized By:	Donald J. Daley
Attorney Docket Number:	32860-001352/US
Receipt Date:	09-JAN-2014
Filing Date:	21-JAN-2009
Time Stamp:	17:04:38
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	Request for Certificate of Correction	2014-01-09_COC_to_file.PDF	266518 365330cbb59511c1f71197a6239321001ed9f5aa	no	6

Warnings:	
Information:	

Total Files Size (in bytes):	266518

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

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/918,276	12/10/2013	8605794	32860-001352/US	4022

30596 7590 11/20/2013

HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

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 962 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):

Hermann Hellwagner, Klagenfurt, AUSTRIA;
Jörg Heuer, Oberhaching, GERMANY;
Andreas Hutter, M¿nchen, GERMANY;
Michael Ransburg, Maria Rain, AUSTRIA;

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OCT 31 2013
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Commissioner for Patents
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30596 7590 08/01/2013
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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US	4022

TITLE OF INVENTION: METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	11/01/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
SHOLEMAN, ABU S	2437	375-240280

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 HARNESS, DICKEY &
2 PIERCE, P.L.C.
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: SIEMENS AKTIENGESELLSCHAFT

(B) RESIDENCE: (CITY and STATE OR COUNTRY): MUNICH, GERMANY

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 _____

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- ☒ A check is enclosed.
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- ☒ The Director is hereby authorized to charge ~~the required fee(s)~~ XXXXXXXXX, any deficiency, or credit any overpayment, to Deposit Account Number 080750 (enclose an extra copy of this form).

11/01/2013 SMOHAMM1 00000019 11918276

01 FC:1501 1780.00 OP
02 FC:1504 300.00 OP

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 form 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: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date OCTOBER 31, 2013

Typed or printed name DONALY J. DALEY Registration No. 34,313

This collection of information 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.

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OPAP AKIMA-3
OCT 31 2013
PATENT & TRADEMARK OFFICE

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Hermann HELLWAGNER et al.	Conf. No.:	4022
Application No.:	11/918,276	Examiner:	Abu Sholeman
Filing Date:	January 21, 2009	Art Unit:	2437
Title:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES		
Attorney Docket:	32860-001352/US		

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314
Mail Stop Issue Fee

October 31, 2013

COMMENTS ON THE EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

Sir:

In reply to the Examiner's Statement of Reasons for Allowance, provided with the Notice of Allowance dated August 1, 2013, Applicants submit the following comments.

The Examiner offers several reasons why the claims of the present application are allowable over the prior art of record. Although Applicants agree that the various claimed limitations mentioned in the claims are not taught or suggested by the prior art taken either singly or in combination, Applicants wish to emphasize that it is each claim, taken as a whole, including the interrelationships and interconnections between various claimed elements which is allowable over the prior art of record.

Further, Applicants disagree with the Examiner's assertion that claim 9 invokes 35 U.S.C. § 112, sixth paragraph. Claim 9 recites "a synchronization device configured to output" content-related data. MPEP 2181 (I)(A) states:

> However, 35 U.S.C. 112, paragraph 6 will not apply if persons of ordinary skill in the art reading the specification understand the

> term to be the name for the structure that performs the function, even when the term covers a broad class of structures or identifies the structures by their function (e.g., "filters," "brakes," "clamp," "screwdriver," and "locks"). *Lighting World*, 382 F.3d at 1360; *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372-73 (Fed. Cir. 2003); *CCS Fitness*, 288 F.3d at 1369; *Watts v. XL Sys. Inc.*, 232 F.3d 877, 880-81 (Fed. Cir. 2000); *Personalized Media*, 161 F.3d at 704; *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("Many devices take their names from the functions they perform.") The term is not required to denote a specific structure or a precise physical structure to avoid the application of 35 U.S.C. 112, paragraph 6. See *Watts*, 232 F.3d at 880; *Inventio AG v. Thyssenkrupp Elevator Americas Corp.*, 649 F.3d 1350 (Fed. Cir. 2011)(The court concluded the claim terms "modernizing device" and "computing unit" when read in light of the specification connoted sufficient, definite structure to one of skill in the art to preclude application of 35 U.S.C. 112, sixth paragraph).

In the instant case, Applicants respectfully submit that "a synchronization device," when read in light of the specification, denotes sufficient and definite structure to one of ordinary skill in the art. Accordingly, Applicants respectfully submit that claim 9 does not invoke § 112, sixth paragraph.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By _____
Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

DJD/EXB/sem

1952287

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NOTICE OF ALLOWANCE AND FEE(S) DUE

30596 7590 08/01/2013

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EXAMINER
SHOLEMAN, ABU S

ART UNIT	PAPER NUMBER
2437	

DATE MAILED: 08/01/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US	4022

TITLE OF INVENTION: METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	11/01/2013

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.

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HOW TO REPLY TO THIS NOTICE:

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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.

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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.
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US	4022

TITLE OF INVENTION: METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

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nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	11/01/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
SHOLEMAN, ABU S	2437	375-240280

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,
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

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- ❑ A check is enclosed.
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- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit 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 form 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.

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Authorized Signature _____ Date _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US	4022

30596 7590 08/01/2013

HARNESS, DICKEY & PIERCE, P.L.C.
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RESTON, VA 20195

EXAMINER	
SHOLEMAN, ABU S	

ART UNIT	PAPER NUMBER
2437	

DATE MAILED: 08/01/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 696 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 696 day(s).

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 Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

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. 11/918,276	Applicant(s) HELLWAGNER ET AL.	
	Examiner ABU SHOLEMAN	Art Unit 2437	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 *06/28/2013*.
   ☐ 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 *1-22*. 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 _____.

DETAILED ACTION

1. This action is the responsive to the communication filed on 06/28/2013.

Response to Arguments

2. Applicant's arguments filed on 06/28/2013 have been fully considered but they are persuasive.

3. The rejection for claims 1-5,7-8,10-14,16,18,20 and 22 under 35 USC 101 has been withdrawn due to the applicant's amendment.

4. The claim 9 still invokes 35 USC 112, sixth paragraph under the new guidelines. However, the limitation "a synchronization device configured to" has corresponding structure that disclosed in the specification PG-PUB, Fig.1, par 0035, the synchronization information SI can assume two different forms. [0036] a) Thus, for example, the second data segment S2 is assigned a first data segment S1 and a further assignment is carried out after a number A of output, sequentially succeeding first data segments S1. If the number A=2, this means that in each case the second first data segment S1 is to be output with the second data segment S2. This constellation is illustrated in FIG. 1. The first and second data segments S1, S2 are output in their chronological sequence R1, R2 by the synchronization module MS at the latter's data output G. First, the respective first content-related first and second data segments S1, S2 with the numeral 0 are forwarded. Since the number is A=2, the next first data segment S1 with the numeral 1 is now output. Thus, the claim 9 invokes 35 USC 112, sixth paragraph.

Examiner's statement of reason of allowance

5. Claims 1-22 are allowed.

6. The following is an examiner's statement of reasons for allowance: In interpreting the claims, in light of the Specification and the applicant's amendments filed on 06/28/2013, the Examiner finds the claimed invention to be patentably distinct from the prior art of record.

The present relates to the synchronization of data segments is particularly necessary for the use of small screens. A method and a device are disclosed for synchronizing content-dependent first data segments of a first data file and content-dependent second data segments of a second data file, the first and second data segments being respectively output in sequence according to their chronological order in such a way that based on a predeterminable assignment rule for the first and second data segments, each second data segment is output together with a corresponding first data segment.

Independent claims 1, 9 and 22, recite the uniquely distinct features of " sequentially outputting data segments on the basis of an assignment rule for assigning one of the content-related second data segments for assigning each one of the content-related second data segment to one of the content-related first data segments".

7. The closest prior art, (Rosenau et al (US 5598352)), discloses Fig.la, col 5, liens 20-30, video data synchronized with the audio data, col 6, lines 1-35, fig.3b-3c, FIGS. 3B and 3C also discloses how the video display may be resynchronized to the audio playback by the present invention. Referring to FIG. 3B, the video display over time may be illustrated by the sequence of video data frame(O) 320A to video data frame(N+1) 320(N+1) (i.e. sequence output). Audio playback over time may be illustrated by the sequence of audio data(O) 330A to audio data(N+1) 330(N+1) (i.e. sequence output). FIG. 3C is similarly illustrated. The video data frame leads the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be repeated in order to allow the audio to catch up. Assume initially that video data frame(O) 320A and audio data(O) 330A are in complete synchronization. Over time video data frame(K) 320K leads audio data(K) 330K. Once a lead threshold-- such as one or one half frame--is reached, the A/V sync circuit causes the video frame (or half frame as the case may be) to be repeated. In FIG. 3B a one frame lead threshold may be reached wherein video data frame(M) 320M leads audio data(M) 330M by one frame such that next video data frame(N) 320N may be repeated on the video display as illustrated by repeat video frame 322. Thus video data frame(N) 320N may be resynchronized with audio data(N) 330N. Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment

rule for resynchronizing the video data and audio data based on the sequence number). Over time video data frame(J) 321J lags audio data(j) 331J. Once a lag threshold--such as one or one half frame--is reached, the A/V sync circuit causes a video frame (or half frame as the case may be) to be skipped. In FIG. 3C a one frame lag threshold may be reached wherein video data frame(L) 320L leads audio data(N) 331N by one frame such that the next video data frame(M) (not shown) may be skipped on the video display as illustrated by skipped video frame 323. In place of video data frame(M) video data frame(N) 321N may be displayed when audio data(N) 331N may be played. Thus, video data frame(N) 321N may be resynchronized with audio data(N) 331N. *The above discussion can be summarized as the frame synchronization is based on the timing information parsed from a data stream, which is loaded into a system time clock counter and incremented according to the clock frequency. And also the frame may be skipped in order to resynchronize the frame with audio data*. Therefore, synchronizing the frame and skipping the frame to resynchronize is not the equivalent to the “sequentially outputting data segments on the basis of an assignment rule for assigning one of the content-related second data segments for assigning each one of the content-related second data segment to one of the content-related first data segments".

8. The closest prior art, (Yamane et al (US 5661523)) discloses, col 1, lines 50-55, frames are displaying in the chronological order. The display of the chronological order of the fame is not equal to sequentially outputting data

segments on the basis of an assignment rule for assigning one of the content-related second data segments for assigning each one of the content-related second data segment to one of the content-related first data segments.

9. However, the prior art of record, either individually or in a reasonable combination, fails to disclose or suggest the underline limitations when in combination with the remaining limitations currently recited in the independent claims 1 ,9 and 22. In addition, updated search also did not yield any new applicable prior art with respect to the underlined limitations.

10. 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

11. Claims 1-22 are patentable.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abu Sholeman whose telephone number is (571)270-7314. The examiner can normally be reached on Monday through Friday 9 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Shiferaw can be reached on (571)272-3867. 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.

/ABU SHOLEMAN/
Examiner, Art Unit 2437
/Eleni A Shiferaw/

Supervisory Patent Examiner, Art Unit 2437

Notice of References Cited	Application/Control No. 11/918,276	Applicant(s)/Patent Under Reexamination HELLWAGNER ET AL.	
	Examiner ABU SHOLEMAN	Art Unit 2437	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-4,569,026	02-1986	Best, Robert M.	715/716
*	B	US-6,597,861	07-2003	Tozaki et al.	386/338
*	C	US-7,194,194	03-2007	Kashiwagi et al.	386/332
*	D	US-6,904,610	06-2005	Bayrakeri et al.	725/54
*	E	US-7,099,848	08-2006	Bratton, Timothy Robert	705/57
*	F	US-5,640,421	06-1997	Sonohara et al.	375/240
*	G	US-5,661,523	08-1997	Yamane, Yasuhiko	348/390.1
*	H	US-2005/0155063	07-2005	Bayrakeri et al.	725/047
*	I	US-2006/0165379	07-2006	Agnihotri et al.	386/095
*	J	US-2005/0237952	10-2005	Punj et al.	370/260
*	K	US-5,661,523	08-1997	Yamane, Yasuhiko	348/390.1
*	L	US-6,052,390	04-2000	Deliot et al.	370/528
*	M	US-7,443,367	10-2008	Numao, Takaji	345/76

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	

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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 11/918,276	Applicant(s)/Patent Under Reexamination HELLWAGNER ET AL.	
	Examiner ABU SHOLEMAN	Art Unit 2437	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,623,424	04-1997	Azadegan et al.	708/203
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

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	T					

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	W	
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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	11/918276.app. and (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:21
L2	8838	(output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:29
L3	26	375/240.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:34
L4	7	375/240.03.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:44
L5	6	375/240.18.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:49
L6	52	375/240.01.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:50
L7	46	375/240.24.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:56
L8	4	375/240.28.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:00
L18	32	(SIEMENS near2 AKTIENGESELLSCHAFT).as. and	US-PGPUB; USPAT;	OR	ON	2013/07/12 16:16

		(output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	USOCR; FPRS; EPO; JPO; IBM_TDB			
L19	6	(HELLWAGNER near2 HERMANN).inv.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:18
L20	51	(HEUER near2 JORG).inv.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:20
L21	119	(HUTTER near2 ANDREAS).inv.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:20
L22	2	(RANSBURG near2 MICHAEL).inv.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:21
S2	565	375/240.28.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:50
S3	15	375/240.28.ccls. and (sequentially sequential sequence) with (synchronized synchronizing synchronize) with (frame picture metadata)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:53
S4	0	375/240.28.ccls. and (chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S5	38	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S6	1	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize) with (frame picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2012/02/27 10:25

			DERWENT; IBM_TDB			
S7	8	(chronological near4 (sequentially sequential sequence)) with (frame) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:30
S8	3	(chronological near4 (sequentially sequential sequence)) with (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S9	6	(chronological near4 (sequentially sequential sequence)) same (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S10	19742	375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:34
S11	0	S10 and (chronological near4 (sequentially sequential sequence)) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S12	25	S10 and (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S13	1	(output outputting outputted) near5 (frame picture) with (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S14	6	(output outputting outputted) near5 (frame picture) same (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S15	7618	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	USPAT	OR	OFF	2012/02/27 11:01

S16	21298	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S17	846	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S18	7	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:03
S19	13	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) same (synchroniz$4 adjust$4 set$4 integrat$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:09
S20	37470	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:17
S21	24	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) near6 (chronological$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:18
S31	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:37
S33	1	11/918276.app. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:38
S34	1	11/918276.app. and (synchroniz$4 module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S35	1	11/918276.app. and (module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42

S36	51	("5319395" "6249824" "5784366" "5909435" "5877742" "5303393" "5365516" "5526357" "5764691" "5894494" "5999562" "6072185" "6237122" "5507024" "5805155" "5848072" "6181609" "4455483" "5177796" "5274508" "5321699" "5386422" "5388074" "5469444" "5481531" "5506965" "5684774" "5841717" "5917429" "6178121" "6243348" "4415792" "4451108" "4502082" "4796260" "4972474" "5280584" "5377102" "5382508" "5440686" "5477492" "5511212" "5537945" "5561671" "5583975" "5657398" "5684693" "5724241" "5742509" "5831903").pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:57
S37	1	"1494430"	EPO	OR	ON	2012/02/27 12:00
S38	1	(outputting) near6 (video picture segment) with (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:09
S39	1	(outputting) near6 (video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S40	1152	(outputting) near6 (video picture segment) same (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S41	525	(outputting) near6 (video picture segment) near6 (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S42	123	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S43	19	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:11

S44	348	(video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S45	7	(video picture segment) same (chronological near4 sequence)and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S46	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:14
S47	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:52
S48	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:37
S49	411	348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:41
S50	0	348/512.ccls. and (synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S51	332	348/512.ccls. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S52	1	348/512.ccls. and (synchroniz$4) same (assignment near2 rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2012/06/14 12:43

			DERWENT; IBM_TDB			
S53	4	348/512.ccls. and (synchroniz$4) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S54	80	(synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:44
S55	9	(synchroniz$4) same (signaling near3 number) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:45
S56	34	(synchroniz$4) same (video near2 file) same (audio near2 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S57	0	(synchroniz$4) same (video near2 file) same (audio near2 file) same (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S58	5	(synchroniz$4) same (video near2 file) same (audio near2 file) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S59	17	(synchroniz$4) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S60	31	(synchroniz$6) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S61	35	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (number) and (@ad<"20050412"	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/06/14 13:10

		and @rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S62	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S63	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S64	1	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) and (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S65	37	(synchroniz$6) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:13
S66	0	(synchroniz$6) same (chronological$4 near3 (number order)) same (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S67	14	(synchroniz$6) same (chronological$4 near3 (number order)) and (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S68	3162	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S69	139	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S70	79	(synchroniz$6) with (frame packet)	US-PGPUB;	OR	OFF	2012/06/14

		with (sequentially sequence order) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			13:39
S71	62	(synchroniz$6) with (frame packet) with (sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:44
S72	4223	(sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S73	894	(sequentially) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S74	497	(sequentially) with (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S75	39	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S76	47	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$6) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S77	2	"5661523".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:09
S78	1509	(multiplex$4 multi-plex$4 synchroniz$6) with (frame packet) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2012/06/14 14:11

			IBM_TDB			
S79	1098	(multiplex$4 multi-plex$4 synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S80	934	(synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S81	645	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S82	265	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S83	0	(synchroniz$6) near6 (frame) with (chronological)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S84	158	(synchroniz$6) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S85	50	(assignment assign$4) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:17
S86	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S87	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2012/06/14 15:23

			EPO; JPO; DERWENT; IBM_TDB			
S88	0	(synchroniz$6) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S89	0	(synchroniz$6) with (combin$3 near2 rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S90	5	(synchroniz$6) with (combin$3 near2 rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:24
S91	45	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S92	19	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S93	20	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:25
S94	8	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:26
S95	0	((combin$3 near2 rule) or (assignment near2 rule)) with (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S96	4	((combin$3 near2 rule) or (assignment near2 rule)) same (synchroniz$4) and (	US-PGPUB; USPAT;	OR	ON	2012/06/14 15:31

		video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S97	4	(combin$3 near2 rule) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:33
S99	0	(combin$3 near2 rule) with (video) with (audio) same (synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:34
S100	1	"1408505"	EPO	OR	ON	2012/06/14 15:43
S101	3	"20010014210"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:01
S102	2	"5777612".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:04
S103	0	(combin$4 near2 rule) same (synchronizing synchronized) near6 (frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S104	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S105	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S106	2	(combin$4 near2 rule) same (synchronizing synchronized) same (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2012/06/14 16:48

			DERWENT; IBM_TDB			
S107	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/500.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S108	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S109	0	(combin$4 near2 rule) same (synchronizing synchronized) and 348/521.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S110	12	(combin$4 near2 rule) same (synchronizing synchronized)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S111	818	(synchronizing synchronized) with (frame) with (audio) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S112	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S113	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S115	69	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S116	22	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy) and (@ad<"20050412"	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/06/14 16:54

		and @rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S117	108	"348"/$.ccls. and (multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S118	472	(multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S119	2	(multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:39
S121	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:40
S122	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S123	2	(multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S124	2	(multiview$3 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S125	2	(multiview$4 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S126	116	(multiview multi-view) near3 (	US-PGPUB;	OR	ON	2012/06/15

		encod$4) and (audio sound) and (video picture)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			14:42
S127	2	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:43
S128	23113	(multiplex$4 or combin$4) same (frame image picture pixel) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S129	13098	(multiplex$4 or combin$4) with (frame image picture) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S130	2896	(multiplex$4 or combin$4) with (frame) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S131	2568	(multiplex$4 or combin$4) with (frame) same (audio) same (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S132	574	(multiplex$4 or combin$4) with (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S133	335	(multiplex$4 or combin$4) near6 (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S134	166	(multiplex$4 or combin$4) near6 (frame) with (audio) with (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/06/15 14:56

			IBM_TDB			
S135	1085	(multiplex$4 or combin$4) near6 (frame) with (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:06
S136	850	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S137	47	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S138	17	(combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:25
S139	1161	(combin$4) near6 (data packet) with (position) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:53
S140	3	(combin$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:55
S141	16	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:06
S142	40	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:09
S143	45	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/10/09 15:09

			EPO; JPO; DERWENT; IBM_TDB			
S144	59	(combin$4 synchroniz$4) near6 (data packet segment) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:11
S145	26	375/240.26.ccls. and (scene) near5 (index$4 classif$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:02
S146	1	(scene) near5 (index$4 classif$6) same (chronological near2 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:11
S147	0	(scene) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:13
S148	1	(scene picture frame macroblock) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:14
S149	604	(scene picture macroblock) with (index$4 classif$6) same (sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S150	163	(scene picture segment) with (index$4 classif$6) same (sequence) same (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S151	509	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:28
S152	3	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (	US-PGPUB; USPAT;	OR	ON	2013/05/01 14:29

		scene picture) and 348/143-160.ccls.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S153	46	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:32
S154	286	(arrang$4 order$4) near5 (video segment) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:01
S155	120	(arrang$4 order$4) near5 (video) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:02
S156	0	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock) with (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:10
S157	26	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) same (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:11
S158	214	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S159	20	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence near2 (mark$3 number$3)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S160	0	(determin$4 calculat$4) with (read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:00

S161	0	(read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S162	13	(read$4) with (video near2 segment) with (file) and (read$4) with (video near2 segment) with (file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S163	12	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:04
S164	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) with (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:05
S165	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:06
S166	421	(extract$4 read$4) near5 (segment block) with (video) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:07
S167	40	(read$4) near5 (segment block) with (manay plurality) with (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:14
S168	51	(read$4) near5 (manay plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:23
S169	54	(read$4) near5 (many plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2013/05/01 16:24

			DERWENT; IBM_TDB			
S170	0	(read$4) near5 (macroblock segment) with (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S171	0	(read$4) near5 (macroblock segment) same (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S172	0	(read$4) with (macroblock segment) same (many near2 video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S173	219	(read$4) with (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S174	110	(read$4) near5 (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S175	1935	(frame) near5 (arrang$4 order$4) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S176	40612	(frame) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S177	2597	(frame) near5 (index$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:01
S178	380	(frame) near5 (index$4 order$4) with (mark$4) with (video)	US-PGPUB; USPAT; USOCR;	OR	ON	2013/05/02 11:01

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S179	1	(frame) near5 (index$4 order$4) with (mark$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:02
S181	158	(frame) near5 (index$4 order$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:03
S182	313	(frame) near5 (index$4 order$4) with (video) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:14
S183	0	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:15
S184	2	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:16
S185	1862	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:20
S186	273	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S187	2	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) same (rule polic$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S188	12	(synchroniz$4) near5 (frame video	US-PGPUB;	OR	ON	2013/05/02

		picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			11:30
S189	136	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:39
S190	0	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:40
S191	2	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:40
S192	38	(synchroniz$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:42

7/ 12/ 2013 4:22:58 PM
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BIB DATA SHEET

CONFIRMATION NO. 4022

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/918,276	01/21/2009	375	2437	32860-001352/US

APPLICANTS
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Andreas Hutter, M¿nchen, GERMANY;
Michael Ransburg, Maria Rain, AUSTRIA;

**** CONTINUING DATA ***************************
This application is a 371 of PCT/EP2006/060808 03/16/2006

**** FOREIGN APPLICATIONS ***************************
GERMANY 10 2005 016 866.3 04/12/2005

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****
03/25/2009

Foreign Priority claimed ☑ Yes ☐ No 35 USC 119(a-d) conditions met ☑ Yes ☐ No Verified and Acknowledged /ABU S SHOLEMAN/ Examiner's Signature	☑ Met after Allowance /A.S./ Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		AUSTRIA	5	17	2

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RESTON, VA 20195
UNITED STATES

TITLE
Method for Synchronizing Content-Dependent Data Segments of Files

FILING FEE RECEIVED		
1182	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

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	**Art Unit**
	ABU SHOLEMAN	2437

CPC		
Symbol	**Type**	**Version**

CPC Combination Sets				
Symbol	**Type**	**Set**	**Ranking**	**Version**

/ABU SHOLEMAN/ Examiner.Art Unit 2437	07/12/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	22	
/ELENI SHIFERAW/ Supervisory Patent Examiner.Art Unit 2437	07/24/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	22	1

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	Examiner	**Art Unit**
	ABU SHOLEMAN	2437

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
375	240.28	H	0	4	N	21 / 4305						
CROSS REFERENCE(S)		H	0	4	N	7 / 50 (2006.01.01)						

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
375	240				

/ABU SHOLEMAN/ Examiner.Art Unit 2437 (Assistant Examiner)	07/12/2013 (Date)	**Total Claims Allowed:** 22	
/ELENI SHIFERAW/ Supervisory Patent Examiner.Art Unit 2437 (Primary Examiner)	07/24/2013 (Date)	O.G. Print Claim(s) 22	O.G. Print Figure 1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	**Art Unit**
	ABU SHOLEMAN	2437

☐ 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	17	17												
2	2	18	18												
3	3	19	19												
4	4	20	20												
5	5	21	21												
6	6	22	22												
7	7														
8	8														
9	9														
10	10														
11	11														
12	12														
13	13														
14	14														
15	15														
16	16														

/ABU SHOLEMAN/ Examiner.Art Unit 2437	07/12/2013	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	22	
/ELENI SHIFERAW/ Supervisory Patent Examiner.Art Unit 2437	07/24/2013	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	22	1

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	Art Unit
	ABU SHOLEMAN	2437

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
375	240.28	2/27/2012	/A.S./
375	all subclasses with keyword	2/27/2012	/A.S./
375	all subclassse with keyword	6/14/2012	/A.S./
update		5/1/2013 and 5/2/2013	/A.S./
375	240, 240.01,240.03,240.18,240.24	7/12/2013	/A.S./

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor search in PALM	2/27/2012	/A.S./
classes and concept and keyword search in EAST all databases	2/27/2012 and 03/01/2012	/A.S./
Plus search	2/27/2012	/A.S./
classes and concept and key searches in EAST all databases	6/14/2012 and 6/15/2012 and 6/20/2012	/A.S./
consulted with 375 PE Mr. Philippe and 357 PE Mr. Senfi (searches help)	6/14/2012	/A.S./
consulted with 375 PE Andy Rao for searches help too	6/15/2012	/A.S./
STIC_Searhces	6/19/2012	/A.S./
IEEE searches	6/20/2012	/A.S./
update	5/1/2013 and 5/2/2013	/A.S./

SEARCH NOTES

Search Notes	Date	Examiner
cosulted with SPE Kambiz Zand and Mr. Zand has approved the allowance for claims 1-22 if applicant over come the 35 USC 101 rejection for claims 1 and 22.	5/2/2013	/A.S./
Inventor searches	7/12/2013	/A.S./
concept and keyword searches in EAST all database	7/12/2013	/A.S./
NPL_Searches	7/12/2013	/A.S./
concept and text and keyword searches in EAST	7/19/2013	/A.S./
EIC_center serches	7/19/2013	/A.S./
ACM/IEEE/Springer searches	7/19/2013	/A.S./

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
375	240.28,240.01,240.03,240.24,240.18	7/12/2013	/A.S./

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	**Art Unit**
	ABU SHOLEMAN	2437

✓	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	03/01/2012	06/20/2012	05/02/2013	07/12/2013					
1	1	✓	✓	✓	=					
2	2	✓	✓	✓	=					
3	3	✓	✓	✓	=					
4	4	✓	✓	✓	=					
5	5	✓	✓	✓	=					
6	6	✓	✓	=	=					
7	7	✓	✓	✓	=					
8	8	✓	✓	✓	=					
9	9	✓	✓	=	=					
10	10	✓	✓	✓	=					
11	11	✓	✓	✓	=					
12	12	✓	✓	✓	=					
13	13	✓	✓	✓	=					
14	14	✓	✓	✓	=					
15	15	✓	✓	=	=					
16	16	✓	✓	✓	=					
17	17	✓	✓	=	=					
18	18		✓	✓	=					
19	19		✓	=	=					
20	20		✓	✓	=					
21	21		✓	=	=					
22	22			✓	=					

OK TO ENTER: /A.S./

07/22/2013

OK TO ENTER: /A.S./

07/22/2013

SUBMITTED ELECTRONICALLY VIA EFS-WEB

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Hermann HELLWAGNER et al.	Con. No.:	4022
Application No.:	11/918,276	Examiner:	Abu Sholeman
Filing Date:	January 21, 2009	Art Unit:	2437
Title:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES		
Attorney Docket:	32860-001352/US		

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June 28, 2013

AMENDMENT UNDER 37 C.F.R. § 1.116

Sir:

In response to the Final Office Action mailed May 8, 2013, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

Amendments to the Claims begin on page 2 of this Amendment.

Remarks begin on page 7 of this Amendment.

	Claims remaining after Amendment		**Highest number previously paid for**		**Present extra**
Total	22	-	22	=	0
Independent	3	-	3	=	0

OK TO ENTER: /A.S./

07/22/2013

OK TO ENTER: /A.S./

07/22/2013

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S2	565	375/240.28.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:50
S3	15	375/240.28.ccls. and (sequentially sequential sequence) with (synchronized synchronizing synchronize) with (frame picture metadata)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:53
S4	0	375/240.28.ccls. and (chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S5	38	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S6	1	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize) with (frame picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:25
S7	8	(chronological near4 (sequentially sequential sequence)) with (frame) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:30
S8	3	(chronological near4 (sequentially sequential sequence)) with (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S9	6	(chronological near4 (sequentially	US-PGPUB;	OR	ON	2012/02/27

		sequential sequence)) same (packet) same(synchronized synchronizing synchronize)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			10:33
S10	19742	375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:34
S11	0	S10 and (chronological near4 (sequentially sequential sequence)) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S12	25	S10 and (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S13	1	(output outputting outputted) near5 (frame picture) with (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S14	6	(output outputting outputted) near5 (frame picture) same (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S15	7618	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	USPAT	OR	OFF	2012/02/27 11:01
S16	21298	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S17	846	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S18	7	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:03

S19	13	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) same (synchroniz$4 adjust$4 set$4 integrat$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:09
S20	37470	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:17
S21	24	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) near6 (chronological$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:18
S31	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:37
S33	1	11/918276.app. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:38
S34	1	11/918276.app. and (synchroniz$4 module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S35	1	11/918276.app. and (module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S36	51	("5319395" "6249824" "5784366" "5909435" "5877742" "5303393" "5365516" "5526357" "5764691" "5894494" "5999562" "6072185" "6237122" "5507024" "5805155" "5848072" "6181609" "4455483" "5177796" "5274508" "5321699" "5386422" "5388074" "5469444" "5481531" "5506965" "5684774" "5841717" "5917429" "6178121" "6243348" "4415792" "4451108" "4502082" "4796260" "4972474" "5280584" "5377102" "5382508" "5440686" "5477492" "5511212" "5537945" "5561671" "5583975" "5657398" "5684693" "5724241" "5742509" "5831903").pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:57
S37	1	"1494430"	EPO	OR	ON	2012/02/27

						12:00
S38	1	(outputting) near6 (video picture segment) with (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:09
S39	1	(outputting) near6 (video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S40	1152	(outputting) near6 (video picture segment) same (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S41	525	(outputting) near6 (video picture segment) near6 (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S42	123	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S43	19	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:11
S44	348	(video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S45	7	(video picture segment) same (chronological near4 sequence)and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S46	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/02/29 10:14

			EPO; JPO; DERWENT; IBM_TDB			
S47	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:52
S48	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:37
S49	411	348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:41
S50	0	348/512.ccls. and (synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S51	332	348/512.ccls. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S52	1	348/512.ccls. and (synchroniz$4) same (assignment near2 rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S53	4	348/512.ccls. and (synchroniz$4) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S54	80	(synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:44
S55	9	(synchroniz$4) same (signaling near3 number) and (@ad<"20050412" and	US-PGPUB; USPAT;	OR	OFF	2012/06/14 12:45

		@rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S56	34	(synchroniz$4) same (video near2 file) same (audio near2 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S57	0	(synchroniz$4) same (video near2 file) same (audio near2 file) same (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S58	5	(synchroniz$4) same (video near2 file) same (audio near2 file) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S59	17	(synchroniz$4) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S60	31	(synchroniz$6) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S61	35	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (number) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:10
S62	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S63	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11

S64	1	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) and (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S65	37	(synchroniz$6) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:13
S66	0	(synchroniz$6) same (chronological$4 near3 (number order)) same (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S67	14	(synchroniz$6) same (chronological$4 near3 (number order)) and (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S68	3162	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S69	139	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S70	79	(synchroniz$6) with (frame packet) with (sequentially sequence order) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:39
S71	62	(synchroniz$6) with (frame packet) with (sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:44
S72	4223	(sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2012/06/14 13:54

			DERWENT; IBM_TDB			
S73	894	(sequentially) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S74	497	(sequentially) with (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S75	39	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S76	47	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$6) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S77	2	"5661523".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:09
S78	1509	(multiplex$4 multi-plex$4 synchroniz$6) with (frame packet) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S79	1098	(multiplex$4 multi-plex$4 synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S80	934	(synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S81	645	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/06/14 14:12

		@rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S82	265	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S83	0	(synchroniz$6) near6 (frame) with (chronological)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S84	158	(synchroniz$6) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S85	50	(assignment assign$4) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:17
S86	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S87	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S88	0	(synchroniz$6) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S89	0	(synchroniz$6) with (combin$3 near2 rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S90	5	(synchroniz$6) with (combin$3 near2	US-PGPUB;	OR	OFF	2012/06/14

		rule)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			15:24
S91	45	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S92	19	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S93	20	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:25
S94	8	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:26
S95	0	((combin$3 near2 rule) or (assignment near2 rule)) with (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S96	4	((combin$3 near2 rule) or (assignment near2 rule)) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S97	4	(combin$3 near2 rule) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:33
S99	0	(combin$3 near2 rule) with (video) with (audio) same (synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/06/14 15:34

			IBM_TDB			
S100	1	"1408505"	EPO	OR	ON	2012/06/14 15:43
S101	3	"20010014210"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:01
S102	2	"5777612".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:04
S103	0	(combin$4 near2 rule) same (synchronizing synchronized) near6 (frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S104	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S105	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S106	2	(combin$4 near2 rule) same (synchronizing synchronized) same (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S107	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/500.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S108	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S109	0	(combin$4 near2 rule) same (	US-PGPUB;	OR	OFF	2012/06/14

		synchronizing synchronized) and 348/521.ccls.	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			16:49
S110	12	(combin$4 near2 rule) same (synchronizing synchronized)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S111	818	(synchronizing synchronized) with (frame) with (audio) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S112	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S113	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S115	69	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S116	22	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:54
S117	108	"348"/$.ccls. and (multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S118	472	(multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/06/15 14:38

			IBM_TDB			
S119	2	(multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:39
S121	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:40
S122	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S123	2	(multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S124	2	(multiview$3 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S125	2	(multiview$4 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S126	116	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:42
S127	2	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:43
S128	23113	(multiplex$4 or combin$4) same (frame image picture pixel) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/06/15 14:54

			EPO; JPO; DERWENT; IBM_TDB			
S129	13098	(multiplex$4 or combin$4) with (frame image picture) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S130	2896	(multiplex$4 or combin$4) with (frame) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S131	2568	(multiplex$4 or combin$4) with (frame) same (audio) same (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S132	574	(multiplex$4 or combin$4) with (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S133	335	(multiplex$4 or combin$4) near6 (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S134	166	(multiplex$4 or combin$4) near6 (frame) with (audio) with (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S135	1085	(multiplex$4 or combin$4) near6 (frame) with (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:06
S136	850	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S137	47	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence)	US-PGPUB; USPAT;	OR	ON	2012/06/15 15:07

		same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S138	17	(combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:25
S139	1161	(combin$4) near6 (data packet) with (position) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:53
S140	3	(combin$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:55
S141	16	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:06
S142	40	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:09
S143	45	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:09
S144	59	(combin$4 synchroniz$4) near6 (data packet segment) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:11
S145	26	375/240.26.ccls. and (scene) near5 (index$4 classif$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:02

S146	1	(scene) near5 (index$4 classif$6) same (chronological near2 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:11
S147	0	(scene) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:13
S148	1	(scene picture frame macroblock) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:14
S149	604	(scene picture macroblock) with (index$4 classif$6) same (sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S150	163	(scene picture segment) with (index$4 classif$6) same (sequence) same (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S151	509	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:28
S152	3	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:29
S153	46	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:32
S154	286	(arrang$4 order$4) near5 (video segment) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2013/05/01 15:01

			DERWENT; IBM_TDB			
S155	120	(arrang$4 order$4) near5 (video) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:02
S156	0	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock) with (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:10
S157	26	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) same (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:11
S158	214	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S159	20	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence near2 (mark$3 number$3)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S160	0	(determin$4 calculat$4) with (read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:00
S161	0	(read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S162	13	(read$4) with (video near2 segment) with (file) and (read$4) with (video near2 segment) with (file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S163	12	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR;	OR	ON	2013/05/01 16:04

		@rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S164	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) with (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:05
S165	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:06
S166	421	(extract$4 read$4) near5 (segment block) with (video) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:07
S167	40	(read$4) near5 (segment block) with (manay plurality) with (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:14
S168	51	(read$4) near5 (manay plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:23
S169	54	(read$4) near5 (many plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:24
S170	0	(read$4) near5 (macroblock segment) with (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S171	0	(read$4) near5 (macroblock segment) same (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S172	0	(read$4) with (macroblock segment)	US-PGPUB;	OR	ON	2013/05/01

		same (many near2 video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			16:31
S173	219	(read$4) with (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S174	110	(read$4) near5 (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S175	1935	(frame) near5 (arrang$4 order$4) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S176	40612	(frame) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S177	2597	(frame) near5 (index$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:01
S178	380	(frame) near5 (index$4 order$4) with (mark$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:01
S179	1	(frame) near5 (index$4 order$4) with (mark$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:02
S181	158	(frame) near5 (index$4 order$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2013/05/02 11:03

			IBM_TDB			
S182	313	(frame) near5 (index$4 order$4) with (video) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:14
S183	0	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:15
S184	2	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:16
S185	1862	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:20
S186	273	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S187	2	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) same (rule polic$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S188	12	(synchroniz$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:30
S189	136	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:39
S190	0	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance) and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2013/05/02 11:40

		@rlad<"20050412")	EPO; JPO; DERWENT; IBM_TDB			
S191	2	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:40
S192	38	(synchroniz$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:42

5/2/2013 3:55:11 PM
C:\Users\asholeman\Documents\EAST\Workspaces\11918276.wsp

EAST Search History

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L9	0	375/240.28.ccls. and ((sequentially) and (synchroniz$3) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:05
L11	0	375/240.28.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:06
L12	0	375/240.01.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:06
L13	2	375/240.03.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:06
L14	0	375/240.18.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:07
L15	0	375/240.24.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:07
L16	1	375/240.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:08
L17	22	((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:08

7/12/2013 4:22:21 PM
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	99964	(sequentially sequential sequence parallel) near5 (display$3 show$3 output$3) with (block frame segment macroblock)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/19 10:26
L2	99	(sequentially sequential sequence parallel) near5 (display$3 show$3 output$3) with (block frame segment macroblock) same (chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/19 10:27
L3	50	(sequentially sequential sequence parallel) near5 (display$3 show$3 output$3 print$4) with (block frame segment macroblock) with (chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/19 10:36
S2	565	375/240.28.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:50
S3	15	375/240.28.ccls. and (sequentially sequential sequence) with (synchronized synchronizing synchronize) with (frame picture metadata)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:53
S4	0	375/240.28.ccls. and (chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S5	38	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S6	1	(chronological near4 (sequentially	US-PGPUB;	OR	ON	2012/02/27

		sequential sequence)) with (synchronized synchronizing synchronize) with (frame picture)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			10:25
S7	8	(chronological near4 (sequentially sequential sequence)) with (frame) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:30
S8	3	(chronological near4 (sequentially sequential sequence)) with (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S9	6	(chronological near4 (sequentially sequential sequence)) same (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S10	19742	375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:34
S11	0	S10 and (chronological near4 (sequentially sequential sequence)) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S12	25	S10 and (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S13	1	(output outputting outputted) near5 (frame picture) with (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S14	6	(output outputting outputted) near5 (frame picture) same (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/02/27 10:56

			IBM_TDB			
S15	7618	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	USPAT	OR	OFF	2012/02/27 11:01
S16	21298	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S17	846	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S18	7	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:03
S19	13	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) same (synchroniz$4 adjust$4 set$4 integrat$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:09
S20	37470	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:17
S21	24	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) near6 (chronological$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:18
S31	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:37
S33	1	11/918276.app. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:38
S34	1	11/918276.app. and (synchroniz$4 module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S35	1	11/918276.app. and (module)	US-PGPUB; USPAT;	OR	ON	2012/02/27 11:42

			USOCR; FPRS; EPO; JPO; IBM_TDB			
S36	51	("5319395" "6249824" "5784366" "5909435" "5877742" "5303393" "5365516" "5526357" "5764691" "5894494" "5999562" "6072185" "6237122" "5507024" "5805155" "5848072" "6181609" "4455483" "5177796" "5274508" "5321699" "5386422" "5388074" "5469444" "5481531" "5506965" "5684774" "5841717" "5917429" "6178121" "6243348" "4415792" "4451108" "4502082" "4796260" "4972474" "5280584" "5377102" "5382508" "5440686" "5477492" "5511212" "5537945" "5561671" "5583975" "5657398" "5684693" "5724241" "5742509" "5831903").pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:57
S37	1	"1494430"	EPO	OR	ON	2012/02/27 12:00
S38	1	(outputting) near6 (video picture segment) with (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:09
S39	1	(outputting) near6 (video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S40	1152	(outputting) near6 (video picture segment) same (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S41	525	(outputting) near6 (video picture segment) near6 (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S42	123	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S43	19	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls. and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR;	OR	ON	2012/02/27 13:11

		@rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S44	348	(video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S45	7	(video picture segment) same (chronological near4 sequence)and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S46	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:14
S47	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:52
S48	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:37
S49	411	348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:41
S50	0	348/512.ccls. and (synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S51	332	348/512.ccls. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S52	1	348/512.ccls. and (synchroniz$4) same	US-PGPUB;	OR	OFF	2012/06/14

		(assignment near2 rule)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			12:43
S53	4	348/512.ccls. and (synchroniz$4) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S54	80	(synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:44
S55	9	(synchroniz$4) same (signaling near3 number) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:45
S56	34	(synchroniz$4) same (video near2 file) same (audio near2 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S57	0	(synchroniz$4) same (video near2 file) same (audio near2 file) same (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S58	5	(synchroniz$4) same (video near2 file) same (audio near2 file) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S59	17	(synchroniz$4) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S60	31	(synchroniz$6) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2012/06/14 13:01

			IBM_TDB			
S61	35	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (number) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:10
S62	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S63	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S64	1	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) and (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S65	37	(synchroniz$6) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:13
S66	0	(synchroniz$6) same (chronological$4 near3 (number order)) same (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S67	14	(synchroniz$6) same (chronological$4 near3 (number order)) and (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S68	3162	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S69	139	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) same (audio) same (video) and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2012/06/14 13:38

		@rlad<"20050412")	EPO; JPO; DERWENT; IBM_TDB			
S70	79	(synchroniz$6) with (frame packet) with (sequentially sequence order) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:39
S71	62	(synchroniz$6) with (frame packet) with (sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:44
S72	4223	(sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S73	894	(sequentially) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S74	497	(sequentially) with (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S75	39	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S76	47	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$6) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S77	2	"5661523".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:09
S78	1509	(multiplex$4 multi-plex$4 synchroniz$6) with (frame packet) with (	US-PGPUB; USPAT;	OR	OFF	2012/06/14 14:11

		chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S79	1098	(multiplex$4 multi-plex$4 synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S80	934	(synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S81	645	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S82	265	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S83	0	(synchroniz$6) near6 (frame) with (chronological)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S84	158	(synchroniz$6) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S85	50	(assignment assign$4) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:17
S86	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23

S87	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S88	0	(synchroniz$6) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S89	0	(synchroniz$6) with (combin$3 near2 rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S90	5	(synchroniz$6) with (combin$3 near2 rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:24
S91	45	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S92	19	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S93	20	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:25
S94	8	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:26
S95	0	((combin$3 near2 rule) or (assignment near2 rule)) with (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2012/06/14 15:31

			DERWENT; IBM_TDB			
S96	4	((combin$3 near2 rule) or (assignment near2 rule)) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S97	4	(combin$3 near2 rule) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:33
S99	0	(combin$3 near2 rule) with (video) with (audio) same (synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:34
S100	1	"1408505"	EPO	OR	ON	2012/06/14 15:43
S101	3	"20010014210"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:01
S102	2	"5777612".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:04
S103	0	(combin$4 near2 rule) same (synchronizing synchronized) near6 (frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S104	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S105	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48

S106	2	(combin$4 near2 rule) same (synchronizing synchronized) same (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S107	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/500.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S108	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S109	0	(combin$4 near2 rule) same (synchronizing synchronized) and 348/521.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S110	12	(combin$4 near2 rule) same (synchronizing synchronized)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S111	818	(synchronizing synchronized) with (frame) with (audio) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S112	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S113	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S115	69	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2012/06/14 16:53

			DERWENT; IBM_TDB			
S116	22	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:54
S117	108	"348"/$.ccls. and (multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S118	472	(multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S119	2	(multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:39
S121	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:40
S122	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S123	2	(multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S124	2	(multiview$3 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S125	2	(multiview$4 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR;	OR	ON	2012/06/15 14:41

		@rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S126	116	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:42
S127	2	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:43
S128	23113	(multiplex$4 or combin$4) same (frame image picture pixel) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S129	13098	(multiplex$4 or combin$4) with (frame image picture) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S130	2896	(multiplex$4 or combin$4) with (frame) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S131	2568	(multiplex$4 or combin$4) with (frame) same (audio) same (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S132	574	(multiplex$4 or combin$4) with (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S133	335	(multiplex$4 or combin$4) near6 (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S134	166	(multiplex$4 or combin$4) near6 (	US-PGPUB;	OR	ON	2012/06/15

		frame) with (audio) with (video)and (@ad<"20050412" and @rlad<"20050412")	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			14:56
S135	1085	(multiplex$4 or combin$4) near6 (frame) with (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:06
S136	850	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S137	47	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S138	17	(combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:25
S139	1161	(combin$4) near6 (data packet) with (position) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:53
S140	3	(combin$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:55
S141	16	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:06
S142	40	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/10/09 15:09

			IBM_TDB			
S143	45	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:09
S144	59	(combin$4 synchroniz$4) near6 (data packet segment) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:11
S145	26	375/240.26.ccls. and (scene) near5 (index$4 classif$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:02
S146	1	(scene) near5 (index$4 classif$6) same (chronological near2 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:11
S147	0	(scene) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:13
S148	1	(scene picture frame macroblock) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:14
S149	604	(scene picture macroblock) with (index$4 classif$6) same (sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S150	163	(scene picture segment) with (index$4 classif$6) same (sequence) same (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S151	509	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2013/05/01 14:28

			EPO; JPO; DERWENT; IBM_TDB			
S152	3	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:29
S153	46	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:32
S154	286	(arrang$4 order$4) near5 (video segment) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:01
S155	120	(arrang$4 order$4) near5 (video) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:02
S156	0	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock) with (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:10
S157	26	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) same (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:11
S158	214	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S159	20	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence near2 (mark$3 number$3)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S160	0	(determin$4 calculat$4) with (read$4) with (video near2 segment) with (first	US-PGPUB; USPAT;	OR	ON	2013/05/01 16:00

		near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S161	0	(read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S162	13	(read$4) with (video near2 segment) with (file) and (read$4) with (video near2 segment) with (file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S163	12	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:04
S164	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) with (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:05
S165	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:06
S166	421	(extract$4 read$4) near5 (segment block) with (video) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:07
S167	40	(read$4) near5 (segment block) with (manay plurality) with (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:14
S168	51	(read$4) near5 (manay plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:23

S169	54	(read$4) near5 (many plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:24
S170	0	(read$4) near5 (macroblock segment) with (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S171	0	(read$4) near5 (macroblock segment) same (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S172	0	(read$4) with (macroblock segment) same (many near2 video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S173	219	(read$4) with (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S174	110	(read$4) near5 (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S175	1935	(frame) near5 (arrang$4 order$4) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S176	40612	(frame) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S177	2597	(frame) near5 (index$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2013/05/02 11:01

			DERWENT; IBM_TDB			
S178	380	(frame) near5 (index$4 order$4) with (mark$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:01
S179	1	(frame) near5 (index$4 order$4) with (mark$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:02
S181	158	(frame) near5 (index$4 order$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:03
S182	313	(frame) near5 (index$4 order$4) with (video) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:14
S183	0	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:15
S184	2	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:16
S185	1862	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:20
S186	273	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S187	2	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) same (rule polic$4) and	US-PGPUB; USPAT; USOCR;	OR	ON	2013/05/02 11:21

		(@ad<"20050412" and @rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S188	12	(synchroniz$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:30
S189	136	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:39
S190	0	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:40
S191	2	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:40
S192	38	(synchroniz$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:42
S193	1	11/918276.app. and (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:21
S194	8838	(output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:29
S195	26	375/240.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:34
S196	7	375/240.03.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2013/07/12 15:44

			EPO; JPO; IBM_TDB			
S197	6	375/240.18.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:49
S198	52	375/240.01.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:50
S199	46	375/240.24.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:56
S200	4	375/240.28.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:00
S201	32	(SIEMENS near2 AKTIENGESELLSCHAFT).as. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:16
S202	6	(HELLWAGNER near2 HERMANN).inv.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:18
S203	51	(HEUER near2 JORG).inv.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:20
S204	119	(HUTTER near2 ANDREAS).inv.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:20
S205	2	(RANSBURG near2 MICHAEL).inv.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:21

7/19/2013 10:41:26 AM
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	11/918276.app. and (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:21
L2	8838	(output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:29
L3	26	375/240.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:34
L4	7	375/240.03.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:44
L5	6	375/240.18.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:49
L6	52	375/240.01.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:50
L7	46	375/240.24.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 15:56
L8	4	375/240.28.ccls. and (output$3 display$4 combin$4 synchroniz$4) with (segment portion block frame macroblock) with (rule chronological)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2013/07/12 16:00
S2	565	375/240.28.ccls.	US-PGPUB; USPAT;	OR	ON	2012/02/27 09:50

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S3	15	375/240.28.ccls. and (sequentially sequential sequence) with (synchronized synchronizing synchronize) with (frame picture metadata)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:53
S4	0	375/240.28.ccls. and (chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S5	38	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S6	1	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize) with (frame picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:25
S7	8	(chronological near4 (sequentially sequential sequence)) with (frame) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:30
S8	3	(chronological near4 (sequentially sequential sequence)) with (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S9	6	(chronological near4 (sequentially sequential sequence)) same (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S10	19742	375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:34

S11	0	S10 and (chronological near4 (sequentially sequential sequence)) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S12	25	S10 and (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S13	1	(output outputting outputted) near5 (frame picture) with (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S14	6	(output outputting outputted) near5 (frame picture) same (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S15	7618	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	USPAT	OR	OFF	2012/02/27 11:01
S16	21298	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S17	846	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S18	7	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:03
S19	13	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) same (synchroniz$4 adjust$4 set$4 integrat$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:09
S20	37470	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:17

S21	24	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) near6 (chronological$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:18
S31	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:37
S33	1	11/918276.app. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:38
S34	1	11/918276.app. and (synchroniz$4 module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S35	1	11/918276.app. and (module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S36	51	("5319395" "6249824" "5784366" "5909435" "5877742" "5303393" "5365516" "5526357" "5764691" "5894494" "5999562" "6072185" "6237122" "5507024" "5805155" "5848072" "6181609" "4455483" "5177796" "5274508" "5321699" "5386422" "5388074" "5469444" "5481531" "5506965" "5684774" "5841717" "5917429" "6178121" "6243348" "4415792" "4451108" "4502082" "4796260" "4972474" "5280584" "5377102" "5382508" "5440686" "5477492" "5511212" "5537945" "5561671" "5583975" "5657398" "5684693" "5724241" "5742509" "5831903").pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:57
S37	1	"1494430"	EPO	OR	ON	2012/02/27 12:00
S38	1	(outputting) near6 (video picture segment) with (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:09
S39	1	(outputting) near6 (video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2012/02/27 13:10

			DERWENT; IBM_TDB			
S40	1152	(outputting) near6 (video picture segment) same (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S41	525	(outputting) near6 (video picture segment) near6 (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S42	123	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S43	19	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:11
S44	348	(video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S45	7	(video picture segment) same (chronological near4 sequence)and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S46	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:14
S47	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:52
S48	1	11/918276.app.	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/06/14 12:37

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S49	411	348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:41
S50	0	348/512.ccls. and (synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S51	332	348/512.ccls. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S52	1	348/512.ccls. and (synchroniz$4) same (assignment near2 rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S53	4	348/512.ccls. and (synchroniz$4) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S54	80	(synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:44
S55	9	(synchroniz$4) same (signaling near3 number) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:45
S56	34	(synchroniz$4) same (video near2 file) same (audio near2 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S57	0	(synchroniz$4) same (video near2 file)	US-PGPUB;	OR	OFF	2012/06/14

		same (audio near2 file) same (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			12:58
S58	5	(synchroniz$4) same (video near2 file) same (audio near2 file) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S59	17	(synchroniz$4) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S60	31	(synchroniz$6) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S61	35	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (number) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:10
S62	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S63	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S64	1	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) and (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S65	37	(synchroniz$6) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2012/06/14 13:13

			IBM_TDB			
S66	0	(synchroniz$6) same (chronological$4 near3 (number order)) same (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S67	14	(synchroniz$6) same (chronological$4 near3 (number order)) and (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S68	3162	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S69	139	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S70	79	(synchroniz$6) with (frame packet) with (sequentially sequence order) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:39
S71	62	(synchroniz$6) with (frame packet) with (sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:44
S72	4223	(sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S73	894	(sequentially) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S74	497	(sequentially) with (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2012/06/14 13:54

			EPO; JPO; DERWENT; IBM_TDB			
S75	39	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S76	47	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$6) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S77	2	"5661523".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:09
S78	1509	(multiplex$4 multi-plex$4 synchroniz$6) with (frame packet) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S79	1098	(multiplex$4 multi-plex$4 synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S80	934	(synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S81	645	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S82	265	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S83	0	(synchroniz$6) near6 (frame) with (chronological)and (@ad<"20050412"	US-PGPUB; USPAT;	OR	OFF	2012/06/14 14:13

		and @rlad<"20050412") and "375"/$.ccls.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S84	158	(synchroniz$6) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S85	50	(assignment assign$4) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:17
S86	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S87	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S88	0	(synchroniz$6) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S89	0	(synchroniz$6) with (combin$3 near2 rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S90	5	(synchroniz$6) with (combin$3 near2 rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:24
S91	45	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25

S92	19	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S93	20	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:25
S94	8	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:26
S95	0	((combin$3 near2 rule) or (assignment near2 rule)) with (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S96	4	((combin$3 near2 rule) or (assignment near2 rule)) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S97	4	(combin$3 near2 rule) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:33
S99	0	(combin$3 near2 rule) with (video) with (audio) same (synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:34
S100	1	"1408505"	EPO	OR	ON	2012/06/14 15:43
S101	3	"20010014210"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:01
S102	2	"5777612".pn.	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/06/14 16:04

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S103	0	(combin$4 near2 rule) same (synchronizing synchronized) near6 (frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S104	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S105	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S106	2	(combin$4 near2 rule) same (synchronizing synchronized) same (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S107	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/500.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S108	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S109	0	(combin$4 near2 rule) same (synchronizing synchronized) and 348/521.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S110	12	(combin$4 near2 rule) same (synchronizing synchronized)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S111	818	(synchronizing synchronized) with (	US-PGPUB;	OR	OFF	2012/06/14

		frame) with (audio) with (video)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			16:53
S112	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S113	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S115	69	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S116	22	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:54
S117	108	"348"/$.ccls. and (multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S118	472	(multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S119	2	(multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:39
S121	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/06/15 14:40

			IBM_TDB			
S122	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S123	2	(multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S124	2	(multiview$3 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S125	2	(multiview$4 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S126	116	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:42
S127	2	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:43
S128	23113	(multiplex$4 or combin$4) same (frame image picture pixel) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S129	13098	(multiplex$4 or combin$4) with (frame image picture) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S130	2896	(multiplex$4 or combin$4) with (frame) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/06/15 14:55

			EPO; JPO; DERWENT; IBM_TDB			
S131	2568	(multiplex$4 or combin$4) with (frame) same (audio) same (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S132	574	(multiplex$4 or combin$4) with (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S133	335	(multiplex$4 or combin$4) near6 (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S134	166	(multiplex$4 or combin$4) near6 (frame) with (audio) with (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S135	1085	(multiplex$4 or combin$4) near6 (frame) with (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:06
S136	850	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S137	47	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S138	17	(combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:25
S139	1161	(combin$4) near6 (data packet) with (position) and (@ad<"20050412" and	US-PGPUB; USPAT;	OR	ON	2012/10/09 14:53

		@rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S140	3	(combin$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:55
S141	16	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:06
S142	40	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:09
S143	45	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:09
S144	59	(combin$4 synchroniz$4) near6 (data packet segment) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:11
S145	26	375/240.26.ccls. and (scene) near5 (index$4 classif$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:02
S146	1	(scene) near5 (index$4 classif$6) same (chronological near2 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:11
S147	0	(scene) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:13

S148	1	(scene picture frame macroblock) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:14
S149	604	(scene picture macroblock) with (index$4 classif$6) same (sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S150	163	(scene picture segment) with (index$4 classif$6) same (sequence) same (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S151	509	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:28
S152	3	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:29
S153	46	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:32
S154	286	(arrang$4 order$4) near5 (video segment) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:01
S155	120	(arrang$4 order$4) near5 (video) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:02
S156	0	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock) with (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2013/05/01 15:10

			DERWENT; IBM_TDB			
S157	26	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) same (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:11
S158	214	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S159	20	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence near2 (mark$3 number$3)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S160	0	(determin$4 calculat$4) with (read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:00
S161	0	(read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S162	13	(read$4) with (video near2 segment) with (file) and (read$4) with (video near2 segment) with (file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S163	12	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:04
S164	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) with (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:05
S165	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) same (sequence number order) and	US-PGPUB; USPAT; USOCR;	OR	ON	2013/05/01 16:06

		(@ad<"20050412" and @rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S166	421	(extract$4 read$4) near5 (segment block) with (video) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:07
S167	40	(read$4) near5 (segment block) with (manay plurality) with (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:14
S168	51	(read$4) near5 (manay plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:23
S169	54	(read$4) near5 (many plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:24
S170	0	(read$4) near5 (macroblock segment) with (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S171	0	(read$4) near5 (macroblock segment) same (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S172	0	(read$4) with (macroblock segment) same (many near2 video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S173	219	(read$4) with (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S174	110	(read$4) near5 (macroblock segment)	US-PGPUB;	OR	ON	2013/05/01

		same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			16:31
S175	1935	(frame) near5 (arrang$4 order$4) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S176	40612	(frame) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S177	2597	(frame) near5 (index$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:01
S178	380	(frame) near5 (index$4 order$4) with (mark$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:01
S179	1	(frame) near5 (index$4 order$4) with (mark$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:02
S181	158	(frame) near5 (index$4 order$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:03
S182	313	(frame) near5 (index$4 order$4) with (video) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:14
S183	0	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2013/05/02 11:15

			IBM_TDB			
S184	2	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:16
S185	1862	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:20
S186	273	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S187	2	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) same (rule polic$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S188	12	(synchroniz$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:30
S189	136	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:39
S190	0	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:40
S191	2	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:40
S192	38	(synchroniz$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2013/05/02 11:42

			EPO; JPO; DERWENT; IBM_TDB			

7/ 12/ 2013 4:02:25 PM
C:\ Users\ asholeman\ Documents\ EAST\ Workspaces\ 11918276.wsp

EAST Search History

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L9	0	375/240.28.ccls. and ((sequentially) and (synchroniz$3) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:05
L11	0	375/240.28.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:06
L12	0	375/240.01.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:06
L13	2	375/240.03.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:06
L14	0	375/240.18.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:07
L15	0	375/240.24.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:07
L16	1	375/240.ccls. and ((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:08
L17	22	((sequentially) and (assignment near2 rule)).clm.	US-PGPUB; USPAT; UPAD	OR	ON	2013/07/12 16:08

7/12/2013 4:10:25 PM
C:\Users\asholeman\Documents\EAST\Workspaces\11918276.wsp

PATENT

SUBMITTED ELECTRONICALLY VIA EFS-WEB

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Hermann HELLWAGNER et al.	Con. No.:	4022
Application No.:	11/918,276	Examiner:	Abu Sholeman
Filing Date:	January 21, 2009	Art Unit:	2437
Title:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES		
Attorney Docket:	32860-001352/US		

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June 28, 2013

AMENDMENT UNDER 37 C.F.R. § 1.116

Sir:

In response to the Final Office Action mailed May 8, 2013, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

Amendments to the Claims begin on page 2 of this Amendment.

Remarks begin on page 7 of this Amendment.

	Claims remaining after Amendment		**Highest number previously paid for**		**Present extra**
Total	22	-	22	=	0
Independent	3	-	3	=	0

AMENDMENTS TO THE CLAIMS

The following is a complete, marked-up listing of revised claims with a status identifier in parenthesis, underlined text indicating insertions, and strike through and/or double-bracketed text indicating deletions.

LISTING OF CLAIMS

1. (Currently Amended) A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:

sequentially outputting, by a device for synchronizing content-related data, the content-related first data segments and the content-related second data segments according to their chronological sequence in such a way that each of the content-related second data segments is output together with an associated one of the content-related first data segments on the basis of an assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments.

2. (Previously Presented) The method as claimed in claim 1, wherein the assignment rule is formed in such a way that each of the content-related second data segments are assigned to precisely one of the content-related first data segments and a further assignment is carried out after a number of sequentially succeeding content-related first data segments.

3. (Previously Presented) The method as claimed in claim 1, wherein the assignment rule is formed in such a way that, for each of the content-related second data segments, the content-related first data segments are assigned by

specification of a number, the number representing a position of the content-related first data segments within the order of content-related first data segments.

4. (Previously Presented) The method as claimed in claim 1, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments and the content-related second data segments are synchronized on the basis of a combined assignment rule.

5. (Previously Presented) The method as claimed in claim 1, wherein media data are represented by at least one of the first data file and the second data file.

6. (Previously Presented) The method as claimed in claim 1, wherein at least one of the content-related first data segments and content-related second data segments are generated on the basis of at least one of the generic bit stream syntax description and the extensible stylesheet language transformation.

7. (Previously Presented) The method as claimed in claim 1, further comprising: determining, based upon a content-related marker, which content-related first data segments and content-related second data segments are to be output first in time.

8. (Previously Presented) The method as claimed in claim 7, wherein at least one of a scene change in an image sequence and a change of speaker in a speech sequence is identified by way of at least one of the first content-related markers and the second content-related markers.

9. (Currently Amended) A device for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, comprising:

a synchronization ~~module~~ device configured to output each of the content-related first data segments and the content-related second data segments, sequentially, according to their chronological sequence, each of the content-related second data segments being output together with an associated one of the content-related first data segments based upon of an assignment rule for assigning each one of the content-related second data segments to each one of the content-related first data segment.

10. (Previously Presented) The method as claimed in claim 2, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments of the first data file and the content-related second data segments are synchronized on the basis of a combined assignment rule.

11. (Previously Presented) The method as claimed in claim 3, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments of the first data file and content-related second data segments are synchronized on the basis of a combined assignment rule.

12. (Previously Presented) The method as claimed in claim 5, wherein the media data include at least one of video and audio data.

13. (Previously Presented) The method as claimed in claim 1, wherein at least one of media data and metadata are represented by at least one of the first data file and the second data file.

14. (Previously Presented) The method as claimed in claim 13, wherein the metadata include metadata encoded according to the XML standard.

15. (Previously Presented) The method as claimed in claim 13, wherein the media data include at least one of video and audio data.

16. (Previously Presented) The method as claimed in claim 1, wherein the assignment rule is predefinable.

17. (Previously Presented) The device as claimed in claim 9, wherein the assignment rule is predefinable.

18. (Previously Presented) The method of claim 1, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.

19. (Previously Presented) The device of claim 9, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.

20. (Previously Presented) The method of claim 1, wherein the assignment rule is not based on a timestamp.

21. (Previously Presented) The device of claim 9, wherein the assignment rule is not based on a timestamp.

22. (Currently Amended) A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:

determining an order for the content-related first data segments to be read out from the first data file and an order for the content-related second data segments to be read out from the second data file, the content-related first data segments being ordered according to corresponding first content-related markers and the content-related second data segments being ordered according to corresponding second content-related markers;

assigning, according to an assignment rule, each of the ordered content-related second data segments that are read out from the second data file with a corresponding one of the ordered content-related first data segments that are read out from the first data file; and

sequentially outputting, by a device for synchronizing content-related data, in a chronological sequence, each of the assigned content-related first data segments and the assigned content-related second data segments.

REMARKS

Favorable reconsideration of this application, in light of the preceding amendments and following remarks, is respectfully requested.

Claims 1-22 are pending in this application.

After Final Consideration Pilot 2.0

Applicants hereby declare their desire to avail themselves of the After Final Consideration Pilot (AFCP) 2.0 program which authorizes extra time for examiners to consider responses filed after a final rejection. Entry and consideration of the present Amendment After Final Rejection under 37 CFR 1.116(b) is appropriate because entry of the Amendment will lead to earlier allowance of the application without undue burden on the examiner or applicant for at least one of the following reasons:

1. The amendment can be determined to place the application in condition for allowance with only a limited amount of further search or consideration, even if new claims are added without cancelling a corresponding number of finally rejected claims.
2. The amendment can be determined to place the application in condition for allowance by adding new limitation(s) which require only a limited amount of further consideration or search.

If the Examiner believes an interview should be conducted as a result of consideration of the after final response, Applicants hereby request the Examiner to contact Applicants undersigned representative.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 1-22 contain allowable subject matter and would be allowed pending the withdrawal of the non-art claim rejections addressed below.

Rejections under 35 U.S.C. § 101

Claims 1-5, 7-8, 10-14, 16, 18, 20, and 22 stand rejected under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter. Applicants respectfully traverse this rejection for the reasons detailed below.

Without conceding to the Examiner's position, Applicants have amended claims 1 and 22 to recite "sequentially outputting, by a device for synchronizing content-related data . . . ." Applicants respectfully submit that these amendments overcome the Examiner's rejection under 35 U.S.C. § 101.

For at least the reasons discussed above, reconsideration and withdrawal of the rejection of claims 1-5, 7-8, 10-14, 16, 18, 20, and 22 under 35 U.S.C. § 101 is respectfully requested.

Claim Rejections under 35 U.S.C. § 112, Sixth Paragraph

Claim 9 stands interpreted under 35 U.S.C. § 112, sixth paragraph, because the claim allegedly uses a non-structural term coupled with functional language without reciting sufficient structure to achieve the function. Without conceding to the Examiner's position, Applicants have amended claim 9 to be directed to "a synchronization device configured to output" content-related data. Applicants respectfully submit that amended claim 9 does not invoke 35 U.S.C. § 112, sixth paragraph. Therefore, Applicants respectfully request reconsideration and withdrawal of the interpretation of claim 9 under 35 U.S.C. § 112, sixth paragraph.

CONCLUSION

In view of the above remarks and amendments, the Applicants respectfully submit that each of the pending objections and rejections has been addressed and overcome, placing the present application in condition for allowance. A notice to that effect is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By _____
Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
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DJD/EXB/sem

1835227

Doc Code: A.NE.AFCP
Document Description: After Final Consideration Pilot Program Request

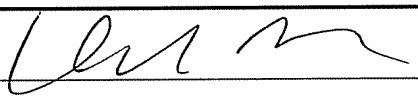
PTO/SB/434 (05-13)

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

Practitioner Docket No.:	Application No.:	Filing Date:
32860-001352/US	11/918,276	October 11, 2007
First Named Inventor:	**Title:**	
Herman HELLWAGNER	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES	

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
	June 28, 2013
Name (Print/Typed) Donald J. Daley	**Practitioner Registration No.** 34,313

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 _____ forms are submitted.

Electronic Acknowledgement Receipt

EFS ID:	16189736
Application Number:	11918276
International Application Number:	
Confirmation Number:	4022
Title of Invention:	Method for Synchronizing Content-Dependent Data Segments of Files
First Named Inventor/Applicant Name:	Hermann Hellwagner
Customer Number:	30596
Filer:	Donald J. Daley/Eric Bomkamp/Shannon Mosley
Filer Authorized By:	Donald J. Daley
Attorney Docket Number:	32860-001352/US
Receipt Date:	28-JUN-2013
Filing Date:	21-JAN-2009
Time Stamp:	15:30:24
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		AmendmentAFReqCons.PDF	561583 10b42c61e5c90c9248c5ad7cc1a97039b6ae3185	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment After Final	1	9
	After Final Consideration Program Request	10	10
Warnings:			
Information:			
	Total Files Size (in bytes):	561583	

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
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/918,276	01/21/2009	

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 **06/28/2013**

	(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))	* 22	Minus	** 22	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $420 =	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.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US	4022

30596 7590 05/08/2013

HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

EXAMINER	
SHOLEMAN, ABU S	

ART UNIT	PAPER NUMBER
2437	

NOTIFICATION DATE	DELIVERY MODE
05/08/2013	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):

dcmailroom@hdp.com
siemensgroup@hdp.com
pshaddin@hdp.com

Office Action Summary	Application No.	Applicant(s)	
	11/918,276	HELLWAGNER ET AL.	
	Examiner	Art Unit	
	ABU SHOLEMAN	2437	

-- 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* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 *11/29/2012*.

