

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TIKTOK INC.,
Petitioner,

v.

NTECH PROPERTIES, INC.,
Patent Owner.

Case No. IPR2024-01343

U.S. Patent No. 9,923,947

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,923,947**

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. MANDATORY NOTICES	2
A. Real Party-In-Interest	2
B. Related Matters.....	2
C. Counsel and Service Information	3
D. Payment of Fees	3
E. Requirements for Inter Partes Review	3
III. GROUNDS	4
IV. BACKGROUND	4
A. State of the Art	4
B. Asserted Prior Art.....	6
1. Whitehead (EX1003)	6
2. Cristofalo (EX1004).....	7
3. Marcus '904 (EX1005)	9
4. Marcus '156 (EX1008)	10
C. '947 patent.....	11
1. Priority Date	11
2. Prosecution History (EX1019).....	11
3. '947 Patent (EX1001)	12
V. PERSON OF ORDINARY SKILL	14
VI. CLAIM CONSTRUCTION	14
VII. GROUNDS	15
A. Ground 1: Whitehead	15
1. Claim 1	15
2. Claim 2: <i>The method according to claim 1, wherein the element comprises at least one of media clips, sidebars, overlays, audio elements, animation elements, and</i>	

	<i>graphical elements residing/displaying within or outside of a player region of the client device</i>	34
B.	Ground 2: Whitehead and Marcus '904	35
	1. Motivation to Combine & Reasonable Expectation of Success	35
	2. Analysis.....	37
C.	Ground 3: Cristofalo and Marcus '904	38
	1. Motivation to Combine & Reasonable Expectation of Success	38
	2. Claim 1	41
	3. Claim 2: <i>The method according to claim 1, wherein the element comprises at least one of media clips, sidebars, overlays, audio elements, animation elements, and graphical elements residing/displaying within or outside of a player region of the client device</i>	52
D.	Secondary Considerations	53
VIII.	NO BASIS FOR DISCRETIONARY DENIAL	54
A.	35 U.S.C. § 325(d) Supports Institution.....	54
B.	<i>Fintiv</i> Supports Institution.....	54
	1. Overlap Between Issues	54
	2. Likelihood of a Stay	55
	3. Proximity of the Court's Trial Date to a FWD	55
	4. Investment in the Parallel Proceeding	56
	5. Whether the Petitioner and the Defendant in the Parallel Proceeding are the Same Party	56
	6. Other Circumstances, that Impact the Board's Exercise of Discretion, Including the Merits	56
IX.	CONCLUSION.....	56

EXHIBIT LIST

Ex.	Description
EX1001	U.S. Patent No. 9,923,947 (“’947 patent”)
EX1002	Declaration of Kevin Almeroth, Ph.D.
EX1003	U.S. Pat. 8,555,318 (“Whitehead”)
EX1004	U.S. Pat. Pub. No. 2002/0152117 (“Cristofalo”)
EX1005	U.S. Pat. Pub. No. 2006/0015904 (“Marcus ’904”)
EX1006	U.S. Patent No. 6,177,931
EX1007	Int’l Publ. No. WO 00/40021 (“Montie”)
EX1008	U.S. Pat. No. 6,032,156 (“Marcus ’156”)
EX1009	Provisional Application for U.S. Pat. No. 9,923,947 (U.S. Prov. Appl. No. 60/934,456)
EX1010	D. Wilkerson, “ACTV hopes to steal print's thunder” (Dec. 8, 2000)
EX1011	Amended Complaint in <i>NTECH Properties, Inc. v. ByteDance Ltd. et al.</i> , No. 2:24-cv-00130 (E.D. Tex.)
EX1012	Ben Hammersley, “Audible revolution” (Feb. 11, 2004)
EX1013	U.S. Pat. No. 6,388,714
EX1014	U.S. Pat. No. 7,467,398
EX1015	Verizon, “Verizon Unlocks Full Potential of Fiber-Based FiOS Internet and Video Services With Advanced 100-Mbps Broadband Home Router” (June 28, 2006)
EX1016	Prosecution History for U.S. Pat. No. 8,145,704
EX1017	Prosecution History for U.S. Pat. No. 8,886,753

Petition for *Inter Partes* Review
U.S. Patent No. 9,923,947

EX1018	Prosecution History for U.S. Pat. No. 9,215,261
EX1019	Prosecution History for U.S. Pat. No. 9,923,947
EX1020	List of Recent Expert Witness Engagements of Dr. Kevin Almeroth
EX1021	Curriculum Vitae of Dr. Kevin Almeroth
EX1022	R. Gelles-Watnick, “Americans’ Use of Mobile Technology and Home Broadband,” Pew Research Center (Jan. 31, 2024)

LIST OF CHALLENGED CLAIMS

Claim	Limitation
1[pre]	A method of generating customized media programming, comprising:
1[a]	providing by an aggregator, to a client device associated with a user, a list of media feeds available from at least one publisher, wherein each said media feed comprises a plurality of media elements selected from audio media elements, visual media elements, and combinations thereof;
1[b]	receiving by the aggregator from the client device a selection identifying at least one of the media feeds;
1[c]	providing, to a publisher from the aggregator, the media feed selection received from the client device;
1[d]	analyzing, by the publisher, user information included in the media feed selection;
1[e]	inserting into media programming based on a publisher-initiated feed responsive to the media feed selection, based on the user information, an element based on at least one of positioning, frequency, type, demographic targeting, geo-targeting and psychographic targeting;
1[f]	providing, to the client device, the media programming; and
1[g]	dynamically updating the element in the media programming responsive to additional user information provided by the aggregator.
2	The method according to claim 1, wherein the element comprises at least one of media clips, sidebars, overlays, audio elements, animation elements, and graphical elements residing/displaying within or outside of a player region of the client device.

I. INTRODUCTION

The '947 patent is directed to generating and updating “media programming” based on a user “selection” and “user information.” This was far from a new concept in June 2007, when PO filed the provisional application that '947 patent claims priority from. Television providers have been customizing programming for users in specific geographic areas since the 1970s, and techniques for generating custom “virtual channels” based on an individual “user profile” were known at least by the 1990s. This trend accelerated in the early 2000s as computer technology reached speeds sufficient for streaming video over the Internet to individual users. By June 2007, the technological landscape was comparable to today, with Netflix streaming, YouTube, and Amazon Prime already available to consumers.

The only alleged point of novelty in the '947 patent was to arbitrarily divide the processing involved in generating such “media programming” between an “*aggregator*” (e.g., a “web server” or an “electronic program guide”) that provides a UI and a “*publisher*” (e.g., another “web server” or a “cable provider”) that transmits the custom “media programming.” The '947 patent does not, however, disclose any technical innovation for implementing this basic division of labor.

Moreover, even the '947 patent’s “*aggregator*”/“*publisher*” structure is not new. For example, Whitehead (filed by Verizon) discloses a “content processing device” and “mixing server” that work together to generate “one or more custom

media channels” (“*media programming*”). Cristofalo (filed by ACTV) similarly discloses a “transmitting system” and “receiving system.” For **Ground 1**, Whitehead renders obvious all claims of the ’947 patent. For **Ground 2**, Whitehead is combined with Marcus ’904, which has the same named inventor and assignee as the ’947 patent and discloses many ’947 patent claim limitations verbatim. For **Ground 3**, the combination of Cristofalo and Marcus ’904 also renders obvious the ’947 patent claims.

Accordingly, Petitioner respectfully requests that the Board institute this IPR and find all claims of the ’947 patent invalid.

II. MANDATORY NOTICES

A. Real Party-In-Interest

The real parties-in-interest for Petitioner are TikTok Inc., Bytedance Ltd., Bytedance Pte. Ltd., and TikTok Pte. Ltd.

B. Related Matters

The ’947 patent was only asserted in *NTECH Properties, Inc. v. ByteDance Ltd. et al.*, Case No. 2:24-cv-00130 (E.D. Tex., filed Feb. 23, 2024).

The ’947 patent is in the same family as U.S. Patent Nos. 8,145,704, 8,886,753, and 9,215,261, which have also been asserted in that case. Petitioner is concurrently filing IPR petitions against these family members.

C. Counsel and Service Information

Electronic service may be made on the email addresses identified below and in the accompanying Power of Attorney.

LEAD COUNSEL	BACK-UP COUNSEL
James M. Glass (Reg. No. 46729) jimglass@quinnemanuel.com QUINN EMANUEL URQUHART & SULLIVAN, LLP 51 Madison Avenue, 22 nd Floor New York, NY 10010 Tel: (212) 849-7000	Ognjen Zivojnovic (Reg. No. 69,516) ogizivojnovic@quinnemanuel.com QUINN EMANUEL URQUHART & SULLIVAN, LLP 50 California Street, 22nd Floor San Francisco, California 9411 Tel: (415) 875-6600 Gavin Snyder (<i>pro hac vice</i> to be requested upon grant authorization) gavinsnyder@quinnemanuel.com QUINN EMANUEL URQUHART & SULLIVAN, LLP 1109 First Avenue, Suite 210 Seattle, Washington 98101 Tel: (206) 905-7000

D. Payment of Fees

The Office is authorized to charge the fee required for this Petition (any any additional fees) to Deposit Account No. 50-5708.

E. Requirements for Inter Partes Review

Petitioner certifies that the '947 patent is available for *inter partes* review, that Petitioner is not barred or estopped, and that 35 U.S.C. §§315(a)-(b) is inapplicable.

III. GROUNDS

Ground	Basis	Reference(s)	Claims
1	§103	Whitehead	1-2
2	§103	Whitehead and Marcus '904	1-2
3	§103	Cristofalo and Marcus '904	1-2

IV. BACKGROUND

A. State of the Art

Since the early days of radio and television broadcasting, media providers have sought to understand their audience and cater to their preferences. EX1002 ¶56. By the 1970s, television programming became further customizable via the advent of local programming insertion. *Id.* Cable providers would dedicate slots within their national programming for local affiliates to insert their own programming on a market-by-market level. *Id.*

Programming became customizable on an individual subscriber level in the early 1990s with the introduction of electronic program guides (EPGs). EX1002 ¶57. With EPGs, a user was able to browse a menu of available television programming and tune to a particular program by selecting its program listing. In addition, EPGs could automatically tune to channels based on user profile data, thereby creating custom media programming. *Id.* For example, U.S. Pat. No. 6,177,931 (filed in 1998, issued Jan. 23, 2001, § 102(b) art) describes an EPG that monitors user interactions to generate viewer profile information, and then uses that information to automatically tune to a particular advertising channel during a commercial break.

EX1002 ¶57, EX1006 at 28:11-35:36. As another example, U.S. Pat. No. 8,813,122 (filed in 1999, published July 6, 2000, § 102(b) art) describes generating a “virtual channel” of programming specifically selected based on the user’s profile and then automatically tuning to programming according to a defined schedule. EX1002 ¶57, EX1007 at 5-6.

The next step in the evolution of custom media programming was brought by advances in computer technology. EX1002 ¶58. By the early 1990s, most components of the modern Internet were in place—including web servers that support HTTP over TCP/IP traffic—and codecs for transmitting video over computer networks (such as MPEG) had also been standardized. Importantly, unlike broadcast technology, TCP/IP permits a web server to receive a request from a specific user and respond to that user’s request with individualized custom media programming. *Id.*

One limiting factor was that most households in the 1990s did not have sufficient Internet speeds to support video streaming. Standard definition video requires about 0.5 – 1.5 Mbps. EX1002 ¶59. In the 1990s, only 56 kbps dial-up was available to most U.S. households with Internet access. *Id.* This changed with the introduction of broadband Internet connections. *Id.* In 2000, only 1% of U.S. households had broadband Internet subscriptions. *Id.* By 2007, that had grown to about 50%. *Id.*

This rendered transmitting video programming over the Internet commercially desirable, leading to a rapid rise in Internet-based media companies. EX1002 ¶60. For example, YouTube was founded in 2005, Amazon Prime debuted in 2006, and Netflix launched its streaming service in January 2007. *Id.*

B. Asserted Prior Art

With the rise in commercial interest in transmitting media programming over the Internet came a corresponding influx of patent applications on techniques for generating and updating custom media programs based on user selections and user information. EX1002 ¶61.

