

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Google LLC,

Petitioner,

v.

Touchstream Technologies, Inc.,

Patent Owner.

U.S. Patent No. 8,356,251

Filing Date: September 26, 2011

Issue Date: January 15, 2013

Case No. IPR2022-00795

PETITION FOR *INTER PARTES* REVIEW

TABLE OF CONTENTS

I.	PRELIMINARY STATEMENT	1
II.	STATEMENT OF PRECISE RELIEF REQUESTED	2
III.	THE '251 PATENT.....	3
	A. Overview of the '251 Patent.....	3
	B. Prosecution History	6
IV.	OVERVIEW OF PRIOR ART.....	6
	A. Muthukumarasamy.....	6
	B. Hayward	11
V.	LEVEL OF ORDINARY SKILL IN THE ART.....	13
VI.	CLAIM CONSTRUCTION	13
VII.	GROUND I AND II: MUTHUKUMARASAMY ALONE OR IN VIEW OF HAYWARD RENDERS OBVIOUS THE CHALLENGED CLAIMS	14
	A. Summary of Grounds I and II	14
	1. Ground I: Muthukumarasamy Would Have Rendered Obvious Claims 1-2 and 5-9	14
	2. Ground II: Muthukumarasamy and Hayward Would Have Rendered Obvious Claims 1-2 and 5-9	15
	B. Independent Claim 1	20
	1. Element 1(pre).....	20
	2. Element 1(a).....	27
	3. Element 1(b).....	31
	4. Element 1(c).....	33

5.	Element 1(d)(i).....	34
6.	Element 1(d)(ii).....	35
7.	Element 1(d)(iii).....	42
8.	Element 1(e)(i)	48
9.	Element 1(e)(ii).....	53
10.	Element 1(f)	58
C.	Dependent Claims	64
1.	Claim 2	64
a.	Element 2(a) - The method of claim 1 including: checking, in the server system, the identity of the media player identified in the one or more signals from the personal computing device	64
b.	Element 2(b) - loading an appropriate set of protocols or application programming interfaces from a library based on the identity of the media player	68
c.	Element 2(c) - converting the command from the personal computing device into corresponding code to control the media player.....	71
2.	Claim 5	71
3.	Claim 6	72
4.	Claim 7	72
5.	Claim 8	72
6.	Claim 9	73
VIII.	DENIAL UNDER § 325(d) IS IMPROPER	74
IX.	DENIAL UNDER § 314(a) IS IMPROPER	75

A.	Factor 1: Whether the district court granted a stay or a stay may be granted if a proceeding is instituted	75
B.	Factor 2: Proximity of the court’s trial date	75
C.	Factor 3: Investment in the parallel proceeding	76
D.	Factor 4: Overlap between issues	77
E.	Factor 5: Whether the petitioner and the defendant in the parallel proceeding are the same party	77
F.	Factor 6: Other circumstances	78
X.	MANDATORY NOTICES	79
A.	Real Parties-in-Interest	79
B.	Related Matters	79
C.	Lead and Back-Up Counsel, and Service Information	80
XI.	GROUND FOR STANDING	80
XII.	CONCLUSION	80

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>3Shape A/S v. Align Tech., Inc.</i> , IPR2020-00223, Paper 12 (PTAB May 26, 2020)	78
<i>Acoustic Tech., Inc. v. Itron Networked Sols., Inc.</i> , 949 F.3d 1366 (Fed. Cir. 2020)	17
<i>Apple Inc. v. Corephotonics, Ltd.</i> , IPR2020-00862, Paper 35 (PTAB Dec. 7, 2021)	19
<i>Apple Inc. v. Firstface Co.</i> , IPR2019-00612, Paper 26 (PTAB July 31, 2020), <i>aff'd</i> , 859 F. App'x 579 (Fed. Cir. 2021)	17
<i>Apple Inc. v. Fintiv, Inc.</i> , IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020)	75, 76, 77
<i>Apple Inc. v. Seven Networks, LLC</i> , IPR2020-00156, Paper 10 (PTAB June 15, 2020)	76
<i>AVX Corp. v. Presidio Components, Inc.</i> , IPR2018-00167, Paper 16 (PTAB May 14, 2019), <i>aff'd</i> , 825 F. App'x 909 (Fed. Cir. 2020)	<i>passim</i>
<i>Becton, Dickinson & Co. v. B. Braun Melsungen AG</i> , IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017)	74
<i>Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.</i> , 229 F.3d 1120 (Fed. Cir. 2000)	17
<i>Cisco Sys., Inc. v. Ramot at Tel Aviv Univ. Ltd.</i> , IPR2020-00133, Paper 15 (J. Crumbley dissenting) (PTAB May 15, 2020)	77
<i>Ex parte Huppenthal</i> , No. 2009-010115, 2011 WL 1826813 (B.P.A.I. May 10, 2011).....	18

<i>In re Fisher</i> , 427 F.2d 833 (C.C.P.A. 1970)	18
<i>Koninklijke Philips N.V. v. Google LLC</i> , 948 F.3d 1330 (Fed. Cir. 2020)	38
<i>KSR Int’l Co. v. Teleflex, Inc.</i> , 550 U.S. 398 (2007).....	<i>passim</i>
<i>Microsoft Corp. v. Uniloc 2017 LLC</i> , IPR2019-01251, Paper 7 (PTAB Dec. 20, 2019)	74
<i>Neenah, Inc. v. Schwendimann</i> , IPR2020-00915, Paper 29 (PTAB Nov. 1, 2021).....	19
<i>Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.</i> , 868 F.3d 1013 (Fed. Cir. 2017)	13
<i>Randall Mfg. v. Rea</i> , 733 F.3d 1355 (Fed. Cir. 2013)	38
<i>Sand Revolution II, LLC v. Cont’l Intermodal Group-Trucking LLC</i> , IPR2019-01393, Paper 24 (PTAB June 16, 2020)	75, 76, 77
<i>Sotera Wireless, Inc. v. Masimo Corp.</i> , IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020)	77
Statutes	
35 U.S.C. § 102(a)	2
35 U.S.C. § 102(b)	2, 11
35 U.S.C. § 102(e)	2, 6
35 U.S.C. § 112, sixth paragraph	14
35 U.S.C. § 311	2
35 U.S.C. § 314(a)	75
35 U.S.C. § 325(d)	74, 78

LIST OF EXHIBITS

Exhibit	Description
Ex-1001	U.S. Patent No. 8,356,251 to Strober (“the ’251 Patent”)
Ex-1002	RESERVED
Ex-1003	’251 Patent Prosecution History (U.S. App. No. 13/245,001)
Ex-1004	RESERVED
Ex-1005	Declaration of Dr. Benjamin B. Bederson (“Bederson”)
Ex-1006	Curriculum Vitae of Dr. Benjamin B. Bederson
Ex-1007	RESERVED
Ex-1008	U.S. Patent Pub. No. 2010/0241699 (“Muthukumarasamy”)
Ex-1009	U.S. Patent No. 8,918,812 (“Hayward”)
Ex-1010	Touchstream Technologies, Inc.’s Opening Claim Construction Brief, <i>Touchstream Techs., Inc. v. Vizbee, Inc.</i> , No. 1:17-cv-6247-PGG-KNF (S.D.N.Y., Sep. 4, 2018)
Ex-1011	U.S. Patent App. Pub. No. 2011/00600998 (“Schwartz”)
Ex-1012	RESERVED
Ex-1013	RESERVED
Ex-1014	<i>Touchstream Techs., Inc. v. Google LLC</i> , No. 6:21-cv-00569-ADA, Joint Claim Construction Statement (W.D. Tex. Feb. 8, 2022)
Ex-1015	<i>Touchstream Techs., Inc. v. Google LLC</i> , No. 6:21-cv-00569-ADA, Scheduling Order (W.D. Tex. Sept. 21, 2021)
Ex-1016	<i>Touchstream Techs., Inc. v. Google LLC</i> , No. 6:21-cv-00569-ADA, Redacted Motion to Transfer Venue (W.D. Tex. Dec. 23, 2021)

I. PRELIMINARY STATEMENT

Petitioner requests *inter partes* review of claims 1, 2, and 5-9 of U.S. Patent No. 8,356,251 (“the ’251 Patent”). The claims recite a system that includes a personal computing device, a server, and a display device. ’251 Patent, Abstract. When the personal computing device sends a request to the server identifying media content to play in a media player running on the display device, the server sends a message to the display device, causing the content to be played by the media player. *Id.*, 6:30-46. The server mediates the personal computing device’s control of content presented on the display device. *Id.*, 5:2-31, 6:47-58.

Server-mediated control of content presentation was known before the earliest-claimed priority date of the ’251 Patent. Muthukumarasamy describes a system that includes a personal computing device, a server system, and a display device. Muthukumarasamy, [0044]-[0045]. In Muthukumarasamy, the personal computing device sends a message to the server system identifying content for presentation on the display device, and the server system sends a message to the display device, causing the content to be presented at the display device. *Id.* Presentation of content through specified media players was likewise known. Muthukumarasamy “controls delivery of selected media content and selects and controls the media devices that deliver the selected media content according to a media type of the selected media content.” *Id.*, [0048], [0057]-[0058]. Hayward also

presents internet-received media content having different formats using media players. Hayward, Abstract, 3:53-63. Hayward teaches a media player that is transferred to a client based on a user's selection of the media content. *Id.*, 3:53-63, Abstract, 5:38-66, FIG. 2.

Petitioner requests that the Board institute review and cancel the challenged claims.

II. STATEMENT OF PRECISE RELIEF REQUESTED

Petitioner requests review under 35 U.S.C. § 311 and cancellation of the challenged claims in view of the following references, which are prior art under at least one of pre-AIA 35 U.S.C. § 102(a), (b), and (e):

Name	U.S. Pat./Pub. Number	Filing Date	Publication Date
Muthukumarasamy	2010/0241699 A1	March 22, 2010	September 23, 2010
Hayward	8,918,812 B2	October 24, 2000	June 20, 2002

The following proposed obviousness grounds render the challenged claims obvious.

Ground	Reference(s)	Claims
I	Obvious over Muthukumarasamy	1-2 and 5-9

II	Obvious over Muthukumarasamy in view of Hayward	1-2 and 5-9
----	---	-------------

III. THE '251 PATENT

A. Overview of the '251 Patent

The '251 Patent purports to allow a user to use a personal computing device (e.g., smartphone) to control the presentation of content on a display device, mediated by a server system. '251 Patent, Abstract, 1:22-39, 2:16-34, 3:56-62; Ex. 1005 (“Bederson”), ¶31.

The **computing device**, **display device**, and **server system** are illustrated in Figure 1 below.

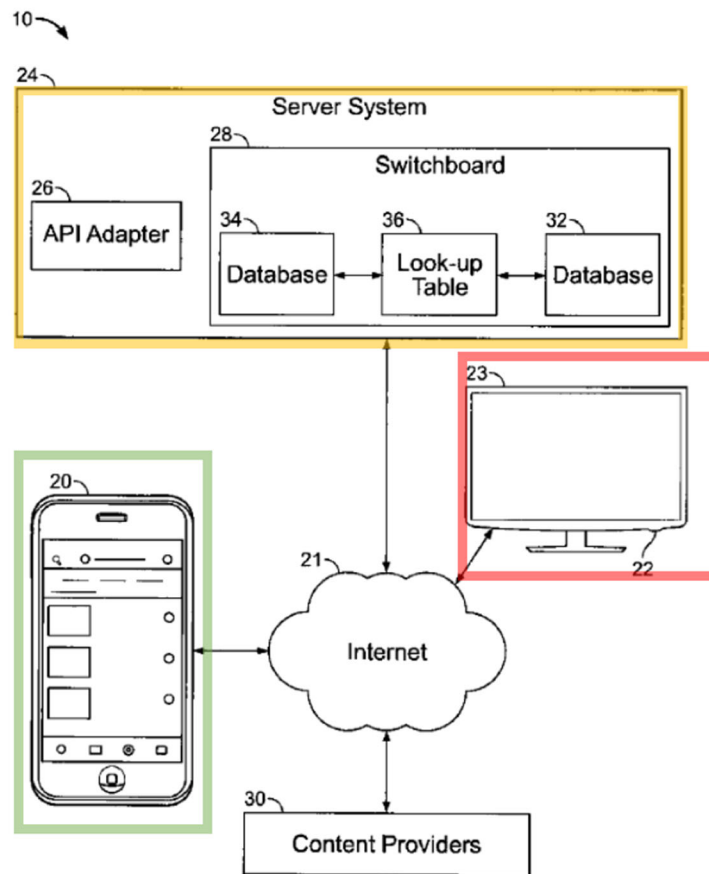


FIG. 1

Id., FIG. 1 (annotated); Bederson, ¶32.

The **computing device** displays content from various internet sources, and a user selects content to be presented on the **display device**. *Id.*, 3:7-15, 3:64-67, 4:23-27. The **computing device** sends signals through the **server system** to cause presentation of the content at the **display device**. *Id.*, 3:10-18. The signals sent by the **computing device** also specify a particular media player for playing the content. *Id.*, 4:29-35. The **computing device** causes different content to be played on the **display device** by a plurality of media players. *Id.*, 3:33-36.

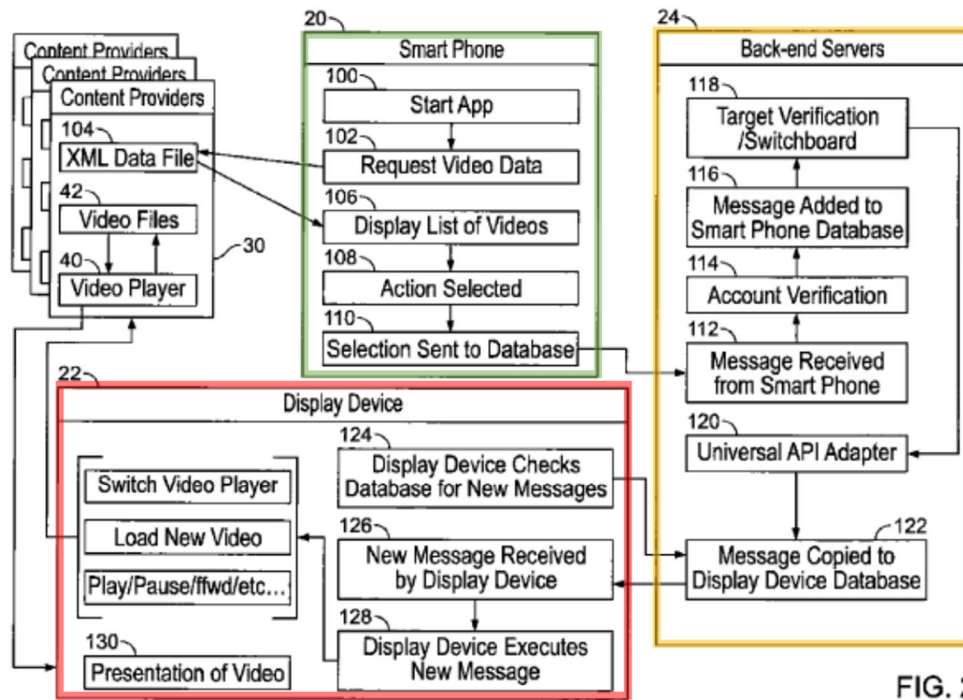


FIG. 2

Id., FIG. 2 (annotated); Bederson, ¶33.