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) *1-22* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☒ Claim(s) *6,9,15, 17,19, and 21,* is/are allowed.

7)☒ Claim(s) *1-5,7-8,10-14,16,18,20 and 22* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

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).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/29/2012 has been entered.

Response to Arguments

2. The objection to the abstract of the disclosure has been withdrawn due to the submission of the corrected abstract.

Applicant argued in the page 9 of the remark that claims 1-4,7,16,18 and 20 are statutory under 35 U.S.C 101.

Examiner respect fully disagrees, the instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter. The process claimed including steps of “outputting ….” **** is broad enough that the claim could be completely performed mentally, verbally or without

a machine nor is any transformation apparent. For example, let say, we have a folder of paper with a page number on it wherein the each page has some data written. I can pull out the page number 2 and page number 6 either sequentially or randomly from the folder and then, combine those pages into one page by using any addictive such as glue or staple it together. Performing the above method can be done by human; it does not require any transformation and machine.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-5 , 7-8, 10-14, 16, 18, 20 and 22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 1 and 22, those claims invention is not directed to eligible subject matter under 35 U.S.C. § 101 in view of In Re Bilski, 88 USPQ2d 1385. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing (See In Re Bilski, 88 USPQ2d 1385; see also Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 473 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780, 787-88 (1976)); The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform

underlying subject matter. The method claimed including steps of " outputting ...." is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent; Therefore, the claimed invention is directed to non-statutory subject matter.

Dependent claims 2-5 , 7-8, 10-14, 16, 18, 20 are rejected under the same analysis as set forth above.

35 USC § 112, Sixth Paragraph – Claim Interpretations

5. **As per claim 9**, this claim limitations "a synchronization module to" has been interpreted under 35 U.S.C. 112, sixth paragraph, because it uses a non-structural term " module to" coupled with functional language "output" respectively without reciting sufficient structure to achieve the function. Furthermore, the non-structural term is not preceded by a structural modifier.

Since this claim limitation invokes 35 U.S.C. 112, sixth paragraph, claim 9 interpreted to cover the corresponding structure described in the specification that achieves the claimed function, and equivalents thereof.

A review of the specification shows that the following appears to be the corresponding structure described in the specification for the 35 U.S.C. 112, sixth paragraph limitation: specification discloses, **PG-PUB par 0035, the synchronization information SI can assume two different forms. [0036] a) Thus, for example, the**

second data segment S2 is assigned a first data segment S1 and a further assignment is carried out after a number A of output, sequentially succeeding first data segments S1. If the number A=2, this means that in each case the second first data segment S1 is to be output with the second data segment S2. This constellation is illustrated in FIG. 1. The first and second data segments S1, S2 are output in their chronological sequence R1, R2 by the synchronization module MS at the latter's data output G. First, the respective first content-related first and second data segments S1, S2 with the numeral 0 are forwarded. Since the number is A=2, the next first data segment S1 with the numeral 1 is now output.

If applicant wishes to provide further explanation or dispute the examiner's interpretation of the corresponding structure, applicant must identify the corresponding structure with reference to the specification by page and line number, and to the drawing, if any, by reference characters in response to this Office action.

If applicant does not wish to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant may amend the claim so that it will clearly not invoke 35 U.S.C. 112, sixth paragraph, or present a sufficient showing that the claim recites sufficient structure, material, or acts for performing the claimed function to preclude application of 35 U.S.C. 112, sixth paragraph.

For more information, see Supplementary Examination Guidelines for Determining Compliance with 35 U.S.C. § 112 and for Treatment of Related Issues in Patent Applications, 76 FR 7162, 7167 (Feb. 9, 2011).

Allowable Subject Matter

6. Claims 1-22 are allowed. No reason for allowance is needed as the record is clear in light of applicant's arguments and amendment filed on 11/29/2012 and also examiner amendment above. See MPEP 1302.14(I).

7. According to MPEP 1302.14 (I): "In most cases, the examiner's actions and the applicant's replies make evident the reasons for allowance, satisfying the "record as a whole" proviso of the rule. This is particularly true when applicant fully complies with 37 CFR 1.111 (b) and (c) and 37 CFR 1.133(b). Thus, where the examiner's actions clearly point out the reasons for rejection and the applicant's reply explicitly presents reasons why claims are patentable over the reference, the reasons for allowance are in all probability evident from the record and no statement should be necessary."

Conclusion

8. **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.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abu Sholeman whose telephone number is (571)270-73144. The examiner can normally be reached on Mon-Thurs 7:30 am-5:00 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Shiferaw can be reached on (571)-272-38677. 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.

/ABU SHOLEMAN/
Examiner, Art Unit 2437

/Kambiz Zand/
Supervisory Patent Examiner, Art Unit 2434

Notice of References Cited	Application/Control No. 11/918,276	Applicant(s)/Patent Under Reexamination HELLWAGNER ET AL.	
	Examiner ABU SHOLEMAN	Art Unit 2437	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,598,352	01-1997	Rosenau et al.	715/203
*	B	US-5,661,523	08-1997	Yamane, Yasuhiko	348/390.1
*	C	US-2005/0008240	01-2005	Banerji et al.	382/238
	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.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	**Art Unit**
	ABU SHOLEMAN	2437

✓	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	03/01/2012	06/20/2012	05/02/2013						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	=						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	=						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	✓	✓						
	15	✓	✓	=						
	16	✓	✓	✓						
	17	✓	✓	=						
	18		✓	✓						
	19		✓	=						
	20		✓	✓						
	21		✓	=						
	22			✓						

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	Art Unit
	ABU SHOLEMAN	2437

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
375	240.28	2/27/2012	/A.S./
375	all subclasses with keyword	2/27/2012	/A.S./
375	all subclassse with keyword	6/14/2012	/A.S./
update		5/1/2013 and 5/2/2013	/A.S./

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor search in PALM	2/27/2012	/A.S./
classes and concept and keyword search in EAST all databases	2/27/2012 and 03/01/2012	/A.S./
Plus search	2/27/2012	/A.S./
classes and concept and key searches in EAST all databases	6/14/2012 and 6/15/2012 and 6/20/2012	/A.S./
consulted with 375 PE Mr. Philippe and 357 PE Mr. Senfi (searches help)	6/14/2012	/A.S./
consulted with 375 PE Andy Rao for searches help too	6/15/2012	/A.S./
STIC_Searhces	6/19/2012	/A.S./
IEEE searches	6/20/2012	/A.S./
update	5/1/2013 and 5/2/2013	/A.S./

SEARCH NOTES		
Search Notes	**Date**	**Examiner**
cosulted with SPE Kambiz Zand and Mr. Zand has approved the allowance for claims 1-22 if applicant over come the 35 USC 101 rejection for claims 1 and 22.	5/2/2013	/A.S./

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
S2	565	375/240.28.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:50
S3	15	375/240.28.ccls. and (sequentially sequential sequence) with (synchronized synchronizing synchronize) with (frame picture metadata)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:53
S4	0	375/240.28.ccls. and (chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S5	38	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S6	1	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize) with (frame picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:25
S7	8	(chronological near4 (sequentially sequential sequence)) with (frame) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:30
S8	3	(chronological near4 (sequentially sequential sequence)) with (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S9	6	(chronological near4 (sequentially	US-PGPUB;	OR	ON	2012/02/27

		sequential sequence)) same (packet) same(synchronized synchronizing synchronize)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			10:33
S10	19742	375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:34
S11	0	S10 and (chronological near4 (sequentially sequential sequence)) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S12	25	S10 and (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S13	1	(output outputting outputted) near5 (frame picture) with (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S14	6	(output outputting outputted) near5 (frame picture) same (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S15	7618	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	USPAT	OR	OFF	2012/02/27 11:01
S16	21298	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S17	846	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S18	7	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:03

S19	13	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) same (synchroniz$4 adjust$4 set$4 integrat$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:09
S20	37470	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:17
S21	24	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) near6 (chronological$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:18
S31	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:37
S33	1	11/918276.app. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:38
S34	1	11/918276.app. and (synchroniz$4 module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S35	1	11/918276.app. and (module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S36	51	("5319395" "6249824" "5784366" "5909435" "5877742" "5303393" "5365516" "5526357" "5764691" "5894494" "5999562" "6072185" "6237122" "5507024" "5805155" "5848072" "6181609" "4455483" "5177796" "5274508" "5321699" "5386422" "5388074" "5469444" "5481531" "5506965" "5684774" "5841717" "5917429" "6178121" "6243348" "4415792" "4451108" "4502082" "4796260" "4972474" "5280584" "5377102" "5382508" "5440686" "5477492" "5511212" "5537945" "5561671" "5583975" "5657398" "5684693" "5724241" "5742509" "5831903").pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:57
S37	1	"1494430"	EPO	OR	ON	2012/02/27

						12:00
S38	1	(outputting) near6 (video picture segment) with (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:09
S39	1	(outputting) near6 (video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S40	1152	(outputting) near6 (video picture segment) same (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S41	525	(outputting) near6 (video picture segment) near6 (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S42	123	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S43	19	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:11
S44	348	(video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S45	7	(video picture segment) same (chronological near4 sequence)and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S46	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/02/29 10:14

			EPO; JPO; DERWENT; IBM_TDB			
S47	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:52
S48	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:37
S49	411	348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:41
S50	0	348/512.ccls. and (synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S51	332	348/512.ccls. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S52	1	348/512.ccls. and (synchroniz$4) same (assignment near2 rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S53	4	348/512.ccls. and (synchroniz$4) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S54	80	(synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:44
S55	9	(synchroniz$4) same (signaling near3 number) and (@ad<"20050412" and	US-PGPUB; USPAT;	OR	OFF	2012/06/14 12:45

		@rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S56	34	(synchroniz$4) same (video near2 file) same (audio near2 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S57	0	(synchroniz$4) same (video near2 file) same (audio near2 file) same (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S58	5	(synchroniz$4) same (video near2 file) same (audio near2 file) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S59	17	(synchroniz$4) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S60	31	(synchroniz$6) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S61	35	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (number) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:10
S62	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S63	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11

S64	1	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) and (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S65	37	(synchroniz$6) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:13
S66	0	(synchroniz$6) same (chronological$4 near3 (number order)) same (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S67	14	(synchroniz$6) same (chronological$4 near3 (number order)) and (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S68	3162	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S69	139	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S70	79	(synchroniz$6) with (frame packet) with (sequentially sequence order) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:39
S71	62	(synchroniz$6) with (frame packet) with (sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:44
S72	4223	(sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2012/06/14 13:54

			DERWENT; IBM_TDB			
S73	894	(sequentially) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S74	497	(sequentially) with (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S75	39	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S76	47	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$6) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S77	2	"5661523".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:09
S78	1509	(multiplex$4 multi-plex$4 synchroniz$6) with (frame packet) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S79	1098	(multiplex$4 multi-plex$4 synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S80	934	(synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S81	645	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/06/14 14:12

		@rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S82	265	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S83	0	(synchroniz$6) near6 (frame) with (chronological)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S84	158	(synchroniz$6) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S85	50	(assignment assign$4) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:17
S86	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S87	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S88	0	(synchroniz$6) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S89	0	(synchroniz$6) with (combin$3 near2 rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S90	5	(synchroniz$6) with (combin$3 near2	US-PGPUB;	OR	OFF	2012/06/14

		rule)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			15:24
S91	45	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S92	19	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S93	20	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:25
S94	8	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:26
S95	0	((combin$3 near2 rule) or (assignment near2 rule)) with (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S96	4	((combin$3 near2 rule) or (assignment near2 rule)) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S97	4	(combin$3 near2 rule) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:33
S99	0	(combin$3 near2 rule) with (video) with (audio) same (synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/06/14 15:34

			IBM_TDB			
S100	1	"1408505"	EPO	OR	ON	2012/06/14 15:43
S101	3	"20010014210"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:01
S102	2	"5777612".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:04
S103	0	(combin$4 near2 rule) same (synchronizing synchronized) near6 (frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S104	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S105	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S106	2	(combin$4 near2 rule) same (synchronizing synchronized) same (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S107	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/500.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S108	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S109	0	(combin$4 near2 rule) same (	US-PGPUB;	OR	OFF	2012/06/14

		synchronizing synchronized) and 348/521.ccls.	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			16:49
S110	12	(combin$4 near2 rule) same (synchronizing synchronized)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S111	818	(synchronizing synchronized) with (frame) with (audio) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S112	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S113	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S115	69	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S116	22	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:54
S117	108	"348"/$.ccls. and (multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S118	472	(multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/06/15 14:38

			IBM_TDB			
S119	2	(multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:39
S121	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:40
S122	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S123	2	(multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S124	2	(multiview$3 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S125	2	(multiview$4 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S126	116	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:42
S127	2	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:43
S128	23113	(multiplex$4 or combin$4) same (frame image picture pixel) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/06/15 14:54

			EPO; JPO; DERWENT; IBM_TDB			
S129	13098	(multiplex$4 or combin$4) with (frame image picture) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S130	2896	(multiplex$4 or combin$4) with (frame) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S131	2568	(multiplex$4 or combin$4) with (frame) same (audio) same (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S132	574	(multiplex$4 or combin$4) with (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S133	335	(multiplex$4 or combin$4) near6 (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S134	166	(multiplex$4 or combin$4) near6 (frame) with (audio) with (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S135	1085	(multiplex$4 or combin$4) near6 (frame) with (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:06
S136	850	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S137	47	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence)	US-PGPUB; USPAT;	OR	ON	2012/06/15 15:07

		same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S138	17	(combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:25
S139	1161	(combin$4) near6 (data packet) with (position) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:53
S140	3	(combin$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 14:55
S141	16	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:06
S142	40	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:09
S143	45	(combin$4 synchroniz$4) near6 (data packet) with (position near2 segment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:09
S144	59	(combin$4 synchroniz$4) near6 (data packet segment) with (position near2 segment) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/10/09 15:11
S145	26	375/240.26.ccls. and (scene) near5 (index$4 classif$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:02

S146	1	(scene) near5 (index$4 classif$6) same (chronological near2 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:11
S147	0	(scene) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:13
S148	1	(scene picture frame macroblock) near5 (index$4 classif$6) same (chronological near2 sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:14
S149	604	(scene picture macroblock) with (index$4 classif$6) same (sequence) and (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S150	163	(scene picture segment) with (index$4 classif$6) same (sequence) same (compres$4 synchroniz$4) with (segment frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:15
S151	509	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:28
S152	3	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:29
S153	46	(sequentially sequence) near5 (index$4 classif$6) same (sequence) with (scene picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 14:32
S154	286	(arrang$4 order$4) near5 (video segment) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2013/05/01 15:01

			DERWENT; IBM_TDB			
S155	120	(arrang$4 order$4) near5 (video) with (marker flag) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:02
S156	0	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock) with (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:10
S157	26	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) same (marker) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:11
S158	214	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S159	20	(determin$4 calculat$4) with (arrang$4 order$4) near5 (macroblock frame segment) with (sequence near2 (mark$3 number$3)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 15:17
S160	0	(determin$4 calculat$4) with (read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:00
S161	0	(read$4) with (video near2 segment) with (first near2 file) and (read$4) with (video near2 segment) with (second near3 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S162	13	(read$4) with (video near2 segment) with (file) and (read$4) with (video near2 segment) with (file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:01
S163	12	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR;	OR	ON	2013/05/01 16:04

		@rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S164	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) with (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:05
S165	1	(extract$4 read$4) near5 (segment block) with (video near2 (file chapter)) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:06
S166	421	(extract$4 read$4) near5 (segment block) with (video) same (sequence number order) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:07
S167	40	(read$4) near5 (segment block) with (manay plurality) with (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:14
S168	51	(read$4) near5 (manay plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:23
S169	54	(read$4) near5 (many plurality) with (video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:24
S170	0	(read$4) near5 (macroblock segment) with (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S171	0	(read$4) near5 (macroblock segment) same (many near2 video) with (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:30
S172	0	(read$4) with (macroblock segment)	US-PGPUB;	OR	ON	2013/05/01

		same (many near2 video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			16:31
S173	219	(read$4) with (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S174	110	(read$4) near5 (macroblock segment) same (video) same (order sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/01 16:31
S175	1935	(frame) near5 (arrang$4 order$4) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S176	40612	(frame) with (index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:00
S177	2597	(frame) near5 (index$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:01
S178	380	(frame) near5 (index$4 order$4) with (mark$4) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:01
S179	1	(frame) near5 (index$4 order$4) with (mark$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:02
S181	158	(frame) near5 (index$4 order$4) with (video) and 348/143-160.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2013/05/02 11:03

			IBM_TDB			
S182	313	(frame) near5 (index$4 order$4) with (video) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:14
S183	0	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4) and 375/240.26.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:15
S184	2	(read$4) with (surveillance) with (video) near5 (frame) same (classif$4 index$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:16
S185	1862	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:20
S186	273	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S187	2	(compres$4 synchroniz$4) with (surveillance) with (frame video picture scene) same (rule polic$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:21
S188	12	(synchroniz$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:30
S189	136	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:39
S190	0	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance) and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2013/05/02 11:40

		@rlad<"20050412")	EPO; JPO; DERWENT; IBM_TDB			
S191	2	(synchroniz$4 order$4 arrang$4) near5 (frame video picture scene) with (rule) same (surveillance)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:40
S192	38	(synchroniz$4 arrang$4) near5 (frame video picture scene) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/05/02 11:42

5/2/2013 3:54:26 PM
C:\Users\asholeman\Documents\EAST\Workspaces\11918276.wsp

OPAP IAP28 NOV 29 2012 PATENT & TRADEMARK OFFICE

IFW/RCE

PTO/SB/30 (07-09)
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Request for Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	11/918,276
Filing Date	January 21, 2009
First Named Inventor	Hermann HELLWAGNER et al.
Art Unit	2437
Examiner Name	Sholeman, A.
Attorney Docket Number	32860-001352/US

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. 08-0750.

i. ☐ RCE fee required under 37 CFR 1.17(e)

ii. ☑ Extension of time fee (37 CFR 1.136 and 1.17)

iii. ☐ Other _____

11/30/2012 AWONDAF1 00000004 11918276
01 FC:1801 930.00 OP
02 FC:1202 62.00 OP

b. ☑ Check in the amount of $ 930.00 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	/Donald J. Daley/ 56,007	Date	November 29, 2012
Name (Print/Type)	Donald J. Daley	Registration No.	34,313

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.

OPAP IAP28
NOV 29 2012
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PTO/SB/22 (06-09)
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** ***(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)***	Docket Number (Optional) 32860-001352/US
Application Number 11/918,276	Filed January 21, 2009
For METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES	
Art Unit 2437	Examiner Sholeman, A.

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☐ One month (37 CFR 1.17(a)(1))	$130	$65	$
☑ Two months (37 CFR 1.17(a)(2))	$490	$245	$ 570
☐ Three months (37 CFR 1.17(a)(3))	$1110	$555	$
☐ Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐ Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☐ Applicant claims small entity status. See 37 CFR 1.27.

☑ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 08-0750.

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.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 34,313

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

56,027

Signature — November 29, 2012 — Date

Donald J. Daley — Typed or printed name

703-668-8000 — Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). 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 6 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.

11/30/2012 RWONDAF1 00000004 11918276
03 FC:1252 570.00 OP

OPAP IAP28 NOV 29 2012 PATENT & TRADEMARK OFFICE

HDP/SB/17 (10-08)
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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FEE TRANSMITTAL for FY 2013

Effective 2/8/2006. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 1562

Complete if Known	
Application Number	11/918,276
Filing Date	January 21, 2009
First Named Inventor	Hermann HELLWAGNER et al.
Examiner Name	Sholeman, A.
Art Unit	2437
Attorney Docket No.	32860-001352/US

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number: 08-0750

Deposit Account Name: Harness, Dickey & Pierce, P.L.C.

The Director is authorized to: *(check all that apply)*
☐ Charge fee(s) indicated below ☒ Credit any overpayments
☒ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1011	390	2011	195	Utility filing fee	
1012	250	2012	125	Design filing fee	
1013	250	2013	125	Plant filing fee	
1014	390	2014	195	Reissue filing fee	
1005	250	2005	125	Provisional filling fee	

SUBTOTAL (1) ($) 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

			Extra Claims		Fee from below	=	Fee Paid
Total Claims	22	-21 ** =	1	X	62	=	62
Independent Claims	3	-3 ** =	0	X		=	0
Multiple Dependent						=	0

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	62	2202	31	Claims in excess of 20
1201	250	2201	125	Independent claims in excess of 3
1203	460	2203	225	Multiple dependent claim, if not paid
1204	250	2204	125	** Reissue independent claims over original patent
1205	62	2205	31	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 62

**or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description Paid	Fee
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	17,750	1812	17,750	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	150	2251	75	Extension for reply within first month	
1252	570	2252	285	Extension for reply within second month	570
1253	1,290	2253	645	Extension for reply within third month	
1254	2,010	2254	1,005	Extension for reply within fourth month	
1255	2,730	2255	1,365	Extension for reply within fifth month	
1401	630	2401	315	Notice of Appeal	
1402	630	2402	315	Filing a brief in support of an appeal	
1403	1,260	2403	630	Request for oral hearing	
1452	630	2452	315	Petition to revive – unavoidable	
1453	1,890	2453	945	Petition to revive – unintentional	
1462	400	1462	400	Petition fee under 37 CFR 1.17(f)	
1463	200	1463	200	Petition fee under 37 CFR 1.17(g)	
1464	130	1464	130	Petition fee under 37 CFR 1.17(h)	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	810	2809	405	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	810	2810	405	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	930	2801	465	Request for Continued Examination (RCE)	930

Other fee (specify) ____

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) ($)1500

4. SEARCH/EXAMINATION FEES

1111	620	2111	310	Utility Search Fee
1112	120	2112	60	Design Search Fee
1113	380	2113	190	Plant Search Fee
1114	620	2114	310	Reissue Search Fee
1311	250	2311	125	Utility Examination Fee
1312	160	2312	80	Design Examination Fee
1313	200	2313	100	Plant Examination Fee
1314	760	2314	380	Reissue Examination Fee

SUBTOTAL (4) ($)0

SUBMITTED BY

Complete *(if applicable)*

Name (Print/Type)	Donald J. Daley	Registration No. (Attorney/Agent)	34,313	Telephone	703-668-8000
Signature				Date	November 29, 2012

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OPAP IAP28 NOV 29 2012 PATENT & TRADEMARK OFFICE

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Hermann HELLWAGNER et al.	Confirmation No.:	4022
Application No.:	11/918,276	Examiner:	Sholeman, A.
Filing Date:	January 21, 2009	Group Art Unit:	2437
Title:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES		
Attorney Docket:	32860-001352/US		

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314
Mail Stop Amendment RCE

November 29, 2012

AMENDMENT UNDER 37 C.F.R. § 1.114

Sir:

In response to the Final Office Action mailed June 29, 2012, the due date having been extended two (2) months by a two month extension requested herein to November 29, 2012, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

Amendments to the Abstract begin on page 2 of this Amendment.

Amendments to the Claims begin on page 3 of this Amendment.

Remarks begin on page 7 of this Amendment.

	Claims remaining after Amendment		**Highest number previously paid for**		**Present extra**
Total	22	-	21	=	1
Independent	3	-	3	=	0

AMENDMENTS TO THE ABSTRACT

Please replace the Abstract with the attached revised Abstract located at the end of this document.

AMENDMENTS TO THE CLAIMS

The following is a complete, marked-up listing of revised claims with a status identifier in parenthesis, underlined text indicating insertions, and strike through and/or double-bracketed text indicating deletions.

LISTING OF CLAIMS

1. (Currently Amended) A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:

sequentially outputting the content-related first data segments and the content-related second data segments according to their chronological sequence in such a way that each of the content-related second data segments is output together with an associated one of the content-related first data segments on the basis of an assignment rule for assigning each one of the content-related second data segments to [[a]] one of the content-related first data segments.

2. (Currently Amended) The method as claimed in claim 1, wherein the assignment rule is formed in such a way that [[a]] each of the content-related second data segments [[is]] are assigned to precisely one of the content-related first data segments and a further assignment is carried out after a number of sequentially succeeding content-related first data segments.

3. (Currently Amended) The method as claimed in claim 1, wherein the assignment rule is formed in such a way that, for each of the content-related second data segments, [[a]] the content-related first data segments [[is]] are assigned by specification of a number, the number representing a position of the content-related first data segments within ~~a chronological sequence of~~ the order of content-related first data segments.

4. (Currently Amended) The method as claimed in claim 1, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments and the content-related second data segments ~~of a plurality of second data files~~ are synchronized on the basis of a combined assignment rule.

5. (Currently Amended) The method as claimed in claim 1, wherein media data are represented by at least one of the first data file and the second data file.

6. (Currently Amended) The method as claimed in claim 1, wherein at least one of the content-related first data segments and content-related second data segments are generated on the basis of at least one of the generic bit stream syntax description and the extensible stylesheet language transformation.

7. (Currently Amended) The method as claimed in claim 1, further comprising:

determining, based upon a content-related marker, which content-related first data segments and content-related second data segments are to be output first in time.

8. (Currently Amended) The method as claimed in claim 7, wherein at least one of a scene change in an image sequence and a change of speaker in a speech sequence is identified by way of at least one of the first content-related markers and the second content-related markers.

9. (Currently Amended) A device for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, comprising:

a synchronization module to output each of the content-related first data segments and the content-related second data segments, sequentially, according to their chronological sequence, each of the content-related second data segments being output together with an associated one of the content-related first data segments based upon of an assignment rule for assigning each one of the content-related second data segments to [[a]] each one of the content-related first data segment.

10. (Currently Amended) The method as claimed in claim 2, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments of the first data file and the content-related second data segments ~~of a plurality of second data files~~ are synchronized on the basis of a combined assignment rule.

11. (Currently Amended) The method as claimed in claim 3, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments of the first data file and content-related second data segments ~~of a plurality of second data files~~ are synchronized on the basis of a combined assignment rule.

12. (Previously Presented) The method as claimed in claim 5, wherein the media data include at least one of video and audio data.

13. (Currently Amended) The method as claimed in claim 1, wherein at least one of media data and metadata are represented by at least one of the first data file and the second data file.

14. (Previously Presented) The method as claimed in claim 13, wherein the metadata include metadata encoded according to the XML standard.

15. (Previously Presented) The method as claimed in claim 13, wherein the media data include at least one of video and audio data.

16. (Previously Presented) The method as claimed in claim 1, wherein the assignment rule is predefinable.

17. (Previously Presented) The device as claimed in claim 9, wherein the assignment rule is predefinable.

18. (Previously Presented) The method of claim 1, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.

19. (Previously Presented) The device of claim 9, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.

20. (Previously Presented) The method of claim 1, wherein the assignment rule is not based on a timestamp.

21. (Previously Presented) The device of claim 9, wherein the assignment rule is not based on a timestamp.

22. (New) A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:

determining an order for the content-related first data segments to be read out from the first data file and an order for the content-related second data segments to be read out from the second data file, the content-related first data segments being ordered according to corresponding first content-related markers and the content-related second data segments being ordered according to corresponding second content-related markers;

assigning, according to an assignment rule, each of the ordered content-related second data segments that are read out from the second data file with a corresponding one of the ordered content-related first data segments that are read out from the first data file; and

sequentially outputting, in a chronological sequence, each of the assigned content-related first data segments and the assigned content-related second data segments.

REMARKS

Favorable reconsideration of this application, in light of the preceding amendments and following remarks, is respectfully requested. Claim 22 is new. Claims 1-22 are pending in this application. No new matter has been added.

Specification

The Office Action includes an objection to the Abstract of the Disclosure. Specifically, the Examiner objects to the use of the phrase "in one embodiment". Applicants have amended the Abstract of the Disclosure as recommended. Accordingly, withdrawal of this objection is respectfully requested.

Examiner Interview

Applicants wish to thank the Examiner for the time spent on October 10, 2012 during a telephonic interview. Below is a brief summary of the matters discussed during the interview.

Applicants' Representative and the Examiner primarily discussed the outstanding art rejection made in the Final Office Action dated June 29, 2012, the differences between example embodiments and the cited art, and between Claim 1 and the cited art. Applicants' Representative presented the following proposed amendments to Claim 1.

> 1. (Proposed) A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:
>
> sequentially outputting, by a device for synchronizing content-related data, the first and second data segments according to their chronological sequence in such a way that each second data segment is output together with an associated first data segment on the basis of an assignment rule for assigning each second data segment to a first data segment;

wherein the assignment rule is formed in such a way that, for each second data segment, a first data segment is assigned by specification of a number, the number representing a position of the first data segment within a chronological sequence of the first data segments.

Applicants' Representative pointed out differences between proposed amended Claim 1 and the cited art. The Examiner stated that he believed the cited art disclosed the limitations of proposed amended Claim 1. Additionally, the Examiner presented a new reference, U.S. Pat. No. 7,099,848 ("*Bratton*"), which the Examiner believed disclosed the limitations of proposed amended Claim 1. No agreement was reached.

Furthermore, the Examiner suggested amending Claim 1 to include subject matter disclosed in ¶42 of Applicant's published patent application. The Examiner indicated that incorporating the subject matter disclosed in ¶42 would overcome the current rejection.

Moreover, the Examiner recommended that Applicants make minor amendments to the claims in an effort to avoid potential issues under 35 U.S.C. § 112, second paragraph. By way of this Amendment, Applicants have amended the claims, taking into account the Examiner's comments.

No other pertinent matters were discussed.

New Claim

New independent Claim 22 includes subject matter in line with the Examiner's suggestions during the interview. Applicants respectfully request allowance of Claim 22.

Rejections under 35 U.S.C. § 101

Claims 1-4, 7, 16, 18, and 20 stand rejected under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter. Applicants respectfully traverse this rejection for the reasons detailed below.

CLAIMS 1-4, 7, 16, 18, AND 20 ARE STATUTORY UNDER 35 U.S.C. § 101

At page 7, the Office Action alleges that Claim 1 does not satisfy the machine or transformation test, and therefore, Claim 1 is not statutory under 35 U.S.C. § 101. Applicants respectfully disagree.

In *Bilski v. Kappos*, 130 S. Ct. 3218, 561 US __, 177 L. Ed. 2d 792 (2010), the Supreme Court addressed the test for patent-eligible processes within the meaning of 35 U.S.C. § 101. The Supreme Court's decision in *Bilski* overruled the Court of Appeals for the Federal Circuit (CAFC) regarding the machine or transformation test being the sole test for determining statutory subject matter under 35 U.S.C. § 101. In overruling the CAFC, the Supreme Court stated:

> Section 101 specifies four independent categories of inventions or discoveries that are patent eligible: "process[es]," "machin[es]," "manufactur[es]," and "composition[s] of matter." "In choosing such expansive terms, . . . Congress plainly contemplated that the patent laws would be given wide scope," *Diamond* v. *Chakrabarty*, 447 U. S. 303, 308, in order to ensure that " 'ingenuity should receive a liberal encouragement,'" *id.*, at 308–309. **This Court's precedents provide three specific exceptions to §101's broad principles: "laws of nature, physical phenomena, and abstract ideas."** *Id.*, at 309.
>
> Emphasis added.

In *Bilski*, the Supreme Court also stated that the machine or transformation test "may be a useful and important clue or investigative tool" in determining statutory subject matter under § 101, but is not the sole test for patent eligibility. Thus, a claim may be directed to statutory subject matter without being tied to another statutory category or transforming underlying subject matter into another state or thing, so long as the

claim does not fall within the Supreme Court's three specific exceptions (i.e., laws of nature, physical phenonema, and abstract ideas).

Claim 1 is directed to a method or "process" for synchronizing content-related data segments within one or more data files. Therefore, Claim 1 falls under the "process" category of invention enumerated in § 101. Being that Claim 1 is a process, so long as Claim 1 does not fall within the Supreme Court's three specific exceptions (i.e., laws of nature, physical phenonema, and abstract ideas), the process should be patent eligible.

Initially, Claim 1 is not a law of nature or a physical phenomenon. As mentioned above, Claim 1 is directed to a method for synchronizing content-related data segments within one or more data files.

Moreover, as discussed in more detail below, Applicant submits that Claim 1 is also not an abstract idea.

On December 8, 2010, the Federal Circuit decided *Research Corp. Technologies, Inc. v. Microsoft Corp.*, Fed. Cir., No. 2010-1037, 12/8/10, in which the Federal Circuit provided guidance with regard to method claims and abstract ideas.

> Indeed, the Supreme Court in *Bilski* refocused this court's inquiry into processes on the question of whether the subject matter of the invention is abstract. **The Supreme Court did not presume to provide a rigid formula or definition for abstractness**. *See, e.g., Bilski*, 130 S.Ct. at 3236 (The Court has "never provide[d] a satisfying account of what constitutes an unpatentable abstract idea." (Stevens, J., concurring)). Instead, the Supreme Court invited this court to develop "other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text." *Id.* at 3231.
>
> With that guidance, **this court also will not presume to define "abstract"** beyond the recognition that this disqualifying characteristic should **exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act.** In that context, this court perceives nothing abstract in the subject matter of the processes claimed in the '310 and '228 patents. The '310 and '228 patents claim methods (statutory "processes") for rendering a halftone image of a digital image by comparing, pixel by

> pixel, the digital image against a blue noise mask. **The invention presents functional and palpable applications in the field of computer technology. These inventions address "a need in the art for a method of and apparatus for the halftone rendering of gray scale images in which a digital data processor is utilized in a simple and precise manner to accomplish the halftone rendering." '310 patent col.3 ll.33-40. The fact that some claims in the '310 and '228 patents require a "high contrast film," "a film printer," "a memory," and "printer and display devices" also confirm this court's holding that the invention is not abstract. Indeed, this court notes that inventions with specific applications or improvements to technologies in the marketplace are not likely to be so abstract that they override the statutory language and framework of the Patent Act.**[1]
>
> Emphasis added.

Claim 1 is not an abstract idea at least because Claim 1 does not exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act. Furthermore, Claim 1 presents functional and palpable applications in the field of, for example, data processing, such as in synchronizing content-related data segments within one or more data files. Indeed, the method of Claim 1 allows content-related data streams to be encoded without requiring the content-related data streams to be encoded as a function of image size or based on performance capability of a specific user device. Thus, the method of Claim 1 is analogous to the method at issue in *Research Corp. Technologies, Inc.* in that the claim presents functional and palpable applications in a given field of technology (e.g., data processing). Therefore, the process of Claim 1 is not an abstract idea.

Because the process of Claim 1 does not fall within one of the Supreme Court's three specific exceptions, the method of Claim 1 is patent eligible under § 101. Additionally, Claims 2-4, 7, 16, 18, and 20 are patent eligible at least by virtue of their dependency from independent Claim 1.

---

[1] 627 F.3d at 868.

For at least the reasons discussed above, reconsideration and withdrawal of the rejection of Claims 1-4, 7, 16, 18, and 20 under 35 U.S.C. § 101 is respectfully requested.

REBUTTAL TO RESPONSE TO ARGUMENTS SECTION IN THE FINAL OFFICE ACTION

At pages 3-6 of the Final Office Action, the Examiner responds to Applicants' arguments made in the Response to the Non-Final Office Action dated April 11, 2012. The Examiner appears to assert that Claim 1 is directed to an abstract idea because Claim 1 does not pass the machine-or-transformation test. The Examiner argues on pages 5-6 of the Final Office Action as follows:

> Examiner respect fully disagrees, the instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter. The process including steps of "outputting ...." **** is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent. ... Performing the above process can be done by a human; it does not require any transformation and machine.

Applicants submit that the Examiner's assertion is contrary to well established Supreme Court precedent. Applicants note that the Office Action at page 7 relies on the Federal Circuit's decision of *In re Bilski*, 88 USPQ2d 1385 (2008) to support the proposition that machine-or-transformation test is the sole test for determining statutory subject matter under 35 U.S.C. § 101.[2] As discussed at length above, however, **the Supreme Court's decision in *Bilski v. Kappos* overruled the Court of Appeals for the Federal Circuit (CAFC) regarding the machine or transformation test being the sole test for determining statutory subject matter under 35 U.S.C. § 101.** Accordingly, Applicants respectfully submit that the Examiner's reliance on the machine-or-transformation test as the sole factor in determining the subject matter eligibility of Claims 1-4, 7, 16, 18, and 20 under 35 U.S.C. § 101 is erroneous.

2 Applicants also note that, at page 3, the Non-Final Office Action dated March 7, 2012 relies on *In Re Bilski*, 88 USPQ2d 1385 (2008) to support the proposition that machine-or-transformation test being the sole test for determining statutory subject matter under 35 U.S.C. § 101.

Furthermore, with respect to Claim 1 being directed to an abstract idea, assuming *arguendo* that Claim 1 does not pass the machine-or-transformation test (which Applicants do not admit), the Examiner has cited no rule or law stating that any claim which fails the machine-or-transformation test is **necessarily directed to an abstract idea**. The Examiner has provided no support for the assertion that Claim 1 is directed to an abstract idea. Therefore, the Examiner has not shown that Claim 1 is directed to non-statutory subject matter under 35 U.S.C. § 101.

For at least this additional reason, reconsideration and withdrawal of the rejection of Claims 1-4, 7, 16, 18, and 20 under 35 U.S.C. § 101 is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 1-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,598,352 ("*Rosenau*") in view of U.S. Pat. No. 5,661,523 ("*Yamane*"). Applicants respectfully traverse this rejection for the reasons detailed below.

Rosenau and *Yamane*, alone or combined (assuming they could be properly combined, which Applicants do not admit), do not disclose or suggest "sequentially outputting the content-related first data segments and the content-related second data segments... **on the basis of an assignment rule** for assigning each one of the content-related second data segments to one of the content-related first data segments", as recited in amended Claim 1 (emphasis added).

In particular, the Office Action at page 10 asserts that *Rosenau* discloses an assignment rule for resynchronizing the video data and audio data based on a sequence number. Applicants respectfully disagree.

Rosenau discloses a system that synchronizes a video display with audio playback. The synchronization is done by utilizing a system time clock. The

synchronization is based on the timing information parsed from a data stream, which is loaded into a system time clock counter and incremented according to a pre-determined clock frequency. *Rosenau,* col. 3, l.57-col. 4, l. 7; col. 4, l. 3-7; col. 5, l. 8-10, 37-40, 65-66; col. 6, l. 24-25.

Additionally, *Rosenau* discloses that over time video data may lag the audio data. If a video frame leads an audio data by one frame, then the video frame may be skipped in order to resynchronize the video data frame with the audio data. Moreover, if the audio and video are out of sync by more than one frame, then it may be desirable to skip or repeat multiple frames. *Rosenau* col. 6, l. 25-51.

However, the skipping and/or repeating of frames for resynchronization is not "an **assignment rule** for assigning each one of the content-related second data segments to one of the content-related first data segments", as required by Claim 1 (emphasis added). Instead, *Rosenau* merely discloses that when outputted audio data and video data fall out of sync, they may be resynchronized by skipping one or more video frames.

Furthermore, the Examiner does not use *Yamane* to teach or suggest the features as discussed above with respect to Claim 1, nor does *Yamane* provide such teachings. Accordingly, *Rosenau* and *Yamane,* alone or combined, do not disclose or suggest "sequentially outputting the content-related first data segments and the content-related second data segments... **on the basis of an assignment rule** for assigning each one of the content-related second data segments to one of the content-related first data segments", as recited in amended Claim 1 (emphasis added).

Claim 9 is a separate independent claim from Claim 1, wherein Claim 9 contains its own individual limitations. Claim 9 should be interpreted solely based upon limitations set forth therein. However, Claim 9 is patentable for at least reasons somewhat similar to those set forth above regarding Claim 1. Additionally, Claims 2-8

and 9-21 are allowable at least by virtue of their dependency from allowable independent Claims 1 and 9. For at least these reasons, reconsideration and withdrawal of the rejection of Claims 1-21 under 35 U.S.C. § 103(a) is respectfully requested.

CONCLUSION

In view of the above remarks and amendments, the Applicants respectfully submit that each of the pending objections and rejections has been addressed and overcome, placing the present application in condition for allowance. A notice to that effect is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned.

Pursuant to 37 C.F.R. §1.17 and 1.136(a), Applicant hereby petitions for a two (2) month extension of time for filing a reply to the outstanding Office Action and submit the required $570.00 extension fee herewith.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By _____
Donald J. Daley, Reg. No. 34,313

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DJD/AMW/RNS/kem

ABSTRACT OF THE DISCLOSURE

The synchronization of data segments is particularly necessary for the use of small screens. A method and a device are disclosed for synchronizing content-dependent first data segments of a first data file and content-dependent second data segments of a second data file, the first and second data segments being respectively output in sequence according to their chronological order in such a way that based on a predeterminable assignment rule for the first and second data segments, each second data segment is output together with a corresponding first data segment.

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/918,276	Filing Date 01/21/2009	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			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 $250 ($125 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			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	11/29/2012	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 22	Minus	** 21	= 1	X $ =		OR	X $62=	62
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $ =		OR	X $250=	0
	☐ 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	62

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	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 number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DORIS KING/

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.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US	4022

30596 7590 10/17/2012

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RESTON, VA 20195

EXAMINER	
SHOLEMAN, ABU S	

ART UNIT	PAPER NUMBER
2437	

NOTIFICATION DATE	DELIVERY MODE
10/17/2012	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):

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Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	11/918,276	HELLWAGNER ET AL.	
	Examiner	Art Unit	
	ABU SHOLEMAN	2437	

All participants (applicant, applicant's representative, PTO personnel):

(1) *ABU SHOLEMAN*.

(3) *Ryan Strauss*.

(2) *Luu Pham*.

(4)_____.

Date of Interview: *10 October 2012*.

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: *claim 1*.

Identification of prior art discussed: *Rosenau et al pat # 5598352*.

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...)

See Continuation Sheet.

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

/Luu Pham/ Primary Examiner, Art Unit 2437	

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.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments:

The following topics have been discussed during the interview:

The Applicants further explained the claimed invention and pointed out differences between prior arts and the claimed limitations.

The Examiner pointed out his position that Rosenau does disclose the claimed limitations recited in claim 1 "wherein the assignment rule is formed in such a way that, for each second data segment, a first data segment is assigned by specification of a number, the number representing a position of the first data segment within a chronological sequence of the first data segments" based on the previously cited portion of the prior art Rosenau. Examiner also provided the newly prior art Bratton patent # 7099848 that also discloses the above claimed amendment. Finally, It is suggested that independent claims be further amended details in specification (PG-PUB par 0042) be incorporated to distinguish the claim invention over prior art of record.

The Examiner suggested that the claim be further amended to avoid issues with 35 U.S.C. 112, second paragraph as it is unclear as to what first data segment 'the first data segment' recited in line 12 refers to (i.e., associated first data segment [line 7], a first data segment [line 8], or a first data segment [line 10]).

The Applicant will further amend the claims to clarify the invention and submit a formal response for further consideration and examination.

No agreement with respect to the claim was reached.

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Applicant Initiated Interview Request Form

Application No.: 11/918,276 First Named Applicant: Hermann Hellwagner

Examiner: Abu Sholeman Art Unit: 2437 Status of Application: Final

Tentative Participants:

(1) **Examiner Sholeman, Abu S** (2) **Ryan Strauss (Reg. No. 68,392)**

(3) _____ (4) _____

Proposed Date of Interview: **Sept. 26, 2012** **Proposed Time:** **2:00** (☐AM ☒PM)

Type of Interview Requested:

(1) ☒ **Telephonic** (2) ☐ **Personal** (3) ☐ **Video Conference**

Exhibit To Be Shown or Demonstrated: ☐ **YES** ☒ **NO**

If yes, provide brief description: _____

Issues To Be Discussed

Issue (Rej., Obj., etc.)	Claims/ figures	Prior Art	Discussed	Agreed	Not Agreed
(1) Rejection	1-21	Rosenau, Yamane	☐	☐	☐
(2) _____	_____	_____	☐	☐	☐
(3) _____	_____	_____	☐	☐	☐
(4) _____	_____	_____	☐	☐	☐

☐ Continuation Sheet Attached

Brief Description of Arguments to be Presented:

See attached Sheets.

_____

_____

An interview was conducted on the above-identified application on _____.

NOTE:
This form should be completed by application and submitted to the examiner in advance of the interview (see MPEP § 713.01)
This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

_____ _____

(Applicant/Applicant's Representative Signature) (Examiner/SPE Signature)

1. Applicants would like to discuss the following proposed amendment to claim 1.

1. (Currently Amended) A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:

sequentially outputting, by a device for synchronizing content-related data, the first and second data segments according to their chronological sequence in such a way that each second data segment is output together with an associated first data segment on the basis of an assignment rule for assigning each second data segment to a first data segment;

wherein the assignment rule is formed in such a way that, for each second data segment, a first data segment is assigned by specification of a number, the number representing a position of the first data segment within a chronological sequence of the first data segments.

2. Applicants would also appreciate the Examiner's consideration of the following discussion prior to the interview. Applicants would like to discuss these arguments during the interview.

Rosenau discloses a system that synchronizes a video display with audio playback. The synchronization is done by utilizing a system time clock, and is based on the timing information parsed from a data stream. The parsed timing information is loaded into a system time clock counter and incremented according to a pre-determined clock frequency. Additionally, *Rosenau* discloses that if a video frame leads an audio frame by one frame, the video frame may be skipped in order to resynchronize the video frame with the audio frame. Moreover, if the audio and video are out of sync by more than one frame, multiple video frames may be skipped or repeated. *See Rosenau,* col. 3, l.57-col. 4, l. 7; col. 4, l. 3-7; col. 5, l. 8-10, 37-40, 65-66; col. 6, l. 24-51.

The skipping and/or repeating of frames for resynchronization is not an assignment rule that is formed in such a way that, for each second data segment, a first data segment is assigned by specification of a number, as required by amended Claim 1. Instead, *Rosenau* discloses that when outputted audio data and video data

PAGE 3/4 * RCVD AT 9/25/2012 3:01:08 PM [Eastern Daylight Time] * SVR:W-PTOFAX-002/16 * DNIS:2738300 * CSID:703-668-8200 * DURATION (mm-ss):02-36

fall out of sync, they may be resynchronized by skipping one or more video frames.

Moreover, *Yamane* fails to remedy the defects of *Rosenau* as discussed above. *Yamane* discloses that a frame display sequence may be in a chronological order prior to being compressed. *Yamane* discloses that time based correlations may be used to compress moving picture frames. However, not only is *Yamane* silent regarding how the display frames are output, *Yamane* is also silent regarding how moving picture frames are assigned to other data segments when being output. *See Yamane*, col. 1, l. 23-25, 31-33, 53-54.

3. Additionally, Applicants would appreciate any suggestions the Examiner might have for moving prosecution of this application forward.

PAGE 4/4 * RCVD AT 9/25/2012 3:01:08 PM [Eastern Daylight Time] * SVR:W-PTOFAX-002/16 * DNIS:2738300 * CSID:703-668-8200 * DURATION (mm-ss):02-36

HARNESS DICKEY

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DATE:	September 25, 2012
NO. OF PAGES (INCLUDING THIS PAGE):	4

FOR:	Abu S Sholeman		ORIGINAL WILL FOLLOW BY: ☐ REGULAR MAIL ☐ OVERNIGHT MAIL ☐ COURIER ☒ WILL NOT FOLLOW
COMPANY:	United States Patent and Trademark Office		
FAX NO.:	571 273 8300	PHONE: 571 270 7314	

FROM:	Ryan Strauss

Please let us know by phone or fax if you do not receive any of these pages.

COMMENTS:

Re: U.S. Application No. 11/918,276 (Atty. Dkt. 32860-001352/US)

Examiner Sholeman,

Attached is an agenda for a telephonic interview scheduled for September 26, 2012 at 2PM. If you have any questions, please feel free to contact me at 703.668.8072.

-Ryan Strauss

NOTICE

The information contained in this fax transmission is intended only for the individual to whom or entity to which it is addressed. It may also contain privileged, confidential, attorney work product or trade secret information which is protected by law. If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering the message to the addressee, the reader is hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by telephone and return the original message to us at the address above via the U.S. Postal Service. We will reimburse you for any reasonable expense (including postage) for the return of the original message.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US	4022

30596 7590 06/29/2012

HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

EXAMINER	
SHOLEMAN, ABU S	

ART UNIT	PAPER NUMBER
2437	

NOTIFICATION DATE	DELIVERY MODE
06/29/2012	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):

dcmailroom@hdp.com
siemensgroup@hdp.com
pshaddin@hdp.com

Office Action Summary	Application No.	Applicant(s)	
	11/918,276	HELLWAGNER ET AL.	
	Examiner	Art Unit	
	ABU SHOLEMAN	2437	

-- 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* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 *04/11/2012*.

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) *1-21* 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) *1-21* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

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).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is the responsive to the communication filed on 04/11/2012. Claims 1-21 are pending in this application.

Response to Arguments

2. Applicant argued (remark page 5) that he specification is objected to. Specifically, the Examiner appears to allege that the abstract of the disclosure does not meet statutory requirements, and the Examiner appears to object to the use of the phrase "in one embodiment." Applicants respectfully submit that the Examiner has not cited any law or other authority that suggests that the phrase "in one embodiment" must not be used in an Abstract of the Disclosure. Applicants respectfully submit that the Examiner withdraw the objection or cite authority indicating that the abstract of the disclosure does not meet requirements.

3. Examiner respectfully disagrees. MPEP said 608.01(b) Abstract of the Disclosure [R-7] - 600 Parts, Form, and Content of Application, 608.01(b) Abstract of the Disclosure [R-7] The abstract must commence on a separate sheet, preferably following the claims, under the heading "Abstract" or "Abstract of the Disclosure." The sheet or sheets presenting the **abstract may not include other parts of the application**.

This abstract recites “ in one embodiment ". The "in one embodiment" is refereeing to the other parts of the application.

4. Applicant argued (remarks , page 6-8) that Claims 1-4 and 7 are rejected under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter. The Examiner alleges that the claims are "neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter...Therefore, the claimed invention is directed to non-statutory subject matter." Applicants respectfully disagree. The recent decision by the Supreme Court in Bilski v. Kappos, 130 S. Ct. 3218, 177 L. Ed. 2d 792 (2010) addresses the test for patent-eligible processes within the meaning of 35 U.S.C. § 101. The Supreme Court's decision in Bilski overruled the Court of Appeals for the Federal CirCuit (CAFC) regarding the machine or transformation test being the sole test for determining statutory subject matter under 35 U.S.C. § 101. In overruling the CAFC, the Supreme Court stated: Section 101 specifies four independent categories of inventions or discoveries that are patent eligible: "process[es]," "machin[es]," "manufactur[es]," and "composition[s] of matter." "In choosing such expansive terms, . . . Congress plainly contemplated that the patent laws would be given wide scope," Diamond v. Chakrabarty, 447 U. S. 303, 308, in order to ensure that " 'ingenuity should receive a liberal encouragement," id., at 308-309. This Court's precedents provide three specific exceptions to §101's broad principles: "laws of nature, physical phenomena, and abstract ideas." Id., at 309. The Examiner asserts a statutory process under 35 U.S.C. § 101 must be (1) tied to a particular machine, or (2) transform underlying subject matter.

However, the decision in Bilski overruled the Court of Appeals for the Federal Circuit (CAFC) regarding the machine or transformation test being the sole test for determining statutory subject matter under 35 U.S.C. § 101. Claim 1 is directed to a "process" for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file. Thus, claim 1 fails under the "process" category of invention enumerated in § 101. Being that claim 1 is a process, so long as claim 1 does not fall within the Supreme Court's three specific exceptions (i.e., laws of nature, physical phenomena, and abstract ideas), the process is patent eligible. Initially, claim 1 is clearly not a law of nature or a physical phenomenon. Indeed, as the Examiner correctly notes, claim 1 is directed to a method. Moreover, as discussed in more detail below, Applicants submit that claim 1 is also not an abstract idea. On December 8, 2010, the Federal Circuit decided Research Corp. Technologies, Inc. v. Microsoft Corp., 627 F.3d 859, in which the Federal Circuit provided guidance with regard to method claims and abstract ideas. Indeed, the Supreme Court in Bilski refocused this court's inquiry into processes on the question of whether the subject matter of the invention is abstract. The Supreme Court did not presume to provide a rigid formula or definition for abstractness. See, e.g., Bilski, 130 S.Ct. at 3236 (The Court has "never provide[d] a satisfying account of what constitutes an unpatentable abstract idea." (Stevens, J., concurring)). Instead, the Supreme Court invited this court to develop "other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text." Id. at 3231. With that guidance, this court also will not presume to define "abstract" beyond the recognition that this disqualifying characteristic

should exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act.I Emphasis added. Claim 1 is not an abstract idea at least because the claim does not exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act. Further, claim 1 presents functional and palpable applications in the field of, for example, television and television content provisioning. , Indeed, the method of claim 1 provides the ability to synchronize content-related television data streams. Thus, the method of claim 1 is analogous to the method at issue in Research Corp. Technologies, Inc. in that the claim presents functional and palpable applications in a given field of technology. Because the process of claim 1 does not fall within one of the Supreme Court's three specific exceptions, the method of claim 1 is patent eligible under § 101. Claims 2-4 and 7 include patent-eligible subject matter at least by virtue of their dependency from claim 1. Withdrawal of this rejection is respectfully requested.

Examiner respect fully disagrees, the instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter. The process claimed including steps of “outputting ….” **** is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent. For example, let say, we have a folder of paper with a page number on it wherein the each page has some data written. I can pull

out the page number 2 and page number 6 either sequentially or randomly from the folder and then, combine those pages into one page by using any addictive such as glue or staple it together. Performing the above process can be done by human; it does not require any transformation and machine.

5. Applicant's arguments, see pages 8-10, filed on 04/11/2012, with respect to the rejection(s) of claim(s) 1-17 under 35 U.S.C 103(a) 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 Rosenau et all # 5598352 in view of Yamane # 5661523.

Specification

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," **" in one embodiment** ", etc.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-4 and 7, 16, 18, 20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claim 1, the claim invention is not directed to eligible subject matter under 35 U.S.C. § 101 in view of In Re Bilski, 88 USPQ2d 1385. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing (See In Re Bilski, 88 USPQ2d 1385; see also Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 473 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780, 787-88 (1976)); The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter. The method claimed including steps of " outputting ...." is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent; Therefore, the claimed invention is directed to non-statutory subject matter.

Dependent claims 2-4 and 7, 16, 18, and 20 are rejected under the same analysis as set forth above.

9. As per claim 9, a synchronization module has a corresponding structure in the PG-PUB par 0035, the synchronization information SI can assume two different forms. [0036] a) Thus, for example, the second data segment S2 is assigned a first data segment S1 and a further assignment is carried out after a number A of output, sequentially succeeding first data segments S1. If the number A=2, this means that in each case the second first data segment S1 is to be output with the second data segment S2. This constellation is illustrated in FIG. 1. The first and second data segments S1, S2 are output in their chronological sequence R1, R2 by the synchronization module MS at the latter's data output G. First, the respective first content-related first and second data segments S1, S2 with the numeral 0 are forwarded. Since the number is A=2, the next first data segment S1 with the numeral 1 is now output

Claim Rejections - 35 USC § 103

10. 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.

11. Claims 1- 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenau et al patent 5598352 in view of Yamane patent number 5661523 hereinafter Yamane.

As per claim 1, Rosenau et al discloses a method for synchronizing content-related first data segments of a first data file and content -related second data segments of a second data file (Fig.1a, col 5, liens 20-30, video data synchronized with the audio data), the method comprising:

Sequentially outputting the first and second data segments according to their sequence in such a way that each second data segment is output together with an associated first data segment on the basis of an assignment rule for assigning each second data segment to a first data segment (col 6, lines 1-35, fig.3b-3c, FIGS. 3B and 3C illustrate how the video display may be resynchronized to the audio playback by the present invention. Referring to FIG. 3B, the video display over time may be illustrated by the sequence of video data frame(O) 320A to video data frame(N+1) 320(N+1) (i.e. sequence output). Audio playback over time may be illustrated by the sequence of audio data(O) 330A to audio data(N+1) 330(N+1) (i.e. sequence output). FIG. 3C is similarly illustrated. In FIG. 3B the video data frame leads the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be repeated in order to allow the audio to catch up. Assume initially that

video data frame(O) 320A and audio data(O) 330A are in complete synchronization. Over time video data frame(K) 320K leads audio data(K) 330K. Once a lead threshold--such as one or one half frame--is reached, the A/V sync circuit causes the video frame (or half frame as the case may be) to be repeated. In FIG. 3B a one frame lead threshold may be reached wherein video data frame(M) 320M leads audio data(M) 330M by one frame such that next video data frame(N) 320N may be repeated on the video display as illustrated by repeat video frame 322. Thus video data frame(N) 320N may be resynchronized with audio data(N) 330N. Referring to FIG. 3C, **the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number)**. Over time video data frame(J) 321J lags audio data(j) 331J. Once a lag threshold--such as one or one half frame--is reached, the A/V sync circuit causes a video frame (or half frame as the case may be) to be skipped. In FIG. 3C a one frame lag threshold may be reached wherein video data frame(L) 320L leads audio data(N) 331N by one frame such that the next video data frame(M) (not shown) may be skipped on the video display as illustrated by skipped video frame 323. In place of video data frame(M) video data frame(N) 321N may be displayed when audio data(N) 331N may be played. Thus, video data frame(N) 321N may be resynchronized with audio data(N) 331N.

).

Rosenau does not explicitly disclose chronological sequence.

However, Yamane discloses chronological sequence (col 1, lines 50-55, I, B, P frames are displaying in the chronological order).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 2, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the assignment rule is formed in such a way that a second data segment is assigned to precisely one first data segment and a further assignment is carried out after a number of sequentially succeeding first data segments (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data

and audio data based on the sequence number), Yamane, col 1, lines 56-65, rearranged in the order processed) .

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 3, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the assignment rule is formed in such a way that for each second data segment a first data segment is assigned by specification of a number, the number representing a position of the first data segment within a chronological sequence of the first data segments (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number), Yamane, col 1, lines 54-55, chronological order for the frames).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 4, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein content-related first data segments and content related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 5, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein media data are represented by at least one of the first and second data file (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 6, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein a least one of the first and second data segments are generated on the basis of at least one of the generic bit stream syntax description (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization) and the extensible stylesheet language transformation (well know).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 7, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses further comprising: determining, based upon a content related marker which first and second data segments are to be output first in time (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization, col 1, liens 50-55, displaying frames chronological order).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 8, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein at least one of a scene change in an image sequence and a change of speaker in a speech sequence is identified by way of the content related marker (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped (i.e. scene change). Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization, Yamane, col 1, liens 50-55, displaying frames chronological order).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 10, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein content-related first data segments and content –related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e.

assignment rule for resynchronizing the video data and audio data based on the sequence number)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 11, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein content-related first data segments and content-related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of

resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 12, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the media data include at least one of video and audio data (Rosenau, col 5, lines 25-30, synchronized video and audio data).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 13, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein at least one of media data and metadata are represented by at least one of the first and second data file (Rosenau, col 5, lines 25-30, synchronized video and audio data).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau,

based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 14, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the metadata include metadata encoded according to the XML standard (Rosenau, col 5, liens 35-45, MPEG audio/ video decoder).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 15, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the media data include at least one of video and audio data (Rosenau, col 2, lines 5-20, MPEG and JPEG data).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau,

based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 16, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the assignment rule is predefinable (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number))

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 9, this claim is directed to a device and contains limitations that are substantially similar to those recited in claim 1 above, and accordingly is rejected for similar reasons.

As per claim 17, this claim is directed to a device and contains limitations that are substantially similar to those recited in claim 16 above, and accordingly is rejected for similar reasons.

As per claim 18, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the assignment rule is maintained in a file separate from the first data file and the second data file (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number))

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 19, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the assignment rule is maintained in a file separate from the first data file and the second data file (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the

video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number))

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 20, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the assignment rule is not based on a timestamp (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number), resynchronizing based on the sequence number of the frame)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau,

based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 21, Rosenau in view of Yamane discloses all the limitation set forth above, the combination also discloses wherein the assignment rule is not based on a timestamp (Rosenau, Referring to FIG. 3C, the video data frame lags the audio data such that in order to resynchronize the video data frame with the audio data, a video data frame may be skipped. Initially, video data frame(O) 321A and audio data(O) 331A are in complete synchronization (i.e. assignment rule for resynchronizing the video data and audio data based on the sequence number), resynchronizing based on the sequence number of the frame)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of resynchronizing the video and audio data based on the frame number of Rosenau, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

Conclusion

12. 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.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abu Sholeman whose telephone number is (571)270-73144. The examiner can normally be reached on Mon-Thurs 7:30 am-5:00 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Shiferaw can be reached on (571)-272-38677. 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.

/ABU SHOLEMAN/
Examiner, Art Unit 2437
/Eleni A Shiferaw/
Supervisory Patent Examiner, Art Unit 2437

Notice of References Cited	Application/Control No. 11/918,276	Applicant(s)/Patent Under Reexamination HELLWAGNER ET AL.	
	Examiner ABU SHOLEMAN	Art Unit 2437	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,598,352	01-1997	Rosenau et al.	715/203
*	B	US-5,661,523	08-1997	Yamane, Yasuhiko	348/390.1
	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	Art Unit
	ABU SHOLEMAN	2437

SEARCHED

Class	Subclass	Date	Examiner
375	240.28	2/27/2012	/A.S./
375	all subclasses with keyword	2/27/2012	/A.S./
375	all subclassse with keyword	6/14/2012	/A.S./

SEARCH NOTES

Search Notes	Date	Examiner
Inventor search in PALM	2/27/2012	/A.S./
classes and concept and keyword search in EAST all databases	2/27/2012 and 03/01/2012	/A.S./
Plus search	2/27/2012	/A.S./
classes and concept and key searches in EAST all databases	6/14/2012 and 6/15/2012 and 6/20/2012	/A.S./
consulted with 375 PE Mr. Philippe and 357 PE Mr. Senfi (searches help)	6/14/2012	/A.S./
consulted with 375 PE Andy Rao for searches help too	6/15/2012	/A.S./
STIC_Searhces	6/19/2012	/A.S./
IEEE searches	6/20/2012	/A.S./

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S2	565	375/240.28.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:50
S3	15	375/240.28.ccls. and (sequentially sequential sequence) with (synchronized synchronizing synchronize) with (frame picture metadata)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:53
S4	0	375/240.28.ccls. and (chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S5	38	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S6	1	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize) with (frame picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:25
S7	8	(chronological near4 (sequentially sequential sequence)) with (frame) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:30
S8	3	(chronological near4 (sequentially sequential sequence)) with (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S9	6	(chronological near4 (sequentially	US-PGPUB;	OR	ON	2012/02/27

		sequential sequence)) same (packet) same(synchronized synchronizing synchronize)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			10:33
S10	19742	375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:34
S11	0	S10 and (chronological near4 (sequentially sequential sequence)) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S12	25	S10 and (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S13	1	(output outputting outputted) near5 (frame picture) with (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S14	6	(output outputting outputted) near5 (frame picture) same (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S15	7618	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	USPAT	OR	OFF	2012/02/27 11:01
S16	21298	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S17	846	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S18	7	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:03

S19	13	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) same (synchroniz$4 adjust$4 set$4 integrat$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:09
S20	37470	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:17
S21	24	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) near6 (chronological$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:18
S31	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:37
S33	1	11/918276.app. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:38
S34	1	11/918276.app. and (synchroniz$4 module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S35	1	11/918276.app. and (module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S36	51	("5319395" "6249824" "5784366" "5909435" "5877742" "5303393" "5365516" "5526357" "5764691" "5894494" "5999562" "6072185" "6237122" "5507024" "5805155" "5848072" "6181609" "4455483" "5177796" "5274508" "5321699" "5386422" "5388074" "5469444" "5481531" "5506965" "5684774" "5841717" "5917429" "6178121" "6243348" "4415792" "4451108" "4502082" "4796260" "4972474" "5280584" "5377102" "5382508" "5440686" "5477492" "5511212" "5537945" "5561671" "5583975" "5657398" "5684693" "5724241" "5742509" "5831903").pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:57
S37	1	"1494430"	EPO	OR	ON	2012/02/27

						12:00
S38	1	(outputting) near6 (video picture segment) with (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:09
S39	1	(outputting) near6 (video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S40	1152	(outputting) near6 (video picture segment) same (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S41	525	(outputting) near6 (video picture segment) near6 (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S42	123	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S43	19	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:11
S44	348	(video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S45	7	(video picture segment) same (chronological near4 sequence)and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S46	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/02/29 10:14

			EPO; JPO; DERWENT; IBM_TDB			
S47	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:52
S48	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:37
S49	411	348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:41
S50	0	348/512.ccls. and (synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S51	332	348/512.ccls. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:42
S52	1	348/512.ccls. and (synchroniz$4) same (assignment near2 rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S53	4	348/512.ccls. and (synchroniz$4) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:43
S54	80	(synchroniz$4) same (signaling near3 number)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:44
S55	9	(synchroniz$4) same (signaling near3 number) and (@ad<"20050412" and	US-PGPUB; USPAT;	OR	OFF	2012/06/14 12:45

		@rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S56	34	(synchroniz$4) same (video near2 file) same (audio near2 file) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S57	0	(synchroniz$4) same (video near2 file) same (audio near2 file) same (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S58	5	(synchroniz$4) same (video near2 file) same (audio near2 file) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 12:58
S59	17	(synchroniz$4) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S60	31	(synchroniz$6) same (video near2 (frame packet)) same (audio near2 (packet frame)) and (rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:01
S61	35	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (number) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:10
S62	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S63	0	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11

S64	1	(synchroniz$6) same (video near2 (frame)) same (audio near2 (frame)) and (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:11
S65	37	(synchroniz$6) same (chronological$4 near3 (number order)) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:13
S66	0	(synchroniz$6) same (chronological$4 near3 (number order)) same (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S67	14	(synchroniz$6) same (chronological$4 near3 (number order)) and (frame) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:14
S68	3162	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S69	139	(synchroniz$6) with (frame packet) with (sequentially sequence order number$3) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:38
S70	79	(synchroniz$6) with (frame packet) with (sequentially sequence order) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:39
S71	62	(synchroniz$6) with (frame packet) with (sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:44
S72	4223	(sequentially sequence) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2012/06/14 13:54

			DERWENT; IBM_TDB			
S73	894	(sequentially) same (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S74	497	(sequentially) with (audio) same (video) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:54
S75	39	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S76	47	(sequentially) with (audio) same (video) same (multiplex multi-plex synchroniz$6) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 13:55
S77	2	"5661523".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:09
S78	1509	(multiplex$4 multi-plex$4 synchroniz$6) with (frame packet) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S79	1098	(multiplex$4 multi-plex$4 synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:11
S80	934	(synchroniz$6) with (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S81	645	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and	US-PGPUB; USPAT; USOCR;	OR	OFF	2012/06/14 14:12

		@rlad<"20050412")	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S82	265	(synchroniz$6) near6 (frame) with (chronological sequence)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:12
S83	0	(synchroniz$6) near6 (frame) with (chronological)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S84	158	(synchroniz$6) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:13
S85	50	(assignment assign$4) near6 (frame) with (chronological order)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 14:17
S86	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412") and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S87	0	(synchroniz$6) near6 (frame) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S88	0	(synchroniz$6) with (combin$3 near2 rule)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S89	0	(synchroniz$6) with (combin$3 near2 rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:23
S90	5	(synchroniz$6) with (combin$3 near2	US-PGPUB;	OR	OFF	2012/06/14

		rule)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			15:24
S91	45	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S92	19	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 15:25
S93	20	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:25
S94	8	(synchroniz$6) same ((combin$3 near2 rule) or (assignment near2 rule)) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:26
S95	0	((combin$3 near2 rule) or (assignment near2 rule)) with (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S96	4	((combin$3 near2 rule) or (assignment near2 rule)) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:31
S97	4	(combin$3 near2 rule) same (synchroniz$4) and (video) and (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/14 15:33
S99	0	(combin$3 near2 rule) with (video) with (audio) same (synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/06/14 15:34

			IBM_TDB			
S100	1	"1408505"	EPO	OR	ON	2012/06/14 15:43
S101	3	"20010014210"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:01
S102	2	"5777612".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:04
S103	0	(combin$4 near2 rule) same (synchronizing synchronized) near6 (frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S104	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:47
S105	0	(combin$4 near2 rule) same (synchronizing synchronized) with (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S106	2	(combin$4 near2 rule) same (synchronizing synchronized) same (frame signal packet block pixel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:48
S107	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/500.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S108	1	(combin$4 near2 rule) same (synchronizing synchronized) and 348/512.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S109	0	(combin$4 near2 rule) same (	US-PGPUB;	OR	OFF	2012/06/14

		synchronizing synchronized) and 348/521.ccls.	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			16:49
S110	12	(combin$4 near2 rule) same (synchronizing synchronized)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:49
S111	818	(synchronizing synchronized) with (frame) with (audio) with (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S112	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S113	0	(synchronizing synchronized) with (frame) with (audio) with (video) same (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S115	69	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:53
S116	22	(synchronizing synchronized) with (frame) with (audio) with (video) and (rule policy) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/14 16:54
S117	108	"348"/$.ccls. and (multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:38
S118	472	(multiview multi-view) near3 (encod$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2012/06/15 14:38

			IBM_TDB			
S119	2	(multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:39
S121	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:40
S122	2	"348"/$.ccls. and (multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S123	2	(multiview multi-view) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S124	2	(multiview$3 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S125	2	(multiview$4 multi-view$4) near3 (encod$4 encrypt$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:41
S126	116	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:42
S127	2	(multiview multi-view) near3 (encod$4) and (audio sound) and (video picture) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:43
S128	23113	(multiplex$4 or combin$4) same (frame image picture pixel) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/06/15 14:54

			EPO; JPO; DERWENT; IBM_TDB			
S129	13098	(multiplex$4 or combin$4) with (frame image picture) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:54
S130	2896	(multiplex$4 or combin$4) with (frame) same (audio sound) same (video picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S131	2568	(multiplex$4 or combin$4) with (frame) same (audio) same (video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S132	574	(multiplex$4 or combin$4) with (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:55
S133	335	(multiplex$4 or combin$4) near6 (frame) same (audio) same (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S134	166	(multiplex$4 or combin$4) near6 (frame) with (audio) with (video)and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 14:56
S135	1085	(multiplex$4 or combin$4) near6 (frame) with (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:06
S136	850	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:07
S137	47	(multiplex$4 or combin$4) near6 (frame) near6 (number sequence)	US-PGPUB; USPAT;	OR	ON	2012/06/15 15:07

		same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S138	17	(combin$4) near6 (frame) near6 (number sequence) same (video) same (audio) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/06/15 15:25
S139	198	(sequentially) with (audio) same (video) same (number order sequece) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/20 11:59
S140	0	(sequentially) with (audio) same (video) same (number order sequece) near4 (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/20 11:59
S141	0	(sequentially) with (audio) same (video) same (number order sequece) with (rule) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/20 11:59
S142	2	(sequentially) with (audio) same (video) same (number order sequece) same (synchroniz$4) and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/20 12:00
S143	2	"5598352".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2012/06/20 12:03

6/ 20/ 2012 4:37:49 PM
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	**Art Unit**
	ABU SHOLEMAN	2437

✓	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	03/01/2012	06/20/2012							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
	17	✓	✓							
	18		✓							
	19		✓							
	20		✓							
	21		✓							
	22									

OPAP IAP15 APR 11 2012 PATENT & TRADEMARK OFFICE

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Hermann HELLWAGNER et al.	Confirmation No.:	4022
Application No.:	11/918,276	Examiner:	A.S. Sholeman
Filing Date:	January 21, 2009	Group Art Unit:	2437
Title:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES		
Attorney Docket:	32860-001352/US		

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314
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April 11, 2012

AMENDMENT

Sir:

In response to the Office Action mailed March 7, 2012, the following amendments and remarks are respectfully submitted in connection with the above-identified application.