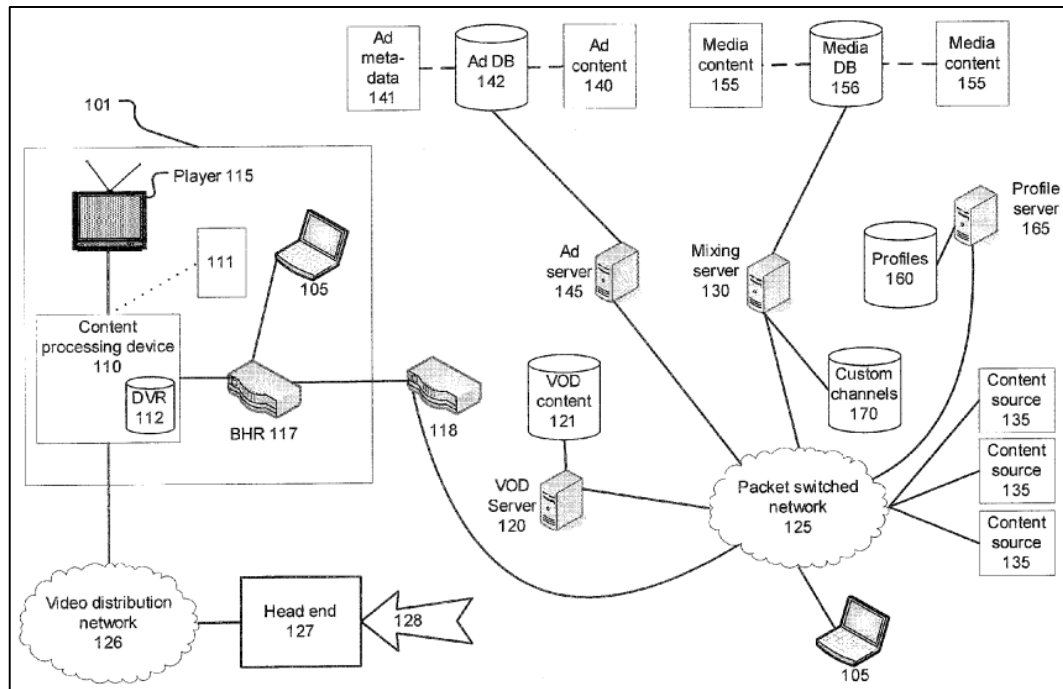
1. Whitehead (EX1003)

In 2005-2006, Verizon expanded its fiber-based broadband Internet and video services, allowing its customers to stream videos at speeds of up to 30 Mbps and introduced its “FiOS TV server.” EX1015, EX1002 ¶62. Recognizing the potential of this expansion of broadband Internet and video services, Verizon filed the Whitehead application on Dec. 6, 2006. *Id.* Whitehead published on June 12, 2008 and is prior art under 35 U.S.C. § 102(e). EX1002 ¶62, EX1003. Whitehead issued on October 8, 2013. EX1003.

Whitehead describes “creat[ing] a custom media channel based on [a user] profile” and “provid[ing] the custom media channel upon a request from a user, wherein the custom media channel includes more than one item of multimedia

content.” EX1003 at Abstract, EX1002 ¶63. Whitehead’s system is shown in its

Figure 1:



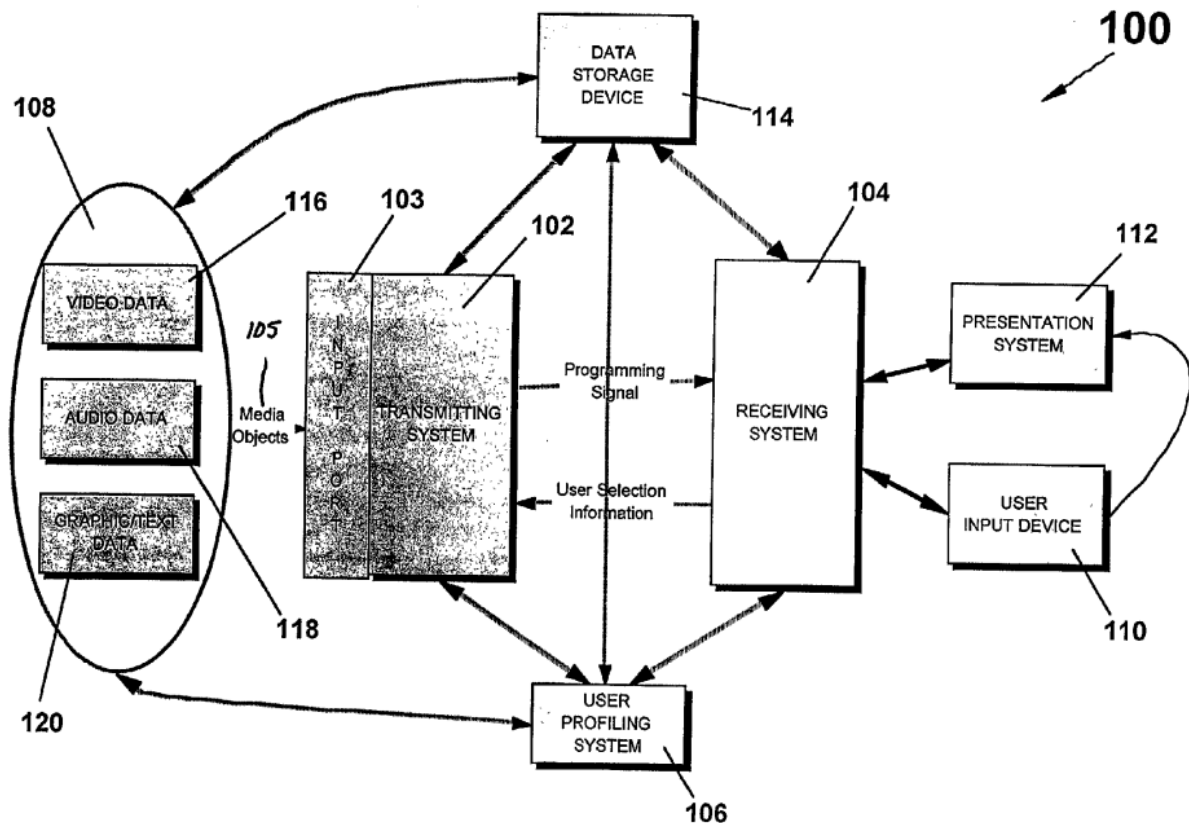
A mixing server 130 creates custom media channel 170 based on a profile 160 for that channel and metadata on multimedia content available from different content sources 135. EX1002 ¶64. The mixing server 130 also includes advertisements 140 in custom media channel 170. *Id.* The custom media channel 170 is then transmitted to content processing device 110 for playback on player 115. *Id.*

2. Cristofalo (EX1004)

ACTV developed technology for targeting advertisements to specific users by “trigger[ing] a set-top box to switch to the appropriate commercial.” EX1010, EX1002 ¶65. This functionality was deployed in early 2001 in partnership with

AT&T. EX1010, EX1002 ¶65. ACTV also filed an application on this technology on April 12, 2001, which was published as U.S. Pat. Apl. Pub. No. 2002/0152117 (“Cristofalo”) on October 17, 2002. *Id*, EX1004. Cristofalo is prior art under 35 U.S.C. §102(b). *Id*.

Cristofalo describes “[a] system and process for targeting programming (including, but not limited to, advertising) to users by utilizing media objection to provide specific content to a user, or groups of users, based upon profiling information.” EX1004 at Abstract, EX1002 ¶66. Cristofalo’s system is shown in its Figure 1:

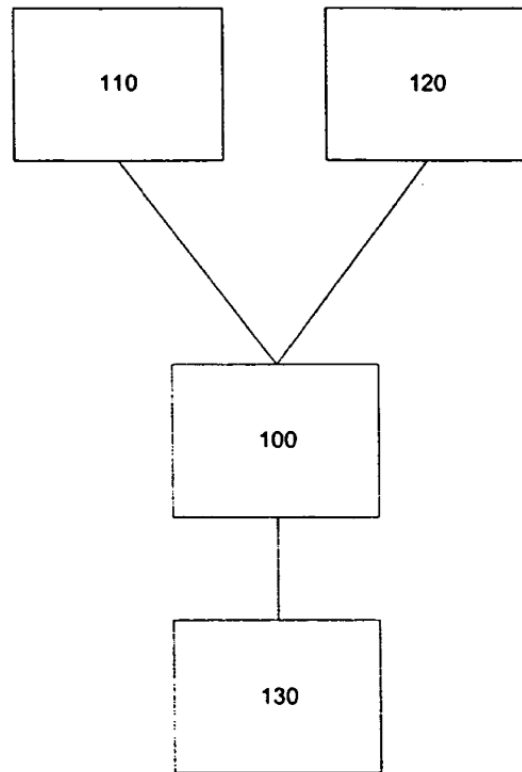


Cristofalo teaches that media objects can be targeted to specific users at transmitting system 102, receiving system 104, or a combination of the two. EX1004 ¶49, EX1002 ¶67. For example, transmitting system 102 may modify a commercial for specific markets or groups of users. EX1004 ¶¶35, 47; EX1002 ¶67. Or, receiving system 104 may receive multiple, multiplexed media objects and select the appropriate media object for inclusion in the programming. EX1004 ¶36; EX1002 ¶67.

3. Marcus '904 (EX1005)

Marcus '904 was published on January 19, 2006. EX1005, EX1002 ¶68. Marcus '904 is thus prior art under at least 35 U.S.C. §102(b). *Id.* Marcus '904 identifies the same sole named inventor (Dwight Marcus) and assignee (NTECH) as the challenged '947 patent. *Id.*

Marcus '904 describes a custom program assembled by a “receiver 100,” and from content obtained from “a first media source 110 and a second media source 120.” EX1005 ¶31; EX1002 ¶69, *see also* EX1005 ¶30 (“[M]edia distribution systems described in [Marcus '156], herein incorporated by reference, are modified to receive media streams from sources in addition to the preexisting database of media.”); *see also id.* at Fig. 1:



4. Marcus '156 (EX1008)

U.S. Pat. No. 6,032,156 (“Marcus '156”) is incorporated by reference in both Marcus '904 and the '947 patent. EX1008, EX1002 ¶70. Marcus '156 was issued on February 29, 2000. *Id.*

Marcus '156 describes delivering a custom media program to a user. EX1008 at Abstract; EX1002 ¶71. The system selects “[m]edia elements” in response to a user request for media programming, and those elements are then assembled into a temporal sequence. *Id.* Marcus '156 relies on “tags” to implement this process, including “content tags” containing “information identifying the content of the clip” and “control tags” defining how clips are assembled. EX1008 at 3:2-13, 5:3-39;

EX1002 ¶71. These tags are used in conjunction with a database of “viewer information” to select clips for the media programming and create “customized programming.” EX1008 at 10:9-20; EX1002 ¶71. This “customized programming” is then delivered to the user over the Internet as a “concatenated stream.” EX1008 at 3:44-46, 11:1-10; EX1002 ¶71.

C. '947 patent

1. Priority Date

PO filed the application for the '947 patent on December 14, 2015. EX1002 ¶35. The '947 patent is a continuation application of U.S. Patent Application No. 14/497,728, filed Sep. 26, 2014 and issued as U.S. Pat. No. 9,215,261, which is a continuation of U.S. Patent Application No. 13/428,228, filed Mar. 23, 2012 and issued as U.S. Pat. No. 8,886,753, which is a continuation of U.S. Patent Application No. 12/138,925, filed Jun. 13, 2008 and issued as U.S. Pat. No. 8,145,704, which claims priority to U.S. Provisional Patent Application No. 60/934,456, filed Jun. 13, 2007. EX1002 ¶35; EX1001; EX1009. The “Detailed Description” in this provisional application consisted of less than 40 paragraphs and a single figure, which eventually became Figure 1 of the '947 patent. EX1009; EX1002 ¶¶35, 39.