The computing device “control[s] how the content is displayed (e.g., play, pause, stop, rewind, fast forward, etc.)” at the display device. *Id.*, 3:36-39. To this end, signals from the computing device are passed through the server system to the display device. *Id.*, 3:39-41. This is because “[v]arious types of [media] players may use different ... commands to control their respective playback.” *Id.*, 5:57-58. Accordingly, the computing device sends to the server system a universal playback control command not specific to any media player. *Id.*, 5:58-62. The server system translates the universal playback control command into the appropriate playback control command for the media player playing the content and provides this media-

player-specific playback control command to the display device. *Id.*, 5:62-6:3; Bederson, ¶34-35.

B. Prosecution History

The patent application that issued as the '251 Patent (the “Application”), filed on September 26, 2011, is a continuation of U.S. Patent No. 8,904,289 (“the '289 Patent”) filed June 10, 2011, which claims priority to U.S. Provisional App. No. 61/477,998 filed April 21, 2011.¹ To avoid rejections over prior art, the Applicant added additional limitations to claim 1: that the personal computing device is “separate from the server system and separate from the display device;” that the display device “loads any one of a plurality of different media player players;” and that the server system uses a “synchronization code” to “associat[e]” the personal computing device and the display device. *Id.*, 204, 210-11.

IV. OVERVIEW OF PRIOR ART

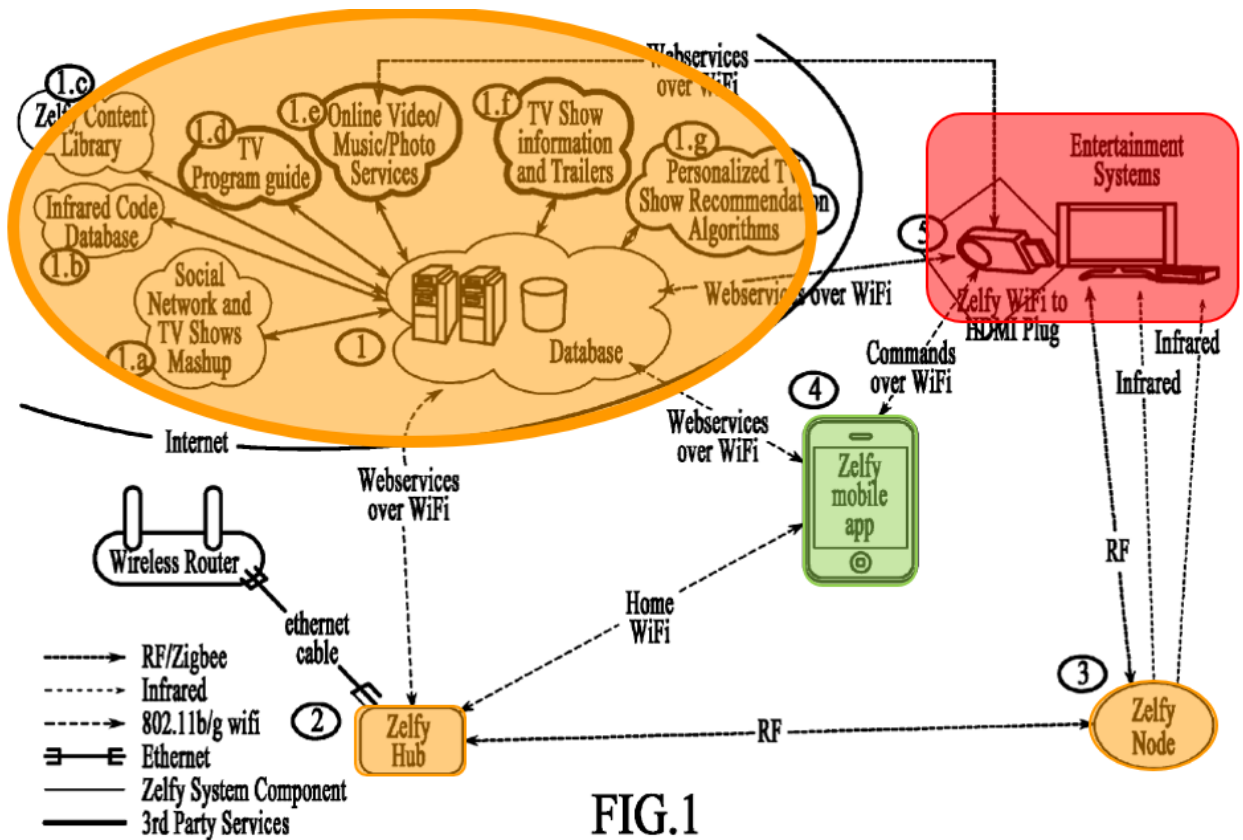
A. Muthukumarasamy

Muthukumarasamy was filed on March 22, 2010, and published on September 23, 2010, and is prior art under at least pre-AIA 35 U.S.C. § 102(a).

Like the '251 Patent, Muthukumarasamy allows a user to use an internet-enabled device (“IED”), such as a smartphone, to control the presentation of content,

¹ Petitioner does not admit the '251 Patent is entitled to these earlier dates of priority, but the Board need not resolve any priority dispute in this case.

including internet content, on a display device. Muthukumarasamy, Abstract, [0005], [0026], [0031], [0041], [0047]. Just like the '251 Patent, Muthukumarasamy provides a “device-agnostic and source-agnostic entertainment experience” in which the IED controls, through a Device-Based Control System (“DBCS”), the presentation of content from different sources (Muthukumarasamy, Abstract, [0005], [0027], [0047], [0134]). The IED, content presentation device, and DBCS are illustrated in Figure 1 below.



Muthukumarasamy, FIG. 1 (annotated); Bederson, ¶36-37.

The IED displays content from various internet sources (*see, e.g.*, FIGs. 2 and 3), and a user selects content to be presented on the display device. *Id.*, [0048]. Signals to control presentation of the content are sent from the IED to the display device through the DBCS, so the DBCS can translate commands into those specific to the current content presentation. The IED's signal is sent to the content presentation device through a server system, as shown in Figure 1. *Id.*, [0057]-[0058];Bederson, ¶38.

Muthukumarasamy also describes server-system-mediated control of internet content presented at a content presentation device. As Figure 18 shows, the DBCS includes remote-controlled internet browser software (“RCIBS”) that is “optimized for internet-media consumption.” *Id.*, [0083]. Examples of internet-media platforms are Netflix and Amazon Video On Demand. *Id.*, [0134].

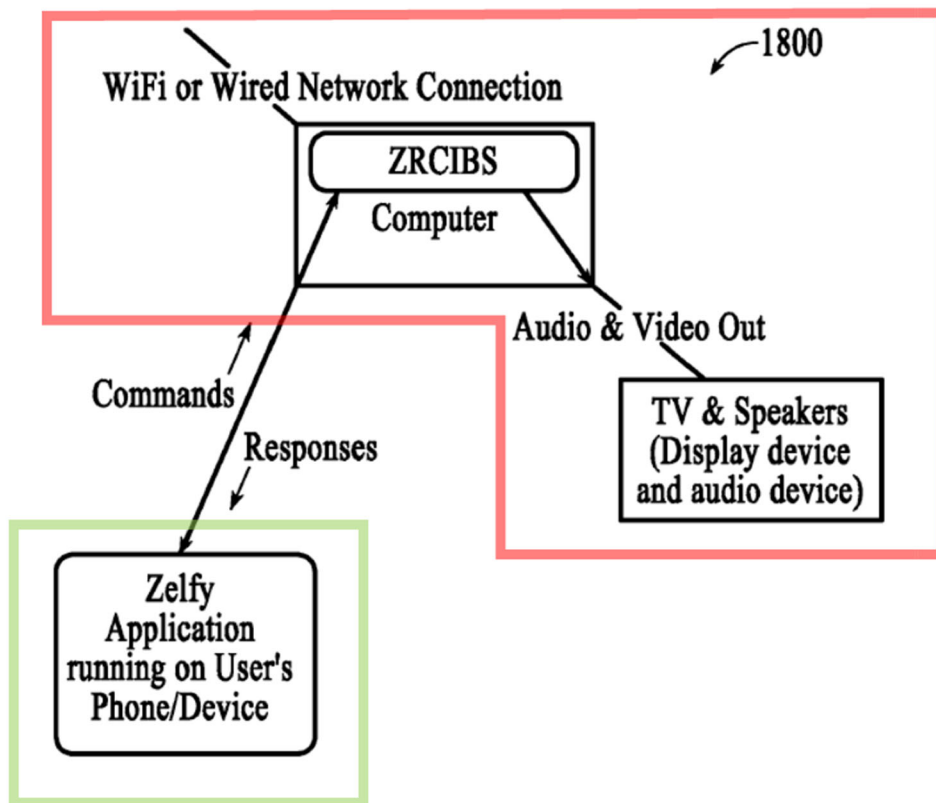


FIG.18

Id., FIG. 18 (annotated); Bederson, ¶39.

Muthukumarasamy recognizes that different media players are needed to present different internet content. As Figure 19 shows, the RCIBS “[p]lay[s] [a] video at [a] given URL,” and plays a video “using 3rd Party APIs [application programming interfaces] and Video Players.” The RCIBS must “load[] the 3rd Party Video Player specified” for the video. *Id.*, FIG. 19.

Command	Result
Go to webpage with given URL	ZRCIBS loads and displays the webpage that is present at the given internet URL
While on webpage, Navigate: Up/down/right/left (This is done via button presses or gestures on the Zelfy application)	ZRCIBS jumps hyperlink to next hyperlink.
Play video at given URL	ZRCIBS plays the video present at the given URL
Execute Transport Command (Play, Pause Fastforward, rewind) on currently playing video	ZRCIBS executes the transport command on the current playing video.
Play audio at given URL	ZRCIBS plays the audio present at the given URL
Execute Transport Command (Play, Pause Fastforward, rewind) on currently playing audio	ZRCIBS executes the transport command on the current playing audio.
Play flash swf game or other game at given URL	ZRCIBS loads and presents the game (adobe flash swf or other) present at the given URL
While on game: Pass game command. (This is done via button presses or gestures on the Zelfy application)	ZIMMS executes the command in the game.
Play video with given video-id (as specified by 3 rd party using 3 rd party APIs and Video Players	ZRCIBS loads the 3 rd Party Video Player specified and plays the video with given videoid)
Play audio with given audio-id (as specified by 3 rd party using 3 rd party APIs and audio Players	ZRCIBS loads the 3 rd Party Audio Player specified and plays the audio with given audioid)

FIG.19

Id., FIG. 19; Bederson, ¶40.

B. Hayward

Hayward was filed on October 24, 2001, published on June 20, 2002 and claims priority to a provisional application, filed on Oct. 24, 2000. It is prior art at least under pre-AIA 35 U.S.C. § 102(b); Bederson, ¶41.

Hayward describes the presentation of internet content on a client, such as an internet-enabled television. Hayward, 3:20-32, 3:35-47. Internet content may take “a variety of streaming media file formats” and media files must be presented using an appropriate “media player[.]” *Id.*, 1:8-10, 3:56-60, 5:4-47. Hayward’s method identifies a media player to present internet content on a client and controls media-player-specific content. Bederson, ¶42.

Presentation of internet content is facilitated by a customer system that identifies the media player needed to present a media file. Hayward’s **customer system** provides the **client** with “access to a wide variety of information through a common interface.” *Id.*, 4:15-19. Through the **customer system**, the **client** selects a media file, causing the **customer system** to provide the **client** with an “embedded media player page.” *Id.*, 5:24-28. The embedded media player page includes “a reference to a functional media player object (such as a RealPlayer plug in).” *Id.*, 5:38-40, 8:39-41. The reference refers to a memory location on the **client** or “trigger[s] a download of a media player applet to control the output of a media file.”

Id., 5:40-47, 6:35-38. Hayward's content may be in one of "a variety of streaming media file formats," and the media player called is the appropriate media player for playing the media file format, such as the RealPlayer plug in for playing internet content. *Id.*, 1:8-10, 3:56-60, 5:4-47.

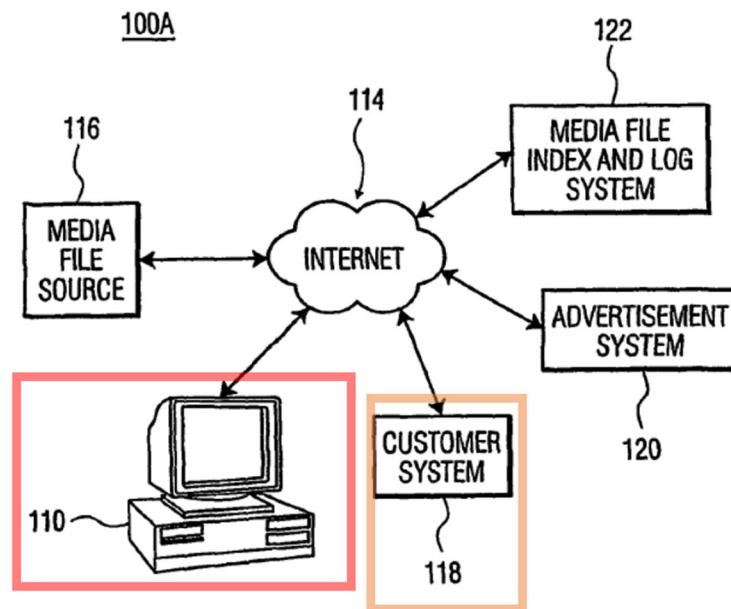


FIG. 1A

Id., FIG. 1A (annotated); Bederson, ¶43.

Through the embedded media player page, a user can control the presentation of the media file. *Id.*, 5:63-66. The embedded media player page provides "a play button, pause button, stop button, slider bar, [or] forward and rewind buttons" through which the user can control presentation of the media file. *Id.*, 5:66-6:4; Bederson, ¶44.

V. LEVEL OF ORDINARY SKILL IN THE ART

A person of skill in the art (“POSA”) would have had at least a bachelor’s degree in electrical engineering or computer science (or equivalent experience) and two years of experience designing or implementing interactive systems with networked media or media playback systems. *Bederson*, ¶47. With more education, for example, postgraduate degrees and/or study, less experience is needed to attain an ordinary level of skill in the art. Similarly, more experience can substitute for formal education. *Bederson*, ¶¶45-49.

VI. CLAIM CONSTRUCTION

Claims should only be construed to the extent necessary to resolve a controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). Because the prior art renders obvious all limitations of the challenged claims under any reasonable interpretation, the Board need not construe any claims to resolve a controversy. *See Bederson*, ¶50. Moreover, Touchstream proposed plain and ordinary meaning for all terms in the parallel district court action, confirming that Patent Owner does not believe any terms of the

'251 Patent require construction. Ex-1014. Petitioner adopts these interpretations for purposes of this Petition.²

VII. GROUNDS I AND II: MUTHUKUMARASAMY ALONE OR IN VIEW OF HAYWARD RENDERS OBVIOUS THE CHALLENGED CLAIMS

The Challenged Claims are obvious over Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**). *See* Bederson, ¶¶50-55.

A. Summary of Grounds I and II

1. Ground I: Muthukumarasamy Would Have Rendered Obvious Claims 1-2 and 5-9

Muthukumarasamy provides “a device-agnostic and source-agnostic entertainment experience.” Muthukumarasamy, [0027]. Muthukumarasamy uses a DBCS, including a server system, to mediate control by a personal computing device (IED) of content presented at a display device. Bederson, ¶56.

Muthukumarasamy expressly describes how the DBCS-mediated control can create a “*device-agnostic*” experience. The DBCS (e.g., using a zHub and a zNode) translates universal commands sent by the IED into device-specific commands

² Petitioner reserves the right to propose alternate constructions before the district court, including assertions of indefiniteness under 35 U.S.C. § 112, sixth paragraph (pre-AIA), which cannot be raised in this Petition.

interpretable by the display device. *Id.*, [0057]-[0058], [0066]-[0067]; Bederson, ¶57.