Amendments to the Claims begin on page 2 of this Amendment.

Remarks begin on page 5 of this Amendment.

	Claims remaining after Amendment		**Highest number previously paid for**		**Present extra**
Total	21	-	20	=	1
Independent	2	-	3	=	0

04/12/2012 LNGUYEN1 00000007 11918276
01 FC:1202 60.00 OP

AMENDMENTS TO THE CLAIMS

The following is a complete, marked up listing of revised claims with a status identifier in parentheses, underlined text indicating insertions, and strikethrough and/or double-bracketed text indicating deletions.

1. (Currently Amended) A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:

sequentially outputting the first and second data segments according to their chronological sequence in such a way that each second data segment is output together with an associated first data segment on the basis of an assignment rule for assigning each second data segment to a first data segment ~~the first and second data segments~~.

2. (Previously Presented) The method as claimed in claim 1, wherein the assignment rule is formed in such a way that a second data segment is assigned to precisely one first data segment and a further assignment is carried out after a number of sequentially succeeding first data segments.

3. (Previously Presented) The method as claimed in claim 1, wherein the assignment rule is formed in such a way that, for each second data segment, a first data segment is assigned by specification of a number, the number representing a position of the first data segment within a chronological sequence of the first data segments.

4. (Previously Presented) The method as claimed in claim 1, wherein content-related first data segments and content-related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule.

5. (Previously Presented) The method as claimed in claim 1, wherein media data are represented by at least one of the first and second data file.

6. (Previously Presented) The method as claimed in claim 1, wherein at least one of the first and second data segments are generated on the basis of at least one of the generic bit stream syntax description and the extensible stylesheet language transformation.

7. (Previously Presented) The method as claimed in claim 1, further comprising:

determining, based upon a content-related marker, which first and second data segments are to be output first in time.

8. (Previously Presented) The method as claimed in claim 7, wherein at least one of a scene change in an image sequence and a change of speaker in a speech sequence is identified by way of the content-related marker.

9. (Currently Amended)) A device for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, comprising:

a synchronization module to output first and second data segments, sequentially, according to their chronological sequence, each second data segment being output together with an associated first data segment based upon of an assignment rule for assigning each second data segment to a first data segment ~~the first and second data segments~~.

10. (Previously Presented) The method as claimed in claim 2, wherein content-related first data segments and content-related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule.

11. (Previously Presented) The method as claimed in claim 3, wherein content-related first data segments and content-related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule.

12. (Previously Presented) The method as claimed in claim 5, wherein the media data include at least one of video and audio data.

13. (Previously Presented) The method as claimed in claim 1, wherein at least one of media data and metadata are represented by at least one of the first and second data file.

14. (Previously Presented) The method as claimed in claim 13, wherein the metadata include metadata encoded according to the XML standard.

15. (Previously Presented) The method as claimed in claim 13, wherein the media data include at least one of video and audio data.

16. (Previously Presented) The method as claimed in claim 1, wherein the assignment rule is predefinable.

17. (Previously Presented) The device as claimed in claim 9, wherein the assignment rule is predefinable.

18. (New) The method of claim 1, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.

19. (New) The device of claim 9, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.

20. (New) The method of claim 1, wherein the assignment rule is not based on a timestamp.

21. (New) The device of claim 9, wherein the assignment rule is not based on a timestamp.

REMARKS

Claims 1-21 are pending in this application. Claims 1 and 9 are amended. Claims 18 -21 are new. No new matter is added.

Drawings

Applicants appreciate the Examiner's indication that the drawings, filed January 21, 2009, have been accepted by the Examiner.

Foreign Priority

Applicants note with appreciation the Examiner's acknowledgement of Applicants' claim for foreign priority, and the Examiner's acknowledgement that certified copies of all priority documents have been received.

Information Disclosure Statement

Applicants thank the Examiner for indicating that the references submitted in the Information Disclosure Statements filed October 11, 2007 and February 15, 2008, have been considered.

Specification

The specification is objected to. Specifically, the Examiner appears to allege that the abstract of the disclosure does not meet statutory requirements, and the Examiner appears to object to the use of the phrase "in one embodiment." Applicants respectfully submit that the Examiner has not cited any law or other authority that suggests that the phrase "in one embodiment" must not be used in an Abstract of the Disclosure. Applicants respectfully submit that the Examiner withdraw the objection or cite authority indicating that the abstract of the disclosure does not meet requirements.

Rejections under 35 U.S.C. §101

Claims 1-4 and 7 are rejected under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter. The Examiner alleges that the claims are "neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter...Therefore, the claimed invention is directed to non-statutory subject matter." Applicants respectfully disagree.

The recent decision by the Supreme Court in *Bilski v. Kappos*, 130 S. Ct. 3218, 177 L. Ed. 2d 792 (2010) addresses the test for patent-eligible processes within the meaning of 35 U.S.C. § 101. The Supreme Court's decision in *Bilski* overruled the Court of Appeals for the Federal Circuit (CAFC) regarding the machine or transformation test being the sole test for determining statutory subject matter under 35 U.S.C. § 101. In overruling the CAFC, the Supreme Court stated:

> Section 101 specifies four independent categories of inventions or discoveries that are patent eligible: "process[es]," "machin[es]," "manufactur[es]," and "composition[s] of matter." "In choosing such expansive terms, . . . Congress plainly contemplated that the patent laws would be given wide scope," *Diamond* v. *Chakrabarty*, 447 U. S. 303, 308, in order to ensure that " 'ingenuity should receive a liberal encouragement,'" *id.*, at 308–309. This Court's precedents provide three specific exceptions to §101's broad principles: "laws of nature, physical phenomena, and abstract ideas." *Id.*, at 309.

The Examiner asserts a statutory process under 35 U.S.C. § 101 must be (1) tied to a particular machine, or (2) transform underlying subject matter. However, the decision in *Bilski* overruled the Court of Appeals for the Federal Circuit (CAFC) regarding the machine or transformation test being the sole test for determining statutory subject matter under 35 U.S.C. § 101.

Claim 1 is directed to a "process" for synchronizing content-related first data segments of a first data file and content-related second data segments of a second

data file. Thus, claim 1 falls under the "process" category of invention enumerated in § 101. Being that claim 1 is a process, so long as claim 1 does not fall within the Supreme Court's three specific exceptions (i.e., laws of nature, physical phenomena, and abstract ideas), the process is patent eligible.

Initially, claim 1 is clearly not a law of nature or a physical phenomenon. Indeed, as the Examiner correctly notes, claim 1 is directed to a method.

Moreover, as discussed in more detail below, Applicants submit that claim 1 is also not an abstract idea.

On December 8, 2010, the Federal Circuit decided *Research Corp. Technologies, Inc. v. Microsoft Corp.*, 627 F.3d 859, in which the Federal Circuit provided guidance with regard to method claims and abstract ideas.

> Indeed, the Supreme Court in *Bilski* refocused this court's inquiry into processes on the question of whether the subject matter of the invention is abstract. **The Supreme Court did not presume to provide a rigid formula or definition for abstractness**. *See, e.g., Bilski*, 130 S.Ct. at 3236 (The Court has "never provide[d] a satisfying account of what constitutes an unpatentable abstract idea." (Stevens, J., concurring)). Instead, the Supreme Court invited this court to develop "other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text." *Id.* at 3231.
>
> With that guidance, **this court also will not presume to define "abstract"** beyond the recognition that this disqualifying characteristic should **exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act.**[1]
>
> Emphasis added.

Claim 1 is not an abstract idea at least because the claim does not exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter and the statutory context that directs primary attention on the patentability criteria of the rest of the Patent Act. Further, claim 1 presents functional and palpable

[1] 627 F.3d at 868.

applications in the field of, for example, television and television content provisioning. Indeed, the method of claim 1 provides the ability to synchronize content-related television data streams. Thus, the method of claim 1 is analogous to the method at issue in *Research Corp. Technologies, Inc. in that the claim presents* functional and palpable applications in a given field of technology.

Because the process of claim 1 does not fall within one of the Supreme Court's three specific exceptions, the method of claim 1 is patent eligible under § 101. Claims 2-4 and 7 include patent-eligible subject matter at least by virtue of their dependency from claim 1. Withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 1494430 ("Shin") in view of U.S. Patent No. 5,661,523 ("Yamane"). With regard to Shin, reference is made, where required, to portions of the corresponding U.S. Patent No. 7,428,696.

First, without conceding to the Examiner's position, Applicants have amended claim 1 to recite, *inter alia*, "each second data segment is output together with an associated first data segment on the basis of an assignment rule for assigning each second data segment to a first data segment." This amendment is for clarity purposes only and example support for the amendment can be found at least at ¶[0035] of the originally-filed specification. Shin and Yamane, either alone or in combination, do not disclose at least this limitation of amended claim 1.

Shin discloses a method for synchronizing content segments with metadata in response to user requests. Shin, col. 2, lines 31-35. The content data and metadata each include time information for synchronization. Shin, col. 2, lines 33-36. In response to user content requests, a synchronizer determines reference time points

from the time information contained within the content data and the metadata. Shin, col. 2, lines 35-40 and col. 8, lines 1-6. The synchronizer then determines a relative time point and synchronizes the content data and metadata based on the determined time point. Shin, col. 2, lines 42-45.

The Examiner equates the relative time point of Shin to "an assignment rule" of claim 1. However, this time point does not assign "each second data segment to a first data segment." On the contrary, Shin at best determines a point in time in content and metadata so that they are synchronized. Segments of one type of data are not assigned to segments of the other type; rather, a synchronization time is calculated. Further, there is no "assigning" of each "second data segment" to "a first data segment" disclosed elsewhere in Shin. For at least these reasons, Shin does not disclose, at least, "each second data segment is output together with an associated first data segment on the basis of an assignment rule for assigning each second data segment to a first data segment," as recited in amended claim 1.

The Examiner does not rely on, and Yamane does not disclose, at least this limitation. Accordingly, the combination of references does not disclose each and every limitation of claim 1. *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) ("[...] obviousness requires a suggestion of all limitations in a claim."), *citing, In re Royka*, 490 F.2d 981, 985 (CCPA 1974). While independent claim 9 should be interpreted solely based on the limitations set forth therein, claim 9 includes at least somewhat similar limitations as those discussed above with regard to claim 1, and claim 9 is patentable at least for somewhat similar reasons as that of claim 1. Claims 2-8 and 10-17 are patentable at least by virtue of their dependency from claim 1 or 9. Withdrawal of the rejection is respectfully requested.

Further, Applicants submit that the combination of Shin and Yamane is improper. The Examiner does not provide a clear rationale including articulated

reasoning that one of ordinary skill in the art would have been motivated to make the proposed combination of Shin and Yamane. Instead, the Examiner makes the conclusory statement that it would have been obvious to one having ordinary skill in the art to combine Shin and Yamane "because doing so would provide displaying the image in chronological order." Action, p. 5.

A rejection for obviousness must include 'articulated reasoning with some rational underpinning to support the legal conclusion.'" *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), quoting *In re Kahn*, 441 F.3d 977 (Fed. Cir. 2006). The reasons provided by the Examiner do not provide a rational underpinning as to why a person having ordinary skill in the art at the time of the invention would have combined the teachings of Shin and Yamane to meet the limitations of claim 1.

Shin is directed to synchronizing metadata content with other multimedia content. Shin makes use of relative, calculated timestamps to achieve this synchronization. There is no indication that any of the content might be displayed out of order, and there is especially no indication that images could be displayed out of order. Therefore, there is no motivation to combine Yamane with Shin to "display the image in chronological order," contrary to the Examiner's assertions.

Further, it is far from evident, in studying the references, that adding compression algorithms taught in Yamane would allow Shin to "display the images in chronological order," even assuming Shin did not already display images in chronological order. Such a provision of access may even render Shin inoperable. In any case, the Examiner has not attempted to present any reasons that adding the compression and coding methods of Yamane would allow Shin to "display the image in chronological order."

For at least these reasons, the Examiner has not provided the requisite rational underpinning supporting the legal conclusion that one of ordinary skill in the art

would have modified the teachings of Shin to meet the limitations of claim 1. At least because the Examiner has provided no rational underpinning for the alleged combination, the Examiner has not shown that it would be obvious to combine Shin and Yamane. Claim 9 includes at least somewhat similar limitations as those of claim 1 and is allowable at least for somewhat similar reasons. Claims 2-8 and 10-21 are allowable at least by virtue of their dependency from the independent claims. Withdrawal of these rejections is respectfully requested.

NEW CLAIMS

Claims 18-21 have been added in an effort to provide further, different protection for Applicants' invention. Claims 18-21 are allowable at least for the reasons somewhat similar to those given above. Example support for claims 18 and 19 may be found in e.g., FIGS. 1 and 4 and the corresponding text of the specification as filed. Example support for claims 20 and 21 may be found in e.g., ¶[0012] of the originally-filed specification. No new matter is added.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-21 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. §1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By _____
Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

DJD/TRS:clc
1429781.1

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HDP/SB/21 based on PTO/SB/21 (08-00)

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	**11/918,276**
Filing Date	January 21, 2009
Inventor(s)	Hermann HELLWAGNER et al.
Group Art Unit	2437
Examiner Name	A.S. Sholeman
Attorney Docket Number	32860-001352/US

ENCLOSURES *(check all that apply)*

- ☒ Fee Transmittal Form
  - ☒ Fee Attached
- ☒ Amendment
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
- ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☐ Letter to the Official Draftsperson and _____ Sheets of Formal Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance Communication to Group
- ☐ LETTER SUBMITTING APPEAL BRIEF AND APPEAL BRIEF (w/clean version of pending claims)
- ☐ Appeal Communication to Group *(Notice of Appeal, Brief, Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) *(please identify below)*:

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm *or* Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name Donald J. Daley	Reg. No. 34,313
Signature			
Date	April 11, 2012		

PAP IAP15 APR 11 2012 PATENT & TRADEMARK OFFICE

HDP/SB/17 (10-08)
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.

FEE TRANSMITTAL for FY 2012

Effective 2/8/2006. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 60

Complete if Known	
Application Number	11/918,276
Filing Date	January 21, 2009
First Named Inventor	Hermann HELLWAGNER et al.
Examiner Name	A.S. Sholeman
Art Unit	2437
Attorney Docket No.	32860-001352/US

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number: 08-0750

Deposit Account Name: Harness, Dickey & Pierce, P.L.C.

The Director is authorized to: *(check all that apply)*
☐ Charge fee(s) indicated below ☒ Credit any overpayments
☒ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1011	380	2011	190	Utility filing fee	
1012	250	2012	125	Design filing fee	
1013	250	2013	125	Plant filing fee	
1014	380	2014	190	Reissue filing fee	
1005	250	2005	125	Provisional filing fee	

SUBTOTAL (1) ($) 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

			Extra Claims		Fee from below		Fee Paid
Total Claims	21	-20 ** =	1	X	60	=	60
Independent Claims	2	-3 ** =	0	X		=	0
Multiple Dependent						=	0

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	60	2202	30	Claims in excess of 20
1201	250	2201	125	Independent claims in excess of 3
1203	450	2203	225	Multiple dependent claim, if not paid
1204	250	2204	125	** Reissue independent claims over original patent
1205	60	2205	30	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 60

***or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	150	2251	75	Extension for reply within first month	
1252	560	2252	280	Extension for reply within second month	
1253	1,270	2253	635	Extension for reply within third month	
1254	1,980	2254	990	Extension for reply within fourth month	
1255	2,690	2255	1,345	Extension for reply within fifth month	
1401	620	2401	310	Notice of Appeal	
1402	620	2402	310	Filing a brief in support of an appeal	
1403	1,240	2403	620	Request for oral hearing	
1452	620	2452	310	Petition to revive – unavoidable	
1453	1,860	2453	930	Petition to revive – unintentional	
1462	400	1462	400	Petition fee under 37 CFR 1.17(f)	
1463	200	1463	200	Petition fee under 37 CFR 1.17(g)	
1464	130	1464	130	Petition fee under 37 CFR 1.17(h)	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	810	2809	405	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	810	2810	405	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	930	2801	465	Request for Continued Examination (RCE)	
				Other fee (specify) ____	

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) ($) 0

4. SEARCH/EXAMINATION FEES

1111	620	2111	310	Utility Search Fee
1112	120	2112	60	Design Search Fee
1113	380	2113	190	Plant Search Fee
1114	620	2114	310	Reissue Search Fee
1311	250	2311	125	Utility Examination Fee
1312	160	2312	80	Design Examination Fee
1313	200	2313	100	Plant Examination Fee
1314	750	2314	375	Reissue Examination Fee

SUBTOTAL (4) ($) 0

SUBMITTED BY				Complete *(if applicable)*	
Name (Print/Type)	Donald J. Daley	*Registration No. (Attorney/Agent)*	34,313	*Telephone*	703-668-8000
Signature				*Date*	April 11, 2012

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PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/918,276	01/21/2009	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			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 $250 ($125 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			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	04/11/2012	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 20	= 1	X $ =		OR	X $60=	60
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $ =		OR	X $250=	0
	☐ 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	60

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	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 number found in the appropriate box in column 1.

Legal Instrument Examiner:
/CAROLYN COFER/

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.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US	4022

30596 7590 03/07/2012

HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

EXAMINER	
SHOLEMAN, ABU S	

ART UNIT	PAPER NUMBER
2437	

NOTIFICATION DATE	DELIVERY MODE
03/07/2012	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):

dcmailroom@hdp.com
siemensgroup@hdp.com
pshaddin@hdp.com

Office Action Summary	Application No.	Applicant(s)	
	11/918,276	HELLWAGNER ET AL.	
	Examiner	Art Unit	
	ABU SHOLEMAN	2437	

-- 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* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 *21 January 2009*.

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) *1-17* 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) *1-17* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *21 January 2009* 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).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

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) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/11/2007,02/15/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-17 are pending in this application.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," **“ in one embodiment** ", etc.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-4 and 7 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claim 1, the claim invention is not directed to eligible subject matter under 35 U.S.C. § 101 in view of In Re Bilski, 88 USPQ2d 1385. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing (See In Re Bilski, 88 USPQ2d 1385; see also Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 473 U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780, 787-88 (1976)); The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter. The method claimed including steps of " outputting ...." **** is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent; Therefore, the claimed invention is directed to non-statutory subject matter.

Dependent claims 2-4 and 7 are rejected under the same analysis as set forth above.

5. As per claim 9, a synchronization module has a corresponding structure in the PG-PUB par 0035, the synchronization information SI can assume two different forms. [0036] a) Thus, for example, the second data segment S2 is assigned a first data segment S1 and a further assignment is carried out after a number A of output, sequentially succeeding first data segments S1. If the number A=2, this means that in

each case the second first data segment S1 is to be output with the second data segment S2. This constellation is illustrated in FIG. 1. The first and second data segments S1, S2 are output in their chronological sequence R1, R2 by the synchronization module MS at the latter's data output G. First, the respective first content-related first and second data segments S1, S2 with the numeral 0 are forwarded. Since the number is A=2, the next first data segment S1 with the numeral 1 is now output

Claim Rejections - 35 USC § 103

6. 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.

7. Claims 1- 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al EP 1494430 hereinafter Shin in view of Yamane patent number 5661523 hereinafter Yamane.

As per claim 1, Shin discloses a method for synchronizing content-related first data segments (par 0021, content) of a first data file (MPEG2) and content -related

second data segments (par 0021 metadata) of a second data file (ATSC), the method comprising:

the first and second data segments according to their sequence in such a way that each second data segment is output together with an associated first data segment on the basis of an assignment rule for the first and second data segments (par 0008,synchronizing the content and metadata using the time point (i.e. rule) and 0019, a receiver 300 for synchronizing content and metadata and performing content and the synchronized data to the browser system 305).

Shin does not explicitly disclose sequentially outputting the first and second data segments according to their chronological sequence.

However, Yamane discloses sequentially outputting the first and second data segments according to their chronological sequence (col 1, lines 50-55, I, B, P frames are displaying in the chronological order).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 2, Shin in view of Yamane discloses all the limitation set forth above, Yamane also discloses wherein the assignment rule is formed in such a way that a second data segment is assigned to precisely one first data segment and a further assignment is carried out after a number of sequentially succeeding first data segments (col 1, lines 56-65, rearranged in the order processed) .

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 3, Shin in view of Yamane discloses all the limitation set forth above, Yamane also discloses wherein the assignment rule is formed in such a way that for each second data segment a first data segment is assigned by specification of a number, the number representing a position of the first data segment within a chronological sequence of the first data segments (col 1, lines 54-55, chronological order (i.e. assignment rule) for the frames).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 4, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein content-related first data segments and content related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule (par 0008,synchronizing the content and metadata using the time point (i.e. rule) and 0019, a receiver 300 for synchronizing content and metadata and performing content and the synchronized data to the browser system 305).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 5, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein media data are represented by at least one of the first and second data file (par 0021, the MPEG2 and ATSC or DVB).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 6, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein a least one of the first and second data segments are generated on the basis of at least one of the generic bit stream syntax description and the extensible stylesheet language transformation (par 0003 and Fig.1A-B, media retime point in the XML style sheet).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 7, Shin in view of Yamane discloses all the limitation set forth above, Yamane also discloses further comprising: determining, based upon a content related marker which first and second data segments are to be output first in time (col 1, liens 50-55, displaying frames chronological order).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of

Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 8, Shin in view of Yamane discloses all the limitation set forth above, Yamane also discloses wherein at least one of a scene change in an image sequence and a change of speaker in a speech sequence is identified by way of the content related marker (col 1, liens 50-55, displaying frames chronological order).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 11, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein content-related first data segments and content-related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule(par 0008,synchronizing the content and metadata using the time point (i.e. rule) and 0019, a receiver 300 for synchronizing content and metadata and performing content and the synchronized data to the browser system 305).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of

Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 12, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein the media data include at least one of video and audio data (par 0021, digital broadcast standard such as ATSC or DVB).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 13, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein at least one of media data and metadata are represented by at least one of the first and second data file (par 0019, synchronizing content of the MPEG2 (first file) and DVB (second file)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 14, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein the metadata include metadata encoded according to the XML standard (par 0003 and Fig.1A-B, media reftime point in the XML style sheet).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 15, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein the media data include at least one of video and audio data (par 0021, DVB file).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 16, Shin in view of Yamane discloses all the limitation set forth above, Shin also discloses wherein the assignment rule is predefinable (par 0008, using relative time point).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the claimed invention by modifying the method of Shin, based on the teaching of displaying frames in chronologically order of Yamane, because doing so would provide displaying the image in chronological order.

As per claim 9, this claim is directed to a device and contains limitations that are substantially similar to those recited in claim 1 above, and accordingly is rejected for similar reasons.

As per claim 10, this claim is directed to a device and contains limitations that are substantially similar to those recited in claim 4 above, and accordingly is rejected for similar reasons.

As per claim 17, this claim is directed to a device and contains limitations that are substantially similar to those recited in claim 16 above, and accordingly is rejected for similar reasons.

Examiner Notes

8. Examiner cites particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations

within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abu Sholeman whose telephone number is (571)270-73144. The examiner can normally be reached on Mon-Thurs 7:30 am-5:00 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Shiferaw can be reached on (571)-272-38677. 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

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800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ABU SHOLEMAN/
Examiner, Art Unit 2437
/Eleni A Shiferaw/
Supervisory Patent Examiner, Art Unit 2437

Notice of References Cited	Application/Control No. 11/918,276	Applicant(s)/Patent Under Reexamination HELLWAGNER ET AL.	
	Examiner ABU SHOLEMAN	Art Unit 2437	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0286783	12-2005	Takada et al.	382/236
*	B	US-5,661,523	08-1997	Yamane, Yasuhiko	348/390.1
	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	EP 1494430	06-2004			
	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	Art Unit
	ABU SHOLEMAN	2437

SEARCHED

Class	Subclass	Date	Examiner
375	240.28	2/27/2012	/A.S./
375	all subclasses with keyword	2/27/2012	/A.S./

SEARCH NOTES

Search Notes	Date	Examiner
Inventor search in PALM	2/27/2012	/A.S./
classes and concept and keyword search in EAST all databases	2/27/2012 and 03/01/2012	/A.S./
Plus search	2/27/2012	/A.S./

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S2	565	375/240.28.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:50
S3	15	375/240.28.ccls. and (sequentially sequential sequence) with (synchronized synchronizing synchronize) with (frame picture metadata)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 09:53
S4	0	375/240.28.ccls. and (chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S5	38	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:24
S6	1	(chronological near4 (sequentially sequential sequence)) with (synchronized synchronizing synchronize) with (frame picture)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:25
S7	8	(chronological near4 (sequentially sequential sequence)) with (frame) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:30
S8	3	(chronological near4 (sequentially sequential sequence)) with (packet) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:33
S9	6	(chronological near4 (sequentially	US-PGPUB;	OR	ON	2012/02/27

		sequential sequence)) same (packet) same(synchronized synchronizing synchronize)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			10:33
S10	19742	375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:34
S11	0	S10 and (chronological near4 (sequentially sequential sequence)) same(synchronized synchronizing synchronize)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S12	25	S10 and (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:35
S13	1	(output outputting outputted) near5 (frame picture) with (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S14	6	(output outputting outputted) near5 (frame picture) same (chronological near4 (sequentially sequential sequence))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 10:56
S15	7618	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	USPAT	OR	OFF	2012/02/27 11:01
S16	21298	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S17	846	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:02
S18	7	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (synchroniz$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:03

S19	13	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) same (synchroniz$4 adjust$4 set$4 integrat$4) and (frame picture) with (assign$4) with (rule)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:09
S20	37470	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:17
S21	24	(produc$4 output$4 mak$4) near6 (frame picture) with (sequentially sequence serially serial successively successive contant$3 continuou$4) near6 (chronological$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:18
S31	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:37
S33	1	11/918276.app. and (synchroniz$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:38
S34	1	11/918276.app. and (synchroniz$4 module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S35	1	11/918276.app. and (module)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:42
S36	51	("5319395" "6249824" "5784366" "5909435" "5877742" "5303393" "5365516" "5526357" "5764691" "5894494" "5999562" "6072185" "6237122" "5507024" "5805155" "5848072" "6181609" "4455483" "5177796" "5274508" "5321699" "5386422" "5388074" "5469444" "5481531" "5506965" "5684774" "5841717" "5917429" "6178121" "6243348" "4415792" "4451108" "4502082" "4796260" "4972474" "5280584" "5377102" "5382508" "5440686" "5477492" "5511212" "5537945" "5561671" "5583975" "5657398" "5684693" "5724241" "5742509" "5831903").pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/02/27 11:57
S37	1	"1494430"	EPO	OR	ON	2012/02/27

						12:00
S38	1	(outputting) near6 (video picture segment) with (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:09
S39	1	(outputting) near6 (video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S40	1152	(outputting) near6 (video picture segment) same (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S41	525	(outputting) near6 (video picture segment) near6 (sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S42	123	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:10
S43	19	(outputting) near6 (video picture segment) near6 (sequence) and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:11
S44	348	(video picture segment) same (chronological near4 sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S45	7	(video picture segment) same (chronological near4 sequence)and "375"/$.ccls. and (@ad<"20050412" and @rlad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/27 13:13
S46	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2012/02/29 10:14

			EPO; JPO; DERWENT; IBM_TDB			
S47	1	11/918276.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/02/29 10:52
S48	21336	(produc$4 output$4) near6 (frame picture) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:01
S49	13361	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) and (@ad<"20050412")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:01
S50	1139	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) and (@ad<"20050412") and 375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:02
S51	1	(produc$4 output$4) near6 (frame picture) with (sequentially sequence) same (chronological$3) and (@ad<"20050412") and 375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:02
S52	25	(frame picture) with (sequentially sequence) same (chronological$3) and (@ad<"20050412") and 375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:04
S53	1	"20010053185"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:07
S54	0	"20010053185" and (display$4 output$4) near4 (frame) with (sequenc$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:08
S55	0	"20010053185" and (display$4 output$4) near4 (frame) same (chronological$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:08
S56	0	"20010053185" and (display$4 output$4) near4 (frame) and (chronological$4)	US-PGPUB; USPAT;	OR	ON	2012/03/01 13:08

			USOCR; FPRS; EPO; JPO; IBM_TDB			
S57	51	(produc$4 output$4) near6 (frame picture) same (chronological$4) with (sequentially sequence)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:10
S58	2	(produc$4 output$4) near6 (frame picture) same (chronological$4) with (sequentially sequence) and (@ad<"20050412") and 375/240.$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB	OR	ON	2012/03/01 13:10
S59	1	"1494430"	EPO	OR	ON	2012/03/01 13:53

3/1/2012 3:39:29 PM
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Receipt date: 02/15/2008

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11918276 - GAU: 2437

PTO/SB/08A (10-07)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	11/918,276
Filing Date	October 11, 2007
First Named Inventor	Dr. Hermann Hellwagner
Art Unit	2622
Examiner Name	Unknown
Attorney Docket Number	328620-001352/US

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

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]
	1	EP 0753954 A2	01-15-1997	MORONEY PAUL, GEN INSTRUMENT CORP		

Examiner Signature	/Abu Sholeman/	Date Considered	03/01/2012

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This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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.**

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IDNR: 4285 / 13.11.2007

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Receipt date: 10/11/2007

11/918276 GAU: 2437

IAP17 Rec'd PCT/PTO 11 OCT 2007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	Not yet assigned
Filing Date	10/11/2007
First Named Inventor	Hermann Hellwagner et al.
Art Unit	Not yet assigned
Examiner Name	Not yet assigned
Attorney Docket Number	32860-001352/US

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
	1	US-2001/0052943 A1	12-20-2001	Sone	
		US-			
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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]
	2	EP 1 494 430 A2	01-05-2005	Samsung Electronics Co. Ltd.		
	3	Patentabstracts of Japan 2004056777 A	02-19-2004	Matsushita Electric Ind. Co. Ltd.		

Examiner Signature	/Abu Sholeman/	Date Considered	03/01/2012

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IDNR: 4285 / 07.08.2006

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11/918276

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 2

Complete if Known	
Application Number	Not yet assigned
Filing Date	10/11/2007
First Named Inventor	Hermann Hellwagner et al.
Art Unit	Not yet assigned
Examiner Name	Not yet assigned
Attorney Docket Number	32860-001352/US

OTHER PRIOR ART -- 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[2]
	4	S. Devillers et al., „Metadaten streaming use case and requirements", ISO/IEC JTC 1/SC 29/WG11 M11638, Hong Kong, Januar 2005-04-08 03/01/2012	
	5	H. Hellwagner et al., „Report of CE on Bit-Stream Adap-tation in Constrained and Streaming Environments", ISO/IEC JTC 1/SC 29/WG 11 M11706, Hong Kong, Januar 2005	
	6	I. Burnett et al., „Bitstream Binding Language – a grammar for Digital Item Transport", ISO/IEC JTC 1/SC 29/WG M11611, Hong Kong, Januar 2005	
	7	Panis G. et al., "Bitstream Syntax Description: A Tool for Multimedia Resource Adaptation within MPEG-21", Sig-nal Processing, Image Communication, Elsevier Science Publishers, Amsterdam, NL, Band 18, Nr. 8, September 2003, Seiten 721-747, ISSN: 0923-5965	
	8	Li et al., "Multimedia Segment Delivery Scheme and its performance for real-time synchronization control", Communications 1994, ICC '94, Supercomm/ICC '94, Conference on Record "Serving Humanity Through Communications", IEEE International Conference on New Orleans, LA, USA 1-5 May 1994, New York, NY, USA, pp 1734-1738 03/01/2012	

Examiner Signature	/Abu Sholeman/	Date Considered	03/01/2012

*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.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
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IDNR: 4285 / 07.08.2006

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.S./

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11918276	HELLWAGNER ET AL.
	Examiner	**Art Unit**
	ABU SHOLEMAN	2437

✓	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	03/01/2012								
	1	✓								
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	15	✓								
	16	✓								
	17	✓								

PLUS Search Results for S/N 11918276, Searched Mon Feb 27 11:47:02 EST 2012

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

5319395 99
6249824 99
5784366 92
5909435 92
5877742 78
5303393 76
5365516 76
5526357 76
5764691 76
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/918,276	01/21/2009	Hermann Hellwagner	32860-001352/US

CONFIRMATION NO. 4022

30596
HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

PUBLICATION NOTICE

OC00000036848621

Title: Method for Synchronizing Content-Dependent Data Segments of Files

Publication No.US-2009-0174815-A1
Publication Date:07/09/2009

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.

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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.

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U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
11/918,276	Hermann Hellwagner	32860-001352/US

30596
HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

INTERNATIONAL APPLICATION NO.	
PCT/EP2006/060808	
I.A. FILING DATE	PRIORITY DATE
03/16/2006	04/12/2005

CONFIRMATION NO. 4022
371 ACCEPTANCE LETTER

OC000000035188969

Date Mailed: 03/27/2009

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:

01/21/2009	01/21/2009
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:

- Copy of the International Application filed on 10/11/2007
- English Translation of the IA filed on 10/11/2007
- Copy of the International Search Report filed on 10/11/2007
- Copy of IPE Report filed on 01/21/2009
- Preliminary Amendments filed on 10/11/2007
- Information Disclosure Statements filed on 10/11/2007
- Oath or Declaration filed on 01/21/2009
- Request for Immediate Examination filed on 10/11/2007
- U.S. Basic National Fees filed on 10/11/2007
- Substitute Specification filed on 10/11/2007
- Priority Documents filed on 10/11/2007
- Power of Attorney filed on 01/21/2009
- Specification filed on 01/21/2009
- Claims filed on 01/21/2009
- Abstracts filed on 01/21/2009
- Drawings filed on 01/21/2009

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)

DEBORAH D WILLIAMS

Telephone: (703) 308-9140 EXT 205

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
11/918,276	01/21/2009	2622	1060	32860-001352/US	17	2

CONFIRMATION NO. 4022

30596
HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

FILING RECEIPT

OC000000035188968

Date Mailed: 03/27/2009

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**

Applicant(s)

Hermann Hellwagner, Klagenfurt, AUSTRIA;
Jörg Heuer, Oberhaching, GERMANY;
Andreas Hutter, München, GERMANY;
Michael Ransburg, Maria Rain, AUSTRIA;

Power of Attorney: The patent practitioners associated with Customer Number 30596

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/EP2006/060808 03/16/2006

Foreign Applications

GERMANY 10 2005 016 866.3 04/12/2005

If Required, Foreign Filing License Granted: 03/25/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 11/918,276**

Projected Publication Date: 07/09/2009

Non-Publication Request: No

Early Publication Request: No

Title

Method for Synchronizing Content-Dependent Data Segments of Files

Preliminary Class

348

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 (1-866-999-4158).

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 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).

IAP08Rec'd PCT 21 JAN 2009



Mail Stop PCT
PATENT
32860-001352/US

IN THE U.S. PATENT AND TRADEMARK OFFICE

APPLICATION. NO.:	**11/918,276**
APPLICANT:	Hermann HELLWAGNER et al.
INTERNATIONAL APPL. NO.:	**PCT/EP2006/060808**
CONF.:	4022
FILED:	October 11, 2007
FOR:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

RESPONSE TO NOTICE TO FILE MISSING REQUIREMENTS OF AN APPLICATION

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314
Mail Stop PCT

January 21, 2009

Sir:

Under the provisions of 37 C.F.R. § 1.494 or 37 C.F.R. § 1.495, attached hereto are the following additional items necessary for entering the national phase in connection with the above-identified PCT international application.

☒ Executed Declaration and Power of Attorney.

☐ Original ☒ Photocopy

☐ The specification attached to the executed Declaration and Power of Attorney is a true copy of the specification which was filed in the U.S. Patent and Trademark Office on , including any amendments thereto (if applicable) filed on even date therewith.

☒ The undersigned hereby declares that "32860-001352/US." on page 1 of the attached inventors' Declaration corresponds to Appl. No.PCT/EP2006/060/808 filed October 11, 2007 entitled "METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

."

☐ English language specification, claims, and Abstract with ( ) sheets of drawings.

☐ Applicant claims small entity status under 37 C.F.R. § 1.27.

☐ Attached is a copy of Form PCT/DO/EO/905.

☐ _____

☒ No extension fee is required because the undersigned has filed the documents within the allotted time given by the Notification of Missing Requirements (Form PCT/DO/EO/905). However, if for some reason it is determined that an extension of time is necessary, applicant hereby respectfully petitions for an extension of time for the filing of the present paper in accordance with the provisions of 37 C.F.R. § 1.136 and 37 C.F.R. § 1.17.

☐ Applicant(s) hereby respectfully petitions for ( ) month(s) extension of time for the filing of the present paper in accordance with the provisions of 37 C.F.R. § 1.136 and 37 C.F.R. § 1.17. The required fee of $0.00 is attached hereto.

The Government Filing Surcharge in the amount of **$130.00** in accordance with 37 C.F.R. §§ 1.494 and 1.492 **was previously paid for** concurrently with the filing of the application **on October 11, 2007.**

☒ Submitted concurrently herewith **under separate cover** for recording is an Assignment.

☐ A Fee of $0.00 to cover the increase in fees of the filing Surcharge is enclosed.

☐ Check(s) in the amount of $0.00 to cover the above-mentioned fees is/are enclosed.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fee required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, P.L.C.

By _____

Donald J. Daley, Reg. No. 34,313
P.O. Box 8910
Reston, VA 20195
703-668-8000

DJD:kmo

Attachments: Copy of Notice to File Missing Requirements
Declaration and Power of Attorney

(Rev. 01/13/05)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
11/918,276	Hermann Hellwagner	32860-001352/US

30596
HARNESS, DICKEY & PIERCE, P.L.C.
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NOV 19 2008
HARNESS, DICKEY & PIERCE

INTERNATIONAL APPLICATION NO.	
PCT/EP2006/060808	
I.A. FILING DATE	PRIORITY DATE
03/16/2006	04/12/2005

CONFIRMATION NO. 4022
371 FORMALITIES LETTER



Date Mailed: 11/17/2008

NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as an Elected Office (37 CFR 1.495):

- Priority Document
- Copy of the International Application filed on 10/11/2007
- English Translation of the IA filed on 10/11/2007
- Copy of the International Search Report filed on 10/11/2007
- Preliminary Amendments filed on 10/11/2007
- Information Disclosure Statements filed on 10/11/2007
- Request for Immediate Examination filed on 10/11/2007
- U.S. Basic National Fees filed on 10/11/2007
- Substitute Specification filed on 10/11/2007
- Priority Documents filed on 10/11/2007

Matter no.
Action Due Date 1/17/09 Final Date 6/17/09
Action Missing Req
Atty DJD JKT/Verify SHW / [illegible]

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

- Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the international application number and international filing date.

ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTHS FROM THE DATE OF THIS NOTICE OR BY 32 MONTHS FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

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)

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

VIRGINIA L IRBY

Telephone: (703) 308-9140 EXT 229

FORM PCT/DO/EO/905 (371 Formalities Notice)

OIPE JAN 21 2009 PATENT & TRADEMARK OFFICE

DECLARATION AND POWER OF ATTORNEY

Atty. Dkt. No.: 32860-001352/US

DECLARATION

As a below named inventor, I hereby declare that:

My residence, mailing address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

the specification of which (check one)

☐ is attached hereto.
or
☒ was filed on March 16, 2006 as Application Serial No. or PCT International Application No. PCT/EP2006/060808 and was amended on October 11, 2007 (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is 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.

I hereby claim foreign priority benefits under 35 U.S.C. §§ 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a), of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATION(S)				
APPN. SERIAL NO.	COUNTRY	DATE FILED (MM/DD/YYYY)	PRIORITY CLAIM Yes	PRIORITY CLAIM No
10 2005 016 866.3	Germany	4/12/2005	☒	☐
			☐	☐
			☐	☐

DECLARATION AND POWER OF ATTORNEY

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

PRIOR PROVISIONAL APPLICATION(S)	
APPN. SERIAL NO.	DATE FILED (MM/DD/YYYY)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below:

PRIOR U.S. APPLICATION(S)		
APPN. SERIAL NO.	DATE FILED (MM/DD/YYYY)	STATUS - PATENTED, PENDING, ABANDONED

I hereby 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 were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY

I hereby appoint the following attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

John A. Castellano	Reg. No. 35,094
Terry L. Clark	Reg. No. 32,644
Donald J. Daley	Reg. No. 34,313
Gary D. Yacura	Reg. No. 35,416

and all individuals assigned to Customer No. **30593**.

DECLARATION AND POWER OF ATTORNEY

CORRESPONDENCE ADDRESS

I request the Patent and Trademark Office to direct all correspondence and telephone calls relative to this application to Harness, Dickey & Pierce, P.L.C., Customer No. 30593, P.O. Box 8910, Reston, Virginia, 20195, (703) 668-8000.

Full name of sole or first inventor: Hermann HELLWAGNER

Inventor's signature: H. Hellwagner

Date: November 5, 2007

Residence: Babenbergerstr. 50, 9020 Klagenfurt, Austria

Citizenship: AUSTRIAN

Mailing Address: SAME AS ABOVE

Full name of second joint inventor: Jörg HEUER

Inventor's signature: _____

Date: _____

Residence: Gänslerweg 24, 82041 Oberhaching, Germany

Citizenship: GERMAN

Mailing Address: SAME AS ABOVE

Full name of third joint inventor: Andreas HUTTER

Inventor's signature: _____

Date: _____

Residence: Sturmiusweg 42, 81673 München, Germany

Citizenship: GERMAN

Mailing Address: SAME AS ABOVE

Full name of fourth joint inventor: Michael RANSBURG

Inventor's signature: _____

Date: _____

Residence: Untertöllern 44, 9161 Maria Rain, AUSTRIA

Citizenship: AUSTRIAN

Mailing Address: SAME AS ABOVE

DECLARATION AND POWER OF ATTORNEY

CORRESPONDENCE ADDRESS

I request the Patent and Trademark Office to direct all correspondence and telephone calls relative to this application to Harness, Dickey & Pierce, P.L.C., Customer No. 30593, P.O. Box 8910, Reston, Virginia, 20195, (703) 668-8000.

Full name of sole or first inventor: Hermann HELLWAGNER

Inventor's signature: _____

Date: _____

Residence: Babenbergerstr. 50, 9020 Klagenfurt, Austria

Citizenship: AUSTRIAN

Mailing Address: SAME AS ABOVE

Full name of second joint inventor: Jörg HEUER

Inventor's signature: _____

Date: _____

Residence: Gänslerweg 24, 82041 Oberhaching, Germany

Citizenship: GERMAN

Mailing Address: SAME AS ABOVE

Full name of third joint inventor: Andreas HUTTER

Inventor's signature: _____

Date: _____

Residence: Sturmiusweg 42, 81673 München, Germany

Citizenship: GERMAN

Mailing Address: SAME AS ABOVE

Full name of fourth joint inventor: Michael RANSBURG

Inventor's signature: _____

Date: 12.11.07

Residence: Untertöllern 44, 9161 Maria Rain, AUSTRIA

Citizenship: AUSTRIAN

Mailing Address: SAME AS ABOVE

DECLARATION AND POWER OF ATTORNEY

CORRESPONDENCE ADDRESS

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Full name of sole or first inventor: Hermann HELLWAGNER

Inventor's signature: _____

Date: _____

Residence: Babenbergerstr. 50, 9020 Klagenfurt, Austria

Citizenship: AUSTRIAN

Mailing Address: SAME AS ABOVE

Full name of second joint inventor: Jörg HEUER

Inventor's signature: _____

Date: 7.11.07

Residence: Gänslerweg 24, 82041 Oberhaching, Germany

Citizenship: GERMAN

Mailing Address: SAME AS ABOVE

Full name of third joint inventor: Andreas HUTTER

Inventor's signature: _____

Date: 5.11.07

Residence: Sturmiusweg 42, 81673 München, Germany

Citizenship: GERMAN

Mailing Address: SAME AS ABOVE

Full name of fourth joint inventor: Michael RANSBURG

Inventor's signature: _____

Date: _____

Residence: Untertöllern 44, 9161 Maria Rain, AUSTRIA

Citizenship: AUSTRIAN

Mailing Address: SAME AS ABOVE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
11/918,276	Hermann Hellwagner	32860-001352/US

30596
HARNESS, DICKEY & PIERCE, P.L.C.
P.O.BOX 8910
RESTON, VA 20195

INTERNATIONAL APPLICATION NO.	
PCT/EP2006/060808	
I.A. FILING DATE	PRIORITY DATE
03/16/2006	04/12/2005

CONFIRMATION NO. 4022
371 FORMALITIES LETTER

OC000000033099674

Date Mailed: 11/17/2008

NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as an Elected Office (37 CFR 1.495):

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- Priority Documents filed on 10/11/2007

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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)

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

VIRGINIA L IRBY

Telephone: (703) 308-9140 EXT 229

DO/ EO WORKSHEET

Virginia Irby, Patent Application Specialist/ National Stage Division

U.S. Appl. No. 11/ 918276 International Appl. No. PCT/EP06/60808

Application filed by : ☐ 20 months ☑ 30 months

WIPO PUBLICATION INFORMATION :

Publication No.: WO2006 / 108750

Publication Language : ☐ English ☑ German ☐ Japanese ☐ Chinese ☐ Korean ☐ French ☐ Spanish ☐ Russian ☐ Other : _____

Publication Date : 19 Oct 2006

Not Published : ☐ U.S. only designated ☐ EP request Published : ☐ EP request

INTERNATIONAL APPLICATION PAPERS IN THE APPLICATION FILE :

- ☑ International Application *(RECORD COPY)*
- ☐ Article 19 Amendments
- ☐ PCT/IPEA/409 IPER : ☐ EP ☐ JP ☐ SE ☐ AU ☐ US ☐ FR ☐ CN ☐ ES ☐ RU ☐ AT ☐ KR ☐ ___
- ☐ Annexes to 409
- ☑ PCT/ISA/237 : ☑ EP ☐ JP ☐ SE ☐ AU ☐ US ☐ FR ☐ CN ☐ ES ☐ RU ☐ AT ☐ KR ☐ ___
  - ☐ PCT/IPEA/409 or PCT/ISA/237 was NOT AVAILABLE at the time of paralegal review
- ☐ PCT/IB/306
- ☐ Request form PCT/RO/101
- ☑ PCT/ISA/210 - Search Report : ☑ EP ☐ JP ☐ SE ☐ AU ☐ US ☐ FR ☐ CN ☐ ES ☐ RU ☐ AT ☐ KR ☐ ___ ☐ NONE
- ☐ Search Report References
- ☑ Priority Document (s) No. 1
  - ☐ N/A
  - ☐ Priority Document was NOT AVAILABLE at the time of paralegal review
- ☐ Other : _____

RECEIPTS FROM THE APPLICANT *(other than checked above) :*

- ☑ Basic National Fee (I) *(or authorization to charge)*
- ☑ Description ☑ Claims ☑ Abstract
- ☑ Drawing Figure(s) - (# of drwgs. 5)
- ☐ Translation of Article 19 Amendments ☐ entered ☐ not entered :
  - ☐ not a page for page substitution
  - ☐ replaced by Article 34 Amendment
- ☐ Annexes to 409 ☐ entered ☐ not entered :
  - ☐ not a page for page substitution
  - ☐ no translation ☐ other : _____
- ☐ Application Data Sheet
- ☐ Power of Attorney
- ☐ Change of Address
- ☑ Preliminary Amendment(s) Filed on : 1. ☑ same as 371 request date 2. _____ 3. _____
- ☑ Information Disclosure Statement(s) Filed on : 1. ☐ same as 371 request date 2. 2-15-08 3. _____
- ☐ Assignment Document (forwarded to Assignment Branch)
- ☐ Assignee Statement Under 37 CFR 3.73(b)
- ☐ Assignee PG Publication Notice
- ☑ Substitute Specification Filed on : 1. ☐ same as 371 request date 2. _____ 3. _____
- ☐ Verified Small Status Statement
- ☐ Oath/ Declaration (executed)
- ☐ Oath/ Declaration ☐ unsigned ☐ no citizenship ☐ other
- ☐ DNA Diskette ☐ Sequence Listing
- ☐ Other : _____

NOTES : ☐ I.A. used as Specification ☐ Other :

35 U.S.C. 371 - Receipt of Request (PTO-1390)	11 Oct 2007
Date Acceptable Oath/ Declaration Received	
Date of Completion of requirements under 35 U.S.C. 371	
Date of Completion of DO/ EO 903 - Notification of Acceptance	
Date of Completion of DO/ EO 905 - Notification of Missing Requirements	13 Nov 2008
Date of Completion of DO/ EO 909 - Notification of Abandonment	
Date of Completion of DO/ EO 916 - Notification of Defective Response	
Date of Completion of DO/ EO 922 - Notification to Comply w/ Requirements for Patent Applications Containing Nucleotide and/or Amino Acid Sequence Disclosures	
Date of Completion of DO/ EO 923	

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET (FOR USE WITH FORM PTO-875)	SERIAL NO. 11/918276	FILING DATE
	APPLICANT(S)	

CLAIMS

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT	
	IND.	DEP.	IND.	DEP.	IND.	DEP.
1			1			
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TOTAL IND.			2			
TOTAL DEP.			15			
TOTAL CLAIMS			17			

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT	
	IND.	DEP.	IND.	DEP.	IND.	DEP.
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TOTAL IND.						
TOTAL DEP.						
TOTAL CLAIMS						

PATENT APPLICATION FEE DETERMINATION RECORD
Effective December 8, 2004

Application or Docket Number
11/918276

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)	SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
			RATE	FEE		RATE	FEE
U.S. NATIONAL STAGE FEES							
BASIC FEE	SMALL ENT. = $ 150	LARGE ENT. = $ 300	BASIC FEE		OR	BASIC FEE	310
EXAMINATION FEE	Satisfies PCT Article 33(1)-(4) = $ 50 / $ 100	All other situations = $ 100 / $ 200	EXAM. FEE			EXAM. FEE	210
SEARCH FEE	U.S. is ISA = $ 50 / $ 100 ALL other countries = $ 200 / $ 400	ALL other situations = $ 250 / $ 500	SEARCH FEE			SEARCH FEE	410
FEE FOR EXTRA SPEC. PGS.	minus 100 =	/ 50 =	X $ 125 =			X $ 250 =	
TOTAL CHARGEABLE CLAIMS	17 minus 20 =	*	X $ 25 =		OR	X $ 50 =	
INDEPENDENT CLAIMS	2 minus 3 =	*	X $ 100 =		OR	X $ 200 =	
MULTIPLE DEPENDENT CLAIM PRESENT ☐			+ $ 180 =		OR	+ $ 360 =	
* If the difference in column 1 is less than zero, enter "0" in column 2			TOTAL		OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A	(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
Total	*	Minus	**	=	X $ 25 =		OR	X $ 50 =	
Independent	*	Minus	***	=	X $ 100 =		OR	X $ 200 =	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐					+ $ 180 =		OR	+ $ 360 =	
					TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B	(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
Total	*	Minus	**	=	X $ 25 =		OR	X $ 50 =	
Independent	*	Minus	***	=	X $ 100 =		OR	X $ 200 =	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐					+ $ 180 =		OR	+ $ 360 =	
					TOTAL ADDIT. FEE		OR	TOTAL ADDIT. 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.

OIPE
FEB 15 2008
PATENT & TRADEMARK OFFICE

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	**11/918,276**
Filing Date:	October 11, 2007
Applicant:	Hermann HELLWAGNER et al.
Group Art Unit:	2622
Examiner:	Unknown
Title:	METHOD FOR SYNCHRONISING CONTENT-DEPENDENT DATA SEGMENTS OF FILES
Attorney Docket:	32860-001352/US

Customer Service Window
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401 Dulany Street
Alexandria, VA 22314
Mail Stop Amendment

February 15, 2008

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS, AND OTHER INFORMATION

The patents, publications and other information submitted for consideration by the Office (except unpublished U.S. patent applications) are listed on Form PTO-1449 attached hereto.

II. COPIES

A. ☐ Submitted herewith is a legible copy of (i) each foreign patent; (ii) each publication or that portion which caused it to be listed, other than U.S. patents and U.S. patent application publications unless required by the Office; (iii) for each cited pending unpublished U.S. application listed below in Section IV, the application specification including the claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion; and (iv) all other information or that portion which caused it to be listed.

B. ☐ Any patents, publications or other information which are listed on Form PTO-1449 or on the copies of Form PTO-892, but which are not enclosed herewith, were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Serial Number U.S. Filing Date

C. ☒ Because the present application was/is being filed after June 30, 2003, no copies of the U.S. patents or U.S. patent application publications which are listed on the attached Form PTO-1449 are enclosed pursuant to the waiver of 37 C.F.R. § 1.98(a)(2)(i). Any foreign patent documents or non-patent literature listed on the attached Form PTO-1449 are enclosed herewith.

D. ☐ This is a PCT application in the entry of the National Phase in the United States. A copy of the International Search Report is attached for the Examiner's information. The documents listed on the International Search Report are listed on the attached Form PTO-1449 for consideration by the Examiner and for listing on any patent resulting from this application. Since the International Search Report was from the US, EPO, or JPO search authorities, copies of these references should have been supplied to the USPTO under the trilateral agreement and are believed to be in the file of the above-identified application. (MPEP 1893.03(g))

III. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

A. ☒ Except as may be indicated below in (B), all of the patents, publications or other information are in the English language (concise explanation not required).

B. ☐ A concise explanation of the relevance of each patent, publication or other information listed that is not in the English language is as follows (see 37 C.F.R. § 1.98(a)(3)):

1. ☐ See the attached foreign patent office communication from a counterpart foreign application:
2. ☐ English translations are provided for:
3. ☐ Other:

C. ☐ The following additional information is provided for the Examiner's consideration.

IV. CROSS REFERENCE TO RELATED APPLICATION(S)

A. ☐ The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this(these) application(s) to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. § 122.

Serial No. Filing Date Art Unit

V. THIS IDS IS BEING FILED UNDER

A. ☒ 37 C.F.R. § 1.97(b): (check only one box)

1. ☐ within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. § 1.53(d) (37 C.F.R. § 1.97(b)(1)). No fee or certification is required.

2. ☐ within three months of the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or certification is required.

3. ☒ before the mailing of a first Office Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or certification is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the certification under 37 C.F.R. § 1.97(e) below; or, if no certification has been made, charge our deposit account a fee in the amount of $180.00 as required by 37 C.F.R. § 1.17(p).

4. ☐ before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No fee or certification is required.

B. ☐ 37 C.F.R. § 1.97(c): (check only one box)

☐ before the mailing date of either any Final Office Action under 37 C.F.R. § 1.113, a Notice of Allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution.

1. ☐ No certification; therefore, a fee in the amount of $180.00 is required by 37 C.F.R. § 1.17(p).

2. ☐ See the certification below. No fee is required.

C. ☐ 37 C.F.R. § 1.97(d):

☐ after the mailing date of either a Final Office Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311, yet on or before payment of the issue fee.

1. ☐ See the certification below. A fee in the amount of $180.00 is required by 37 C.F.R. § 1.17(p).

VI. CERTIFICATION UNDER 37 C.F.R. § 1.97(e): (check only one box)

The undersigned hereby certifies that:

A. ☐ each item of information contained in this IDS was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(1)). See further statement under 37 C.F.R. § 1.704(d) below in section VII, if applicable; or

B. ☐ no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(2)).

C. ☐ Some of the items of information were first cited in a communication from a foreign patent office. As to this information, the undersigned hereby certifies that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS.

VII. STATEMENT UNDER 37 C.F.R. § 1.704(d)

The undersigned hereby states that:

☐ each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this IDS.

VIII. PAYMENT OF FEES (check only one box)

A. ☒ No fee is believed to be due in light of the above-noted status or above-provided certification.

B. ☐ A check in the amount of $180.00 is enclosed for the above-identified fee.

C. ☐ Please charge Deposit Account No. 08-0750 in the amount of $180.00 for the above-indicated fee. A duplicate copy of this paper is attached.

The above references are being cited only in the interest of candor and without any admission that they constitute statutory prior art, contain matter which anticipates the invention, or which would render the same obvious, either singly or in combination, to a person of ordinary skill in the art. Furthermore, this Information Disclosure Statement shall not be construed as a representation that a search has been made.

If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 08-0750.

Please charge any additional fees or credit any overpayment pursuant to 37 C.F.R. §§ 1.16 or 1.17 to Deposit Account No. 08-0750.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By _____
Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
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DJD/amp

Enclosures: ☒ Form PTO-1449(s) (1 sheet(s))
☒ Documents

OIPE IAP42 FEB 15 2008 PATENT & TRADEMARK OFFICE

PTO/SB/08A (10-07)
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	11/918,276
Filing Date	October 11, 2007
First Named Inventor	Dr. Hermann Hellwagner
Art Unit	2622
Examiner Name	Unknown
Attorney Docket Number	328160-001352/US

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

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]
	1	EP 0753954 A2	01-15-1997	MORONEY PAUL, GEN INSTRUMENT CORP		

Examiner Signature		Date Considered	

*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. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours 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 (1-800-786-9199) and select option 2.

IDNR: 4285 / 13.11.2007

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(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
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13.07.1995 US 15392

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(54) Transmission of high rate isochronous data in MPEG-2 data streams

(57) A scheme is provided for communicating high rate isochronous data in an MPEG-2 type transport stream in a robust manner. The syntax for the data bitstream also provides for the communication of a data clock increment value to a decoder. The increment value enables a simplified and cost effective approach to the direct digital synthesis of a clock frequency necessary to recover data from the packetized data stream at the decoder. The time resolution for presenting isochronous data presentation units at the decoder is increased by providing a presentation time stamp (PTS) extension to supplement a standard MPEG-2 PTS.

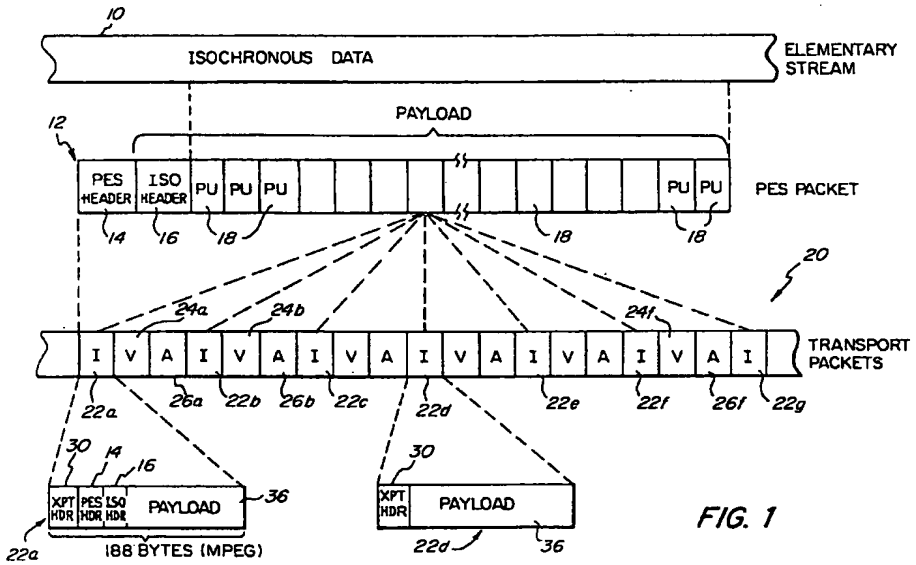


FIG. 1

EP 0 753 954 A2

Description

BACKGROUND OF THE INVENTION

The present invention relates to a method and apparatus for communicating data via a packetized data stream, and more particularly to the transmission of high rate isochronous data in an MPEG-2 data stream. The invention also provides for the communication of a data clock increment value to a decoder to provide a simplified and cost effective approach to the direct digital synthesis (DDS) of a clock frequency necessary to recover data from the packetized data stream at the decoder.

Various standards have emerged for the transport of digital data, such as digital television data. Examples of such standards include the Motion Picture Experts Group standard referred to as MPEG-2 and the DigiCipher® II standard proprietary to General Instrument Corporation of Chicago, Illinois, U.S.A., the assignee of the present invention. The DigiCipher II standard is similar and inclusive of various aspects of the MPEG-2 standard, which is widely known and recognized as a video and audio compression specification sanctioned by the International Standards Organization (ISO) in Document ISO 13818.

In addition to the video and audio compression features, the MPEG-2 specification also contains a systems "layer" that provides a transmission medium independent coding technique to build bitstreams containing one or more MPEG programs. The MPEG coding technique uses a formal grammar ("syntax") and a set of semantic rules for the construction of bitstreams to be transmitted. The syntax and semantic rules include provisions for multiplexing, clock recovery, synchronization and error resiliency. For purposes of this disclosure, any data stream that is coded similarly to that of an MPEG-2 transport stream is referred to as an "MPEG-2 type transport stream." One example, but by no means the only such MPEG-2 type transport stream, is a data stream provided in accordance with the DigiCipher II standard. Other such standards are expected to be promulgated in the future.

The MPEG-2 transport stream is specifically designed for transmission in conditions that can generate data errors. MPEG transport packets each have a fixed length of 188 bytes. Many programs, each with different components, may be combined in a transport stream. Examples of services that can be provided using the MPEG format are television services broadcast over terrestrial, cable television and satellite networks as well as interactive telephony-based services. The syntax and semantics of the MPEG-2 transport stream are defined in the International Organisation for Standardisation, ISO/IEC 13818-1, International Standard, 13 November 1994 entitled "Generic Coding of Moving Pictures and Associated Audio: Systems," recommendation H.222.0, and ISO/IEC 13818-2, International Standard, 1995 entitled "Generic Coding of Moving Pictures and Associated Audio: Video," recommendation H.262, both incorporated herein by reference.

Multiplexing according to the MPEG-2 standard is accomplished by packaging raw elementary streams such as coded video and audio into packetized elementary stream (PES) packets which are then inserted into transport packets. As noted above, each MPEG transport packet is fixed at 188 bytes in length. The first byte is a synchronization byte having a unique eight-bit pattern, e.g., 01000111. The sync byte is used to locate the beginning of each transport packet.

Following the sync byte is a three-byte prefix which includes a one-bit transport packet error indicator, a one-bit payload unit start indicator, a one-bit transport priority indicator, a 13-bit packet identifier (PID), a two-bit transport scrambling control, a two-bit adaptation field control, and a four-bit continuity counter. Use of the sync byte and three-byte prefix leaves up to 184 bytes of payload which carry the data to be communicated. An optional adaptation field may follow the prefix for carrying both MPEG related and private information of relevance to a given transport stream or the elementary stream carried within a given transport packet. Provisions for clock recovery, such as a program clock reference (PCR) and splicing control are typical of the information carried in the adaptation field. By placing such information in an adaptation field, it becomes encapsulated with its associated data to facilitate remultiplexing and network routing operations. When an adaptation field is used, the payload is correspondingly shorter.

The PCR is a count which reflects the value of the system time clock (STC) for the associated program at the time the PCR bytes were inserted into the transport stream. The decoder uses the PCR to synchronize a decoder time clock with the encoder system clock. The lower nine bits of the 42-bit PCR provide a modulo-300 counter that is incremented at a 27 MHz clock rate (the "system clock rate"). At each modulo-300 rollover, the count in the upper 33 bits is incremented, such that the upper bits represent counts that occur at a 90 kHz rate. This enables presentation time-stamps (PTS) and decoding time-stamps (DTS) to be compared using the 90 kHz value. Since each program or service carried by the data stream may have its own PCR, the programs and services can be multiplexed asynchronously.

Synchronization of audio, video and data within a program is accomplished using a time stamp approach. Presentation time-stamps and decoding time-stamps are inserted into the transport stream for the separate video and audio packets. The PTS and DTS information is used by the decoder to determine when to decode and display a picture and when to play an audio segment. As indicated above, the PTS and DTS values are tied to the same clock established by the PCRs, but are limited by the MPEG-2 standard to a time resolution of 11.1 microseconds. This resolution is limited by the PTS resolution of 90 kHz ticks, provided by the upper 33 bits of the PCR. This limitation precludes the transport

of generalized "high rate" data which is robust to timing errors, e.g., data rates not integer related to 90 kbps, using the same approach provided for video and audio information in a standard MPEG-2 type transport stream.

MPEG-2 data, such as compressed video and audio data, must be formatted into a packetized elementary stream (PES) formed from a succession of PES packets. Each PES packet includes a PES header followed by a payload. The PES packets are then divided into the payloads of successive fixed length transport packets.

PES packets are of variable and relatively long length. Various optional fields, such as the presentation time-stamps and decoding time-stamps may follow the PES header. When the transport packets are formed from the PES, the PES headers are aligned with the transport packet headers. A single PES packet may span many transport packets and the subsections of the PES packet must appear in consecutive transport packets of the same PID value. It should be appreciated, however, that these transport packets may be freely interleaved with other transport packets having different PIDs and carrying data from different elementary streams.

Video services are carried by placing coded MPEG video streams into PES packets which are then divided into transport packets for insertion into a transport stream. Each video PES packet contains all or part of a coded video picture, referred to as a video "access unit." PTS and DTS data are placed into the PES packet header that encapsulates the associated access unit. The PTS is used to actuate the decoder to present (e.g., "display") the associated access unit. The DTS indicates when the decoder should decode the access unit.

Audio services are provided in accordance with the MPEG standard using the same specification of the PES packet layer. PTS data is attached to those packets that include audio frame boundaries. Such boundaries are defined by audio sync words. An audio frame is defined as the data between two consecutive audio sync words.

In order to reconstruct a television signal from the video and audio information carried in an MPEG-2 type (e.g., MPEG-2 or DigiCipher II) transport stream, a decoder is required to process the video packets for output to a video decompression processor (VDP) and the audio packets for output to an audio decompression processor (ADP). It is also possible to transmit other types of data in such a transport stream. For example, private data to provide services such as teletext, stock quotes and other information can be carried as separate transport packets derived from a separate packetized elementary stream. Asynchronous data pipes can be supported as well; such a pipe would represent an RS-232 style output from the decoder with the equivalent input to an encoder. Such information service transport packets would be multiplexed with the MPEG video and audio packets in a final multiplex transmitted, e.g., via satellite or cable.

It would be advantageous to also carry "isochronous" data using an MPEG-2 type format. Isochronous data is high rate data delivered at the edges of a regular clock and is distinguished from bursty "synchronous" data which may arrive with an irregular clock. Thus, isochronous data carries a jitter specification and the clock can be restored with a simple phase lock loop (PLL). In general, an isochronous data component is one in which data bits are delivered at essentially regular rates, with an accompanying clock. Any deviation from the regular (isochronous) rate would be covered by the allowed jitter specification. Such data may be used for any number of a large range of "data pipe" applications. One example is the transport of the contents of a T1 digital (i.e., telephone data line) data stream. Such data streams operate at 1.554 Mbps. Other applications include, but are not limited to, business network data, general high speed data communications, and virtually any other data service requiring constant delay data transmission rates that exceed those generally available using asynchronous communication techniques or are not appropriate for variable delay. These applications are characterized by a general intolerance of "bit slips." That is, errors are tolerated, but resynchronization involving net shifts of the bitstream cause large outages to the ultimate data synchronization.

In the MPEG-2 standard, the presentation time-stamps are only able to point to presentation units (i.e. 8-bit bytes of data "presented" to the decoder) at a resolution of 11.1 microseconds. This limitation results from the 90 kHz rate established by the upper bits of the PCR count used to produce the presentation time-stamps. With high speed isochronous data, it may be necessary to resolve presentation units with a higher resolution, especially for purposes of error recovery. Specifically, it is necessary to be capable of presenting presentation units unambiguously in time to support continuously variable rates. Therefore, it would be advantageous to increase the time resolution of the presentation time-stamps over that provided by a standard MPEG-2 implementation. For example, it would be advantageous to provide a scheme for increasing the PTS time resolution to allow the robust transport of isochronous data or the like at rates up to 9.0 Mbps or more.