2. Prosecution History (EX1019)

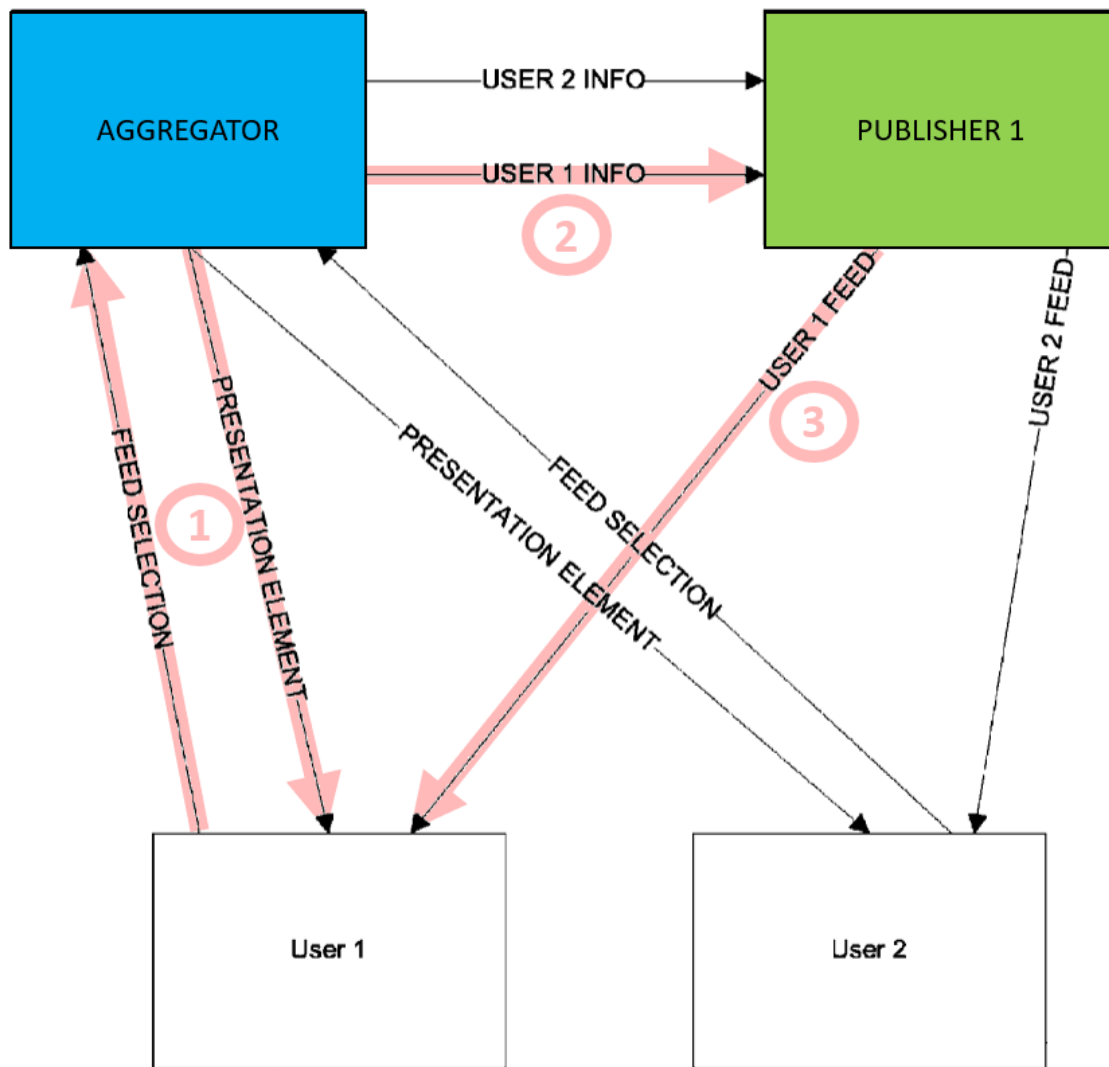
The Examiner rejected the pending claims of the '947 patent application twice as anticipated or obvious. EX1019 at 86-89, 125-129; EX1002 ¶40. Eventually, applicant substantially amended the claims. EX1019 at 141; EX1002 ¶40. Applicant

then argued the prior art does not disclose that “the publisher can receive information about a user’s [geo]graphic location and provide an element (e.g., a sidebar) based on that location (e.g., an ad for a local restaurant)” and “continually updat[ing] the element based on updated information.” EX1019 at 139; EX1002 ¶40. The Examiner allowed the claims. EX1019 at 152-157; EX1002 ¶41, *see also* EX1002 ¶¶42-46.

3. '947 Patent (EX1001)

The '947 patent specification relies on long-existing technologies, such as “the Internet,” “TCP/IP protocol,” and “MPEG-3 format for video.” EX1001 at 4:15-16, 14:48-58; EX1002 ¶36. In addition, like the Marcus '904 publication before it, the '947 patent specification relies on Marcus '156 patent for all selecting, ordering, and assembling of media programming. EX1001 at 1:26-31, 5:54-61, 9:39-49, 9:65-10:2, 10:36-38; EX1002 ¶36.

The '947 patent issued with just independent claim and dependent claim 2. Claims 1-2 are directed to the concept of generating custom media programming using an “*aggregator*” and a “*publisher*.” EX1002 ¶37. These components are shown in the '947 patent’s Figure 1:



Claims 1-2 recite four basic steps. EX1002 ¶38. **Step 1:** The *aggregator* provides a user interface presenting available media feeds and receives a user selection of one of those media feeds. *Id.* **Step 2:** The *aggregator* then provides the user selection and user profile information to the *publisher*. *Id.* **Step 3:** The *publisher* generates custom media programming comprising the selected media feed and advertising or other media elements and provides the custom media

programming to the user. *Id.* **Step 4 (not shown in Fig. 1):** The *publisher* dynamically updates the inserted advertising or mother media elements based on additional user profile information from the *aggregator*. *Id.*

V. PERSON OF ORDINARY SKILL

A person of ordinary skill in the art at the time of the '947 patent ("POSITA") had at least a Bachelor of Science in electrical engineering, computer engineering, or similar fields and at least two years of practical experience in the field of media processing and/or transmission. EX1002 ¶¶47-50. More education can supplement for less practical experience, and vice versa. *Id.*

Petitioner's expert, Dr. Almeroth, exceeded this level by the priority date. EX1002 ¶50.

VI. CLAIM CONSTRUCTION

No express constructions are required to find the '947 patent claims invalid; however, Petitioner identifies and addresses the plain meaning of certain terms in the analysis for the presented Grounds. EX1002 ¶¶51-53.

VII. GROUNDS

A. Ground 1: Whitehead

1. Claim 1

- (a) **1[pre]: *A method of generating customized media programming, comprising:***

Whitehead discloses system 100 for “receiving a video signal from a network and providing programming such as video to media player 115.” EX1003 at 2:4-6, 2:7-16; EX1002 ¶72.

- (b) **1[a][i]: *providing by an aggregator, to a client device associated with a user, a list of media feeds available from at least one publisher***

Whitehead discloses **content processing device 110**, which is the claimed “**aggregator**,” and **mixing server 130**, which is the claimed “**publisher**.”¹ EX1002 ¶¶73-82.

¹ References to the '947 patent claim language are bold and italicized. Emphasis is bolded but not italicized. Emphasis is added unless otherwise indicated.

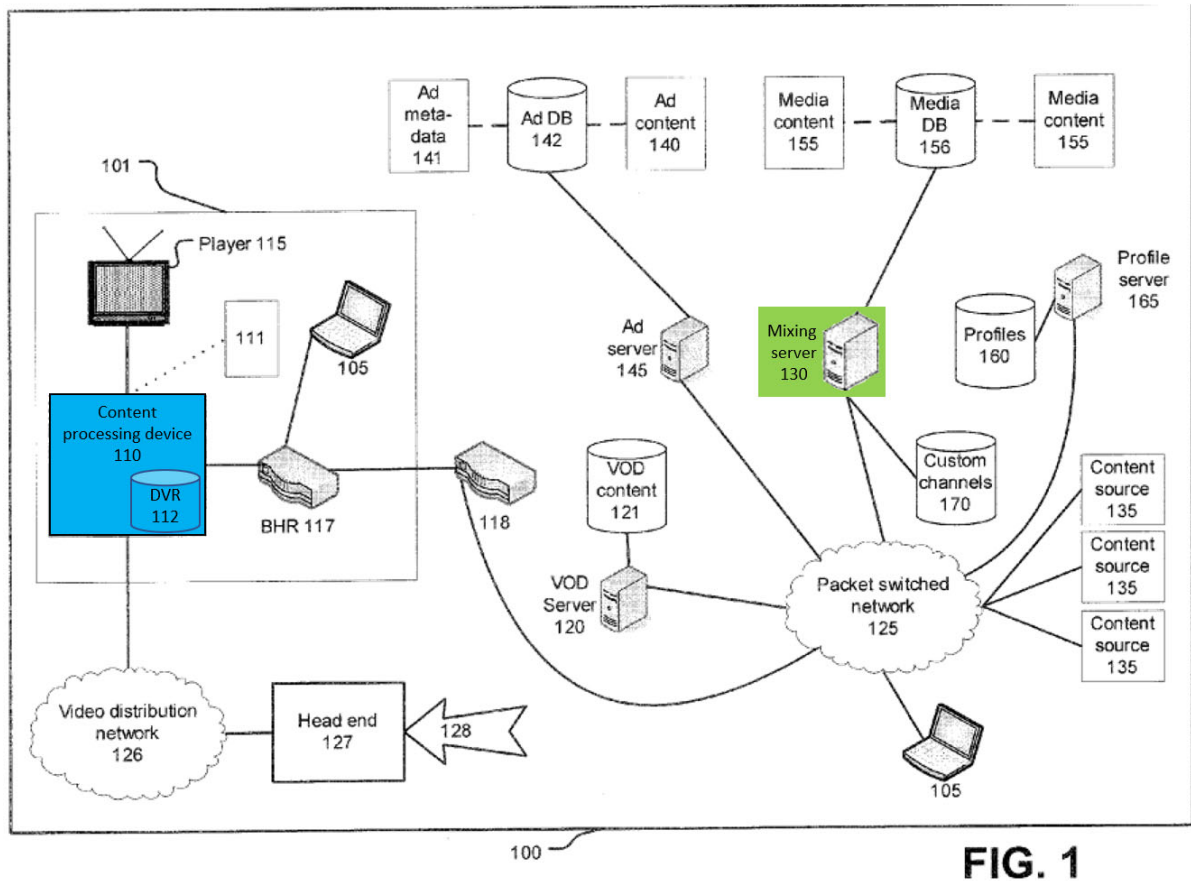


FIG. 1

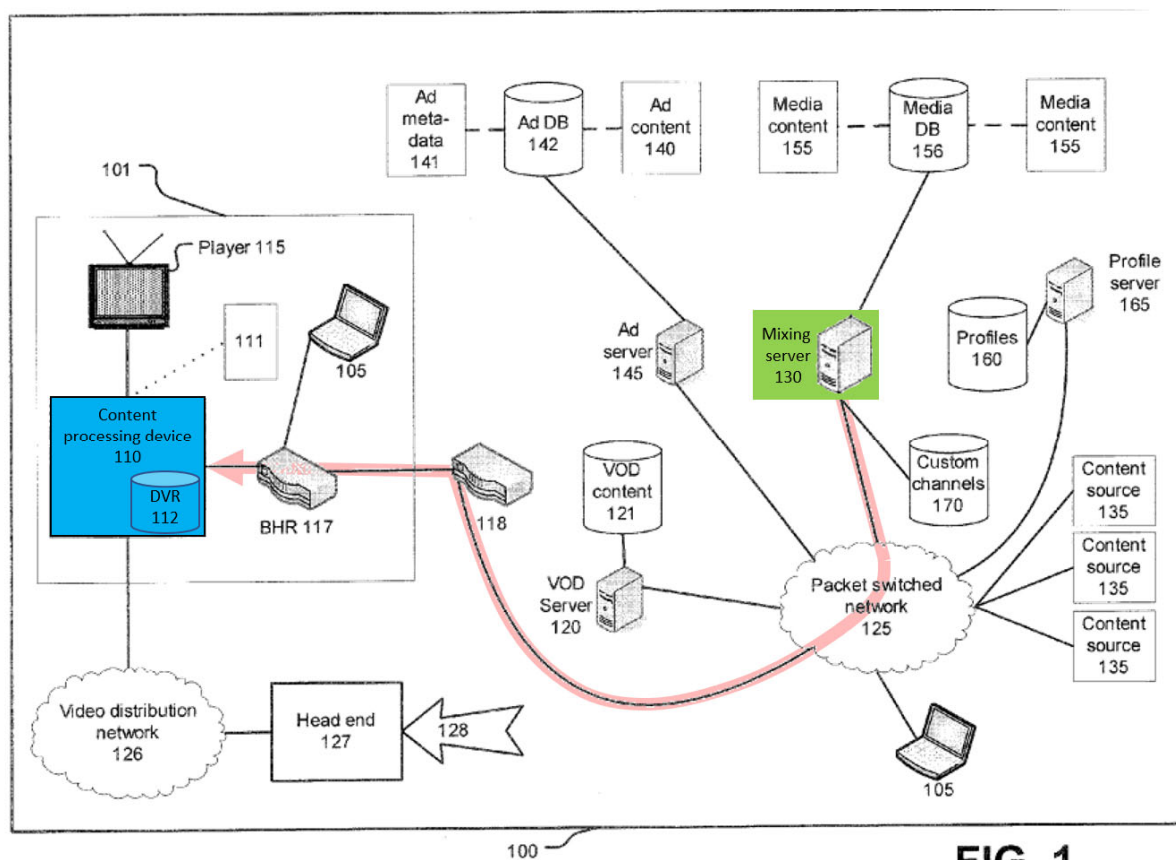
The '947 patent specification describes an “*aggregator*” as “provid[ing] a presentation element”—i.e., a user interface—“to user 1 120 and 2 130” for different media feeds. EX1001 at 2:53-56, 3:16-29; EX1002 ¶74. Whitehead similarly discloses that its **content processing device 110** presents a menu of media programming available from different sources. EX1002 ¶74. For example, Whitehead discloses that its **content processing device 110** “performs operations relating to generating a user interface, e.g., that is displayed in media player 115.” EX1003 at 2:60-3:7; *see also* EX1003 at 15:16-22; EX1002 ¶74. A user may then “browse a menu of video-on-demand-options displayed on media player 115.”