Muthukumarasamy also creates a “*source-agnostic*” experience when the source is an internet source. Muthukumarasamy describes presenting content from various internet sources, and recognizes that, to do so, the RCIBS will need to load an appropriate “Video Player” for presenting the content on the display device. *Id.*, FIG. 19. In particular, Muthukumarasamy teaches that the IED sends commands to “play[] the video present at [a] given URL” on the internet and the RCIBS “loads [a] 3rd Party Video Player specified” for the video to “play[] the video.” *Id.* From this, a POSA would have understood Muthukumarasamy to achieve source-agnostic presentation of internet content because one of any number of “Video Player[s]” can be loaded to present the internet content at the display device, irrespective of its source. Bederson, ¶58.

2. Ground II: Muthukumarasamy and Hayward Would Have Rendered Obvious Claims 1-2 and 5-9

To the extent that Muthukumarasamy does not expressly teach source-agnostic presentation of internet content by loading the Video Player on the display device, Hayward teaches this. In particular, Hayward expressly explains how to provide source-agnostic presentation of content at a display device through embedded media player pages. Recognizing that internet content may have “a

variety of streaming media file formats” and media files must be presented using an appropriate “media player,” Hayward proposes using embedded media player pages through which internet content is presented at a user’s display device using an appropriate media player. Hayward, 1:8-10, 3:56-60, 5:4-47. Because the embedded media player page includes an identification of a selected media file from the internet together with “a reference to a functional media player object (such as a RealPlayer plug in),” a display device may present the selected media file in the appropriate media player, irrespective of the media file’s source. *Id.*, 5:38-47, 8:39-41. Because the embedded media player facilitates control of the media file’s presentation, a user of the display device may control the presentation, regardless of the media file’s source. *Id.*, 5:63-6:4; Bederson, ¶59.

A POSA would have been motivated and found it obvious to implement Hayward’s embedded media player pages to facilitate the source-agnostic presentation of internet content that Muthukumarasamy envisions. Bederson, ¶60. For example, a POSA would have been motivated by and found it obvious from Hayward to implement the RCIBS to present internet content at the display device using embedded media player pages, such as those taught by Hayward. *Id.* Muthukumarasamy’s DBCS enables a user to browse “web-based merchant stores” and make “purchases from web-based merchants.” Muthukumarasamy, [0138]. Muthukumarasamy’s RCIBS discloses using “3rd party APIs and Video Players,”

including Adobe Flash, a well-known web-based player. *Id.*, FIG. 19. A POSA would have looked to web-based, embedded media player references, such as Hayward, for implementation details. *Id.*; Bederson, ¶60.

A POSA implementing Muthukumarasamy would have been motivated by Muthukumarasamy's stated goal to provide source-agnostic content presentation at the display device. Muthukumarasamy, [0027]; *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000) (evidence of a motivation to combine "may flow from the prior art references themselves"). The POSA would have recognized from Hayward that embedded media player pages, which allow a display device to seamlessly present media files having a variety of file formats through a variety of media players, are a tool to provide such source-agnostic content presentation. Hayward, 1:8-10, 3:56-60, 5:4-47. Bederson, ¶61. *See, e.g., Acoustic Tech., Inc. v. Itron Networked Sols., Inc.*, 949 F.3d 1366, 1376 (Fed. Cir. 2020) (holding that a POSA would have been motivated to use a secondary reference's technique that was "'well known' among skilled artisans as a way to achieve [the] goals" stated in the primary reference (citation omitted)); *Apple Inc. v. Firstface Co.*, IPR2019-00612, Paper 26 at 31-36 (PTAB July 31, 2020) (finding a POSA would have been motivated to implement a primary reference using a technique described in a secondary reference "to fulfill [the primary reference's]

goal,” citing the primary reference’s “*express motivation*” (citation omitted)), *aff’d*, 859 F. App’x 579 (Fed. Cir. 2021).

Embedded media player pages were widely used and implemented using well-known technologies at the time of the ’251 Patent, for example, by using JavaScript as Hayward discloses. Bederson, ¶62. A POSA would have had a reasonable expectation of success in implementing such a widely known and commonly used feature within Muthukumarasamy. *Id.* Muthukumarasamy itself discloses using web-based embedded media players, such as Flash (Muthukumarasamy, FIG. 19), which Hayward also discloses as one possible media player (Hayward, 3:53-63). Because of this overlapping disclosure, a POSA would have found the two references compatible and had a reasonable expectation of success in combining them. Bederson, ¶62. *In re Fisher*, 427 F.2d 833, 839 (C.C.P.A. 1970) (identifying electrical elements as being predictable); *Ex parte Huppenthal*, No. 2009-010115, 2011 WL 1826813, at *4 (B.P.A.I. May 10, 2011) (“we find the claimed invention is within a predictable art,” regarding a computer networking patent application); *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“[W]hen a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” (citation omitted)).

A POSA would have been motivated by the ability of Hayward’s embedded player pages to improve Muthukumarasamy’s stated goals of “dynamic presentation of advertisements,” “gathering data on user behavior,” and “learn[ing] the media preferences from a viewing history of [a] user.” Muthukumarasamy, [0091], [0139], [0142]; Bederson, ¶63. *See, e.g., Neenah, Inc. v. Schwendimann*, IPR2020-00915, Paper 29 at 22-23 (PTAB Nov. 1, 2021) (finding as support for a motivation to combine the “shared goal” of the references); *Apple Inc. v. Corephotonics, Ltd.*, IPR2020-00862, Paper 35 at 28, 34 (PTAB Dec. 7, 2021) (similar). As Hayward explains, embedded media player pages are well suited to “advertising and branding space as a means to monetize the media experience” and “collecting data” to “help content providers in gauging audience interest.” Hayward, 1:26-28, 1:52-54, 7:3-7, 8:12-14, 10:4-6, 12:10-13; Bederson, ¶63.

A POSA would have had a reasonable expectation of success implementing Muthukumarasamy to use Hayward’s embedded media player pages, because embedded media players were, by the earliest claimed priority date of the ’251 Patent, well known: Hayward teaches that, by 2003, embedded media players were already “known” and “popular” and “[m]any content providers employ[ed] this embedded technique.” Hayward, 1:11-13, 1:26-30; *see also* Bederson, ¶64. A POSA would have had a reasonable expectation of success in the “mere application of [this] known technique”—embedded media player pages—“to a piece of prior art”—

Muthukumarasamy—“ready for the improvement.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007); *AVX Corp. v. Presidio Components, Inc.*, IPR2018-00167, Paper 16 at 50 (PTAB May 14, 2019), *aff’d*, 825 F. App’x 909, 915-16 (Fed. Cir. 2020).

B. Independent Claim 1

1. Element 1(pre)

To the extent the preamble of Claim 1 is limiting, Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**) discloses *a machine-implemented method: of controlling presentation of video content on a display device that loads any[]one of a plurality of different media players*.³ Muthukumarasamy discloses controlling presentation of video content on a video device, and both Muthukumarasamy and Hayward disclose loading any one of a plurality of different media players on the display device. Bederson, ¶65.

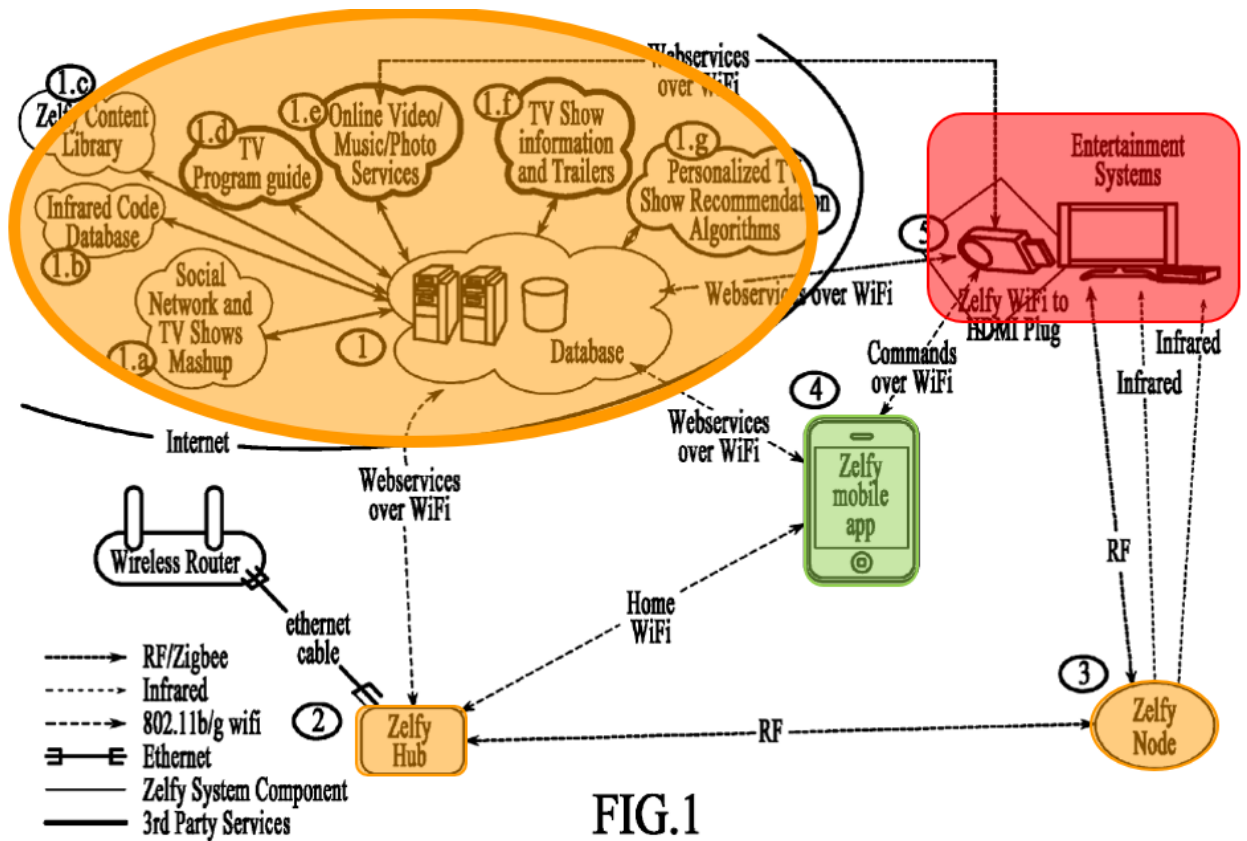
Muthukumarasamy discloses controlling presentation of video content on a display device because it teaches using an “internet-enabled device to control navigation through media or entertainment content and control media devices or components.” Muthukumarasamy, [0003]. “A Device-Based Control System (DBCS)” allows a user to use an “internet-enabled device (IED)” such as an iPhone®

³ Claim language is bolded and italicized throughout.

to select and control media played on different devices and from different media sources including cable and streamed internet content, such as Netflix or Amazon Video On Demand, onto a display device, such as a media device configured with remote-controlled internet browser software (RCIBS). *Id.*, [0026], [0027], [0031], [0045], [0083], [0134]. From Muthukumarasamy's IED, users "navigate through media or entertainment content, [and] control media components or equipment to watch and/or listen to media content." *Id.*, [0026]. Thus, Muthukumarasamy provides "a device-agnostic and source-agnostic entertainment experience," which allows selecting media "content choices spread across numerous sources and devices." *Id.*, [0026], [0027], [0049]; Bederson, ¶66.

Users "[u]sing the IED interface, ... select[] the content and start[] enjoying the content" on a separate "media device" (claimed display device) (*id.*, [0077]) such as a "TV, DVD player, [and] Apple TV device" (*id.*, [0036]). Once media content is selected for playback, users control playback with a number of commands, such as pause or play. *Id.*, [0050]; Bederson, ¶67.

The following annotated Figure 1 shows the Muthukumarasamy system for controlling presentation of video content requested from a **personal computing device** received from a **server system** on a **display device** that loads any one of a plurality of different media players. Bederson, ¶68.



Muthukumarasamy, FIG. 1 (annotated).

Muthukumarasamy teaches that the media device loads any one of a plurality of different media players for two reasons:

First, Muthukumarasamy discloses a source-agnostic system that aggregates content choices from a multitude of disparate media sources, including “subscription media, broadcast media, cable, DVR, VOD and internet media.” *Id.*, [0047]. Muthukumarasamy “controls delivery of selected media content and selects and controls the media devices that deliver the selected media content according to a media type of the selected media content.” *Id.*, [0048]. Because Muthukumarasamy

teaches that the media device displays media content from various disparate sources depending on the media type and media source, a POSA would have understood the media device to load an appropriate media player depending on the media type and source. Bederson, ¶¶69-70.

Second, Muthukumarasamy discloses using its RCIBS to play internet-based media content. Muthukumarasamy discloses that its display device loads any one of a plurality of different media players using the RCIBS because it discloses loading one of a plurality of video players. Muthukumarasamy, FIG. 19, [0025], [0083]. Muthukumarasamy discloses that, in response to a command from the IED to “[p]lay [a] video with given video-id (as specified by 3rd party using 3rd party APIs and Video Players[]),” the RCIBS, running on the display device, “loads the 3rd Party Video Player specified and plays the video.” *Id.* From this, a POSA would have understood Muthukumarasamy to teach that any number of “Video Player[s]” can be loaded to present content at the display device. Bederson, ¶71.

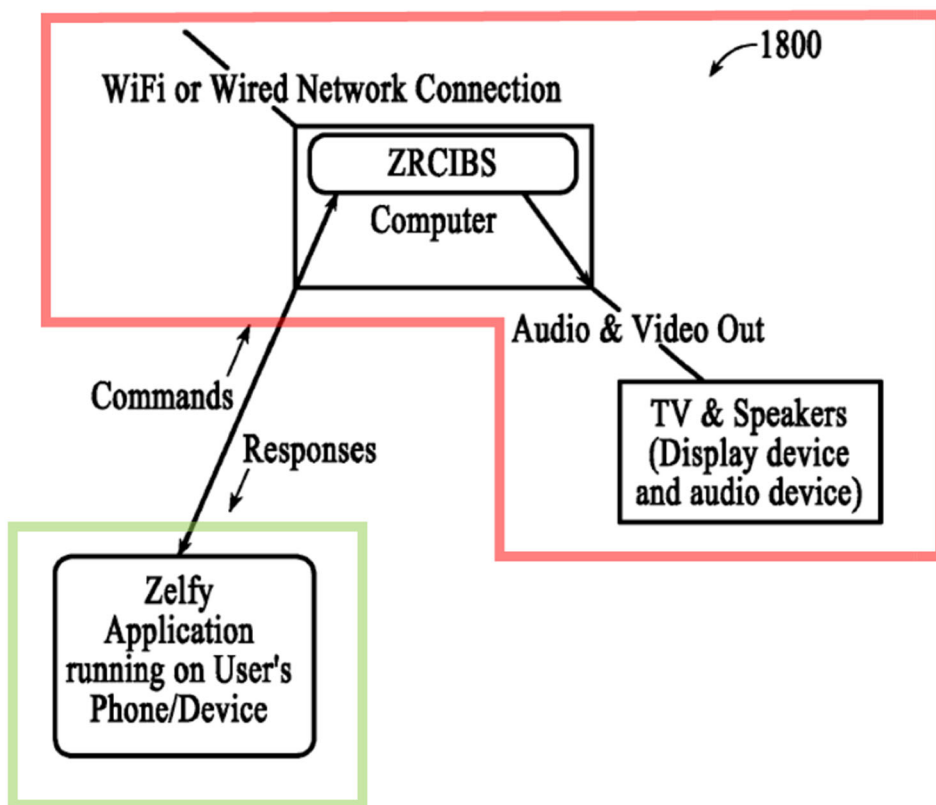


FIG.18

Muthukumarasamy, FIG. 18 (annotated).