It would be further advantageous to provide a scheme for simplifying a data receiver to provide the appropriate clock rates based on a system clock frequency, in order to recover data from a data stream. In particular, it would be advantageous to provide a scheme in which the receiver would be able to provide a clock at any desired information data rate from, e.g., 19.2 kbps to 9 Mbps for use in outputting isochronous information data, via DDS.

The present invention provides a method and apparatus for transmitting and receiving data in an MPEG-2 type transport stream having the aforementioned and other advantages.

SUMMARY OF THE INVENTION

In accordance with the present invention, a method is provided for the robust transmission of high rate isochronous

data in an MPEG-2 type transport stream. Isochronous data is provided in a packetized elementary stream (PES) having a PES header preceding a PES payload. The PES payload includes an isochronous data header followed by a plurality of isochronous data presentation units. The isochronous data header and the presentation units which follow within the PES are aligned such that the first byte of the isochronous data header immediately follows the last byte of the PES header. A clock increment value is inserted in said isochronous data header specifying the ratio of said isochronous data rate to a reference clock rate. The clock increment value enables the isochronous data rate to be derived from the reference clock rate at a decoder. The PES is packaged into a plurality of isochronous data transport packets such that a first payload byte of each transport packet is the first byte of an isochronous data presentation unit and a last payload byte of each of the packets is the last byte of an isochronous data presentation unit.

A presentation time-stamp (PTS) extension is provided in the isochronous data header to supplement a standard MPEG-2 PTS provided in the PES header. The combination of the PTS extension with the standard PTS enables the time resolution for presenting isochronous data presentation units at a decoder to be increased.

In an illustrated embodiment, the PTS extension is provided at the beginning of the isochronous data header. The PTS extension can be derived from the eight most significant bits of the standard MPEG-2 nine-bit PCR extension. The eight-bit PTS extension can be combined with MPEG's standard thirty-three-bit PTS to increase the time resolution of isochronous data presentation time-stamps from the MPEG-2 standard resolution of 11.1 microseconds (90 kHz) to 74 nanoseconds (13.5 MHz) for unambiguous determination of the correct presentation unit start time referenced by an isochronous data PTS.

In the illustrated embodiment, each isochronous data presentation unit comprises two eight-bit bytes, such that the presentation units comprise sixteen-bit words.

An increment value can be provided in the isochronous data header specifying the ratio of the isochronous data rate to a reference clock rate at the decoder.

A method is provided for recovering isochronous data transmitted in accordance with any one of the aforementioned methods. A PES header and an isochronous data header are located in a received data stream of isochronous data transport packets. Program clock reference (PCR) values are extracted from the isochronous data transport packets. The PCR values are used to recover the reference clock rate. The clock increment value is extracted from the isochronous data header, and used to derive the isochronous data rate from the reference clock rate. The isochronous data is recovered at the isochronous data rate.

The standard PTS is extracted from the PES header. The PTS extension is extracted from the isochronous data header. The extracted standard PTS and PTS extension are used to determine a correct time for commencing the presentation of the isochronous data presentation units contained in the received data stream. In the illustrated embodiment, the PTS extension is provided at the beginning of the isochronous data header, although it may alternatively be provided elsewhere. The PTS extension can be derived from the eight-most significant bits of the standard MPEG-2 nine-bit PCR extension.

Apparatus is provided for recovering isochronous data from an MPEG-2 type transport packet stream at high data rates in a manner which is robust to the loss of transport packets due to errors. Means are provided for locating a packetized elementary stream header and an isochronous data header in a received isochronous data transport packet stream. Means are also provided for extracting program clock reference (PCR) values from the isochronous data transport packet stream. Means responsive to said PCR values recover a reference clock rate. Means are provided for extracting a clock increment value from the isochronous data header. The extracted clock increment value and the recovered reference clock rate are processed to reproduce the isochronous data rate. Means responsive to the reproduced isochronous data rate recover the isochronous data.

Means are also provided for extracting a presentation time-stamp for the isochronous data from the PES header and for extracting a PTS extension for the isochronous data from the isochronous data header. Means responsive to the extracted PTS and PTS extension are provided for determining a correct time for commencing the presentation of isochronous data presentation units contained in the received data transport packet stream.

In one embodiment of the apparatus, the PTS extension is extracted from the beginning of the isochronous data header, and the isochronous data presentation units are each sixteen bits in length.

Receiver apparatus is provided for recovering information data from a data stream. The information is transmitted in the data stream at an information data rate. A direct digital synthesis clock provides a plurality of reference clock rates based on a system clock frequency. Means are provided for locating an information data header in a received information data transport packet stream. Means are also provided for extracting a clock increment value from the information data header. The clock increment value specifies the exact ratio of the information data rate to the frequency of a phase locked system clock. The DDS clock is responsive to the clock increment value for providing a clock signal at the information data rate for use in outputting the information data.

The increment value is provided as an integer. The data stream can comprise, for example, an MPEG-2 type transport packet stream. In such an embodiment, the nominal system clock frequency is 27 MHz. The increment value is the nearest integer to the product of the information data rate and a modulus value N divided by the nominal system clock frequency (i.e., 27,000,000). In a specific embodiment, the modulus value N = 536,868,000. The integer increments,

combined with the allowed 30 ppm variability from the MPEG nominal 27 MHz system clock frequency, provide a continuously variable clock generator for isochronous data support.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a diagrammatic illustration showing how elementary stream data is packaged into transport packets;
Figure 2 illustrates the PES and isochronous data headers referred to in Figure 1 in greater detail;
Figure 3 is a block diagram of encoder apparatus for assembling the transport packets referred to in Figure 1; and
Figure 4 is a block diagram of decoder apparatus for recovering the isochronous data carried by the transport packets.

DETAILED DESCRIPTION OF THE INVENTION

Figure 1 is a diagrammatic illustration showing how different digital service components can be multiplexed into a stream of transport packets. Multiplexing is accomplished by packaging raw elementary streams such as coded video, audio and data into PES packets and then encapsulating these into transport packets. The figure is illustrative only, since a PES packet, such as packet 12 illustrated, may translate into more or less than the seven transport packets 22a-22g illustrated.

In the example of Figure 1, an elementary stream generally designated 10 comprises a serial stream of data bits, such as the isochronous data shown. It should be appreciated that other types of data can be provided in the elementary stream for transmission in accordance with the present invention. Similar elementary streams will be provided for compressed video and audio data in accordance with the MPEG-2 transport standard.

The first step in forming a transport packet stream is to encapsulate the elementary stream for each type of data into a corresponding packetized elementary stream (PES) formed from successive PES packets, such as packet 12 illustrated. Each PES packet contains a PES header 14 followed by a PES payload containing a series of fixed length presentation units (PU) 18. The payload comprises the data to be communicated. The PES header 14 contains information useful in processing the payload data, such as the presentation time-stamp (PTS) in accordance with the MPEG-2 systems specification.

In accordance with the present invention, an isochronous data header (ISO header) 16 follows the PES header 14 as part of the PES packet payload. The presentation units 18 of the payload follow the ISO header 16. The ISO header is described in greater detail below.

The header and payload data from each PES packet is split into individual fixed length transport packets 22, 24, 26, each containing a transport header 30 and payload data 36. The payload data of each transport packet will contain a portion of the payload data (i.e., presentation units 18) of the corresponding PES packet 12 and may also contain the PES header 14 and ISO header 16, as illustrated at 22a. Transport packet 22d is another isochronous data transport packet in the transport packet multiplex 20. This transport packet includes a transport header 30 as well as payload 36. The payload does not include a PES header or ISO header because this transport packet is derived from payload data that is subsequent to the PES header and ISO header in the PES packet. In other words, since there is only one PES header and one ISO header per PES packet, only the first transport packet derived from that PES packet will contain the PES header and ISO header. The payload segments of the remaining transport packets derived from the PES packet will contain only portions of the actual information data to be transmitted.

In accordance with the MPEG-2 systems specification, the transport packet headers 30 will contain the program identifier (PID) which distinguishes each transport packet stream, such as an isochronous data packet stream, a video packet stream, or an audio packet stream, from other packet streams. In Figure 1, only the derivation of the isochronous data transport packets 22 is shown. In order to derive video packets 24 and audio packets 26, corresponding elementary streams (not shown) are provided which are encapsulated into PES packets and transport packets in essentially the same manner illustrated in Figure 1 with respect to the formation of the isochronous data packets 22, except that the isochronous data header 16 of the present invention is not provided in the video or audio transport packets.

Each MPEG transport packet contains 188 bytes of data, formed from the transport header 30 of at least four bytes and payload data 36, which can be up to 184 bytes. In accordance with the MPEG-2 systems specification, an adaptation field of, e.g, eight bytes may be provided between the transport header 30 and payload 36. The variable length adaptation field can contain, for example, the program clock reference (PCR) used for synchronization of the decoder's system time clock.

The plurality of isochronous data packets 22a, 22b, 22c ... 22g ..., and other packets 24a-f ... and 26a-f ... is multiplexed as illustrated in Figure 1 to form the transport stream 20 that is communicated over the communication channel from the encoder to the decoder. The purpose of the decoder is to demultiplex the different types of transport packets from the transport stream, based on the PID's of the individual packets, and to then selectively process each of the isochronous data, audio and video components for use in reconstructing a television signal and recovering a data stream represented by the isochronous data.

Figure 2 illustrates the PES header 14 and ISO header 16 in greater detail. The PES header 14 includes various length and structure information 50 in accordance with the MPEG-2 systems specification. An optional PTS field 52 may follow the length and structure information 50. In the event a PTS is provided, a counterpart PTS extension is provided in the ISO header 16. As illustrated in Figure 2, the PTS extension 54 is preferably provided at the beginning of the ISO header 16 such that it immediately follows the PTS 52 in the PES header. The present invention is not limited, however, to providing the PTS extension at the beginning of the ISO header. The PTS extension can be provided elsewhere in the ISO header, as long as it can be detected at the decoder for use in appending it to the PTS to extend the time resolution for presenting the isochronous data at the output of the decoder. By providing an additional eight bits, for example, in the PTS extension to be added to the thirty-three bits provided in the PTS specified in MPEG's systems specification, the standard MPEG-2 resolution of 11.1 microseconds can be extended to 74 nanoseconds for unambiguous determination of the correct presentation unit start time referenced by an extended isochronous data PTS.

The ISO header also includes various rate, length and increment information 56. More particularly, the rate, length and increment information will include a data rate flag, an isochronous data header length field, and an increment field specifying a ratio of the information data rate (e.g., the isochronous data rate) to a system clock frequency. This clock increment value enables a direct digital synthesis clock at a decoder to provide a clock signal at the information data rate for use in outputting information data carried by a data transport stream in accordance with the present invention.

In a preferred embodiment of the invention, each isochronous data presentation unit 18 (Figure 1) is sixteen bits in length, i.e., one word of two eight-bit bytes. The isochronous data presentation units are aligned with the PES syntax in that the first byte of the isochronous data header immediately follows the last byte of the PES header. Isochronous data presentation units are aligned with transport packet payloads such that the first payload byte of an isochronous data transport packet is the first byte of an isochronous data presentation unit (following any adaptation, PES header and isochronous data header fields). The last byte of an isochronous data transport packet is the last byte of an isochronous data presentation unit.

The syntax of isochronous data in accordance with the present invention is described below using the formal grammar utilized by the MPEG-2 systems specification. The MPEG grammar is a C-language-like syntax and is a method of describing continuous and possibly variable rate sequences of bits, instead of specifying a procedural program and its functions as in the computer language C. The first column of the syntax contains the syntax element. The second column gives the length of the syntax element in bits and the third column identifies the syntax type. The types are bslbf (bit sequence left-most bit first) and uimsbf (unsigned integer most significant bit first). The notation "isochronous_data_header() {...}" indicates that the syntax elements within the braces are a named set and may be invoked elsewhere in the syntax by simply using the designation "isochronous_data_header()". A conditional occurrence of bit structures may be indicated with the usual "if" tests. The customary relational operators well known in the C-language are also available. Loop structures are possible and use the standard C loop syntax. The syntax table is accompanied by a set of semantics, providing definitions for each previously undefined syntax fields and placing constraints on their use. The following isochronous data bitstream syntax and bitstream semantics represent a preferred embodiment of the present invention:

Isochronous Data Sequence:

Syntax:	No. of Bits:	Mnemonic:
isochronous_data_sequence{		
Isochronous_data_header(){		
for (i=0; i<N; i++){		
Isochronous_data_presentation_unit	16	bslbf
}		
}		

Isochronous Data Header:

To constrain each isochronous data sequence to an even number of bytes, the last reserved field in the isochronous data header is specified to be an even number of bytes. The syntax for isochronous data headers is:

Syntax:	No. of Bits:	Mnemonic:
isochronous_data_header{		
pts_ext8	8	bslbf
data_rate_flag	1	bslbf
reserved	3	bslbf
isochronous_data_header_length	4	uimsbf
if (data_rate_flag){		
reserved	4	bslbf
increment	28	uimsbf
}		
reserved	n	bslbf
}		

Isochronous Data Bitstream Semantics:

Isochronous Data Sequence:

Isochronous_data_presentation_unit -- A 16 bit presentation unit of isochronous data where the first (left) bit is presented (output) before the second bit, etc.

Isochronous Data Header:

pts_ext8 -- An 8-bit field extending the PTS conveyed in the PES header of this PES. This field is the 8 most significant bits of the 9 bit PCR extension defined in the MPEG-2 systems specification, and is used in accordance with the present invention to extend the time resolution of isochronous data PTS's from the MPEG-2 systems specification resolution of 11.1 microseconds (90 kHz) to 74 nanoseconds (13.5 MHz) for unambiguous determination of the correct presentation unit start time referenced by an isochronous data PTS.

data_rate_flag -- A one bit flag which, when set to "1", indicates that an increment field is present in the isochronous data header.

isochronous_data_header_length -- A 4 bit field indicating the number of words (16 bits) of isochronous data header which follow this field including the reserved words, (units of 16 bits forces the isochronous data header to be an even number of bytes which, coupled with isochronous data presentation units, adaptation fields, and PES header also being an even number of bytes, allows isochronous data transport packets to be generated without any padding bytes and thus higher efficiency).

increment -- A 28 bit field which indicates the isochronous data clock increment value and takes on a value that describes the exact ratio of the isochronous data rate to a phase locked reference clock, e.g., an MPEG-2 27 MHz reference. In a preferred embodiment, increment is:

increment = NINT(isochronous data rate *536,868,000/nominal_system_clock_frequency);

where:

nominal_system_clock_frequency is specified by MPEG as 27 MHz and "NINT" means "nearest integer." As noted above, MPEG allows a 30 ppm variability from the nominal system clock frequency.

reserved -- An n-bit field of reserved words of which the decoder assumes no particular value.

The block diagram of Figure 3 illustrates a possible encoder for implementing the present invention. Isochronous data (e.g., from elementary stream 10 - Figure 1) is input via terminal 60 to a header insertion stage 62 which inserts the data required to assemble the ISO header 16. This data is obtained, for example, from a system microprocessor, not shown. The ISO data with the inserted ISO header is received by a PES packetizer stage 66 that inserts the PES header 14 which has been assembled from PES header data input via terminal 68. As with the ISO header data, the

PES header data can be obtained from a system microprocessor or other data source as well known in the art.

An isochronous data clock signal is input via terminal 65 to a phase lock loop (PLL) 67 of the encoder of Figure 3. The PLL can comprise, e.g., a 27 MHz oscillator and DDS circuit to lock to the input clock signal, using the nearest increment value as calculated above. PCR values are then generated by a PCR generator 69. The PCR values are input as transport adaptation data to a transport packet packetizer 70, described in further detail below.

Once the ISO header and PES header have been inserted into the isochronous data elementary stream, the subsequent payload data input via terminal 60 is segmented to follow the headers in the form of fixed length presentation units 18. The result is a succession of PES packets 12 which are output from PES packetizer 66 to the transport packet packetizer stage 70. At this point, data necessary to assemble the transport header is received via terminal 72 in a conventional manner and assembled into a transport header, to which counterpart payload data is appended. The payload data comprises the next portion of data (i.e., PES header data, ISO header data and/or presentation units) from the current PES packet(s). The output of packetizer 70 is a series of isochronous data transport packets 22 which will each comprise a transport header and payload and may or may not include PES header and isochronous data header information as part of the payload.

The isochronous data transport packets from packetizer 70 may be multiplexed with compressed audio packets and video packets input to a multiplexer 74 via terminals 76 and 78, respectively. The audio and video packets are provided in accordance with the MPEG-2 systems specification, as well known in the art. Multiplexer 74 assembles the transport packets into a transport packet stream 20 (as shown in Figure 1). The transport packet stream is modulated in a conventional modulator 80 and transmitted by a conventional transmitter 82 via a satellite, cable or other known communication channel.

Figure 4 illustrates a receiver ("decoder") for the transmission multiplex output from the encoder of Figure 3. The transmission multiplex is input to a decoder 92 via terminal 90, and demodulated in a conventional demodulator 94. A demultiplexer 96 recovers the audio packets, video packets and isochronous data packets from the demodulated transport packet stream. The isochronous data packets are input to a header processor 98 which can comprise a conventional microprocessor programmed to recover the PES header and ISO header from the isochronous data packet stream. The PTS is extracted from the PES header in a PTS extraction stage 102. The PTS extension provided in accordance with the present invention is extracted from the ISO header by a PTS extension extraction stage 104. The PTS and PTS extension are combined in a combiner 106 to provide the isochronous data PTS's that enable the high rate isochronous data to be accurately presented in time. A PTS decoder 108 extracts the timing information from the extended isochronous data PTS's output from combiner 106. This timing information is input to an isochronous data extractor 110 that also receives the isochronous data packets from demultiplexer 96. System timing information from the header processor 98 enables the extraction stages 102, 104, the PTS decoder 108 and the isochronous data extractor 110 to properly locate and process the data presented to each stage. The ISO data extractor 110 responds to the PTS's from PTS decoder 108 in order to present the individual isochronous data presentation units (the recovered "ISO data") at the appropriate time. The presented ISO data is output from ISO data extractor 110 for use in providing a desired service based on the information embodied in the data.

The decoder of Figure 4 also includes a DDS clock 100 that is used to provide a plurality of reference clock rates used by the header processor and/or other components of the decoder. The system timing output from header processor 98 is based on one or more of the reference clock rates provided by the DDS clock. These reference clock rates are based on a system clock frequency, for example, the 27 MHz system clock frequency set forth in the MPEG-2 systems specification. In order to process PCRs to generate the system clock frequency for use by the DDS, the decoder includes a PCR parser 97 that extracts PCR values from isochronous data transport packets. The extracted PCR values are used to lock a phase lock loop 99 that generates the system clock (e.g., 27 MHz). The system clock is input to the DDS clock 100 for use in generating the reference clock rates described above.

In order to simplify the decoder, a clock "increment" is provided in the isochronous data header to specify the ratio of the isochronous data rate to the system clock frequency. This increment is recovered by the header processor 98 and input to the DDS clock 100, which uses the increment to provide a clock signal at the isochronous data rate for use in presenting the isochronous data.

The provision of a clock increment in the isochronous data header obviates the need for the decoder to have to compute this increment on its own. In conventional systems using a direct digital synthesis clock, the decoder receives a required clock frequency indicator with the data to be recovered. The clock frequency indicator specifies the actual clock frequency that is to be synthesized by the DDS clock. Since the DDS clock scales an existing system clock in order to produce various fixed clock frequencies, conventional decoders must first determine the ratio of the desired clock frequency to the system clock frequency from which the desired clock frequency is to be derived. The processing hardware necessary to perform this function adds cost and complexity to the decoder.

In a digital television decoder, cost must be kept to a minimum since a separate decoder will be required for each of the potentially millions of televisions in the field. By providing the decoder with an increment that can be directly used by the DDS clock to produce the desired frequency, the receiver complexity and cost is reduced. In the system of the present invention, the computation of the increment necessary to provide the desired frequency is done centrally at the

encoder, which serves the millions of decoders in the field. The decoders therefore do not need to perform this computation.

It should now be appreciated that the present invention provides a method and apparatus for communicating information data, such as isochronous data, in an MPEG-2 type transport stream. The isochronous data follows a PES header in the payload portion of a packetized elementary stream. The PES payload begins with an isochronous data header which is followed by isochronous data presentation units. In the preferred embodiment, the presentation units are sixteen bits in length. The presentation units are aligned with the packetized elementary stream, with the first byte of the isochronous data header following the last byte of the PES header. The isochronous data presentation units are also aligned with the transport packets which carry them. In particular, the first payload byte of a transport packet is the first byte of an presentation unit. The last byte of a transport packet is the last byte of an presentation unit. A unique isochronous data bitstream syntax is provided to implement the present invention. The syntax provides a clock increment in the isochronous data header in order to describe the ratio of the isochronous data rate to a system reference, thereby providing additional information to the decoder that enables the receiver complexity and cost to be reduced.

Although the invention has been described in connection with a preferred embodiment, it should be appreciated that numerous adaptations and modifications may be made thereto without departing from the spirit and scope of the invention as set forth in the claims.

Claims

1. A method for the robust transmission of high rate isochronous data in an MPEG-2 type transport stream, comprising the steps of:

   providing said isochronous data in a packetized elementary stream (PES) having a PES header preceding a PES payload, said PES payload including an isochronous data header followed by a plurality of isochronous data presentation units;
   aligning said isochronous data header and the presentation units which follow within said PES such that the first byte of the isochronous data header immediately follows the last byte of the PES header;
   inserting a clock increment value in said isochronous data header specifying the ratio of said isochronous data rate to a reference clock rate, said clock increment value enabling said isochronous data rate to be derived from said reference clock rate at a decoder; and
   packaging said PES into a plurality of isochronous data transport packets such that a first payload byte of each transport packet is the first byte of an isochronous data presentation unit and a last payload byte of each of said packets is the last byte of an isochronous data presentation unit.

2. A method in accordance with claim 1 comprising the further step of:

   providing a presentation time-stamp (PTS) extension in said isochronous data header to supplement a standard MPEG-2 PTS provided in said PES header, the combination of said PTS extension with the standard PTS enabling the time resolution for presenting isochronous data presentation units at said decoder to be increased.

3. A method in accordance with claim 2 wherein said PTS extension is provided at the beginning of said isochronous data header.

4. A method in accordance with claim 2 or 3 wherein said PTS extension is an eight bit extension derived from the eight most significant bits of the standard MPEG-2 nine bit PCR extension.

5. A method in accordance with any of claims 2 to 4 wherein said eight bit PTS extension is combined with a standard 33-bit PTS to increase said time resolution from about 11.1 microseconds to about 74 nanoseconds.

6. A method in accordance with any of the preceding claims wherein said isochronous data presentation units are each sixteen bits in length.

7. A method for recovering isochronous data transmitted in accordance with the method of any of the preceding claims comprising the steps of:

   locating a PES header and an isochronous data header in a received data stream of said isochronous data transport packets;
   extracting program clock reference (PCR) values from said isochronous data transport packets;

using said PCR values to recover said reference clock rate;
extracting said clock increment value from said isochronous data header;
using said extracted increment value to derive said isochronous data rate from said reference clock rate; and
recovering said isochronous data at said isochronous data rate.

8. A method in accordance with claim 7 wherein prior to transmission of said high rate isochronous data in said MPEG-2 type transport stream, a presentation time-stamp (PTS) extension is provided in said isochronous data header to supplement a standard MPEG-2 PTS provided in said PES header, the combination of said PTS extension with the standard PTS enabling the time resolution for presenting isochronous data presentation units at said decoder to be increased, said method for recovering the isochronous data comprising the further steps of:

extracting said standard PTS from said PES header;
extracting said PTS extension from said isochronous data header; and
using the extracted standard PTS and PTS extension to determine a correct time for commencing the presentation of the isochronous data presentation units contained in said received data stream.

9. A method in accordance with claim 8 wherein said PTS extension is provided at the beginning of said isochronous data header.

10. A method in accordance with claim 8 or 9 wherein said PTS extension is derived from the eight most significant bits of the standard MPEG-2 nine bit PCR extension.

11. A method in accordance with any of claims 8 to 10 wherein said isochronous data presentation units are each sixteen bits in length.

12. A method in accordance with any of the preceding claims comprising the further step of inserting PCR values into said isochronous data transport packets for use by said decoder in recovering said reference clock rate.

13. Apparatus for recovering isochronous data carried at an isochronous data rate in an MPEG-2 type transport stream comprising:

means for locating a packetized elementary stream (PES) header and an isochronous data header in a received isochronous data transport packet stream;
means for extracting program clock reference (PCR) values from said isochronous data transport packet stream;
means responsive to said PCR values for recovering a reference clock rate;
means for extracting a clock increment value from said isochronous data header;
means for processing said extracted clock increment value and the recovered reference clock rate to reproduce said isochronous data rate; and
means responsive to the isochronous data rate reproduced by said processing means for recovering said isochronous data.

14. Apparatus in accordance with claim 13 further comprising:

means for extracting a presentation time-stamp (PTS) for the isochronous data from said PES header;
means for extracting a PTS extension for the isochronous data from said isochronous data header and;
means responsive to said extracted PTS and PTS extension for determining a correct time for commencing the presentation of isochronous data presentation units contained in said received data transport packet stream.

15. Apparatus in accordance with claim 14 wherein said PTS extension is extracted from the beginning of said isochronous data header.

16. Apparatus in accordance with claim 14 or 15 wherein said isochronous data presentation units are each sixteen bits in length.

17. Decoder apparatus for recovering information data from a data stream, said information being transmitted in said data stream at an information data rate, comprising:

a direct digital synthesis (DDS) clock for providing a plurality of reference clock rates based on a system clock

frequency;

means for locating an information data header in a received information data transport packet stream; and

means for extracting a clock increment value from said information data header, said clock increment value specifying the ratio of said information data rate to said system clock frequency;

wherein said DDS clock is responsive to said clock increment value for providing a clock signal at said information data rate for use in outputting said information data.

18. Apparatus in accordance with claim 17 wherein said increment value is an integer.

19. Apparatus in accordance with claim 17 or 18 wherein:

said data stream is an MPEG-2 type transport stream;

said system clock frequency is about 27 MHz; and

said increment value is the nearest integer to the product of the information data rate and a modulus value N divided by 27,000,000.

20. Apparatus in accordance with claim 19 wherein said modulus value N = 536,868,000.

21. Apparatus in accordance with any of claims 17 to 20 wherein:

said system clock frequency has a range of tolerance enabling said DDS clock to generate a substantially continuous range of reference clock rates from a system clock to recover information at any information rate within said substantially continuous range.

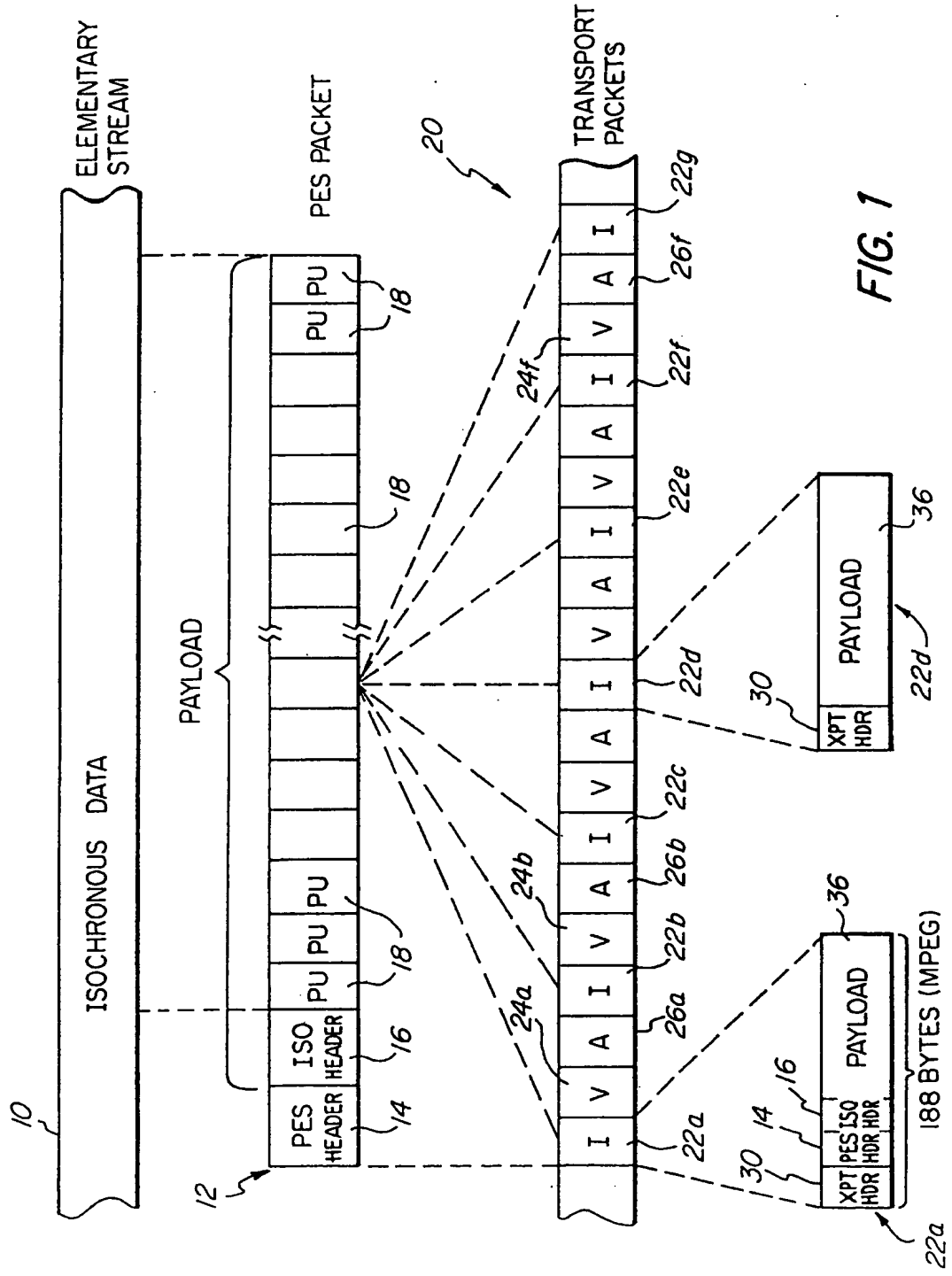

ELEMENTARY STREAM
ISOCHRONOUS DATA
PAYLOAD
PES PACKET
PES HEADER
ISO HEADER
PU
TRANSPORT PACKETS
I
A
V
PAYLOAD
XPT HDR
PES HDR
ISO HDR
188 BYTES (MPEG)
10
12
14
16
18
20
22a
22b
22c
22d
22e
22f
22g
24a
24b
24f
26a
26b
26f
30
36

FIG. 1

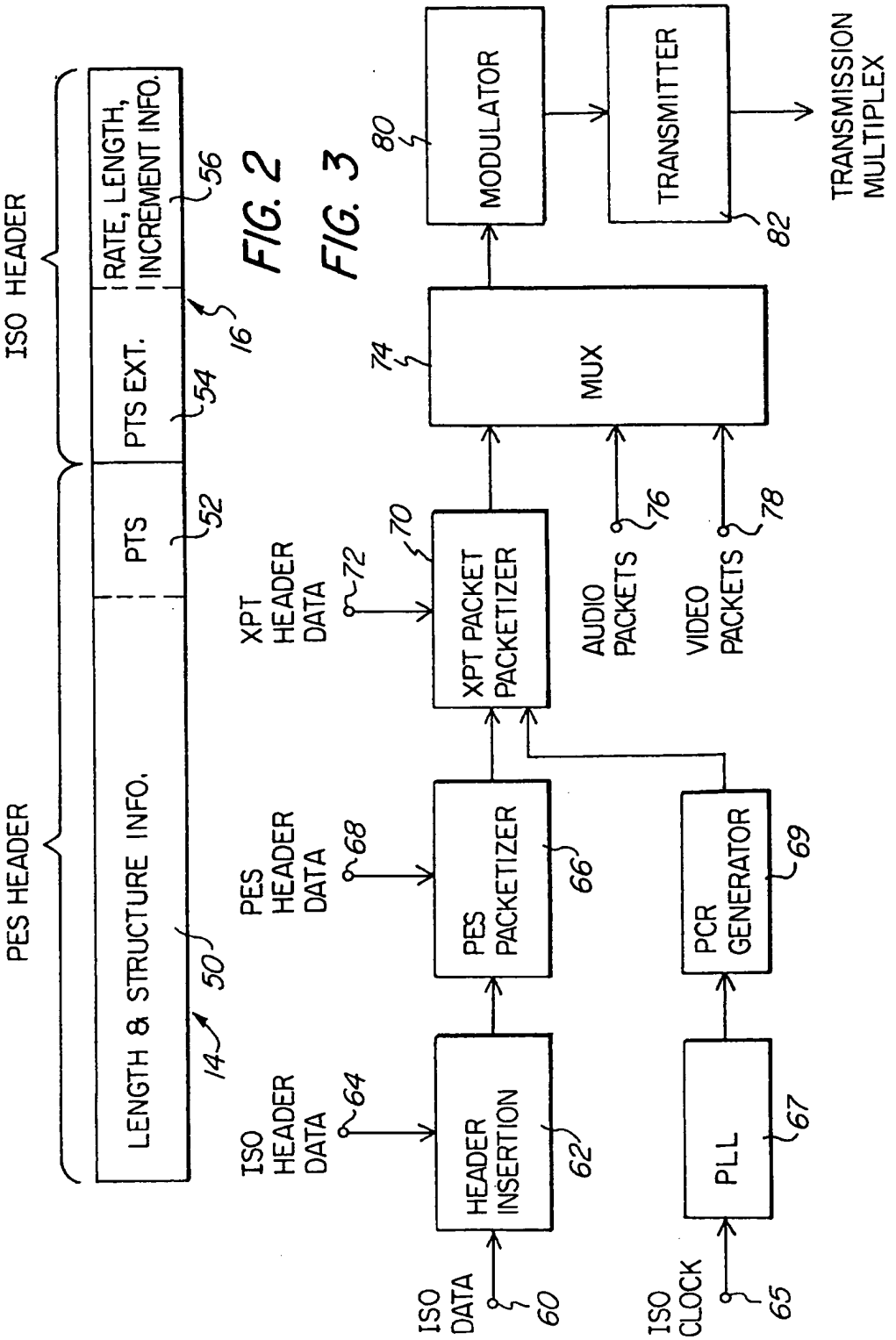

ISO HEADER
PES HEADER
LENGTH & STRUCTURE INFO.
PTS
PTS EXT.
RATE, LENGTH, INCREMENT INFO.
14
50
52
54
56
16
ISO HEADER DATA
64
HEADER INSERTION
62
ISO DATA
60
PES HEADER DATA
68
PES PACKETIZER
66
XPT HEADER DATA
72
70
XPT PACKET PACKETIZER
ISO CLOCK
65
PLL
67
PCR GENERATOR
69
AUDIO PACKETS
76
VIDEO PACKETS
78
74
MUX
80
MODULATOR
TRANSMITTER
82
TRANSMISSION MULTIPLEX

FIG. 2

FIG. 3

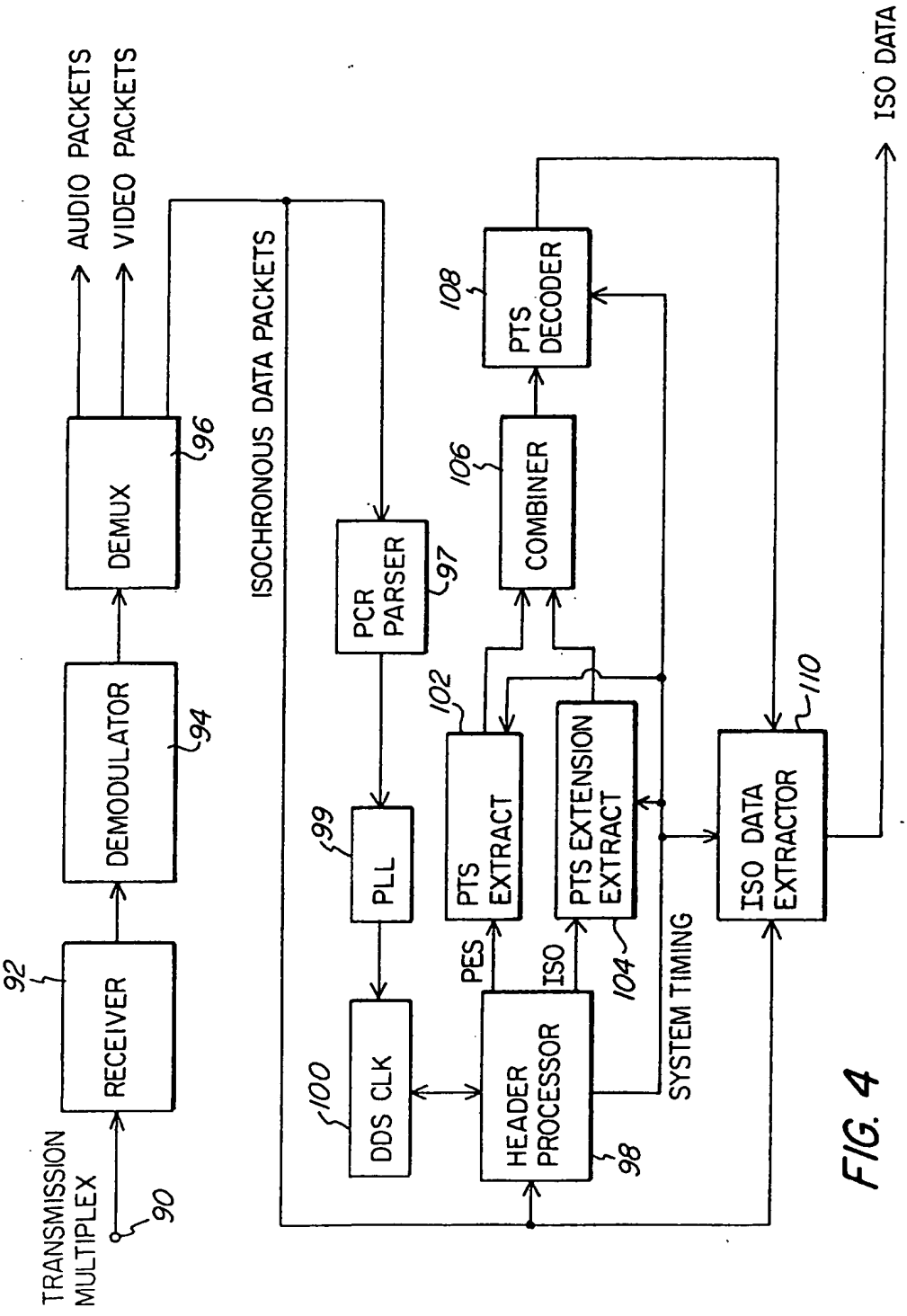

TRANSMISSION MULTIPLEX
90
92
RECEIVER
DEMODULATOR
94
DEMUX
96
AUDIO PACKETS
VIDEO PACKETS
ISOCHRONOUS DATA PACKETS
PCR PARSER
97
99
PLL
100
DDS CLK
PES
ISO
HEADER PROCESSOR
98
102
PTS EXTRACT
PTS EXTENSION EXTRACT
104
SYSTEM TIMING
106
COMBINER
108
PTS DECODER
ISO DATA EXTRACTOR
110
ISO DATA

FIG. 4

IAP12 Rec'd PCT/PTO 11 OCT 2007

FORM PTO-1390 (Modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

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

ATTORNEY'S DOCKET NUMBER	U.S. APPLICATION NO. (If known, see 37 CFR 1.5)	EXPRESS MAIL LABEL NO.
32860-001352/US	11/918276 NEW	

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/EP2006/060808	March 16, 2006	April 12, 2005

TITLE OF INVENTION
METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

APPLICANT(S) FOR DO/EO/US

Hermann HELLWAGNER, Jörg HEUER, Andreas HUTTER and Michael RANSBURG.

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

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39 (1).
4. ☒ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☒ has been transmitted by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
   a. ☒ is transmitted herewith.
   b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4)
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
   a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ have been transmitted by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 20. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98-1449, International Search Report (PCT/ISA/210 and a PCT/ISA/220) in English and PTO Form 1449
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
14. ☐ A SECOND or SUBSEQUENT preliminary amendment.
15. ☒ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821-1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information: Formal Drawings and a PCT/ISA/237.

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U.S. APPLICATION NO (if known, see 37 CFR 1.5)	INTERNATIONAL APPLICATION NO	ATTORNEY'S DOCKET NUMBER
NEW 11/918276	PCT/EP2006/060808	32860-001352/US

21. ☒ The following fees are submitted:

PCT FEES – NATIONAL STAGE:

Fee Code	Description	Fee
1631	Basic National Stage Fee	$310.00
1632	National Stage Search Fee	$410.00
1633	National Stage Examination Fee	$210.00

	CALCULATIONS PTO USE ONLY
ENTER APPROPRIATE FEE AMOUNT = $ 1060	$ 930.00
Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☒ 30 Months from the earliest claimed priority date (37 CFR 1.492(e)).	$ 130.00

PAGES	PAGES FILED	EXTRA PAGES FILED IN 50 PAGE SEGMENTS	RATE	
Total Pages	22 - 100 =0	0	X 260.00	$ 0.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	
Total Claims	17 - 20 =	0	X 50.00	$ 0.00
Independent Claims	2 - 3 =	0	X 210.00	$ 0.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)		____	X 370.00	$ 0.00
TOTAL OF ABOVE CALCULATIONS =				$ 1060.00
☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				$ ____
SUBTOTAL =				$ 1060.00
Processing fee of **$130.00** for furnishing the English translation later than ☐20 ☐30 Months from the earliest claimed priority date (37 CFR 1.492(f)).				$ ____
TOTAL NATIONAL FEE =				$ 1060.00
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 =				$ 1060.00
			Amount to be: refunded	$
			charged	$

a. ☒ A check in the amount of $**1060.00** to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account. No. 08-0750 in the amount of $ to cover the above fees. A triplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 08-0750.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 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 application to pending status.

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Date: October 11, 2007

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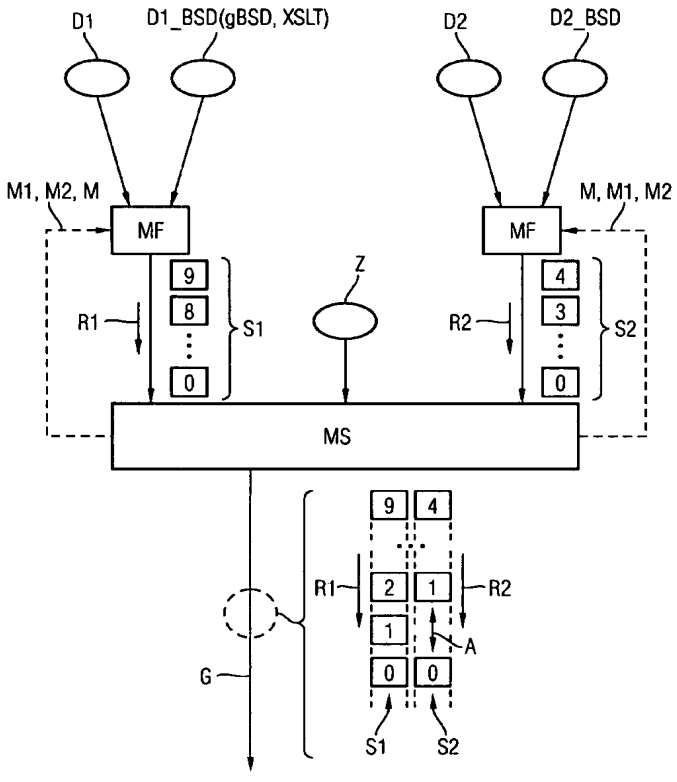
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[Fortsetzung auf der nächsten Seite]

(54) **Title:** METHOD FOR SYNCHRONISING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

(54) **Bezeichnung:** VERFAHREN ZUM SYNCHRONISIEREN VON INHALTSBEZOGENEN DATENSEGMENTEN VON DATEIEN



(57) **Abstract:** The synchronisation of data segments is particularly necessary for the use of small screens. The invention relates to a method and a device for synchronising content-dependent first data segments (S1) of a first data file (D1) and content-dependent second data segments (S2) of a second data file (D2), the first and second data segments (S1, S2) being respectively output in sequence according to their chronological order in such a way that based on a predeterminable assignment rule for the first and second data segments (S1, S2), each second data segment (S2) is output together with a corresponding first data segment (S1).

(57) **Zusammenfassung:** Besonderes bei der Verwendung von kleinen Bildschirmen ist die Synchronisierung von Datensegmenten in einfacher Weise notwendig. Die Erfindung betrifft ein Verfahren sowie eine Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (Sl) einer ersten Datendatei (Dl) und inhaltsbezogenen zweiten Datensegmenten (S2) einer zweiten Datendatei (D2), wobei die ersten und zweiten Datensegmente (Sl, S2) jeweils seguenziell entsprechend ihrer zeitlichen Reihenfolge derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente (Sl, S2) jedes zweite Datensegment (S2) zusammen mit einem dazugehörigen ersten Datensegment (Sl) ausgegeben wird.

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SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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Veröffentlicht:

— *mit internationalem Recherchenbericht*

Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

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Beschreibung

VERFAHREN ZUM SYNCHRONISIEREN VON INHALTSBEZOGENEN DATENSEGMENTEN VON DATEIEN

Die Erfindung betrifft ein Verfahren gemäß dem Oberbegriff des Anspruchs 1 und eine Vorrichtung gemäß dem Oberbegriff des Anspruchs 9.

Seit vielen Jahrzehnten werden Fernsehsignale terrestrisch und im Kabel an Fernsehteilnehmer übermittelt. In Europa wird dafür beispielsweise die PAL-Norm und in Nordamerika die NTSC-Norm verwendet. Da alle Fernsehgeräte in den jeweiligen Ländern dazu geeignet sind, das z.B. nach PAL-Norm codierte Fernsehsignal zu empfangen, braucht lediglich ein Fernsehsignal für ein Fernsehprogramm ausgestrahlt werden. Dadurch wird eine Ausstrahlung mehrerer unterschiedlich codierter Fernsehsignale eines Fernsehnprogramms, beispielsweise in Abhängigkeit von einer Bildgröße oder einer Leistungsfähigkeit der Fernsehgeräte, nicht benötigt.

Durch die derzeitige Einführung neuer Endgeräte, beispielsweise mobiler Endgeräte mit kleinen Bildschirmen, wird es in der Zukunft nicht mehr möglich sein, ein einziges Fernsehsignal eines Fernsehprogramms für alle Endgeräte zur Verfügung zu stellen. Ferner kann es auch gewünscht sein, unterschiedliche Fernsehteilnehmer mit unterschiedlich qualitativen Fernsehsignalen zu versorgen. Dabei wird beispielsweise für ein Fernsehteilnehmer, der eine niedrige monatliche Gebühr bezahlt, ein gering qualitatives Fernsehsignal zur Verfügung gestellt, beispielsweise in schwarz/weiß, wohingegen bei höherer Gebühr ein hoch auflösendes farbiges Fernsehsignal geliefert wird.

Um diesen Anforderungen gerecht zu werden, wurden in der Vergangenheit sowohl neuartige Datenkompressionsalgorithmen, wie

zum Beispiel ein Videocodierstandard ITU-T H.264, als auch Metadatensprachen, wie z.B. XML (XML = Extended Markup Language), entwickelt. Mit Hilfe dieser Metadatensprachen können Inhalte eines Dokuments und/oder eines Datenstroms, wie zum Beispiel eines Fernseh- bzw. Videosignals, mittels einer XML-Schema-Sprachdefinition strukturiert beschrieben werden. Auf Basis dieser Definition können je nach Anforderung Informationen gewonnen werden, mit deren Hilfe eine Skalierung des Fernseh- bzw. Videosignals für verschiedene Fernsehteilnehmer realisiert werden kann.

Aus dem Stand der Technik ist die Verwendung von XML-basierten Beschreibungen von Datenströmen bekannt, bei denen die einzelnen Komponenten des Datenstroms entsprechend ihrer syntaktischen Bedeutung mit BSD-Einheiten (BSD = Bitstream Syntax Description) mit frei adressierbaren gBSD-Einheiten (gBSD=generic Bitstream Description) hinsichtlich unterschiedlicher Adaptionsmöglichkeiten beschrieben bzw. gekennzeichnet werden. Eine ausführliche Beschreibung hierzu findet sich in [1]. Diese Beschreibungen des Datenstroms werden genutzt, um den Datenstrom an die Anforderung, zum Beispiel in Hinsicht auf Datenrate oder Qualität eines Fernsehsignals, eines Endteilnehmers, wie z.B. eines Fernsehteilnehmers, zu adaptieren. Dazu kann zunächst die Beschreibung des Datenstroms geeignet transformiert werden, wobei anschließend der Datenstrom basierend auf der transformierten Beschreibung adaptiert wird.

Aus [4] ist eine Bitstream Binding Language - Verfahren (BBL) bekannt, mit der eine Synchronisation durchgeführt werden kann. Da BBL bei der Fragmentierung von Metadaten auf XPath beruht und eine Beschreibung eines Abschnitts der Metadaten mit XPath eine umfangreiche Datenmenge einnimmt, wird ein großer Oberhead durch dieses Verfahren erzeugt. Für die Fragmentierung der Mediadaten wird ein proprietäres Verfahren vorgeschlagen, wodurch eine Synchronisierung verschiedener Datentypen nicht allgemein ermöglicht wird.

In dem Dokument [2] werden Anforderungen für streambare digitale Einheiten (streamable digital items) vorgestellt. Diese Anforderungen basieren auf der gBSD-Beschreibung, wobei eine verteilte und dynamische Adaption für Metadaten vorgeschlagen wird.

Aus dem Dokument [3] sind zwei Verfahren bekannt, bei denen mit Hilfe der gBSD-Beschreibung und der XSLT-Beschreibung eine Adapation von Datenströmen für Streaming-Anwendungen durchführbar ist.

Die der Erfindung zugrunde liegende Aufgabe ist ein Verfahren und eine Vorrichtung anzugeben, das bzw. die eine Synchronisation von inhaltsbezogenen ersten und zweiten Datensegmenten in einfacher und standardkonformer Weise ermöglicht.

Diese Aufgabe wird ausgehend von dem Verfahren gemäß dem Oberbegriff des Anspruchs 1 durch dessen kennzeichnende Merkmale und durch eine Vorrichtung ausgehend von dem Oberbegriff des Anspruchs 9 durch dessen kennzeichnende Merkmale gelöst.

Bei dem Verfahren zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei werden die ersten und zweiten Datensegmente jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente jedes zweite Datensegment zusammen mit einem dazugehörigen ersten Datensegment ausgegeben wird.

Durch das erfindungemäße Verfahren wird ermöglicht in einfacher Weise inhaltsbezogene erste und zweite Datensegmente zu synchronisieren. Diese Synchronisation wird gesteuert durch die vorgebbare Zuordnungsvorschrift. Somit können inhaltsbezogene Datensegmente entsprechend ihrer zeitlichen Reihenfolge zusammen ausgegeben werden. Dies ist von Vorteil, da die Zuordnung ohne die Verwendung von Zeitmarken erfolgt. In die-

sem Zusammenhang ist unter dem Begriff ausgeben zu verstehen, dass erste und zweite Datensegmente bspw. übertragen, gemeinsam gespeichert oder an eine Verarbeitungseinheit weitergegeben werden.

Vorzugsweise wird die vorgebbare Zuordnungsvorschrift derart gebildet, dass ein zweites Datensegment genau einem ersten Datensegment zugewiesen wird und eine weitere Zuweisung nach einer Anzahl an sequenziell aufeinander folgenden ersten Datensegmenten erfolgt. Dadurch kann nur durch Angabe der Anzahl die Zuordnungsvorschrift beschrieben werden. Dies ist wegen des sehr geringen Signalisierungsaufwands, der zur Signalisierung der Anzahl benötigt wird, von Vorteil.

In einer alternativen Ausführungsform wird die vorgebbare Zuordnungsvorschrift derart gebildet wird, dass für jedes zweite Datensegment ein erstes Datensegment durch Angabe einer Nummer zugeordnet wird, wobei die Nummer eine Position des ersten Datensegments innerhalb der zeitlichen Reihenfolge der ersten Datensegmente repräsentiert. Hierdurch wird in besonders flexibler Art und Weise die Zuordnung von ersten und zweiten Datensegmenten erreicht. Dabei können einem ersten Datensegment mehrere zweite Datensegmente zugeordnet werden.

Vorzugsweise werden auf Grundlage einer kombinierten vorgebbaren Zuordnungsvorschrift inhaltsbezogene erste Datensegmente und inhaltsbezogene zweite Datensegmente mehrerer zweiter Datendatei synchronisiert. Hierdurch können die zweiten Datensegmente mehrerer Datendateien synchronisiert ausgegeben werden. Die kombinierte vorgebbare Zuordnungsvorschrift ermöglicht eine sehr kompakte und speichereffiziente Beschreibung.

Durch das erfindungsgemäße Verfahren werden durch die erste und/oder zweite Datendatei Mediadaten, insbesondere Video- oder Audiodaten, und/oder Metadaten, insbesondere codiert nach XML-Standard, beschrieben. Somit wird es durch das er-

findungsgemäße Verfahren ermöglicht, eine Vielzahl unterschiedlicher Datentypen zu synchronisieren.

Vorzugsweise werden die ersten und/oder zweiten Datensegmente auf Basis der generic bit stream syntax description oder auf Basis der extensible stylesheet language transformation generiert. Mit dieser standardisierten Art und Weise der Generierung der ersten und/oder zweiten Datensegmente kann eine kostengünstige, zuverlässige und standardkonforme Realisierung des erfindungsgemäßen Verfahrens erzielt werden, da die Realisierung auf standardisierte Module zurückgreifen kann.

Ferner ist es in der Praxis zweckmäßig, dass auf Grundlage einer inhaltsbezogenen Markierung bestimmt wird, welches erste und zweite Datensegment zeitlich zuerst ausgegeben wird. Damit kann wahlfrei auf die erste und zweite Datendatei zugegriffen werden. Durch die inhaltsbezogene Markierung wird insbesondere ein Szenenwechsel in einer Bildsequenz oder ein Sprecherwechsel in einer Sprachsequenz gekennzeichnet. Damit kann ein gewünschter Abschnitt einer Sprach- oder Bildsequenz rasch aufgefunden werden, da der Zugriff inhaltsbasiert erfolgt.

Die Erfindung betrifft auch eine Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei, mit einem Synchronisationsmodul zum Ausgeben erster und zweiter Datensegmente jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge, wobei auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente jedes zweite Datensegment zusammen mit einem dazugehörigen ersten Datensegment ausgegeben wird. Mit Hilfe der Vorrichtung kann das erfindungsgemäße Verfahren durchgeführt werden.

Weitere Einzelheiten sowie Vorteile der Erfindung werden anhand der Figuren 1 bis 5 näher erläutert. Im Einzelnen zeigen:

Figur 1 eine Vorrichtung zur Durchführung des erfindungsgemäßen Verfahrens;

Figur 2 einen Inhalt einer Fragmentierungsbeschreibungsdatei unter Verwendung der XML-Beschreibungssprache, wobei mittels der Fragmentierungsbeschreibungsdatei eine Fragmentierung einer ersten und/oder zweiten Datendatei beschrieben wird;

Figur 3 ein Baumdiagramm zur bildhaften Darstellung einer Zuordnungsvorschrift;

Figur 4 einen Inhalt einer Zuordnungsvorschrift, die mit Hilfe der XML-Beschreibungssprache gebildet wird;

Figur 5 eine zeitliche Anordnung synchronisierter erster und zweiter Datensegmente S1, S2.

Elemente mit gleicher Funktion und gleicher Wirkungsweise sind in den Figuren 1 bis 5 mit denselben Bezugszeichen versehen.

Das erfindungsgemäße Verfahren wird im Folgenden anhand eines Ausführungsbeispiels gemäß Figur 1 näher erläutert. Hierbei sollen ein Videodatenstrom und ein Audiodatenstrom synchronisiert werden. Der Videodatenstrom ist bspw. nach dem Videocodierstandard MPEG2, MPEG4 oder ITU H.264 komprimiert worden. In Figur 1 wird dieser Videodatenstrom als erste Datendatei D1 gekennzeichnet. Der Audiodatenstrom ist bspw. mit dem Audiocodierstandard ITU G.723.1 oder MPEG4-AAC codiert worden. Der Audiodatenstrom ist in Figur 1 mit einem Namen zweite Datendatei D2 bezeichnet.

Zu jeder ersten und zweiten Datendatei D1, D2 existiert jeweils eine Fragmentierungsbeschreibungsdatei D1_BSD, B2_BSD. Diese Fragmentierungsbeschreibungsdatei D1_BSD, B2_BSD spezifiziert, wie inhaltsbezogene erste und inhaltsbezogene zweite

Datensegmente S1, S2 aus der jeweiligen ersten bzw. zweiten Datendatei D12, D2 gewonnen werden können. Unter dem Begriff inhaltsbezogen ist zu verstehen, dass erste bzw. zweite Datensegmente eine syntaktische Bedeutung innerhalb der jeweiligen Datendatei aufweisen, wie z.B. mehrere aufeinander folgende zweite Datensegmente repräsentieren das Sprachsignal eines bestimmten Sprechers innerhalb einer Dialogsequenz. Ferner können darunter auch Abschnitte der Datendatei verstanden werden, wie z.B. einzelne Bilder einer Videosequenz. Im Folgenden beziehen sich Datensegmente immer auf inhaltsbasierte Datensegmente.

In Figur 2 ist eine erste Fragmentierungsbeschreibungsdatei D1_BSD für eine nach dem Standard MPEG4 codierte erste Datendatei D1 zu sehen. Daten einer derartigen ersten Datendatei D1 sind auch als Mediadaten MID bekannt. Diese erste Fragmentierungsbeschreibungsdatei D1_BSD verwendet zur Darstellung der Fragmentierungsvorschriften eine gBSD-Syntax (gBSD = generic bit stream syntax description), wobei die gBSD-Sytax auf der XML-Spache basiert. So zeigt bspw. die mit einem Bezugszeichen X1 gekennzeichnete Zeile, dass eine Intracodierte Video Object Plane (I-VOP) an einer Byteadresse 26 innerhalb der ersten Datendatei D1 beginnt und 2877 Bytes umfasst. Eine detaillierte Beschreibung der Funktionsweise der gBSD-Sprache ist aus [1] bekannt, wobei die erste Fragmentierungsbeschreibungsdatei D1_BSD mit Figur 9 aus [1] nahezu identisch ist. Eine andere Möglichkeit zur Beschreibung der Fragmentierungsvorschriften stellt die extensible stylesheet language transformation (XSL-Transformation bzw. XSLT) dar. Hiermit können Metadaten MTD, insbesondere XML-codierte Metadaten, fragmentiert werden. Weitere Information zu XSLT sind dem Dokument [1] entnehmbar.

Gemäß Figur 1 wird die erste Datendatei D1 und die erste Fragmentierungsbeschreibungsdatei D1_BSD einem Fragmentierungsmodul MF zugeführt. Dieses entnimmt aus der ersten Datendatei D1 gemäß der Fragmentierungsvorschrift der ersten Fragmentierungsbeschreibungsdatei D1_BSD erste Datensegmente

S1. Diese ersten Datensegmente S1 werden in derjenigen zeitlichen Reihenfolge R1 von dem Fragmentierungsmodul MF an ein Synchronisationsmodul MS übergeben, in der diese ausgegeben werden sollen. Unter den ersten Datensegmenten S1 sind Datensegmente der ersten Datendatei D1 zu verstehen, die eine für die erste Datendatei D1 inhaltsbezogene Bedeutung aufweisen, wie bspw. einzelne Bilder in einer Videosequenz oder einzelne gesprochene Worte in einer Audiosequenz. Dabei kennzeichnet die zeitliche Reihenfolge diejenige Abfolge der einzelnen ersten Datensegmente S1, in der diese bspw. visuell wiedergegeben oder hörbar gemacht werden. Beispielsweise umfasst ein Datensegment das Wort „Guten" und ein weiteres Datensegment das Wort „Morgen", so wird zuerst das Datensegment mit „Guten" und dann dasjenige mit „Morgen" ausgegeben. Diese zeitliche Reihenfolge R1 ist in Figur 1 durch einen Pfeil mit dem Bezugszeichen R1 sinnbildlich dargestellt. Ferner sind in den einzelnen ersten Datensegmente S1 Ziffern abgedruckt, die diese zeitliche Reihenfolge R1 wiedergeben. So wird zuerst das erste Datensegment mit der Ziffer 0, dann dasjenige mit der Ziffer 1 und zuletzt das erste Datensegment mit der höchsten Ziffer, d.h. mit der Ziffer 9 ausgegeben. Die Verwendung dieser Ziffern ist lediglich zur besseren Darstellung des erfindungsgemäßen Verfahrens gewählt worden und stellt keine Anforderung bei der Ausführung des erfindungsgemäßen Verfahrens dar.

Zur Realisierung der Fragmentierung der zweiten Datendatei D2 mittels der zweiten Fragmentierungsbeschreibungsdatei D2_BSD und somit zur Ausgabe der inhaltsbezogenen zweiten Datensegmente S2 in der zeitlichen Reihenfolge R2 wird analog zu den obigen Ausführungen vorgegangen.

In einem nächsten Verarbeitungsschritt des erfindungsgemäßen Verfahrens werden die ersten und zweiten Datensegmente S1, S2 auf Grundlage einer vorgebbaren Zuordnungsvorschrift Z synchronisiert. In Figur 3 ist in Form einer Baumstruktur ein möglicher Aufbau einer derartigen Zuordnungsvorschrift Z abgebildet. Die Baumstruktur zeigt zum einen durch gestrichelte

bzw. durchgezogene Verbindungslinien Abhängigkeiten innerhalb der Zuordnungsvorschrift Z und zum anderen Schlüsselwörter zur Verwendung dieser Zuordnungsvorschrift Z in einer XML-basierten Beschreibungsform. Ein Beginn der Zuordnungsvorschrift Z kann in einem XML-basierten Dokument, wie z.B. in Figur 4 zusehen, mit einem XML-Startwort „StreamingInstructions" gekennzeichnet werden. Danach folgen die erste Datendatei D1 mit einem XML-Namen „SynchronizationSource" und optinal die Fragmentierungsvorschrift durch Angabe der ersten Fragmentierungsbeschreibungsdatei D1_BSD mit einem XML-Namen „FragmentationInstruction". Daneben wird zumindest eine zweite Datendatei D2 mit einem XML-Namen „SynchronizationTarget" definiert, die optional die Fragmentierungsvorschrift in Form der zweiten Fragmentierungsbeschreibungsdatei D2_BSD mit einem XML-Namen „FragmentationInstruction" umfasst. Zu jeder zweiten Datendatei D2 wird eine Synchronisierungsinformation SI mit einem XML-Namen „SynchronizationInstruction" angegeben, die die eigentliche Zuordnung der ersten und zweiten Datensegmente S1, S2 definiert.

Die Synchronisationsinformation SI kann gemäß dem erfindungsgemäßen Verfahren zwei unterschiedliche Ausprägungen aufweisen.

a) So wird bspw. dem zweiten Datensegment S2 ein erstes Datensegment S1 zugewiesen und eine weitere Zuweisung erfolgt nach einer Anzahl A ausgegebener, sequentiell aufeinander folgender erster Datensegmente S1. Ist die Anzahl A = 2, so bedeutet dies, dass jeweils das zweite erste Datensegment S1 mit dem zweiten Datensegment S2 ausgegeben werden soll. In Figur 1 ist diese Konstellation verdeutlicht. Die ersten und zweiten Datensegmente S1, S2 werden in ihrer zeitlichen Reihenfolge R1, R2 durch das Synchronisationsmodul MS an dessen Datenausgang G ausgegeben. Zunächst werden die jeweils ersten inhaltbezogenen ersten und zweiten Datensegmente S1, S2 mit der Ziffer 0 weitergeleitet. Da die Anzahl A=2 ist wird nun das nächste erste Datensegment S1 mit der Ziffer 1 ausgestoßen. Danach werden jeweils ein erstes und ein zweites Datensegment S1, S2

mit der Ziffer 2 bzw. 1 gemeinsam an dem Datenausgang G herausgegeben. Zum Schluss werden das erste Datensegment S1 mit der Ziffer 9 und das zweite Datensegment mit der Ziffer 4 ausgegeben. Diese Vorgehensweise wird in Figur 3 bzw. 4 mit einem XML-Namen „SimpleSynchronize" und einem Bezugszeichen Z1 gekennzeichnet. In Figur 4 beträgt der Wert der Anzahl A bspw. A=16.

b) Die Verwendung der Anzahl A ermöglicht zum einen, dass lediglich ein einziges zweites Datensegment S2 mit einem ersten Datensegment S1 synchronisiert werden kann. Zum anderen sind die Abstände, in denen ein erstes und ein zweites Datensegment S1, S2 gemeinsam ausgegeben werden können fest durch die Anzahl A vorgegeben.

Somit kann in einer alternativen Ausführungsform die vorgebbare Zuordnungsvorschrift Z derart gebildet werden, dass für jedes zweite Datensegment ein erstes Datensegment S1 durch Angabe einer Nummer A zugeordnet wird, wobei die Nummer N eine Position des ersten Datensegments S1 innerhalb der zeitlichen Reihenfolge R1 der ersten Datensegmente S1 repräsentiert.

Mit Hilfe eines Beispiels gemäß Figur 5 wird diese Alternative näher erläutert. Die ersten und zweiten Datensegmente S1, S2 sollen in der Anordnung gemäß Figur 5 ausgegeben werden. Dazu kann die Zuordnungsvorschrift Z folgende Vorschrift enthalten V={1, 1, 2, 8, 8}. Dies bedeutet, dass das erste und zweite inhaltsbezogene zweite Datensegment S2, also diejenigen mit den Ziffern 0 und 1, mit dem zweiten inhaltsbezogenen ersten Datensegment S1, welches die Ziffer 1 trägt, synchronisiert werden soll. Ferner soll das nächste zweite Datensegment S2 mit der Ziffer 2 mit dem ersten Datensegment S1 mit der Ziffer 2 gemeinsam ausgegeben werden. Schließlich sollen das vierte und fünfte zweite Datensegment S2 mir den Ziffern 3 und 4 mit dem ersten Datensegment mit der Ziffer 8 gemeinsam wiedergegeben werden. Somit beschreibt die obige Vorschrift V={1, 1, 2, 8, 8} für jedes zweite Datensegment S2, und zwar in der zeitlichen Reihenfolge R2, wobei die zeitliche Reihenfolge R2 dem Auslesen dieser Vorschrift V von links nach rechts

entspricht, zu welchem ersten Datensegment S1 eine Synchronisation zu erfolgen hat. Dabei entspricht die Zahl innerhalb der Vorschrift der Nummer N, die in diesem Ausführungsbeispiel der Ziffer des ersten Datensegments S1 entspricht.

In Figur 4 ist die Vorschrift etwas anders dargestellt. Hierbei gilt für die zeitliche Reihenfolge R2 die Vorschrift nicht von links nach rechts sondern von oben nach unten. Das bedeutet, dass die ersten zwei zweiten Datensegmente S2 mit dem ersten Datensegment S1 mit der Nummer 0, die danach folgenden weiteren vier zweiten Datensegmente S2 dem ersten Datensegment S1 mit der Nummer 1 zugeordnet und dann jeweils gemeinsam ausgegeben werden. In Figur 3 ist diese Variante der Zuordnungsvorschrift Z mit einem Bezugszeichen Z2 bzw. einem XML-Namen „ComplexSynchronize" markiert. Mit Hilfe eines XML-Names „Occurance" kann die jeweilige Nummer N in dem XML-Dokument gemäß Figur 4 gekennzeichnet werden, wobei diese Nummer N mehrmals, wie in obiger Vorschrift V gezeigt, auftreten kann.

Die am Datenausgang G ausgegebenen ersten und zweiten Datensegmente S1, S2 können jeweils mit einem RTP-Paket (RTP-Realtime Transport Protocol) verschickt werden, wobei die RTP-Pakete gemeinsam ausgegebener erster und zweiter Datensegmente S1, S2 mit einem identischen Zeitstempel (Zeitstempel = engl. Time code) versehen werden. In einer Alternative können jeweils gemeinsam ausgegebene erste und zweite Datensegmente S1, S2 in einem jeweiligen RTP-Paket gruppiert werden.

In einer alternativen Erweiterung des erfindungsgemäßen Verfahrens kann es zweckmäßig sein das jeweils zeitlich zuerst auszugebende erste bzw. zweite Datensegment S1, S2 innerhalb der ersten und zweiten Datei D1, D2 auf Grundlage einer Markierung M zu bestimmen. Diese Markierung M gibt an, welches erste bzw. zweite Datensegment S1, S2 aus der dazugehörigen ersten bzw. zweiten Datendatei D1, D2 ausgelesen werden soll. So kann innerhalb der ersten bzw. zweiten Fragmentierungsbe-

schreibungsdatei D1_BSD, D2_BSD die Markierung M derart abgelegt sein, dass das Fragmentierungsmodul MF eindeutig die richtige Stelle innerhalb der dazugehörigen Datendatei D1, D2 zuordnen kann. Im Beispiel gemäß Figur 4 sind eine erste und eine zweite Markierung M1, M2 eingefügt, wobei die erste Markierung M1 durch einen Text „Start_1" und die zweite Markierung durch einen Text „Start_2" identifiziert werden. So wird bspw. die erste Markierung M1 vom Synchronisationsmodul MS an das Fragmentierungsmodul MF übermittelt, wobei das Fragmentierungsmodul MF daraufhin mit der Bildung des ersten Datensegments S1 in der Zeile mit dem Bezugszeichen X1 startet. Wird die zweite Markierung M2 übermittelt, so beginnt die Erstellung des ersten Datensegments S1 in der Zeile mit einem Bezugszeichen X2.