EX1003 at 3:59-4:9, 6:47-7:2. The user may also use **content processing device 110** to “select a channel ... associated with a custom media channel 170.” *Id.* at 15:23-41; *see also id.* at 18:47-62. Each of these custom media channels 170 includes content from one or more different content sources 135, and a collection of custom media channels thus covers multiple different content sources 135. *Id.* at 3:14-28, 5:56-6:9, 7:3-18; EX1002 ¶74.

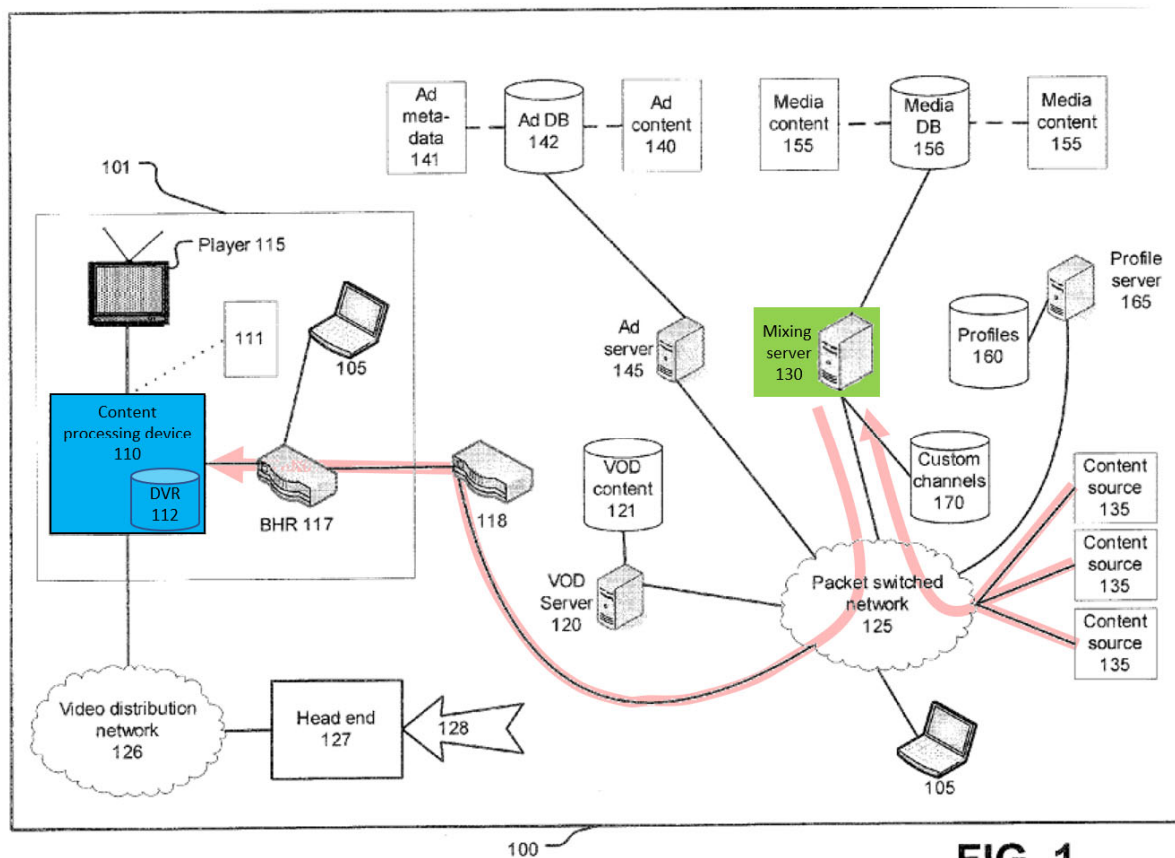
The '947 patent describes the claimed “***publisher***” as a “source[] of media content.” EX1001 at 6:18-30; EX1002 ¶75. The same is true for Whitehead’s **mixing server 130**: “A basic purpose of [Whitehead’s] **mixing server 130** is to assemble and deliver to **content processing device 110** one or more custom media channels.” EX1003 at 4:10-26; EX1002 ¶75. In addition, Whitehead’s **mixing server 130** may be “combined” with VOD server 120. EX1003 at 4:10-26; EX1002 ¶75. Thus, Whitehead’s **mixing server 130** is a source of media content (custom media channels 170 and content from VOD server 120) for **content processing device 110** and accordingly the claimed “***publisher***.” EX1002 ¶75.

Whitehead also discloses media player 115 that is either a stand-alone device or software running on computer 105 (“***client device***”) and that a user is interfacing with (“***associated with a user***”). EX1003 at 2:4-16, 2:31-39, 2:52-3:7, 3:59-4:9, 15:16-22; EX1002 ¶76.

Finally, Whitehead's **content processing device 110** provides to media player 115 (“*client device*”) for display a menu “indicat[ing] a plurality of custom media channels 170” (“*list of media feeds*”) that are available from **mixing server 130**. EX1003 at 2:60-3:7, 3:59-4:9, 4:45-52, 6:20-34, 10:46-67, 11:9-16, 11:40-58, 15:16-16:53, 18:47-62; EX1002 ¶77. Whitehead discloses or renders obvious this limitation under two mappings: the “*media feeds*” are either (1) custom media channels 170 made available by **mixing server 130** to **content processing device 110** (**Media Feed Mapping 1**); or (2) media content transmitted by content sources 135 to **mixing server 130** (**Media Feed Mapping 2**). EX1002 ¶77.



Whitehead’s menu of available custom media channels “*provid[es] ... a list of media feeds*” available from **mixing server 130** because each custom **media** channel 170, if selected, is “**streamed ... to content processing device 110.**” EX1003 at 8:42-64; EX1002 ¶78. Thus, custom media channels 170 are themselves the claimed “*media feeds.*” EX1002 ¶78.



Whitehead’s menu of available custom media channels “*provid[es] ... a list of media feeds*” available from **mixing server 130** because each custom media channel 170 generated by **mixing server 130** corresponds to a “*media stream*” from a different content source 135. EX1002 ¶79.

¶80. Each of Whitehead's plurality of custom media channels 170 can thus correspond to a different content source 135. EX1002 ¶80.

Second, Whitehead discloses that each content source 135 provides a "*media feed*." EX1002 ¶81. Whitehead discloses that "[c]ontent sources 135 may include a wide variety of sources," including sources that "broadcast" content "on a particular data at a particular time," *i.e.*, television channels. EX1003 at 5:9-23, 10:46-67; *see also* EX1003 at 2:52-59, 5:24-42; EX1002 ¶81. Television channels provide content as continuous feeds ("*media feeds*"). EX1002 ¶81.

To the extent PO argues that Whitehead's content sources 135 do not provide "*media feeds*," Whitehead renders this obvious. EX1002 ¶82. Television channels were a well-known source of media content even before the '947 patent's priority date. *Id.* Moreover, a POSITA would be motivated to use television channels as content sources 135. *Id.* For example, it would be desirable to maximize the number and variety of content sources, since having more sources and variety improves the likelihood of having the best media content in custom media channel 170. *Id.* As another, television channels are one of the most popular and abundant sources of media content, and many subscribers expect to have access to such content sources. *Id.* There would also be a reasonable expectation of success of using television channels as content sources 135. *Id.* Whitehead already discloses that media content 155 "provided by content sources 135" is "stored in a media database 156." EX1003

at 5:9-23; EX1002 ¶82. Thus, **mixing server 130** could store media content 155 from television channels in database 156 for subsequent inclusion in a custom media channel 170. EX1002 ¶82. Alternatively, Whitehead's **mixing server 130** could switch to the appropriate channels in real time as the media content 155 is being broadcast to generate custom media channel 170. *See* EX1006 at 32:61-33:8, EX1007 at 5-6; EX1002 ¶82.

- (c) **1[a][ii]: wherein each said media feed comprises a plurality of media elements selected from audio media elements, visual media elements, and combinations thereof**

Whitehead's **mixing server 130** receives multiple media content 155 ("*plurality of media elements*") from each content source 135 ("*media feed*" under **Media Feed Mapping 2**) and then combines advertising content 140 and media content 155 ("*plurality of media elements*") to create each custom media channel 170 ("*media feed*" under **Media Feed Mapping 1**). EX1003 at 4:27-44, 5:9-23, 8:65-9:29, 12:18-37; EX1002 ¶83. Whitehead further discloses that its media content 155 and advertising content 140 can be "video," "audio," or "multimedia" content ("*audio media elements, visual media elements, and combinations thereof*"). EX1003 at 4:27-44, 4:53-5:3, 5:9-42, 7:3-18; EX1002 ¶83.

- (d) 1[b]: *receiving by the aggregator from the client device a selection identifying at least one of the media feeds*

Whitehead's **content processing device 100** receives a user selection of one of these custom media channels 170 ("*a selection identifying at least one of the media feeds*") from media player 115 ("*client device*"). EX1003 at 4:45-52, 11:9-16, 11:40-58, 15:16-16:53, 18:47-62; EX1002 ¶84. This selection corresponds to selection of both the content source 135 corresponding to that custom media channel 170 ("*one of the media feeds*" under **Media Feed Theory 1**) and the custom media channel 170 itself ("*one of the media feeds*" under **Media Feed Theory 2**). EX1002 ¶84.

- (e) 1[c]: *providing, to a publisher from the aggregator, the media feed selection received from the client device*
- (f) 1[d]: *analyzing, by the publisher, user information included in the media feed selection*

Whitehead discloses or renders obvious that **content processing device 110** provides "*the media feed selection,*"² including "*user information,*" to **mixing server 130**. EX1002 ¶¶85-92. This "*media feed selection*" could be (1) a request

² This selection corresponds to selection of both the custom media channel 170 itself ("*media feed*" under **Media Feed Mapping 1**) and the content source 135 corresponding to that custom media channel 170 ("*media feed*" under **Media Feed Mapping 2**).

sent from **content processing device 110** directly to **mixing server 130** (Feed Selection Mapping 1), or (2) data sent by **content processing device 110** to profile server 165, and then from profile server 165 to **mixing server 130** (Feed Selection Mapping 2). *Id.*

(i) **Feed Selection Mapping 1: request from content processing device 110 to mixing server 130**

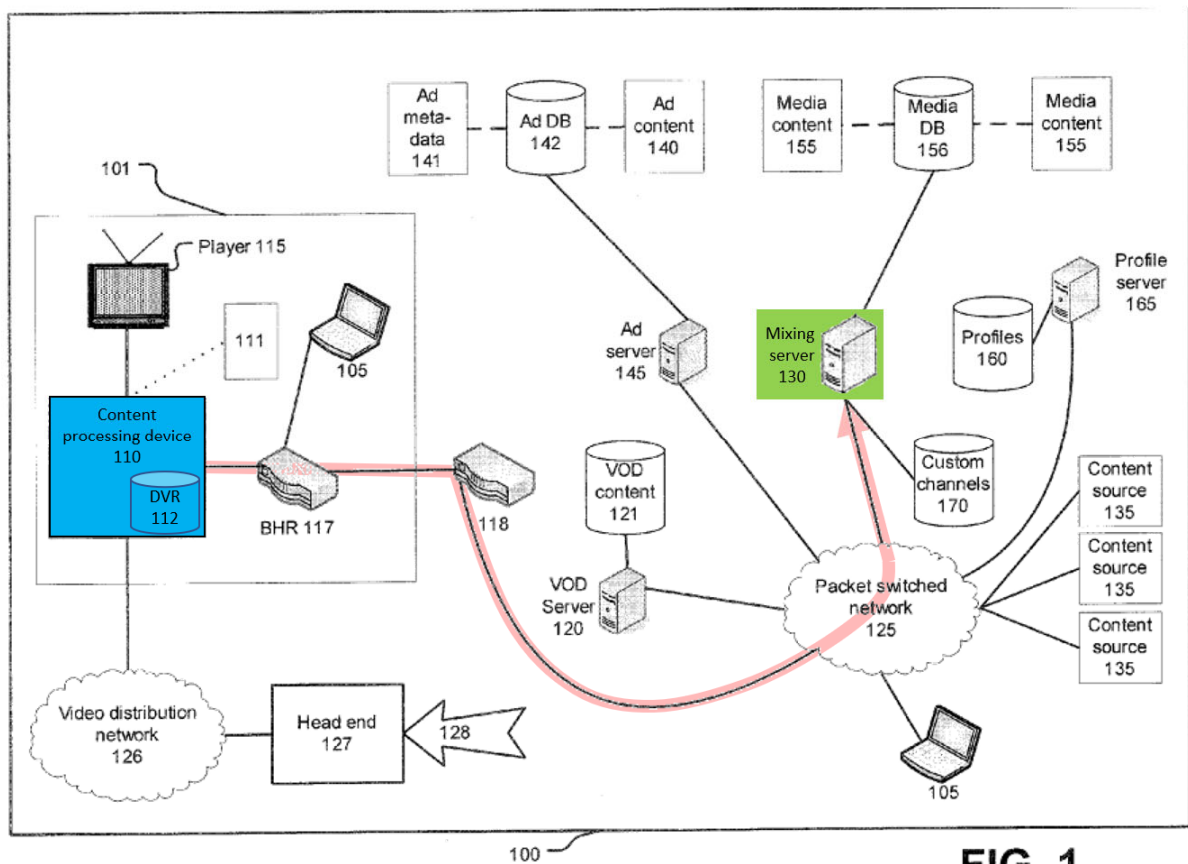


FIG. 1

Whitehead discloses that “[c]ontent processing device 110 may ... make requests to ... [mixing server] 130, etc. via network 125.” EX1003 at 3:40-51; *see also* EX1003 at 9:30-58; EX1002 ¶86. This request “trigger[s]” **mixing server 130**

“to create one or more custom media channels 170 based on one or more custom channel profiles 160” in “real-time or near real-time.” EX1003 at 11:40-12:17; EX1002 ¶86. Where the user has multiple custom media channels 170 to choose from (EX1003 at 11:9-16), this request necessarily identifies the selected custom media channel 170 (“*media feed selection*”). EX1002 ¶86. Otherwise, the **mixing server 130** would not know which custom media channel was selected by the user and thus should be created. EX1002 ¶86.