Like Muthukumarasamy’s third-party-provided video player, the ’251 Patent discloses loading a media player to view videos within an internet browser. For example, Figure 6 of the ’251 Patent shows one such media player playing an internet video from “Ted.com.” ’251 Patent, 6:7-17; Bederson, ¶72.

For **Ground II**, to the extent Patent Owner argues that Muthukumarasamy does not disclose loading any one of a plurality of different media players on a display device, Hayward does so explicitly. Hayward discloses a display device for “displaying video data using an embedded media player page.” Hayward, Abstract.

Like both the '251 Patent and Muthukumarasamy, Hayward teaches various media players running on the display device that play media content received over the internet. *Id.*, 2:60-67, 3:30-40, 4:9-24. Hayward's display device plays internet-received media content in a plurality of formats, each corresponding to a different media player, or software such as an applet for playing the media content. *Id.*, 2:60-67 (referencing "plug-ins"), 5:36-60. For example, the media content may be encoded as "REALAUDIO™, REALVIDEO#, MICROSOFT WINDOWS MEDIA FORMAT™, FLASH™, APPLE QUICKTIME™, MPEG-2 Layer III Audio, and MP3." *Id.*, 3:53-63. Hayward's "[e]mbedded media player page includes a reference to a functional media player object (such as a RealPlayer plug in)" which is "resident on the client" and corresponds to the format of the video data to be played. *Id.*, 5:38-47. If the required media player object is not already resident on the client or the display device, Hayward's request for media content "trigger[s] a download of a media player applet to control the output" of the media. *Id.*; Bederson, ¶73.

A POSA would have understood Hayward's plurality of media player objects or applets corresponding to the media content's format to be the claimed plurality of media players because they are different software applets, resident on or downloaded to the display device, and selected based on the media content to be played. Bederson, ¶74. Patent Owner apparently agrees that the claimed "media player" can be software, like Hayward's plug-in or applet, loaded to play content. During

prosecution, for example, the Applicant defined the claimed “media player” as “application software for playing back the video content.” Ex-1003, 403 n. 2. Patent Owner also previously construed “media player” as “a computer application operable to present content and control presentation of content.” Ex-1010, 5; Bederson, ¶74.

The '251 Patent discloses similar “media players.” For example, the '251 Patent discloses that its “[v]arious types of video players may use different JavaScript commands to control their respective playback.” '251 Patent, 5:57-58. The universal playback control commands may be converted into the correct JavaScript code “to control the specific player.” *Id.*, 5:62-6:3. The “embedded media player” of Hayward also may use JavaScript commands. Hayward, 5:21-29 (“When the user ‘clicks’ on a link to a selected video file, a script file, such as a JavaScript file, transmitted to the client from the customer system 122 instructs the client to request the embedded media player page from the customer system 122.”). The embedded media player objects or applets of Hayward are media players under this definition as they present video content (*id.*, 2:9-12) and control it (*id.*, 5:38-6:4). Bederson, ¶75.

As explained in Section VII.A, a POSA would have been motivated and found it obvious to implement Hayward’s embedded media player pages in Muthukumarasamy to facilitate the source-agnostic presentation of internet content

that Muthukumarasamy envisions. Bederson, ¶76. For example, a POSA would have been motivated by and found it obvious from Hayward to implement the DBCS (e.g., the RCIBS) to facilitate presentation of internet content at the display device using any number of media players through embedded media player pages, as described in Hayward. *Id.* Such embedded media player pages would provide, as in Hayward, source-agnostic controlled presentation of internet content, as Muthukumarasamy envisions. *Id.*; Bederson, ¶76.

2. Element 1(a)

Muthukumarasamy discloses *assigning, by a server system, a synchronization code to the display device*. Muthukumarasamy discloses a server system comprising at least the internet server, zHub, and zNode, which receives configuration information related to the media device coupled to the RCIBS. Muthukumarasamy, [0044], [0045], [0051], [0057], [0058], [0068], [0077], FIGs. 1, 5, 6; Bederson, ¶77.

Muthukumarasamy discloses the claimed *server system* because it discloses an internet server, a zHub, and a zNode. These components work together as a *server system* to receive messages and commands from an internet-enabled device, such as a smartphone, and relay corresponding commands to control a media device (display device), such as a TV. Muthukumarasamy, [0057] (the “zHub receives the command from the IED” and “resolves the command” into an instruction for a zNode); [0044]

(the zNode translates the signals from the zHub to a protocol for sending to the media device), FIG. 1; Bederson, ¶78.

Muthukumarasamy's server system is similar to the server system described by the '251 Patent, which comprises multiple hardware components ('251 Patent, 1:44-50), receives commands from the personal computing device, such as a smartphone, and relays corresponding commands to control a display device, such as a TV. *Id.*, 1:43-61, 2:3-16; Bederson, ¶79.

Muthukumarasamy discloses the claimed *synchronization code* because it discloses "configuration information" that includes a "Device Identifier." Muthukumarasamy, FIG. 15/2; *see also* FIG. 14, [0068]-[0069]. Similarly, the '251 Patent discloses that the synchronization code identifies the display device. '251 Patent, 2:16-26 (the synchronization code is "uniquely associated with the display device"); Bederson, ¶80.

As explained in Section VII.B.3, Muthukumarasamy's server system receives a message including the synchronization code. Muthukumarasamy's server system then *assigns a synchronization code to the display device* because the internet server creates a device map including the configuration information. Muthukumarasamy, [0045]. Muthukumarasamy acknowledges that a user may want to view selected media content on one or more of a plurality of media devices (display devices). *Id.*, [0048]. To provide "a device-agnostic entertainment experience," (*id.*, [0068]),

Muthukumarasamy creates “a device map and infrared database 1B, hosted on the internet server 1” from configuration information the user provides “when he sets the system for the first time” to identify various media devices available for playback. *Id.*, [0045]; *see also id.*, [0068]-[0069], FIGs. 14, 15/2; Bederson, ¶81.

Muthukumarasamy’s “device map” includes a “logical representation of each of the devices,” including “a logical representation of a media device.” *Id.*, [0068]. The “device map” includes “core functions (e.g., audio output devices, video output devices, video content sources, audio output sources, intermediate switchers, etc.) and the various component relationships.” *Id.* This allows the DBCS “to scale across various consumer configurations at a premise.” *Id.*; Bederson, ¶82.

The server assigns the “configuration information,” as part of the “logical representation” of each device in the device map. *Id.*, [0045] (the Device-Based-Control System (DBCS) comprises “a device map and infrared database 1B, hosted on the internet server 1”), [0068] (“[T]he device map database of an embodiment comprises a logical representation of each of the devices at a consumer’s premise and the configuration in which they are coupled or connected”). This “configuration information” may be initially provided by the user from the IED during setup. *Id.*, FIG. 14, [0069], FIG. 15/2 (the “configuration information” can include, for example, a “Device Identifier.”); Bederson, ¶¶83-85.

Although “configuration information” may be **received** from the IED during setup (*id.*, [0069]), the “internet server” also **assigns** the “configuration information” to the display device in the “device map.” *Id.*, [0068]. The “internet server” assigns to the display device the “configuration information” as part of the “logical representation” in the “device map.” *Id.* The “internet server” updates the “device map database ... as a consumer adds new devices to the configuration, [such that] the new device is added to that consumer’s configuration database.” *Id.*, [0069], [0045]; Bederson, ¶84.

A similar structure of both receiving and assigning a synchronization code is disclosed by the ’251 Patent. The server system may “prompt the user to identify the device on which the video is to be displayed,” if the device is not already registered and connected to the system. ’251 Patent, 5:2-7. The ’251 Patent acknowledges, like in Muthukumarasamy, that the **synchronization code** may be first sent to the **server system** when a consumer adds a new device. *Id.* After the synchronization code is sent, “[i]n response, the server system 24 establishes a connection between the user’s smartphone and the selected display device through a look-up table.” *Id.*, 7:32-35; *see also id.* 5:36-41 (“Once the synchronization code is entered into, or captured by, the mobile phone 20, it is sent from the mobile phone 20 to the server system 24, which stores the information in the look-up table 36 so as to establish a connection between the mobile phone 20 and the display device 22 through the server system

24.”). The ’251 Patent discloses that the “synchronization code (‘sync code’) [can be] assigned to [the display device] at any given time” and “stored, for example, in a look-up table in the server system.” *Id.*, 5:29-35. Muthukumarasamy teaches an identical synchronization code to that of the ’251 Patent—both receiving the synchronization code from the personal computing device and assigning the synchronization code by the server system to the display device, and storing the synchronization code in a look-up table. Bederson, ¶85.

3. Element 1(b)

Muthukumarasamy discloses *receiving, in the server system, a message from a personal computing device that is separate from the server system and separate from the display device, wherein the message includes the synchronization code.*

Muthukumarasamy’s internet server receives a message from the IED, which is separate from both the internet server and the media device (playback device). Muthukumarasamy discloses that *the message includes the synchronization code.* Muthukumarasamy’s message from the IED to the internet server includes the configuration information. Bederson, ¶86.

Muthukumarasamy discloses that, from the IED, the user can select “Launch App” then “configur[e] the DBCS to interact with media components at a premise.” Muthukumarasamy, [0069], FIGs. 15/1, 15/2, 15/3. The IED can “add[] new devices to the configuration” to update the database. Muthukumarasamy, [0069]; *see also*

id., FIGs. 15/1, 15/2, 15/3. Muthukumarasamy discloses that the user provides the “configuration information” to the “internet server” via the IED (personal computing device). *Id.*, [0068], [0069], FIGs. 15/1, 15/2, 15/3. Muthukumarasamy states that after receiving the configuration information, the “internet server” stores the configuration information as part of the “logical representation” in the “Device map.” *Id.*, [0068]-[0069]; Bederson, ¶86.

The IED sending the configuration information to the internet server is separate from both the internet server and the media device. Muthukumarasamy’s IED includes a smartphone, such as an iPhone®. *Id.*, [0026]. Muthukumarasamy’s media device includes, for example, “entertainment components or devices such as [a] TV, DVD player, [and] Apple TV device.” *Id.*, [0036]; Bederson, ¶87.

Figure 1, annotated below, shows that the IED (*personal computing device*) is separate from the internet server, zHub, and zNode (*server system*), and the “media device” “Entertainment Systems” (*display device*).

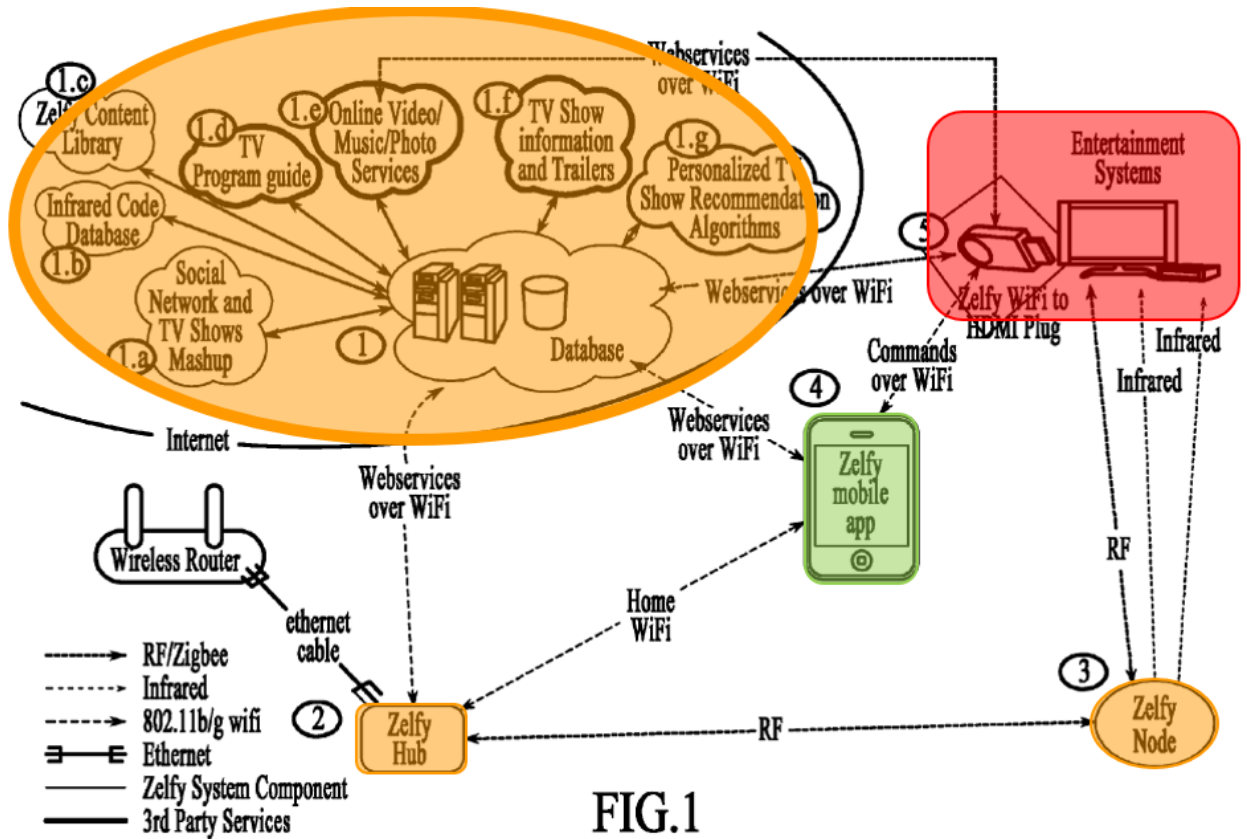


FIG.1

Id., FIG. 1 (annotated); Bederson, ¶88.

4. Element 1(c)

Muthukumarasamy discloses *storing, by the server system, a record establishing an association between the personal computing device and the display device based on the synchronization code*. Muthukumarasamy’s internet server stores “a logical representation of each of the devices at a consumer’s premise and the configuration in which they are coupled or connected” in a device map database based on the configuration information. *Id.*, [0068]; Bederson, ¶89.

Muthukumarasamy discloses that its server system stores *a record establishing an association between the personal computing device and the display*

device because Muthukumarasamy discloses storing a “device map database of an embodiment comprises a logical representation of each of the devices at a consumer’s premise and the configuration in which they are coupled or connected.” *Id.*, [0068]; *see also id.*, [0114]. The device map database includes an IED and its relationship with the media device. *Id.*, FIG. 14, [0020], [0050], [0068]-[0069]. The “logical representation of each of the devices at a consumer’s premise and the configuration in which they are coupled or connected” includes a record of an association between the IED and the media device. And the logical representation is *based on the synchronization code* because it is based on the configuration information. *Id.*, [0068]-[0069]; *see also id.*, FIGs. 14, 15/2; Bederson, ¶90.

The “logical representation” is also “*stor[ed], by the server system* because it is stored by the internet server in the device map database.” *Id.*, [0045], [0068]-[0069]. Muthukumarasamy states that its device map is “hosted on the internet server 1” (*id.*, [0045]) and “stores every user’s media system configuration” (*id.*, [0069]). Bederson, ¶91.

5. Element 1(d)(i)

Muthukumarasamy discloses *receiving, in the server system, one or more signals from the personal computing device*. Muthukumarasamy’s zHub, a component of the server system, receives signals from the IED. Bederson, ¶92.