In den bisherigen Beispielen wurden zwei zu synchronisierende Datendateien D1, D2 betrachtet. Im Allgemeinen können mehr als eine einzige zweite Datendatei D2 mit der ersten Datendatei D1 synchronisiert werden. Beispielsweise gibt es zwei zweite Datendateien D21, D22. Hierfür wird für eine kombinierte vorgebbare Zuordnungsvorschrift ZK gebildet. In dem Beispiel gemäß Figur 4 ist eine derartige kombinierte Zuordnungsvorschrift ZK abgebildet. Ein erster Beschreibungsteil B_D1 beinhaltet Informationen bzgl. der ersten Datendatei D1 bzw. deren erste Datensegmente S1. Ein zweiter Beschreibungsteil B_D21 umfasst Synchronisierungsinformationen für eine erste zweite Datendatei D21 bzw. deren zweite Datensegmenten S2. Ein dritter Beschreibungsteil B_D22 umfasst Synchronisierungsinformationen für die weitere zweite Datendatei D22 bzw. deren zweite Datensegmente S2. Der zweite Beschreibungsteil B_D21 ist gemäß der ersten Zuordnungsvorschrift Z1 und der dritte Beschreibungsteil B_D22 gemäß der zweiten Zuordnungsvorschrift Z2 gebildet worden.

Literatur

[1] Panis G. et al., "Bitstream Syntax Description: A Tool for Multimedia Resource Adaptation within MPEG-21", Signal Processing, Image Communication, Elsevier Science Publishers, Amsterdam, NL, Band 18, Nr. 8, September 2003, Seiten 721-747, ISSN: 0923-5965

[2] S. Devillers et al., „Metadaten streaming use case and requirements", ISO/IEC JTC 1/SC 29/WG11 M11638, Hong Kong, Januar 2005-04-08

[3] H. Hellwagner et al., „Report of CE on Bit-Stream Adaptation in Constrained and Streaming Environments", ISO/IEC JTC 1/SC 29/WG 11 M11706, Hong Kong, Januar 2005

[4] I. Burnett et al., „Bitstream Binding Language - a grammar for Digital Item Transport", ISO/IEC JTC 1/SC 29/WG M11611, Hong Kong, Januar 2005

Patentansprüche

1. Verfahren zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (S1) einer ersten Datendatei (D1) und inhaltsbezogenen zweiten Datensegmenten (S2) einer zweiten Datendatei (D2),
dadurch gekennzeichnet,
dass die ersten und zweiten Datensegmente (S1, S2) jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge (R1, R2) derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift (Z) für die ersten und zweiten Datensegmente (S1, S2) jedes zweite Datensegment (S2) zusammen mit einem dazugehörigen ersten Datensegment (S1) ausgegeben wird.

2. Verfahren nach Anspruch 1,
dadurch gekennzeichnet,
dass die vorgebbare Zuordnungsvorschrift (Z) derart gebildet wird, dass ein zweites Datensegment (S2) genau einem ersten Datensegment (S1) zugewiesen wird und eine weitere Zuweisung nach einer Anzahl (A) an sequenziell aufeinander folgender erster Datensegmenten (S1) erfolgt.

3. Verfahren nach Anspruch 1,
dadurch gekennzeichnet,
dass die vorgebbare Zuordnungsvorschrift (Z) derart gebildet wird, dass für jedes zweite Datensegment (S2) ein erstes Datensegment (S1) durch Angabe einer Nummer (N) zugeordnet wird, wobei die Nummer (N) eine Position des ersten Datensegments (S1) innerhalb der zeitlichen Reihenfolge (R1) der ersten Datensegmente (S1) repräsentiert.

4. Verfahren nach einem der vorhergehenden Ansprüche,
dadurch gekennzeichnet,
dass auf Grundlage einer kombinierten vorgebbaren Zuordnungsvorschrift (ZK) inhaltsbezogene erste Datensegmente (S1) und

inhaltsbezogene zweite Datensegmente (S21, S22) mehrerer zweiter Datendateien (D21, D22) synchronisiert werden.

5. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass durch die erste und/oder zweite Datendatei (D1, D2) Mediadaten (MID), insbesondere Video- oder Audiodaten, und/oder Metadaten (MTD), insbesondere codiert nach XML-Standard, dargestellt werden.

6. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass die ersten und/oder zweiten Datensegmente (S1, S2) auf Basis der generic bit stream syntax description (gBSD) oder auf Basis der extensible stylesheet language transformation (XSLT) generiert werden.

7. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass auf Grundlage einer inhaltsbezogenen Markierung (M) bestimmt wird, welches erste und zweite Datensegment (S1, S2) zeitlich zuerst ausgegeben wird.

8. Verfahren nach Anspruch 7, dadurch gekennzeichnet, dass durch die inhaltsbezogene Markierung (M) ein Szenenwechsel in einer Bildsequenz oder ein Sprecherwechsel in einer Sprachsequenz gekennzeichnet wird.

9. Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (S1) einer ersten Datendatei (D1) und inhaltsbezogenen zweiten Datensegmenten (S2) einer zweiten Datendatei (D2), insbesondere nach einem der vorhergehenden Ansprüche, gekennzeichnet durch ein Synchronisationsmodul (MS) zum Ausgeben erster und zweiter Datensegmente (S1, S2) jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge (R1, R2), wobei auf Grundlage

einer vorgebbaren Zuordnungsvorschrift (Z) für die ersten und zweiten Datensegmente (S1, S2) jedes zweite Datensegment (S2) zusammen mit einem dazugehörigen ersten Datensegment (S1) ausgegeben wird.

FIG 1

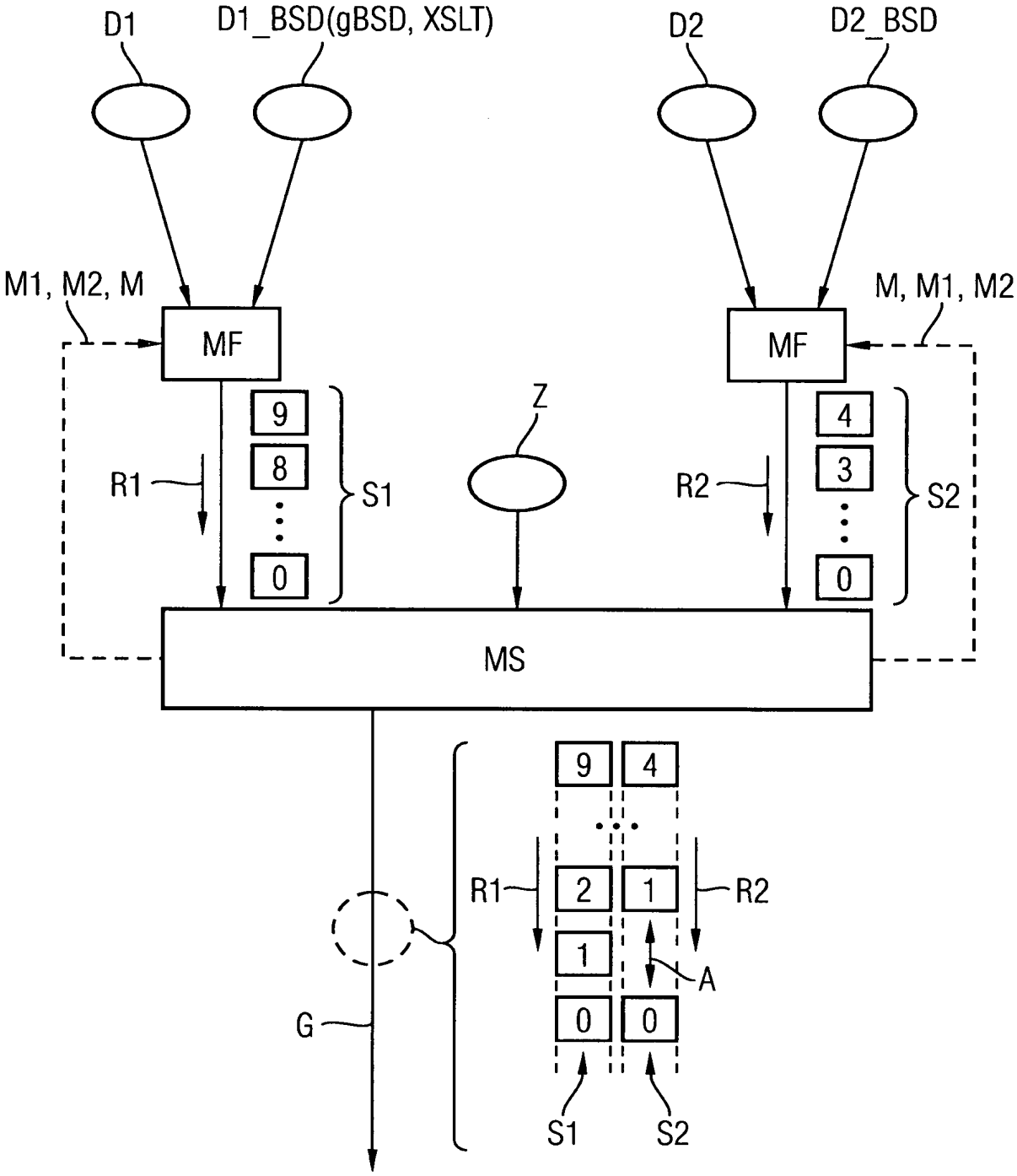

D1
D1_BSD(gBSD, XSLT)
D2
D2_BSD
M1, M2, M
M, M1, M2
MF
MF
9
8
0
R1
S1
Z
4
3
0
R2
S2
MS
9
4
R1
2
1
R2
1
A
G
0
0
S1
S2

FIG 2




```
<?xml version="1.0" encoding="UTF-8"?>
<dia:DIA xmlns="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS"
  xmlns:dia="urn:mpeg:mpeg21:2003:01-DIA-NS"
  xmlns:gbsd="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS gBSSchema.xsd">
  <dia:Description xsi:type="gBSDType">
    <Header>
      <ClassificationAlias alias="MV4" href="urn:mpeg:mpeg4:video:cs:
syntacticalLabels"/>
      <DefaultValues addressUnit="byte" addressMode="Absolute" globalAddressInfo=
"Content/starwars.cmp"/>
    </Header>
    <gBSDUnit syntacticalLabel=":MV4:VO" start="0" length="4"/>
    <gBSDUnit syntacticalLabel=":MV4:VOL" start="4" length="22"/>
    <gBSDUnit start="26" length="99983" marker="Start-1">
      <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="26" length="2877"/>
      <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="2903" length="64"/>
      <gBSDUnit syntacticalLabel=":MV4:B_VOP" start="2967" length="17"/>
      <gBSDUnit syntacticalLabel=":MV4:B_VOP" start="2984" length="16"/>
      <!--... and so on ...-->
      <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="98296" length="1713"/>
    </gBSDUnit>
    <gBSDUnit start="100009" length="68022" marker="Start-2">
      <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="100009" length="1825"/>
      <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="101834" length="1780"/>
      <!--... and so on ...-->
      <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="166802" length="1229"/>
    </gBSDUnit>
    <!--... and so on ...-->
  </dia:Description>
</dia:DIA>
```

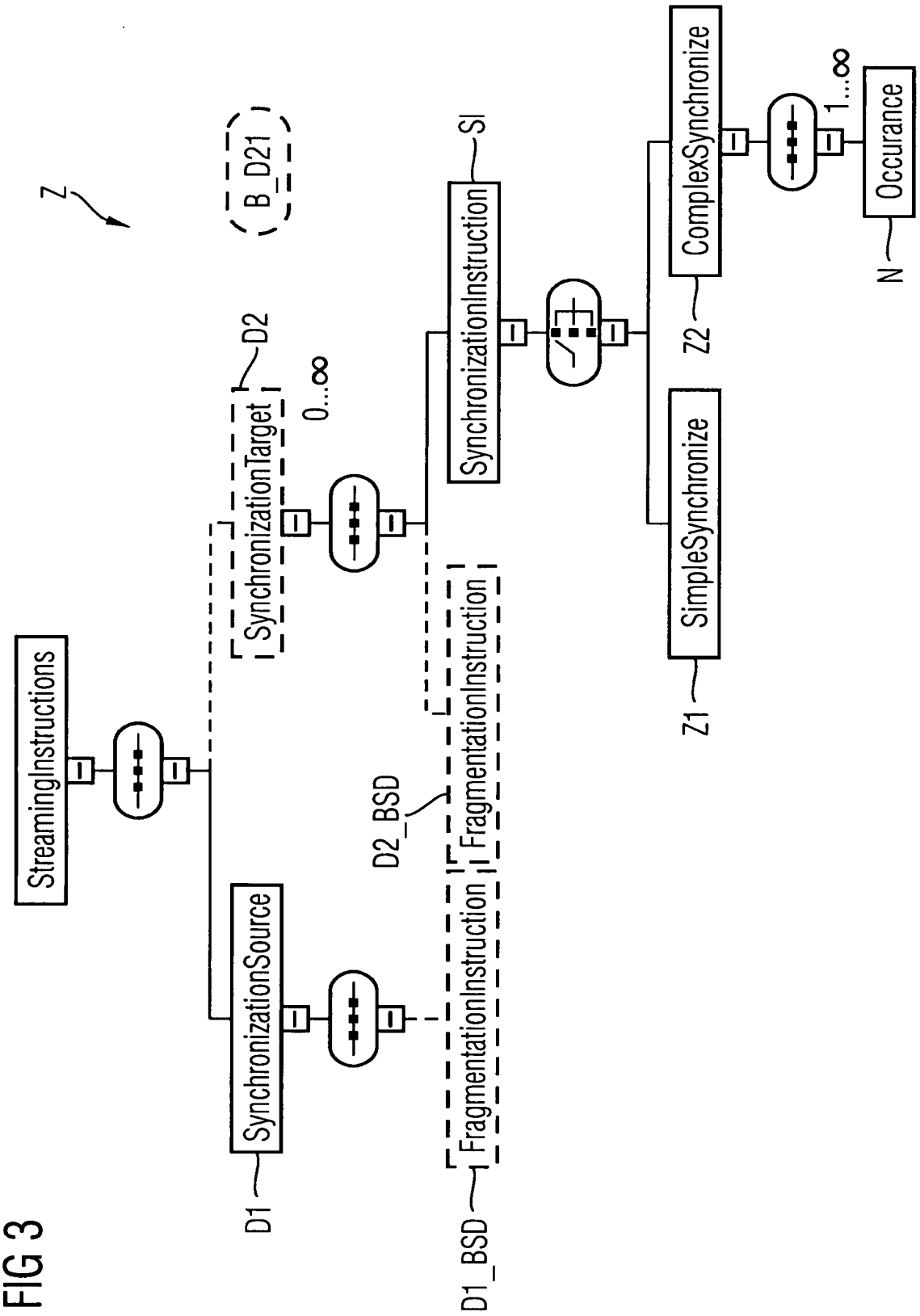

Z
B_D21
D2
SynchronizationTarget
0...∞
SI
SynchronizationInstruction
ComplexSynchronize
1...∞
Occurance
N
Z2
Z1
SimpleSynchronize
StreamingInstructions
SynchronizationSource
D1
D2_BSD
FragmentationInstruction
FragmentationInstruction
D1_BSD

FIG 3

FIG 4

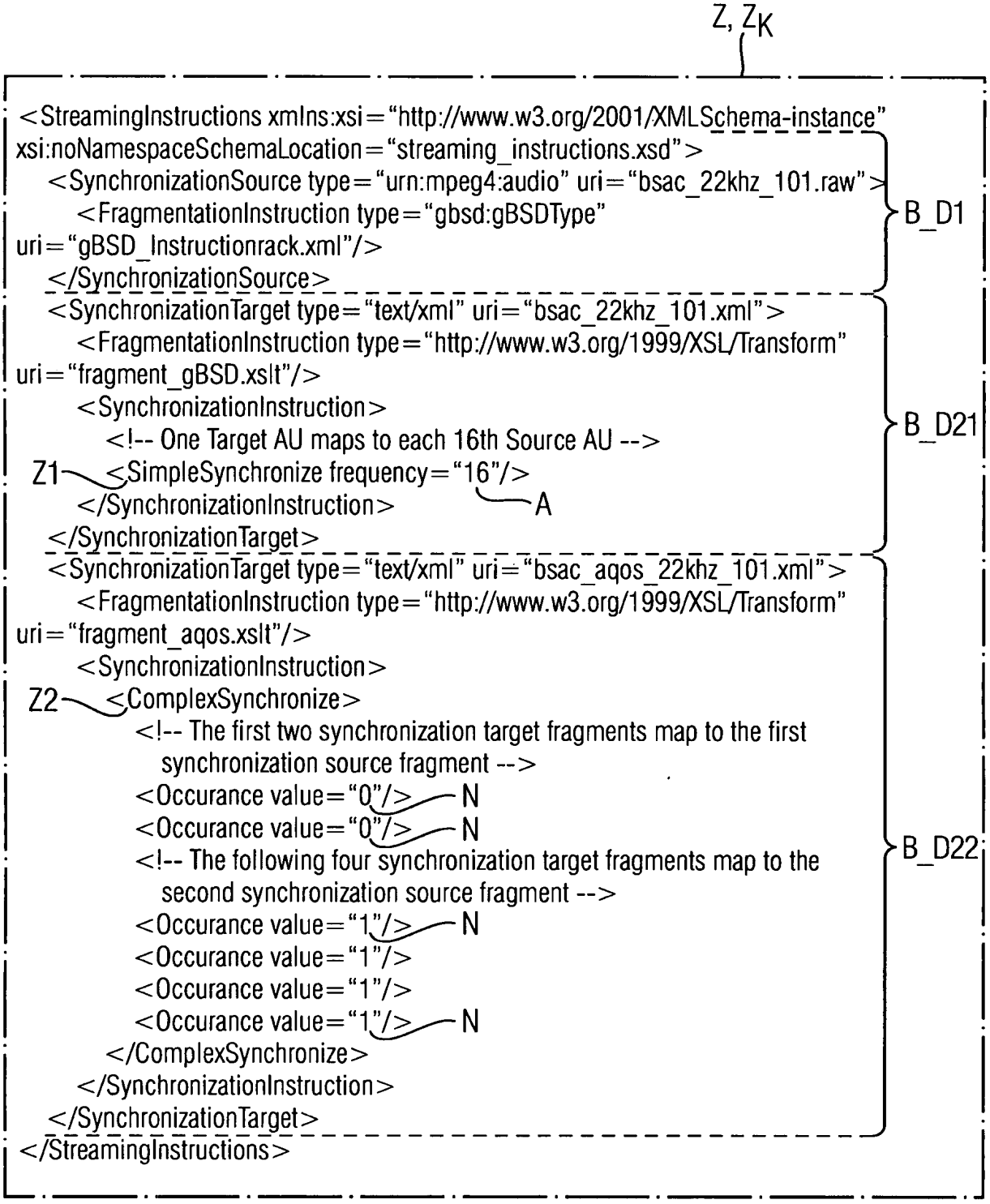
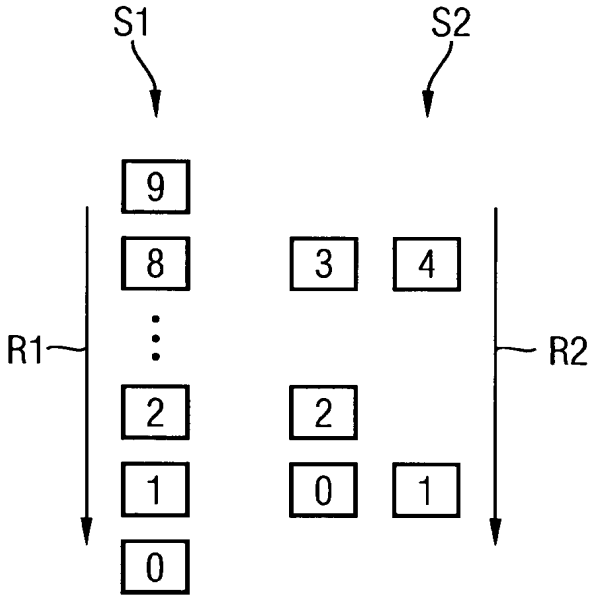

Z, ZK
<StreamingInstructions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="streaming_instructions.xsd">
<SynchronizationSource type="urn:mpeg4:audio" uri="bsac_22khz_101.raw">
<FragmentationInstruction type="gbsd:gBSDType"
uri="gBSD_Instructionrack.xml"/>
</SynchronizationSource>
B_D1
<SynchronizationTarget type="text/xml" uri="bsac_22khz_101.xml">
<FragmentationInstruction type="http://www.w3.org/1999/XSL/Transform"
uri="fragment_gBSD.xslt"/>
<SynchronizationInstruction>
<!-- One Target AU maps to each 16th Source AU -->
Z1
<SimpleSynchronize frequency="16"/>
A
</SynchronizationInstruction>
</SynchronizationTarget>
B_D21
<SynchronizationTarget type="text/xml" uri="bsac_aqos_22khz_101.xml">
<FragmentationInstruction type="http://www.w3.org/1999/XSL/Transform"
uri="fragment_aqos.xslt"/>
<SynchronizationInstruction>
Z2
<ComplexSynchronize>
<!-- The first two synchronization target fragments map to the first
synchronization source fragment -->
<Occurance value="0"/>
N
<Occurance value="0"/>
N
<!-- The following four synchronization target fragments map to the
second synchronization source fragment -->
<Occurance value="1"/>
N
<Occurance value="1"/>
<Occurance value="1"/>
<Occurance value="1"/>
N
</ComplexSynchronize>
</SynchronizationInstruction>
</SynchronizationTarget>
B_D22
</StreamingInstructions>

FIG 5



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2006/060808

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04L29/06

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 H04L

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, PAJ, INSPEC, COMPENDEX, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 494 430 A (SAMSUNG ELECTRONICS CO., LTD) 5 January 2005 (2005-01-05) paragraph [0008] - paragraph [0009] paragraph [0019] - paragraph [0022]; claims 1-5; figures 2,3	1-9
X	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 12, 5 December 2003 (2003-12-05) & JP 2004 056777 A (MATSUSHITA ELECTRIC IND CO LTD), 19 February 2004 (2004-02-19)	1,9
A	abstract	2-8

-/--

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

[X] See patent family annex.

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"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

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Date of the actual completion of the international search	Date of mailing of the international search report
21 June 2006	29/06/2006

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2006/060808

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LI L ET AL: "Multimedia segment delivery scheme and its performance for real-time synchronization control" COMMUNICATIONS, 1994. ICC '94, SUPERCOMM/ICC '94, CONFERENCE RECORD, 'SERVING HUMANITY THROUGH COMMUNICATIONS.' IEEE INTERNATIONAL CONFERENCE ON NEW ORLEANS, LA, USA 1-5 MAY 1994, NEW YORK, NY, USA,IEEE, 1 May 1994 (1994-05-01), pages 1734-1738, XP010126591 ISBN: 0-7803-1825-0 page 1735, right-hand column, line 1 - page 1736, right-hand column, line 17; figures 1-4	1-9
A	US 2001/052943 A1 (SONE TAKUROU) 20 December 2001 (2001-12-20) paragraph [0088] - paragraph [0091]; claims 1-4,9-11; figures 1-5	1-9
A	PANIS G ET AL: "Bitstream syntax description: a tool for multimedia resource adaptation within MPEG-21" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 18, no. 8, September 2003 (2003-09), pages 721-747, XP004452907 ISSN: 0923-5965 cited in the application the whole document	1-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2006/060808

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		JP 2005027274 A	27-01-2005
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INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
PCT/EP2006/060808

A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES
INV. H04L29/06

Nach der Internationalen Patentklassifikation (IPC) oder nach der nationalen Klassifikation und der IPC

B. RECHERCHIERTE GEBIETE

Recherchierter Mindestprüfstoff (Klassifikationssystem und Klassifikationssymbole)
H04N H04L

Recherchierte, aber nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Gebiete fallen

Während der internationalen Recherche konsultierte elektronische Datenbank (Name der Datenbank und evtl. verwendete Suchbegriffe)
EPO-Internal, PAJ, INSPEC, COMPENDEX, WPI Data

C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
X	EP 1 494 430 A (SAMSUNG ELECTRONICS CO., LTD) 5. Januar 2005 (2005-01-05) Absatz [0008] - Absatz [0009] Absatz [0019] - Absatz [0022]; Ansprüche 1-5; Abbildungen 2,3	1-9
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A	Zusammenfassung	2-8

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[X] Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen [X] Siehe Anhang Patentfamilie

* Besondere Kategorien von angegebenen Veröffentlichungen :
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Datum des Abschlusses der internationalen Recherche	Absendedatum des internationalen Recherchenberichts
21. Juni 2006	29/06/2006

Name und Postanschrift der Internationalen Recherchenbehörde	Bevollmächtigter Bediensteter
Europäisches Patentamt, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Schwibinger, H-P

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
PCT/EP2006/060808

C. (Fortsetzung) ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
A	LI L ET AL: "Multimedia segment delivery scheme and its performance for real-time synchronization control" COMMUNICATIONS, 1994. ICC '94, SUPERCOMM/ICC '94, CONFERENCE RECORD, 'SERVING HUMANITY THROUGH COMMUNICATIONS.' IEEE INTERNATIONAL CONFERENCE ON NEW ORLEANS, LA, USA 1-5 MAY 1994, NEW YORK, NY, USA,IEEE, 1. Mai 1994 (1994-05-01), Seiten 1734-1738, XP010126591 ISBN: 0-7803-1825-0 Seite 1735, rechte Spalte, Zeile 1 - Seite 1736, rechte Spalte, Zeile 17; Abbildungen 1-4	1-9
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A	PANIS G ET AL: "Bitstream syntax description: a tool for multimedia resource adaptation within MPEG-21" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, Bd. 18, Nr. 8, September 2003 (2003-09), Seiten 721-747, XP004452907 ISSN: 0923-5965 in der Anmeldung erwähnt das ganze Dokument	1-9

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Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören

Internationales Aktenzeichen
PCT/EP2006/060808

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Description

IAP17 Rec'd PCT/PTO 11 OCT 2007

Method for synchronizing content-dependent data segments of files

The invention relates to a method according to the preamble of claim 1 and a device according to the preamble of claim 9.

For many decades television signals have been transmitted to television subscribers terrestrially and via cable. In Europe, for example, the PAL standard is used for this purpose, and in North America the NTSC standard. Since all television sets in the respective countries are suitable for receiving the television signal encoded e.g. according to the PAL standard, only one television signal needs to be transmitted for a television program. As a result a transmission of a plurality of differently encoded television signals of a television program, for example as a function of an image size or a performance capability of the television sets, is not required.

Due to the current introduction of new terminal devices, for example mobile terminals with small screens, it will no longer be possible in the future to provide a single television signal of a television program for all terminal devices. Furthermore it may also be desired to provide different television subscribers with television signals of different quality. In this case, for example, a low-quality television signal, in monochrome for example, is provided for a television subscriber who pays a low monthly fee, whereas for a higher fee a high-resolution color television signal is supplied.

New types of data compression algorithms, such as a video coding standard ITU-T H.264 for example, as well as metadata languages, such as e.g. XML (XML = Extended Markup Language), were developed in order to satisfy these requirements. With the aid of said metadata languages, contents of a document and/or a data stream, such as of a television or video signal for example, can be described in a structured manner by means of an XML schema language definition. Based on this definition, information can be obtained as required, with the aid of which information a scaling of the television or video signal for different television subscribers can be realized.

From the prior art it is known to use XML-based descriptions of data streams in which individual components of the data stream are described or marked according to their syntactical meaning by means of BSD units (BSD = Bitstream Syntax Description) with freely addressable gBSD units (gBSD = generic Bitstream Description) with regard to different adaptation possibilities. A detailed description can be found in [1]. These descriptions of the data stream are used in order to adapt the data stream to the requirement, for example in terms of data rate or quality of a television signal, of an end subscriber, such as e.g. a television subscriber. For this purpose the description of the data stream can first be suitably transformed, with the data stream then being adapted based on the transformed description.

A Bitstream Binding Language (BBL) method by means of which a synchronization can be performed is known from [4]. Since BBL is based on XPath during the fragmentation of metadata and a description of a section of the metadata using XPath accounts for a sizable quantity of data, a large overhead is generated by this method. A proprietary method is proposed for the

fragmentation of the media data, as a result of which it is generally not made possible to synchronize different data types.

Requirements for streamable digital items are presented in document [2]. These requirements are based on the gBSD description, a distributed and dynamic adaptation being proposed for metadata.

Document [3] discloses two methods in which an adaptation of data streams for streaming applications can be performed with the aid of the gBSD description and XSLT description.

The object underlying the invention is to specify a method or, as the case may be, a device which enables content-related first and second data segments to be synchronized in a simple and standard-compliant manner.

This object is achieved based on the method according to the preamble of claim 1 by means of its characterizing features and by a device based on the preamble of claim 9 by means of its characterizing features.

With the method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the first and second data segments will be output in each case sequentially according to their chronological sequence in such a way that, based on a predefinable assignment rule for the first and second data segments, each second data segment will be output together with an associated first data segment.

By means of the method according to the invention it is made possible in a simple manner to synchronize content-related first and second data segments. Said synchronization is controlled by means of the predefinable assignment rule. In this way content-related data segments can be output together according to their chronological sequence. This is of advantage, since the assignment is carried out without the use of timestamps. In this context the term "output" is understood to mean that first and second data segments are, for example, transmitted, stored together or passed on to a processing unit.

Preferably the predefinable assignment rule is formed in such a way that a second data segment is assigned precisely to a first data segment and a further assignment is carried out following a number of sequentially succeeding first data segments. In this way the assignment rule can be described merely by specification of the number. This is advantageous owing to the very low signaling overhead required for signaling the number.

In an alternative embodiment the predefinable assignment rule is formed in such a way that for each second data segment a first data segment is assigned by specification of a number, the number representing a position of the first data segment within the chronological sequence of the first data segments. By this means the assignment of first and second data segments is achieved in a particularly flexible manner. In this embodiment a plurality of second data segments can be assigned to a first data segment.

Preferably, content-related first data segments and content-related second data segments of a plurality of second data

files can be synchronized on the basis of a combined predefinable assignment rule. By this means the second data segments of a plurality of data files can be output in a synchronized manner. The combined predefinable assignment rule enables a very compact and storage-efficient description.

With the method according to the invention, media data, in particular video or audio data, and/or metadata, in particular encoded according to the XML standard, are described by means of the first and/or second data file. In this way it is made possible by means of the method according to the invention to synchronize a plurality of different data types.

The first and/or second data segments are preferably generated on the basis of the generic bit stream syntax description or on the basis of the extensible stylesheet language transformation. With this standardized approach to generating the first and/or second data segments it is possible to achieve a cost-effective, reliable and standard-compliant implementation of the method according to the invention, since the implementation can make use of standardized modules.

Furthermore, it is beneficial in practice to determine, on the basis of a content-related marker, which first and second data segments will be output first in time. This enables the first and second data files to be accessed at random. In particular a scene change in an image sequence or a change of speaker in a speech sequence is identified by means of the content-related marker. This enables a desired section of a speech or image sequence to be located quickly, since the access is performed in a content-based manner.

The invention also relates to a device for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, comprising a synchronization module for outputting first and second data segments in each case sequentially according to their chronological sequence, with each second data segment being output together with an associated first data segment based on a predefinable assignment rule for the first and second data segments. The method according to the invention can be performed with the aid of the device.

Further details and advantages of the invention are explained in greater depth with reference to Figures 1 to 5, in which:

Figure 1 shows a device for performing the method according to the invention;

Figure 2 shows the contents of a fragmentation description file using the XML description language, wherein a fragmentation of a first and/or second data file is described by means of the fragmentation description file;

Figure 3 shows a tree diagram for the pictorial representation of an assignment rule;

Figure 4 shows the contents of an assignment rule formed with the aid of the XML description language; and

Figure 5 shows a chronological arrangement of synchronized first and second data segments S1, S2.

Elements having the same function and the same mode of operation are provided with the same reference symbols in Figures 1 to 5.

The method according to the invention is explained in more detail below with reference to an exemplary embodiment according to Figure 1. In this example a video data stream and an audio data stream are to be synchronized. The video data stream has been compressed for example according to the video coding standard MPEG2, MPEG4 or ITU H.264. Said video data stream is identified in Figure 1 as the first data file D1. The audio data stream has been coded for example using the audio coding standard ITU G.723.1 or MPEG4-AAC. The audio data stream is designated in Figure 1 by means of a name second data file D2.

For every first and second data file D1, D2 there exists in each case a fragmentation description file D1_BSD, B2_BSD. Said fragmentation description file D1_BSD, B2_BSD specifies how content-related first and content-related second data segments S1, S2 can be obtained from the respective first and second data file D12, D2. The term "content-related" is understood to mean that first and second data segments have a syntactical meaning within the respective data file, such as e.g. a plurality of succeeding second data segments represent the speech signal of a specific speaker within a dialog sequence. Furthermore, sections of the data file can also be understood thereby, such as e.g. individual images of a video sequence. In the following description data segments always refer to content-based data segments.

Figure 2 shows a first fragmentation description file D1_BSD for a first data file D1 encoded according to the MPEG4

standard. Data of a first data file D1 of this type is also known as media data MID. Said first fragmentation description file D1_BSD uses a gBSD syntax (gBSD = generic bit stream syntax description) for representing the fragmentation rules, the gBSD syntax being based on the XML language. Thus, for example, the line identified by a reference symbol X1 shows that an intracoded video object plane (I-VOP) begins at a byte address 26 within the first data file D1 and comprises 2877 bytes. A detailed description of the mode of operation of the gBSD language is known from [1], the first fragmentation description file D1_BSD being virtually identical with Figure 9 from [1]. The extensible stylesheet language transformation (XSL Transformation or XSLT) represents another option for describing the fragmentation rules. This enables metadata MTD, in particular XML-encoded metadata, to be fragmented. Further information on XSLT can be found in document [1].

According to Figure 1, the first data file D1 and the first fragmentation description file D1_BSD are supplied to a fragmentation module MF. This takes first data segments S1 from the first data file D1 according to the fragmentation rule of the first fragmentation description file D1_BSD. Said first data segments S1 are passed by the fragmentation module MF to a synchronization module MS in the same chronological sequence R1 in which they are to be output. By the first data segments S1 is meant data segments of the first data file D1 which have a content-related meaning for the first data file D1, such as e.g. individual images in a video sequence or individual spoken words in an audio sequence. In this case the chronological sequence identifies that sequence of individual first data segments S1 in which, for example, the latter are played back visually or made audible. For example, one data segment contains the word "Good" and a further data segment

the word "Morning", so the data segment containing "Good" is output first, and then the data segment containing "Morning". This chronological sequence R1 is represented symbolically in Figure 1 by an arrow with the reference symbol R1. Additionally printed in the individual first data segments S1 are numerals which indicate said chronological sequence R1. Thus, the first data segment with the numeral 0 is output first, then the one with the numeral 1, and finally the first data segment with the highest numeral, i.e. with the numeral 9. The use of these numerals has been chosen solely to illustrate the method according to the invention more clearly and does not constitute a requirement for the implementation of the method according to the invention.

A similar procedure to that described above is followed in order to implement the fragmentation of the second data file D2 by means of the second fragmentation description file D2_BSD and hence to output the content-related second data segments S2 in the chronological sequence R2.

In a next processing step of the method according to the invention, the first and second data segments S1, S2 are synchronized on the basis of a predefinable assignment rule Z. Figure 3 shows a possible layout of an assignment rule Z of this type in the form of a tree structure. The tree structure shows dependencies within the assignment rule Z indicated by means of dashed or unbroken connecting lines on the one hand and, on the other, keywords for using said assignment rule Z in the form of an XML-based description. A start of the assignment rule Z can be identified in an XML-based document, such as can be seen e.g. in Figure 4, by an XML start word "StreamingInstructions". This is followed by the first data file D1 with an XML name "SynchronizationSource" and

optionally the fragmentation rule by specification of the first fragmentation description file D1_BSD with an XML name "FragmentationInstruction". Alongside this, at least one second data file D2 with an XML name "SynchronizationTarget" is defined which optionally comprises the fragmentation rule in the form of the second fragmentation description file D2_BSD with an XML name "FragmentationInstruction". For each second data file D2, synchronization information SI is specified by means of an XML name "SynchronizationInstruction", which defines the actual assignment of the first and second data segments S1, S2.

According to the inventive method, the synchronization information SI can assume two different forms.

a) Thus, for example, the second data segment S2 is assigned a first data segment S1 and a further assignment is carried out after a number A of output, sequentially succeeding first data segments S1. If the number A = 2, this means that in each case the second first data segment S1 is to be output with the second data segment S2. This constellation is illustrated in Figure 1. The first and second data segments S1, S2 are output in their chronological sequence R1, R2 by the synchronization module MS at the latter's data output G. First, the respective first content-related first and second data segments S1, S2 with the numeral 0 are forwarded. Since the number is A=2, the next first data segment S1 with the numeral 1 is now output. Next, a first and a second data segment S1, S2 with the numeral 2 and 1 respectively are in each case output together at the data output G. Finally, the first data segment S1 with the numeral 9 and the second data segment with the numeral 4 are output. This procedure is identified in Figure 3 and 4 by means of an XML name "SimpleSynchronize" and a reference

symbol Z1. In Figure 4 the value of the number A is for example A=16.

b) The use of the number A firstly enables only one single second data segment S2 to be synchronized with a first data segment S1. Secondly, the intervals at which a first and a second data segment S1, S2 can be output together are permanently predefined by the number A.
This means that in an alternative embodiment the predefinable assignment rule Z can be formed in such a way that for each second data segment a first data segment S1 is assigned by specification of a number A, where the number N represents a position of the first data segment S1 within the chronological sequence R1 of the first data segments S1.
This alternative is explained in more detail with the aid of an example according to Figure 5. The first and second data segments S1, S2 are to be output in the arrangement according to Figure 5. For this purpose the assignment rule Z can include the following rule: V={1, 1, 2, 8, 8}. This means that the first and second content-related second data segment S2, i.e. those with the numerals 0 and 1, are to be synchronized with the second content-related first data segment S1, which bears the numeral 1. Furthermore, the next second data segment S2 with the numeral 2 is to be output together with the first data segment S1 with the numeral 2. Finally, the fourth and fifth second data segment S2 with the numerals 3 and 4 are to be output together with the first data segment with the numeral 8. Accordingly, the above rule V={1, 1, 2, 8, 8} describes for each second data segment S2, and moreover in the chronological sequence R2, the chronological sequence R2 corresponding to the reading out of said rule V from left to right, for which first data segment S1 a synchronization

has to be performed. In this case the number within the rule corresponds to the number N, which corresponds in this exemplary embodiment to the numeral of the first data segment S1.

The rule is presented somewhat differently in Figure 4. In this case the rule for the chronological sequence R2 applies not from left to right, but from top to bottom. This means that the first two second data segments S2 are output with the first data segment S1 with the number 0, the following further four second data segments S2 are assigned to the first data segment S1 with the number 1 and are then output together in each case. This variant of the assignment rule Z is marked in Figure 3 by means of a reference symbol Z2 or an XML name "ComplexSynchronize". The respective number N in the XML document according to Figure 4 can be identified with the aid of an XML name "Occurance", where said number N can occur several times, as shown in the above rule V.

The first and second data segments S1, S2 output at the data output G can each be sent with an RTP packet (RTP = Realtime Transport Protocol), the RTP packets of jointly output first and second data segments S1, S2 being provided with an identical timestamp ("time code"). In an alternative, first and second data segments S1, S2 output together in each case can be grouped in a respective RTP packet.

In an alternative extension of the method according to the invention it can be beneficial to determine the first and second data segments S1, S2 to be output first in time in each case within the first and second files D1, D2 on the basis of a marker M. Said marker M indicates which first or second data segment S1, S2 is to be read out from the associated first or

second data file D1, D2. Thus, the marker M can be stored within the first or second fragmentation description file D1_BSD, D2_BSD in such a way that the fragmentation module MF can unequivocally assign the right position within the associated data file D1, D2. In the example according to Figure 4, a first and a second marker M1, M2 are inserted, the first marker M1 being identified by means of a text "Start_1" and the second marker by means of a text "Start_2". In this way the first marker M1 for example is transmitted by the synchronization module MS to the fragmentation module MF, whereupon the fragmentation module MF starts forming the first data segment S1 in the line with the reference symbol X1. If the second marker M2 is transmitted, the first data segment S1 begins to be created in the line with the reference symbol X2.

In the previous examples, two data files D1, D2 to be synchronized were considered. In general, more than one single second data file D2 can be synchronized with the first data file D1. For example, there are two second data files D21, D22. For this purpose a combined predefinable assignment rule ZK is formed. A combined assignment rule ZK of this kind is illustrated in the example according to Figure 4. A first description part B_D1 contains information relating to the first data file D1 or its first data segments S1. A second description part B_D21 comprises synchronization information for a first second data file D21 or its second data segments S2. A third description part B_D22 comprises synchronization information for the further second data file D22 or its second data segments S2. The second description part B_D21 was formed according to the first assignment rule Z1, and the third description part B_D22 according to the second assignment rule Z2.

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Claims

1. A method for synchronizing content-related first data segments (S1) of a first data file (D1) and content-related second data segments (S2) of a second data file (D2), characterized in that
the first and second data segments (S1, S2) are in each case output sequentially according to their chronological sequence (R1, R2) in such a way that each second data segment (S2) is output together with an associated first data segment (S1) on the basis of a predefinable assignment rule (Z) for the first and second data segments (S1, S2).

2. The method as claimed in claim 1,
characterized in that
the predefinable assignment rule (Z) is formed in such a way that a second data segment (S2) is assigned to precisely one first data segment (S1) and a further assignment is carried out after a number (A) of sequentially succeeding first data segments (S1).

3. The method as claimed in claim 1,
characterized in that
the predefinable assignment rule (Z) is formed in such a way that for each second data segment (S2) a first data segment (S1) is assigned by specification of a number (N), the number (N) representing a position of the first data segment (S1) within the chronological sequence (R1) of the first data segments (S1).

4. The method as claimed in one of the preceding claims,
characterized in that

second data segments (S2) of a second data file (D2), in particular as claimed in one of the preceding claims, characterized by

a synchronization module (MS) for outputting first and second data segments (S1, S2) sequentially in each case according to their chronological sequence (R1, R2), wherein each second data segment (S2) is output together with an associated first data segment (S1) on the basis of a predefinable assignment rule (Z) for the first and second data segments (S1, S2).

FIG 1

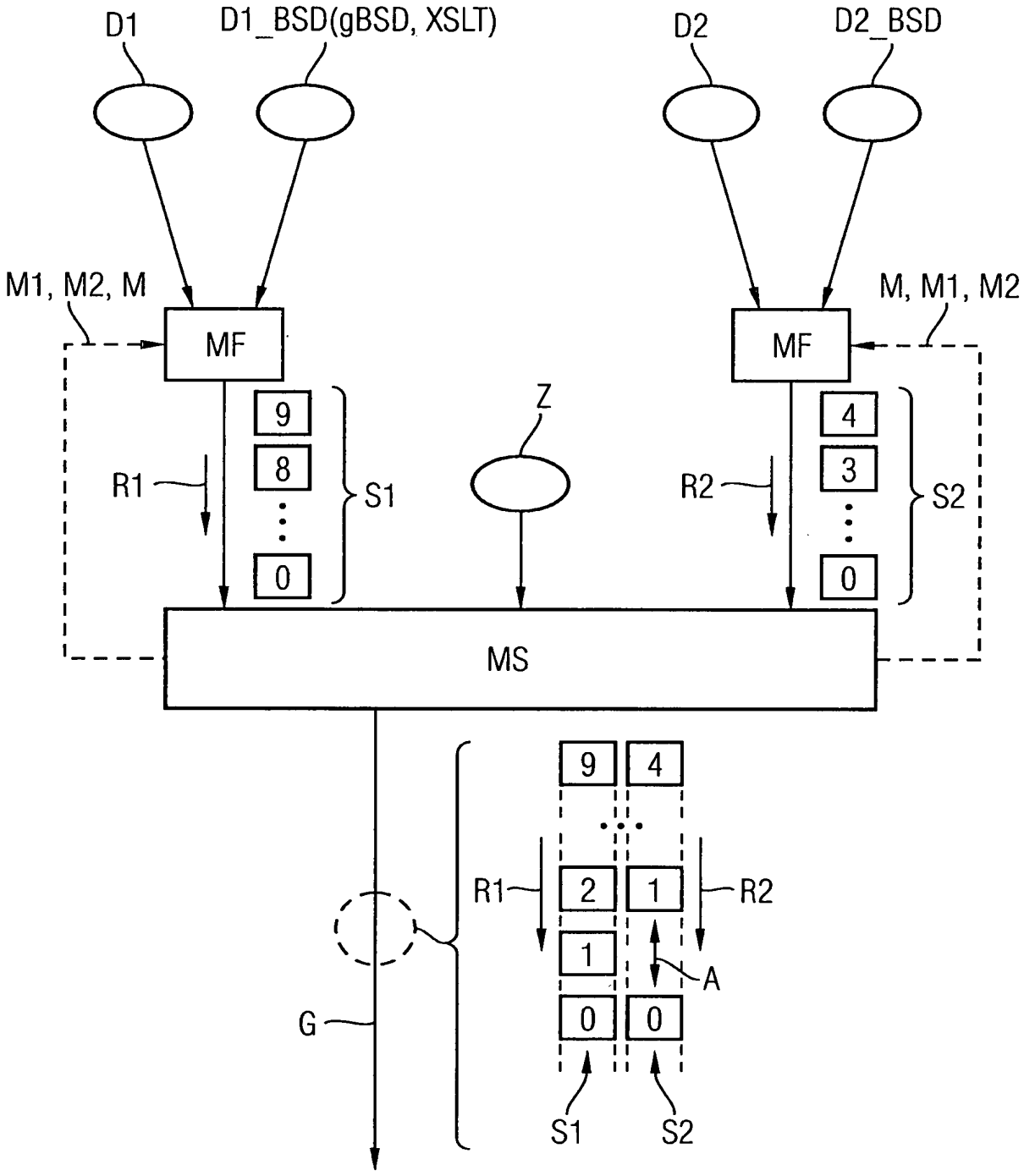

D1
D1_BSD(gBSD, XSLT)
D2
D2_BSD
M1, M2, M
M, M1, M2
MF
MF
9
8
0
R1
S1
Z
4
3
0
R2
S2
MS
9
4
R1
2
1
R2
1
A
0
0
G
S1
S2

FIG 2




```
<?xml version="1.0" encoding="UTF-8"?>
<dia:DIA xmlns="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS"
  xmlns:dia="urn:mpeg:mpeg21:2003:01-DIA-NS"
  xmlns:gbsd="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS gBSSchema.xsd">
  <dia:Description xsi:type="gBSDType">
    <Header>
      <ClassificationAlias alias="MV4" href="urn:mpeg:mpeg4:video:cs:
syntacticalLabels"/>
      <DefaultValues addressUnit="byte" addressMode="Absolute" globalAddressInfo=
"Content/starwars.cmp"/>
    </Header>
    <gBSDUnit syntacticalLabel=":MV4:VO" start="0" length="4"/>
    <gBSDUnit syntacticalLabel=":MV4:VOL" start="4" length="22"/>
    <gBSDUnit start="26" length="99983" marker="Start-1">
      <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="26" length="2877"/>
      <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="2903" length="64"/>
      <gBSDUnit syntacticalLabel=":MV4:B_VOP" start="2967" length="17"/>
      <gBSDUnit syntacticalLabel=":MV4:B_VOP" start="2984" length="16"/>
      <!--... and so on ...-->
      <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="98296" length="1713"/>
    </gBSDUnit>
    <gBSDUnit start="100009" length="68022" marker="Start-2">
      <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="100009" length="1825"/>
      <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="101834" length="1780"/>
      <!--... and so on ...-->
      <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="166802" length="1229"/>
    </gBSDUnit>
    <!--... and so on ...-->
  </dia:Description>
</dia:DIA>
```

FIG 3

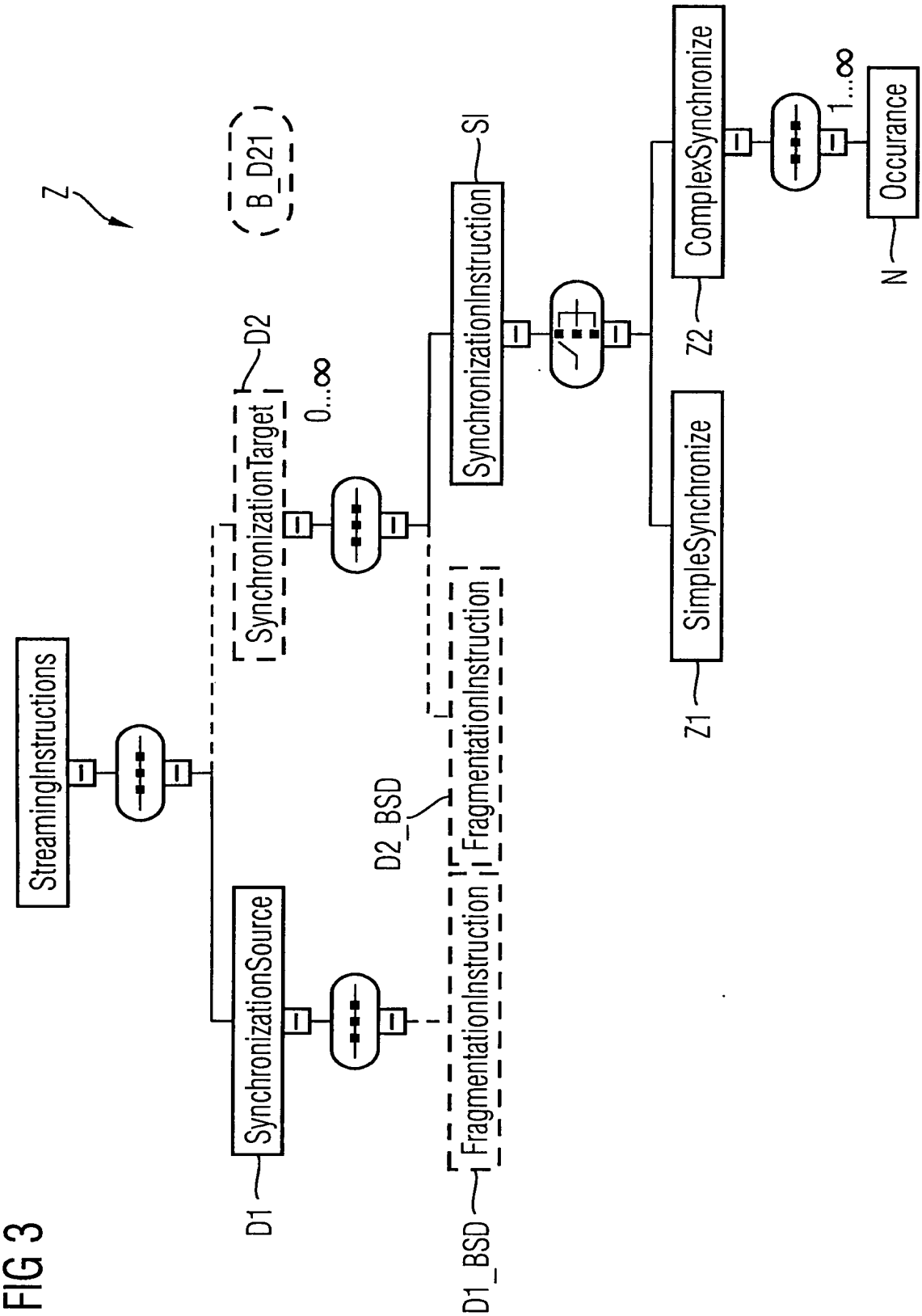

Z
B_D21
D2
SynchronizationTarget
0...∞
StreamingInstructions
SynchronizationSource
D1
D2_BSD
FragmentationInstruction
D1_BSD
FragmentationInstruction
SI
SynchronizationInstruction
Z1
SimpleSynchronize
Z2
ComplexSynchronize
1...∞
N
Occurance

FIG 4

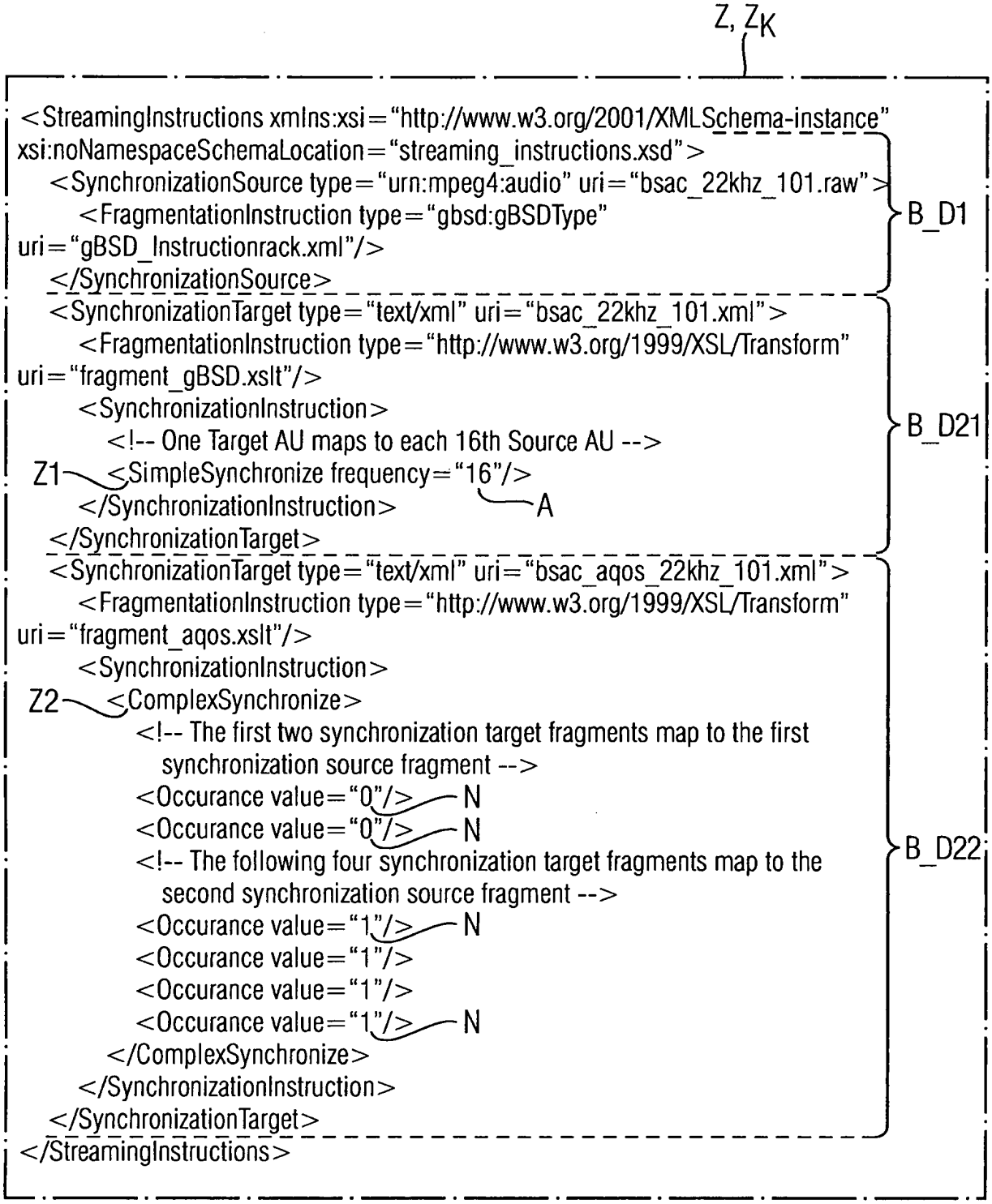
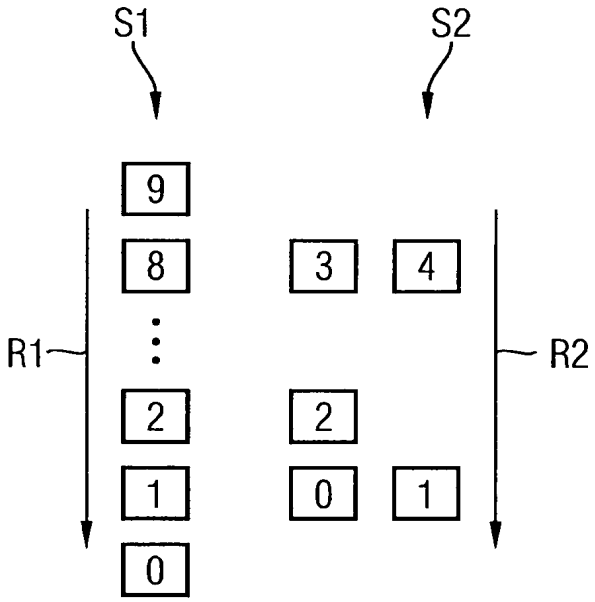

Z, ZK
<StreamingInstructions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="streaming_instructions.xsd">
<SynchronizationSource type="urn:mpeg4:audio" uri="bsac_22khz_101.raw">
<FragmentationInstruction type="gbsd:gBSDType"
uri="gBSD_Instructionrack.xml"/>
</SynchronizationSource>
B_D1
<SynchronizationTarget type="text/xml" uri="bsac_22khz_101.xml">
<FragmentationInstruction type="http://www.w3.org/1999/XSL/Transform"
uri="fragment_gBSD.xslt"/>
<SynchronizationInstruction>
<!-- One Target AU maps to each 16th Source AU -->
Z1
<SimpleSynchronize frequency="16"/>
A
</SynchronizationInstruction>
</SynchronizationTarget>
B_D21
<SynchronizationTarget type="text/xml" uri="bsac_aqos_22khz_101.xml">
<FragmentationInstruction type="http://www.w3.org/1999/XSL/Transform"
uri="fragment_aqos.xslt"/>
<SynchronizationInstruction>
Z2
<ComplexSynchronize>
<!-- The first two synchronization target fragments map to the first
synchronization source fragment -->
<Occurance value="0"/>
N
<Occurance value="0"/>
N
<!-- The following four synchronization target fragments map to the
second synchronization source fragment -->
<Occurance value="1"/>
N
<Occurance value="1"/>
<Occurance value="1"/>
<Occurance value="1"/>
N
</ComplexSynchronize>
</SynchronizationInstruction>
</SynchronizationTarget>
B_D22
</StreamingInstructions>

FIG 5



IAP17 Rec'd PCT/PTO 11 OCT 2007

SUBSTITUTE SPECIFICATION

METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

Priority Statement

[0001] This application is the national phase under 35 U.S.C. § 371 of PCT International Application No. PCT/EP2006/060808 which has an International filing date of March 16, 2006, which designated the United States of America and which claims priority on German Patent Application number DE 10 2005 016 866.3 filed April 12, 2005, the entire contents of which are hereby incorporated herein by reference.

Field

[0002] At least one embodiment of the invention relates to a method and/or to a device.

Background

[0003] For many decades, television signals have been transmitted to television subscribers terrestrially and via cable. In Europe, for example, the PAL standard is used for this purpose, and in North America the NTSC standard. Since all television sets in the respective countries are suitable for receiving the television signal encoded e.g. according to the PAL standard, only one television signal needs to be transmitted for a television program. As a result, a transmission of a plurality of differently encoded television signals of a television program, for example as a function of an image size or a performance capability of the television sets, is not required.

[0004] Due to the current introduction of new terminal devices, for example mobile terminals with small screens, it will no longer be possible in the future to provide a single television signal of a television program for all terminal devices. Furthermore it may also be desired to provide different television subscribers with television signals of different quality. In this case, for example, a low-quality television signal, in monochrome for example, is provided for a television subscriber who pays a low monthly fee, whereas for a higher fee a high-resolution color television signal is supplied.

[0005] New types of data compression algorithms, such as a video coding standard ITU-T H.264 for example, as well as metadata languages, such as e.g. XML (XML = Extended Markup Language), were developed in order to satisfy these requirements. With the aid of said metadata languages, contents of a document and/or a data stream, such as of a television or video signal for example, can be described in a structured manner by means of an XML schema language definition. Based on this definition, information can be obtained as required, with the aid of which information a scaling of the television or video signal for different television subscribers can be realized.

[0006] From the prior art, it is known to use XML-based descriptions of data streams in which individual components of the data stream are described or marked according to their syntactical meaning by means of BSD units (BSD = Bitstream Syntax Description) with freely addressable gBSD units (gBSD = generic Bitstream Description) with regard to different adaptation possibilities. A detailed description can be found in document [1] listed at the end of this application. These descriptions of the data stream are used in order to adapt the

data stream to the requirement, for example in terms of data rate or quality of a television signal, of an end subscriber, such as e.g. a television subscriber. For this purpose the description of the data stream can first be suitably transformed, with the data stream then being adapted based on the transformed description.

[0007] A Bitstream Binding Language (BBL) method, by which a synchronization can be performed, is known from document [4]. Since BBL is based on XPath during the fragmentation of metadata and a description of a section of the metadata using XPath accounts for a sizable quantity of data, a large overhead is generated by this method. A proprietary method is proposed for the fragmentation of the media data, as a result of which it is generally not made possible to synchronize different data types.

[0008] Requirements for streamable digital items are presented in document [2]. These requirements are based on the gBSD description, a distributed and dynamic adaptation being proposed for metadata.

[0009] Document [3] discloses two methods in which an adaptation of data streams for streaming applications can be performed with the aid of the gBSD description and XSLT description.

SUMMARY

[0010] At least one embodiment of the invention specifies a method or, as the case may be, a device which enables content-related first and second data segments to be synchronized in a simple and standard-compliant manner.

[0011] With the method of at least one embodiment for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the first and second data segments will be output in each case sequentially according to their chronological sequence in such a way that, based on a predefinable assignment rule for the first and second data segments, each second data segment will be output together with an associated first data segment.

[0012] By way of the method according to at least one embodiment of the invention, it is made possible in a simple manner to synchronize content-related first and second data segments. The synchronization is controlled by way of the predefinable assignment rule. In this way, content-related data segments can be output together according to their chronological sequence. This is of advantage, since the assignment is carried out without the use of timestamps. In this context the term "output" is understood to mean that first and second data segments are, for example, transmitted, stored together or passed on to a processing unit.

[0013] Preferably, the predefinable assignment rule is formed in such a way that a second data segment is assigned precisely to a first data segment and a further assignment is carried out following a number of sequentially succeeding first data segments. In this way the assignment rule can be described merely by specification of the number. This is advantageous owing to the very low signaling overhead required for signaling the number.

[0014] In an alternative embodiment, the predefinable assignment rule is formed in such a way that for each second data segment a first data segment is assigned by specification

of a number, the number representing a position of the first data segment within the chronological sequence of the first data segments. By this, the assignment of first and second data segments is achieved in a particularly flexible manner. In this embodiment a plurality of second data segments can be assigned to a first data segment.

[0015] Preferably, content-related first data segments and content-related second data segments of a plurality of second data files can be synchronized on the basis of a combined predefinable assignment rule. By this, the second data segments of a plurality of data files can be output in a synchronized manner. The combined predefinable assignment rule enables a very compact and storage-efficient description.

[0016] With the method according to at least one embodiment of the invention, media data, in particular video or audio data, and/or metadata, in particular encoded according to the XML standard, are described by way of the first and/or second data file. In this way it is made possible by way of the method according to at least one embodiment of the invention to synchronize a plurality of different data types.

[0017] The first and/or second data segments are preferably generated on the basis of the generic bit stream syntax description or on the basis of the extensible stylesheet language transformation. With this standardized approach to generating the first and/or second data segments it is possible to achieve a cost-effective, reliable and standard-compliant implementation of the method according to at least one embodiment of the invention, since the implementation can make use of standardized modules.

[0018] Furthermore, it is beneficial in practice to determine, on the basis of a content-related marker, which first and second data segments will be output first in time. This enables the first and second data files to be accessed at random. In particular a scene change in an image sequence or a change of speaker in a speech sequence is identified by way of the content-related marker. This enables a desired section of a speech or image sequence to be located quickly, since the access is performed in a content-based manner.

[0019] At least one embodiment of the invention also relates to a device for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, comprising a synchronization module for outputting first and second data segments in each case sequentially according to their chronological sequence, with each second data segment being output together with an associated first data segment based on a predefinable assignment rule for the first and second data segments. The method according to at least one embodiment of the invention can be performed with the aid of the device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] Further details and advantages of the invention are explained in greater depth with reference to Figures 1 to 5, in which:

[0021] Figure 1 shows a device for performing the method according to an embodiment of the invention;

[0022] Figure 2 shows the contents of a fragmentation description file using the XML description language, wherein a fragmentation of a first and/or second data file is described by way of the fragmentation description file;

[0023] Figure 3 shows a tree diagram for the pictorial representation of an assignment rule;

[0024] Figure 4 shows the contents of an assignment rule formed with the aid of the XML description language; and

[0025] Figure 5 shows a chronological arrangement of synchronized first and second data segments S1, S2.

[0026] Elements having the same function and the same mode of operation are provided with the same reference symbols in Figures 1 to 5.

DETAILED DESCRIPTION OF THE EXAMPLE EMBODIMENTS

[0027] The method according to the invention is explained in more detail below with reference to an example embodiment according to Figure 1. In this example a video data stream and an audio data stream are to be synchronized. The video data stream has been compressed for example according to the video coding standard MPEG2, MPEG4 or ITU H.264. Said video data stream is identified in Figure 1 as the first data file D1. The audio data stream has been coded for example using the audio coding standard ITU G.723.1 or MPEG4-AAC. The audio data stream is designated in Figure 1 by way of a name second data file D2.

[0028] For every first and second data file D1, D2 there exists in each case a fragmentation description file D1_BSD, B2_BSD. Said fragmentation description file D1_BSD, B2_BSD specifies how content-related first and content-related second data segments S1, S2 can be obtained from the respective first and second data file D12, D2. The term "content-related" is understood to mean that first and second data segments have a

syntactical meaning within the respective data file, such as e.g. a plurality of succeeding second data segments represent the speech signal of a specific speaker within a dialog sequence. Furthermore, sections of the data file can also be understood thereby, such as e.g. individual images of a video sequence. In the following description data segments always refer to content-based data segments.

[0029] Figure 2 shows a first fragmentation description file D1_BSD for a first data file D1 encoded according to the MPEG4 standard. Data of a first data file D1 of this type is also known as media data MID. The first fragmentation description file D1_BSD uses a gBSD syntax (gBSD = generic bit stream syntax description) for representing the fragmentation rules, the gBSD syntax being based on the XML language. Thus, for example, the line identified by a reference symbol X1 shows that an intracoded video object plane (I-VOP) begins at a byte address 26 within the first data file D1 and comprises 2877 bytes. A detailed description of the mode of operation of the gBSD language is known from [1], the first fragmentation description file D1_BSD being virtually identical with Figure 9 from [1]. The extensible stylesheet language transformation (XSL Transformation or XSLT) represents another option for describing the fragmentation rules. This enables metadata MTD, in particular XML-encoded metadata, to be fragmented. Further information on XSLT can be found in document [1].

[0030] According to Figure 1, the first data file D1 and the first fragmentation description file D1_BSD are supplied to a fragmentation module MF. This takes first data segments S1 from the first data file D1 according to the fragmentation rule of the first fragmentation description file D1_BSD. Said first data segments S1 are passed by the fragmentation module MF to a synchronization module MS in the same chronological

sequence R1 in which they are to be output. By the first data segments S1 is meant data segments of the first data file D1 which have a content-related meaning for the first data file D1, such as e.g. individual images in a video sequence or individual spoken words in an audio sequence.

[0031] In this case the chronological sequence identifies that sequence of individual first data segments S1 in which, for example, the latter are played back visually or made audible. For example, one data segment contains the word "Good" and a further data segment the word "Morning", so the data segment containing "Good" is output first, and then the data segment containing "Morning". This chronological sequence R1 is represented symbolically in Figure 1 by an arrow with the reference symbol R1. Additionally printed in the individual first data segments S1 are numerals which indicate said chronological sequence R1. Thus, the first data segment with the numeral 0 is output first, then the one with the numeral 1, and finally the first data segment with the highest numeral, i.e. with the numeral 9. The use of these numerals has been chosen solely to illustrate the method according to the invention more clearly and does not constitute a requirement for the implementation of the method according to an embodiment of the invention.

[0032] A similar procedure to that described above is followed in order to implement the fragmentation of the second data file D2 by way of the second fragmentation description file D2_BSD and hence to output the content-related second data segments S2 in the chronological sequence R2.

[0033] In a next processing step of the method according to an embodiment of the invention, the first and second data segments S1, S2 are synchronized on the basis of a

predefinable assignment rule Z. Figure 3 shows a possible layout of an assignment rule Z of this type in the form of a tree structure. The tree structure shows dependencies within the assignment rule Z indicated by means of dashed or unbroken connecting lines on the one hand and, on the other, keywords for using said assignment rule Z in the form of an XML-based description. A start of the assignment rule Z can be identified in an XML-based document, such as can be seen e.g. in Figure 4, by an XML start word "StreamingInstructions".