To the extent PO argues Whitehead does not disclose that its custom channel request from **content processing device 110** to **mixing server 130** includes data indicative of the selected custom media channel 170 (“*media feed selection*”) in its request to **mixing server 130**, Whitehead renders this obvious. EX1002 ¶87. **Mixing server 130** must know which custom media channel 170 the user selected to create that channel. EX1003 at 3:40-51, 11:40-58; EX1002 ¶87. An obvious implementation is for the **content processing device 110** to include an identifier or other data corresponding to the selected custom media channel 170 (“*media feed selection*”) in its request. EX1002 ¶87. Simply including this identifier in the request (rather than conveying it in some other manner) allows **mixing server 130** to locate the corresponding profile 160 faster and thereby facilitates creating the selected custom media channel 170 in real time or near-real-time. EX1003 at 11:40-58; EX1002 ¶87.

In addition, Whitehead renders obvious that the request from **content processing device 110** to **mixing server 130** (“*media feed selection*”) also includes “*user information*” that is then analyzed by **mixing server 130**. EX1003 at 11:40-12:17; *see also* EX1003 at 12:18-37 (“**mixing server 130** analyzes the custom channel profile 160”); EX1002 ¶88. **Mixing server 130** creates the custom media channel 170 in real time or near-real-time. EX1003 at 11:40-58; EX1002 ¶88. Processing efficiency is an important consideration in achieving that goal – too much delay retrieving user data would result in a custom media channel 170 that is no longer created in real time or near real time. Including at least some “*user information*,” such as “subject matter categories of interest to the user” (EX1003 at 7:3-18), in the request itself speeds up processing because **mixing server 130** would be able to start creating custom media channel 170 even before receiving the remainder of profile 160. EX1002 ¶88. Plus, some “*user information*,” such as username (EX1003 at 7:3-18), is helpful to quickly retrieving profile 160 in the first instance by, for example, using the username to identify a specific user, and then using other data to identify a specific profile 160 of that user (instead of having to search all profiles 160). EX1002 ¶88. Moreover, other “*user information*,” such as the user’s geographic location used for targeting advertisements and/or as the “geographic location of interest to the user” for content targeting is subject to change since computer 105 with media player 115 may be a mobile device (e.g., “notebook,

laptop, or handheld computer”). EX1003 at 2:52-59, 7:3-18, 7:19-43, 12:38-55; EX1002 ¶88. Rather than requiring the user to update profile 160 every time the user goes to different geographic location, the **content processing device 110** could automatically include the user’s geographic location (e.g., by looking up the geolocation of an IP address) in the request, thereby improving convenience and accuracy. EX1002 ¶88.

Another obvious design option would be to implement profile server 165 as part of **content processing device 110** and include the complete profile 160 (“*user information*”) in any request for custom media channel 170 (“*media feed selection*”). EX1002 ¶89. Whitehead already recognizes that various functionalities in Figure 1 can be combined or shifted between system components. EX1003 at 2:52-59, 4:10-26, 6:35-46, 15:16-22, 19:44-63; EX1002 ¶89. Maintaining profiles 160 on **content processing device 110** would simplify processing and communications, since it would eliminate the need for a separate profile server 165 or looking up specific sets of profiles a user of **content processing device 110** is permitted to update. EX1002 ¶89.

There would also be a reasonable expectation of success for including “*user information*” in Whitehead’s request from **content processing device 110** directly to **mixing server 130** (“*user information*”). EX1002 ¶90. Whitehead discloses using common communication protocols, such as TCP/IP, for communications

between **content processing device 110** and **mixing server 130**, and these protocols allow for the inclusion of a fair amount of data in each request (the maximum size of a single TCP packet is 64 KB, and 1.5 KB is a common MTU size), which would permit inclusion of “*user information*.” EX1002 ¶90. A 1.5 KB request could easily include data indicating a custom media channel selection, username, current geographic location, content source, and subject matter of interest. EX1002 ¶90. And there is no practical reason why the request would need to be limited to a single TCP packet, either. *Id.* Indeed, Whitehead already discloses that an entire “profile 160 [is] provided in [a] message” (EX1003 at 12:8-17), rendering obvious providing some or all of profile 160 (“*user information*”) in addition to data identifying the selected custom media channel 170 in a request message from **content processing device 110** to **mixing server 130** (“*media feed selection*”). EX1002 ¶¶90-91.

(“*one of the media feeds*” under **Media Feed Theory 2**). EX1002 ¶92. Moreover, updating the selected profile 160 also includes provision of “*user information*” included in that profile, such as a username, user interests, and playback capabilities to profile server 165. EX1003 at 5:56-6:9, 7:3-18; EX1002 ¶92. Whitehead’s profile server 165 then transmits a message to **mixing server 130** containing that profile 160 (“*user information*”), which analyzes profile 160 (“*user information*”) as part of creating custom media channel 170. EX1003 at 11:40-12:17; *see also* EX1003 at 12:18-37 (“**mixing server 130** analyzes the custom channel profile 160”); EX1002 ¶92. Thus, Whitehead’s **content processing device 110** transmits the “*media feed selection*,” including “*user information*,” in connection with creating or modifying a profile 160, and Whitehead’s **mixing server 130** receives and analyzes that same “*media feed selection*,” including “*user information*.” EX1002 ¶92.

- (g) 1[e]: *inserting into media programming based on a **publisher-initiated feed responsive to the media feed selection, based on the user information, an element based on at least one of positioning, frequency, type, demographic targeting, geo-targeting and psychographic targeting***

Responsive to the user selection of a custom media channel (“*the media feed selection*”) and based on profile 160 (“*user information*”), Whitehead’s **mixing server 130** triggers “process 400” for creating a custom media channel 170 (“*media programming*”). EX1003 at 11:38-39, 11:40-58, 12:8-17; EX1002 ¶93. As part of this process, **mixing server 130** first “instantiate[es]” (and thus “*initiate[s]*”) the

custom media channel 170 consisting of media content 155 (“*publisher-initiated feed*”). EX1003 at 4:53-5:3, 11:38-39, 12:38-55, 12:56-63; EX1002 ¶93. Media content 155 is selected based on “a wide variety of attributes,” including profile 160 (“*user information*”), “identity of a content source 135” (“*positioning*”), “the type of media content 155” (“*type*”), “a geographic location associated with media content 155” (“*geo-targeting*”), or other factors including “a subject matter associated with media content 155, e.g. sports, news, weather, entertainment, etc., [and] one or more keywords associated with the multimedia content 155.” EX1003 at 5:9-23, 12:18-37; EX1002 ¶93.

Mixing server 130 then inserts advertising content 140 (“*an element*”). EX1003 at 4:53-5:3, 12:38-55; EX1002 ¶94. Advertising content 140 is selected and inserted based on its association with “advertising metadata 141 sufficient to identify particular items of advertising content 140,” including according to “advertisers, ... rate paid for the advertisement, subject matter of the advertisement” (“*positioning*”), “categories of advertisement” (“*type*”), and “geographic association of the advertisement” (“*geo-targeting*”). EX1002 ¶94. Also, the advertising content 140 is “selected based on user data external to profile 160, such as a separate user profile maintained specifically for identifying and associating with users advertising content 160” (“*user information*”), where “such a profile might contain demographic information such as a user’s location, services subscribed to, etc.” (“*demographic*”).

targeting, geo-targeting and psychographic targeting). EX1003 at 12:38-55; EX1002 ¶94.

Furthermore, “policy control information may ... specify how and when to dynamically mix media and advertising content,” such as defining “a frequency-based rule (e.g., every 3rd item)” (“*element based on frequency*”). EX1003 at 8:65-9:29; EX1002 ¶95.

(h) 1[f]: *providing, to the client device, the media programming*

Whitehead’s **mixing server 130** “stream[s]” the assembled custom media channel 170 (“*media programming*”) to media player 115 (“*client device*”) via **content processing device 110**. EX1003 at 2:7-16, 8:42-64, 13:35-46, 15:16-22; EX1002 ¶96.

(i) 1[g]: *dynamically updating the element in the media programming responsive to additional user information provided by the aggregator*.

Whitehead discloses that, “while an item of media content 155 is being played, a portion of a GUI in playback device 115 that is used to display media channel 170 may provide a user with the opportunity to **provide feedback** concerning the item of media content 155 being played” (“*additional user information provided by the aggregator*”). EX1003 at 18:63-19:15; EX1002 ¶¶97-98. Provision of this user feedback “results in a modification to custom media channels 170 provided to the user following the provision of user feedback” (“*dynamically updating the element*

in the media programming responsive to additional user information”). EX1003 at 19:16-38; *see also* EX1003 at FIGS. 5-7; EX1002 ¶97.

To the extent PO argues that Whitehead does not disclose this limitation, it renders this limitation obvious. EX1002 ¶98. Whitehead has the technical building blocks in place, including updating profile 160 and custom media channel 170 (EX1003 at 10:40-45, 15:52-64) and incrementally transmitting files corresponding to a media channel (EX1003 at 8:42-64, 9:30-58), that allow the system to dynamically modify custom media channel 170 and advertising content 140 included therein (Fig. 2) based on real-time user feedback. EX1002 ¶98. A POSITA would appreciate that dynamic updating allows the system to better target advertising to a user’s preferences as the system learns more about those preferences or those preferences evolve, which in turn allows the system to charge advertisers more for better-targeted advertisements. EX1002 ¶98. For example, if a user has historically been interested in “baseball,” the system may include advertising content 140 directed to baseball tickets in the third slot in custom media channel 170, but if the user then provides feedback illustrating a lack of interest in media content in the first slot directed to baseball highlights and a high level of interest in media content in the second slot directed to basketball highlights, a POSITA would be motivated to update the advertising content 140 in the third slot to instead advertising basketball tickets. *Id.* And since Whitehead discloses receiving that feedback in real time and

sending each media content and advertising content 140 as individual files, there would be no technological challenge to implement this dynamic updating. EX1002 ¶98.

2. **Claim 2:** *The method according to claim 1, wherein the element comprises at least one of media clips, sidebars, overlays, audio elements, animation elements, and graphical elements residing/displaying within or outside of a player region of the client device.*

Whitehead's **mixing server 130** selects and combines "advertising content 140 [and] media content 155" ("*the element*") to create custom media channels 170. EX1003 at 4:27-44; EX1002 ¶¶99-102. The media content 155 and advertising content 140 include "video clips" ("*media clips*") and "known formats for audio content" ("*audio elements*"). EX1003 at 4:27-44; EX1002 ¶99.

Further, Whitehead's playback application provides to content processing device 110 "instructions for displaying and/or rendering on media player 115 what is referred to as an 'overlay menu'" where "the menu is overlaid on top of the playback of custom media channel 170 in the display of media player 115" also based on profile 160 ("*sidebars, overlays ... and graphical elements residing/displaying within or outside of a player region of the client device*"). EX1003 at 4:27-44; EX1002 ¶100. Moreover, Whitehead's profile 160 ("*user information*") includes "policy control information related to the retrieval and playback of channel 170." EX1003 at 5:56-6:9; EX1002 ¶100.

Finally, Whitehead renders obvious including “*animation elements*” in the custom media channel 170, since “[c]ontent sources 135 may include a wide variety of sources of multimedia content 155” (EX1003 at 5:9-23), which includes children’s television channels that broadcast many animated shows, and it would be desirable to include such children’s content to capture a larger potential user market. EX1002 ¶¶101-102.