Muthukumarasamy discloses a zHub as part of its server system that “comprises a hardware component that receives signals or commands from the IED 4 via a local or premise network (e.g., router, WiFi, etc.).” *Id.*, [0044]. The zHub then executes code it downloads from the internet server to control media devices. *Id.*, [0057]; Bederson, ¶93.

6. Element 1(d)(ii)

Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**) teaches *the one or more signals specifying a video file to be acted upon and identifying a particular media player for playing the video content*. Muthukumarasamy discloses signals specifying media content to be acted on by a particular video player. Hayward also discloses identifying a “media player applet to control the output of a media file.” Bederson, ¶94.

Muthukumarasamy discloses *one or more signals specifying a video file to be acted upon*. Muthukumarasamy discloses that the user selects media content for playback from an interface on the IED. *Id.*, [0077]. Muthukumarasamy “generates a list of recommended content that is available for the user.” *Id.* “The list of recommended content is presented to the user, and the user selects media content from the list” shown on the IED. *Id.*; *see also id.*, [0047]-[0048]. This list is generated by a “Content Recommendation System (CRS).” *Id.*, [0045], [0070],

[0084]. Figure 2 below shows the list of video files available for playback displayed by the IED.



FIG.2

Id., FIG. 2; Bederson, ¶95.

A user can select the content from the search results screen to identify the media content, or video file to play. *Id.*, [0047]-[0048], [0050], [0149] (referencing “communicating or transferring files”); *see also id.*, Fig. 19 (referencing a particular URL, which would be understood to be a file). Once selected, the zHub, a component of the server system, “receives signals or commands from the IED 4 via a local or

premise network (e.g., router, WiFi, etc.).” *Id.*, [0044]. In response, Muthukumarasamy’s DBCS “controls delivery of selected media content and selects and controls the media devices that deliver the selected media content according to a media type of the selected media content.” *Id.*, [0048], [0064], [0084], [0085], [0088], [0116], [0117]; Bederson, ¶96.

Muthukumarasamy teaches that the signals *identify[] a particular media player for playing the video content* for two reasons:

First, Muthukumarasamy discloses a source-agnostic system that aggregates content choices from a multitude of disparate media sources, including “subscription media, broadcast media, cable, DVR, VOD and internet media.” *Id.*, [0047]. Muthukumarasamy “controls delivery of selected media content and selects and controls the media devices that deliver the selected media content according to a media type of the selected media content.” *Id.*, [0048]. Because Muthukumarasamy teaches that a user selects media content from various disparate sources, which is then delivered to the selected media device for playback depending on the media type, a POSA would have understood each request for particular content to identify a media player associated with the particular source of the content. Bederson, ¶98. Muthukumarasamy lists a few examples, including “Netflix, Cinema Now, [and] Amazon Video On Demand,” among other internet streaming and on-demand video services. *Id.*, [0134]; Bederson, ¶¶97-98.

Second, Muthukumarasamy discloses “stream[ing] internet content over WiFi” into a browser-based media player. *Id.*, [0045]. To this end, Muthukumarasamy teaches that the IED sends commands to play, through the RCIBS, media content “as specified by 3rd party using 3rd party APIs and Video Players.” *Id.*, FIG. 19. In response, the RCIBS “loads the 3rd Party Video Player specified and plays the video with given video[-]id.” *Id.* From this, a POSA would have understood Muthukumarasamy to teach that the command sent from the IED specifies both the video (*a video file to be acted upon*) and the Video Player to be loaded to play the video (*a particular media player for playing the content*). Bederson, ¶99. *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1337 (Fed. Cir. 2020) (affirming PTAB’s finding that claims would have been obvious over a reference “in light of the general knowledge of a skilled artisan,”) (quoting *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362-63 (Fed. Cir. 2013)); Bederson, ¶99.

For **Ground II**, to the extent that Muthukumarasamy does not expressly disclose that the signals *identify a particular media player for playing the video content*, Hayward does so explicitly. Hayward’s system includes a customer system (server system providing media content) and a client (user’s computing device), as FIG. 1A below shows. Hayward, FIG. 1A, 4:9-19.

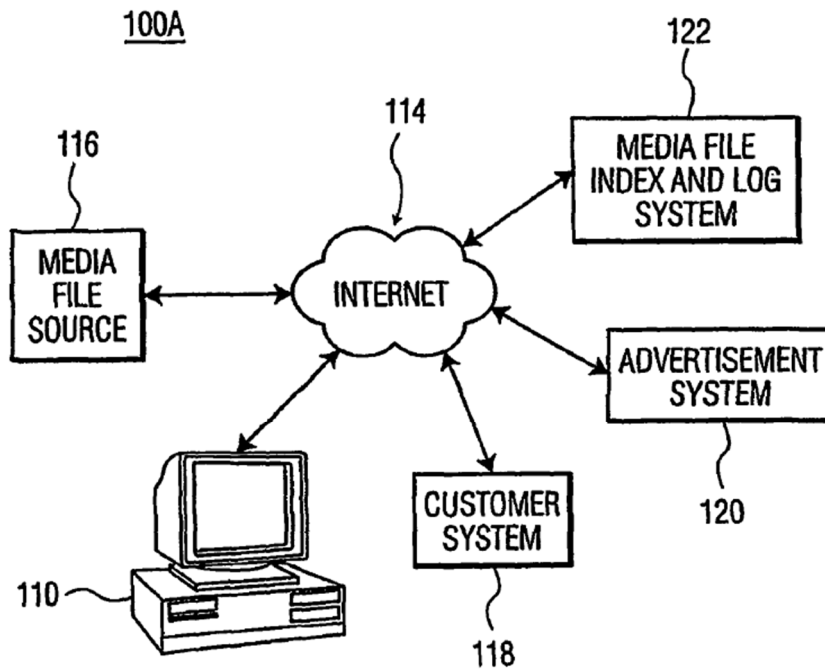


FIG. 1A

Id., FIG. 1A; Bederson, ¶100.

To access and play media content, a “user of client 110 accesses customer system 118 through Internet 114 using an Internet browser.” *Id.*, 4:9-13. Hayward’s customer system provides a list of media content available for playback, and a user at the client may then click on particular media content to initiate playback. *Id.*, 5:6-29. “When the user ‘clicks’ on a link to a selected video file, a script file, such as a JavaScript file, transmitted to the client from the customer system 122 instructs the client to request the embedded media player page from the customer system 122.”

Id., 5:24-28. The requested embedded media player page also “includes a reference to a functional media player object (such as a RealPlayer plug in)” which is “resident on the client” and corresponds to the format of the video data to be played. *Id.*, 5:38-6:4. A POSA would have understood Hayward’s request for a particular embedded media player page to identify the particular media player for playing the content because the embedded media player page references a particular media player object it will run. Bederson, ¶101.

As explained in Section VII.A, a POSA would have been motivated and found it obvious to implement Hayward’s embedded media player pages in Muthukumarasamy to facilitate the source-agnostic presentation of internet content that Muthukumarasamy envisions. Bederson, ¶102. For example, a POSA would have been motivated by and found it obvious from Hayward to implement the DBCS (e.g., the RCIBS) to facilitate presentation of internet content at the display device using any number of media players through embedded media player pages, as described in Hayward. *Id.* Such embedded media player pages would provide, as in Hayward, source-agnostic controlled presentation of internet content, as Muthukumarasamy envisions. *Id.*

Because Hayward’s embedded media player page includes, in addition to an identification of a selected media file from the Internet, “a reference to a functional media player object (such as a RealPlayer plug in),” a client may present the selected

media file in the appropriate media player, whatever the media file's source. Hayward, 5:38-47, 8:39-41. A POSA would have understood that to facilitate playback with the appropriate media player required for playback of the selected media content, as taught by Hayward, the signal requesting the media content would identify the particular media player. Bederson, ¶103. A POSA would have been motivated to include Hayward's disclosure of a signal identifying the particular media player for playback of the media content to facilitate a truly source-agnostic media system in Muthukumarasamy. *Id.* And the POSA would have expected the combination to successfully provide source-agnostic presentation of content on a display device—as desired by Muthukumarasamy, [0027] because embedded media players were, by the earliest claimed priority date of the '251 Patent, well known: Hayward teaches that, by 2003, embedded media players were already “[k]nown” and “popular,” and “[m]any content providers employ[ed] this embedded technique.” Hayward, 1:11-13, 1:26-30; Bederson, ¶103. A POSA would have had a reasonable expectation of success in the “mere application of [this] known technique”—embedded media player pages—“to a piece of prior art”—Muthukumarasamy—“ready for the improvement.” *KSR*, 550 U.S. at 417; *AVX*, IPR2018-00167, Paper 16 at 50.

7. Element 1(d)(iii)

Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**) discloses that *the one or more signals further include[s] a universal playback control command for controlling playing of the video content on the display device by the particular media player*. Muthukumarasamy discloses that signals from the IED identify media content for playback and control playback at the media device by the particular media player. Hayward also discloses a universal playback control command for controlling playback by the particular media player. Bederson, ¶104.

As explained in Section VII.B.5, Muthukumarasamy's server system receives universal signals from the IED. Muthukumarasamy's IED also sends the signals to the server system to control playback of the selected media content in the corresponding media player. Muthukumarasamy's signals from the IED to control playback satisfy this limitation in two ways:

First, Muthukumarasamy explains that once particular media content is selected for playback, the "DBCS software enables, via the IED, contextual gesture-based control of media components (e.g., volume selection, channel selection, pause/play, etc.) by the consumer." Muthukumarasamy, [0050]. Depending on the media source providing the media content, particular inputs by the user correspond to particular controls:

For example when watching DVD players, a single tap on the IED 400 controls the pause function of the DVD, and tapping again on the IED 400 controls the resume play function of the DVD. Similarly, swiping right on the IED screen interface controls the skip function to skip the content to a subsequent chapter, and swiping left controls the skip function to skip the content to a previous chapter. Swiping up and down on the IED screen interface controls the volume on the appropriate media device (e.g., TV, AV Receiver, etc.). Moreover, gesturing right with the IED can control the skip function to skip the content to a subsequent chapter, and gesturing left can control the skip function to skip the content to a previous chapter. Gesturing up and down with the IED can control the volume on the appropriate media device (e.g., TV, AV Receiver, etc.).

Id., [0051]; Bederson, ¶¶105-06.

The control commands, sent from the IED, are universal because they are sent in a standard or common format, agnostic to the media player to control, that must be received and translated into the particular programming code necessary for the particular media player by the zHub. Muthukumarasamy states that, “[w]hen the IED sends a command,” such as the control commands discussed above, “the zHub ... resolves the command into a specific instruction directed at a specific zNode in the house.” *Id.*, [0057]. Because the zHub receives the command and translates it to correspond to the particular media device playing the selected media content in a media player, a POSA would have understood the signal to be a universal playback control command for controlling the playing of video content at the display device by the particular media player. Bederson, ¶107.

Second, Muthukumarasamy discloses that the IED sends commands to control the internet-based media content streamed through the RCIBS. Muthukumarasamy, [0083]. “The IED transmits commands to the RCIBS,” which results in specific actions by the RCIBS, depending on the particular media player in use. *Id.* Figure 19 below shows a list of commands sent from the IED and the RCIBS’s response.

Command	Result
Go to webpage with given URL	ZRCIBS loads and displays the webpage that is present at the given internet URL
While on webpage, Navigate: Up/down/right/left (This is done via button presses or gestures on the Zelfy application)	ZRCIBS jumps hyperlink to next hyperlink.
Play video at given URL	ZRCIBS plays the video present at the given URL
Execute Transport Command (Play, Pause Fastforward, rewind) on currently playing video	ZRCIBS executes the transport command on the current playing video.
Play audio at given URL	ZRCIBS plays the audio present at the given URL
Execute Transport Command (Play, Pause Fastforward, rewind) on currently playing audio	ZRCIBS executes the transport command on the current playing audio.
Play flash swf game or other game at given URL	ZRCIBS loads and presents the game (adobe flash swf of other) present at the given URL
While on game: Pass game command. (This is done via button presses or gestures on the Zelfy application)	ZIMMS executes the command in the game.
Play video with given video-id (as specified by 3 rd party using 3 rd party APIs and Video Players	ZRCIBS loads the 3 rd Party Video Player specified and plays the video with given videoid)
Play audio with given audio-id (as specified by 3 rd party using 3 rd party APIs and audio Players	ZRCIBS loads the 3 rd Party Audio Player specified and plays the audio with given audioid)

FIG.19

Id., FIG. 19. Figure 19 shows that the received commands are universal because the response depends on the particular media player being used. For example, there are seven different responses to the command “Play,” depending on whether the user is playing an Adobe Flash game, an audio API, a video API, audio from a URL, or video from a URL, etc. *Id.* A POSA would have understood signals sent to control the RCIBS to be universal, resolved to control the particular media player loaded by the display device. Bederson, ¶108.

A POSA implementing a web-based media player would have recognized that, for many commands to control a media player, there are multiple possible implementations that invoke tradeoffs in each of (1) resources at the display device, (2) resources at the server, and (3) user experience. Bederson, ¶109. Because a media player, such as Flash, for example, is independently engineered and weighs these tradeoffs differently, each media player has different player-specific implementations. *Id.* Varying player-specific implementations mean a generic command at the user device will often cause different instructions to be carried out at the display device. For example:

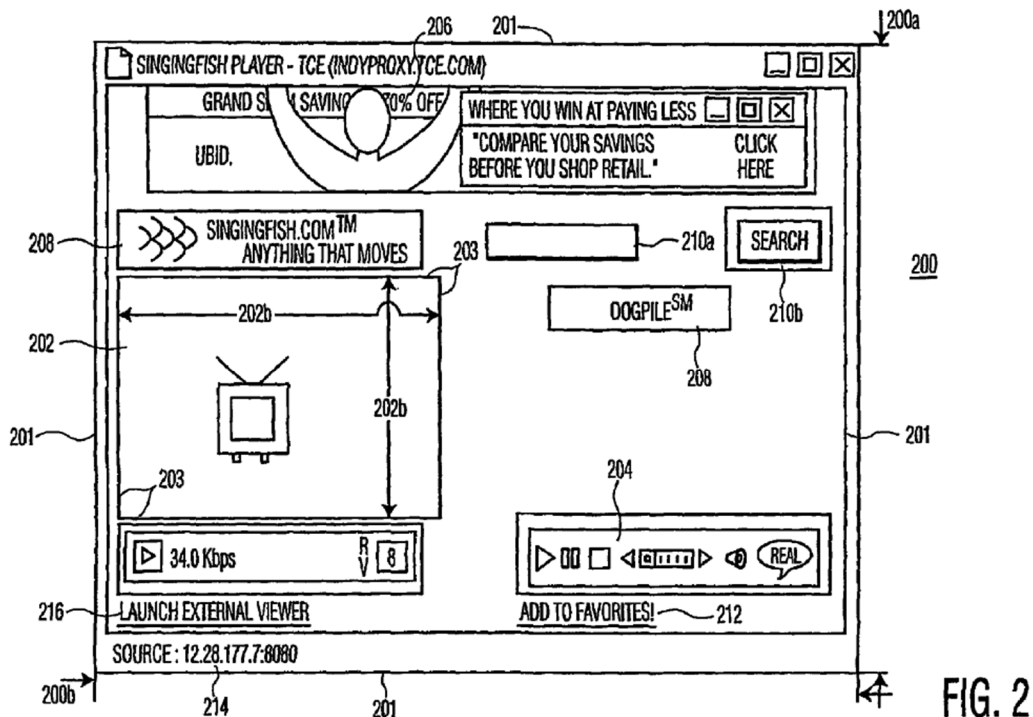
- **Fast Forward** - a media player has three exemplary implementations of a fast forward command: (1) the media player is instructed to only play every other frame of the existing stream; (2) the server creates and sends a new stream that only *has* every other frame and the media player just keeps on playing; (3) a hybrid where the media player plays every other frame until the end of the buffer and then plays the new stream.