[0034] This is followed by the first data file D1 with an XML name "SynchronizationSource" and optionally the fragmentation rule by specification of the first fragmentation description file D1_BSD with an XML name "FragmentationInstruction". Alongside this, at least one second data file D2 with an XML name "SynchronizationTarget" is defined which optionally comprises the fragmentation rule in the form of the second fragmentation description file D2_BSD with an XML name "FragmentationInstruction". For each second data file D2, synchronization information SI is specified by means of an XML name "SynchronizationInstruction", which defines the actual assignment of the first and second data segments S1, S2.

[0035] According to an embodiment of the inventive method, the synchronization information SI can assume two different forms.

a) Thus, for example, the second data segment S2 is assigned a first data segment S1 and a further assignment is carried out after a number A of output, sequentially succeeding first data segments S1. If the number A = 2, this means that in each case the second first data segment S1 is to be output with the second data segment S2. This constellation is illustrated in Figure 1. The first and second data segments S1, S2 are output in their chronological sequence R1, R2 by the synchronization module MS at the latter's

data output G. First, the respective first content-related first and second data segments S1, S2 with the numeral 0 are forwarded. Since the number is A=2, the next first data segment S1 with the numeral 1 is now output. Next, a first and a second data segment S1, S2 with the numeral 2 and 1 respectively are in each case output together at the data output G. Finally, the first data segment S1 with the numeral 9 and the second data segment with the numeral 4 are output. This procedure is identified in Figure 3 and 4 by means of an XML name "SimpleSynchronize" and a reference symbol Z1. In Figure 4 the value of the number A is for example A=16.

b) The use of the number A firstly enables only one single second data segment S2 to be synchronized with a first data segment S1. Secondly, the intervals at which a first and a second data segment S1, S2 can be output together are permanently predefined by the number A.
This means that in an alternative embodiment the predefinable assignment rule Z can be formed in such a way that for each second data segment a first data segment S1 is assigned by specification of a number A, where the number N represents a position of the first data segment S1 within the chronological sequence R1 of the first data segments S1.
This alternative is explained in more detail with the aid of an example according to Figure 5. The first and second data segments S1, S2 are to be output in the arrangement according to Figure 5. For this purpose the assignment rule Z can include the following rule: V={1, 1, 2, 8, 8}. This means that the first and second content-related second data segment S2, i.e. those with the numerals 0 and 1, are to be synchronized with the second content-related first data segment S1, which bears the numeral 1. Furthermore, the next second data segment S2 with the numeral 2 is to be

output together with the first data segment S1 with the numeral 2. Finally, the fourth and fifth second data segment S2 with the numerals 3 and 4 are to be output together with the first data segment with the numeral 8. Accordingly, the above rule V={1, 1, 2, 8, 8} describes for each second data segment S2, and moreover in the chronological sequence R2, the chronological sequence R2 corresponding to the reading out of said rule V from left to right, for which first data segment S1 a synchronization has to be performed. In this case the number within the rule corresponds to the number N, which corresponds in this exemplary embodiment to the numeral of the first data segment S1.

The rule is presented somewhat differently in Figure 4. In this case the rule for the chronological sequence R2 applies not from left to right, but from top to bottom. This means that the first two second data segments S2 are output with the first data segment S1 with the number 0, the following further four second data segments S2 are assigned to the first data segment S1 with the number 1 and are then output together in each case. This variant of the assignment rule Z is marked in Figure 3 by way of a reference symbol Z2 or an XML name "ComplexSynchronize". The respective number N in the XML document according to Figure 4 can be identified with the aid of an XML name "Occurance", where said number N can occur several times, as shown in the above rule V.

[0036] The first and second data segments S1, S2 output at the data output G can each be sent with an RTP packet (RTP = Realtime Transport Protocol), the RTP packets of jointly output first and second data segments S1, S2 being provided with an identical timestamp ("time code"). In an alternative,

first and second data segments S1, S2 output together in each case can be grouped in a respective RTP packet.

[0037] In an alternative extension of the method according to an embodiment of the invention it can be beneficial to determine the first and second data segments S1, S2 to be output first in time in each case within the first and second files D1, D2 on the basis of a marker M. The marker M indicates which first or second data segment S1, S2 is to be read out from the associated first or second data file D1, D2. Thus, the marker M can be stored within the first or second fragmentation description file D1_BSD, D2_BSD in such a way that the fragmentation module MF can unequivocally assign the right position within the associated data file D1, D2. In the example according to Figure 4, a first and a second marker M1, M2 are inserted, the first marker M1 being identified by means of a text "Start_1" and the second marker by way of a text "Start_2". In this way the first marker M1 for example is transmitted by the synchronization module MS to the fragmentation module MF, whereupon the fragmentation module MF starts forming the first data segment S1 in the line with the reference symbol X1. If the second marker M2 is transmitted, the first data segment S1 begins to be created in the line with the reference symbol X2.

[0038] In the previous examples, two data files D1, D2 to be synchronized were considered. In general, more than one single second data file D2 can be synchronized with the first data file D1. For example, there are two second data files D21, D22. For this purpose a combined predefinable assignment rule ZK is formed. A combined assignment rule ZK of this kind is illustrated in the example according to Figure 4. A first description part B_D1 contains information relating to the first data file D1 or its first data segments S1. A second

description part B_D21 includes synchronization information for a first second data file D21 or its second data segments S2. A third description part B_D22 includes synchronization information for the further second data file D22 or its second data segments S2. The second description part B_D21 was formed according to the first assignment rule Z1, and the third description part B_D22 according to the second assignment rule Z2.

[0039] Example embodiments being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

[0040] Documents

[1] Panis G. et al., "Bitstream Syntax Description: A Tool for Multimedia Resource Adaptation within MPEG-21", Signal Processing, Image Communication, Elsevier Science Publishers, Amsterdam, NL, Volume 18, No. 8, September 2003, pages 721-747, ISSN: 0923-5965

[2] S. Devillers et al., "Metadata streaming use case and requirements", ISO/IEC JTC 1/SC 29/WG11 M11638, Hong Kong, January 2005-04-08

[3] H. Hellwagner et al., "Report of CE on Bit-Stream Adaptation in Constrained and Streaming Environments", ISO/IEC JTC 1/SC 29/WG 11 M11706, Hong Kong, January 2005

[4] I. Burnett et al., "Bitstream Binding Language - A Grammar for Digital Item Transport", ISO/IEC JTC 1/SC 29/WG M11611, Hong Kong, January 2005

VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS

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(Regel 43*bis*.1 PCT)

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Aktenzeichen des Anmelders oder Anwalts: siehe Formular PCT/ISA/220 2005P06395WO	**WEITERES VORGEHEN** siehe Punkt 2 unten

Internationales Aktenzeichen	Internationales Anmeldedatum *(Tag/Monat/Jahr)*	Prioritätsdatum *(Tag/Monat/Jahr)*
PCT/EP2006/060808	16.03.2006	12.04.2005

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- ☐ Feld Nr. IV Mangelnde Einheitlichkeit der Erfindung
- ☒ Feld Nr. V Begründete Feststellung nach Regel 43*bis*.1 a) i) hinsichtlich der Neuheit, der erfinderischen Tätigkeit und der gewerblichen Anwendbarkeit; Unterlagen und Erklärungen zur Stützung dieser Feststellung
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SCHRIFTLICHER BESCHEID DER INTERNATIONALEN RECHERCHEBEHÖRDE

Internationales Aktenzeichen
PCT/EP2006/060808

IAP17 Rec'd PCT/PTO 11 OCT 2007

Feld Nr. I Grundlage des Bescheids

1. Hinsichtlich der **Sprache** beruht der Bescheid auf

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   a. Art des Materials

      ☐ Sequenzprotokoll

      ☐ Tabelle(n) zum Sequenzprotokoll

   b. Form des Materials

      ☐ in Papierform

      ☐ in elektronischer Form

   c. Zeitpunkt der Einreichung

      ☐ in der eingereichten internationalen Anmeldung enthalten

      ☐ zusammen mit der internationalen Anmeldung in elektronischer Form eingereicht

      ☐ bei der Behörde nachträglich für die Zwecke der Recherche eingereicht

3. ☐ Wurden mehr als eine Version oder Kopie eines Sequenzprotokolls und/oder einer dazugehörigen Tabelle eingereicht, so sind zusätzlich die erforderlichen Erklärungen, dass die Information in den nachgereichten oder zusätzlichen Kopien mit der Information in der Anmeldung in der eingereichten Fassung übereinstimmt bzw. nicht über sie hinausgeht, vorgelegt worden.

4. Zusätzliche Bemerkungen:

Feld Nr. V Begründete Feststellung nach Regel 43*bis*.1 a) i) hinsichtlich der Neuheit, der erfinderischen Tätigkeit und der gewerblichen Anwendbarkeit; Unterlagen und Erklärungen zur Stützung dieser Feststellung

1. Feststellung

Neuheit	Ja:	Ansprüche	3,4,6,7
	Nein:	Ansprüche	1,2,5,8,9
Erfinderische Tätigkeit	Ja:	Ansprüche	
	Nein:	Ansprüche	1-9
Gewerbliche Anwendbarkeit	Ja:	Ansprüche:	1-9
	Nein:	Ansprüche:	

2. Unterlagen und Erklärungen:

siehe Beiblatt

Zu Punkt V.

1 Es wird auf die folgenden Dokumente verwiesen:
D1 : EP 1 494 430 A (SAMSUNG ELECTRONICS CO., LTD) 5. Januar 2005
D2 : PATENT ABSTRACTS OF JAPAN, Bd. 2003, Nr. 12, 5. Dezember 2003 (2003-12-05) &; JP 2004 056777 A (MATSUSHITA ELECTRIC IND CO LTD), 19. Februar 2004

2 UNABHÄNGIGER ANSPRUCH 1

2.1 Die vorliegende Anmeldung erfüllt nicht die Erfordernisse des Artikels 33(1) PCT, weil der Gegenstand des Anspruchs 1 im Sinne von Artikel 33(2) PCT nicht neu ist.
Dokument D1 offenbart (siehe insbesondere Absatz 19 - 23 in Verbindung mit Figur 2 und 3) im Wortlaut des unabhängigen Anspruchs 1:
Verfahren zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (:=content segment) einer ersten Datendatei (:=MPEG-2) und inhaltsbezogenen zweiten Datensegmenten (:=metadata segment) einer zweiten Datendatei (:=ATSC), [wobei]
die ersten und zweiten Datensegmente jeweils sequentiell entsprechend ihrer zeitlichen Reihenfolge derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente jedes zweite Datensegment zusammen mit einem dazugehörigen ersten Datensegment ausgegeben wird (: siehe insbesondere Seite 5, Zeile 11 -19).

2.2 Die Zusammenfassung D2 der zugrundeliegenden Patentschrift JP2004056777 erweckt den Anschein, dass es sich auch hierbei um eine hochrelevante Druckschrift handelt, die die Neuheit des Anspruchs 1 in Frage stellt.

3 UNABHÄNGIGER ANSPRUCH 9

3.1 Die vorliegende Anmeldung erfüllt nicht die Erfordernisse des Artikels 33(1) PCT, weil der Gegenstand des Anspruchs 9 im Sinne von Artikel 33(2) PCT nicht neu ist.

Der Gegenstand des unabhängigen Anspruchs 9 entspricht dem Gegenstand des unabhängigen Anspruchs 1 und unterscheidet sich von diesem nur dahingehend, dass das Verfahren nun von einer Vorrichtung ausgeführt wird. Es gilt daher analoge Argumentationsweise wie unter 2 mit der Folge, dass der Gegenstand des unabhängigen Anspruchs 9 für nicht neu im Sinne von Artikel 33(2) PCT betrachtet wird.

4 ABHÄNGIGE ANSPRÜCHE 2-8

Die Ansprüche 2-8 enthalten keine Merkmale, die in Kombination mit den Merkmalen irgendeines Anspruchs, auf den sie sich beziehen, die Erfordernisse des PCT in Bezug auf Neuheit bzw. erfinderische Tätigkeit erfüllen

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (SUPPLEMENTARY SHEET)

International Application No. PCT/EP2006/060808

IAP17 Rec'd PCT/PTO 11 OCT 2007

Re Box V.

1 Reference is made to the following documents:

D1 : EP 1 494 430 A (SAMSUNG ELECTRONICS CO., LTD) January 5, 2005
D2 : PATENT ABSTRACTS OF JAPAN, Vol. 2003, No. 12, December 5, 2003 (2003-12-05) &; JP 2004 056777 A (MATSUSHITA ELECTRIC IND CO LTD), February 19, 2004

2 INDEPENDENT CLAIM 1

2.1 The present application does not fulfill the requirements of Article 33(1) PCT, because the subject matter of claim 1 is not novel within the meaning of Article 33(2) PCT.
Document D1 discloses (see in particular paragraphs 19 - 23 in conjunction with Figures 2 and 3) in the wording of the independent claim 1:
A method for synchronizing content-related first data segments (:=content segment) of a first data file (:=MPEG-2) and content-related second data segments (:=metadata segment) of a second data file (:=ATSC),
[wherein]
the first and second data segments are in each case output sequentially according to their chronological sequence in such a way that each second data segment is output together with an associated first data segment on the basis of a predefinable assignment rule for the first and second data segments (: see in particular page 5, lines 11 -19).

2.2 The abstract D2 of the underlying patent specification JP2004056777 creates the impression that that document is also a highly relevant publication which calls into question the novelty of claim 1.

3 INDEPENDENT CLAIM 9

3.1 The present application does not fulfill the requirements of Article 33(1) PCT, because the subject matter of claim 9 is not novel within the meaning of Article 33(2) PCT.

The subject matter of the independent claim 9 corresponds to the subject matter of the independent claim 1 and differs from that claim only in so far as the method is now performed by a device. A similar line of argument therefore applies as in the case of point 2 above, with the result that the subject matter of the independent claim 9 is regarded as not novel within the meaning of Article 33(2) PCT.

4 DEPENDENT CLAIMS 2-8

Claims 2-8 contain no features which, in combination with the features of any claim to which they refer, fulfill the requirements of the PCT in respect of novelty or inventive step.

VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS

Absender: INTERNATIONALE RECHERCHENBEHÖRDE

PCT

MITTEILUNG ÜBER DIE ÜBERMITTLUNG DES INTERNATIONALEN RECHERCHENBERICHTS UND DES SCHRIFTLICHEN BESCHEIDS DER INTERNATIONALEN RECHERCHENBEHÖRDE ODER DER ERKLÄRUNG

(Regel 44.1 PCT)

An
SIEMENS AKTIENGESELLSCHAFT
Postfach 22 16 34
D-80506 München
GERMANY

CT IPS AM Mch P
rec. JUN 29 2006
IP
time limit 12.02.07

Aktenzeichen des Anmelders oder Anwalts 2005P06395WO	Absendedatum *(Tag/Monat/Jahr)* 29/06/2006
Internationales Aktenzeichen PCT/EP2006/060808	**WEITERES VORGEHEN** siehe Punkte 1 und 4 unten
Anmelder SIEMENS AKTIENGESELLSCHAFT	Internationales Anmeldedatum *(Tag/Monat/Jahr)* 16/03/2006

1. [x] Dem Anmelder wird mitgeteilt, daß der internationale Recherchenbericht und der schriftliche Bescheid der Internationalen Recherchenbehörde erstellt wurden und ihm hiermit übermittelt werden.

   Einreichung von Änderungen und einer Erklärung nach Artikel 19:
   Der Anmelder kann auf eigenen Wunsch die Ansprüche der internationalen Anmeldung ändern (siehe Regel 46):

   Bis wann sind Änderungen einzureichen?
   Die Frist zur Einreichung solcher Änderungen beträgt üblicherweise zwei Monate ab der Übermittlung des internationalen Recherchenberichts.

   Wo sind Änderungen einzureichen?
   Unmittelbar beim Internationalen Büro der WIPO, 34, chemin des Colombettes, CH-1211 Genf 20,Telefaxnr.: (41-22) 338.82.70

   Nähere Hinweise sind den Anmerkungen auf dem Beiblatt zu entnehmen.

2. [ ] Dem Anmelder wird mitgeteilt, daß kein internationaler Recherchenbericht erstellt wird und daß ihm hiermit die Erklärung nach Artikel 17 (2) a) sowie der schriftliche Bescheid der Internationalen Recherchenbehörde übermittelt werden.

3. [ ] **Hinsichtlich des Widerspruchs** gegen die Entrichtung einer zusätzlichen Gebühr (zusätzlicher Gebühren) nach Regel 40.2 wird dem Anmelder mitgeteilt, daß

   [ ] der Widerspruch und die Entscheidung hierüber zusammen mit seinem Antrag auf Übermittlung des Wortlauts sowohl des Widerspruchs als auch der Entscheidung hierüber an die Bestimmungsämter dem Internationalen Büro übermittelt worden sind.

   [ ] noch keine Entscheidung über den Widerspruch vorliegt; der Anmelder wird benachrichtigt, sobald eine Entscheidung getroffen wurde.

4. **Zur Erinnerung:**
   Kurz nach Ablauf von **18 Monaten** seit dem Prioritätsdatum wird die internationale Anmeldung vom Internationalen Büro veröffentlicht. Will der Anmelder die Veröffentlichung verhindern oder auf einen späteren Zeitpunkt verschieben, so muß gemäß Regel 90bis.1 bzw. 90bis.3 vor Abschluß der technischen Vorbereitungen für die internationale Veröffentlichung eine Erklärung über die Zurücknahme der internationalen Anmeldung oder des Prioritätsanspruchs beim Internationalen Büro eingehen.
   Der Anmelder kann beim Internationalen Büro eine informelle Stellungnahme zum schriftlichen Bescheid der Internationalen Recherchenbehörde einreichen. Das Internationale Büro sendet allen Bestimmungsämtern eine Kopie dieser Stellungnahme, sofern nicht ein internationaler vorläufiger Prüfungsbericht erstellt worden ist bzw. gerade erstellt wird. Eine solche Stellungnahme würde auch der Öffentlichkeit zugänglich gemacht, allerdings erst nach Ablauf von 30 Monaten seit dem Prioritätsdatum.
   In bezug auf einige Bestimmungsämter ist innerhalb von **19 Monaten** seit dem Prioritätsdatum ein Antrag auf internationale vorläufige Prüfung einzureichen, wenn der Anmelder den Eintritt in die nationale Phase verschieben und erst **30 Monaten** nach dem Prioritätsdatum (in manchen Ämtern sogar noch später) vornehmen möchte; ansonsten muß der Anmelder innerhalb von **20 Monaten** seit dem Prioritätsdatum die für den Eintritt in die nationale Phase vor diesen Bestimmungsämtern vorgeschriebenen Handlungen vornehmen.
   Bei anderen Bestimmungsämtern gilt die Frist von **30 Monaten** (oder eine etwaige längere Frist) auch dann, wenn innerhalb von 19 Monaten kein solcher Antrag eingereicht wird.
   Siehe Anhang zu Formblatt PCT/IB/301. Genaue Angaben zu den jeweils geltenden Fristen in den einzelnen Ämtern enthält der *PCT-Leitfaden für Anmelder*, Band II, Nationale Kapitel sowie die Website der WIPO.

Name und Postanschrift der Internationalen Recherchenbehörde	Bevollmächtigter Bediensteter
Europäisches Patentamt, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040 Fax: (+31-70) 340-3016	Claude Berthon

Formblatt PCT/ISA/220 (Oktober 2005) *(Siehe Anmerkungen auf Beiblatt)*

ANMERKUNGEN ZU FORMBLATT PCT/ISA/220

Diese Anmerkungen sollen grundlegende Hinweise zur Einreichung von Änderungen gemäß Artikel 19 geben. Diesen Anmerkungen liegen die Erfordernisse des Vertrags über die internationale Zusammenarbeit auf dem Gebiet des Patentwesens (PCT), der Ausführungsordnung und der Verwaltungsvorschriften zu diesem Vertrag zugrunde. Bei Abweichungen zwischen diesen Anmerkungen und obengenannten Texten sind letztere maßgebend. Nähere Einzelheiten sind dem *PCT-Leitfaden für Anmelder*, einer Veröffentlichung der WIPO, zu entnehmen.

Die in diesen Anmerkungen verwendeten Begriffe "Artikel", "Regel" und "Abschnitt" beziehen sich jeweils auf die Bestimmungen des PCT-Vertrags, der PCT-Ausführungsordnung bzw. der PCT-Verwaltungsvorschriften.

HINWEISE ZU ÄNDERUNGEN GEMÄSS ARTIKEL 19

Nach Erhalt des internationalen Recherchenberichts und des schriftlichen Bescheids der Internationalen Recherchenbehörde hat der Anmelder die Möglichkeit, einmal die Ansprüche der internationalen Anmeldung zu ändern. Es ist jedoch zu betonen, daß, da alle Teile der internationalen Anmeldung (Ansprüche, Beschreibung und Zeichnungen) während des internationalen vorläufigen Prüfungsverfahrens geändert werden können, normalerweise keine Notwendigkeit besteht, Änderungen der Ansprüche nach Artikel 19 einzureichen, außer wenn der Anmelder z. B. zum Zwecke eines vorläufigen Schutzes die Veröffentlichung dieser Ansprüche wünscht oder ein anderer Grund für eine Änderung der Ansprüche vor ihrer internationalen Veröffentlichung vorliegt. Weiterhin ist zu beachten, daß ein vorläufiger Schutz nur in einigen Staaten erhältlich ist (siehe *PCT-Leitfaden für Anmelder*, Band I/B, Anlagen B 1 und B 2).

Der Anmelder wird darauf hingewiesen, daß Änderungen nach Artikel 19 nicht zulässig sind, wenn die Internationale Recherchenbehörde nach Artikel 17 (2) erklärt hat, daß kein internationaler Recherchenbericht erstellt wird (siehe *PCT-Leitfaden für Anmelder*, Band I/A, Ziffer 296).

Welche Teile der internationalen Anmeldung können geändert werden?

Im Rahmen von Artikel 19 können nur die Ansprüche geändert werden.

In der internationalen Phase können die Ansprüche auch nach Artikel 34 vor der mit der internationalen vorläufigen Prüfung beauftragten Behörde geändert (oder nochmals geändert) werden. Die Beschreibung und die Zeichnungen können nur nach Artikel 34 vor der mit der internationalen vorläufigen Prüfung beauftragten Behörde geändert werden.

Beim Eintritt in die nationale Phase können alle Teile der internationalen Anmeldung nach Artikel 28 oder gegebenenfalls Artikel 41 geändert werden.

Bis wann sind Änderungen einzureichen?

Innerhalb von zwei Monaten ab der Übermittlung des internationalen Recherchenberichts oder innerhalb von sechzehn Monaten ab dem Prioritätsdatum, je nachdem, welche Frist später abläuft. Die Änderungen gelten jedoch als rechtzeitig eingereicht, wenn sie dem Internationalen Büro nach Ablauf der maßgebenden Frist, aber noch vor Abschluß der technischen Vorbereitungen für die internationale Veröffentlichung (Regel 46.1) zugehen.

Wo sind Änderungen nicht einzureichen?

Die Änderungen können nur beim Internationalen Büro, nicht aber beim Anmeldeamt oder der Internationalen Recherchenbehörde eingereicht werden (Regel 46.2).

Falls ein Antrag auf internationale vorläufige Prüfung eingereicht wurde/wird, siehe unten.

In welcher Form können Änderungen erfolgen?

Eine Änderung kann erfolgen durch Streichung eines oder mehrerer ganzer Ansprüche, durch Hinzufügung eines oder mehrerer neuer Ansprüche oder durch Änderung des Wortlauts eines oder mehrerer Ansprüche in der eingereichten Fassung.

Für jedes Anspruchsblatt, das sich aufgrund einer oder mehrerer Änderungen von dem ursprünglich eingereichten Blatt unterscheidet, ist ein Ersatzblatt einzureichen.

Alle Ansprüche, die auf einem Ersatzblatt erscheinen, sind mit arabischen Ziffern zu numerieren. Wird ein Anspruch gestrichen, so brauchen die anderen Ansprüche nicht neu numeriert zu werden. Im Fall einer Neunumerierung sind die Ansprüche fortlaufend zu numerieren (Verwaltungsvorschriften, Abschnitt 205 b)).

Die Änderungen sind in der Sprache abzufassen, in der die internationale Anmeldung veröffentlicht wird.

Welche Unterlagen sind den Änderungen beizufügen?

Begleitschreiben (Abschnitt 205 b)):

Die Änderungen sind mit einem Begleitschreiben einzureichen.

Das Begleitschreiben wird nicht zusammen mit der internationalen Anmeldung und den geänderten Ansprüchen veröffentlicht. Es ist nicht zu verwechseln mit der "Erklärung nach Artikel 19(1)" (siehe unten, "Erklärung nach Artikel 19 (1)").

Das Begleitschreiben ist nach Wahl des Anmelders in englischer oder französischer Sprache abzufassen. Bei englischsprachigen internationalen Anmeldungen ist das Begleitschreiben aber ebenfalls in englischer, bei französischsprachigen internationalen Anmeldungen in französischer Sprache abzufassen.

IAP17 Rec'd PCT/PTO 11 OCT 2007

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant(s): Hermann HELLWAGNER et al.

Int'l App. No.: PCT/EP2006/060808

Application No.: **NEW APPLICATION**

Filed: October 11, 2007

For: METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

PRELIMINARY AMENDMENT

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314
Mail Stop PCT

October 11, 2007

Sir:

The following preliminary amendments and remarks are respectfully submitted in connection with the above-identified application. Prior to examination of the present application, please consider the following:

Amendments to the Abstract begin on page 2 of this Preliminary Amendment.

Amendments to the Specification begin on page 3 of this Preliminary Amendment.

Amendments to the Claims begin on page 4 of this Preliminary Amendment.

	Claims remaining after Amendment		**Highest number previously paid for**		**Present extra**
Total	17	-	20	=	0
Independent	2	-	3	=	0

IN THE ABSTRACT

Please replace the Abstract with the attached revised Abstract located at the end of this document.

SUBSTITUTE SPECIFICATION

In accordance with 37 C.F.R. §1.125, a substitute specification has been included in lieu of substitute paragraphs in connection with the present Preliminary Amendment. The substitute specification is submitted in clean form, attached hereto, and is accompanied by a marked-up version showing the changes made to the original specification. The changes have been made in an effort to place the specification in better form for U.S. practice. No new matter has been added by these changes to the specification. Further, the substitute specification includes paragraph numbers to facilitate amendment practice as requested by the U.S. Patent and Trademark Office.

IN THE CLAIMS

This is a complete and current listing of the claims, marked with status identifiers in parentheses. The following listing of claims will replace all prior versions and listings of claims in the application.

What is claimed is:

1. (Currently Amended) A method for synchronizing content-related first data segments ~~(S1)~~ of a first data file ~~(D1)~~ and content-related second data segments ~~(S2)~~ of a second data file ~~(D2)~~, the method comprising:

~~characterized in that~~

sequentially outputting the first and second data segments ~~(S1, S2) are in each case output sequentially~~ according to their chronological sequence ~~(R1, R2)~~ in such a way that each second data segment ~~(S2)~~ is output together with an associated first data segment ~~(S1)~~ on the basis of an ~~predefinable~~ assignment rule ~~(Z)~~ for the first and second data segments ~~(S1, S2)~~.

2. (Currently Amended) The method as claimed in claim 1, wherein

~~characterized in that~~

the ~~predefinable~~ assignment rule ~~(Z)~~ is formed in such a way that a second data segment ~~(S2)~~ is assigned to precisely one first data segment ~~(S1)~~ and a further assignment is carried out after a number ~~(A)~~ of sequentially succeeding first data segments ~~(S1)~~.

3. (Currently Amended) The method as claimed in claim 1, wherein

~~characterized in that~~

the ~~predefinable~~ assignment rule ~~(Z)~~ is formed in such a way that, for each second data segment, ~~(S2)~~ a first data segment ~~(S1)~~ is assigned by

specification of a number ~~(N)~~, the number ~~(N)~~ representing a position of the first data segment ~~(S1)~~ within ~~the~~ a chronological sequence ~~(R1)~~ of the first data segments ~~(S1)~~.

4. (Currently Amended) The method as claimed in ~~one of the preceding claims,~~
~~characterized in that~~claim 1, wherein
content-related first data segments ~~(S1)~~ and content-related second data segments ~~(S21, S22)~~ of a plurality of second data files ~~(D21, D22)~~ are synchronized on the basis of a combined ~~predefinable~~ assignment rule ~~(ZK)~~.

5. (Currently Amended) The method as claimed in claim 1, wherein
~~one of the preceding claims,~~
~~characterized in that~~
media data ~~(MID), in particular video or audio data, and/or metadata (MTD), in particular encoded according to the XML standard,~~ are represented by at least one of the first and~~/or~~ second data file ~~(D1, D2)~~.

6. (Currently Amended) The method as claimed in ~~one of the preceding claims,~~
~~characterized in that~~claim 1, wherein
at least one of the first and~~/or~~ second data segments ~~(S1, S2)~~ are generated on the basis of at least one of the generic bit stream syntax description ~~(gBSD) or on the basis of~~and the extensible stylesheet language transformation ~~(XSLT)~~.

7. (Currently Amended) The method as claimed in ~~one of the preceding claims,~~

~~characterized in that~~claim 1, further comprising:

determining, based upon ~~it is determined on the basis of~~ a content-related marker, ~~(M)~~ which first and second data segments ~~(S1, S2)~~ are to be output first in time.

8. (Currently Amended) The method as claimed in claim 7, wherein ~~characterized in that~~

at least one of a scene change in an image sequence ~~or~~ and a change of speaker in a speech sequence is identified by ~~means~~ way of the content-related marker ~~(M)~~.

9. (Currently Amended) A device for synchronizing content-related first data segments ~~(S1)~~ of a first data file ~~(D1)~~ and content-related second data segments ~~(S2)~~ of a second data file ~~(D2), in particular as claimed in one of the preceding claims~~, comprising: ~~characterized by~~

a synchronization module ~~(MS) for~~to output~~ting~~ first and second data segments, ~~(S1, S2)~~ sequentially, ~~in each case~~ according to their chronological sequence ~~(R1, R2)~~, ~~wherein~~ each second data segment ~~(S2)~~ ~~is~~being output together with an associated first data segment ~~(S1) on the basis~~based upon of ~~a predefinable~~an assignment rule ~~(Z)~~ for the first and second data segments ~~(S1, S2)~~.

10. (New) The method as claimed in claim 2, wherein content-related first data segments and content-related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule.

11. (New) The method as claimed in claim 3, wherein content-related first data segments and content-related second data segments of a plurality of second data files are synchronized on the basis of a combined assignment rule.

12. (New) The method as claimed in claim 5, wherein the media data include at least one of video and audio data.

13. (New) The method as claimed in claim 1, wherein at least one of media data and metadata are represented by at least one of the first and second data file.

14. (New) The method as claimed in claim 13, wherein the metadata include metadata encoded according to the XML standard.

15. (New) The method as claimed in claim 13, wherein the media data include at least one of video and audio data.

16. (New) The method as claimed in claim 1, wherein the assignment rule is predefinable.

17. (New) The device as claimed in claim 9, wherein the assignment rule is predefinable.

REMARKS

Claims 1-17 are now present in this application. It should be noted that the amendments to claims 1-9 of the present application are non-narrowing amendments, made solely to place the claims in proper form for U.S. practice and not to overcome any prior art or for any other statutory considerations.

CONCLUSION

Accordingly, in view of the above amendments and remarks, an early indication of the allowability of each of claims 1-17 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY & PIERCE, P.L.C.

By: Scott Elder 55,149
For Donald J. Daley, Reg. No. 34,313

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

DJD/amp

ABSTRACT OF THE DISCLOSURE

In one embodiment of the present invention, the synchronisation of data segments is particularly necessary for the use of small screens. A method and a device are disclosed for synchronising content-dependent first data segments of a first data file and content-dependent second data segments of a second data file, the first and second data segments being respectively output in sequence according to their chronological order in such a way that based on a predeterminable assignment rule for the first and second data segments, each second data segment is output together with a corresponding first data segment.

~~Description~~

11/918276
IAP17 Rec'd PCT/PTO 11 OCT 2007

SUBSTITUTE SPECIFICATION

METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

Priority Statement

[0001] This application is the national phase under 35 U.S.C. § 371 of PCT International Application No. PCT/EP2006/060808 which has an International filing date of March 16, 2006, which designated the United States of America and which claims priority on German Patent Application number DE 10 2005 016 866.3 filed April 12, 2005, the entire contents of which are hereby incorporated herein by reference.

Field

[0002] At least one embodiment of t~~T~~he invention relates to a method ~~according to the preamble of claim 1~~ and/or to a device ~~according to the preamble of claim 9~~.

Background

[0003] For many decades, television signals have been transmitted to television subscribers terrestrially and via cable. In Europe, for example, the PAL standard is used for this purpose, and in North America the NTSC standard. Since all television sets in the respective countries are suitable for receiving the television signal encoded e.g. according to the PAL standard, only one television signal needs to be transmitted for a television program. As a result, a transmission of a plurality of differently encoded television signals of a television program, for example as a function of an image size or a performance capability of the television sets, is not required.

[0004] Due to the current introduction of new terminal devices, for example mobile terminals with small screens, it will no longer be possible in the future to provide a single television signal of a television program for all terminal devices. Furthermore it may also be desired to provide different television subscribers with television signals of different quality. In this case, for example, a low-quality television signal, in monochrome for example, is provided for a television subscriber who pays a low monthly fee, whereas for a higher fee a high-resolution color television signal is supplied.

[0005] New types of data compression algorithms, such as a video coding standard ITU-T H.264 for example, as well as metadata languages, such as e.g. XML (XML = Extended Markup Language), were developed in order to satisfy these requirements. With the aid of said metadata languages, contents of a document and/or a data stream, such as of a television or video signal for example, can be described in a structured manner by means of an XML schema language definition. Based on this definition, information can be obtained as required, with the aid of which information a. scaling of the television or video signal for different television subscribers can be realized.

[0006] From the prior art, it is known to use XML-based descriptions of data streams in which individual components of the data stream are described or marked according to their syntactical meaning by means of BSD units (BSD = Bitstream Syntax Description) with freely addressable gBSD units (gBSD = generic Bitstream Description) with regard to different adaptation possibilities. A detailed description can be found in document [1] listed at the end of this application. These

descriptions of the data stream are used in order to adapt the data stream to the requirement, for example in terms of data rate or quality of a television signal, of an end subscriber, such as e.g. a television subscriber. For this purpose the description of the data stream can first be suitably transformed, with the data stream then being adapted based on the transformed description.

[0007] A Bitstream Binding Language (BBL) method, by ~~means of~~ which a synchronization can be performed, is known from document [4]. Since BBL is based on XPath during the fragmentation of metadata and a description of a section of the metadata using XPath accounts for a sizable quantity of data, a large overhead is generated by this method. A proprietary method is proposed for the fragmentation of the media data, as a result of which it is generally not made possible to synchronize different data types.

[0008] Requirements for streamable digital items are presented in document [2]. These requirements are based on the gBSD description, a distributed and dynamic adaptation being proposed for metadata.

[0009] Document [3] discloses two methods in which an adaptation of data streams for streaming applications can be performed with the aid of the gBSD description and XSLT description.

SUMMARY

[0010] At least one embodiment of ~~The object underlying~~ the invention ~~is to~~ specifies~~y~~ a method or, as the case may be, a device which enables content-related first and second data segments to be synchronized in a simple and standard-compliant manner.

~~[0011] This object is achieved based on the method according to the preamble of claim 1 by means of its characterizing features and by a device based on the preamble of claim 9 by means of its characterizing features.~~

[0011] With the method of at least one embodiment for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the first and second data segments will be output in each case sequentially according to their chronological sequence in such a way that, based on a predefinable assignment rule for the first and second data segments, each second data segment will be output together with an associated first data segment.

[0012] By ~~means~~ way of the method according to at least one embodiment of the invention, it is made possible in a simple manner to synchronize content-related first and second data segments. ~~Said~~ The synchronization is controlled by ~~means~~ way of the predefinable assignment rule. In this way, content-related data segments can be output together according to their chronological sequence. This is of advantage, since the assignment is carried out without the use of timestamps. In this context the term "output" is understood to mean that first and second data segments are, for example, transmitted, stored together or passed on to a processing unit.

[0013] Preferably, the predefinable assignment rule is formed in such a way that a second data segment is assigned precisely to a first data segment and a further assignment is carried out following a number of sequentially succeeding first data segments. In this way the assignment rule can be described merely by specification of the number. This is advantageous

owing to the very low signaling overhead required for signaling the number.

[0014] In an alternative embodiment, the predefinable assignment rule is formed in such a way that for each second data segment a first data segment is assigned by specification of a number, the number representing a position of the first data segment within the chronological sequence of the first data segments. By this, ~~means~~ the assignment of first and second data segments is achieved in a particularly flexible manner. In this embodiment a plurality of second data segments can be assigned to a first data segment.

[0015] Preferably, content-related first data segments and content-related second data segments of a plurality of second data files can be synchronized on the basis of a combined predefinable assignment rule. By this, ~~means~~ the second data segments of a plurality of data files can be output in a synchronized manner. The combined predefinable assignment rule enables a very compact and storage-efficient description.

[0016] With the method according to at least one embodiment of the invention, media data, in particular video or audio data, and/or metadata, in particular encoded according to the XML standard, are described by ~~means~~ way of the first and/or second data file. In this way it is made possible by ~~means~~ way of the method according to at least one embodiment of the invention to synchronize a plurality of different data types.

[0017] The first and/or second data segments are preferably generated on the basis of the generic bit stream syntax description or on the basis of the extensible stylesheet language transformation. With this standardized approach to generating the first and/or second data segments it is

possible to achieve a cost-effective, reliable and standard-compliant implementation of the method according to at least one embodiment of the invention, since the implementation can make use of standardized modules.

[0018] Furthermore, it is beneficial in practice to determine, on the basis of a content-related marker, which first and second data segments will be output first in time. This enables the first and second data files to be accessed at random. In particular a scene change in an image sequence or a change of speaker in a speech sequence is identified by ~~means~~ way of the content-related marker. This enables a desired section of a speech or image sequence to be located quickly, since the access is performed in a content-based manner.

[0019] At least one embodiment of t~~T~~he invention also relates to a device for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, comprising a synchronization module for outputting first and second data segments in each case sequentially according to their chronological sequence, with each second data segment being output together with an associated first data segment based on a predefinable assignment rule for the first and second data segments. The method according to at least one embodiment of the invention can be performed with the aid of the device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] Further details and advantages of the invention are explained in greater depth with reference to Figures 1 to 5, in which:

[0021] Figure 1 shows a device for performing the method according to an embodiment of the invention;

[0022] Figure 2 shows the contents of a fragmentation description file using the XML description language, wherein a fragmentation of a first and/or second data file is described by ~~means~~ way of the fragmentation description file;

[0023] Figure 3 shows a tree diagram for the pictorial representation of an assignment rule;

[0024] Figure 4 shows the contents of an assignment rule formed with the aid of the XML description language; and

[0025] Figure 5 shows a chronological arrangement of synchronized first and second data segments S1, S2.

[0026] Elements having the same function and the same mode of operation are provided with the same reference symbols in Figures 1 to 5.

DETAILED DESCRIPTION OF THE EXAMPLE EMBODIMENTS

[0027] The method according to the invention is explained in more detail below with reference to an ~~exemplary~~ example embodiment according to Figure 1. In this example a video data stream and an audio data stream are to be synchronized. The video data stream has been compressed for example according to the video coding standard MPEG2, MPEG4 or ITU H.264. Said video data stream is identified in Figure 1 as the first data file D1. The audio data stream has been coded for example using the audio coding standard ITU G.723.1 or MPEG4-AAC. The audio data stream is designated in Figure 1 by ~~means~~ way of a name second data file D2.

[0028] For every first and second data file D1, D2 there exists in each case a fragmentation description file D1_BSD, B2_BSD. Said fragmentation description file D1_BSD, B2_BSD specifies how content-related first and content-related second data segments S1, S2 can be obtained from the respective first and second data file D12, D2. The term "content-related" is understood to mean that first and second data segments have a syntactical meaning within the respective data file, such as e.g. a plurality of succeeding second data segments represent the speech signal of a specific speaker within a dialog sequence. Furthermore, sections of the data file can also be understood thereby, such as e.g. individual images of a video sequence. In the following description data segments always refer to content-based data segments.

[0029] Figure 2 shows a first fragmentation description file D1_BSD for a first data file D1 encoded according to the MPEG4 standard. Data of a first data file D1 of this type is also known as media data MID. ~~Said~~ The first fragmentation description file D1_BSD uses a gBSD syntax (gBSD = generic bit stream syntax description) for representing the fragmentation rules, the gBSD syntax being based on the XML language. Thus, for example, the line identified by a reference symbol X1 shows that an intracoded video object plane (I-VOP) begins at a byte address 26 within the first data file D1 and comprises 2877 bytes. A detailed description of the mode of operation of the gBSD language is known from [1], the first fragmentation description file D1_BSD being virtually identical with Figure 9 from [1]. The extensible stylesheet language transformation (XSL Transformation or XSLT) represents another option for describing the fragmentation rules. This enables metadata MTD, in particular XML-encoded metadata, to be fragmented. Further information on XSLT can be found in document [1].

[0030] According to Figure 1, the first data file D1 and the first fragmentation description file D1_BSD are supplied to a fragmentation module MF. This takes first data segments S1 from the first data file D1 according to the fragmentation rule of the first fragmentation description file D1_BSD. Said first data segments S1 are passed by the fragmentation module MF to a synchronization module MS in the same chronological sequence R1 in which they are to be output. By the first data segments S1 is meant data segments of the first data file D1 which have a content-related meaning for the first data file D1, such as e.g. individual images in a video sequence or individual spoken words in an audio sequence.

[0031] In this case the chronological sequence identifies that sequence of individual first data segments S1 in which, for example, the latter are played back visually or made audible. For example, one data segment contains the word "Good" and a further data segment the word "Morning", so the data segment containing "Good" is output first, and then the data segment containing "Morning". This chronological sequence R1 is represented symbolically in Figure 1 by an arrow with the reference symbol R1. Additionally printed in the individual first data segments S1 are numerals which indicate said chronological sequence R1. Thus, the first data segment with the numeral 0 is output first, then the one with the numeral 1, and finally the first data segment with the highest numeral, i.e. with the numeral 9. The use of these numerals has been chosen solely to illustrate the method according to the invention more clearly and does not constitute a requirement for the implementation of the method according to an embodiment of the invention.

[0032] A similar procedure to that described above is followed in order to implement the fragmentation of the second data

file D2 by ~~means~~ way of the second fragmentation description file D2_BSD and hence to output the content-related second data segments S2 in the chronological sequence R2.

[0033] In a next processing step of the method according to an embodiment of the invention, the first and second data segments S1, S2 are synchronized on the basis of a predefinable assignment rule Z. Figure 3 shows a possible layout of an assignment rule Z of this type in the form of a tree structure. The tree structure shows dependencies within the assignment rule Z indicated by means of dashed or unbroken connecting lines on the one hand and, on the other, keywords for using said assignment rule Z in the form of an XML-based description. A start of the assignment rule Z can be identified in an XML-based document, such as can be seen e.g. in Figure 4, by an XML start word "StreamingInstructions".

[0034] This is followed by the first data file D1 with an XML name "SynchronizationSource" and optionally the fragmentation rule by specification of the first fragmentation description file D1_BSD with an XML name "FragmentationInstruction". Alongside this, at least one second data file D2 with an XML name "SynchronizationTarget" is defined which optionally comprises the fragmentation rule in the form of the second fragmentation description file D2_BSD with an XML name "FragmentationInstruction". For each second data file D2, synchronization information SI is specified by means of an XML name "SynchronizationInstruction", which defines the actual assignment of the first and second data segments S1, S2.

[0035] According to an embodiment of the inventive method, the synchronization information SI can assume two different forms.

a) Thus, for example, the second data segment S2 is assigned a first data segment S1 and a further assignment is carried

out after a number A of output,, sequentially succeeding first data segments S1. If the number A = 2, this means that in each case the second first data segment S1 is to be output with the second data segment S2. This constellation is illustrated in Figure 1. The first and second data segments S1, S2 are output in their chronological sequence R1, R2 by the synchronization module MS at the latter's data output G. First, the respective first content-related first and second data segments S1, S2 with the numeral 0 are forwarded. Since the number is A=2, the next first data segment S1 with the numeral 1 is now output. Next, a first and a second data segment S1, S2 with the numeral 2 and 1 respectively are in each case output together at the data output G. Finally, the first data segment S1 with the numeral 9 and the second data segment with the numeral 4 are output. This procedure is identified in Figure 3 and 4 by means of an XML name "SimpleSynchronize" and a reference symbol Z1. In Figure 4 the value of the number A is for example A=16.

b) The use of the number A firstly enables only one single second data segment S2 to be synchronized with a first data segment S1. Secondly, the intervals at which a first and a second data segment S1, S2 can be output together are permanently predefined by the number A.
This means that in an alternative embodiment the predefinable assignment rule Z can be formed in such a way that for each second data segment a first data segment S1 is assigned by specification of a number A, where the number N represents a position of the first data segment S1 within the chronological sequence R1 of the first data segments S1.
This alternative is explained in more detail with the aid of an example according to Figure 5. The first and second data segments S1, S2 are to be output in the arrangement

according to Figure 5. For this purpose the assignment rule Z can include the following rule: V={1, 1, 2, 8, 8}. This means that the first and second content-related second data segment S2, i.e. those with the numerals 0 and 1, are to be synchronized with the second content-related first data segment S1, which bears the numeral 1. Furthermore, the next second data segment S2 with the numeral 2 is to be output together with the first data segment S1 with the numeral 2. Finally, the fourth and fifth second data segment S2 with the numerals 3 and 4 are to be output together with the first data segment with the numeral 8. Accordingly, the above rule V={1, 1, 2, 8, 8} describes for each second data segment S2, and moreover in the chronological sequence R2, the chronological sequence R2 corresponding to the reading out of said rule V from left to right, for which first data segment S1 a synchronization has to be performed. In this case the number within the rule corresponds to the number N, which corresponds in this exemplary embodiment to the numeral of the first data segment S1.

The rule is presented somewhat differently in Figure 4. In this case the rule for the chronological sequence R2 applies not from left to right, but from top to bottom. This means that the first two second data segments S2 are output with the first data segment S1 with the number 0, the following further four second data segments S2 are assigned to the first data segment S1 with the number 1 and are then output together in each case. This variant of the assignment rule Z is marked in Figure 3 by ~~means~~ way of a reference symbol Z2 or an XML name "ComplexSynchronize". The respective number N in the XML document according to Figure 4 can be identified with the aid of an XML name "Occurance", where said number N can occur several times, as shown in the above rule V.

[0036] The first and second data segments S1, S2 output at the data output G can each be sent with an RTP packet (RTP = Realtime Transport Protocol), the RTP packets of jointly output first and second data segments S1, S2 being provided with an identical timestamp ("time code"). In an alternative, first and second data segments S1, S2 output together in each case can be grouped in a respective RTP packet.

[0037] In an alternative extension of the method according to an embodiment of the invention it can be beneficial to determine the first and second data segments S1, S2 to be output first in time in each case within the first and second files D1, D2 on the basis of a marker M. ~~Said~~ The marker M indicates which first or second data segment S1, S2 is to be read out from the associated first or second data file D1, D2. Thus, the marker M can be stored within the first or second fragmentation description file D1_BSD, D2_BSD in such a way that the fragmentation module MF can unequivocally assign the right position within the associated data file D1, D2. In the example according to Figure 4, a first and a second marker M1, M2 are inserted, the first marker M1 being identified by means of a text "Start_1" and the second marker by ~~means~~ way of a text "Start_2". In this way the first marker M1 for example is transmitted by the synchronization module MS to the fragmentation module MF, whereupon the fragmentation module MF starts forming the first data segment S1 in the line with the reference symbol X1. If the second marker M2 is transmitted, the first data segment S1 begins to be created in the line with the reference symbol X2.

[0038] In the previous examples, two data files D1, D2 to be synchronized were considered. In general, more than one single second data file D2 can be synchronized with the first data

file D1. For example, there are two second data files D21, D22. For this purpose a combined predefinable assignment rule ZK is formed. A combined assignment rule ZK of this kind is illustrated in the example according to Figure 4. A first description part B_D1 contains information relating to the first data file D1 or its first data segments S1. A second description part B_D21 ~~comprises~~ includes synchronization information for a first second data file D21 or its second data segments S2. A third description part B_D22 ~~comprises~~ includes synchronization information for the further second data file D22 or its second data segments S2. The second description part B_D21 was formed according to the first assignment rule Z1, and the third description part B_D22 according to the second assignment rule Z2.

[0039] Example embodiments being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

[0040] ~~References~~Documents

[1] Panis G. et al., "Bitstream Syntax Description: A Tool for Multimedia Resource Adaptation within MPEG-21", Signal Processing, Image Communication, Elsevier Science Publishers, Amsterdam, NL, Volume 18, No. 8, September 2003, pages 721-747, ISSN: 0923-5965

[2] S. Devillers et al., "Metadata streaming use case and requirements", ISO/IEC JTC 1/SC 29/WG11 M11638, Hong Kong, January 2005-04-08

[3] H. Hellwagner et al., "Report of CE on Bit-Stream Adaptation in Constrained and Streaming Environments", ISO/IEC JTC 1/SC 29/WG 11 M11706, Hong Kong, January 2005

[4] I. Burnett et al., "Bitstream Binding Language - A Grammar for Digital Item Transport", ISO/IEC JTC 1/SC 29/WG M11611, Hong Kong, January 2005

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PATENT
32860-001352/US

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant(s):	Hermann HELLWAGNER et al.
Int'l Application No.:	PCT/EP2006/060808
Application No.:	**NEW APPLICATION**
Filed:	October 11, 2007
For:	METHOD FOR SYNCHRONIZING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

INFORMATION DISCLOSURE STATEMENT (SUBMISSION CONCURRENT WITH THE FILING OF A NEW PATENT APPLICATION)

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October 11, 2007

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☐ Submitted herewith is a legible copy of (i) each U.S. and foreign patent; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed.

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English Language abstracts, submitted herewith, constitute concise statements of relevance for Japanese Patent Publication Number JP 2004-056777.

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Respectfully submitted,

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- ☒ Documents
- ☒ International Search Report (PCT/ISA/210 and PCT/ISA/220)
- ☒ PCT/ISA/237

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Complete if Known	
Application Number	Not yet assigned
Filing Date	10/11/2007
First Named Inventor	Hermann Hellwagner et al.
Art Unit	Not yet assigned
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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
	1	US-2001/0052943 A1	12-20-2001	Sone	
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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]
	2	EP 1 494 430 A2	01-05-2005	Samsung Electronics Co. Ltd.		
	3	Patentabstracts of Japan 2004056777 A	02-19-2004	Matsushita Electric Ind. Co. Ltd.		

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Sheet 2 of 2

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	4	S. Devillers et al., „Metadaten streaming use case and requirements", ISO/IEC JTC 1/SC 29/WG11 M11638, Hong Kong, Januar 2005-04-08	
	5	H. Hellwagner et al., „Report of CE on Bit-Stream Adap-tation in Constrained and Streaming Environments", ISO/IEC JTC 1/SC 29/WG 11 M11706, Hong Kong, Januar 2005	
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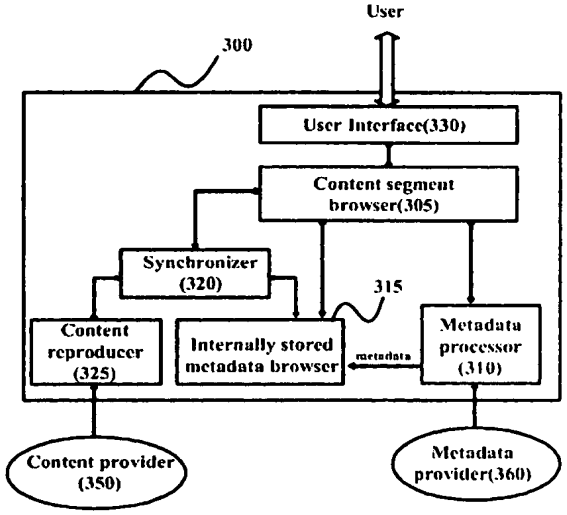
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(54) System and method for time synchronization between multimedia content and segment metadata

(57) A system and method for time synchronization between multimedia content and segment metadata. Disclosed is a time synchronization system (300) including a content processor (325) for receiving and storing multimedia content containing first segment time information; a metadata processor (310) for receiving and storing segment metadata for the content containing second segment time information; a synchronizer (320) for extracting the first segment time information from the multimedia content and the second segment time information from the metadata in response to a request of a user, determining respective reference time points from the first and second extracted segment time information, correcting a relative time point of the content using a difference between the determined reference time points, and synchronizing the received content and metadata using the corrected relative time point; and a content segment browser (305) for forwarding the content segment request signal to the synchronizer and reproducing a plurality of segments of the content synchronized by the synchronizer.

FIG. 3



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Description

[0001] Apparatus and methods consistent with embodiments of the present invention relate to time synchronization between multimedia content and segment metadata for multimedia content, and more particularly, to a system and method for synchronizing content and segment metadata received via different transmission channels using predetermined time information.

[0002] As digital broadcasting services have become widely distributed, technical development for an effective application using multimedia contents (in embodiments of the present invention, the various types of content mentioned below are all regarded as multimedia content) is desirable. For example, there is provided a personal video recorder (PVR) application, which provides a time shifting function for content broadcast in real time by storing the broadcast contents therein. PVR may be a good example of a change in the way of viewing TV, in that it allows useful functions such as automatic commercial advance, instant replay, pause and trick play, which can be realized only in recording media such as video tapes and DVDs, to be applied to TV programs being broadcast in real time. The PVR application can have more powerful functions and provide users with more convenient functions, since it uses additional information, i.e. metadata, for broadcast content. In particular, since segment metadata (in embodiments of the present invention, metadata mentioned below are all regarded as segment metadata) is able to provide additional information such as highlights, tables of contents and bookmarks for the contents, users can view the broadcast contents in a desired, non-linear manner. For example, it is possible for users to view collected highlights of scoring scenes in a soccer game, to move and view again a desired second half of the third inning while viewing a first half of the seventh inning in a baseball game, to view only a desired news segment corresponding to a specific field in a news program, to firstly view desired songs of a specific singer in a show program, or the like. As mentioned above, a next generation PVR using segment metadata can provide users with a content segment browser which is a more convenient and powerful broadcast viewing tool.

[0003] As a representative standard for segment metadata, there is provided the "TV-Anytime Metadata" standard specified in the TV-Anytime Forum. This metadata standard expressed in an XML format defines the metadata for a segment and a segment group. FIG. 1A shows an example of metadata in which a segment is described. A segment is a unit representing a portion of contents, in which information such as segment ID, relevant broadcast program ID, descriptor for the segment, e.g. title/synopsis/keyword, and temporal positions of the segment and a key frame.

[0004] FIG. 1B shows an example of metadata in which a segment group is described. The segment group is a unit for grouping one or more segments from one or several broadcast programs. Group types for use in segment grouping are classified into highlights, highlights/objects, highlights/events, bookmarks, bookmarks/objects, bookmarks/events, themeGroup, preview, preview/title, preview/slideshow, tableofcontents, synopsis, shots, insertionPoints, alternativeGroups, other, and the like. If the group comprises only a group ID and the segment for one broadcast program other than the aforementioned group types, the metadata for the segment group defines information including a relevant broadcast program ID, a group descriptor such as title/synopsis/keyword, a group interval, a key frame position, IDs of segments belonging to the group, and the like.

[0005] A time point of each segment in segment metadata of TV-Anytime is described as a relative time point with respect to a start time point of the contents. Therefore, a reference time point to which the segment refers should be additionally described in the metadata. FIG. 1C shows an example of the metadata for representing such a reference time point.

[0006] At this time, if the aforementioned metadata are not provided simultaneously via the same transmission channel as that for the contents but provided via a different transmission channel by a content provider or another metadata provider, a time difference may be produced at the receiving device upon reception of the contents and metadata. Accordingly, a time synchronization process is desirable.

[0007] Embodiments of the present invention address the aforementioned problem, and relate to a system and method for performing time synchronization between content and metadata.

[0008] According to an aspect of the present invention there is provided a time synchronization system, comprising a content processor for receiving and storing multimedia content containing first segment time information; a metadata processor for receiving and storing segment metadata for the content containing second segment time information; a synchronizer for extracting the first segment time information from the multimedia content and the second segment time information from the metadata in response to a content segment request signal of a user, determining respective reference time points from the first and second extracted segment time information, correcting a relative time point of the content using a difference between the determined reference time points, and synchronizing the received content and metadata using the corrected relative time point; and a content segment browser for forwarding the content segment request signal to the synchronizer and reproducing a plurality of segments of the content synchronized by the synchronizer.

[0009] In an exemplary embodiment, in a case where the time information is GPS time information and the reference time point is GPS time information, if a GPS value of the content is ahead of a GPS value of the metadata, the syn-

chronizer corrects the relative time point of the content by adding a difference between the GPS values of the content and metadata to a relative time value in the metadata; or if the GPS value of the content is behind the GPS value of the metadata, the synchronizer corrects the relative time point of the content by subtracting the difference between the GPS values from the relative time value in the metadata.

[0010] In an exemplary embodiment, in a case where the time information is GPS and DTS time information and the reference time point is DTS time information, if a GPS value of the content is ahead of a GPS value of the metadata, the synchronizer causes ΔT_{DTS} to be changed to $\Delta T_{DTS}-2^{33}$ as a new ΔT_{DTS} when $\Delta T_{DTS} > 0$ or ΔT_{DTS} to remain unchanged when $\Delta T_{DTS} < 0$ and then corrects the relative time point of the content by adding an absolute value of the ΔT_{DTS} to a relative time value in the metadata, where ΔT_{DTS} is a value obtained by subtracting the DTS time information value of the metadata from the DTS time information value of the content; or if the GPS value of the content is behind the GPS value of the metadata, the synchronizer causes ΔT_{DTS} to be changed to $\Delta T_{DTS}+2^{33}$ as a new ΔT_{DTS} when $\Delta T_{DTS} < 0$ or ΔT_{DTS} to remain unchanged when $\Delta T_{DTS} > 0$ and then corrects the relative time point of the content by subtracting an absolute value of the ΔT_{DTS} from the relative time value in the metadata, where ΔT_{DTS} is a value obtained by subtracting the DTS time information value of the metadata from the DTS time information value of the content.

[0011] In an exemplary embodiment, in a case where the time information is GPS and PTS time information and the reference time point is PTS time information, if a GPS value of the content is ahead of a GPS value of the metadata, the synchronizer causes ΔT_{PTS} to be changed to $\Delta T_{PTS}-2^{33}$ as a new ΔT_{PTS} when $\Delta T_{PTS} > 0$ or ΔT_{PTS} to remain unchanged when $\Delta T_{PTS} < 0$ and then corrects the relative time point of the content by adding an absolute value of the ΔT_{PTS} to a relative time value in the metadata, where ΔT_{PTS} is a value obtained by subtracting the PTS time information value of the metadata from the PTS time information value of the content; or if the GPS value of the content is behind the GPS value of the metadata, the synchronizer causes ΔT_{PTS} to be changed to $\Delta T_{PTS}+2^{33}$ as a new ΔT_{PTS} when $\Delta T_{PTS} < 0$ or ΔT_{PTS} to remain unchanged when $\Delta T_{PTS} > 0$ and then corrects the relative time point of the content by subtracting an absolute value of the ΔT_{PTS} from the relative time value in the metadata, where ΔT_{DTS} is a value obtained by subtracting the PTS time information value of the metadata from the PTS time information value of the content.

[0012] According to another aspect of the present invention there is provided a time synchronization method, comprising the steps of (1) receiving a multimedia content containing first segment time information and segment metadata for the multimedia content containing second segment time information for the multimedia content; (2) extracting the first segment time information from the received content and the second segment time information from the received metadata to determine their respective reference time points; (3) correcting a relative time point of the content using a difference between the determined reference time points; and (4) synchronizing the content and metadata received in step (1) using the corrected relative time point.

[0013] In an exemplary embodiment, in a case where the time information is GPS time information and the reference time point is GPS time information, if a GPS value of the content is ahead of a GPS value of the metadata, step (3) comprises the step of correcting the relative time point of the content by adding a difference between the GPS values of the content and metadata to a relative time value in the metadata; or if the GPS value of the content is behind the GPS value of the metadata, step (3) comprises correcting the relative time point of the content by subtracting the difference between the GPS values from the relative time value in the metadata.

[0014] In an exemplary embodiment, in a case where the time information is GPS and DTS time information and the reference time point is DTS time information, if a GPS value of the content is ahead of a GPS value of the metadata, step (3) comprises the steps of (3-1) causing ΔT_{DTS} to be changed to $\Delta T_{DTS}-2^{33}$ as a new ΔT_{DTS} when $\Delta T_{DTS} > 0$ or ΔT_{DTS} to remain unchanged when $\Delta T_{DTS} < 0$ and (3-2) correcting the relative time point of the content by adding an absolute value of the ΔT_{DTS} to the relative time value in the metadata, where ΔT_{DTS} is a value obtained by subtracting the DTS time information value of the metadata from the DTS time information value of the content; or if the GPS value of the content is behind the GPS value of the metadata, step (3) comprises the steps of (3-1) causing ΔT_{DTS} to be changed to $\Delta T_{DTS}+2^{33}$ as a new ΔT_{DTS} when $\Delta T_{DTS} < 0$ or ΔT_{DTS} to remain unchanged when $\Delta T_{DTS} > 0$ and (3-2) correcting the relative time point of the content by subtracting an absolute value of the ΔT_{DTS} from the relative time value in the metadata, where ΔT_{DTS} is a value obtained by subtracting the DTS time information value of the metadata from the DTS time information value of the content.

[0015] In an exemplary embodiment, in a case where the time information is GPS and PTS time information and the reference time point is PTS time information, if a GPS value of the content is ahead of a GPS value of the metadata, step (3) comprises the steps of causing ΔT_{PTS} to be changed to $\Delta T_{PTS}-2^{33}$ as a new ΔT_{PTS} when $\Delta T_{PTS} > 0$ or ΔT_{PTS} to remain unchanged when $\Delta T_{PTS} < 0$ and (3-2) correcting the relative time point of the content by adding an absolute value of the ΔT_{PTS} to a relative time value in the metadata, where ΔT_{PTS} is a value obtained by subtracting the PTS time information value of the metadata from the PTS time information value of the content; or if the GPS value of the content is behind the GPS value of the metadata, step (3) comprises the steps of (3-1) causing ΔT_{PTS} to be changed to $\Delta T_{PTS}+2^{33}$ as a new ΔT_{PTS} when $\Delta T_{PTS} < 0$ or ΔT_{PTS} to remain unchanged when $\Delta T_{PTS} > 0$ and (3-2) correcting the relative time point of the content by subtracting an absolute value of the ΔT_{PTS} from the relative time value in the metadata, where ΔT_{DTS} is a value obtained by subtracting the PTS time information value of the metadata from the

PTS time information value of the content.

[0016] For a better understanding of the invention, and to show how embodiments of the same may be carried into effect, reference will now be made, by way of example, to the accompanying diagrammatic drawings in which:

FIG. 1A is a view illustrating metadata describing a content segment according to the prior art;

FIG. 1B is a view illustrating metadata describing a content segment group according to the prior art;

FIG. 1C is a view illustrating metadata describing a reference time point of a content segment according to the prior art;

FIG. 2 is a view illustrating a flow of content and metadata in a digital television broadcast environment according to an embodiment of the present invention;

FIG. 3 is an internal block diagram of a receiver for synchronizing content and metadata and performing the content segment browsing according to an embodiment of the present invention;

FIG. 4 illustrates an algorithm for calculating ΔT_{DTS} when a reference time point is DTS according to an embodiment of the present invention;

FIG. 5 illustrates an algorithm for calculating ΔT_{PTS} when a reference time point is PTS according to an embodiment of the present invention;

FIG. 6A is a diagram illustrating a method for correcting relative time points in a case where reference time points of content and metadata match according to an embodiment of the present invention;

FIG. 6B is a diagram illustrating a method for correcting relative time points in a case where a reference time point of content is ahead of a reference time point of metadata according to an embodiment of the present invention;

FIG. 6C is a diagram illustrating a method for correcting relative time points in a case where a reference time point of content is behind a reference time point of metadata according to an embodiment of the present invention; and

FIG. 6D is a diagram illustrating a case where overflow is generated in any time interval according to an embodiment of the present invention.

[0017] Hereinafter, a system and method for time synchronization between multimedia content and segment metadata according to an embodiment of the present invention will be described with reference to the accompanying drawings.

[0018] FIG. 2 is a view illustrating a flow of content and metadata in a digital television broadcast environment according to an embodiment of the present invention. Referring to FIG. 2, a content generator 210 generates content and provides the generated content to a broadcaster 220 such as a broadcasting station, which in turn broadcasts the received content. A metadata generator 230 receives the broadcast content, produces metadata for the received content, and then forwards the produced metadata to a metadata provider 240, which in turn sends the received metadata to a receiver 250. Furthermore, the receiver 250 receives the broadcast content from the broadcaster 220 via a different channel than the metadata transmission channel and performs segment browsing through time synchronization between the received content and the metadata received from the broadcaster 220. At this time, the metadata generator 230 additionally records time information, which will be a reference to the time described in the metadata to be produced, into a specific area of the metadata, and also the receiver 250 additionally stores time information which will be a reference when receiving the content from the broadcaster 220 and recording the received content. Because the reference time point recorded by the metadata generator 230 and the reference time point stored by the receiver 250 may be different from each other, the receiver 250 needs to correct the reference time point for time synchronization between the content and the metadata. Meanwhile, the broadcaster 220 and the metadata provider 240, which are shown in FIG. 2, may be the same as or different from each other, whereas the content and metadata transmission channels may be different and thus discriminated from each other.

[0019] FIG. 3 is an internal block diagram of a receiver 300 for synchronizing content and metadata and performing content segment browsing according to an embodiment of the present invention. Referring to FIG. 3, the receiver 300 comprises a metadata processor 310 for receiving metadata from a metadata provider 360 and processing the received metadata, a content reproducer 325 for receiving content from a content provider 350, an internally stored metadata

browser 315 for storing metadata information, a synchronizer 320 for synchronizing information on the content and metadata, a content segment browser 305 for performing content segment browsing at the request of a user, and a user interface 330 for receiving browsing instructions from the user and forwarding the received instructions to the content segment browser 305. Then, the content provider 350 may include both the content generator 210 and the broadcaster 220 shown in FIG. 2, and the metadata provider 360 may include the metadata generator 230 and the metadata provider 240 shown in FIG. 2. The content reproducer 325 functions to receive content from the content provider 350 and reproduce or store the received content. Furthermore, the metadata processor 310 receives segment metadata for content that the content reproducer 325 has received from the metadata provider 360, and forwards the received segment metadata to the internally stored metadata browser 315. At this time, the internally stored metadata browser 315 extracts necessary field data by parsing the received metadata and stores the extracted data in a given data storage format. The content segment browser 305 is an application present in the receiver 300 for performing content segment browsing and forwards a control signal containing information on the segment or segment group selected by the user to the synchronizer 320 in response to user instructions received from the user interface 330. Then, the synchronizer 320 extracts the content, which the user has selected, from the content reproducer 325 and also extracts the metadata information for the content from the internally stored metadata browser 315 so as to synchronize the content and the metadata information and forward the synchronized information to the content segment browser 305. Thereafter, the content segment browser 305 performs segment browsing using the synchronized content and metadata information. Thus, embodiments of the present invention are directed to a method for allowing the synchronizer 320 to perform time synchronization between the content and the metadata in the receiver 300 so constructed.

[0020] To perform the time synchronization between content and metadata, the synchronizer 320 requires reference time information. That is, since the metadata generator 230 and the receiver 250 receive content via separate transmission channels as illustrated in FIG. 2, the respective reference times may be different from each other. Thus, if the receiver 250 intends to perform time synchronization between the content stored in the receiver 250 and the metadata generated by the metadata generator 230 and received from the metadata provider 240, it is necessary to use a common reference time format.

[0021] Embodiments of the present invention suggests DTS/PTS (decoding time stamp/presentation time stamp) information of a PES (packetized elementary stream) packet provided by the MPEG-2 based digital TV broadcast and standard time information defined in the digital broadcast standard such as ATSC or DVB, as reference time information for use in the time synchronization.

[0022] DTS and PTS are time information inserted in MPEG-2 PES packets, and represent a reference time for use in synchronous decoding and presentation of video/audio streams. DTS and PTS consist of 33 bits and are updated 90,000 times per second. Further, DTS and PTS are not inserted in all PES packets. DTS and PTS are contained in PES packet headers and transmitted every about 0.7 second. In addition, the values of DTS and PTS are reset every 24 hours, and thus, DTS and PTS can be used as time identification information only in 24 hours.

[0023] Meanwhile, the digital broadcast standard based on the MPEG-2 system standard is generally classified into American ATSC and European DVB. ATSC extensively defines a PSIP (program and system information protocol) standard in a PSI (program specific information) section specified in the MPEG-2 system. In the PSIP standard, a reference time is transmitted by a 32-bit field value of "system_time" in STT (system time table). This field value represents a lapse time in seconds from a reference time which is January 6, 1980, 0:00:00 AM (hereinafter, referred to as "GPS" to refer the Global Positioning System time). STT is designed to be transmitted once every second. Tolerance from an exact time is within +/-4 seconds and is recommended to be less than a second. Unlike DTS and PTS, STT represents reference time information in real life. Similar to ATSC, DVB defines a SI (system information) standard under the MPEG-2 system standard, and also defines TDT (time and date table) and TOT (time offset table) tables so as to represent a reference time in the standard.