B. Ground 2: Whitehead and Marcus ’904³

1. Motivation to Combine & Reasonable Expectation of Success

A POSITA would have modified Whitehead’s **mixing server 130** to incorporate Marcus ’904’s algorithm (running on Marcus ’904’s receiver) for receiving, selecting, ordering, and assembling different media streams (both for content and advertising) for at least the following reasons (EX1002 ¶¶103-109):

More choices: Having many different content sources to choose from when generating custom media programming is desirable because it makes it more likely the system will identify content best suited for a particular user. EX1002 ¶104. Similarly, additional advertising choices allow for more targeted advertising and/or an opportunity to maximize revenue. *Id.* Modifying Whitehead’s system to

³ All limitations of the challenged claims not expressly addressed in Ground 2 are disclosed or rendered obvious by Whitehead for the reasons in Ground 1.

incorporate the content and advertising sources described in Marcus '904 thus improves Whitehead's ability to target content and advertising to a particular user.
Id.

Incorporating Marcus '904's content and advertising sources would unlock new revenue sources for Whitehead: Marcus '904 states that it facilitates generating revenue from transmitting content from niche content and advertising sources. EX1005 ¶¶5-13; EX1002 ¶105. Cristofalo also discloses providing both content and advertising to users. EX1004 ¶¶29, 35-36; EX1002 ¶105. A POSITA would be motivated to use Marcus '904's content and advertising sources to unlock additional potential sources of revenue for Whitehead's system. EX1002 ¶105.

Incorporating aspects of Marcus '904's content selection and concatenation algorithm improves Whitehead's efficiency: Marcus '904 describes generating custom media programming by starting targeted content or advertising into a "primary" stream. EX1005 ¶¶48, 82-87, 148, 237, 251, 594; EX1002 ¶106. By starting with or having as fallback Marcus '904's "primary" stream, rather than individually selecting each piece of media content, Whitehead's system would need to select fewer pieces of media content for its custom media channel. EX1002 ¶106.

Similar field of art: Both Whitehead and Marcus '904 generate custom media programming based on a user profile. EX1003 at Abstract; EX1005 ¶¶82-87; EX1002 ¶107.

Whitehead already teaches different content sources (including broadcast sources) and focusing a custom media channel on a specific content source:

Whitehead discloses different content sources, including broadcast television content sources, and further discloses that a particular user profile can identify a specific content source. *See* Section VII.A.1.c; EX1002 ¶108. Thus, incorporating Marcus '904's teachings would not require redesigning Whitehead's architecture and instead merely supplements Whitehead's disclosure. EX1002 ¶108.

Software modification would be predictable: Petitioner's proposed modification can be implemented entirely in software and does not require any hardware modifications. Indeed, Whitehead acknowledges that such modifications are possible. EX1003 at 19:64-20:6, 22:26-40; EX1002 ¶109.

2. Analysis

Claim 1 require "***media feeds***." EX1002 ¶¶110-112. As addressed in Ground 1, **Media Feed Mapping 2**⁴ maps the claimed "***media feeds***" onto Whitehead's content sources 135. *Id.* Marcus '904 further renders obvious that Whitehead's content providers 135 are "***media feeds***." *Id.* Marcus '904 expressly discloses a

⁴ For **Media Feed Mapping 1**, there should be no dispute that Whitehead's custom media channels are "media streams." Whitehead expressly teaches "stream[ing]" these channels. EX1003 at 8:42-64.

“receiver” that receives “a plurality of tagged media streams” and “assembles” those “media streams” into “programming.” EX1005 ¶¶34, 37-42, 48; EX1002 ¶¶110-111.

In addition, claim 1 requires “*analyzing, by the publisher, user information included in the media feed selection*” and “*inserting into media programming based on a publisher-initiated feed responsive to the media feed selection, based on the user information, an element based on at least one of positioning, frequency, type, demographic targeting, geo-targeting and psychographic targeting.*” As addressed in Ground 3, Marcus ’904 discloses all aspects of the challenged claims pertaining to selecting, ordering, and assembling media programming by a “*publisher.*” See Section VII.C.2; EX1002 ¶112. To the extent any of those elements are missing from Whitehead, they are rendered obvious by Marcus ’904; EX1002 ¶112.

C. Ground 3: Cristofalo and Marcus ’904

1. Motivation to Combine & Reasonable Expectation of Success

A POSITA would have modified Cristofalo’s **transmitting system 102** to incorporate Marcus ’904’s algorithm (running on Marcus ’904’s receiver) for receiving, selecting, ordering, and assembling different media streams (both for content and advertising) for at least the following reasons (EX1002 ¶¶113-119):

Cristofalo’s transmitting system 102 benefits from targeting content to specific users by incorporating the teachings in Marcus ’904: In describing

targeting performed by **transmitting system 102**, Cristofalo states that “[i]nstead of creating a unique media object for each user's profile, the process preferably pushes media objects to specific users based upon user identifiers.” EX1004 ¶48; EX1002 ¶114. Cristofalo recognizes, however, “as bi-directional data link throughput capacity increases, various other routing techniques may be utilized to push media object based targeted advertising and programming to users.” EX1004 ¶48; EX1002 ¶114. Indeed, Cristofalo expressly states that “the present invention may be utilized in a unicast environment (i.e., where the content/media objects are transmitted to a single user).” EX1004 ¶¶9, 19; EX1002 ¶114. And transmission capacity did, in fact, increase since Cristofalo’s filing in 2001. *See* Section IV.A; EX1002 ¶114. Unsurprisingly then, Marcus ’904 includes additional disclosure of targeting media programming to specific users, leading to better customization of media programming by Cristofalo’s **transmitting system 102** (with Cristofalo’s **receiving system 104** retaining ability to insert media objects as overlays, *see* EX1004 ¶41). EX1002 ¶114.

Incorporating Marcus ’904’s content selection, ordering, and assembly algorithm provides additional implementation details for Cristofalo’s targeting system: Cristofalo discloses that targeted content may be selected at **transmitting system 102**, **receiving system 104**, or a combination of the two. EX1004 ¶¶35-36, 44, 49; EX1002 ¶115. Cristofalo generally addresses creating custom programming

but does not provide many details on how Cristofalo's media objects are selected at its **transmitting system 102** or **receiving system 104** or how the final media programming is generated and formatted for display. EX1002 ¶115. The additional disclosure in Marcus '904 (and Marcus '156 incorporated by reference therein) provides such additional details, which can be incorporated into either Cristofalo's **transmitting system 102** or **receiving system 104**. *Id.*

Incorporating Marcus '904's content and advertising sources would unlock new revenue sources for Cristofalo: Marcus '904 states that it facilitates generating revenue from transmitting content from niche content and advertising sources. EX1005 ¶¶5-13; EX1002 ¶116. A POSITA would be motivated to use Marcus '904's content and advertising sources to unlock additional potential revenue sources for Cristofalo's system. EX1002 ¶116.

Similar field of art: Both Cristofalo and Marcus '904 generate custom media programming. EX1004 at Abstract; EX1005 ¶¶82-87; EX1002 ¶117.

Cristofalo already includes the framework necessary for implementing Marcus '904's selection, ordering, and assembly algorithm: Cristofalo discloses that both its **transmitting system 102** and **receiving system 104** have access to use profile information and customize media programming based on the same. EX1004 ¶¶35-36, 44, 49; EX1002 ¶118. Thus, incorporating Marcus '904's teachings would

not require redesigning Cristofalo's architecture and instead merely supplements Cristofalo's disclosure. EX1002 ¶118.

Software modification would be predictable: Petitioner's proposed modification can be implemented entirely in software and does not require any hardware modifications. EX1002 ¶119. Indeed, Cristofalo acknowledges that such modifications are possible. EX1004 ¶57; EX1002 ¶119.

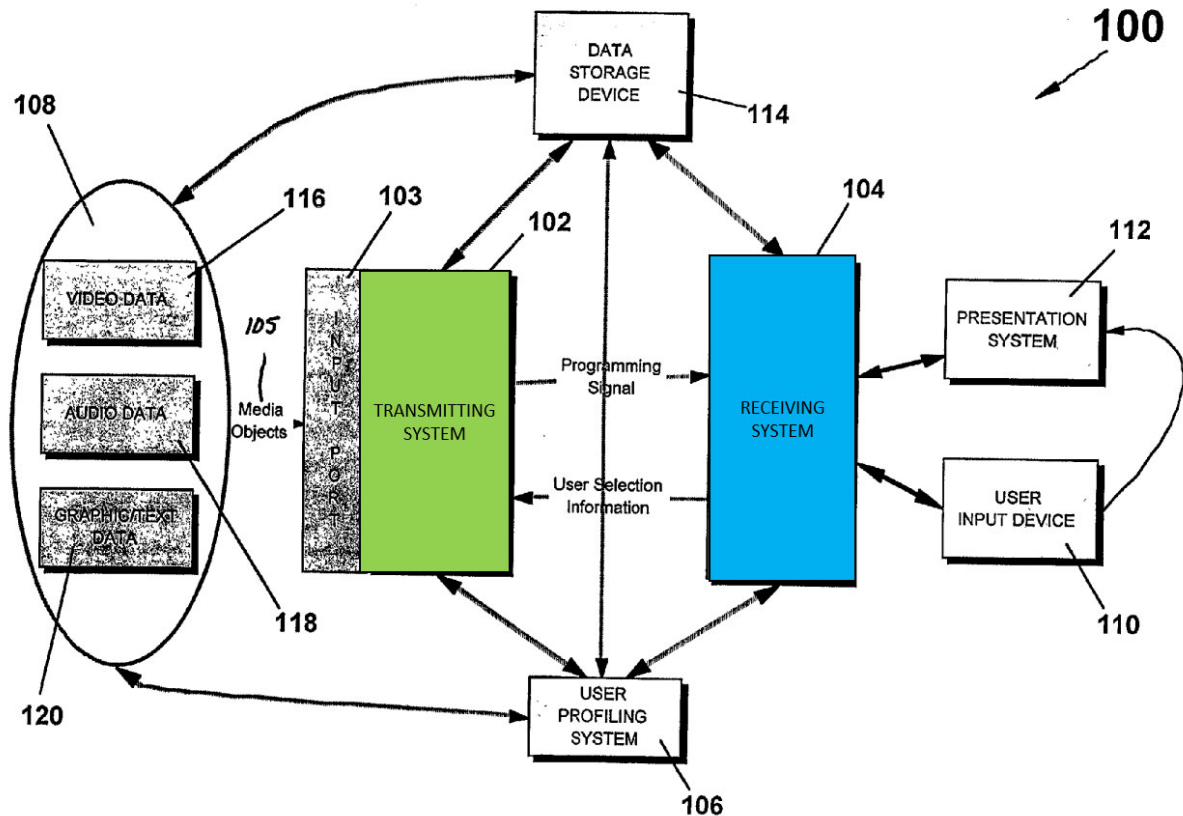
2. Claim 1

(a) **1[pre] *A method of generating customized media programming, comprising:***

Cristofalo discloses a “process for targeting programming (including, but not limited to, advertising) to users.” EX1004 at Abstract, ¶46; EX1002 ¶120.

(b) **1[a][i]: *providing by an aggregator, to a client device associated with a user, a list of media feeds available from at least one publisher***

Cristofalo discloses **receiving system 104**, which is an “**aggregator**,” and **transmitting system 102**, which is the claimed “**publisher**.” EX1002 ¶¶121-127.



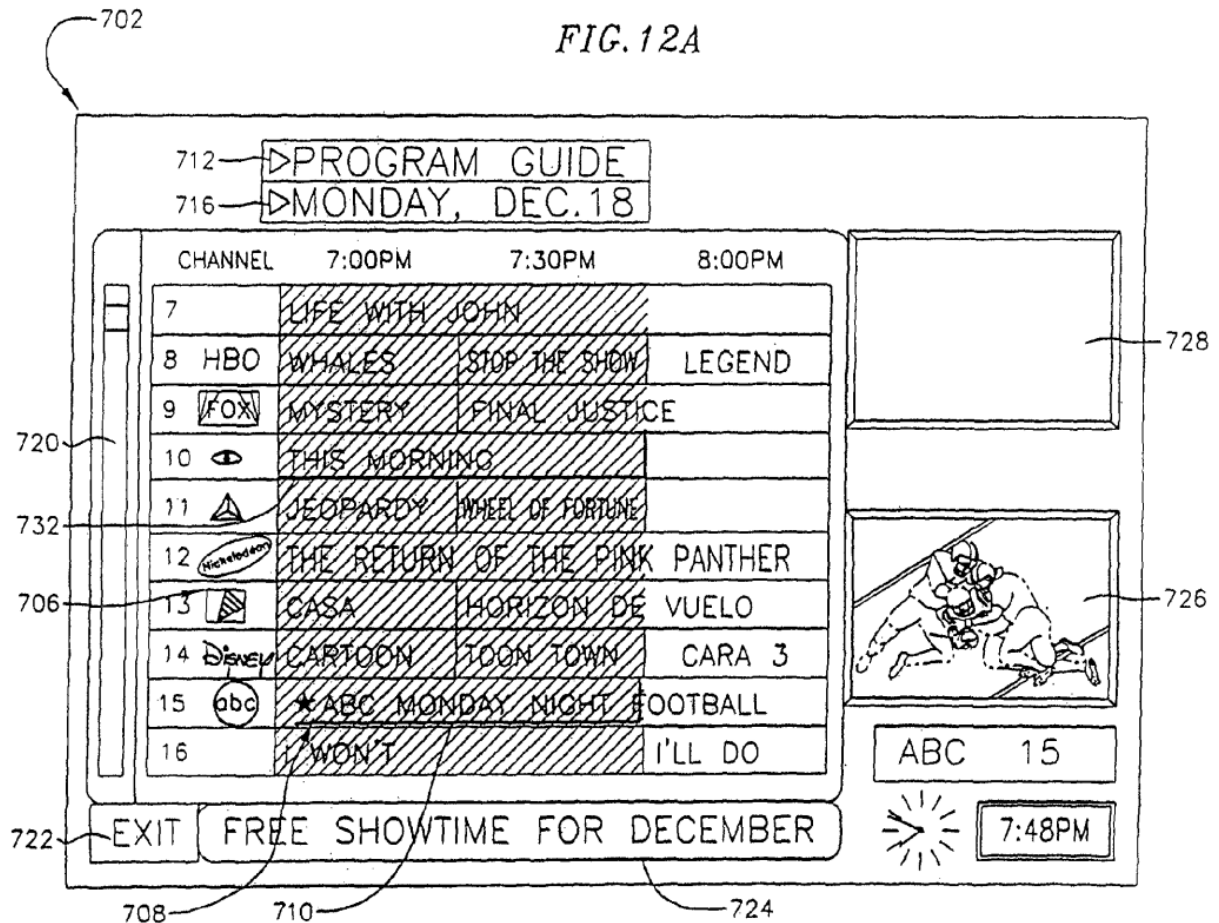
The '947 patent specification describes an “*aggregator*” as “provid[ing] a presentation element to user 1 120 and 2 130” for different media feeds. EX1001 at 2:53-56, 3:16-29; EX1002 ¶122. Cristofalo similarly discloses that its *receiving system 104* allows a user to “select[] the described programming ... to be received and presented” from among “numerous programming options.” EX1004 ¶46; EX1002 ¶122. Cristofalo further discloses that those “programming options” can be from different “media object creators 108, broadcasters, local affiliates, and others,” such as “a cable signal ... contain[ing] numerous programming signals (i.e., ABC, CBS, FOX, etc.).” EX1004 ¶¶29, 37, 52; EX1002 ¶122.

The '947 patent describes the claimed “*publisher*” as a “source[] of media content.” EX1001 at 6:18-30; EX1002 ¶123. The same is true for Cristofalo’s **transmitting system 102**: it is the source of programming (e.g., media objects) for the **receiving system 104** and ultimately for the user. EX1004 ¶¶9, 19, 22, 34, 38, 47-48, 54; *see also* EX1004 at Fig. 1 (**transmitting system 102** sending “Programming Signal” to **receiving system 104**); EX1002 ¶123.

Cristofalo further discloses a presentation system 112 and user input device 110 (“*client device*”) and that a user is interfacing with (“*associated with a user*”). EX1004 ¶¶20, 24, 25, 32; EX1002 ¶124.

For Cristofalo’s user to be able to “select[] the desired programming” from “numerous programming options” (EX1004 ¶46), Cristofalo’s **receiving system 104** necessarily presented the user with the programming options (e.g., different broadcast channels) (“*a list of media feeds*”) via presentation system 112 and user input device 110 (“*client*”). EX1002 ¶125; *see also* EX1004 ¶¶20, 25, 29, 32, 49.

Moreover, it would have been obvious to implement Cristofalo’s **receiving system 104** as a program guide for presenting programming options from different channels (“*a list of media feeds*”) via presentation system 112 and user input device 110 (“*client*”). EX1002 ¶126. A program guide was a well-known UI for interacting with television sources even before the '947 patent’s priority date. EX1002 ¶126, *see* EX1013 (filed April 11, 1997, issued May 14, 2002, § 102(b) art) at Fig. 12A:



A POSITA implementing Cristofalo would be motivated to present users with a UI they were already familiar with and would thus find it obvious to use a program guide. EX1002 ¶127. Using such a well-known system would also ensure there is a reasonable expectation the implementation would be successful. *Id.*

- (c) **1[a][ii]:** *wherein each said media feed comprises a plurality of media elements selected from audio media elements, visual media elements, and combinations thereof*

Cristofalo's media programming is generated and provided to the user "in the form of media objects," where the media objects are "provided in any medium

desired including, for example, **audio, video, graphical, and textual**,” as well as “**audio-visual content**.” EX1004 ¶¶2, 16-17; EX1002 ¶128.

- (d) **1[b]: receiving by the aggregator from the client device a selection identifying at least one of the media feeds**

Cristofalo discloses that its **receiving system 104** allows a user to “select[] the described programming ... to be received and presented” from among “numerous programming options” (“*a selection identifying at least one of the media feeds*”). EX1004 ¶¶46, 49; EX1002 ¶129. This selection is received from presentation system 112 and user input device 110 (“*client device*”). EX1004 ¶¶20, 24, 25, 32; EX1002 ¶129.

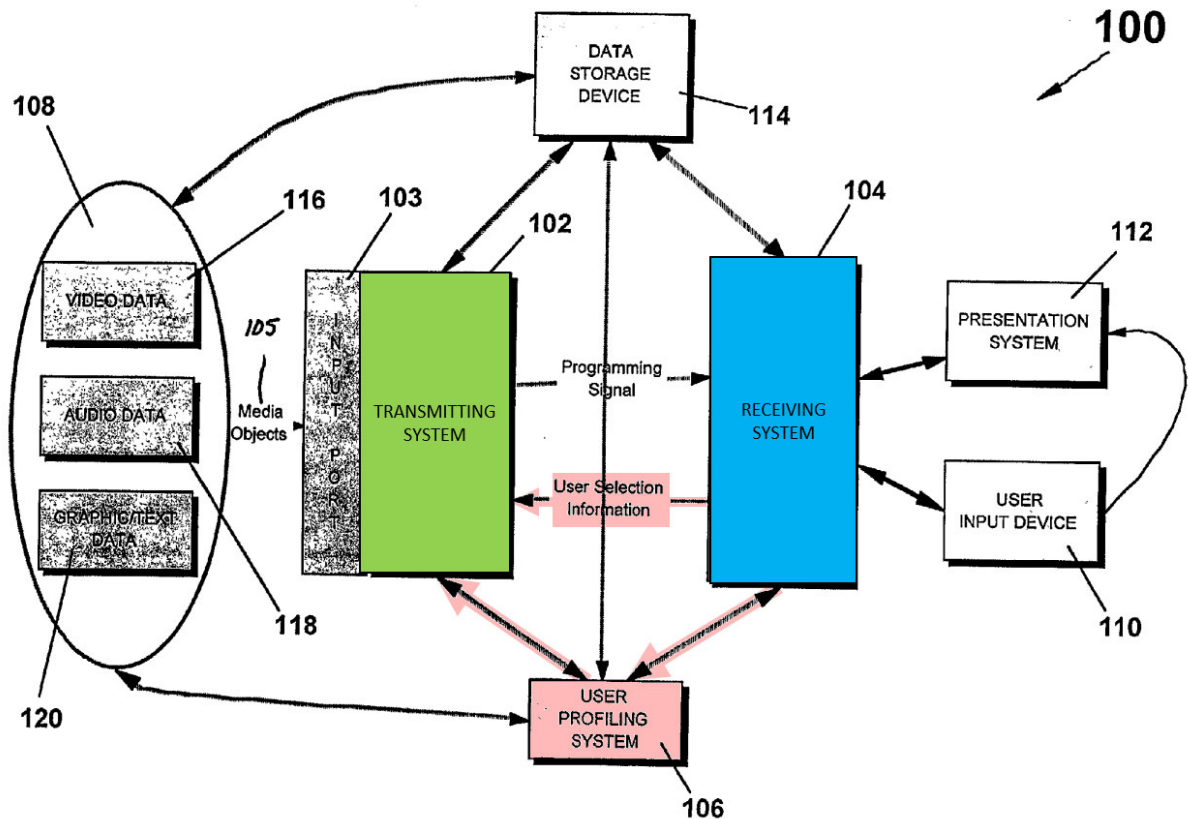
- (e) **1[c]: providing, to a publisher from the aggregator, the media feed selection received from the client device**
- (f) **1[d]: analyzing, by the publisher, user information included in the media feed selection**

Cristofalo discloses that “the user’s choice of programming” (“*media feed selection*”) is provided by Cristofalo’s **receiving system 104** to Cristofalo’s **transmitting system 102** from the **receiving system 104**. EX1004 ¶46; *see also* EX1004 at Fig. 1 (**receiving system 104** sending “User Selection Information” to **transmitting system 102**); EX1002 ¶¶130-134.

In addition, Cristofalo discloses that its **receiving system 104** provides information on programs selected by the user and content to receive (“*user information*”) to Cristofalo’s **transmitting system 102**. EX1002 ¶131. Specifically,

Cristofalo's **receiving system 104** provides this user profile information (“*user information*”) to user profiling system 106, which in turn is co-located with **transmitting system 102**. EX1004 ¶¶37, 39; EX1002 ¶131. Ultimately, the user profile information (“*user information*”) is received and analyzed by the **transmitting system 102**. EX1004 ¶¶28, 37-39, 47, 53; *see also* Section VII.C.2.g (Marcus '904 also disclosing analyzing user profile information); EX1002 ¶131.

Cristofalo's provision of “user selection information” (“*media feed selection*”) and user profile information (“*user information*”) from **receiving system 104** to **transmitting system 102** is shown in Cristofalo's Figure 1 (EX1002 ¶132):

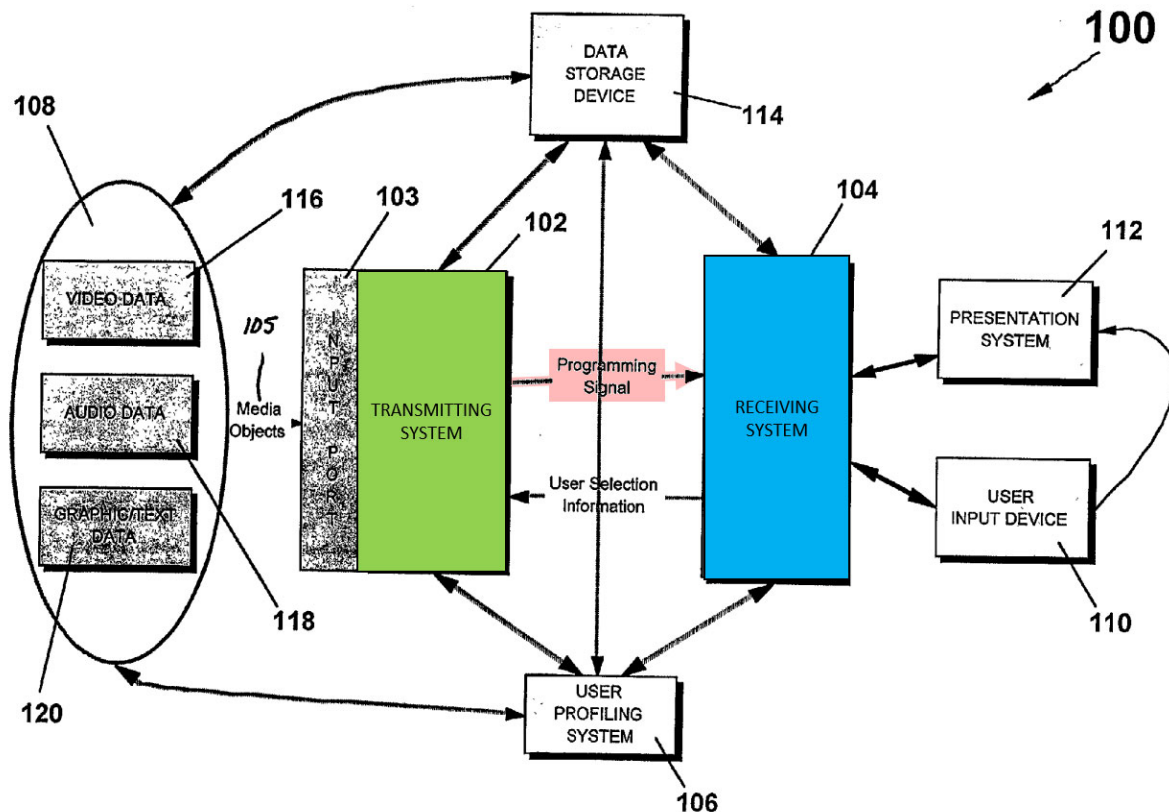


In addition, Cristofalo renders obvious that its user profile information (“*user information*”) could be included in its “user selection information” (“*media feed selection*”). EX1002 ¶133. A POSITA would be motivated to combine the user selection and any user profile information necessary for customizing the programming in a single message such that Cristofalo’s **transmitting system 102** receives some or all relevant information at the same time. *Id.* For example, the message could contain both the user’s choice and the user’s geographic information to facilitate targeting content based on location (*see* EX1004 ¶35), which would be especially desirable for presentation systems 112 that are a mobile device (*see*

EX1004 ¶24) and the user's location may thus be different each time the user chooses programming to watch. EX1002 ¶133. As another example, receiving all relevant user profile information together with the user's choice eliminates the need for further processing and delay associated with retrieving or correlating profile information. *Id.* Moreover, there would be a reasonable expectation of success given the amount of data that can be transmitted in a single message. *See* Section VII.A.1.f; EX1002 ¶¶133-134.

- (g) 1[e]: *inserting into media programming based on a **publisher**-initiated feed responsive to the media feed selection, based on the user information, an element based on at least one of positioning, frequency, type, demographic targeting, geo-targeting and psychographic targeting*
- (h) 1[f]: *providing, to the client device, the media programming*

Cristofalo's **transmitting system 102** generates *media programming* consisting of media objects based on the user's choice ("*responsive to the media feed selection*") and user profile information ("*based on the user information*") and provides that media programming to presentation system 112 and user input device 110 ("*client device*"). EX1004 ¶¶9, 19, 20, 22, 24-25, 32, 34, 38, 47-48, 54; *see also* EX1004 at FIG. 1 ("programming signal"); EX1002 ¶¶135-138.



Moreover, Marcus '904 addresses the lack of detail in Cristofalo regarding targeting by **transmitting system 102** by describing a receiver 100 that “collects media” from different “media source[s]” and “assembles a program from the collected media.” EX1005 ¶30; EX1002 ¶136. Specifically, Marcus '904’s receiver “selects media elements from the media streams for inclusion in the programming based upon the user data” and then “arranges the selected data elements into an order based upon the user data.” EX1005 ¶40; EX1002 ¶136. The media elements include both a “primary” stream assembled by the receiver (“***publisher-initiated feed***”) and additional media elements, such as advertising or other programming (“***an***

element”). EX1005 ¶¶37-42, 252, 275; *see also* EX1005 ¶¶48, 148; EX1002 ¶136.

Marcus ’904 then assembles these media elements in the arranged order and streams the resultant media programming to the user. EX1005 ¶¶40, 48, 148-49; EX1002 ¶136.

Marcus ’904 further incorporates by reference Marcus ’156, which provides additional details regarding the selection, ordering, and assembly of media elements into media programming for a particular user. EX1005 ¶30; EX1008 at 8:1-9:21 (describing “Editor Program” that “selects and orders” clips), 9:22-10:8 (describing “Assembly Program”); EX1002 ¶137. The ’947 patent relies on incorporating by reference that same Marcus ’156 prior art reference for the exact same disclosure. EX1001 at 1:26-31, 5:54-61, 9:39-49, 9:65-10:2, 10:36-38; EX1002 ¶137. Thus, Marcus ’904, at least via its incorporation of Marcus ’156, discloses the very same “*inserting*” described and claimed in the ’947 patent. EX1002 ¶137.

Finally, Marcus ’904 (and Marcus ’156 incorporated therein) discloses that the “*inserting*” is done based on “*positioning, frequency, type, demographic targeting, geo-targeting and psychographic targeting.*” EX1004 ¶¶48, 96, 104, 171, 174, 237, 318-319, 413, 450, 460, 476-77, 494-495, 531, 539-542; EX1002 ¶138.

- (i) 1[g]: *dynamically updating the element in the media programming responsive to additional user information provided by the aggregator.*

Marcus '904 discloses that the “[t]he content of the ads” (“*element[s]*”) inserted into the *media programming* can “be updated.” EX1005 ¶¶130-32. Marcus '904 also discloses continuously monitoring user consumption of media programming through “sensing and reporting of viewed-channel, power-state (on/off/standby), mute-state, screen-on, volume, headset presence, mouse-motions or keystrokes.” EX1005 ¶60; EX1002 ¶¶139-140. Cristofalo’s *receiving system 104* similarly discloses continuously monitors user interactions to generate user profile information (“*additional user information*”). EX1004 ¶39; EX1002 ¶139.

It would be obvious for Cristofalo’s system as modified by Marcus’ 904 to dynamically update Marcus ’904’s inserted advertising (“*element[s]*”) based on continued monitoring of the user’s interactions with the system (“*additional user information*”). EX1002 ¶140. Cristofalo and Marcus ’904 teach the relevant technical building blocks, including continuously monitoring user interactions with the system to generate “*additional user information*” and dynamically updating advertisements without further user interactions. *Id.* A POSITA would appreciate that dynamic updating allows the system to better target advertising to a user’s preferences as the system learns more about those preferences or those preferences

evolve, which in turn allows the system to charge advertisers more for better-targeted advertisements. *See* Section VII.A.1.i; EX1002 ¶140.

3. **Claim 2:** *The method according to claim 1, wherein the element comprises at least one of media clips, sidebars, overlays, audio elements, animation elements, and graphical elements residing/displaying within or outside of a player region of the client device.*

Marcus '904 discloses that the advertisements can “stick themselves to browsers, to applications” as well as “into a stream of time-based programming” (“*the element*”). EX1002 ¶141. Marcus '904 further discloses that such an “ad contains, for example, 4 clips” (“*media clips*”). EX1005 ¶376; EX1002 ¶141. An advertisement can be “a tiny screen corner motif like a bug,” where “bugs are small logos or other identifying marks generally overlayed on the lower corner of a video to mark its source or sponsor” (“*overlays, graphical elements residing/displaying within or outside of a player region of the client device*”). EX1005 ¶¶377, 656; EX1002 ¶141. As yet another example, the advertisement can be “short interstitial” or “spots” that are “deployed for viewing/listening/reading multiple times and in various patterns” (“*media clips, audio elements*”). EX1005 ¶377; EX1002 ¶141. Marcus '904 also discloses a special type of advertisement called “sponsored cursor” that, “dependent upon the levels of sponsorship selected,” a cursor can “become a strong decision-making voice for the user.” EX1005 ¶¶430-434; EX1002 ¶141. With such advertisements, “the user momentarily loose[s] control of his/her cursor

as the cursor is dragged ... with ***visible animations*** of a tiny-person/endorser/celebrity/host doing the dragging ... to a specific location or task and, for example, even auto-clicked to open.” (“***animation elements***”). EX1005 ¶ 433; EX1002 ¶ 141.

D. Secondary Considerations

Secondary considerations only further weigh in favor of obviousness, and in any event cannot overcome the strong showing of obviousness. EX1002 ¶ 142. First, market trends incentivized development work into generating custom media programming for specific users and resulted in simultaneous development by multiple entities. *See* Section IV.A-B. Second, PO alleges in its complaint that its product, “StimTV” launched in 2005 and won an award in 2007. EX1011 ¶ 12; EX1002 ¶ 142. But significantly, PO does not allege that this product practiced the ’947 patent. EX1002 ¶ 142. Indeed, if it did, StimTV was allegedly released more than a year before the ’947 patent’s effective filing date and would thus constitute invalidating prior art. *Id.* Thus, PO seemingly never deemed the ’947 patent sufficiently valuable/innovative to practice its claims. *Id.* And even if PO eventually did release a product practicing the ’947 patent, PO ceased operations at some point in time, evidencing a lack of success for any product practicing the ’947 patent. *Id.*

VIII. NO BASIS FOR DISCRETIONARY DENIAL

A. 35 U.S.C. § 325(d) Supports Institution

The Board should not exercise its discretion under § 325(d). None of the prior art relied upon in this Petition was considered by the examiner. EX1001 at 1-3. In addition, the art cited in this Petition is not cumulative of the art considered by the Examiner. During prosecution, applicant obtained allowance by arguing the cited art did not disclose that “the publisher can receive information about a user’s [geo]graphic location and provide an element ... based on that location (e.g., an ad for a local restaurant)” and “continually updat[ing] the element based on updated information.” EX1019 at 139. In contrast, there can be no dispute that at least Whitehead, Marcus ’904, and Cristofalo disclose these limitations. *See* Sections VII.A.1.g, i., VII.B.2, VII.C.2.g, i.

B. *Fintiv* Supports Institution

District court litigation has not commenced in earnest. Petitioners are filing this IPR petition a month before their answer is due. The six *Fintiv* factors thus strongly favor institution.

1. Overlap Between Issues

While PO has not yet identified the set of asserted claims, this Petition challenges all ’947 patent claims. Accordingly, no matter what claims PO asserts in district court, all those claims will also be at issue here. On the other hand, Petitioner

has not yet served their invalidity contentions. Thus, there is no basis for concluding that there is substantive overlap in invalidity theories.

2. Likelihood of a Stay

Neither party has requested a stay in the district court in part because the district court case is not yet underway. The likelihood of a stay is increased here, however, by the fact that Petitioners are filing this IPR petition before answering the complaint and are filing concurrent IPR petitions against all asserted patents.

3. Proximity of the Court's Trial Date to a FWD

No trial date has been set. Indeed, no case schedule of any kind has been entered, nor has a Rule 26(f) conference been held. At Judge Gilstrap's most-recent, July 2024 scheduling conferences, the Court assigned trial dates from January to April 2026. *See, e.g., Avant Location Techs., LLC v. Samsung Elec. Co. Ltd.*, No. 2:24-cv-00133-JRC , Dkt. 36 (E.D. Tex. Aug. 5, 2024); *Alto Dynamics, LLC v. Gucci Am., Inc.*, No. 2:24-cv-00375, Dkt. 29 (E.D. Tex. Aug. 2, 2024). This case is scheduled for a case management conference on September 18, 2024. *NTECH Properties, Inc. v. ByteDance Ltd.*, No. 2:24-cv-00130-JRG, Dkt. 13 (E.D. Tex. Aug. 8, 2024). By then, Judge Gilstrap will presumptively be assigning trial dates starting in May 2026. If that is the case, then the PTAB will issue its final written decision *before* any district court trial.

4. Investment in the Parallel Proceeding

Although PO filed a district court complaint on February 23, 2024, investment in the parallel proceeding has been nonexistent. PO did not serve the complaint until June 14, 2024. The parties then stipulated to an answer deadline of September 16, 2024. There have been no other case developments and no discovery. The district court has also invested zero time in assessing the parties' claims and defenses.

Moreover, Petitioner is filing this IPR a mere two months after being served with the complaint—almost 10 months before its statutory bar date (June 14, 2025).

5. Whether the Petitioner and the Defendant in the Parallel Proceeding are the Same Party

The parties are the same in this IPR and in the Litigation.

6. Other Circumstances, that Impact the Board's Exercise of Discretion, Including the Merits

This is the Board's opportunity to reassess a facially invalid patent that would not have issued but for the limited prior art before the Examiner, including PO's failure to disclose its own '904 Marcus prior art reference during prosecution. The merits of the Petition are particularly strong and outweigh any countervailing considerations of efficiency.

IX. CONCLUSION

For the reasons above, *inter partes* review is requested.

Date: August 23, 2024

Petition for *Inter Partes* Review
U.S. Patent No. 9,923,947

Respectfully submitted,

By: /s/ *James Glass*

James M. Glass

Counsel for Petitioner

CERTIFICATION UNDER 37 C.F.R. § 42.24

Under the provisions of 37 C.F.R. § 42.24, the undersigned hereby certifies that the word count for the foregoing Petition for *inter partes* review (excluding the table of contents, table of authorities, mandatory notices, certificate of service or word count, and appendix of exhibits or claim listing) totals 9,517 words, which is within the word limit allowed under 37 C.F.R. § 42.24(a)(i).

Date: August 23, 2024

/s/ James Glass

James Glass (Reg. No. 46729)

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e), 42.105(a), the undersigned hereby certifies service on the PO of a copy of this Petition and its respective exhibits at the official correspondence address for the attorneys of record for the '947 patent as shown in USPTO PAIR via FedEx:

Louis DeJuidice
Troutman Pepper Hamilton Sanders LLP
600 Peachtree St. NE, Suite 3000
Atlanta, GA

Courtesy copies were also sent via electronic mail to Patent Owner's counsel of record in the related district court proceeding:

Elizabeth L. DeRieux
ederieux@capshawlaw.com
Capshaw DeRieux LLP
114 E. Commerce St.
Gladewater, TX 75647

Paul J. Andre
pandrew@kramerlevin.com
Lisa Kobialka
lkobialka@kramerlevin.com
James Hannah
jhannah@kramerlevin.com
Kris Kastens
kkastens@kramerlevin.com
Kramer Levin Naftalis & Frankel LLP
333 Twin Dolphin Drive
Redwood City, CA 94065

Petition for *Inter Partes* Review
U.S. Patent No. 9,923,947

Date: August 23, 2024

/s/ James Glass

James Glass (Reg. No. 46729)