- **Pause** - a media player has three exemplary implementations of a pause command: (1) the media player tells the server to stop sending frames, but keeps the buffered frames; (2) the media player does not tell the server to stop sending frames and just lets the buffer fill up as usual; and (3) the media player empties its buffer to free up RAM for other processes at the display device.

Id. In both above examples, these different implementations have tradeoffs in display device resources, server resources, and user experience (e.g., time lag). *Id.* Because a POSA would have understood that each media player has a specific implementation in response to a received command, a POSA would have understood that Muthukumarasamy's system must receive a universal playback control command and adapt it to control the particular media player. *Id.*, ¶¶109-10.

For **Ground II**, to the extent that Muthukumarasamy does not explicitly disclose that the universal playback control command is *for controlling playing of the video content on the display device by the particular media player*, Hayward does. Hayward discloses that its “embedded media player page includes a video display area 202 (when the embedded player plays a video file) and control 204 for controlling the output of a media file.” Hayward, 5:61-66. The control for controlling output of the media file “includes a play button, pause button, stop button, slider bar, [and] forward and rewind buttons.” *Id.*, 5:66-6:2. As explained in Section VII.B.1, Hayward's embedded media page corresponds to the claimed “media player,” and a POSA would have been motivated and found it obvious to implement Hayward's

embedded media player pages to facilitate the source-agnostic presentation of internet content that Muthukumarasamy envisions. In such an implementation, converting the universal signals sent to control the RCIBS to control the particular media player loaded by the display device, as Muthukumarasamy describes, would be performed by the server in providing the embedded media player page through which the media player is controlled. Bederson, ¶111. As a POSA would have recognized, to control playback in Hayward's embedded media player page, particular controls must be loaded to control the media object used, as taught by Hayward. *Id.* An embedded media player page including controls specific to the media player playing the media content is shown in Figure 2 of Hayward, below.



Hayward, FIG. 2.

A POSA would have understood that the combination of Muthukumarasamy’s universal control command with Hayward’s plurality of media players and media-player specific control commands teaches this limitation. Bederson, ¶111. A POSA would have been motivated to implement Muthukumarasamy’s universal control command with Hayward’s embedded media player page in this manner to facilitate a truly source-agnostic media system, including controlling playback from any internet source. *Id.*, ¶112; Section VII.A. And a POSA would have expected success because embedded media players, which allowed control of presented content, were well-known by the earliest claimed priority date of the ’251 Patent. Hayward teaches that, by 2003, embedded media players were already “[k]nown” and “popular,” and “[m]any content providers employ[ed] this embedded technique.” Hayward, 1:11-13, 1:26-30, 5:61-66; Bederson, ¶121. A POSA would have had a reasonable expectation of success in the “mere application of [this] known technique”—embedded media player pages allowing control of presented content—“to a piece of prior art”—Muthukumarasamy—“ready for the improvement.” *KSR*, 550 U.S. at 417; *AVX*, IPR2018-00167, Paper 16 at 50.

8. Element 1(e)(i)

Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**) discloses *converting, by the server system, the universal playback control command into corresponding programming code to control playing of the video*

content on the display device by the particular media player. Muthukumarasamy's zHub and internet server translate commands from the IED to control playing of the media content in the particular media player on the display device. Hayward also discloses controlling playback of the media content in the particular media player through the embedded media player page. Bederson, ¶113.

Section VII.B.7 explains that Muthukumarasamy teaches or renders obvious a universal playback control command. Muthukumarasamy discloses *converting, by the server system, the universal playback control command into corresponding programming code.* Muthukumarasamy teaches two different conversions of the universal playback control command into corresponding programming code, either of which satisfies this limitation:

First, upon receiving the signals or commands, the zHub, one component of the server system, translates the commands into RF signals for controlling a particular media device (display device) associated with a zNode. Muthukumarasamy, [0044]; Bederson, ¶¶114-15.

Second, the translated commands from zHub are then sent to the identified zNode, where the zNode translates the commands into a protocol that is “interpretable by the media components” of the particular media device. *Id.*, [0058]. For this second conversion, the zNode, another component of the server system, receives RF signals from the zHub and “translates the RF signals to a protocol (e.g.,

Infrared) interpretable by the media components” of the particular media device. *Id.*, [0044]. The zNode and zHub may look up the code from the internet server as part of translating the RF signal to a desired protocol. *Id.*, [0057]; Bederson, ¶116.

Muthukumarasamy teaches or renders obvious that the universal playback control command is converted to particular programming code *to control playing of the video content on the display device by the particular media player*. Muthukumarasamy’s translated RF or infrared codes control playback of media content at the media device (display device) by (1) selecting the media content to begin playing and (2) to control playback of the media content after playback has begun. Bederson, ¶117.

First, Muthukumarasamy “receives and aggregates media content from a plurality of media sources that are disparate sources, learns media preferences from user behavior, generates from the aggregated media content media content choices corresponding to the media preferences, and presents the media content choices on the IED via the media management application, wherein, in response to a user selection on the IED of selected media content, the media management application automatically controls delivery of the selected media content and selects and controls the media devices needed to deliver the selected media content according to a media type of the selected media content.” *Id.*, [0085]; *see also id.*, [0050], FIG. 19. A POSA would have understood that selecting media content to play on

certain media device (display device) would include translating the command into the particular programming code needed for the particular media player playing the media content at the media device because Muthukumarasamy's media players correspond to a particular source. *See* Section VIVII.B.1; Bederson, ¶118.

Second, “[o]nce the content is chosen, the DBCS software enables, via the IED, contextual gesture-based control of media components (e.g., volume selection, channel selection, pause/play, etc.) by the consumer.” Muthukumarasamy, [0050]. The control commands, sent from the IED, are translated into the particular programming code necessary for the particular media player by the zHub. Muthukumarasamy states that, “[w]hen the IED sends a command,” such as the control commands discussed above, “the zHub ... resolves the command into a specific instruction directed at a specific zNode in the house.” *Id.*, [0057]. Because the zHub receives the command and translates it to correspond to the particular media device playing the selected media content in a media player, a POSA would have understood the signal to be *converted, by the server system, into corresponding programming code to control playing of the video content on the display device by the particular media player*. Bederson, ¶119.

For **Ground II**, to the extent Muthukumarasamy's universal playback control does not disclose the limitation of controlling the *particular media player*, as explained in Section VII.B.7, Hayward discloses that the embedded media player

page includes playback commands that control a particular media player. A POSA would have understood that the combination of Muthukumarasamy's translation of a universal control command with Hayward's plurality of media players and media-player specific control commands teaches this limitation because, in combination, the references suggest translating a universal command to control a particular media player. Bederson, ¶120.

A POSA would have been motivated to implement Muthukumarasamy's universal control command with Hayward's embedded media player page in this manner to facilitate a truly source-agnostic media system, including controlling playback from any internet source. Bederson, ¶121; Sections VII.A, VII.B.1. And the POSA would have expected success because embedded media players, which allowed control of presented content, were well-known by the earliest claimed priority date of the '251 Patent: Hayward teaches that, by 2003, embedded media players were already "[k]nown" and "popular," and "[m]any content providers employ[ed] this embedded technique." Hayward, 1:11-13, 1:26-30, 5:61-66; Bederson, ¶121. A POSA would have had a reasonable expectation of success in the "mere application of [this] known technique"—embedded media player pages allowing control of presented content—"to a piece of prior art"—Muthukumarasamy—"ready for the improvement." *KSR*, 550 U.S. at 417; *AVX*, IPR2018-00167, Paper 16 at 50.

9. Element 1(e)(ii)

Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**) discloses that *converting the universal playback control command includes selecting from among a plurality of specific commands each of which represents a corresponding playback control command for a respective media player*. Muthukumarasamy discloses that translating the universal playback control command includes selecting from a plurality of controls for a respective media. Hayward also discloses selecting from a plurality of controls for controlling a particular media player. Bederson, ¶122.

Section VII.B.8 explains that Muthukumarasamy discloses *converting the universal playback control command*. Muthukumarasamy discloses that *converting the universal playback control command includes selecting from among a plurality of specific commands*. After receiving the universal control command, as explained in Section VII.B.7, Muthukumarasamy discloses that translating the command into corresponding code includes *selecting from among a plurality of specific commands* because the translation includes looking up and/or selecting the appropriate code for the corresponding control. Muthukumarasamy, [0057]. That is, Muthukumarasamy's zHub "resolves or maps the command to a specific IR code to be sent to a specific zNode via an RF signal. The zHub can cache IR codes or other data that may be used to control media devices. If the appropriate IR code is not

available in the cache, the zHub looks up the code (e.g., from the internet server);” *see also id.*, [0048]. The IR code is then used to perform the desired control by the media player playing the media content on the media device. *Id.*, [0038]; *see also id.*, [0044], [0048]; Bederson, ¶123.

Figure 5 below shows an exemplary table of different universal control commands, each of which represents a corresponding command for a respective media player. For example, when a user presses the left arrow on the IED, depending on whether the user is watching the Live TV media player, DVR media player, or one of the Blu-ray/Sky/VCR media players, the server system translates the signal into the appropriate programming code for the media player, performing channel down, rewind, or move cursor, respectively. *Id.*, FIG. 5.

10' Experience, Eyes on the TV, Until Viewer Presses Search Button					
	Gesture	Watching Live TV	Watching DVR	Watching DVR/Blu-ray/Sky/VCR	Onscreen Browsing UI For TV: Guide/DVR/DVD/Blu-ray/Sky
↑	Up	Volume Up	Volume Up	Volume Up	Move Selection/Cursor Up
⇧	Continuous Up	Continuous Volume Up	Continuous Volume Up	Continuous Volume Up	Cont.Move Selection/Cursor Up Page Up
↓	Down	Volume Down	Volume Down	Volume Down	Move Selection/Cursor Down
⇩	Continuous Down	Continuous Volume Down	Continuous Volume Down	Continuous Volume Down	Cont.Move Selection/Cursor Down Page Down
←	Left	Channel Down	Enter Rewind Mode	Enter Rewind Mode	Move Selection/Cursor Left
⇐	Continuous Left	Continuous Channel Down	Scrub Back While Finger Down	Scrub Back While Finger Down	Cont.Move Selection/Cursor Left Page Left
→	Right	Channel Up	Enter Fast Forward Mode	Enter Fast Forward Mode	Move Selection/Cursor Right
⇒	Continuous Right	Continuous Channel Up	Scrub Forward While Finger Down	Scrub Forward While Finger Down	Cont. Move Selection/Cursor Right Page Right
↻	Clockwise	Back in Channel History	Jump Back 10 Seconds	Jump Back 10 Seconds/Prev. Chapter	Previous Screen
↺	Counter Clockwise	Forward in Channel History	Jump Forward 30 Seconds	Jump Forward 30 Seconds/Next Chapter	Next Screen
⏻	Select	Mute	Play/Pause	Play/Pause	Select
ⓘ	Menu	TV Menu	DVR Menu	DVR Menu	Menu/Up/Previous
⦿	Content Required Contextual Menu	N/A	Show Info	Contextual Menu	Contextual Menu
🔍	Search (Button)	Search UI & Keyboard on Device: Scoped to TV Guide	Search UI & Keyboard on Device: Scoped to DVR Content	Search UI & Keyboard on Device: Scoped to Universal Search	Search UI & Keyboard on Device: Scoped to Appropriate Service
⏮	Switch Context to 2' (Button)	Switch from 10' Experience to 2' Experience			

FIG.5

Id., FIG. 5; Bederson, ¶124.

The same is true when Muthukumarasamy is streaming media content from the internet. Figure 19 similarly shows that the “play” command corresponds to any one of different actions depending on the particular source or media player, be it an Adobe Flash game, a video at a URL, audio at a URL, a video using a third-party video player, or audio using a third-party audio player. *Id.*, FIG. 19, [0083]; Bederson, ¶125.

Command	Result
Go to webpage with given URL	ZRCIBS loads and displays the webpage that is present at the given internet URL
While on webpage, Navigate: Up/down/right/left (This is done via button presses or gestures on the Zelfy application)	ZRCIBS jumps hyperlink to next hyperlink.
Play video at given URL	ZRCIBS plays the video present at the given URL
Execute Transport Command (Play, Pause Fastforward, rewind) on currently playing video	ZRCIBS executes the transport command on the current playing video.
Play audio at given URL	ZRCIBS plays the audio present at the given URL
Execute Transport Command (Play, Pause Fastforward, rewind) on currently playing audio	ZRCIBS executes the transport command on the current playing audio.
Play flash swf game or other game at given URL	ZRCIBS loads and presents the game (adobe flash swf of other) present at the given URL
While on game: Pass game command. (This is done via button presses or gestures on the Zelfy application)	ZIMMS executes the command in the game.
Play video with given video-id (as specified by 3 rd party using 3 rd party APIs and Video Players	ZRCIBS loads the 3 rd Party Video Player specified and plays the video with given videoid)
Play audio with given audio-id (as specified by 3 rd party using 3 rd party APIs and audio Players	ZRCIBS loads the 3 rd Party Audio Player specified and plays the audio with given audioid)

FIG.19

For **Ground II**, to the extent that Muthukumarasamy does not disclose that commands are *for a respective media player*, Hayward does. Hayward discloses including in the embedded media player page a plurality of controls, such as pause and play for a respective media player loaded with a JavaScript file. Hayward, 5:21-28, 5:60-6:4. This is similar to the commands for a respective media player of the '251 Patent, which discloses loading JavaScript files to control respective media

players. '251 Patent, 5:54-6:8. (“Various types of video players may use different JavaScript commands to control their respective playback” and loading, for example, from a look-up table, “the correct JavaScript (or other programming) code used by the target device 22 to control the specific player.”); Bederson, ¶126.

As explained in Section VII.A, a POSA would have been motivated and found it obvious to implement Hayward’s embedded media player pages in Muthukumarasamy to facilitate the source-agnostic presentation of internet content that Muthukumarasamy envisions. Bederson, ¶127. For example, a POSA would have been motivated by and found it obvious from Hayward to implement the RCIBS to facilitate control of internet content presented at the display device using any number of media players through embedded media player pages, as described in Hayward. *Id.*

Such embedded media player pages would provide, as in Hayward, source-agnostic controlled presentation of internet content, as Muthukumarasamy envisions. Bederson, ¶128. Muthukumarasamy discloses selecting from a plurality of specific commands for a respective media device and media source. Muthukumarasamy, [0085], [0117]. A POSA would have understood that to facilitate control of a plurality of media players, as taught by Hayward, Muthukumarasamy would similarly select from a plurality of specific commands for controlling a particular media player. Bederson, ¶128. For example, a different set

of commands would be used depending on whether the system was using Real Player or Apple QuickTime, two media players expressly recognized by Hayward. *Id.*; Hayward, 3:53-63.