[0024] As described above, there is a disadvantage in that the DTS/PTS time information of MPEG-2 can perform correct time synchronization for any time within 24 hours but cannot perform time synchronization for any time over 24 hours. Furthermore, there is a disadvantage in that any one point in the content cannot be correctly specified, because the "system_time" field of STT provided by ATSC has been set to a time when a relevant TS packet including STT reaches a decoder and its tolerance has been defined as within 4 seconds. That is, the value of STT corresponding to a point intended by a metadata server side may indicate a different point in a set-top box for decoding the content. Therefore, it is suggested in the present invention that the GPS time provided in ATSC or DVB be used as a reference time for time synchronization or that GPS time be used together with DTS and PTS values present in the MPEG-2 PES packet to specify an exact point of interest by a user. In such a case, there is an advantage in that because DTS/PTS values are essentially used for synchronization for audio and video frames, an exact point of any frame in the content can be specified. However, since each of DTS and PTS is not an actual time but a virtual time unit reset every 24 hours, some errors may occur during synchronization. These errors can be prevented by using the GPS time information provided in ATSC or DVB. That is, in embodiments of the present invention, the reference time for synchronization between content and metadata is described using three kinds of information such as the DTS, PTS and GPS time.

[0025] The receiver 250, such as a set-top box, stores an instantaneous time when the content received from the broadcaster 220 is stored for performing subsequent synchronization with the metadata. This instantaneous time is defined as a reference time point of content, which in turn is expressed as a combination of the aforementioned DTS, PTS and GPS times.

[0026] Meanwhile, the metadata generator 230 receives content from the broadcaster 220 and records an instantaneous time when the metadata for the received content is written, into the specific area of the metadata. This time is defined as the reference time point of metadata, which in turn is expressed as a combination of the aforementioned DTS, PTS and GPS times. At this time, the reference time point of metadata may be classified and defined by using the following two methods: i.e., the first method in which a reference time point value is set once, and a start time point of each segment described in the metadata is represented by the relative difference with respect to the set reference time point, and the second method in which a start time point of each segment is represented by an independent reference time point without setting an additional reference time point.

[0027] According to embodiments of the present invention, even though the reference time point of content or metadata contains three fields of GPS, DTS and PTS, the receiver 250 selects only one of the three fields and uses the selected field as a reference time point when performing synchronization between the content and metadata. More accurate synchronization can be made by using DTS and PTS than using GPS. However, when the difference between the GPS values of the content and metadata is greater than 24 hours, the DTS and PTS values are not suitable to be used as a reference time point. This is because an operation, in which the GPS values increase from 0 to $(2^{33}-1)$ and then reset back to 0, is repeated every about 24 hours. In such a case, therefore, the time should be corrected using only GPS, even though it may cause some errors. When the difference between GPS values is less than 24 hours, either DTS or PTS is used as the reference time for accurate time correction.

[0028] As described above, since the reference time of content recorded by the receiver 250 and the reference time of metadata produced by the metadata generator 230 may be different from each other, it is necessary for the receiver 250 to correct the reference time in order to perform time synchronization for the content and metadata.

[0029] Assuming that the difference between the reference time points of content and metadata is ΔT, in embodiments of the present invention, when the reference time point includes GPS, DTS and PTS, the difference thereof is defined as ΔT_{GPS}, ΔT_{DTS} and ΔT_{PTS}, respectively.

[0030] That is, if the reference time point is GPS, the difference thereof can be defined as the following equation:

$$\Delta T_{GPS} = (\text{GPS reference time point value of content}) - (\text{GPS reference time point value of metadata}), \quad (1)$$

where the unit used is a second.

[0031] If the reference time point is DTS or PTS, it should be determined whether the reference time point of content is ahead of or is behind the reference time point of the metadata on the basis of the GPS value. This is because an operation, in which 32-bit length values of DTS and PTS increase from 0 to $(2^{33}-1)$ in a Round-Robin manner and then are reset to 0, is repeated, and thus, it cannot be determined which reference time point is ahead of the other reference time point based on using such a simple difference.

[0032] FIG. 4 illustrates an algorithm for calculating ΔT_{DTS} when the reference time point is DTS, and FIG. 5 illustrates an algorithm for calculating ΔT_{PTS} when the reference time point is PTS. In each case, it is first checked which one of the metadata and content is ahead of the other by calculating ΔT_{GPS}, and ΔT_{DTS} and ΔT_{PTS} are then corrected according to the checked result, and ΔT_{DTS} and ΔT_{PTS} are finally returned.

[0033] Next, a method of correcting relative time points in a case where time points of respective segments described in metadata are specified as the relative time points, i.e. offsets, with respect to a reference time of metadata will be described.

[0034] FIG. 6A is a diagram illustrating a method for correcting the relative time points in a case where the reference time points of content and metadata coincide with each other. In such a case, since the reference time points are the same as each other, it is not necessary to correct the relative time points of the segments.

[0035] FIG. 6B is a diagram illustrating a method for correcting the relative time points in a case where the reference time point of content is ahead of the reference time point of metadata. In such a case, segment browsing will be performed based on time values obtained by adding an absolute value of ΔT to the relative time information such as Ta, Tb, Tc and Td for the respective segments described in the metadata with respect to the reference time point of metadata.

[0036] FIG. 6C is a diagram illustrating a method for correcting the relative time points in a case where the reference time point of content is behind the reference time point of metadata. In such a case, segment browsing will be performed based on time values obtained by subtracting an absolute value of ΔT from the relative time information such as Ta,

Tb, Tc and Td for the respective segments described in the metadata with respect to the reference time point of metadata.

[0037] FIG. 6D is a diagram illustrating a case where an overflow is generated in any time interval. That is, if the time interval of a given segment specified in the segment metadata exceeds a corresponding time interval of the content stored in a receiving device after the reference time point has been corrected, the content is reproduced only within the range of the time interval thereof.

[0038] According to embodiments of the present invention so constructed, there is an advantage in that differences between reference time points of content and metadata, which may be produced when producing metadata for a predetermined content, can be corrected, whereby an user can perform segment browsing for the content even in an environment in which the transmission channels of the content and segment metadata are separate from each other.

[0039] Attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

[0040] All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

[0041] Each feature disclosed in this specification (including any accompanying claims, abstract and drawings) may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

[0042] The invention is not restricted to the details of the foregoing embodiment(s). The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

Claims

1. A time synchronization system (300), comprising:

   a content processor (325) for receiving and storing multimedia content containing first segment time information as received content;

   a metadata processor (310) for receiving and storing segment metadata for the received content containing second segment time information as received metadata;

   a synchronizer (320) operable to:

      extract the first segment time information from the received content and the second segment time information from the received metadata in response to a content segment request signal of a user as first extracted segment time information and as second extracted segment time information;

      determine a first reference time point and a second reference time point from the first and the second extracted segment time information, respectively;

      correct a relative time point of the received content using a difference between the first and the second reference time points as a corrected relative time point; and

      synchronize the received content and metadata using the corrected relative time point; and

   a content segment browser (305) operable to forward the content segment request signal to the synchronizer and reproduce a plurality of segments of the received content synchronized by the synchronizer.

2. The system as claimed in claim 1, wherein the first and the second extracted segment time information comprise first Global Positioning System (GPS) time information and second GPS time information, respectively, and the first and the second reference time points are the first and the second GPS time information, respectively, and wherein:

if the first GPS time information of the received content is ahead of the second GPS time information of the received metadata, the synchronizer is operable to correct the relative time point of the received content by adding a difference between the first GPS time information of the received content and the second GPS time information of the received metadata to a relative time value in the received metadata; or

if the first GPS time information of the content is behind the second GPS time information of the received metadata, the synchronizer is operable to correct the relative time point of the received content by subtracting the difference between the first and second GPS time information from the relative time value in the received metadata.

3. The system as claimed in claim 1 or 2, wherein the first segment time information comprises a first Global Positioning System (GPS) time information and a first decoding time stamp (DTS) time information, the second segment time information comprises a second GPS time information and a second DTS time information, and the first and the second reference time points are the first and the second DTS time information, respectively, and wherein:

if the first GPS time information of the received content is ahead of the second GPS time information of the received metadata,

the synchronizer is operable to cause a difference between the first and the second DTS time information (ΔT_{DTS}) to be changed to $\Delta T_{DTS}-2^{33}$ as a new ΔT_{DTS} when the $\Delta T_{DTS} > 0$ or the ΔT_{DTS} to remain unchanged when the $\Delta T_{DTS} < 0$ and to correct the relative time point of the received content by adding an absolute value of the ΔT_{DTS} to a relative time value in the received metadata, where the ΔT_{DTS} is a value obtained by subtracting the second DTS time information of the received metadata from the first DTS time information of the received content; or

if the first GPS time information of the received content is behind the second GPS time information of the received metadata,

the synchronizer is operable to cause the ΔT_{DTS} to be changed to $\Delta T_{DTS}+2^{33}$ as the new ΔT_{DTS} when the $\Delta T_{DTS} < 0$ or the ΔT_{DTS} to remain unchanged when the $\Delta T_{DTS} > 0$ and to correct the relative time point of the received content by subtracting an absolute value of the ΔT_{DTS} from the relative time value in the received metadata, where the ΔT_{DTS} is a value obtained by subtracting the second DTS time information value of the received metadata from the first DTS time information value of the received content.

4. The system as claimed in any preceding claim, wherein the first segment time information comprises a first Global Positioning System (GPS) time information and a first presentation time stamp (PTS) time information, the second segment time information comprises a second GPS time information and a second PTS time information, and the first and the second reference time points are the first and the second PTS time information, respectively, and wherein:

if the first GPS time information of the received content is ahead of the second GPS time information of the received metadata,

the synchronizer is operable to cause a difference between the first and the second PTS (ΔT_{PTS}) to be changed to $\Delta T_{PTS}-2^{33}$ as a new ΔT_{PTS} when the $\Delta T_{PTS} > 0$ or the ΔT_{PTS} to remain unchanged when the $\Delta T_{PTS} < 0$ and to correct the relative time point of the received content by adding an absolute value of the ΔT_{PTS} to a relative time value in the received metadata, where the ΔT_{PTS} is a value obtained by subtracting the second PTS time information value of the received metadata from the first PTS time information value of the received content; or

if the first GPS time information of the received content is behind the second GPS time information of the received metadata,

the synchronizer is operable to cause the ΔT_{PTS} to be changed to $\Delta T_{PTS}+2^{33}$ as the new ΔT_{PTS} when the $\Delta T_{PTS} < 0$ or the ΔT_{PTS} to remain unchanged when the $\Delta T_{PTS} > 0$ and to correct the relative time point of the received content by subtracting an absolute value of the ΔT_{PTS} from the relative time value in the received metadata, where the ΔT_{DTS} is the value obtained by subtracting the second PTS time information value of the received metadata from the first PTS time information value of the received content.

5. A time synchronization method, comprising:

(1) receiving a multimedia content containing first segment time information as received content and segment metadata for the multimedia content containing second segment time information for the multimedia content as received metadata;

(2) extracting the first segment time information from the received content and the second segment time information from the received metadata to determine a first reference time point and a second reference time point, respectively;

(3) correcting a relative time point of the received content using a difference between the first and the second reference time points to generate a corrected relative time point; and

(4) synchronizing the received content and received metadata received in (1) using the corrected relative time point.

6. The method as claimed in claim 5, wherein the first segment time information comprises a first GPS time information and the second segment time information comprise a second GPS time information and the first and the second reference time points are the first and the second GPS time information, and wherein:

if the first GPS time information of the received content is ahead of the second GPS time information of the received metadata, (3) comprises correcting the relative time point of the received content by adding a difference between the first GPS time information of the received content and the second GPS time information of the received metadata to a relative time value in the received metadata; or

if the first GPS time information of the received content is behind the second GPS time information of the received metadata, (3) comprises correcting the relative time point of the content by subtracting the difference between the first and the second GPS time information from the relative time value in the received metadata.

7. The method as claimed in claim 5 or 6, wherein the first segment time information comprises a first Global Positioning System (GPS) time information and a first decoding time stamp (DTS) time information, the second segment time information comprises a second GPS time information and a second DTS time information, and the first and the second reference time points are the first and the second DTS time information, respectively, and wherein:

if the first GPS time information of the received content is ahead of the second GPS time information of the received metadata,

(3) comprises (3.1) causing a difference between the first and the second DTS time information (ΔT_{DTS}) to be changed to $\Delta T_{DTS}-2^{33}$ as a new ΔT_{DTS} when the $\Delta T_{DTS} > 0$ or the ΔT_{DTS} to remain unchanged when the $\Delta T_{DTS} < 0$ and (3.2) correcting the relative time point of the received content by adding an absolute value of the ΔT_{DTS} to the relative time value in the received metadata, where the ΔT_{DTS} is a value obtained by subtracting the second DTS time information value of the received metadata from the first DTS time information value of the received content; or

if the first GPS time information of the received content is behind the second GPS time information of the received metadata,

(3) comprises (3.1) causing the ΔT_{DTS} to be changed to $\Delta T_{DTS}+ 2^{33}$ as the new ΔT_{DTS} when the $\Delta T_{DTS} < 0$ or the ΔT_{DTS} to remain unchanged when the $\Delta T_{DTS} > 0$ and (3.2) correcting the relative time point of the received content by subtracting an absolute value of the ΔT_{DTS} from the relative time value in the received metadata, where the ΔT_{DTS} is a value obtained by subtracting the second DTS time information value of the received metadata from the first DTS time information value of the received content.

8. The method as claimed in any of claims 5-7, wherein the first segment time information comprises a first Global Positioning System (GPS) time information and a first presentation time stamp (PTS) time information, the second segment time information comprises a second GPS time information and a second PTS time information, and the first and the second reference time points are the first and the second PTS time information, respectively, and wherein:

if the first GPS time information of the received content is ahead of the second GPS time information of the received metadata,

(3) comprises causing a difference between the first and the second PTS (ΔT_{PTS}) to be changed to ΔT_{PTS}-2^{33} as a new ΔT_{PTS} when the $\Delta T_{PTS} > 0$ or the ΔT_{PTS} to remain unchanged when the $\Delta T_{PTS} < 0$ and (3.1) correcting the relative time point of the received content by adding an absolute value of the ΔT_{PTS} to a relative time value in the received metadata, where the ΔT_{PTS} is a value obtained by subtracting the second PTS time information value of the received metadata from the first PTS time information value of the received content; or

if the first GPS time information of the received content is behind the second GPS time information of the received metadata,

(3) comprises (3.1) causing the ΔT_{PTS} to be changed to $\Delta T_{PTS}+2^{33}$ as the new ΔT_{PTS} when the $\Delta T_{PTS} < 0$ or ΔT_{PTS} to remain unchanged when the $\Delta T_{PTS} > 0$ and (3.1) correcting the relative time point of the received content by subtracting an absolute value of the ΔT_{PTS} from the relative time value in the received metadata, where the ΔT_{DTS} is a value obtained by subtracting the second PTS time information value of the received metadata from the first PTS time information value of the received content.

FIG. 1A

```
< SegmentInformation segmentId=" seg-news9-1 ">
 < ProgramRef crid=" crid://www.kbs.co.kr/news9 "/>
  < Description>
   < Title> News/Politics/Presidential Election </ Title>
   < Synopsis> Each candidate made election speech. </ Synopsis>
  </ Description>
 < SegmentLocator>
  < MediaRelTimePoint> PT10M12S</MediaRelTimePoint>
  < MediaDuration> PT1M </ MediaDuration>
 </ SegmentLocator>
 < KeyFrameLocator>
  < MediaRelTimePoint> P10M20S </ MediaRelTimePoint>
 </ KeyFrameLocator>
</ SegmentInformation>
```

FIG. 1B

```
< SegmentGroupInformation groupId=" group-seg-news9 ">
 < ProgramRef crid=" crid://www.kbs.co.kr/news9 "/>
 < GroupType> Highlights </ GroupType>
 < Description>
   < Title> KBS 9 News Group 1 </ Title>
   < Synopsis> Group 1 consists of political news </ Synopsis>
 </ Description>
 < Segments refList=" seg-news9-1 seg-news9-2 " />
</ SegmentGroupInformation>
```

FIG. 1C

```
< TimeBaseReference>
   < RefMediaTime>  </ RefMediaTime>
</ TimeBaseReference>
```

FIG. 2

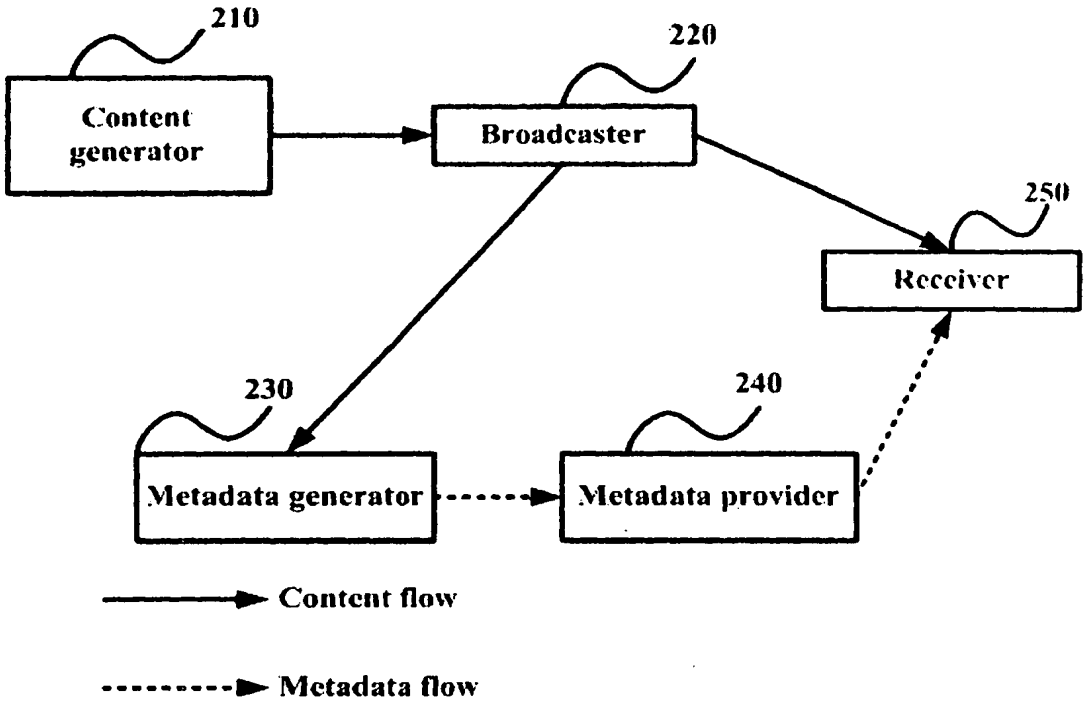


FIG. 3

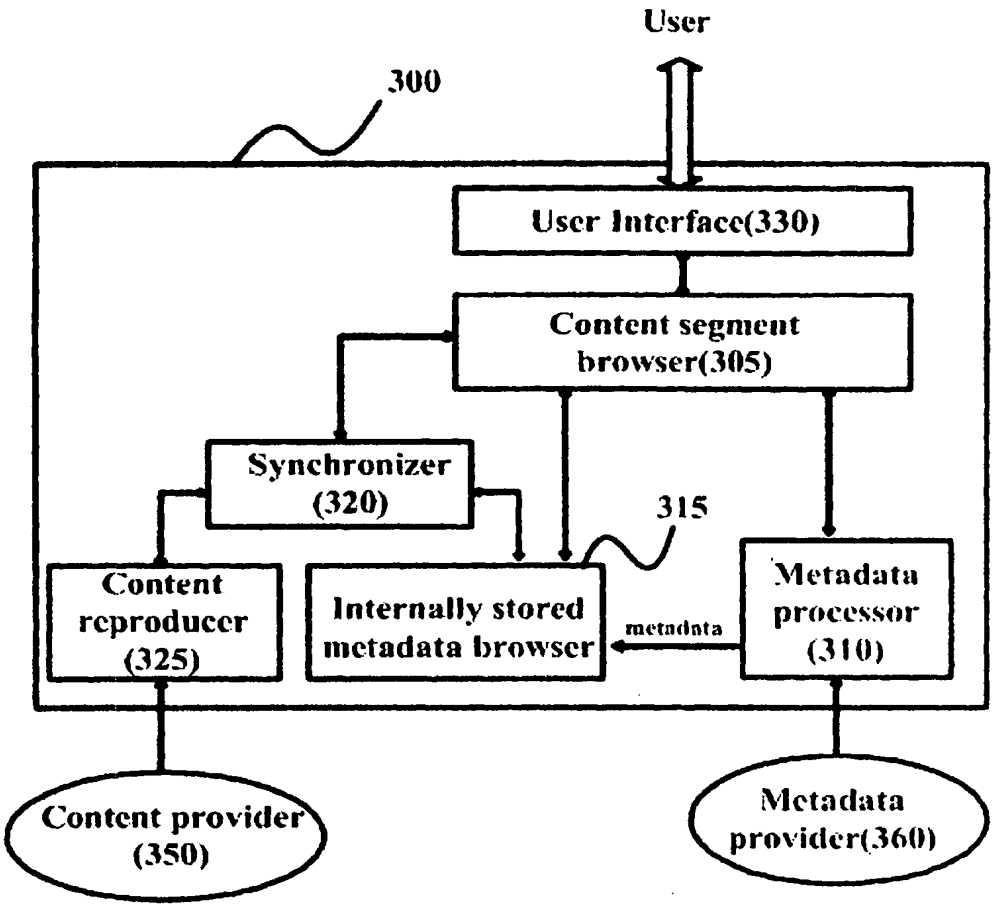

User
300
User Interface(330)
Content segment browser(305)
Synchronizer (320)
315
Content reproducer (325)
Internally stored metadata browser
metadata
Metadata processor (310)
Content provider (350)
Metadata provider(360)

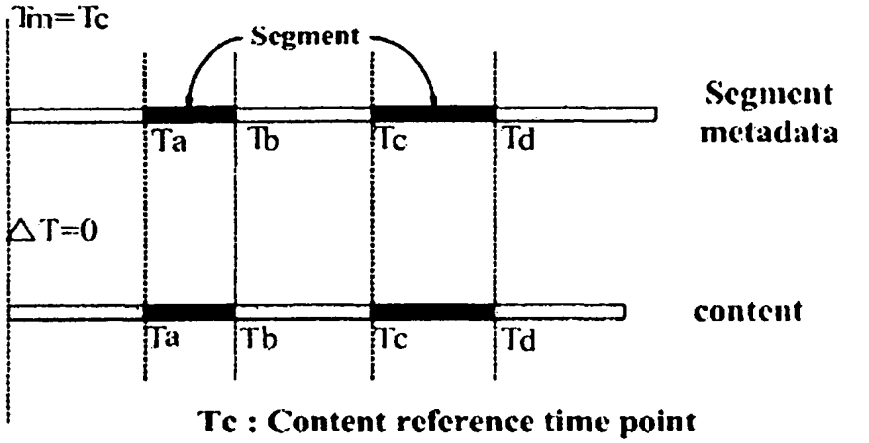
FIG. 4

```
T_GPS = (GPS reference time point value of content)
                - (GPS reference time point value of metadata)
T_DTS = (DTS reference time point value of content)
                - (DTS reference time point value of metadata)
if ( ΔT_GPS >= 0 )
{
    if ( ΔT_DTS < 0 )
        ΔT_DTS = ΔT_DTS + 2^33;
}
else
{
    if ( ΔT_DTS > 0 )
        ΔT_DTS = ΔT_DTS - 2^33;
}
return ΔT_DTS;
```

FIG. 5

```
T_GPS = (GPS reference time point value of content)
                - (GPS reference time point value of metadata)
T_PTS = (PTS reference time point value of content)
                - (PTS reference time point value of metadata)
if ( ΔT_GPS >= 0 )
{
    if ( ΔT_PTS < 0 )
        ΔT_PTS = ΔT_PTS + 2^33;
}
else
{
    if ( ΔT_PTS > 0 )
        ΔT_PTS = ΔT_PTS - 2^33;
}
return ΔT_PTS;
```

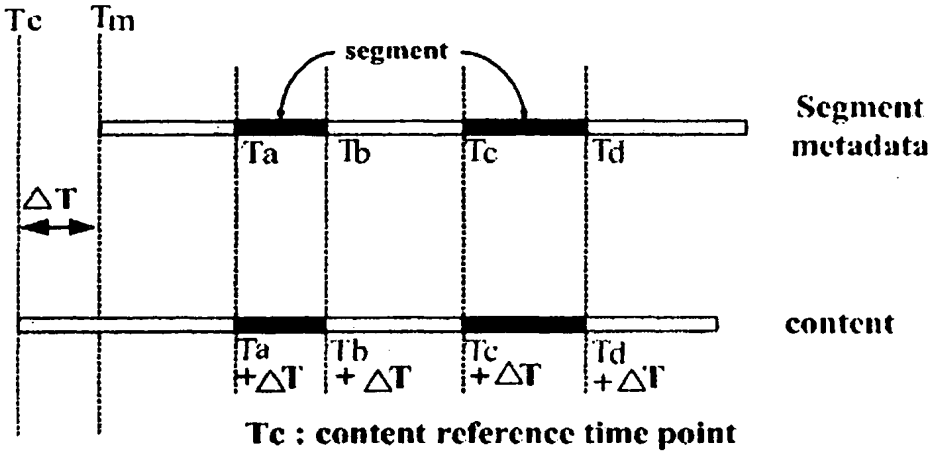
FIG. 6A



Tc : Content reference time point

Tm : segment metadata reference time point

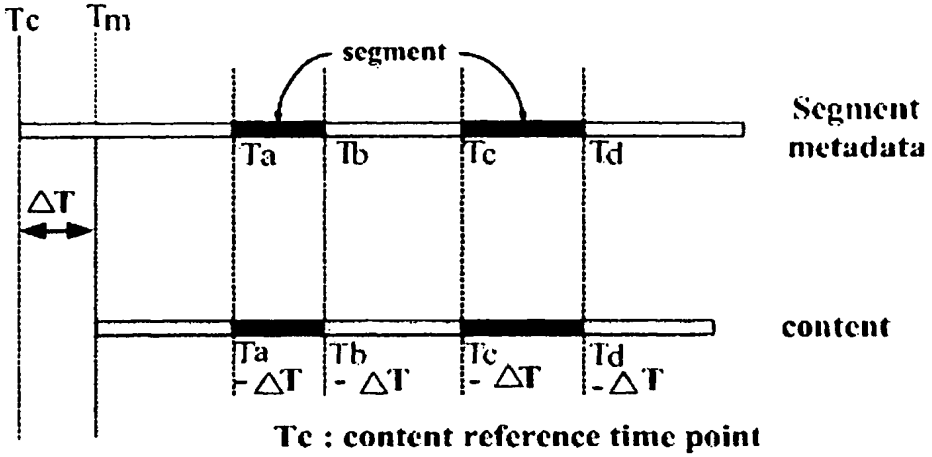
FIG. 6B



Tc : content reference time point

Tm : segment metadata reference time point

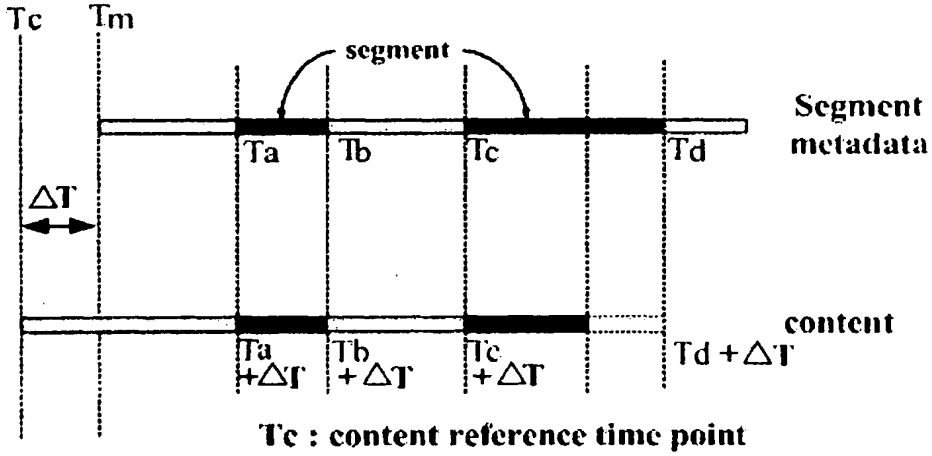
FIG. 6C



Tc : content reference time point

Tm : segment metadata reference time point

FIG. 6D



Tc : content reference time point

Tm : segment metadata reference time point

(19) JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **2004056777 A**
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H04N 5/765

(21) Application number: **2003152525**
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(71) Applicant: **MATSUSHITA ELECTRIC IND CO LTD**
(72) Inventor: **UEDA MASARU**
TANIGUCHI HISAFUMI
NAKAJIMA NAOKI

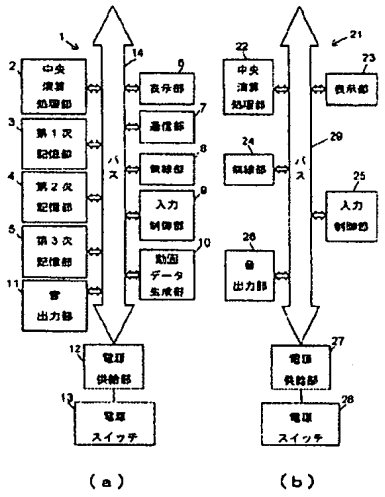
(54) WIRELESS REMOTE CONTROL SYSTEM

(57) Abstract:

PROBLEM TO BE SOLVED: To provide a wireless remote control system with which a motion picture with audio from a server is smoothly reproduced in a client synchronizing with a video and the audio.

SOLUTION: In a server 1, a common form video/audio data conversion block 34 converts data 33 in the original format of application software 31 to common format data 37. A video/audio distribution block 51 outputs video data 53 with the audio and motion picture region data 54. A motion picture data-with-audio sending processing block 52 adds synchronizing data to video and audio data to obtain stream data 55. A video/audio data conversion block 41 outputs display/audio data 56 associated with operations. A remote control block 43 outputs the data 56 and the stream data 55. A client 21 controls the application software 31 of the server 1 in accordance with operation associated with the video and the audio resulting from the data.

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PATENT COOPERATION TREATY

PCT

INTERNATIONALER RECHERCHENBERICHT

(Artikel 18 sowie Regeln 43 und 44 PCT)

Aktenzeichen des Anmelders oder Anwalts 2005P06395WO	**WEITERES VORGEHEN** siehe Formblatt PCT/ISA/220 sowie, soweit zutreffend, nachstehender Punkt 5	
Internationales Aktenzeichen PCT/EP2006/060808	Internationales Anmeldedatum *(Tag/Monat/Jahr)* 16/03/2006	(Frühestes) Prioritätsdatum *(Tag/Monat/Jahr)* 12/04/2005
Anmelder SIEMENS AKTIENGESELLSCHAFT		

Dieser internationale Recherchenbericht wurde von der Internationalen Recherchenbehörde erstellt und wird dem Anmelder gemäß Artikel 18 übermittelt. Eine Kopie wird dem Internationalen Büro übermittelt.

Dieser internationale Recherchenbericht umfaßt insgesamt 5 Blätter.

[X] Darüber hinaus liegt ihm jeweils eine Kopie der in diesem Bericht genannten Unterlagen zum Stand der Technik bei.

1. **Grundlage des Berichts**
   a. Hinsichtlich der **Sprache** beruht die internationale Recherche auf
      [X] der internationalen Anmeldung in der Sprache, in der sie eingereicht wurde
      [ ] einer Übersetzung der internationalen Anmeldung in die folgende Sprache _____, bei der es sich um die Sprache der Übersetzung handelt, die für die Zwecke der internationalen Recherche eingereicht worden ist (Regeln 12.3 a) und 23.1 b)).

   b. [ ] Hinsichtlich der in der internationalen Anmeldung offenbarten **Nucleotid- und/oder Aminosäuresequenz** siehe Feld Nr. I.

2. [ ] **Bestimmte Ansprüche haben sich als nicht recherchierbar erwiesen** (siehe Feld Nr. II).

3. [ ] **Mangelnde Einheitlichkeit der Erfindung** (siehe Feld Nr. III).

4. Hinsichtlich der **Bezeichnung der Erfindung**
   [ ] wird der vom Anmelder eingereichte Wortlaut genehmigt.
   [X] wurde der Wortlaut von der Behörde wie folgt festgesetzt:

   VERFAHREN ZUM SYNCHRONISIEREN VON INHALTSBEZOGENEN DATENSEGMENTEN VON DATEIEN

5. Hinsichtlich der **Zusammenfassung**
   [ ] wird der vom Anmelder eingereichte Wortlaut genehmigt.
   [X] wurde der Wortlaut nach Regel 38.2b) in der in Feld Nr. IV angegebenen Fassung von der Behörde festgesetzt. Der Anmelder kann der Behörde innerhalb eines Monats nach dem Datum der Absendung dieses internationalen Recherchenberichts eine Stellungnahme vorlegen.

6. Hinsichtlich der **Zeichnungen**
   a. ist folgende Abbildung der **Zeichnungen** mit der Zusammenfassung zu veröffentlichen: Abb. Nr. 1
      [X] wie vom Anmelder vorgeschlagen
      [ ] wie von der Behörde ausgewählt, weil der Anmelder selbst keine Abbildung vorgeschlagen hat.
      [ ] wie von der Behörde ausgewählt, weil diese Abbildung die Erfindung besser kennzeichnet.
   b. [ ] wird keine der Abbildungen mit der Zusammenfassung veröffentlicht.

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PCT/EP2006/060808

Feld Nr. IV Wortlaut der Zusammenfassung (Fortsetzung von Punkt 5 auf Blatt 1)

Besonderes bei der Verwendung von kleinen Bildschirmen ist die Synchronisierung von Datensegmenten in einfacher Weise notwendig. Die Erfindung betrifft ein Verfahren sowie eine Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten(S1) einer ersten Datendatei(D1) und inhaltsbezogenen zweiten Datensegmenten(S2) einer zweiten Datendatei(D2), wobei die ersten und zweiten Datensegmente(S1,S2) jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente(S1,S2) jedes zweite Datensegment(S2) zusammen mit einem dazugehörigen ersten Datensegment(S1) ausgegeben wird.

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
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A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES
INV. H04L29/06

Nach der Internationalen Patentklassifikation (IPC) oder nach der nationalen Klassifikation und der IPC

B. RECHERCHIERTE GEBIETE

Recherchierter Mindestprüfstoff (Klassifikationssystem und Klassifikationssymbole)
H04N H04L

Recherchierte, aber nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Gebiete fallen

Während der internationalen Recherche konsultierte elektronische Datenbank (Name der Datenbank und evtl. verwendete Suchbegriffe)
EPO-Internal, PAJ, INSPEC, COMPENDEX, WPI Data

C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
X	EP 1 494 430 A (SAMSUNG ELECTRONICS CO., LTD) 5. Januar 2005 (2005-01-05) Absatz [0008] - Absatz [0009] Absatz [0019] - Absatz [0022]; Ansprüche 1-5; Abbildungen 2,3	1-9
X	PATENT ABSTRACTS OF JAPAN Bd. 2003, Nr. 12, 5. Dezember 2003 (2003-12-05) & JP 2004 056777 A (MATSUSHITA ELECTRIC IND CO LTD), 19. Februar 2004 (2004-02-19)	1,9
A	Zusammenfassung	2-8

-/--

[X] Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen [X] Siehe Anhang Patentfamilie

* Besondere Kategorien von angegebenen Veröffentlichungen :
"A" Veröffentlichung, die den allgemeinen Stand der Technik definiert, aber nicht als besonders bedeutsam anzusehen ist
"E" älteres Dokument, das jedoch erst am oder nach dem internationalen Anmeldedatum veröffentlicht worden ist
"L" Veröffentlichung, die geeignet ist, einen Prioritätsanspruch zweifelhaft erscheinen zu lassen, oder durch die das Veröffentlichungsdatum einer anderen im Recherchenbericht genannten Veröffentlichung belegt werden soll oder die aus einem anderen besonderen Grund angegeben ist (wie ausgeführt)
"O" Veröffentlichung, die sich auf eine mündliche Offenbarung, eine Benutzung, eine Ausstellung oder andere Maßnahmen bezieht
"P" Veröffentlichung, die vor dem internationalen Anmeldedatum, aber nach dem beanspruchten Prioritätsdatum veröffentlicht worden ist
"T" Spätere Veröffentlichung, die nach dem internationalen Anmeldedatum oder dem Prioritätsdatum veröffentlicht worden ist und mit der Anmeldung nicht kollidiert, sondern nur zum Verständnis des der Erfindung zugrundeliegenden Prinzips oder der ihr zugrundeliegenden Theorie angegeben ist
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"Y" Veröffentlichung von besonderer Bedeutung; die beanspruchte Erfindung kann nicht als auf erfinderischer Tätigkeit beruhend betrachtet werden, wenn die Veröffentlichung mit einer oder mehreren anderen Veröffentlichungen dieser Kategorie in Verbindung gebracht wird und diese Verbindung für einen Fachmann naheliegend ist
"&" Veröffentlichung, die Mitglied derselben Patentfamilie ist

Datum des Abschlusses der internationalen Recherche	Absendedatum des internationalen Recherchenberichts
21. Juni 2006	29/06/2006

Name und Postanschrift der Internationalen Recherchenbehörde	Bevollmächtigter Bediensteter
Europäisches Patentamt, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Schwibinger, H-P

1

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
PCT/EP2006/060808

C. (Fortsetzung) ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
A	LI L ET AL: "Multimedia segment delivery scheme and its performance for real-time synchronization control" COMMUNICATIONS, 1994. ICC '94, SUPERCOMM/ICC '94, CONFERENCE RECORD, 'SERVING HUMANITY THROUGH COMMUNICATIONS.' IEEE INTERNATIONAL CONFERENCE ON NEW ORLEANS, LA, USA 1-5 MAY 1994, NEW YORK, NY, USA,IEEE, 1. Mai 1994 (1994-05-01), Seiten 1734-1738, XP010126591 ISBN: 0-7803-1825-0 Seite 1735, rechte Spalte, Zeile 1 - Seite 1736, rechte Spalte, Zeile 17; Abbildungen 1-4	1-9
A	US 2001/052943 A1 (SONE TAKUROU) 20. Dezember 2001 (2001-12-20) Absatz [0088] - Absatz [0091]; Ansprüche 1-4,9-11; Abbildungen 1-5	1-9
A	PANIS G ET AL: "Bitstream syntax description: a tool for multimedia resource adaptation within MPEG-21" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, Bd. 18, Nr. 8, September 2003 (2003-09), Seiten 721-747, XP004452907 ISSN: 0923-5965 in der Anmeldung erwähnt das ganze Dokument	1-9

1

INTERNATIONALER RECHERCHENBERICHT

Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören

Internationales Aktenzeichen
PCT/EP2006/060808

Im Recherchenbericht angeführtes Patentdokument	Datum der Veröffentlichung	Mitglied(er) der Patentfamilie	Datum der Veröffentlichung
EP 1494430 A	05-01-2005	CN 1577571 A	09-02-2005
		JP 2005027274 A	27-01-2005
		US 2004267738 A1	30-12-2004
JP 2004056777 A	19-02-2004	KEINE	
US 2001052943 A1	20-12-2001	GB 2368685 A	08-05-2002

PATENT APPLICATION SERIAL NO._____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

10/16/2007 MKAYPAGH 00000059 11918276

01 FC:1631	310.00 OP
02 FC:1642	410.00 OP
03 FC:1633	210.00 OP
04 FC:1617	130.00 OP

PTO-1556
(5/87)

*U.S. Government Printing Office: 2002-489-267/69033

(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

(19) Weltorganisation für geistiges Eigentum
Internationales Büro

PCT

(43) Internationales Veröffentlichungsdatum
19. Oktober 2006 (19.10.2006)

(10) Internationale Veröffentlichungsnummer
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(51) Internationale Patentklassifikation:
H04L 29/06 (2006.01)

(21) Internationales Aktenzeichen: PCT/EP2006/060808

(22) Internationales Anmeldedatum:
16. März 2006 (16.03.2006)

(25) Einreichungssprache: Deutsch

(26) Veröffentlichungssprache: Deutsch

(30) Angaben zur Priorität:
10 2005 016 866.3 12. April 2005 (12.04.2005) DE

(71) Anmelder *(für alle Bestimmungsstaaten mit Ausnahme von US)*: **SIEMENS AKTIENGESELLSCHAFT** [DE/DE]; Wittelsbacherplatz 2, 80333 München (DE).

(72) Erfinder; und

(75) Erfinder/Anmelder *(nur für US)*: **RANSBURG, Michael** [AT/AT]; Untertöllern 44, A-9161 Maria Rain (AT). **HELLWAGNER, Hermann** [AT/AT]; Babenbergerstr. 50, A-9020 Klagenfurt (AT). **HEUER, Jörg** [DE/DE]; Gänslerweg 24, 82041 Oberhaching (DE). **HUTTER, Andreas** [DE/DE]; Sturmiusweg 42, 81673 München (DE).

(74) Gemeinsamer Vertreter: **SIEMENS AKTIENGESELLSCHAFT**; Postfach 22 16 34, 80506 München (DE).

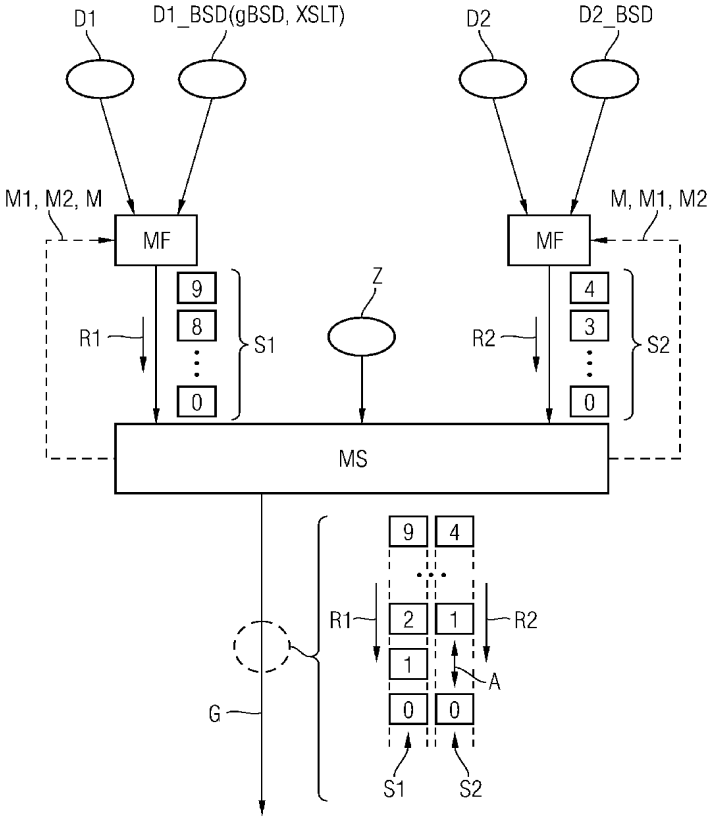
(81) Bestimmungsstaaten *(soweit nicht anders angegeben, für jede verfügbare nationale Schutzrechtsart)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, 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,

[Fortsetzung auf der nächsten Seite]

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(54) Title: METHOD FOR SYNCHRONISING CONTENT-DEPENDENT DATA SEGMENTS OF FILES

(54) Bezeichnung: VERFAHREN ZUM SYNCHRONISIEREN VON INHALTSBEZOGENEN DATENSEGMENTEN VON DATEIEN



(57) Abstract: The synchronisation of data segments is particularly necessary for the use of small screens. The invention relates to a method and a device for synchronising content-dependent first data segments (S1) of a first data file (D1) and content-dependent second data segments (S2) of a second data file (D2), the first and second data segments (S1, S2) being respectively output in sequence according to their chronological order in such a way that based on a predeterminable assignment rule for the first and second data segments (S1, S2), each second data segment (S2) is output together with a corresponding first data segment (S1).

(57) Zusammenfassung: Besonderes bei der Verwendung von kleinen Bildschirmen ist die Synchronisierung von Datensegmenten in einfacher Weise notwendig. Die Erfindung betrifft ein Verfahren sowie eine Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (Sl) einer ersten Datendatei (Dl) und inhaltsbezogenen zweiten Datensegmenten (S2) einer zweiten Datendatei (D2) , wobei die ersten und zweiten Datensegmente (Sl, S2) jeweils seguenziell entsprechend ihrer zeitlichen Reihenfolge derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorσhrift für die ersten und zweiten Datensegmente (Sl, S2) jedes zweite Datensegment (S2) zusammen mit einem dazugehörigen ersten Datensegment (Sl) ausgegeben wird.

SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Bestimmungsstaaten *(soweit nicht anders angegeben, für jede verfügbare regionale Schutzrechtsart)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), eurasisches (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), europäisches (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).

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Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

Beschreibung

VERFAHREN ZUM SYNCHRONISIEREN VON INHALTSBEZOGENEN DATENSEGMENTEN VON DATEIEN

Die Erfindung betrifft ein Verfahren gemäß dem Oberbegriff des Anspruchs 1 und eine Vorrichtung gemäß dem Oberbegriff des Anspruchs 9.

Seit vielen Jahrzehnten werden Fernsehsignale terrestrisch und im Kabel an Fernsehteilnehmer übermittelt. In Europa wird dafür beispielsweise die PAL-Norm und in Nordamerika die NTSC-Norm verwendet. Da alle Fernsehgeräte in den jeweiligen Ländern dazu geeignet sind, das z.B. nach PAL-Norm codierte Fernsehsignal zu empfangen, braucht lediglich ein Fernsehsignal für ein Fernsehprogramm ausgestrahlt werden. Dadurch wird eine Ausstrahlung mehrerer unterschiedlich codierter Fernsehsignale eines Fernsehnprogramms, beispielsweise in Abhängigkeit von einer Bildgröße oder einer Leistungsfähigkeit der Fernsehgeräte, nicht benötigt.

Durch die derzeitige Einführung neuer Endgeräte, beispielsweise mobiler Endgeräte mit kleinen Bildschirmen, wird es in der Zukunft nicht mehr möglich sein, ein einziges Fernsehsignal eines Fernsehprogramms für alle Endgeräte zur Verfügung zu stellen. Ferner kann es auch gewünscht sein, unterschiedliche Fernsehteilnehmer mit unterschiedlich qualitativen Fernsehsignalen zu versorgen. Dabei wird beispielsweise für ein Fernsehteilnehmer, der eine niedrige monatliche Gebühr bezahlt, ein gering qualitatives Fernsehsignal zur Verfügung gestellt, beispielsweise in schwarz/weiß, wohingegen bei höherer Gebühr ein hoch auflösendes farbiges Fernsehsignal geliefert wird.

Um diesen Anforderungen gerecht zu werden, wurden in der Vergangenheit sowohl neuartige Datenkompressionsalgorithmen, wie

zum Beispiel ein Videocodierstandard ITU-T H.264, als auch Metadatensprachen, wie z.B. XML (XML = Extended Markup Language), entwickelt. Mit Hilfe dieser Metadatensprachen können Inhalte eines Dokuments und/oder eines Datenstroms, wie zum Beispiel eines Fernseh- bzw. Videosignals, mittels einer XML-Schema-Sprachdefinition strukturiert beschrieben werden. Auf Basis dieser Definition können je nach Anforderung Informationen gewonnen werden, mit deren Hilfe eine Skalierung des Fernseh- bzw. Videosignals für verschiedene Fernsehteilnehmer realisiert werden kann.

Aus dem Stand der Technik ist die Verwendung von XML-basierten Beschreibungen von Datenströmen bekannt, bei denen die einzelnen Komponenten des Datenstroms entsprechend ihrer syntaktischen Bedeutung mit BSD-Einheiten (BSD = Bitstream Syntax Description) mit frei adressierbaren gBSD-Einheiten (gBSD=generic Bitstream Description) hinsichtlich unterschiedlicher Adaptionsmöglichkeiten beschrieben bzw. gekennzeichnet werden. Eine ausführliche Beschreibung hierzu findet sich in [1]. Diese Beschreibungen des Datenstroms werden genutzt, um den Datenstrom an die Anforderung, zum Beispiel in Hinsicht auf Datenrate oder Qualität eines Fernsehsignals, eines Endteilnehmers, wie z.B. eines Fernsehteilnehmers, zu adaptieren. Dazu kann zunächst die Beschreibung des Datenstroms geeignet transformiert werden, wobei anschließend der Datenstrom basierend auf der transformierten Beschreibung adaptiert wird.

Aus [4] ist eine Bitstream Binding Language - Verfahren (BBL) bekannt, mit der eine Synchronisation durchgeführt werden kann. Da BBL bei der Fragmentierung von Metadaten auf XPath beruht und eine Beschreibung eines Abschnitts der Metadaten mit XPath eine umfangreiche Datenmenge einnimmt, wird ein großer Oberhead durch dieses Verfahren erzeugt. Für die Fragmentierung der Mediadaten wird ein proprietäres Verfahren vorgeschlagen, wodurch eine Synchronisierung verschiedener Datentypen nicht allgemein ermöglicht wird.

In dem Dokument [2] werden Anforderungen für streambare digitale Einheiten (streamable digital items) vorgestellt. Diese Anforderungen basieren auf der gBSD-Beschreibung, wobei eine verteilte und dynamische Adaption für Metadaten vorgeschlagen wird.

Aus dem Dokument [3] sind zwei Verfahren bekannt, bei denen mit Hilfe der gBSD-Beschreibung und der XSLT-Beschreibung eine Adapation von Datenströmen für Streaming-Anwendungen durchführbar ist.

Die der Erfindung zugrunde liegende Aufgabe ist ein Verfahren und eine Vorrichtung anzugeben, das bzw. die eine Synchronisation von inhaltsbezogenen ersten und zweiten Datensegmenten in einfacher und standardkonformer Weise ermöglicht.

Diese Aufgabe wird ausgehend von dem Verfahren gemäß dem Oberbegriff des Anspruchs 1 durch dessen kennzeichnende Merkmale und durch eine Vorrichtung ausgehend von dem Oberbegriff des Anspruchs 9 durch dessen kennzeichnende Merkmale gelöst.

Bei dem Verfahren zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei werden die ersten und zweiten Datensegmente jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente jedes zweite Datensegment zusammen mit einem dazugehörigen ersten Datensegment ausgegeben wird.

Durch das erfindungemäße Verfahren wird ermöglicht in einfacher Weise inhaltsbezogene erste und zweite Datensegmente zu synchronisieren. Diese Synchronisation wird gesteuert durch die vorgebbare Zuordnungsvorschrift. Somit können inhaltsbezogene Datensegmente entsprechend ihrer zeitlichen Reihenfolge zusammen ausgegeben werden. Dies ist von Vorteil, da die Zuordnung ohne die Verwendung von Zeitmarken erfolgt. In die-

sem Zusammenhang ist unter dem Begriff ausgeben zu verstehen, dass erste und zweite Datensegmente bspw. übertragen, gemeinsam gespeichert oder an eine Verarbeitungseinheit weitergegeben werden.

Vorzugsweise wird die vorgebbare Zuordnungsvorschrift derart gebildet, dass ein zweites Datensegment genau einem ersten Datensegment zugewiesen wird und eine weitere Zuweisung nach einer Anzahl an sequenziell aufeinander folgenden ersten Datensegmenten erfolgt. Dadurch kann nur durch Angabe der Anzahl die Zuordnungsvorschrift beschrieben werden. Dies ist wegen des sehr geringen Signalisierungsaufwands, der zur Signalisierung der Anzahl benötigt wird, von Vorteil.

In einer alternativen Ausführungsform wird die vorgebbare Zuordnungsvorschrift derart gebildet wird, dass für jedes zweite Datensegment ein erstes Datensegment durch Angabe einer Nummer zugeordnet wird, wobei die Nummer eine Position des ersten Datensegments innerhalb der zeitlichen Reihenfolge der ersten Datensegmente repräsentiert. Hierdurch wird in besonders flexibler Art und Weise die Zuordnung von ersten und zweiten Datensegmenten erreicht. Dabei können einem ersten Datensegment mehrere zweite Datensegmente zugeordnet werden.

Vorzugsweise werden auf Grundlage einer kombinierten vorgebbaren Zuordnungsvorschrift inhaltsbezogene erste Datensegmente und inhaltsbezogene zweite Datensegmente mehrerer zweiter Datendatei synchronisiert. Hierdurch können die zweiten Datensegmente mehrerer Datendateien synchronisiert ausgegeben werden. Die kombinierte vorgebbare Zuordnungsvorschrift ermöglicht eine sehr kompakte und speichereffiziente Beschreibung.

Durch das erfindungsgemäße Verfahren werden durch die erste und/oder zweite Datendatei Mediadaten, insbesondere Video- oder Audiodaten, und/oder Metadaten, insbesondere codiert nach XML-Standard, beschrieben. Somit wird es durch das er-

findungsgemäße Verfahren ermöglicht, eine Vielzahl unterschiedlicher Datentypen zu synchronisieren.

Vorzugsweise werden die ersten und/oder zweiten Datensegmente auf Basis der generic bit stream syntax description oder auf Basis der extensible stylesheet language transformation generiert. Mit dieser standardisierten Art und Weise der Generierung der ersten und/oder zweiten Datensegmente kann eine kostengünstige, zuverlässige und standardkonforme Realisierung des erfindungsgemäßen Verfahrens erzielt werden, da die Realisierung auf standardisierte Module zurückgreifen kann.

Ferner ist es in der Praxis zweckmäßig, dass auf Grundlage einer inhaltsbezogenen Markierung bestimmt wird, welches erste und zweite Datensegment zeitlich zuerst ausgegeben wird. Damit kann wahlfrei auf die erste und zweite Datendatei zugegriffen werden. Durch die inhaltsbezogene Markierung wird insbesondere ein Szenenwechsel in einer Bildsequenz oder ein Sprecherwechsel in einer Sprachsequenz gekennzeichnet. Damit kann ein gewünschter Abschnitt einer Sprach- oder Bildsequenz rasch aufgefunden werden, da der Zugriff inhaltsbasiert erfolgt.

Die Erfindung betrifft auch eine Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei, mit einem Synchronisationsmodul zum Ausgeben erster und zweiter Datensegmente jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge, wobei auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente jedes zweite Datensegment zusammen mit einem dazugehörigen ersten Datensegment ausgegeben wird. Mit Hilfe der Vorrichtung kann das erfindungsgemäße Verfahren durchgeführt werden.

Weitere Einzelheiten sowie Vorteile der Erfindung werden anhand der Figuren 1 bis 5 näher erläutert. Im Einzelnen zeigen:

Figur 1 eine Vorrichtung zur Durchführung des erfindungsgemäßen Verfahrens;

Figur 2 einen Inhalt einer Fragmentierungsbeschreibungsdatei unter Verwendung der XML-Beschreibungssprache, wobei mittels der Fragmentierungsbeschreibungsdatei eine Fragmentierung einer ersten und/oder zweiten Datendatei beschrieben wird;

Figur 3 ein Baumdiagramm zur bildhaften Darstellung einer Zuordnungsvorschrift;

Figur 4 einen Inhalt einer Zuordnungsvorschrift, die mit Hilfe der XML-Beschreibungssprache gebildet wird;

Figur 5 eine zeitliche Anordnung synchronisierter erster und zweiter Datensegmente S1, S2.

Elemente mit gleicher Funktion und gleicher Wirkungsweise sind in den Figuren 1 bis 5 mit denselben Bezugszeichen versehen.

Das erfindungsgemäße Verfahren wird im Folgenden anhand eines Ausführungsbeispiels gemäß Figur 1 näher erläutert. Hierbei sollen ein Videodatenstrom und ein Audiodatenstrom synchronisiert werden. Der Videodatenstrom ist bspw. nach dem Videocodierstandard MPEG2, MPEG4 oder ITU H.264 komprimiert worden. In Figur 1 wird dieser Videodatenstrom als erste Datendatei D1 gekennzeichnet. Der Audiodatenstrom ist bspw. mit dem Audiocodierstandard ITU G.723.1 oder MPEG4-AAC codiert worden. Der Audiodatenstrom ist in Figur 1 mit einem Namen zweite Datendatei D2 bezeichnet.

Zu jeder ersten und zweiten Datendatei D1, D2 existiert jeweils eine Fragmentierungsbeschreibungsdatei D1_BSD, B2_BSD. Diese Fragmentierungsbeschreibungsdatei D1_BSD, B2_BSD spezifiziert, wie inhaltsbezogene erste und inhaltsbezogene zweite

Datensegmente S1, S2 aus der jeweiligen ersten bzw. zweiten Datendatei D12, D2 gewonnen werden können. Unter dem Begriff inhaltsbezogen ist zu verstehen, dass erste bzw. zweite Datensegmente eine syntaktische Bedeutung innerhalb der jeweiligen Datendatei aufweisen, wie z.B. mehrere aufeinander folgende zweite Datensegmente repräsentieren das Sprachsignal eines bestimmten Sprechers innerhalb einer Dialogsequenz. Ferner können darunter auch Abschnitte der Datendatei verstanden werden, wie z.B. einzelne Bilder einer Videosequenz. Im Folgenden beziehen sich Datensegmente immer auf inhaltsbasierte Datensegmente.

In Figur 2 ist eine erste Fragmentierungsbeschreibungsdatei D1_BSD für eine nach dem Standard MPEG4 codierte erste Datendatei D1 zu sehen. Daten einer derartigen ersten Datendatei D1 sind auch als Mediadaten MID bekannt. Diese erste Fragmentierungsbeschreibungsdatei D1_BSD verwendet zur Darstellung der Fragmentierungsvorschriften eine gBSD-Syntax (gBSD = generic bit stream syntax description), wobei die gBSD-Sytax auf der XML-Spache basiert. So zeigt bspw. die mit einem Bezugszeichen X1 gekennzeichnete Zeile, dass eine Intra-codierte Video Object Plane (I-VOP) an einer Byteadresse 26 innerhalb der ersten Datendatei D1 beginnt und 2877 Bytes umfasst. Eine detaillierte Beschreibung der Funktionsweise der gBSD-Sprache ist aus [1] bekannt, wobei die erste Fragmentierungsbeschreibungsdatei D1_BSD mit Figur 9 aus [1] nahezu identisch ist. Eine andere Möglichkeit zur Beschreibung der Fragmentierungsvorschriften stellt die extensible stylesheet language transformation (XSL-Transformation bzw. XSLT) dar. Hiermit können Metadaten MTD, insbesondere XML-codierte Metadaten, fragmentiert werden. Weitere Information zu XSLT sind dem Dokument [1] entnehmbar.

Gemäß Figur 1 wird die erste Datendatei D1 und die erste Fragmentierungsbeschreibungsdatei D1_BSD einem Fragmentierungsmodul MF zugeführt. Dieses entnimmt aus der ersten Datendatei D1 gemäß der Fragmentierungsvorschrift der ersten Fragmentierungsbeschreibungsdatei D1_BSD erste Datensegmente

S1. Diese ersten Datensegmente S1 werden in derjenigen zeitlichen Reihenfolge R1 von dem Fragmentierungsmodul MF an ein Synchronisationsmodul MS übergeben, in der diese ausgegeben werden sollen. Unter den ersten Datensegmenten S1 sind Datensegmente der ersten Datendatei D1 zu verstehen, die eine für die erste Datendatei D1 inhaltsbezogene Bedeutung aufweisen, wie bspw. einzelne Bilder in einer Videosequenz oder einzelne gesprochene Worte in einer Audiosequenz. Dabei kennzeichnet die zeitliche Reihenfolge diejenige Abfolge der einzelnen ersten Datensegmente S1, in der diese bspw. visuell wiedergegeben oder hörbar gemacht werden. Beispielsweise umfasst ein Datensegment das Wort „Guten" und ein weiteres Datensegment das Wort „Morgen", so wird zuerst das Datensegment mit „Guten" und dann dasjenige mit „Morgen" ausgegeben. Diese zeitliche Reihenfolge R1 ist in Figur 1 durch einen Pfeil mit dem Bezugszeichen R1 sinnbildlich dargestellt. Ferner sind in den einzelnen ersten Datensegmente S1 Ziffern abgedruckt, die diese zeitliche Reihenfolge R1 wiedergeben. So wird zuerst das erste Datensegment mit der Ziffer 0, dann dasjenige mit der Ziffer 1 und zuletzt das erste Datensegment mit der höchsten Ziffer, d.h. mit der Ziffer 9 ausgegeben. Die Verwendung dieser Ziffern ist lediglich zur besseren Darstellung des erfindungsgemäßen Verfahrens gewählt worden und stellt keine Anforderung bei der Ausführung des erfindungsgemäßen Verfahrens dar.

Zur Realisierung der Fragmentierung der zweiten Datendatei D2 mittels der zweiten Fragmentierungsbeschreibungsdatei D2_BSD und somit zur Ausgabe der inhaltsbezogenen zweiten Datensegmente S2 in der zeitlichen Reihenfolge R2 wird analog zu den obigen Ausführungen vorgegangen.

In einem nächsten Verarbeitungsschritt des erfindungsgemäßen Verfahrens werden die ersten und zweiten Datensegmente S1, S2 auf Grundlage einer vorgebbaren Zuordnungsvorschrift Z synchronisiert. In Figur 3 ist in Form einer Baumstruktur ein möglicher Aufbau einer derartigen Zuordnungsvorschrift Z abgebildet. Die Baumstruktur zeigt zum einen durch gestrichelte

bzw. durchgezogene Verbindungslinien Abhängigkeiten innerhalb der Zuordnungsvorschrift Z und zum anderen Schlüsselwörter zur Verwendung dieser Zuordnungsvorschrift Z in einer XML-basierten Beschreibungsform. Ein Beginn der Zuordnungsvorschrift Z kann in einem XML-basierten Dokument, wie z.B. in Figur 4 zusehen, mit einem XML-Startwort „StreamingInstructions" gekennzeichnet werden. Danach folgen die erste Datendatei D1 mit einem XML-Namen „SynchronizationSource" und optinal die Fragmentierungsvorschrift durch Angabe der ersten Fragmentierungsbeschreibungsdatei D1_BSD mit einem XML-Namen „FragmentationInstruction". Daneben wird zumindest eine zweite Datendatei D2 mit einem XML-Namen „SynchronizationTarget" definiert, die optional die Fragmentierungsvorschrift in Form der zweiten Fragmentierungsbeschreibungsdatei D2_BSD mit einem XML-Namen „FragmentationInstruction" umfasst. Zu jeder zweiten Datendatei D2 wird eine Synchronisierungsinformation SI mit einem XML-Namen „SynchronizationInstruction" angegeben, die die eigentliche Zuordnung der ersten und zweiten Datensegmente S1, S2 definiert.

Die Synchronisationsinformation SI kann gemäß dem erfindungsgemäßen Verfahren zwei unterschiedliche Ausprägungen aufweisen.

a) So wird bspw. dem zweiten Datensegment S2 ein erstes Datensegment S1 zugewiesen und eine weitere Zuweisung erfolgt nach einer Anzahl A ausgegebener, sequentiell aufeinander folgender erster Datensegmente S1. Ist die Anzahl A = 2, so bedeutet dies, dass jeweils das zweite erste Datensegment S1 mit dem zweiten Datensegment S2 ausgegeben werden soll. In Figur 1 ist diese Konstellation verdeutlicht. Die ersten und zweiten Datensegmente S1, S2 werden in ihrer zeitlichen Reihenfolge R1, R2 durch das Synchronisationsmodul MS an dessen Datenausgang G ausgegeben. Zunächst werden die jeweils ersten inhaltbezogenen ersten und zweiten Datensegmente S1, S2 mit der Ziffer 0 weitergeleitet. Da die Anzahl A=2 ist wird nun das nächste erste Datensegment S1 mit der Ziffer 1 ausgestoßen. Danach werden jeweils ein erstes und ein zweites Datensegment S1, S2

mit der Ziffer 2 bzw. 1 gemeinsam an dem Datenausgang G herausgegeben. Zum Schluss werden das erste Datensegment S1 mit der Ziffer 9 und das zweite Datensegment mit der Ziffer 4 ausgegeben. Diese Vorgehensweise wird in Figur 3 bzw. 4 mit einem XML-Namen „SimpleSynchronize" und einem Bezugszeichen Z1 gekennzeichnet. In Figur 4 beträgt der Wert der Anzahl A bspw. A=16.

b) Die Verwendung der Anzahl A ermöglicht zum einen, dass lediglich ein einziges zweites Datensegment S2 mit einem ersten Datensegment S1 synchronisiert werden kann. Zum anderen sind die Abstände, in denen ein erstes und ein zweites Datensegment S1, S2 gemeinsam ausgegeben werden können fest durch die Anzahl A vorgegeben.

Somit kann in einer alternativen Ausführungsform die vorgebbare Zuordnungsvorschrift Z derart gebildet werden, dass für jedes zweite Datensegment ein erstes Datensegment S1 durch Angabe einer Nummer A zugeordnet wird, wobei die Nummer N eine Position des ersten Datensegments S1 innerhalb der zeitlichen Reihenfolge R1 der ersten Datensegmente S1 repräsentiert.

Mit Hilfe eines Beispiels gemäß Figur 5 wird diese Alternative näher erläutert. Die ersten und zweiten Datensegmente S1, S2 sollen in der Anordnung gemäß Figur 5 ausgegeben werden. Dazu kann die Zuordnungsvorschrift Z folgende Vorschrift enthalten V={1, 1, 2, 8, 8}. Dies bedeutet, dass das erste und zweite inhaltsbezogene zweite Datensegment S2, also diejenigen mit den Ziffern 0 und 1, mit dem zweiten inhaltsbezogenen ersten Datensegment S1, welches die Ziffer 1 trägt, synchronisiert werden soll. Ferner soll das nächste zweite Datensegment S2 mit der Ziffer 2 mit dem ersten Datensegment S1 mit der Ziffer 2 gemeinsam ausgegeben werden. Schließlich sollen das vierte und fünfte zweite Datensegment S2 mir den Ziffern 3 und 4 mit dem ersten Datensegment mit der Ziffer 8 gemeinsam wiedergegeben werden. Somit beschreibt die obige Vorschrift V={1, 1, 2, 8, 8} für jedes zweite Datensegment S2, und zwar in der zeitlichen Reihenfolge R2, wobei die zeitliche Reihenfolge R2 dem Auslesen dieser Vorschrift V von links nach rechts

entspricht, zu welchem ersten Datensegment S1 eine Synchronisation zu erfolgen hat. Dabei entspricht die Zahl innerhalb der Vorschrift der Nummer N, die in diesem Ausführungsbeispiel der Ziffer des ersten Datensegments S1 entspricht.

In Figur 4 ist die Vorschrift etwas anders dargestellt. Hierbei gilt für die zeitliche Reihenfolge R2 die Vorschrift nicht von links nach rechts sondern von oben nach unten. Das bedeutet, dass die ersten zwei zweiten Datensegmente S2 mit dem ersten Datensegment S1 mit der Nummer 0, die danach folgenden weiteren vier zweiten Datensegmente S2 dem ersten Datensegment S1 mit der Nummer 1 zugeordnet und dann jeweils gemeinsam ausgegeben werden. In Figur 3 ist diese Variante der Zuordnungsvorschrift Z mit einem Bezugszeichen Z2 bzw. einem XML-Namen „ComplexSynchronize" markiert. Mit Hilfe eines XML-Names „Occurance" kann die jeweilige Nummer N in dem XML-Dokument gemäß Figur 4 gekennzeichnet werden, wobei diese Nummer N mehrmals, wie in obiger Vorschrift V gezeigt, auftreten kann.

Die am Datenausgang G ausgegebenen ersten und zweiten Datensegmente S1, S2 können jeweils mit einem RTP-Paket (RTP-Realtime Transport Protocol) verschickt werden, wobei die RTP-Pakete gemeinsam ausgegebener erster und zweiter Datensegmente S1, S2 mit einem identischen Zeitstempel (Zeitstempel = engl. Time code) versehen werden. In einer Alternative können jeweils gemeinsam ausgegebene erste und zweite Datensegmente S1, S2 in einem jeweiligen RTP-Paket gruppiert werden.

In einer alternativen Erweiterung des erfindungsgemäßen Verfahrens kann es zweckmäßig sein das jeweils zeitlich zuerst auszugebende erste bzw. zweite Datensegment S1, S2 innerhalb der ersten und zweiten Datei D1, D2 auf Grundlage einer Markierung M zu bestimmen. Diese Markierung M gibt an, welches erste bzw. zweite Datensegment S1, S2 aus der dazugehörigen ersten bzw. zweiten Datendatei D1, D2 ausgelesen werden soll. So kann innerhalb der ersten bzw. zweiten Fragmentierungsbe-

schreibungsdatei D1_BSD, D2_BSD die Markierung M derart abgelegt sein, dass das Fragmentierungsmodul MF eindeutig die richtige Stelle innerhalb der dazugehörigen Datendatei D1, D2 zuordnen kann. Im Beispiel gemäß Figur 4 sind eine erste und eine zweite Markierung M1, M2 eingefügt, wobei die erste Markierung M1 durch einen Text „Start_1" und die zweite Markierung durch einen Text „Start_2" identifiziert werden. So wird bspw. die erste Markierung M1 vom Synchronisationsmodul MS an das Fragmentierungsmodul MF übermittelt, wobei das Fragmentierungsmodul MF daraufhin mit der Bildung des ersten Datensegments S1 in der Zeile mit dem Bezugszeichen X1 startet. Wird die zweite Markierung M2 übermittelt, so beginnt die Erstellung des ersten Datensegments S1 in der Zeile mit einem Bezugszeichen X2.

In den bisherigen Beispielen wurden zwei zu synchronisierende Datendateien D1, D2 betrachtet. Im Allgemeinen können mehr als eine einzige zweite Datendatei D2 mit der ersten Datendatei D1 synchronisiert werden. Beispielsweise gibt es zwei zweite Datendateien D21, D22. Hierfür wird für eine kombinierte vorgebbare Zuordnungsvorschrift ZK gebildet. In dem Beispiel gemäß Figur 4 ist eine derartige kombinierte Zuordnungsvorschrift ZK abgebildet. Ein erster Beschreibungsteil B_D1 beinhaltet Informationen bzgl. der ersten Datendatei D1 bzw. deren erste Datensegmente S1. Ein zweiter Beschreibungsteil B_D21 umfasst Synchronisierungsinformationen für eine erste zweite Datendatei D21 bzw. deren zweite Datensegmenten S2. Ein dritter Beschreibungsteil B_D22 umfasst Synchronisierungsinformationen für die weitere zweite Datendatei D22 bzw. deren zweite Datensegmente S2. Der zweite Beschreibungsteil B_D21 ist gemäß der ersten Zuordnungsvorschrift Z1 und der dritte Beschreibungsteil B_D22 gemäß der zweiten Zuordnungsvorschrift Z2 gebildet worden.

Literatur

[1] Panis G. et al., "Bitstream Syntax Description: A Tool for Multimedia Resource Adaptation within MPEG-21", Signal Processing, Image Communication, Elsevier Science Publishers, Amsterdam, NL, Band 18, Nr. 8, September 2003, Seiten 721-747, ISSN: 0923-5965

[2] S. Devillers et al., „Metadaten streaming use case and requirements", ISO/IEC JTC 1/SC 29/WG11 M11638, Hong Kong, Januar 2005-04-08

[3] H. Hellwagner et al., „Report of CE on Bit-Stream Adaptation in Constrained and Streaming Environments", ISO/IEC JTC 1/SC 29/WG 11 M11706, Hong Kong, Januar 2005

[4] I. Burnett et al., „Bitstream Binding Language - a grammar for Digital Item Transport", ISO/IEC JTC 1/SC 29/WG M11611, Hong Kong, Januar 2005

Patentansprüche

1. Verfahren zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (S1) einer ersten Datendatei (D1) und inhaltsbezogenen zweiten Datensegmenten (S2) einer zweiten Datendatei (D2),
dadurch gekennzeichnet,
dass die ersten und zweiten Datensegmente (S1, S2) jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge (R1, R2) derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift (Z) für die ersten und zweiten Datensegmente (S1, S2) jedes zweite Datensegment (S2) zusammen mit einem dazugehörigen ersten Datensegment (S1) ausgegeben wird.

2. Verfahren nach Anspruch 1,
dadurch gekennzeichnet,
dass die vorgebbare Zuordnungsvorschrift (Z) derart gebildet wird, dass ein zweites Datensegment (S2) genau einem ersten Datensegment (S1) zugewiesen wird und eine weitere Zuweisung nach einer Anzahl (A) an sequenziell aufeinander folgender erster Datensegmenten (S1) erfolgt.

3. Verfahren nach Anspruch 1,
dadurch gekennzeichnet,
dass die vorgebbare Zuordnungsvorschrift (Z) derart gebildet wird, dass für jedes zweite Datensegment (S2) ein erstes Datensegment (S1) durch Angabe einer Nummer (N) zugeordnet wird, wobei die Nummer (N) eine Position des ersten Datensegments (S1) innerhalb der zeitlichen Reihenfolge (R1) der ersten Datensegmente (S1) repräsentiert.

4. Verfahren nach einem der vorhergehenden Ansprüche,
dadurch gekennzeichnet,
dass auf Grundlage einer kombinierten vorgebbaren Zuordnungsvorschrift (ZK) inhaltsbezogene erste Datensegmente (S1) und

inhaltsbezogene zweite Datensegmente (S21, S22) mehrerer zweiter Datendateien (D21, D22) synchronisiert werden.

5. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass durch die erste und/oder zweite Datendatei (D1, D2) Mediadaten (MID), insbesondere Video- oder Audiodaten, und/oder Metadaten (MTD), insbesondere codiert nach XML-Standard, dargestellt werden.

6. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass die ersten und/oder zweiten Datensegmente (S1, S2) auf Basis der generic bit stream syntax description (gBSD) oder auf Basis der extensible stylesheet language transformation (XSLT) generiert werden.

7. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass auf Grundlage einer inhaltsbezogenen Markierung (M) bestimmt wird, welches erste und zweite Datensegment (S1, S2) zeitlich zuerst ausgegeben wird.

8. Verfahren nach Anspruch 7, dadurch gekennzeichnet, dass durch die inhaltsbezogene Markierung (M) ein Szenenwechsel in einer Bildsequenz oder ein Sprecherwechsel in einer Sprachsequenz gekennzeichnet wird.

9. Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (S1) einer ersten Datendatei (D1) und inhaltsbezogenen zweiten Datensegmenten (S2) einer zweiten Datendatei (D2), insbesondere nach einem der vorhergehenden Ansprüche, gekennzeichnet durch ein Synchronisationsmodul (MS) zum Ausgeben erster und zweiter Datensegmente (S1, S2) jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge (R1, R2), wobei auf Grundlage

einer vorgebbaren Zuordnungsvorschrift (Z) für die ersten und zweiten Datensegmente (S1, S2) jedes zweite Datensegment (S2) zusammen mit einem dazugehörigen ersten Datensegment (S1) ausgegeben wird.

FIG 1

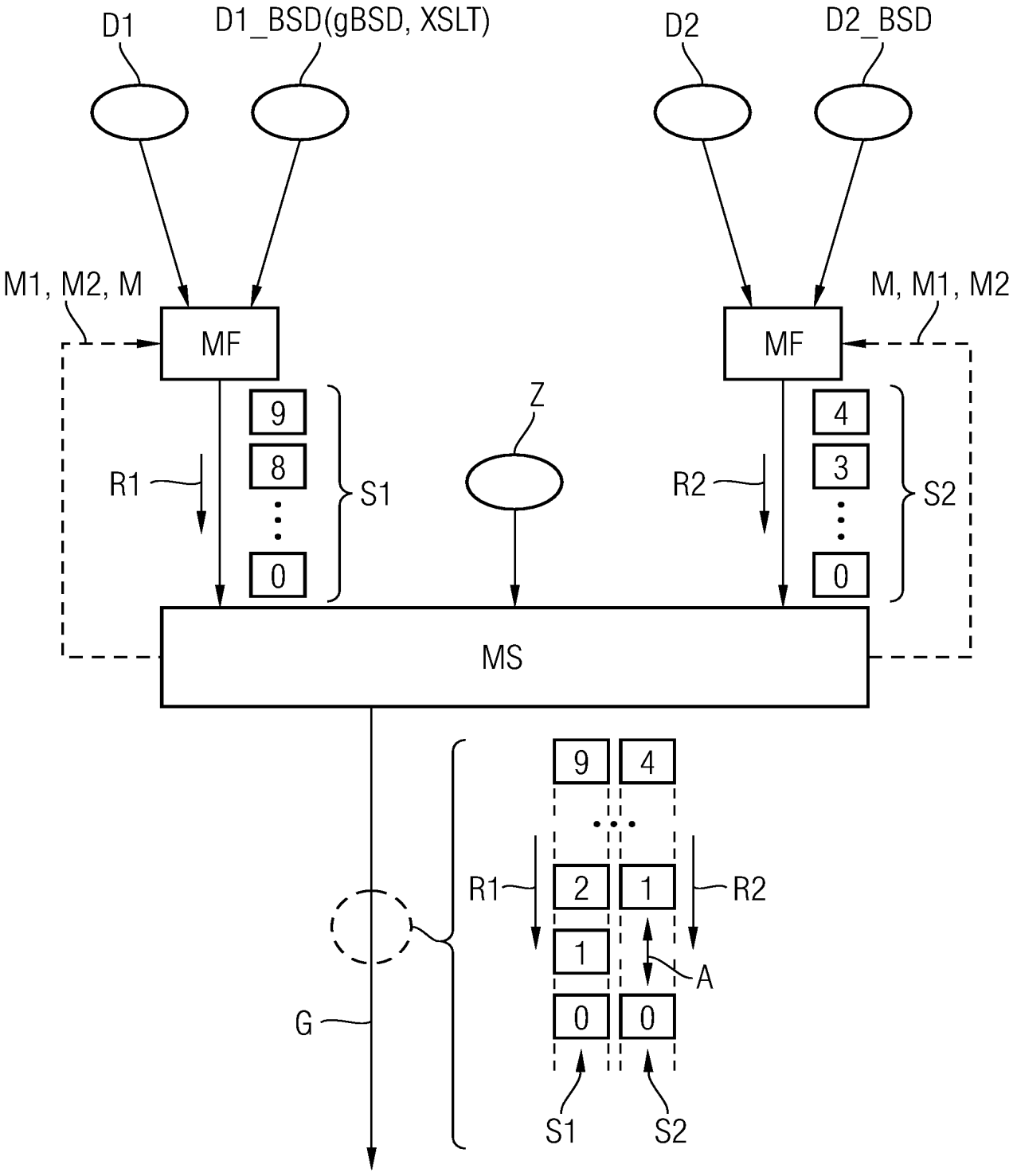

D1
D1_BSD(gBSD, XSLT)
D2
D2_BSD
M1, M2, M
M, M1, M2
MF
MF
9
8
0
S1
Z
R1
R2
4
3
0
S2
MS
9
4
R1
2
1
R2
1
A
0
0
G
S1
S2

FIG 2




```
<?xml version="1.0" encoding="UTF-8"?>
<dia:DIA xmlns="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS"
   xmlns:dia="urn:mpeg:mpeg21:2003:01-DIA-NS"
   xmlns:gbsd="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS gBSSchema.xsd">
   <dia:Description xsi:type="gBSDType">
      <Header>
         <ClassificationAlias alias="MV4" href="urn:mpeg:mpeg4:video:cs:
syntacticalLabels"/>
         <DefaultValues addressUnit="byte" addressMode="Absolute" globalAddressInfo=
"Content/starwars.cmp"/>
      </Header>
      <gBSDUnit syntacticalLabel=":MV4:VO" start="0" length="4"/>
      <gBSDUnit syntacticalLabel=":MV4:VOL" start="4" length="22"/>
      <gBSDUnit start="26" length="99983" marker="Start-1">
         <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="26" length="2877"/>
         <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="2903" length="64"/>
         <gBSDUnit syntacticalLabel=":MV4:B_VOP" start="2967" length="17"/>
         <gBSDUnit syntacticalLabel=":MV4:B_VOP" start="2984" length="16"/>
         <!--... and so on ...-->
         <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="98296" length="1713"/>
      </gBSDUnit>
      <gBSDUnit start="100009" length="68022" marker="Start-2">
         <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="100009" length="1825"/>
         <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="101834" length="1780"/>
         <!--... and so on ...-->
         <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="166802" length="1229"/>
      </gBSDUnit>
      <!--... and so on ...-->
   </dia:Description>
</dia:DIA>
```

FIG 3

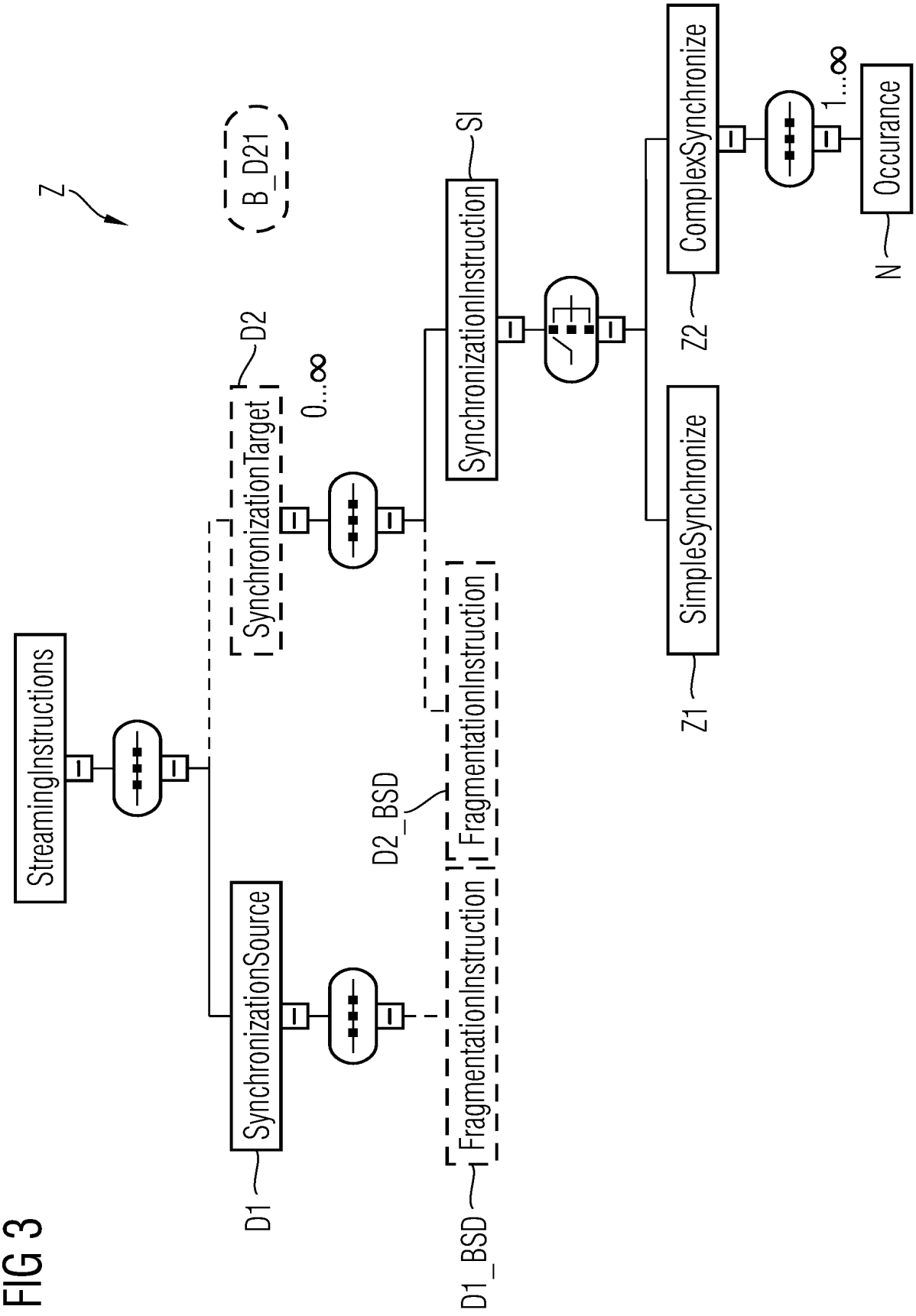

Z
StreamingInstructions
SynchronizationSource
D1
D1_BSD
FragmentationInstruction
D2_BSD
FragmentationInstruction
SynchronizationTarget
D2
B_D21
0...∞
SynchronizationInstruction
SI
SimpleSynchronize
Z1
ComplexSynchronize
Z2
1...∞
Occurance
N

FIG 4

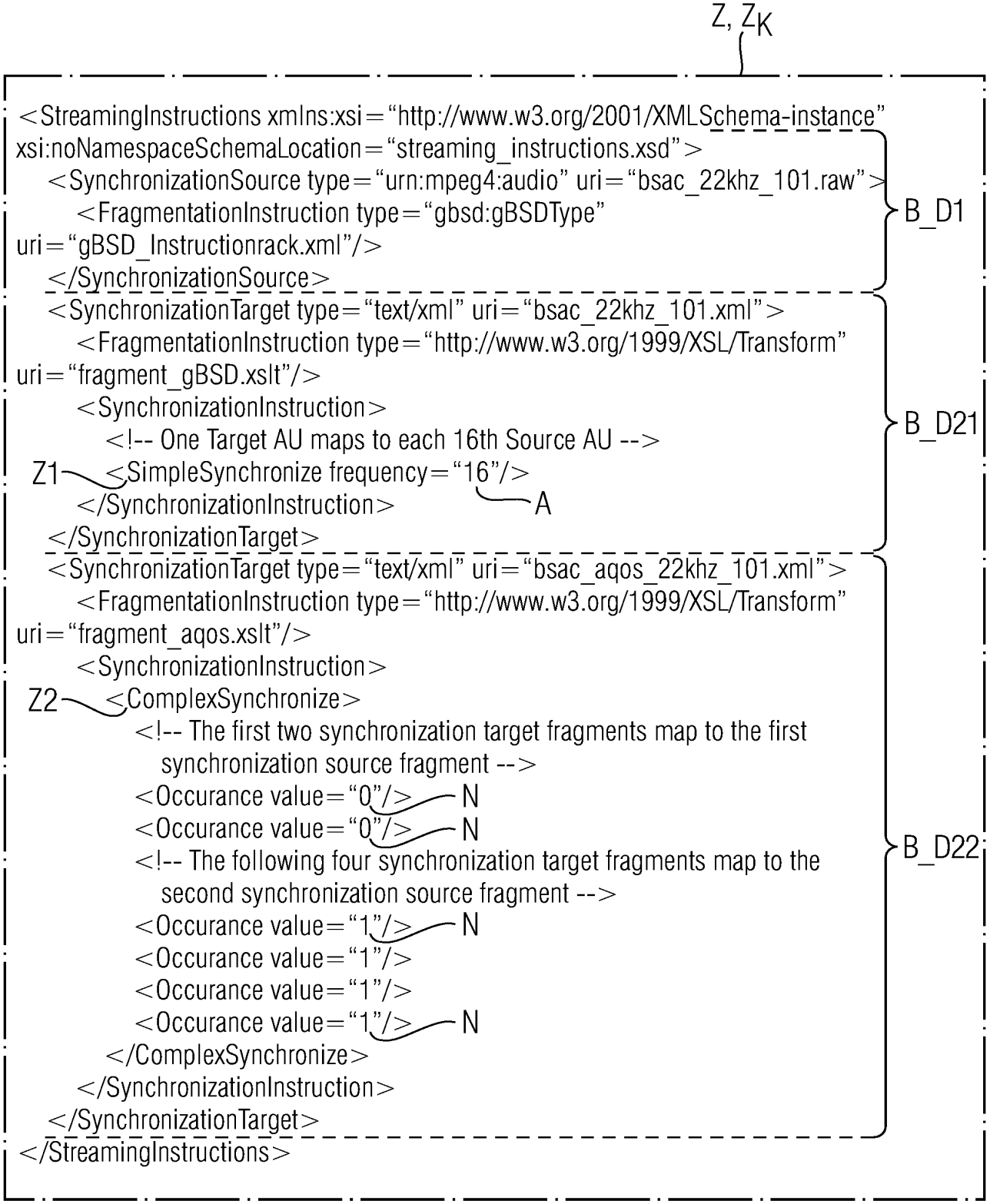
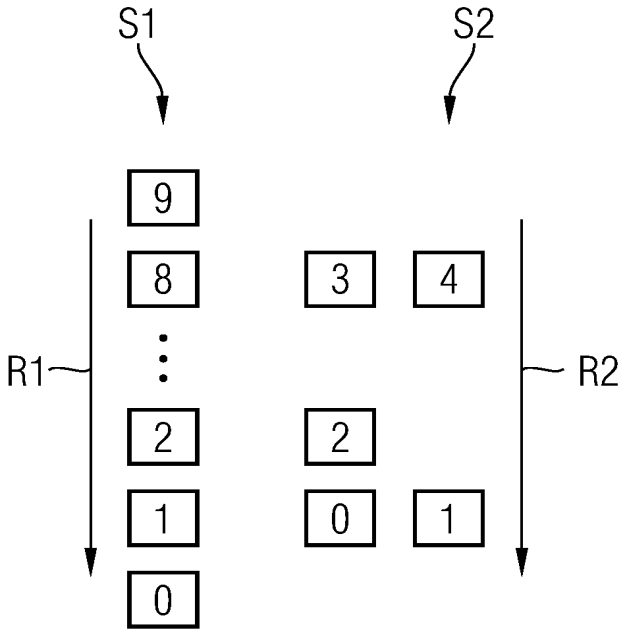

Z, ZK
<StreamingInstructions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="streaming_instructions.xsd">
<SynchronizationSource type="urn:mpeg4:audio" uri="bsac_22khz_101.raw">
<FragmentationInstruction type="gbsd:gBSDType"
uri="gBSD_Instructionrack.xml"/>
</SynchronizationSource>
B_D1
<SynchronizationTarget type="text/xml" uri="bsac_22khz_101.xml">
<FragmentationInstruction type="http://www.w3.org/1999/XSL/Transform"
uri="fragment_gBSD.xslt"/>
<SynchronizationInstruction>
<!-- One Target AU maps to each 16th Source AU -->
Z1
<SimpleSynchronize frequency="16"/>
A
</SynchronizationInstruction>
</SynchronizationTarget>
B_D21
<SynchronizationTarget type="text/xml" uri="bsac_aqos_22khz_101.xml">
<FragmentationInstruction type="http://www.w3.org/1999/XSL/Transform"
uri="fragment_aqos.xslt"/>
<SynchronizationInstruction>
Z2
<ComplexSynchronize>
<!-- The first two synchronization target fragments map to the first
synchronization source fragment -->
<Occurance value="0"/>
N
<Occurance value="0"/>
N
<!-- The following four synchronization target fragments map to the
second synchronization source fragment -->
<Occurance value="1"/>
N
<Occurance value="1"/>
<Occurance value="1"/>
<Occurance value="1"/>
N
</ComplexSynchronize>
</SynchronizationInstruction>
</SynchronizationTarget>
B_D22
</StreamingInstructions>

FIG 5



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2006/060808

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04L29/06

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 H04L

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, PAJ, INSPEC, COMPENDEX, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 494 430 A (SAMSUNG ELECTRONICS CO., LTD) 5 January 2005 (2005-01-05) paragraph [0008] - paragraph [0009] paragraph [0019] - paragraph [0022]; claims 1-5; figures 2,3	1-9
X	PATENT ABSTRACTS OF JAPAN vol. 2003, no. 12, 5 December 2003 (2003-12-05) & JP 2004 056777 A (MATSUSHITA ELECTRIC IND CO LTD), 19 February 2004 (2004-02-19)	1,9
A	abstract	2-8

-/--

[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

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"&" 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 June 2006	29/06/2006

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	Schwibinger, H-P

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2006/060808

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LI L ET AL: "Multimedia segment delivery scheme and its performance for real-time synchronization control" COMMUNICATIONS, 1994. ICC '94, SUPERCOMM/ICC '94, CONFERENCE RECORD, 'SERVING HUMANITY THROUGH COMMUNICATIONS.' IEEE INTERNATIONAL CONFERENCE ON NEW ORLEANS, LA, USA 1-5 MAY 1994, NEW YORK, NY, USA,IEEE, 1 May 1994 (1994-05-01), pages 1734-1738, XP010126591 ISBN: 0-7803-1825-0 page 1735, right-hand column, line 1 - page 1736, right-hand column, line 17; figures 1-4	1-9
A	US 2001/052943 A1 (SONE TAKUROU) 20 December 2001 (2001-12-20) paragraph [0088] - paragraph [0091]; claims 1-4,9-11; figures 1-5	1-9
A	PANIS G ET AL: "Bitstream syntax description: a tool for multimedia resource adaptation within MPEG-21" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 18, no. 8, September 2003 (2003-09), pages 721-747, XP004452907 ISSN: 0923-5965 cited in the application the whole document	1-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2006/060808

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1494430 A	05-01-2005	CN 1577571 A	09-02-2005
		JP 2005027274 A	27-01-2005
		US 2004267738 A1	30-12-2004
JP 2004056777 A	19-02-2004	NONE	
US 2001052943 A1	20-12-2001	GB 2368685 A	08-05-2002

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
PCT/EP2006/060808

A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES
INV. H04L29/06

Nach der Internationalen Patentklassifikation (IPC) oder nach der nationalen Klassifikation und der IPC

B. RECHERCHIERTE GEBIETE

Recherchierter Mindestprüfstoff (Klassifikationssystem und Klassifikationssymbole)
H04N H04L

Recherchierte, aber nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Gebiete fallen

Während der internationalen Recherche konsultierte elektronische Datenbank (Name der Datenbank und evtl. verwendete Suchbegriffe)
EPO-Internal, PAJ, INSPEC, COMPENDEX, WPI Data

C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
X	EP 1 494 430 A (SAMSUNG ELECTRONICS CO., LTD) 5. Januar 2005 (2005-01-05) Absatz [0008] - Absatz [0009] Absatz [0019] - Absatz [0022]; Ansprüche 1-5; Abbildungen 2,3	1-9
X	PATENT ABSTRACTS OF JAPAN Bd. 2003, Nr. 12, 5. Dezember 2003 (2003-12-05) & JP 2004 056777 A (MATSUSHITA ELECTRIC IND CO LTD), 19. Februar 2004 (2004-02-19)	1,9
A	Zusammenfassung	2-8

-/--

[X] Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen [X] Siehe Anhang Patentfamilie

* Besondere Kategorien von angegebenen Veröffentlichungen :
"A" Veröffentlichung, die den allgemeinen Stand der Technik definiert, aber nicht als besonders bedeutsam anzusehen ist
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"&" Veröffentlichung, die Mitglied derselben Patentfamilie ist

Datum des Abschlusses der internationalen Recherche	Absendedatum des internationalen Recherchenberichts
21. Juni 2006	29/06/2006

Name und Postanschrift der Internationalen Recherchenbehörde	Bevollmächtigter Bediensteter
Europäisches Patentamt, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Schwibinger, H-P

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
PCT/EP2006/060808

C. (Fortsetzung) ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
A	LI L ET AL: "Multimedia segment delivery scheme and its performance for real-time synchronization control" COMMUNICATIONS, 1994. ICC '94, SUPERCOMM/ICC '94, CONFERENCE RECORD, 'SERVING HUMANITY THROUGH COMMUNICATIONS.' IEEE INTERNATIONAL CONFERENCE ON NEW ORLEANS, LA, USA 1-5 MAY 1994, NEW YORK, NY, USA,IEEE, 1. Mai 1994 (1994-05-01), Seiten 1734-1738, XP010126591 ISBN: 0-7803-1825-0 Seite 1735, rechte Spalte, Zeile 1 - Seite 1736, rechte Spalte, Zeile 17; Abbildungen 1-4	1-9
A	US 2001/052943 A1 (SONE TAKUROU) 20. Dezember 2001 (2001-12-20) Absatz [0088] - Absatz [0091]; Ansprüche 1-4,9-11; Abbildungen 1-5	1-9
A	PANIS G ET AL: "Bitstream syntax description: a tool for multimedia resource adaptation within MPEG-21" SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, Bd. 18, Nr. 8, September 2003 (2003-09), Seiten 721-747, XP004452907 ISSN: 0923-5965 in der Anmeldung erwähnt das ganze Dokument	1-9

INTERNATIONALER RECHERCHENBERICHT

Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören

Internationales Aktenzeichen
PCT/EP2006/060808

Im Recherchenbericht angeführtes Patentdokument	Datum der Veröffentlichung	Mitglied(er) der Patentfamilie	Datum der Veröffentlichung
EP 1494430 A	05-01-2005	CN 1577571 A	09-02-2005
		JP 2005027274 A	27-01-2005
		US 2004267738 A1	30-12-2004
JP 2004056777 A	19-02-2004	KEINE	
US 2001052943 A1	20-12-2001	GB 2368685 A	08-05-2002

Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/EP2006/060808

International filing date: 16 March 2006 (16.03.2006)

Document type: Certified copy of priority document

Document details: Country/Office: DE
Number: 10 2005 016 866.3
Filing date: 12 April 2005 (12.04.2005)

Date of receipt at the International Bureau: 24 April 2006 (24.04.2006)

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

World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse

BUNDESREPUBLIK DEUTSCHLAND

Prioritätsbescheinigung
DE 10 2005 016 866.3
über die Einreichung einer Patentanmeldung

Aktenzeichen: 10 2005 016 866.3

Anmeldetag: 12. April 2005

Anmelder/Inhaber: Siemens Aktiengesellschaft, 80333 München/DE

Bezeichnung: Verfahren sowie Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei

IPC: H 04 N 7/26

Die angehefteten Stücke sind eine richtige und genaue Wiedergabe der ursprünglichen Unterlagen dieser Patentanmeldung.

München, den 31. März 2006
Deutsches Patent- und Markenamt
Der Präsident
Im Auftrag

Wehner

A 9161
03/00
EDV-L

Beschreibung

Verfahren sowie Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei

Die Erfindung betrifft ein Verfahren gemäß dem Oberbegriff des Anspruchs 1 und eine Vorrichtung gemäß dem Oberbegriff des Anspruchs 9.

Seit vielen Jahrzehnten werden Fernsehsignale terrestrisch und im Kabel an Fernsehteilnehmer übermittelt. In Europa wird dafür beispielsweise die PAL-Norm und in Nordamerika die NTSC-Norm verwendet. Da alle Fernsehgeräte in den jeweiligen Ländern dazu geeignet sind, das z.B. nach PAL-Norm codierte Fernsehsignal zu empfangen, braucht lediglich ein Fernsehsignal für ein Fernsehprogramm ausgestrahlt werden. Dadurch wird eine Ausstrahlung mehrerer unterschiedlich codierter Fernsehsignale eines Fernsehnprogramms, beispielsweise in Abhängigkeit von einer Bildgröße oder einer Leistungsfähigkeit der Fernsehgeräte, nicht benötigt.

Durch die derzeitige Einführung neuer Endgeräte, beispielsweise mobiler Endgeräte mit kleinen Bildschirmen, wird es in der Zukunft nicht mehr möglich sein, ein einziges Fernsehsignal eines Fernsehprogramms für alle Endgeräte zur Verfügung zu stellen. Ferner kann es auch gewünscht sein, unterschiedliche Fernsehteilnehmer mit unterschiedlich qualitativen Fernsehsignalen zu versorgen. Dabei wird beispielsweise für ein Fernsehteilnehmer, der eine niedrige monatliche Gebühr bezahlt, ein gering qualitatives Fernsehsignal zur Verfügung gestellt, beispielsweise in schwarz/weiß, wohingegen bei höherer Gebühr ein hoch auflösendes farbiges Fernsehsignal geliefert wird.

Um diesen Anforderungen gerecht zu werden, wurden in der Vergangenheit sowohl neuartige Datenkompressionsalgorithmen, wie

zum Beispiel ein Videocodierstandard ITU-T H.264, als auch Metadatensprachen, wie z.B. XML (XML = Extended Markup Language), entwickelt. Mit Hilfe dieser Metadatensprachen können Inhalte eines Dokuments und/oder eines Datenstroms, wie zum Beispiel eines Fernseh- bzw. Videosignals, mittels einer XML-Schema-Sprachdefinition strukturiert beschrieben werden. Auf Basis dieser Definition können je nach Anforderung Informationen gewonnen werden, mit deren Hilfe eine Skalierung des Fernseh- bzw. Videosignals für verschiedene Fernsehteilnehmer realisiert werden kann.

Aus dem Stand der Technik ist die Verwendung von XML-basierten Beschreibungen von Datenströmen bekannt, bei denen die einzelnen Komponenten des Datenstroms entsprechend ihrer syntaktischen Bedeutung mit BSD-Einheiten (BSD = Bitstream Syntax Description) mit frei adressierbaren gBSD-Einheiten (gBSD=generic Bitstream Description) hinsichtlich unterschiedlicher Adaptionsmöglichkeiten beschrieben bzw. gekennzeichnet werden. Eine ausführliche Beschreibung hierzu findet sich in [1]. Diese Beschreibungen des Datenstroms werden genutzt, um den Datenstrom an die Anforderung, zum Beispiel in Hinsicht auf Datenrate oder Qualität eines Fernsehsignals, eines Endteilnehmers, wie z.B. eines Fernsehteilnehmers, zu adaptieren. Dazu kann zunächst die Beschreibung des Datenstroms geeignet transformiert werden, wobei anschließend der Datenstrom basierend auf der transformierten Beschreibung adaptiert wird.

Aus [4] ist eine Bitstream Binding Language - Verfahren (BBL) bekannt, mit der eine Synchronisation durchgeführt werden kann. Da BBL bei der Fragmentierung von Metadaten auf XPath beruht und eine Beschreibung eines Abschnitts der Metadaten mit XPath eine umfangreiche Datenmenge einnimmt, wird ein großer Oberhead durch dieses Verfahren erzeugt. Für die Fragmentierung der Mediadaten wird ein proprietäres Verfahren vorgeschlagen, wodurch eine Synchronisierung verschiedener Datentypen nicht allgemein ermöglicht wird.

In dem Dokument [2] werden Anforderungen für streambare digitale Einheiten (streamable digital items) vorgestellt. Diese Anforderungen basieren auf der gBSD-Beschreibung, wobei eine verteilte und dynamische Adaption für Metadaten vorgeschlagen wird.

Aus dem Dokument [3] sind zwei Verfahren bekannt, bei denen mit Hilfe der gBSD-Beschreibung und der XSLT-Beschreibung eine Adapation von Datenströmen für Streaming-Anwendungen durchführbar ist.

Die der Erfindung zugrunde liegende Aufgabe ist ein Verfahren und eine Vorrichtung anzugeben, das bzw. die eine Synchronisation von inhaltsbezogenen ersten und zweiten Datensegmenten in einfacher und standardkonformer Weise ermöglicht.

Diese Aufgabe wird ausgehend von dem Verfahren gemäß dem Oberbegriff des Anspruchs 1 durch dessen kennzeichnende Merkmale und durch eine Vorrichtung ausgehend von dem Oberbegriff des Anspruchs 9 durch dessen kennzeichnende Merkmale gelöst.

Bei dem Verfahren zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei werden die ersten und zweiten Datensegmente jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente jedes zweite Datensegment zusammen mit einem dazugehörigen ersten Datensegment ausgegeben wird.

Durch das erfindungemäße Verfahren wird ermöglicht in einfacher Weise inhaltsbezogene erste und zweite Datensegmente zu synchronisieren. Diese Synchronisation wird gesteuert durch die vorgebbare Zuordnungsvorschrift. Somit können inhaltsbezogene Datensegmente entsprechend ihrer zeitlichen Reihenfolge zusammen ausgegeben werden. Dies ist von Vorteil, da die Zuordnung ohne die Verwendung von Zeitmarken erfolgt. In die-

sem Zusammenhang ist unter dem Begriff ausgeben zu verstehen, dass erste und zweite Datensegmente bspw. übertragen, gemeinsam gespeichert oder an eine Verarbeitungseinheit weitergegeben werden.

Vorzugsweise wird die vorgebbare Zuordnungsvorschrift derart gebildet, dass ein zweites Datensegment genau einem ersten Datensegment zugewiesen wird und eine weitere Zuweisung nach einer Anzahl an sequenziell aufeinander folgenden ersten Datensegmenten erfolgt. Dadurch kann nur durch Angabe der Anzahl die Zuordnungsvorschrift beschrieben werden. Dies ist wegen des sehr geringen Signalisierungsaufwands, der zur Signalisierung der Anzahl benötigt wird, von Vorteil.

In einer alternativen Ausführungsform wird die vorgebbare Zuordnungsvorschrift derart gebildet wird, dass für jedes zweite Datensegment ein erstes Datensegment durch Angabe einer Nummer zugeordnet wird, wobei die Nummer eine Position des ersten Datensegments innerhalb der zeitlichen Reihenfolge der ersten Datensegmente repräsentiert. Hierdurch wird in besonders flexibler Art und Weise die Zuordnung von ersten und zweiten Datensegmenten erreicht. Dabei können einem ersten Datensegment mehrere zweite Datensegmente zugeordnet werden.

Vorzugsweise werden auf Grundlage einer kombinierten vorgebbaren Zuordnungsvorschrift inhaltsbezogene erste Datensegmente und inhaltsbezogene zweite Datensegmente mehrerer zweiter Datendatei synchronisiert. Hierdurch können die zweiten Datensegmente mehrerer Datendateien synchronisiert ausgegeben werden. Die kombinierte vorgebbare Zuordnungsvorschrift ermöglicht eine sehr kompakte und speichereffiziente Beschreibung.

Durch das erfindungsgemäße Verfahren werden durch die erste und/oder zweite Datendatei Mediadaten, insbesondere Video- oder Audiodaten, und/oder Metadaten, insbesondere codiert nach XML-Standard, beschrieben. Somit wird es durch das er-

findungsgemäße Verfahren ermöglicht, eine Vielzahl unterschiedlicher Datentypen zu synchronisieren.

Vorzugsweise werden die ersten und/oder zweiten Datensegmente auf Basis der generic bit stream syntax description oder auf Basis der extensible stylesheet language transformation generiert. Mit dieser standardisierten Art und Weise der Generierung der ersten und/oder zweiten Datensegmente kann eine kostengünstige, zuverlässige und standardkonforme Realisierung des erfindungsgemäßen Verfahrens erzielt werden, da die Realisierung auf standardisierte Module zurückgreifen kann.

Ferner ist es in der Praxis zweckmäßig, dass auf Grundlage einer inhaltsbezogenen Markierung bestimmt wird, welches erste und zweite Datensegment zeitlich zuerst ausgegeben wird. Damit kann wahlfrei auf die erste und zweite Datendatei zugegriffen werden. Durch die inhaltsbezogene Markierung wird insbesondere ein Szenenwechsel in einer Bildsequenz oder ein Sprecherwechsel in einer Sprachsequenz gekennzeichnet. Damit kann ein gewünschter Abschnitt einer Sprach- oder Bildsequenz rasch aufgefunden werden, da der Zugriff inhaltsbasiert erfolgt.

Die Erfindung betrifft auch eine Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei, mit einem Synchronisationsmodul zum Ausgeben erster und zweiter Datensegmente jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge, wobei auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente jedes zweite Datensegment zusammen mit einem dazugehörigen ersten Datensegment ausgegeben wird. Mit Hilfe der Vorrichtung kann das erfindungsgemäße Verfahren durchgeführt werden.

Weitere Einzelheiten sowie Vorteile der Erfindung werden anhand der Figuren 1 bis 5 näher erläutert. Im Einzelnen zeigen:

Figur 1 eine Vorrichtung zur Durchführung des erfindungsgemäßen Verfahrens;

Figur 2 einen Inhalt einer Fragmentierungsbeschreibungsdatei unter Verwendung der XML-Beschreibungssprache, wobei mittels der Fragmentierungsbeschreibungsdatei eine Fragmentierung einer ersten und/oder zweiten Datendatei beschrieben wird;

Figur 3 ein Baumdiagramm zur bildhaften Darstellung einer Zuordnungsvorschrift;

Figur 4 einen Inhalt einer Zuordnungsvorschrift, die mit Hilfe der XML-Beschreibungssprache gebildet wird;

Figur 5 eine zeitliche Anordnung synchronisierter erster und zweiter Datensegmente S1, S2.

Elemente mit gleicher Funktion und gleicher Wirkungsweise sind in den Figuren 1 bis 5 mit denselben Bezugszeichen versehen.

Das erfindungsgemäße Verfahren wird im Folgenden anhand eines Ausführungsbeispiels gemäß Figur 1 näher erläutert. Hierbei sollen ein Videodatenstrom und ein Audiodatenstrom synchronisiert werden. Der Videodatenstrom ist bspw. nach dem Videocodierstandard MPEG2, MPEG4 oder ITU H.264 komprimiert worden. In Figur 1 wird dieser Videodatenstrom als erste Datendatei D1 gekennzeichnet. Der Audiodatenstrom ist bspw. mit dem Audiocodierstandard ITU G.723.1 oder MPEG4-AAC codiert worden. Der Audiodatenstrom ist in Figur 1 mit einem Namen zweite Datendatei D2, bezeichnet.

Zu jeder ersten und zweiten Datendatei D1, D2 existiert jeweils eine Fragmentierungsbeschreibungsdatei D1_BSD, B2_BSD. Diese Fragmentierungsbeschreibungsdatei D1_BSD, B2_BSD spezifiziert, wie inhaltsbezogene erste und inhaltsbezogene zweite

Datensegmente S1, S2 aus der jeweiligen ersten bzw. zweiten Datendatei D12, D2 gewonnen werden können. Unter dem Begriff inhaltsbezogen ist zu verstehen, dass erste bzw. zweite Datensegmente eine syntaktische Bedeutung innerhalb der jeweiligen Datendatei aufweisen, wie z.B. mehrere aufeinander folgende zweite Datensegmente repräsentieren das Sprachsignal eines bestimmten Sprechers innerhalb einer Dialogsequenz. Ferner können darunter auch Abschnitte der Datendatei verstanden werden, wie z.B. einzelne Bilder einer Videosequenz. Im Folgenden beziehen sich Datensegmente immer auf inhaltsbasierte Datensegmente.

In Figur 2 ist eine erste Fragmentierungsbeschreibungsdatei D1_BSD für eine nach dem Standard MPEG4 codierte erste Datendatei D1 zu sehen. Daten einer derartigen ersten Datendatei D1 sind auch als Mediadaten MID bekannt. Diese erste Fragmentierungsbeschreibungsdatei D1_BSD verwendet zur Darstellung der Fragmentierungsvorschriften eine gBSD-Syntax (gBSD = generic bit stream syntax description), wobei die gBSD-Sytax auf der XML-Spache basiert. So zeigt bspw. die mit einem Bezugszeichen X1 gekennzeichnete Zeile, dass eine Intracodierte Video Object Plane (I-VOP) an einer Byteadresse 26 innerhalb der ersten Datendatei D1 beginnt und 2877 Bytes umfasst. Eine detaillierte Beschreibung der Funktionsweise der gBSD-Sprache ist aus [1] bekannt, wobei die erste Fragmentierungsbeschreibungsdatei D1_BSD mit Figur 9 aus [1] nahezu identisch ist. Eine andere Möglichkeit zur Beschreibung der Fragmentierungsvorschriften stellt die extensible stylesheet language transformation (XSL-Transformation bzw. XSLT) dar. Hiermit können Metadaten MTD, insbesondere XML-codierte Metadaten, fragmentiert werden. Weitere Information zu XSLT sind dem Dokument [1] entnehmbar.

Gemäß Figur 1 wird die erste Datendatei D1 und die erste Fragmentierungsbeschreibungsdatei D1_BSD einem Fragmentierungsmodul MF zugeführt. Dieses entnimmt aus der ersten Datendatei D1 gemäß der Fragmentierungsvorschrift der ersten Fragmentierungsbeschreibungsdatei D1_BSD erste Datensegmente

S1. Diese ersten Datensegmente S1 werden in derjenigen zeitlichen Reihenfolge R1 von dem Fragmentierungsmodul MF an ein Synchronisationsmodul MS übergeben, in der diese ausgegeben werden sollen. Unter den ersten Datensegmenten S1 sind Datensegmente der ersten Datendatei D1 zu verstehen, die eine für die erste Datendatei D1 inhaltsbezogene Bedeutung aufweisen, wie bspw. einzelne Bilder in einer Videosequenz oder einzelne gesprochene Worte in einer Audiosequenz. Dabei kennzeichnet die zeitliche Reihenfolge diejenige Abfolge der einzelnen ersten Datensegmente S1, in der diese bspw. visuell wiedergegeben oder hörbar gemacht werden. Beispielsweise umfasst ein Datensegment das Wort „Guten" und ein weiteres Datensegment das Wort „Morgen", so wird zuerst das Datensegment mit „Guten" und dann dasjenige mit „Morgen" ausgegeben. Diese zeitliche Reihenfolge R1 ist in Figur 1 durch einen Pfeil mit dem Bezugszeichen R1 sinnbildlich dargestellt. Ferner sind in den einzelnen ersten Datensegmente S1 Ziffern abgedruckt, die diese zeitliche Reihenfolge R1 wiedergeben. So wird zuerst das erste Datensegment mit der Ziffer 0, dann dasjenige mit der Ziffer 1 und zuletzt das erste Datensegment mit der höchsten Ziffer, d.h. mit der Ziffer 9 ausgegeben. Die Verwendung dieser Ziffern ist lediglich zur besseren Darstellung des erfindungsgemäßen Verfahrens gewählt worden und stellt keine Anforderung bei der Ausführung des erfindungsgemäßen Verfahrens dar.

Zur Realisierung der Fragmentierung der zweiten Datendatei D2 mittels der zweiten Fragmentierungsbeschreibungsdatei D2_BSD und somit zur Ausgabe der inhaltsbezogenen zweiten Datensegmente S2 in der zeitlichen Reihenfolge R2 wird analog zu den obigen Ausführungen vorgegangen.

In einem nächsten Verarbeitungsschritt des erfindungsgemäßen Verfahrens werden die ersten und zweiten Datensegmente S1, S2 auf Grundlage einer vorgebbaren Zuordnungsvorschrift Z synchronisiert. In Figur 3 ist in Form einer Baumstruktur ein möglicher Aufbau einer derartigen Zuordnungsvorschrift Z abgebildet. Die Baumstruktur zeigt zum einen durch gestrichelte

bzw. durchgezogene Verbindungslinien Abhängigkeiten innerhalb der Zuordnungsvorschrift Z und zum anderen Schlüsselwörter zur Verwendung dieser Zuordnungsvorschrift Z in einer XML-basierten Beschreibungsform. Ein Beginn der Zuordnungsvorschrift Z kann in einem XML-basierten Dokument, wie z.B. in Figur 4 zusehen, mit einem XML-Startwort „StreamingInstructions" gekennzeichnet werden. Danach folgen die erste Datendatei D1 mit einem XML-Namen „SynchronizationSource" und optinal die Fragmentierungsvorschrift durch Angabe der ersten Fragmentierungsbeschreibungsdatei D1_BSD mit einem XML-Namen „FragmentationInstruction". Daneben wird zumindest eine zweite Datendatei D2 mit einem XML-Namen „SynchronizationTarget" definiert, die optional die Fragmentierungsvorschrift in Form der zweiten Fragmentierungsbeschreibungsdatei D2_BSD mit einem XML-Namen „FragmentationInstruction" umfasst. Zu jeder zweiten Datendatei D2 wird eine Synchronisierungsinformation SI mit einem XML-Namen „SynchronizationInstruction" angegeben, die die eigentliche Zuordnung der ersten und zweiten Datensegmente S1, S2 definiert.

Die Synchronisationsinformation SI kann gemäß dem erfindungsgemäßen Verfahren zwei unterschiedliche Ausprägungen aufweisen.

a) So wird bspw. dem zweiten Datensegment S2 ein erstes Datensegment S1 zugewiesen und eine weitere Zuweisung erfolgt nach einer Anzahl A ausgegebener, sequentiell aufeinander folgender erster Datensegmente S1. Ist die Anzahl A = 2, so bedeutet dies, dass jeweils das zweite erste Datensegment S1 mit dem zweiten Datensegment S2 ausgegeben werden soll. In Figur 1 ist diese Konstellation verdeutlicht. Die ersten und zweiten Datensegmente S1, S2 werden in ihrer zeitlichen Reihenfolge R1, R2 durch das Synchronisationsmodul MS an dessen Datenausgang G ausgegeben. Zunächst werden die jeweils ersten inhaltbezogenen ersten und zweiten Datensegmente S1, S2 mit der Ziffer 0 weitergeleitet. Da die Anzahl A=2 ist wird nun das nächste erste Datensegment S1 mit der Ziffer 1 ausgestoßen. Danach werden jeweils ein erstes und ein zweites Datensegment S1, S2

mit der Ziffer 2 bzw. 1 gemeinsam an dem Datenausgang G herausgegeben. Zum Schluss werden das erste Datensegment S1 mit der Ziffer 9 und das zweite Datensegment mit der Ziffer 4 ausgegeben. Diese Vorgehensweise wird in Figur 3 bzw. 4 mit einem XML-Namen „SimpleSynchronize" und einem Bezugszeichen Z1 gekennzeichnet. In Figur 4 beträgt der Wert der Anzahl A bspw. A=16.

b) Die Verwendung der Anzahl A ermöglicht zum einen, dass lediglich ein einziges zweites Datensegment S2 mit einem ersten Datensegment S1 synchronisiert werden kann. Zum anderen sind die Abstände, in denen ein erstes und ein zweites Datensegment S1, S2 gemeinsam ausgegeben werden können fest durch die Anzahl A vorgegeben.

Somit kann in einer alternativen Ausführungsform die vorgebbare Zuordnungsvorschrift Z derart gebildet werden, dass für jedes zweite Datensegment ein erstes Datensegment S1 durch Angabe einer Nummer A zugeordnet wird, wobei die Nummer N eine Position des ersten Datensegments S1 innerhalb der zeitlichen Reihenfolge R1 der ersten Datensegmente S1 repräsentiert.

Mit Hilfe eines Beispiels gemäß Figur 5 wird diese Alternative näher erläutert. Die ersten und zweiten Datensegmente S1, S2 sollen in der Anordnung gemäß Figur 5 ausgegeben werden. Dazu kann die Zuordnungsvorschrift Z folgende Vorschrift enthalten V={1, 1, 2, 8, 8}. Dies bedeutet, dass das erste und zweite inhaltsbezogene zweite Datensegment S2, also diejenigen mit den Ziffern 0 und 1, mit dem zweiten inhaltsbezogenen ersten Datensegment S1, welches die Ziffer 1 trägt, synchronisiert werden soll. Ferner soll das nächste zweite Datensegment S2 mit der Ziffer 2 mit dem ersten Datensegment S1 mit der Ziffer 2 gemeinsam ausgegeben werden. Schließlich sollen das vierte und fünfte zweite Datensegment S2 mir den Ziffern 3 und 4 mit dem ersten Datensegment mit der Ziffer 8 gemeinsam wiedergegeben werden. Somit beschreibt die obige Vorschrift V={1, 1, 2, 8, 8} für jedes zweite Datensegment S2, und zwar in der zeitlichen Reihenfolge R2, wobei die zeitliche Reihenfolge R2 dem Auslesen dieser Vorschrift V von links nach rechts

entspricht, zu welchem ersten Datensegment S1 eine Synchronisation zu erfolgen hat. Dabei entspricht die Zahl innerhalb der Vorschrift der Nummer N, die in diesem Ausführungsbeispiel der Ziffer des ersten Datensegments S1 entspricht.

In Figur 4 ist die Vorschrift etwas anders dargestellt. Hierbei gilt für die zeitliche Reihenfolge R2 die Vorschrift nicht von links nach rechts sondern von oben nach unten. Das bedeutet, dass die ersten zwei zweiten Datensegmente S2 mit dem ersten Datensegment S1 mit der Nummer 0, die danach folgenden weiteren vier zweiten Datensegmente S2 dem ersten Datensegment S1 mit der Nummer 1 zugeordnet und dann jeweils gemeinsam ausgegeben werden. In Figur 3 ist diese Variante der Zuordnungsvorschrift Z mit einem Bezugszeichen Z2 bzw. einem XML-Namen „ComplexSynchronize" markiert. Mit Hilfe eines XML-Names „Occurance" kann die jeweilige Nummer N in dem XML-Dokument gemäß Figur 4 gekennzeichnet werden, wobei diese Nummer N mehrmals, wie in obiger Vorschrift V gezeigt, auftreten kann.

Die am Datenausgang G ausgegebenen ersten und zweiten Datensegmente S1, S2 können jeweils mit einem RTP-Paket (RTP-Realtime Transport Protocol) verschickt werden, wobei die RTP-Pakete gemeinsam ausgegebener erster und zweiter Datensegmente S1, S2 mit einem identischen Zeitstempel (Zeitstempel = engl. Time code) versehen werden. In einer Alternative können jeweils gemeinsam ausgegebene erste und zweite Datensegmente S1, S2 in einem jeweiligen RTP-Paket gruppiert werden.

In einer alternativen Erweiterung des erfindungsgemäßen Verfahrens kann es zweckmäßig sein das jeweils zeitlich zuerst auszugebende erste bzw. zweite Datensegment S1, S2 innerhalb der ersten und zweiten Datei D1, D2 auf Grundlage einer Markierung M zu bestimmen. Diese Markierung M gibt an, welches erste bzw. zweite Datensegment S1, S2 aus der dazugehörigen ersten bzw. zweiten Datendatei D1, D2 ausgelesen werden soll. So kann innerhalb der ersten bzw. zweiten Fragmentierungsbe-

schreibungsdatei D1_BSD, D2_BSD die Markierung M derart abgelegt sein, dass das Fragmentierungsmodul MF eindeutig die richtige Stelle innerhalb der dazugehörigen Datendatei D1, D2 zuordnen kann. Im Beispiel gemäß Figur 4 sind eine erste und eine zweite Markierung M1, M2 eingefügt, wobei die erste Markierung M1 durch einen Text „Start_1" und die zweite Markierung durch einen Text „Start_2" identifiziert werden. So wird bspw. die erste Markierung M1 vom Synchronisationsmodul MS an das Fragmentierungsmodul MF übermittelt, wobei das Fragmentierungsmodul MF daraufhin mit der Bildung des ersten Datensegments S1 in der Zeile mit dem Bezugszeichen X1 startet. Wird die zweite Markierung M2 übermittelt, so beginnt die Erstellung des ersten Datensegments S1 in der Zeile mit einem Bezugszeichen X2.

In den bisherigen Beispielen wurden zwei zu synchronisierende Datendateien D1, D2 betrachtet. Im Allgemeinen können mehr als eine einzige zweite Datendatei D2 mit der ersten Datendatei D1 synchronisiert werden. Beispielsweise gibt es zwei zweite Datendateien D21, D22. Hierfür wird für eine kombinierte vorgebbare Zuordnungsvorschrift ZK gebildet. In dem Beispiel gemäß Figur 4 ist eine derartige kombinierte Zuordnungsvorschrift ZK abgebildet. Ein erster Beschreibungsteil B_D1 beinhaltet Informationen bzgl. der ersten Datendatei D1 bzw. deren erste Datensegmente S1. Ein zweiter Beschreibungsteil B_D21 umfasst Synchronisierungsinformationen für eine erste zweite Datendatei D21 bzw. deren zweite Datensegmenten S2. Ein dritter Beschreibungsteil B_D22 umfasst Synchronisierungsinformationen für die weitere zweite Datendatei D22 bzw. deren zweite Datensegmente S2. Der zweite Beschreibungsteil B_D21 ist gemäß der ersten Zuordnungsvorschrift Z1 und der dritte Beschreibungsteil B_D22 gemäß der zweiten Zuordnungsvorschrift Z2 gebildet worden.

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Patentansprüche

1. Verfahren zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (S1) einer ersten Datendatei (D1) und inhaltsbezogenen zweiten Datensegmenten (S2) einer zweiten Datendatei (D2),
dadurch gekennzeichnet,
dass die ersten und zweiten Datensegmente (S1, S2) jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge (R1, R2) derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift (Z) für die ersten und zweiten Datensegmente (S1, S2) jedes zweite Datensegment (S2) zusammen mit einem dazugehörigen ersten Datensegment (S1) ausgegeben wird.

2. Verfahren nach Anspruch 1,
dadurch gekennzeichnet,
dass die vorgebbare Zuordnungsvorschrift (Z) derart gebildet wird, dass ein zweites Datensegment (S2) genau einem ersten Datensegment (S1) zugewiesen wird und eine weitere Zuweisung nach einer Anzahl (A) an sequenziell aufeinander folgender erster Datensegmenten (S1) erfolgt.

3. Verfahren nach Anspruch 1,
dadurch gekennzeichnet,
dass die vorgebbare Zuordnungsvorschrift (Z) derart gebildet wird, dass für jedes zweite Datensegment (S2) ein erstes Datensegment (S1) durch Angabe einer Nummer (N) zugeordnet wird, wobei die Nummer (N) eine Position des ersten Datensegments (S1) innerhalb der zeitlichen Reihenfolge (R1) der ersten Datensegmente (S1) repräsentiert.

4. Verfahren nach einem der vorhergehenden Ansprüche,
dadurch gekennzeichnet,
dass auf Grundlage einer kombinierten vorgebbaren Zuordnungsvorschrift (ZK) inhaltsbezogene erste Datensegmente (S1) und

inhaltsbezogene zweite Datensegmente (S21, S22) mehrerer zweiter Datendateien (D21, D22) synchronisiert werden.

5. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass durch die erste und/oder zweite Datendatei (D1, D2) Mediadaten (MID), insbesondere Video- oder Audiodaten, und/oder Metadaten (MTD), insbesondere codiert nach XML-Standard, dargestellt werden.

6. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass die ersten und/oder zweiten Datensegmente (S1, S2) auf Basis der generic bit stream syntax description (gBSD) oder auf Basis der extensible stylesheet language transformation (XSLT) generiert werden.

7. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass auf Grundlage einer inhaltsbezogenen Markierung (M) bestimmt wird, welches erste und zweite Datensegment (S1, S2) zeitlich zuerst ausgegeben wird.

8. Verfahren nach Anspruch 7, dadurch gekennzeichnet, dass durch die inhaltsbezogene Markierung (M) ein Szenenwechsel in einer Bildsequenz oder ein Sprecherwechsel in einer Sprachsequenz gekennzeichnet wird.

9. Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten (S1) einer ersten Datendatei (D1) und inhaltsbezogenen zweiten Datensegmenten (S2) einer zweiten Datendatei (D2), insbesondere nach einem der vorhergehenden Ansprüche, gekennzeichnet durch ein Synchronisationsmodul (MS) zum Ausgeben erster und zweiter Datensegmente (S1, S2) jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge (R1, R2), wobei auf Grundlage

einer vorgebbaren Zuordnungsvorschrift (Z) für die ersten und zweiten Datensegmente (S1, S2) jedes zweite Datensegment (S2) zusammen mit einem dazugehörigen ersten Datensegment (S1) ausgegeben wird.

Zusammenfassung

Verfahren sowie Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei

Die Erfindung betrifft ein Verfahren sowie eine Vorrichtung zum Synchronisieren von inhaltsbezogenen ersten Datensegmenten einer ersten Datendatei und inhaltsbezogenen zweiten Datensegmenten einer zweiten Datendatei, wobei die ersten und zweiten Datensegmente jeweils sequenziell entsprechend ihrer zeitlichen Reihenfolge derart ausgegeben werden, dass auf Grundlage einer vorgebbaren Zuordnungsvorschrift für die ersten und zweiten Datensegmente jedes zweite Datensegment zusammen mit einem dazugehörigen ersten Datensegment ausgegeben wird.

Figur 1

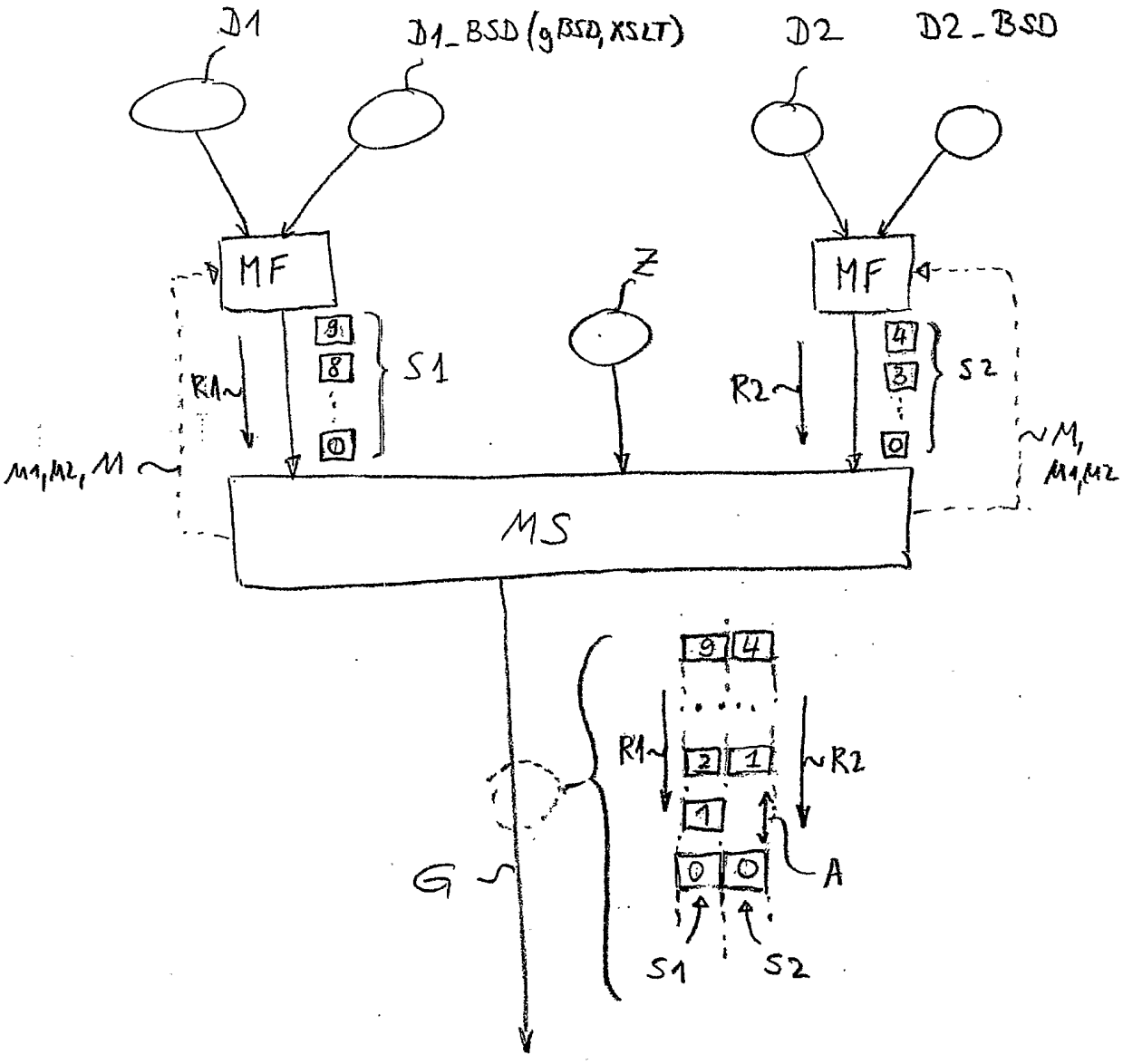

D1
D1_BSD (gBSD, XSLT)
D2
D2_BSD
MF
MF
Z
R1
S1
R2
S2
M1,M2,M
M,
M1,M2
MS
G
R1
R2
A
S1
S2

Fig 1:

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D1_BSD

```
<?xml version="1.0" encoding="UTF-8"?>
<dia:DIA xmlns="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS"
  xmlns:dia="urn:mpeg:mpeg21:2003:01-DIA-NS"
  xmlns:gbsd="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:mpeg:mpeg21:2003:01-DIA-gBSD-NS gBSSchema.xsd">
   <dia:Description xsi:type="gBSDType">
     <Header>
       <ClassificationAlias alias="MV4" href="urn:mpeg:mpeg4:video:cs:
syntacticalLabels"/>
       <DefaultValues addressUnit="byte" addressMode="Absolute" globalAddressInfo=
"Content/starwars.cmp"/>
     </Header>
     <gBSDUnit syntacticalLabel=":MV4:VO" start="0" length="4"/>
     <gBSDUnit syntacticalLabel=":MV4:VOL" start="4" length="22"/>          M1, M
     <gBSDUnit start="26" length="99983" marker="Start_1">
       <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="26" length="2877"/>  <- X1
       <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="2903" length="64"/>
       <gBSDUnit syntacticalLabel=":MV4:B_VOP" start="2967" length="17"/>
       <gBSDUnit syntacticalLabel=":MV4:B_VOP" start="2984" length="16"/>
       <!--... and so on ... -->
       <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="98296" length="1713"/>
     </gBSDUnit>                                                          M2
     <gBSDUnit start="100009" length="68022" marker="Start_2">
       <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="100009" length="1825"/>  <- X2
       <gBSDUnit syntacticalLabel=":MV4:P_VOP" start="101834" length="1780"/>
       <!--... and so on ... -->
       <gBSDUnit syntacticalLabel=":MV4:I_VOP" start="166802" length="1229"/>
     </gBSDUnit>
     <!--... and so on ... -->
   </dia:Description>
 </dia:DIA>
```

Fig-2

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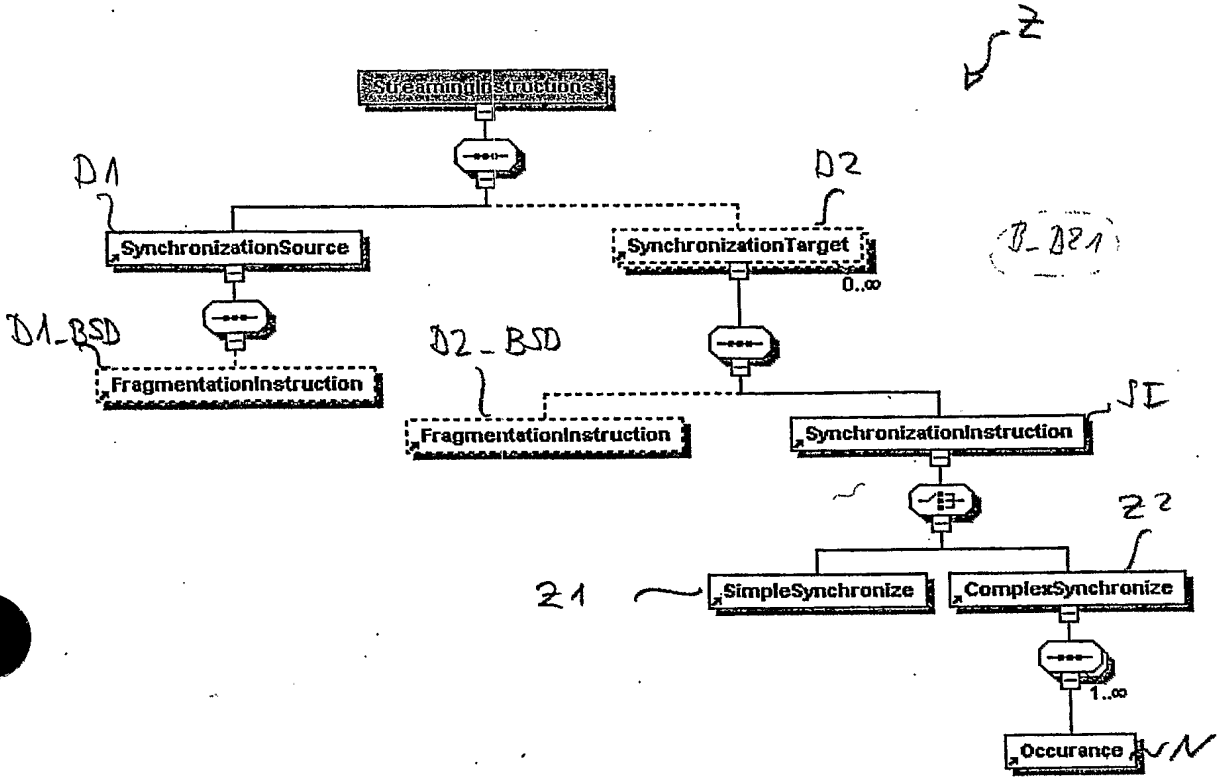
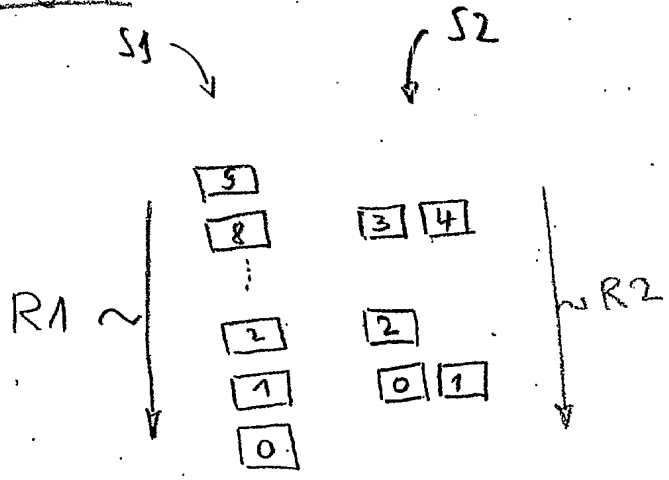


Fig 3:

Fig 5:



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Fig 4 :

2,2k

```
<StreamingInstructions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="streaming_instructions.xsd">
    <SynchronizationSource type="urn:mpeg:mpeg4:audio" uri="bsac_22khz_101.raw">
        <FragmentationInstruction type="gbsd:gBSDType"
uri="gBSD_InstructionTrack.xml"/>
    </SynchronizationSource>
    <SynchronizationTarget type="text/xml" uri="bsac_22khz_101.xml">
        <FragmentationInstruction type="http://www.w3.org/1999/XSL/Transform"
uri="fragment_gBSD.xslt"/>
        <SynchronizationInstruction>
            <!-- One Target AU maps to each 16th Source AU -->
21          <SimpleSynchronize frequency="16"/>
        </SynchronizationInstruction>
    </SynchronizationTarget>
    <SynchronizationTarget type="text/xml" uri="bsac_aqos_22khz_101.xml">
        <FragmentationInstruction type="http://www.w3.org/1999/XSL/Transform"
uri="fragment_aqos.xslt"/>
        <SynchronizationInstruction>
22          <ComplexSynchronize>
                <!-- The first two synchronization target fragments map to the first
                     synchronization source fragment -->
                <Occurance value="0"/>
                <Occurance value="0"/>
                <!-- The following four synchronization target fragments map to the
                     second synchronization source fragment -->
                <Occurance value="1"/>
                <Occurance value="1"/>
                <Occurance value="1"/>
                <Occurance value="1"/>
            </ComplexSynchronize>
        </SynchronizationInstruction>
    </SynchronizationTarget>
</StreamingInstructions>
```

B_D1

B_D21

B_D22

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/918,276	Filing Date 01/21/2009	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			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 $250 ($125 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			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	10/11/2007	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 17	Minus	** 20	= 0	X $ =		OR	X $50=	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $ =		OR	X $210=	0
	☐ 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	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	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".

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Legal Instrument Examiner:
/VICTOR c. BARLOW/

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