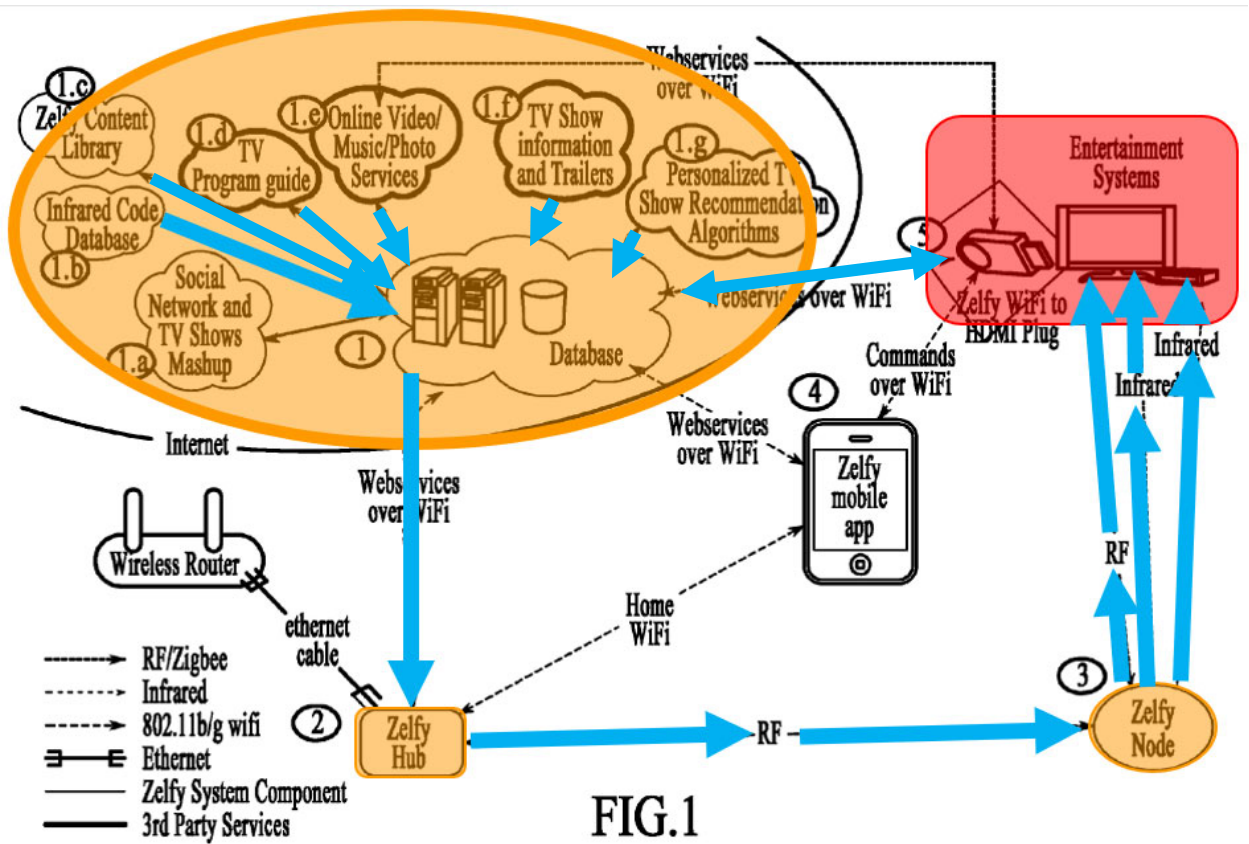
To facilitate a truly source-agnostic media system, including controlling playback from any internet source by corresponding media players, a POSA would have been motivated to implement Muthukumarasamy's conversion of commands to correspond to the particular media players of Hayward. Bederson, ¶129. And a POSA would have expected success because embedded media players, which allowed control of presented content in a variety of media players, were by the earliest claimed priority date of the '251 Patent: Hayward teaches that, by 2003, embedded media players were already “known” and “popular” and “[m]any content providers employ[ed] this embedded technique.” Hayward, 1:11-13, 1:26-30, 5:61-66; Bederson, ¶129. A POSA would have had a reasonable expectation of success in the “mere application of [this] known technique”—embedded media player pages allowing control of presented content in a variety of media players—“to a piece of prior art”—Muthukumarasamy—“ready for the improvement.” *KSR*, 550 U.S. at 417; *AVX*, IPR2018-00167, Paper 16 at 50.

10. Element 1(f)

Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**) discloses *storing, in a database associated with the server system, information for*

transmission to or retrieval by the display device, wherein the information specifies the video file to be acted upon, identifies the particular media player for playing the video content, and includes the corresponding programming code to control playing of the video content on the display device by the particular media player in accordance with the universal playback control command. Muthukumarasamy discloses a source-agnostic system for playing media content from a plurality of disparate sources in associated media players. The media selection and playback are managed by Muthukumarasamy's server system, which stores all necessary data for playback and control of the media content. Hayward also discloses stored information that identifies the particular media player for playing video content and controls playing of the video content on the display device by the particular media player. Bederson, ¶130.

Muthukumarasamy discloses storing data and that the stored data is for *transmission to or retrieval by the display device*. Figures 1 and 12 below show that the “**media device**,” such as a **TV**, can retrieve **information** from a database hosted on the **internet server**.



Muthukumarasamy, FIG. 1 (annotated); Bederson, ¶131.

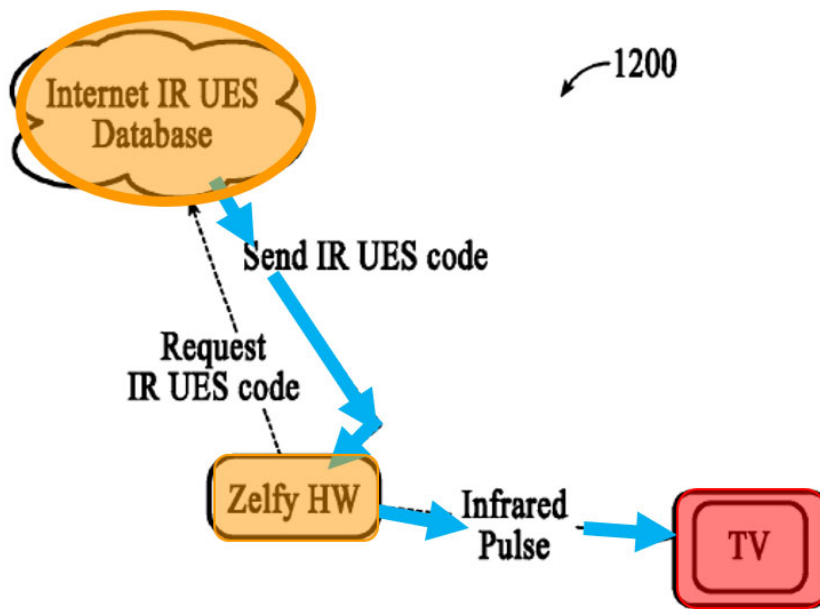


FIG.12

Id., FIG. 12 (annotated); Bederson, ¶131.

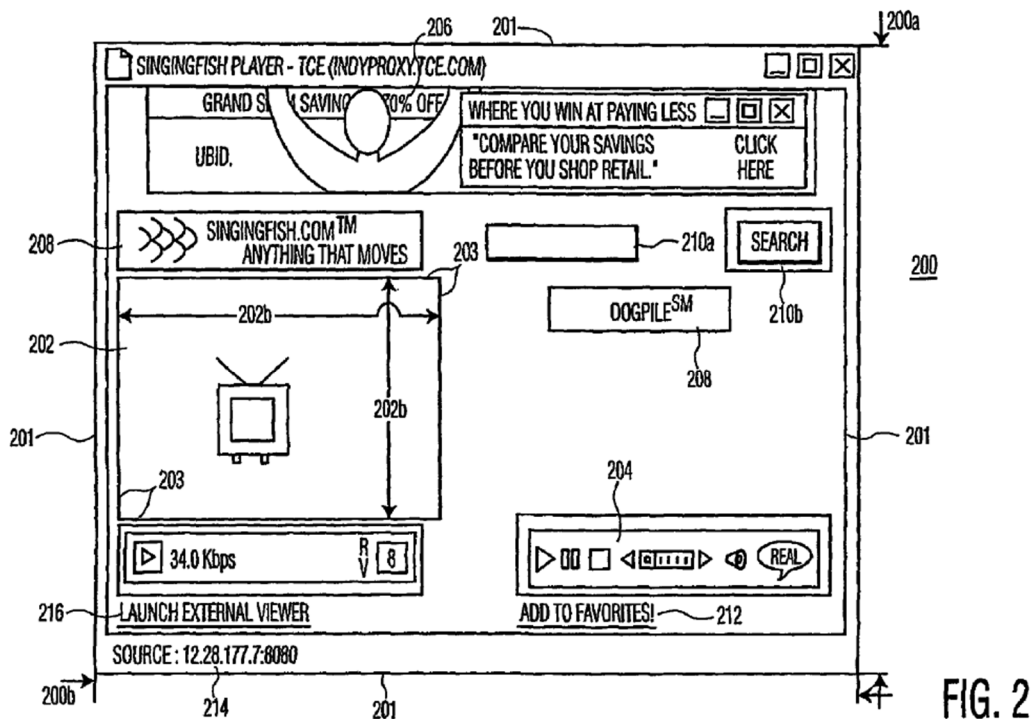
Muthukumarasamy discloses that its server system stores data that *specifies the video file to be acted upon*. As explained in Section VII.B.6, Muthukumarasamy discloses a content recommendation system that aggregates media content available for playback. Muthukumarasamy, [0045], [0070], [0084]-[0085]. Because the content recommendation system is coupled to the user’s IED, it “leverages the internet access of the IED[]” to aggregate media content available from a plurality of various sources and present it to the user (*id.*, [0026]), and a POSA would have understood the content to be aggregated and stored in a database at the internet server. Bederson, ¶132.

Muthukumarasamy discloses that its server system stores data that *identifies the particular media player for playing the video content*. As explained in Section VII.B.6, the particular media content identifies the media player for playback. A POSA would have understood Muthukumarasamy's internet server to also store the particular media player for playing the content. Bederson, ¶133.

Muthukumarasamy teaches that its server system stores data that *includes the corresponding programming code to control playing of the video content on the display device by the particular media player in accordance with the universal playback control command*. As explained in Sections VII.B.7 and VII.B.8, Muthukumarasamy's server system, including the database shown in Figure 1, would have been understood to store an affiliation between a universal playback control command received from the IED and the corresponding programming code particular media device and media player being used for playback. Alternatively, it would have been obvious to store this information in a database because a record of such information is necessary to facilitate playback and control of the media content. Bederson, ¶134.

For **Ground II**, to the extent that Muthukumarasamy does not explicitly disclose that the stored information *identif[ies] the particular media player for playing the video content* and *control[s] playing of the video content on the display device by the particular media player*, Muthukumarasamy in view of Hayward does.

As explained in Sections VII.B.1 and VII.B.7, Hayward's embedded media page corresponds to the claimed "media player." Figure 2 below shows the controls specific to the media player playing the media content.



Hayward, FIG. 2; Bederson, ¶135.

A POSA would have understood that the combination of Muthukumarasamy's stored information with Hayward's plurality of media players and media-player specific control commands teaches this limitation, and would have been motivated to combine the references in this way for the reasons discussed for the preceding limitations of claim 1. Bederson, ¶136; Section VII.A.

C. Dependent Claims

Muthukumarasamy and Hayward also render dependent claims 2 and 5-9 obvious. *See* Bederson, ¶137.

1. Claim 2

Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**) teaches all elements of Claim 2. Bederson, ¶138.

- a. **Element 2(a) - The method of claim 1 including: checking, in the server system, the identity of the media player identified in the one or more signals from the personal computing device**

Muthukumarasamy alone (**Ground I**) or in combination with Hayward (**Ground II**) discloses *checking, in the server system, the identity of the media player identified in the one or more signals from the personal computing device*. Muthukumarasamy discloses checking the identity of a media player identified in signals from the IED in the internet server. Hayward also discloses checking the identity of a media player identified in a request for media content. Bederson, ¶139.

As explained in Section VII.B.6, Muthukumarasamy teaches signals from the IED that identify a particular media player to play back selected media content. Bederson, ¶140.

The '251 patent explains, “Each time a signal is received from the mobile device 20, the API adapter 26 checks and identifies the specific media player that is being requested. Based on this information, the system loads the appropriate set of

protocols or application programming interfaces.” ’251 patent, 5:62-66. Similarly, Muthukumarasamy discloses *checking, in the server system, the identity of the media player identified in the one or more signals from the personal computing device* when initiating media playback for two reasons corresponding to the two reasons Muthukumarasamy’s received signals identify the particular media player:

First, as explained in detail in Section VII.B.6, Muthukumarasamy “controls delivery of selected media content and selects and controls the media devices that deliver the selected media content **according to a media type of the selected media content.**” Muthukumarasamy, [0048]. Because Muthukumarasamy teaches that a user selects media content from various disparate sources, which is then delivered to the selected media device for playback depending on the media type, a POSA would have understood “request for particular content” to identify a media player associated with the particular source of the content. Bederson, ¶142. A POSA would have understood that, to respond by providing media from the particular media player identified, Muthukumarasamy would first check the identity of that media player to respond accordingly. *Id.*, ¶¶141-42.

Second, as explained in detail in Section VII.B.6, Muthukumarasamy discloses playing internet-streamed media content “with [the] given video-id (as specified by 3rd party using 3rd party APIs and Video Players).” *Id.*, FIG. 19. In response, the RCIBS “loads the 3rd Party Video Player specified and plays the

video.” *Id.* A POSA would have understood that Muthukumarasamy’s server system first checks which media player will be used to play the particular media content to respond with the appropriate content and media player. Bederson, ¶143.

Muthukumarasamy also discloses *checking, in the server system, the identity of the media player identified in the one or more signals from the personal computing device* when controlling playback of media content by a particular media player for the reasons explained in detail in Sections VII.B.7 and VII.B.8. Those Sections explain that Muthukumarasamy’s server system receives universal control commands and resolves those commands into specific commands to correspond a particular media device and media player. Bederson, ¶144. Because Muthukumarasamy performs a translation, a POSA would have understood that it first checks the identity of the media player to properly translate the universal command into a specific command for a particular media device and media player. *Id.*

For **Ground II**, to the extent Patent Owner argues that Muthukumarasamy does not disclose *checking, in the server system, the identity of the media player*, Hayward does. Hayward discloses that “[w]hen the user ‘clicks’ on a link to a selected video file, a script file, such as a JavaScript file, transmitted to the client from the customer system 122 instructs the client to request the embedded media player page from the customer system 122.” Hayward, 5:24-47. And the

“[e]mbedded media player page includes a reference to a functional media player object (such as a RealPlayer plug in)” that can be downloaded, if needed, “to control the output of a media file.” *Id.* Because the appropriate object is loaded and/or downloaded to control the output of the media content, a POSA would have understood Hayward to check the identity of the needed media player to respond with the appropriate embedded media player page and media object. Bederson, ¶145.

As explained in Section VII.A, a POSA would have been motivated and found it obvious to implement Hayward’s embedded media player pages in Muthukumarasamy to facilitate the source-agnostic presentation of internet content that Muthukumarasamy envisions. Bederson, ¶146. For example, a POSA would have been motivated by and found it obvious from Hayward to implement the DBCS (e.g., the RCIBS) to facilitate control of internet content presented at the display device using any number of media players through embedded media player pages, as described in Hayward. *Id.* Such embedded media player pages would provide, as in Hayward, source-agnostic controlled presentation of internet content, as Muthukumarasamy envisions. *Id.* A POSA would have recognized that such an implementation of Muthukumarasamy would involve, as part of creating the embedded media player page that includes the appropriate media player, checking the identity of the media player at the server. *Id.*

b. Element 2(b) - loading an appropriate set of protocols or application programming interfaces from a library based on the identity of the media player

Muthukumarasamy alone (**Ground I**) or in combination with Hayward (**Ground II**) discloses *loading an appropriate set of protocols or application programming interfaces from a library based on the identity of the media player*.

Muthukumarasamy discloses loading a protocol from a database based on the identity of the media player. Hayward also discloses loading a protocol or API based on the identity of the media player. Bederson, ¶147.

Muthukumarasamy discloses both *loading an appropriate set of protocols* and loading appropriate *application programming interfaces*. Bederson, ¶148.

First, as explained in detail in Section VII.B.8, Muthukumarasamy discloses loading an appropriate *set of protocols* for controlling a particular media device and media player. Muthukumarasamy, [0044], [0056]. Because Muthukumarasamy discloses looking up the appropriate protocol, as explained in Section VII.B.8, a POSA would have understood the appropriate set of protocols to be loaded from a library. Bederson, ¶149.

Second, Muthukumarasamy discloses loading appropriate *application programming interfaces*. As explained in detail in Section VII.B.6, Muthukumarasamy discloses, for internet-streamed media content, “[p]lay[ing] video with given video-id as specified by 3rd party using 3rd party APIs and Video

Players” and accordingly loading the appropriate third-party API to play the media content. Muthukumarasamy, FIG. 19; [0083]. A POSA would have understood APIs are application programming interfaces. ’251 Patent, 5:65-6:3 (using API abbreviation); Bederson, ¶150. A POSA would have understood the appropriate API to be loaded from a library as claimed because the system would need to identify and load the appropriate API corresponding to the selected media content, which would be stored somewhere within the internet server. *Id.*

For **Ground II**, to the extent that Muthukumarasamy does not disclose that the protocol or API is loaded *based on the identity of the media player*, Muthukumarasamy in view of Hayward does. Hayward discloses that the media content may be encoded as “REALAUDIO™, REALVIDEO#, MICROSOFT WINDOWS MEDIA FORMAT™, FLASH™, APPLE QUICKTIME™, MPEG-2 Layer III Audio, and MP3.” Hayward, 3:53-63. The “[e]mbedded media player page includes a reference to a functional media player object (such as a RealPlayer plug in)” which corresponds to the format of the video data to be played. *Id.*, 5:38-47. If the required media player object is not already resident on the client or the display device, the request “trigger[s] a download of a media player applet to control the output” of the media. *Id.* Hayward acknowledges that different encoded videos require different media player objects with different protocols, and discloses

particular protocols corresponding to the particular media content selected from the library of available protocols. Bederson, ¶151; Section VII.B.6.

As explained in Section VII.A, a POSA would have been motivated and found it obvious to implement Hayward's embedded media player pages in Muthukumarasamy to facilitate the source-agnostic presentation of internet content that Muthukumarasamy envisions. For example, a POSA would have been motivated by and found it obvious from Hayward to implement the DBCS (e.g., the RCIBS) to facilitate control of internet content presented at the display device using any number of media players through embedded media player pages, as described in Hayward. Such embedded media player pages would provide, as in Hayward, source-agnostic controlled presentation of internet content, as Muthukumarasamy envisions. Bederson, ¶152. A POSA would have recognized that such an implementation of Muthukumarasamy would involve, as part of creating the embedded media player page that includes the appropriate media player and controls for controlling the presentation of content in that media player, loading the appropriate protocols for controlling the presentation of content in that media player, as Hayward describes. *Id.*

c. Element 2(c) - converting the command from the personal computing device into corresponding code to control the media player

This claim limitation is commensurate with limitations 1(e)(1), which recites *converting, by the server system, the universal playback control command into corresponding programming code to control playing of the video content on the display device by the particular media player*. This limitation is rendered obvious by Muthukumarasamy alone (**Ground I**) or in view of Hayward (**Ground II**) for the reasons explained in Section VII.B.8. Bederson, ¶153. And a POSA would have been motivated to combine the commands for a respective media player of Hayward with the converting described in Muthukumarasamy for the reasons explained in Section VII.B.8. Bederson, ¶153.

2. Claim 5

Muthukumarasamy discloses that *the universal command represents an instruction to play the video content, to stop playing the video content or to pause playing the video content*. Bederson, ¶154.

As explained in Section VII.B.7, Muthukumarasamy discloses a universal command for controlling playback of media content on a display device. Bederson, ¶155.

Muthukumarasamy discloses that the universal command includes a pause command. Muthukumarasamy, [0050] (“Once the content is chosen, the DBCS

software enables, via the IED, contextual gesture-based control of media components (e.g., volume selection, channel selection, pause/play, etc.) by the consumer”); *see also id.*, FIGs. 5 and 19. Bederson, ¶156.

3. Claim 6

Muthukumarasamy discloses that *the video content is an interactive video game* because it discloses loading Adobe Flash based games as one type of media content. Muthukumarasamy discloses that the DBCS can “load[] and present[] the game (adobe flash swf or other) present at the given URL.” Muthukumarasamy, FIG. 19; Bederson, ¶157.

4. Claim 7

Muthukumarasamy discloses that *the video content is streaming media* because it discloses that its DBCS “comprises a ZHDStick that streams internet content over WiFi to High Definition television (HDTV).” *Id.*, [0045], [0031], [0134]; *see also id.*, FIG. 19 (showing commands for controlling streamed media from the internet). Muthukumarasamy discloses that the media content may include content from sources such as “Netflix, Cinema Now, [and] Amazon Video On Demand,” commonly known streaming services. *Id.*, [0134]; Bederson, ¶158.

5. Claim 8

Muthukumarasamy discloses that *the synchronization code is uniquely associated with the display device on which the video content is to be played.*

Muthukumarasamy discloses that its configuration information is uniquely associated with the display device configured to play selected media content. Bederson, ¶159.

As explained in Section VII.B.2, Muthukumarasamy’s internet server receives configuration information identifying particular media devices (display devices) from the IED and assigns the configuration information to the media device in a device map. *See, e.g.*, Muthukumarasamy, [0045]. The configuration information stored in the device map includes a “Device Identifier.” *Id.*, [0068], FIG. 14. A POSA would have understood that the configuration information, including at least the “Device Identifier,” uniquely identifies the media device playing the selected media content because it is a specific identifier assigned only to the particular media device. Bederson, ¶160.

6. Claim 9

Muthukumarasamy discloses that *the synchronization code is different from an IP address associated with the display device and is different from a MAC address associated with the display device.* Bederson, ¶161.

As explained in Sections VII.B.2 and VII.C.5, Muthukumarasamy’s configuration information includes a “Device Identifier.” Muthukumarasamy, [0068], FIG. 14. Because neither an IP address nor a MAC address would include this information, a POSA would have understood Muthukumarasamy’s

configuration information to be different from both an IP address and a MAC address. Bederson, ¶162.

VIII. DENIAL UNDER § 325(d) IS IMPROPER

Denial under 35 U.S.C. § 325(d) is improper based on a weighing of the factors set forth in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17-18 (PTAB Dec. 15, 2017).

Regarding factors (a) and (b), neither Muthukumarasamy nor Hayward was cited during prosecution. The proposed grounds based on Muthukumarasamy and/or Hayward are materially different from and not cumulative of the Schwartz (Ex-1011) and vbulletin (www.vbulletin.com) used to reject claims during prosecution at least because the proposed grounds teach the limitations the Applicant added to distinguish over these references, namely, that the personal computing device is “separate from the server system and separate from the display device;” that the display device “loads any one of a plurality of different media player players;” and that the server system uses a “synchronization code” to “associat[e]” the personal computing device and the display device. Ex-1003, 204, 210-11. *Microsoft Corp. v. Uniloc 2017 LLC*, IPR2019-01251, Paper 7 at 11-14 (PTAB Dec. 20, 2019) (declining to deny institution under § 325(d) where the petition “present[ed] evidence that the asserted prior art [taught] the claim limitations that the [a]pplicant argued were missing from the prior art applied by the Examiner.”). Regarding factors

(c) and (d), because the Examiner did not apply Muthukumarasamy or Hayward during prosecution, there is little to no overlap between the arguments made during examination and those made here. Finally, factors (e) and (f) are inapplicable, as Petitioner does not request that any of the references or arguments substantively considered by the Examiner be reconsidered.

IX. DENIAL UNDER § 314(a) IS IMPROPER

The Board should institute this proceeding because under a holistic analysis of the factors articulated in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential), non-institution would be improper.

A. Factor 1: Whether the district court granted a stay or a stay may be granted if a proceeding is instituted

In this case, Petitioner intends to request a stay pending IPR at the appropriate time. At the very least, this factor is neutral because determining how a district court might proceed would be merely speculative. *Sand Revolution II, LLC v. Cont'l Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24 at 11-12 (PTAB June 16, 2020) (informative) (finding this factor to be neutral because “the court may determine whether or not to stay any individual case, including the related one, based on a variety of circumstances and facts beyond our control and to which the Board is not privy.”).

B. Factor 2: Proximity of the court’s trial date

The district court has a trial date of February 10, 2023, approximately ten months from the filing of this petition. Ex. 1015. The Board has instituted IPR proceedings when the trial date precedes the final written decision date by as much as ten months because *Fintiv* applies a holistic analysis that must balance all the *Fintiv* factors. *Apple Inc. v. Seven Networks, LLC*, IPR2020-00156, Paper 10 at 8-9 (PTAB June 15, 2020).

Additionally, Petitioner filed a motion to transfer venue in the district court action. Ex-1016. Should the court grant the motion, a new case schedule and trial date will be set in the new forum.

C. Factor 3: Investment in the parallel proceeding

There are significant stages of the parallel district court proceeding remaining. Because of the district court's policy of deferring substantive discovery until after the *Markman* hearing, merits discovery has only just begun. *Sand Revolution II*, Paper 24 at 18 ("The weight to give claim construction orders, however, varies because some district courts may postpone significant discovery until after the issuance of a claim construction order, while others may not."). No expert discovery has yet taken place and no dispositive motions have been filed or decided.

There is currently a motion to transfer venue pending before the district court. Although venue discovery has taken place, the motion and corresponding discovery

are simply “ancillary matters untethered to the validity issue itself.” *Sand Revolution II*, Paper 24 at 10-11.

Although *Markman* briefing is complete, the district court has not conducted a *Markman* hearing nor issued a *Markman* order. This Petition incorporates Patent Owner’s proposed constructions before the district court, minimizing any concerns regarding contradictory decisions in parallel proceedings.

This factor is neutral or, at worst, weighs “marginally, if at all,” in favor of exercising discretion to deny institution, but does not outweigh the other factors against denial. *Id.*

D. Factor 4: Overlap between issues

Google reserves the right to enter a stipulation to eliminate overlap between this proceeding and the litigation. *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18-19 (PTAB Dec. 1, 2020) (precedential as to § II.A); *Sand Revolution II*, Paper 24 at 11-12 (informative).

E. Factor 5: Whether the petitioner and the defendant in the parallel proceeding are the same party

The parties are the same as the district court litigation. The Board historically treats this as weighing against institution, but at least one administrative judge has recognized that *Fintiv* “says nothing about situations in which petitioner is the same as ... the district court defendant.” *Cisco Sys., Inc. v. Ramot at Tel Aviv Univ. Ltd.*,

IPR2020-00133, Paper 15 at 10 (J. Crumbley dissenting) (PTAB May 15, 2020). That judge asserted this factor should be, at worst, neutral because the Board's interpretation "tip[s] the scales against a petitioner merely for being a defendant in the district court action" brought without its consent and is "contrary to the goal of providing *district court litigants* an alternative venue to resolve questions of validity." *Id.* (emphasis added). This factor should be neutral.

F. Factor 6: Other circumstances

This factor considers other case-specific circumstances, including the merits of the proceeding. The prior art asserted in the Petition was not cited or applied by the Office during prosecution. *See supra* Section VIII. Because the asserted references were not applied during prosecution and are materially different and not cumulative of the prior art involved during the examination of the challenged claims, the considerations under 35 U.S.C. § 325(d), related to art previously before the office, are favorable towards institution. *See supra* Section VIII.

As shown above, the merits of the petition are also strong. *3Shape A/S v. Align Tech., Inc.*, IPR2020-00223, Paper 12 at 34 (PTAB May 26, 2020) (differences in issues and strength of merits "outweigh[ed] other applicable factors," including trial date before final written decision).

Each of these additional considerations weighs in favor of institution.

X. MANDATORY NOTICES

A. Real Parties-in-Interest

The real party-in-interest is Google LLC.⁴

B. Related Matters

To the best of Petitioner's knowledge, the '251 Patent has been or is involved in at least the following district court litigations:

Name	Number	Court	Filed
<i>Touchstream Techs, Inc. v. Google, LLC</i>	6-21-cv-00569	W.D. Tex.	June 4, 2021
<i>Touchstream Techs., Inc v. Vizbee, Inc.</i>	1-17-cv-06247	S.D.N.Y.	August 17, 2017

⁴ Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

C. Lead and Back-Up Counsel, and Service Information

Lead Counsel	Back-Up Counsel
Erika H. Arner (Reg. No. 57,540) erika.arner@finnegan.com Finnegan, Henderson, Farabow, Garrett & Dunner, LLP 1875 Explorer Street, Suite 800 Reston, VA 20190-6023 Tel: 571-203-2700 Fax: 202-408-4400	Kara A. Specht (Reg. No. 69,560) kara.specht@finnegan.com Neal Larson (Reg. No. 72,949) neal.larson@finnegan.com Finnegan, Henderson, Farabow, Garrett & Dunner, LLP 271 17th Street, NW, Suite 1400 Atlanta, GA 30363-6209 Tel: 404-653-6400 Fax: 404-653-6444
	Gracie K. Mills (Reg. No. 66,946) gracie.mills@finnegan.com Finnegan, Henderson, Farabow, Garrett & Dunner, LLP 901 New York Avenue, NW Washington, DC 20001-4413 Tel: 202-408-4000 Fax: 202-408-4400

Petitioner consents to e-mail service at Google-Touchstream-
IPRs@finnegan.com.

XI. GROUNDS FOR STANDING

Petitioner certifies the '251 Patent is available for IPR and Petitioner is not
barred or estopped from requesting this IPR.

XII. CONCLUSION

Petitioner requests the Board institute *inter partes* review and cancel the
challenged claims as unpatentable.

The Office may charge any required fees for this proceeding to Deposit
Account No. 06-0916.

Date: April 8, 2022

Respectfully Submitted,

/Erika H. Arner/

Erika H. Arner, Lead Counsel
Reg. No. 57,540

CERTIFICATION UNDER 37 C.F.R. § 42.24(d)

Pursuant to 37 C.F.R. § 42.24(a)(1)(i), the undersigned hereby certifies that the foregoing PETITION FOR *INTER PARTES* REVIEW contains 13,946 words, excluding the parts of this Petition that are exempted under 37 C.F.R. § 42.24(a), as measured by the word-processing system used to prepare this paper.

/Erika H. Arner/

Erika H. Arner, Lead Counsel
Reg. No. 57,540

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(a), the undersigned certifies that on April 8, 2022, a copy of the foregoing **Petition for *Inter Partes* Review, Petitioner's Power of Attorney and Designation of Lead and Backup Counsel, and Exhibits 1001, 1003, 1005-1006, 1008-1011, 1014-1016** were served by Priority Overnight FedEx on the correspondence address of record indicated in the Patent Office's public PAIR system for U.S. Patent No. 8,356,251:

Keith Bae
(Touchstream Technologies, Inc.)
Shook, Hardy & Bacon, LLP
Intellectual Property Department
2555 Grand Blvd.
Kansas City, MO 64108

A courtesy copy has also been mailed to litigation counsel at the following:

Samuel J. Laroque
SHOOK, HARDY & BACON LLP
2555 Grand Blvd
Kansas City, MO 64108-2613

Date: April 8, 2022

By: /Lisa C. Hines/
Lisa C. Hines
Senior Litigation Legal Assistant

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP