IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Alistair Bruce Kelman	
U.S. Patent No.:	9,392,302	Attorney Docket No.: 45035-0013IP1
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Appl. Serial No.:	13/990,372	
Filing Date:	May 29, 2013	
Title:	SYSTEM FOR PROVIDING IMPROVED FACILITIES IN TIME-SHIFTED BROADCASTS	

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PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES PATENT NO. 9,392,302 PURSUANT TO 35 U.S.C. §§ 311–319, 37 C.F.R. § 42

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EXHIBITS

DISH-1001	U.S. Patent No. 9,392,302 B2 to Kelman ("the '302 patent" or "EX1001")
DISH-1002	Excerpts from the Prosecution History of the '302 Patent ("the Prosecution History" or "EX1002")
DISH-1003	Declaration of W. Leo Hoarty (with Curriculum Vitae) ("EX1003")
DISH-1004	PCT Publication No. WO 2011/012909 to Patten et al. ("Patten" or "EX1004")
DISH-1005	U.S. Patent Application Publication No. 2002/0144262 A1 to Plotnick et al. ("Plotnick" or "EX1005")
DISH-1006	PCT Publication No. WO 2011/110893 to Ben-Rubi et al. ("Ben-Rubi" or "EX1006")
DISH-1007	U.S. Patent Application Publication No. 2004/0158870 A1 to Paxton et al. ("Paxton" or "EX1007")
DISH-1008	U.S. Patent No. 7,480,382 to Dunbar et al. ("Dunbar" or "EX1008")
DISH-1009	U.S. Patent No. 8,976,871 to Chen et al. ("Chen" or "EX1009")
DISH-1010	U.S. Patent Application Publication No. 2014/0086338 A1 to Lu et al. ("Lu" or "EX1010")
DISH-1011	U.S. Patent Application Publication No. 2009/0070414 A1 to Singal et al. ("Singal" or "EX1011")
DISH-1012	U.S. Patent No. 8,782,691 to Noble et al. ("Noble" or "EX1012")

DISH-1013	U.S. Patent No. 8,214,256 to Riedl et al. ("Riedl" or "EX1013")
DISH-1014	U.S. Patent Application Publication No. 2005/0289588 A1 to Kinnear et al. ("Kinnear" or "EX1014")
DISH-1015	*SafeCast Ltd. v. DISH Network Corporation*, Case 1:22-cv-03037, Dkt. No. 49 (D. Colo. Mar. 8, 2023) ("EX1015")
DISH-1016	Stipulation Regarding Prior Art Grounds ("EX1016")
DISH-1017	*SafeCast Ltd. v. Google LLC*, Case 6:22-cv-00678-ADA, Dkt. No. 45 (W.D. Tex. April 27, 2023) ("EX1017")
DISH-1018	Infringement Contentions served in *SafeCast Ltd. v. DISH Network Corporation*, Case 1:22-cv-03037 (D. Colo. Jun. 8, 2023) (excerpts) ("EX1018")

LISTING OF CHALLENGED CLAIMS

Claim Language	
Claim 1	
[1a]	A system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:
[1b]	programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;
[1c]	advertisement supply means to supply advertisements within the periodic breaks,
[1d]	each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority which local broadcasting time regulation restricts the time of day at which said advertisement may be shown,
[1e]	and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing:
[1f]	rules database means containing rules relating to said local broadcasting time regulation;
[1g]	clock means to supply a real-time clock signal;
[1h]	and control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown;
[1i]	wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.
Claim 2	
[2]	The system according to claim 1 in which each header includes a keyword, and the control means checks the keyword against the rules database during application of said local broadcasting time regulation to said advertisement.
Claim 3	
[3]	The system according to claim 2 in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity.

Claim Language	
Claim 4	
[4]	The system according to claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.
Claim 6	
[6]	The system according to claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.
Claim 7	
[7]	The system according to claim 1, wherein the system is a personal video recorder (PVR), and wherein the rules database means is a rules database stored locally in the PVR.
Claim 8	
[8]	The system according to claim 1, wherein the control means is further arranged to, when the application of said local broadcasting time regulation to a particular advertisement indicates that showing the particular advertisement would violate the local broadcasting time regulation, search the advertisements stored in the advertisement supply means until either an advertisement is found that does not violate the local broadcasting time regulation or it is determined that no advertisement stored in the advertisement supply means is suitable for showing under the local broadcasting time regulation.
Claim 9	
[9]	The system according to claim 8, wherein the advertisements stored in the advertisement supply means include advertisements that were broadcast live with a programme being shown during time-shifted viewing and also include advertisements that were received by the system other than in the live broadcast of the programme being shown in time-shifted viewing, and wherein the control means is further arranged to show during time-shifted viewing of the programme a mix of advertisements that were received during the live broadcast of the programme and advertisements that were received other than in the live broadcast of the programme being shown during time-shifted viewing.
Claim 12	
[12a]	A Personal Video Recorder (PVR) for use in a system for automating compliance with local broadcasting regulations laid down by a

Claim Language	
	broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening, the PVR comprising:
[12b]	data storage means storing a programme episode database, an advertisement database, and a rules database,
[12c]	each stored advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown,
[12d]	and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing,
[12e]	wherein the rules database contains rules relating to said local broadcasting time regulation
[12f]	and wherein the stored programme episodes have periodic breaks for the insertion of advertisements;
[12g]	input connection means for connection to a source of video/audio signals and a real-time clock signal;
[12h]	output means for connection to a consumer's viewing/listening unit;
[12i]	and control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown during one of the periodic breaks;
[12j]	wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.
Claim 13	
[13]	The PVR according to claim 12 arranged to read the real-time clock, to read the first field in the header of an advertisement, to read the rules database, and to provide that advertisement to a consumer’s viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.
Claim 14	
[14]	The PVR according to claim 13 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

Claim Language	
Claim 15	
[15]	The PVR according to claim 13, further arranged to update the second field in the header when said advertisement is provided to the consumer's viewing/listening unit.

I. INTRODUCTION

The purported invention of U.S. Patent No. 9,392,302 ("the '302 patent") covers targeting television advertisements to the viewing audience based on the time of day. During prosecution, the Applicant amended its claims to overcome prior art rejections by requiring each advertisement to have two header values. The first value reflects a "local broadcasting time regulation [that] restricts the time of day" for presenting the advertisement. EX1001, claim 1. The second value counts the "number of times" the advertisement has been played. *Id*. The '302 patent issued thereafter.

But this Petition's prior art, which the Office did not consider during prosecution, establishes that these types of values were known. For instance, the Patten reference teaches advertisements embedded with "restriction codes" prohibiting presentation of advertisements based on the time of day. Patten, [0069]. And the '302 patent admits the remaining claim elements were conventional.

Admitted Prior Art System

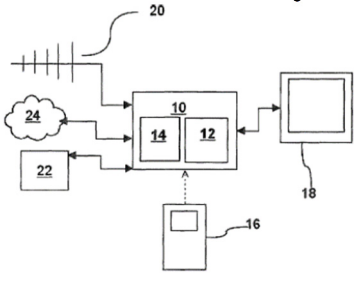


Figure 1

PRIOR ART

Alleged Invention

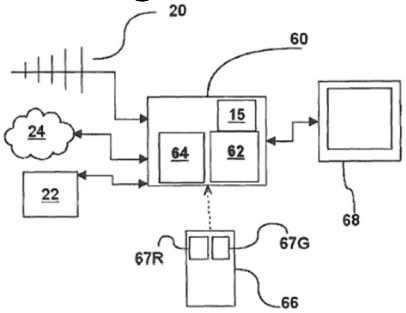


Fig 4

Pursuant to the grounds below, DISH Network L.L.C. and DISH Technologies L.L.C. (collectively, "Petitioner" or "DISH") petition for *Inter Partes* Review ("IPR") under 35 U.S.C. §§ 311–319 and 37 C.F.R. § 42 of claims 1-4, 6-9, and 12-15 ("the Challenged Claims") of the '302 patent.

II. REQUIREMENTS FOR IPR UNDER 37 C.F.R. § 42.104

A. Grounds for Standing Under 37 C.F.R. § 42.104(a)

Petitioner certifies that the '302 patent is available for IPR. The present Petition is filed within one year of service of a complaint against DISH Network Corporation ("DNC") in 6:22-cv-00677 (W.D. Tex.). Patent Owner ("SafeCast") and DNC jointly moved to transfer to the District Court for the District of Colorado. Thereafter, on December 1, 2022, SafeCast filed an amended complaint naming Petitioner as defendants and withdrawing the allegations as to DNC. *SafeCast Ltd. v. DISH Network Corp. et al.*, Case No. 1:22-cv-03037 (D. Colo.), D.I. 19. Petitioner is not barred or estopped from requesting this review.

B. Challenges Under 37 C.F.R. § 42.104(b) and Relief Requested

This Petition demonstrates a reasonable likelihood of prevailing as to at least one Challenged Claim. Petitioner requests institution of IPR and cancellation of all Challenged Claims on the grounds identified below. The expert declaration of W.

Leo Hoarty (EX1003) provides additional explanation and support for each ground.

Ground	Claims	Section 103(a) Basis
Ground 1	1-3, 6-9, 12, 13, 15	Patten in view of Ben-Rubi and Applicant Admitted Prior Art ("AAPA")
Ground 2	3, 4, 14	Patten in view of Ben-Rubi, AAPA, and Plotnick

The PCT application for the '302 patent was filed on November 18, 2011. EX1001, cover. Therefore, November 18, 2011 is the effective filing date for 35 U.S.C. § 102(b). MPEP 2139.01. The '302 patent claims priority to a United Kingdom patent application filed December 1, 2010. *Id*. For purposes of determining prior art status under 35 U.S.C. § 102(a) and (e), and without acquiescence, Petitioner treats December 1, 2010 as the earliest possible priority date of each Challenged Claim.

Each prior art reference applied in Grounds 1-2 is prior art to the '302 patent. International Publication No. WO 2011/012909 A2 ("Patten") qualifies as prior art under at least pre-AIA 35 U.S.C. § 102(e). Patten is a publication of the international application PCT/GB2010/051274 filed on August 2, 2010. EX1004, cover. Patten designates the United States and published in English on February 3, 2011. *Id.*

International Publication No. WO 2011/110893 A1 ("Ben-Rubi") qualifies as prior art under at least pre-AIA 35 U.S.C. § 102(e). Ben-Rubi is a publication

of the international application PCT/IB2010/001220 filed on May 21, 2010. EX1006, cover. Ben-Rubi claims priority to U.S. Provisional Application No. 61/312,031, filed on March 9, 2010. *Id.* Ben-Rubi designates the United States and published in English on September 15, 2011. *Id.*

U.S. Patent Publication No. 2002/0144262 A1 ("Plotnick") qualifies as prior art under at least pre-AIA 35 U.S.C. § 102(a), (b), and (e). Plotnick published on October 3, 2002 from an application filed on November 14, 2001. EX1005, cover.

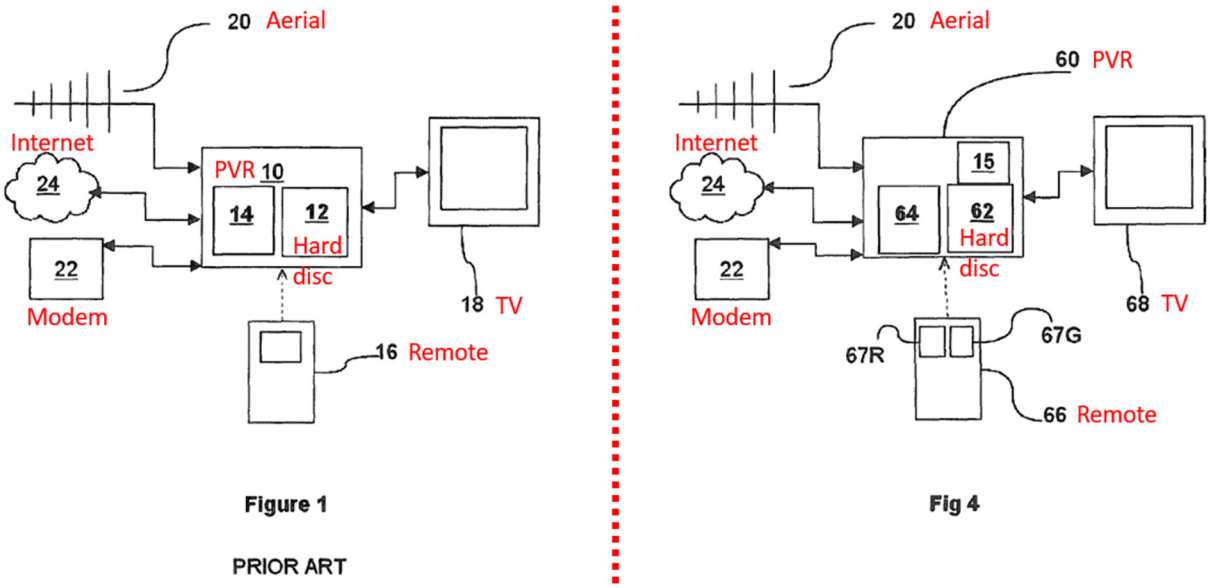
III. THE '302 PATENT

A. Summary

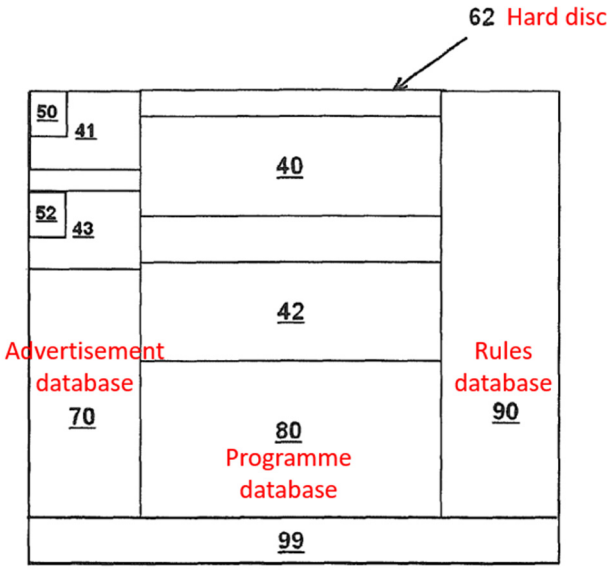
The '302 patent is titled "System for Providing Improved Facilities in Time-Shifted Broadcasts," and is directed to "automatic exclusion of advertisements that should not be shown at the time the programme is being viewed when time-shifted." EX1001, cover, 2:60-63. The patent states that, "[i]n the UK for example, if the advertisement is advertising alcoholic drinks containing more than 1.2% alcohol," then under the relevant broadcasting regulation, "the advertisement may not be shown at a time when children under 10 are likely to be viewing—i.e. before 7.30 pm, sometimes referred to as the 'watershed'." *Id.*, 1:19-26; EX1003, ¶¶12-13.

The '302 patent describes "a PVR [personal video recorder] 60 for use in a system according to the invention." *Id.*, 4:43-44; EX1003, ¶14. As the below

figures show, the '302 patent's PVR 60 (Fig. 4) is substantially identical to the prior art PVR (Fig. 1). *Id.*, Figs. 1 and 4 (annotated); EX1003, ¶¶15-16.

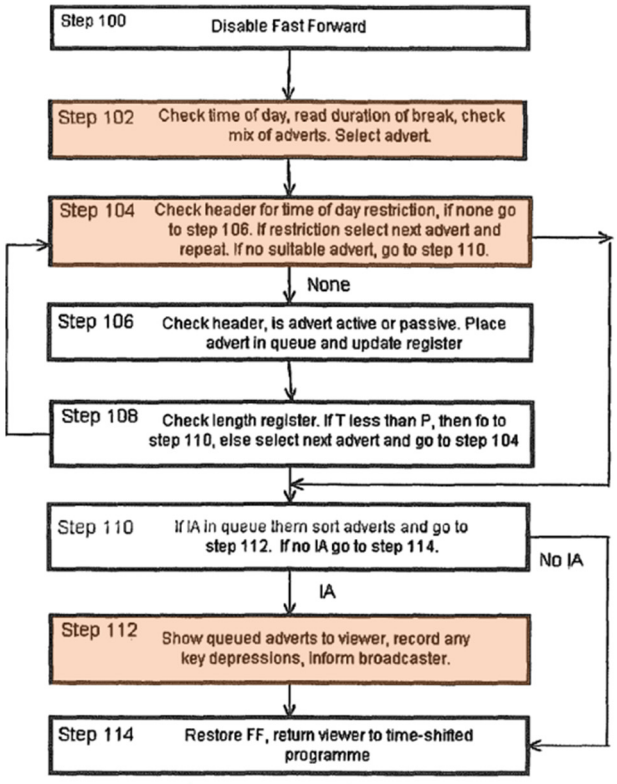


The '302 patent's PVR 60 has a hard disc 62. *Id.*, 4:57-62, Fig. 4. As illustrated below in Figure 5, the contents of hard disc 62 include "an advertisement database 70 which stores advertisements from the broadcast programme; a programme database 80, which stores the broadcast programme segments; and a rules database 90 which stores the rules which apply to broadcast advertisements." *Id.*, 4:57-62. EX1003, ¶17.



'302 patent Fig. 5
(annotated)

Figure 8 illustrates the '302 patent's process for targeting an advertisement based on time of day. *Id.*, 6:33-35.



'302 patent Fig. 8
(annotated)

At step 102, the PVR checks the time and selects an advertisement. *Id.*, 6:40-53. At step 104, the PVR reads the advertisement's header for a time restriction. *Id.*, 6:54-56. If the advertisement is restricted by the time, "the PVR 60 selects the next advertisement from the advertisement database 70, and continues checking the headers until an advertisement is found of a type which can be shown at the current time of day." *Id.*, 6:57-61. Then in step 112, the PVR plays the advertisements. *Id.*, 7:17-18; EX1003, ¶18.

Table 1, below, describes the header information used as part of step 104.

Fields in advertisement headers

Field Name	Activity
Time of Day validity	Code to indicate time of day when advert may be shown.
Days validity	Code to indicate the days of the week when advert may be shown
***	
Showings	Number of times advert is to be shown
Viewings	Number of times this advert has been shown in time-shifted programme viewing
Frequency	Minimum period to elapse before repeat showing

'302 patent Table 1
(partial, annotated)

The header of an advertisement includes a "Time of Day validity" field relating to when the advertisement may be displayed, and a "Viewings" field counting the number of times the advertisement was shown in time-shifted playback. *Id.*; EX1003, ¶19.

B. Prosecution History

The '302 patent issued on July 12, 2016 from U.S. Patent Application No. 13/990,372 filed on May 29, 2013. EX1001, cover. In response to the first non-final office action dated 04/28/2014, the Applicant amended independent claim 1 to specify that the claimed broadcasting regulation is "a local broadcasting time regulation which restricts the time of day at which said advertisement may be shown," EX1002, 203, and argued that the prior art showed "limitations on time and date are set by the advertisers who provide the advertisements, and not by local regulations." *Id.*, 206. The Examiner's next rejection, dated 08/18/2014, found that the amendment did not overcome the prior art. *Id.*, 215. In response, the Applicant amended independent claim 1 requiring that the local broadcasting regulation is "laid down by a broadcasting authority," *id.*, 238, and noted that FCC regulation 47 C.F.R. § 73.3999 specifying "restrictions on times of day during which indecent material may or may not be broadcast, is an example of exactly the kind of regulation that Applicant wishes to refer to in claim 1." *Id.*, 240. The Examiner then cited Paxton (US2004/0158870) during an interview dated 10/17/2014, and noted Paxton's disclosure of the broadcasting regulation through its discussion of the watershed restrictions. *Id.*, 247; EX1003, ¶20.

In response, on 11/18/2014, the Applicant amended independent claim 1 to add "a second field related to the number of times said advertisement has

previously been shown during time-shifted viewing," attempting to overcome the prior art. *Id.*, 260. However, the Examiner found that Poslinski (US2006/0013556) disclosed that limitation. *Id.*, 273. After further rejections, the Applicant amended independent claim 1 to add "wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing." *Id.*, 380. Based on that amendment, the Examiner issued a notice of allowance specifying that, "the Prior Art fails to disclose, teach, or suggest [the limitation] 'update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing'." *Id.*, 477. EX1003, ¶21.

Critically, the Examiner did not consider the prior art combinations set forth in this Petition that demonstrate that the Challenged Claims are obvious in light of the prior art.

C. Level of Ordinary Skill in the Art

The POSITA for the '302 patent would have held a bachelor's degree in electrical or computer engineering or a related field (or equivalent understanding through actual work experience), and had at least two years of experience related to multimedia systems such as video and audio systems. EX1003, ¶¶22-23, 1-10.

IV. CLAIM CONSTRUCTION

All claim terms should be construed under the *Phillips* standard. *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); *see* 37 C.F.R. §42.100. The Challenged Claims recite "means" terms for automating compliance with local broadcasting regulations that are presumptively subject to means-plus-function treatment under 35 U.S.C. §112, ¶6. *See* MPEP 2181. Beyond the proposed constructions for the "means" terms required by the Board's rules, no other terms require construction since "claim terms need only be construed to resolve a controversy." *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011).

For this Petition only, Petitioner proposes the following constructions of the "means" terms to encompass the structures or algorithms listed in the table below. EX1003, ¶26. Petitioner references these structures and algorithms pursuant to 37 C.F.R. § 42.104(b)(3) to provide notice of how the Challenged Claims are construed for purposes of this Petition, but Petitioner does not express subjective agreement regarding the correctness of these constructions. *See Western Digital Corp. v. SPEX Techs., Inc.*, IPR2018-00084, Paper 14 at 10-11 (PTAB Apr. 25, 2018) ("37 C.F.R. § 104(b)(3) does not require Petitioner to express its subjective agreement regarding correctness of its proffered claim constructions or to take ownership of those constructions."); *Gen. Elec. Co. v. Vestas Wind Sys. A/S*,

IPR2018-00928, Paper 9 at 14 (PTAB Nov. 5, 2018) ("The plain language of 37 C.F.R. § 42.104(b)(3)–(4), as written, … does not prohibit a petitioner from submitting a construction it believes is incorrect"; "the purpose of the petitioner's claim construction is to provide patent owners with notice as to the basis for the challenge to the claims") (citing 77 Fed. Reg. 48,688, 48,699-48,700); *10X Genomics, Inc. v. Bio-Rad Labs., Inc.*, IPR2020-00086, Paper 8 (PTAB Apr. 27, 2020).

In district court, Patent Owner has agreed to the construction for "rules database means," "data storage means," "input connection means," and "output means" consistent with the constructions in the following table. EX1017, 24; *see Apple Inc. v. CPC Patent Techs. Pty, Ltd.*, IPR2022-00601, Paper 11 at 12-14 (PTAB Sept. 28, 2022) (instituting IPR and finding petitioner's application of "constructions proposed by Patent Owner in the related litigation" as to § 112(f) terms compliant with § 42.104(b)(3)).

"means" limitation (recited functions underlined)	**Rule 42.104(b)(3) Structure**
"**programme supply means** to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements" (element [1b])	Hard disc 62 in PVR 60 with a part that stores a programme database 80. *See* EX1001, 4:57-62, FIGS. 4-5.
"**advertisement supply means** to supply advertisements within the periodic breaks" (elements [1c], claims [8], [9], [11])	Hard disc 62 in PVR 60 with a part that stores an advertisement database 70. *See* EX1001, 4:57-62, FIGS. 4-5.

"means" limitation (recited functions underlined)	Rule 42.104(b)(3) Structure
"**rules database means** containing rules relating to said local broadcasting time regulation" (elements [1f], claim [7])	Hard disc 62 in PVR 60 with a part that stores a rules database 90. *See* EX1001, 4:57-62, FIGS. 4-5.
"**data storage means** storing a programme episode database, an advertisement database, and a rules database" (element [12b])	Hard disc 62 in PVR 60. *See* EX1001, 4:57-62, FIGS. 4-5.
"**clock means** to supply a real-time clock signal" (element [1g])	Backchannel of a PVR via internet connection 24 or modem 22. *See* EX1001, 2:13-15, 2:26-30, 4:43-49, FIGS. 1 and 4.
"**input connection means** for connection to a source of video/audio signals and a real-time clock signal" (element [12g])	One or more connections between a PVR and (i) aerial 20, and (ii) internet connection 24 or modem 22. *See* EX1001, 1:65-67, 2:13-15, 2:26-30, 4:43-49, FIGS. 1 and 4.
"**output means** for connection to a consumer's viewing/listening unit" (element [12h])	Connection between PVR 60 and TV set 68. *See* EX1001, 4:50, FIG. 4.
"**control means** arranged to": "read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown" (element [1h]) "read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown during one of the periodic breaks"	Hardware or combination of hardware and software of PVR 60 arranged to perform steps 102, 104, and 112 of FIG. 8. *See* EX1001, 6:33-35, 6:40-62, 7:17-27, FIG 8, Table 1 ("Viewings").

"means" limitation (recited functions underlined)	Rule 42.104(b)(3) Structure
(element [12i]) "update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing" (elements [1i], [12j])	
"**control means** arranged to": "check[] the keyword against the rules database during application of said local broadcasting time regulation to said advertisement" (claim [2])	Hardware or combination of hardware and software of PVR 60 arranged to perform steps 102, 104, and 112 of FIG. 8. *See* EX1001, 4:35-37, 6:10-12, FIG 8, Table 1 ("Warnings").
"**control means** arranged to": "when the application of said local broadcasting time regulation to a particular advertisement indicates that showing the particular advertisement would violate the local broad-casting time regulation, search the advertisements stored in the advertisement supply means until either an advertisement is found that does not violate the local broadcasting time regulation or it is determined that no advertisement stored in the advertisement supply means is suitable for showing under the local broadcasting time regulation" (claim [8])	Hardware or combination of hardware and software of PVR 60 arranged to perform steps 102, 104, and 112 of FIG. 8. *See* EX1001, 6:54-62, FIG 8.
"**control means** arranged to": "show during time-shifted viewing of the programme a mix of advertisements that were received during the live broad-cast of the programme and advertisements that	Hardware or combination of hardware and software of PVR 60 arranged to perform steps 102, 104, and 112 of FIG. 8. *See* EX1001, 6:51-53, FIG 8.

"means" limitation (recited functions underlined)	Rule 42.104(b)(3) Structure
were received other than in the live broadcast of the programme being shown during time-shifted viewing" (claim [9])	

Petitioner reserves the right to respond to any of Patent Owner's proposed claim constructions. Furthermore, Petitioner does not concede that the Challenged Claims satisfy statutory requirements, including those under 35 U.S.C. § 112.

V. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. [GROUND 1] – Patten in view of Ben-Rubi and Applicant Admitted Prior Art (Claims 1-3, 6-9, 12, 13, and 15)

1. Overview of Patten

Patten is titled, "Media Insertion System." EX1004, cover. Patten teaches filtering and selecting advertisements that are displayed when recorded content is played back by a "Personal Video Recorder (PVR)." *Id.*, [0002]. Specifically, Patten discloses replacing advertisements in a video program based, in part, on a user profile. *Id.* To select the right advertisement, Patten takes into account "[t]he time of day of playback" to comply with local broadcast regulations called "watershed restrictions," which prohibit certain advertisements "outside the defined watershed times." *Id.*, [00146].

To account for these watershed restrictions, Patten's advertisements have associated metadata that includes "restriction codes." *Id.*, [0060]. Patten's

restriction codes relate to aspects of the advertisement impacting when the advertisement can permissibly be played, for example, "the type of product or service," "the minimum age of viewer," and, critically, "the watershed after which the media item may be shown." *Id.*, [0060]. Thus, Patten's PVR targets advertisements to the viewing audience based on the time of day when the advertisement is played. EX1003, ¶¶29-32.

2. Overview of Ben-Rubi

Ben-Rubi is titled, "Combining User Content with Supplemental Content at a Data Storage Device." EX1006, cover. As its Figure 3E shows below, Ben-Rubi is directed to playback of recorded media such as video 382, and inserting advertisement 386 into the media. *Id.*, 2:18-3:2, 15:12-18, FIG. 3E.

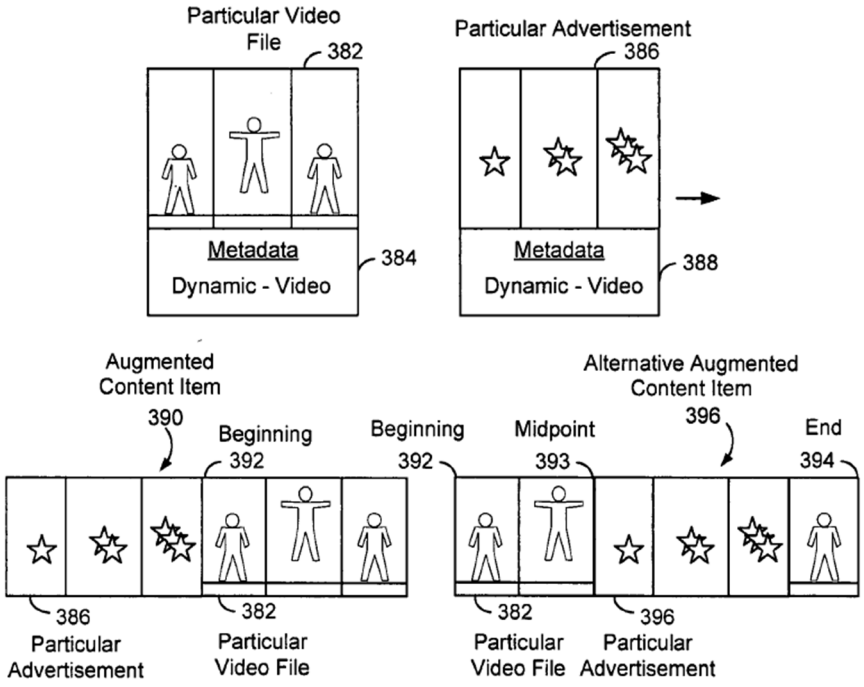
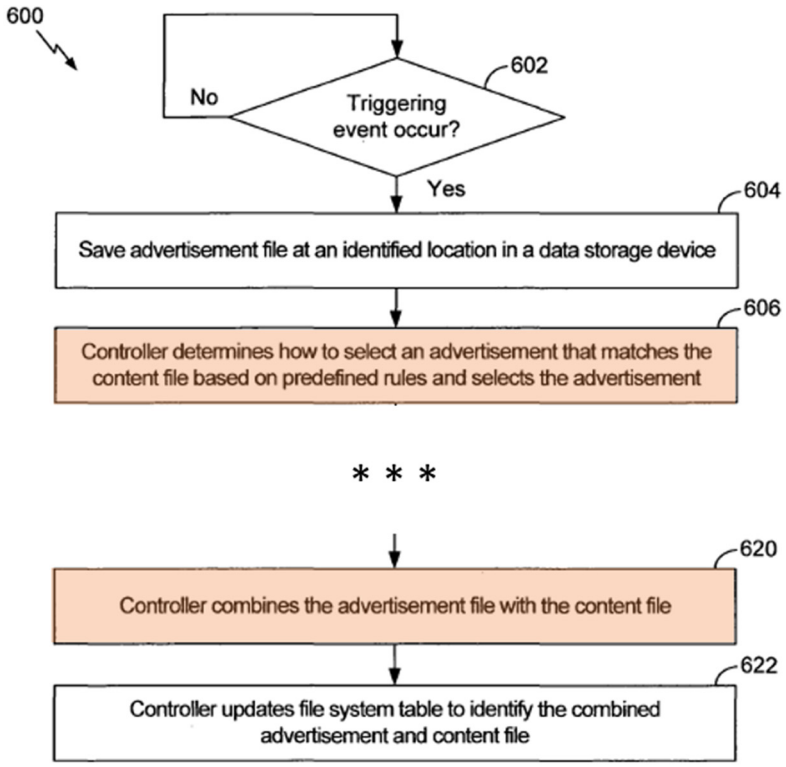


FIG. 3E

Ben-Rubi teaches how to insert advertisements into a content file, *e.g.*, broadcast program, as shown below in the flowchart of Figure 6. *Id.*, 14:24-25, FIG. 6. Ben-Rubi teaches selecting "an advertisement that matches the content file based on one or more predefined rules." *Id.*, 14:36-37. To do so, Ben-Rubi teaches reading "one or more selection rules … from **advertisement headers** or metadata to determine how to match an advertisement with a content file." *Id.*, 15:3-5 (emphasis added).[1] Ben-Rubi then inserts the selected advertisement into the recorded video file. *Id.*, 15:33-16:9.



Ben-Rubi Fig. 6
(partial, annotated)

[1] All emphasis is added unless otherwise noted.

Therefore, Ben-Rubi teaches using headers of advertisement files to insert targeted advertisements. EX1003, ¶¶33-34.

3. Applicant Admitted Prior Art ("AAPA")

The '302 patent admits nearly all of the claimed features were known in the prior art. *See, e.g.*, EX1001, 1:61-2:62, 4:43-49, FIGS. 1-2.[2] In the '302 patent's specification, the Applicant describes various components of "a known PVR" depicted in Figure 1 as admitted "PRIOR ART." *Id.*, 1:61-2:35, Fig. 1.

[2] USPTO guidance allows use of AAPA with an invalidity ground. June 9, 2022 USPTO Memorandum Updated Guidance on the Treatment of Statements of the Applicant in the Challenged Patent in Inter Partes Reviews Under § 311, at 4 ("A patentee's admissions regarding the scope and content of the prior art under § 103 can be used, for example, to: (1) supply missing claim limitations that were generally known in the art prior to the invention …."); *SolarEdge Techs. Ltd. v. SMA Solar Tech. AG*, IPR2020-00021, Paper 31 at 3 (PTAB Oct. 25, 2022) (specifying that, "in light of the Updated Guidance, we erred in excluding from consideration the Petition's use of AAPA," and finding challenged claims unpatentable).

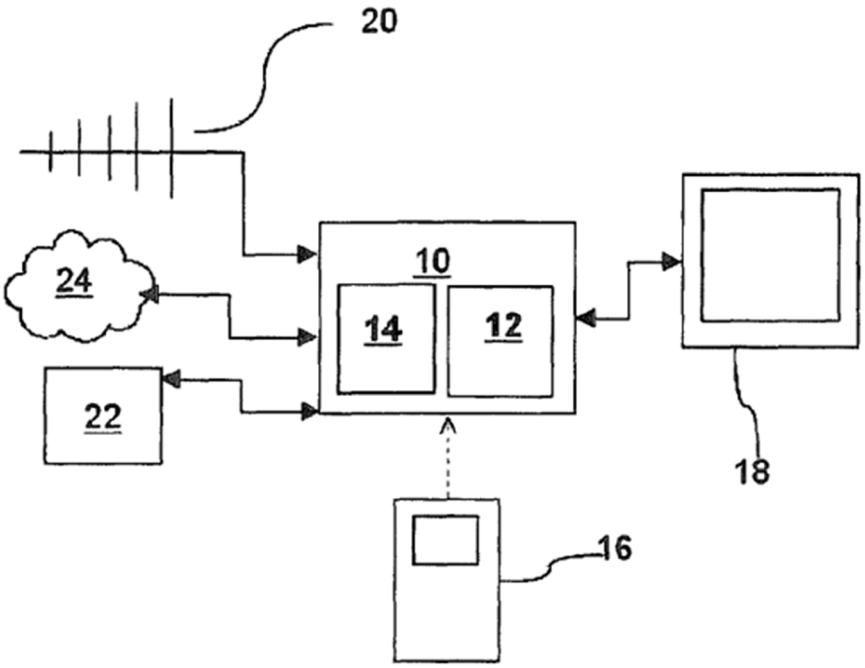


Figure 1

PRIOR ART

The Applicant admits that "[t]he known PVR 10 has what is termed a 'backchannel' supplied by means of either a modem 22 or an Internet connection 24," *id.*, 2:14-16, and that "[a] Real Time of day signal RT is received via the backchannel in either the Internet connection 24 or the connection via the modem 22." *Id.*, 4:45-48. The prior art "PVR receives broadcast digital television and audio signals from an aerial 20," *id.*, 1:65-67, and that "the connections to an aerial 20, a modem 22 and the Internet 24 are as in the prior art." *Id.*, 4:44-45; EX1003, ¶35.

4. Motivation to Combine Patten With Ben-Rubi and AAPA

Combining Patten and Ben-Rubi

A POSITA would have been motivated to modify Patten's system to incorporate the teachings of Ben-Rubi with a reasonable expectation of success. EX1003, ¶36. Both Patten and Ben-Rubi are directed to media players for playing back recorded video content. EX1004, [0002] ("Media insertion systems involve the selection of a media item for output by a receiver"); EX1006, 2:18-3:2 ("the host device 110 may include … a media player"). Furthermore, both are directed to delivering targeted advertisements to improve user engagement. EX1004, [0002] ("advertisements are tailored to the user profile"); EX1006, 14:36-15:11 ("select an advertisement that matches the content file based on one or more predefined rules"). The technical similarities between Patten and Ben-Rubi abound. EX1003, ¶¶36-44.

First, Ben-Rubi teaches rules-based targeted advertisement insertion by "combining a user content item," such as video, "with a supplemental content item, such as an advertisement." EX1006, 1:4-5, 15:12-18. For instance, Ben-Rubi's rules-based selection of advertisements seeks to make the advertisement more relevant to the user by using "attributes such as a topic, an author, a performer, a genre, or a keyword" associated with the media content and the advertisement. *Id.*, 7:29-8:2. Patten similarly teaches rules-based targeted advertising, such as use of a

"selection rule" to match advertisements to the viewer, EX1004, [0031], and "restriction codes" that "restrict the scheduling of the media item" based on various factors including content of the advertisement and the time of viewing. *Id.*, [0060], [0027], [0040], [0047], [0048], [0086], [0089]; EX1003, ¶37.

Second, both Ben-Rubi and Patten discuss the use of data fields related to the advertisements as part of the targeting process. EX1003, ¶38. Ben-Rubi refers to these fields as preferably being contained within headers of an advertisement. EX1006, 15:3-5; 15:7-9, 15:23-25, 17:28-29. And Patten teaches use of fields, *i.e.*, "metadata," embedded with "restriction codes" for the same purpose. EX1004, [0060].

Third, Ben-Rubi describes the benefits of having inserted advertisements "appear[] 'fresh' or 'live' as opposed to fixed or repetitive" by accounting for the "number of times each of the plurality of" advertisements are "used to augment user content" and the "frequency of insertion of one or more particular advertisements." EX1006, 8:3-15. Patten similarly accounts for the number of advertisement playbacks by "no longer select[ing] that media item for output once the maximum has been reached." EX1004, [00114]. Patten also accounts for "a frequency of insertion of one or more particular advertisements," *id.*, [0029], by "selective disablement … to control the frequency with which each substitutional option is displayed." *Id.*, [00100]. A POSITA, therefore, would have been

motivated to incorporate a field related to the number of times an advertisement has been previously shown during time-shifted viewing as explained below regarding element [1e]. EX1003, ¶39.

These similarities across Ben-Rubi's and Patten's teachings would have led a POSITA to incorporate Ben-Rubi's implementation of header-based advertisement targeting into Patten's PVR to improve Patten's advertisement targeting. EX1003, ¶40. Furthermore, based on Ben-Rubi's teachings, a POSITA would have recognized that storing advertisement-selection-rules in the header of the advertisement itself to be a logical and efficient way of organizing information. EX1003, ¶41. Therefore, a POSITA would have been motivated to and had reason to implement Ben-Rubi's header-based advertisement selection and insertion approach in Patten's advertisement selection technique to reduce processing burden on the limited capabilities of set-top boxes around the 2010 timeframe as discussed below regarding element [1d]. EX1003, ¶41.

Further, a POSITA would have recognized the obviousness in implementing Ben-Rubi's data storage device into Patten's PVR. A POSITA would have been motivated to do so based on the similarity and compatibility of the teachings across the two references. EX1003, ¶42. For instance, Patten discloses a hard disk 113 that has "two or more storage areas, one for the storage of television programme data, and the other for storing metadata and/or recorded media items." EX1004,

[00188]. Similarly, Ben-Rubi teaches that its data storage device 120 has a first storage area 126 for "user content items 132 such as … media files," and a second storage area 128 for storing "supplemental content items 142, such as advertisements." EX1006, 3:12-21. Ben-Rubi further discloses the benefits of coupling its data storage device 120 to a "host device 110," *id.*, 3:22-36, which may be a "media player," such as Patten's PVR. *Id.*, 2:26-30; EX1003, ¶¶42-43.

Ben-Rubi contemplates that the "data storage device 120 may be embedded within the host device 110." *Id.*, 3:22-36. For instance, Ben-Rubi identifies a "solid-state drive (SSD)" as preferred type of its data storage device 120, *id.*, which a POSITA would recognize as functioning similarly to Patten's "hard disk 113," which receives "compressed video and/or audio data for recording and subsequent playback." EX1004, [00178]; EX1003, ¶43.

Moreover, Patten's PVR includes an "external interface 135 such as a Universal Serial Bus 2 (USB2) port" that interfaces with removable storage devices such as a USB flash drive. EX1004, [00189]; [00192]-[00193]. A POSITA would have recognized that Ben-Rubi's data storage device 120, which in some embodiments may be an "external removable storage device, such as a Universal Serial Bus (USB) flash drive," EX1006, 3:30-32, would readily interface with Patten's receiver through its USB port. EX1003, ¶43. Therefore, a POSITA

would have been motivated to implement the teachings associated with Ben-Rubi's data storage device 120 in Patten's PVR.[3]

Finally, a POSITA would have had a reasonable expectation of success in combining Patten with Ben-Rubi, because the combination would represent a simple integration of the software implementing Ben-Rubi's header-based advertisement selection into Patten's targeted advertisement functionality to be executed by Patten's processor. EX1003, ¶44. Storing and organizing data, such as in a header of a file, requires merely routine computer programming knowledge and is a task well within the skill of a POSITA. *Id.*

Thus, as detailed below for elements [1d]-[1e], including a header with first and second fields relating to local broadcasting time regulations and the number of

[3] Bodily incorporation is not the test for obviousness analysis. *In re Keller*, 642 F.2d 413, 425 (C.C.P.A. 1981) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference … . Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art."). A POSITA would have been motivated to combine the teachings of Patten and Ben-Rubi for all the reasons discussed above.

times the advertisement has previously played for Patten's advertisements was obvious. *Id.*

Further Combining AAPA with the Patten and Ben-Rubi

A POSITA would have been motivated to modify the Patten/Ben-Rubi system to incorporate the teachings of AAPA with a reasonable expectation of success. EX1003, ¶45. The Patten/Ben-Rubi combination and AAPA are both directed to media players such as personal video recorders. EX1004, [0002]; EX1006, 2:18-3:2; EX1001, 4:43-55.

Further, both the Patten/Ben-Rubi combination and AAPA offer solutions to the same problem—preventing playback of recorded advertisements that would violate time-based broadcasting regulations. EX1004, [00146]; EX1001, 8:28-31. Patten specifically teaches that "[t]he time of day of playback may be taken into account, so that media items having watershed restrictions may not be selected outside the defined watershed times." EX1004, [00146]. A POSITA would have understood that enforcing watershed restrictions requires knowledge of the current time and a means for obtaining such clock signal. EX1003, ¶45. In implementing similar time-based regulation-compliance technology on similar PVR platforms, a POSITA would have been motivated to apply the teachings and the conventional PVR hardware of the AAPA—such as the well-known means for obtaining a real time clock signal—to the PVR receiver of the Patten/Ben-Rubi combination. *Id.*

A POSITA would have had a reasonable expectation of success in making this combination by taking conventional PVR hardware and applying it to another PVR. *Id.* Specifically, the real time clock signal of the AAPA would have been incorporated into the receiver of Patten's modified PVR by receiving the clock signal through AAPA's backchannel connection and making the signal available to the PVR's processor. *Id.* Indeed, Patten specifically discloses an internet connection, which a POSITA would have been motivated to use for receiving the real time of day information, as taught by the AAPA. *Id.*

Thus, as shown for elements [1g] and [12g], modifying Patten's PVR to include a "clock means to supply a real-time clock signal," and "input connection means for connection to a source of video/audio signals and a real-time clock signal" would have been obvious to a POSITA. *Id.*

* * *

Patten in view of Ben-Rubi and AAPA form the basis of Ground 1. As noted in the below element-by-element analysis, other contemporaneous references, including Kinnear, Dunbar, Chen, Lu, Singal, Plotnick, Noble, and Riedl, corroborate a POSITA's relevant knowledge.

5. Independent Claim 1

[1a] A system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:

If the preamble is limiting, in the Patten/Ben-Rubi/AAPA combination, Patten discloses the preamble. EX1003, ¶46. Patten discloses "targeted substitutional advertising (TSA)" where the system selects various advertisements in view of certain criteria without user input, *i.e.*, in an automated fashion. EX1004, [0002]. Patten's "selection [is] made at the broadcast receiver." *Id.*; EX1003, ¶47. As part of the selection, Patten's receiver takes into account "[t]he time of day of playback … so that media items having watershed restrictions may not be selected outside the defined **watershed times**." EX1004, [00146]. Patten's "media items" are advertisements. *Id.*, [0040]; [0011]; EX1003, ¶48.

The "watershed restriction" is a local broadcasting regulation that applies to all broadcasted content (including advertisements). A POSITA would have understood Patten's watershed restrictions prohibit certain content (*e.g.*, adult-focused content) to be played during specific times of the day (*e.g.*, Saturday mornings). EX1003, ¶49; *e.g.*, EX1007 (US2004/0158870 by Paxton), [0071]. Such watershed rules are "statutory rules" requiring service provider compliance. *Id.*, [0130]. Watershed restrictions are precisely the type of broadcast regulations contemplated by the '302 patent. Indeed, the '302 patent highlights that time-

based broadcasting restrictions by UK "Broadcast Committee of Advertising practice" are "watershed" restrictions. EX1001, 1:19-26. Therefore, a POSITA would have understood Patten's compliance with watershed restrictions for its targeted substitutional advertising without user input to disclose the claimed "system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements." EX1003, ¶49.

Patten also discloses substituting media, i.e., advertisements, in time-shifted, *i.e.*, recorded, content: "**media substitution may be performed on playback**." EX1004, [00141]. In operation, therefore, Patten's system optionally displays a different advertisement to a user when viewing the recording than the advertisement originally broadcast. *Id.*; *see also id.*, [00145] ("The substitutional selection for a slot may differ between a live break and a playback break."). Therefore, Patten discloses "advertisements being provided during time-shifted viewing/listening." EX1003, ¶50.

[1b] programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

In the Patten/Ben-Rubi/AAPA combination, Patten teaches this limitation through the recording of video programming having periodic advertisements breaks into a hard disk. EX1003, ¶51. As detailed below, Patten's hard disk 113 with storage area for storing television programme data corresponds to the '302 patent's hard disc 62 in PVR 60 with a part that stores a programme database 80,

consistent with the proposed construction of "programme supply means," and performs the claimed "supply[ing]" function by supplying the stored video for playback. *Supra* § IV; EX1003, ¶54.

Figure 2 of AAPA illustrates the "known format of a television programme" that is "broken up into segments 30, 32, 34 which are separated by advertising breaks, 31, 33." EX1001, 2:35-39, Fig. 2; EX1003, ¶52. As shown below in Figure 2, the '302 patent confirms that a POSITA would have known those advertising breaks are periodic by illustrating those breaks 31, 33 being evenly spaced between programming segments 30, 32, 34. EX1001, Fig. 2; EX1003, ¶52.

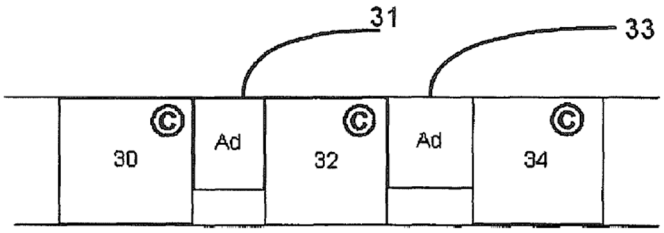


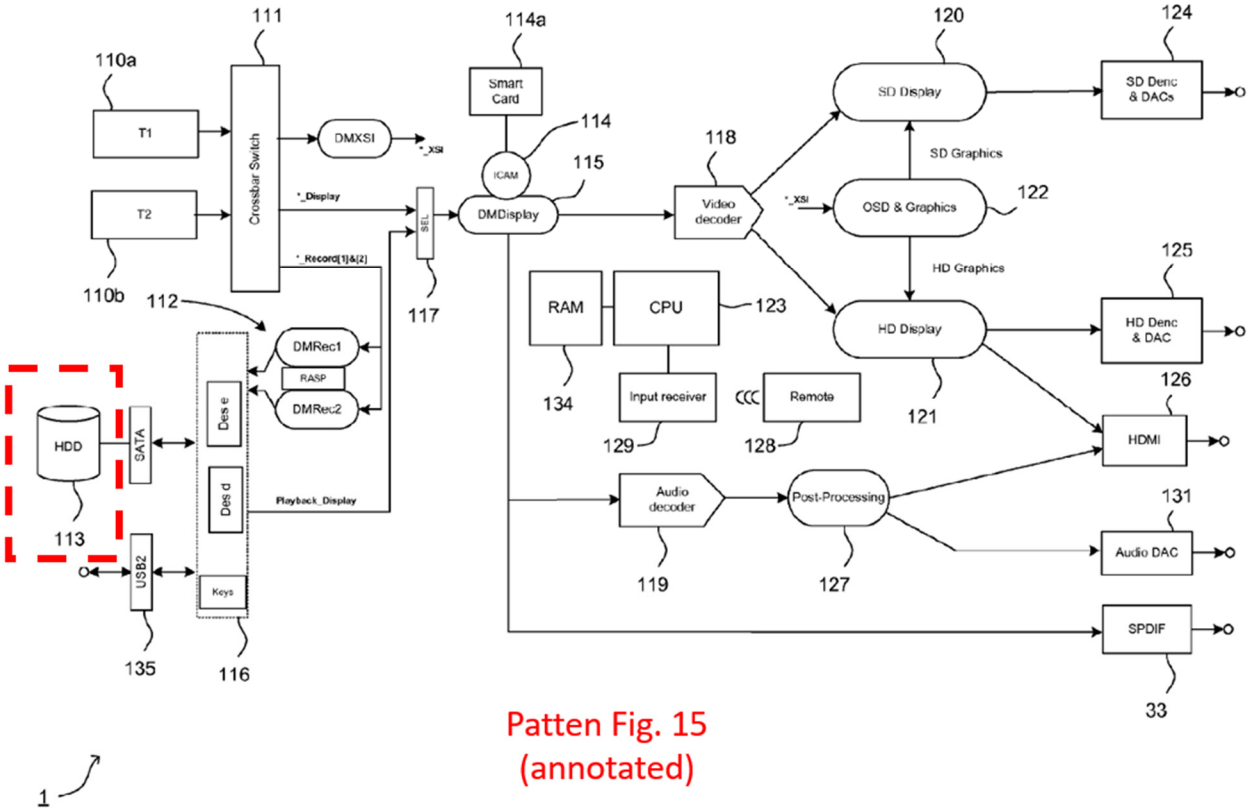
Figure 2

PRIOR ART

Similarly, Patten describes a "programme receiver" that receives broadcasted video programming. EX1004, [0018]. The programming is "recorded at the receiver for subsequent output" and has "a break defined therein such that media stored at the receiver may be output during the break." *Id.* In other words,

Patten's recorded programming has breaks for insertion of stored advertisements just like the advertising breaks of AAPA discussed above. EX1003, ¶53.

Further, Patten's Figure 15 (below) shows that its receiver has "a hard disk 113" that receives "compressed video and/or audio data for recording and subsequent playback." EX1004, [00178]. Hard disk 113 "comprise[s] two or more storage areas, one for the storage of television programme data." *Id.*, [00188]; *see also id.*, [00182] ("controlling the hard disk 113 to record desired television programmes or to play back previously recorded television programmes"); EX1003, ¶54.



Patten Fig. 15
(annotated)

Moreover, a POSITA would have understood that Patten stores programmes in a database within hard disk 113. EX1003, ¶55. Patten explains hard disk 113

"may be similar to conventional hard disks used in computer systems for storing large amounts of data." EX1004, [00188]. Patten explains that "items stored locally at the receiver" would be organized in a "database." *Id.*, [0041]. From these disclosures, a POSITA would have understood Patten organizes its programmes in a database on hard disk 113 with a reasonable expectation of success. EX1003, ¶55.

As Mr. Hoarty explains, a POSITA would have understood how to implement Patten's storage of programmes through programmatically constructed databases using routine programming techniques. *Id.* Indeed, prior art PVRs confirm a POSITA's knowledge of the routine nature of "storing several hours of analog and digital video program files 20, video advertisement files 30" by "creat[ing] on the device's hard drive 16 [] a video program library database 21, [and] a video advertisement library database 31." *E.g.*, EX1014 (US2005/0289588 by Kinnear), [0022]; EX1003, ¶56.

[1c] advertisement supply means to supply advertisements within the periodic breaks,

In the Patten/Ben-Rubi/AAPA combination, Patten teaches recording advertisements into a hard disk. EX1003, ¶¶57-58. Patten discloses a "hard disk 113" with "two or more storage areas" where one is for "**storing** metadata and/or **recorded media items**." EX1004, [00188]; [0050] ("The media items may be stored in a partition of a local hard disc[.]"), [00135]. Patten's hard disk 113 with

storage area for storing the recorded media item corresponds to the '302 patent's hard disc 62 in PVR 60 with a part that stores an advertisement database 70, consistent with the proposed construction of "advertisement supply means," and performs the claimed "supply[ing]" function by supplying the stored advertisement for insertion. *Supra* § IV; EX1003, ¶¶58-59. And as explained above regarding element [1b], a POSITA would have understood that Patten stores its media items, *i.e.*, advertisements, in the hard disk 113 where they are arranged in a database. EX1003, ¶60. Further, as explained above regarding element [1b], a POSITA would have understood from prior art disclosures how to implement Patten's storage of advertisements through programmatically constructed databases using routine programming techniques with a reasonable expectation of success. *Id.*

As shown in element [1a], Patten's media items are advertisements. EX1004, [0040]; [0011]. These "recorded media items," *i.e.*, advertisements, are "stored at the receiver" and "may be output during the break" of the video programs. *Id.*, [0018]. Therefore, Patten/Ben-Rubi/AAPA renders obvious the claimed "advertisement supply means to supply advertisements within the periodic breaks." EX1003, ¶59.

[1d] each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority which local broadcasting time regulation restricts the time of day at which said advertisement may be shown,

In the Patten/Ben-Rubi/AAPA combination, Patten teaches this limitation through Patten's watershed restriction codes embedded as part of the header of the advertisement file. EX1003, ¶61. Each of Patten's advertisements has associated "restriction codes" that prevent an advertisement from playing at certain times based on the watershed restriction. EX1004, [0060] ("an individual copy (i.e. media) item for a particular campaign has its own set of attributes or metadata: … Restriction codes[.]"); [0062]. These restriction codes "restrict the scheduling of the media item" and include the "watershed after which the media item may be shown." *Id.*, [0060]; [0069]; EX1003, ¶61.

Further, Patten's "restriction codes" are "attributes or metadata" of individual advertisements. EX1004, [0060]; [0062]. A POSITA would have known that Patten's metadata is part of a header of an advertisement video file, and therefore would have found Patten teaches or renders obvious the claimed "header" associated with each advertisement. EX1003, ¶62. For instance, Dunbar (US7,480,382) reflects the knowledge of a POSITA by discussing a video file header that includes metadata: "this embodiment includes a metadata portion 400 in header portion 302." EX1008, 6:1-5; Fig. 4 (showing header portion 302 having metadata portion 400). Dunbar shows a POSITA knew that metadata, e.g.,

metadata portion 400, holds information related to "the image (or **audio or video clip**)" including "**information that may be desirable depending on the application.**" *Id.*, 6:36-44.[4]

Therefore, a POSITA would have understood that Patten implements its automated watershed compliance function using a video file with a header that includes metadata without causing conflicts with other functionalities of a PVR. EX1003, ¶63.

Indeed, references teaching multimedia content associated with headers that contain metadata are ubiquitous. EX1003, ¶¶64-65. For instance, Chen (US8,976,871) illustrates that POSITAs knew video files have "metadata located in the header of the file." EX1009, 17:19-21. And Lu (US2014/0086338) shows that POSITAs knew "metadata may be built into one or more headers that are appended [to] the encoded video." EX1010, [0002]; [0017] ("[H]eader data represents metadata that may be incorporated into headers.").

[4] Indeed, a POSITA knew, as Dunbar shows, that "[b]ecause metadata portion 400 is extensible, **applications and/or users can define their own metadata** and such extensions can be used simultaneously within a single container and metadata portion without conflict." Dunbar, 6:36-44.

Dunbar, Chen, Lu, and others all demonstrate a POSITA's knowledge that Patten implements the metadata of each advertisement as an advertisement header, or be part of a header. EX1003, ¶¶63-65. Furthermore, not only was placing metadata in the header of a video file already well-known to a POSITA, doing so "would be an obvious matter of design choice within the skill of the art" since location of the claimed first field "solves no stated problem" and "presents no novel or unexpected result." *In re Kuhle*, 526 F.2d 553, 555 (CCPA 1975). Indeed, the specification of the '302 patent is silent as to the benefit of placing the claimed first field in the header of an advertisement as opposed to any other location. *See* EX1001. Therefore, placing Patten's metadata at the header of each advertisement is an obvious design choice well within the skill of a POSITA. EX1003, ¶66.

Furthermore, a POSITA would have been motivated to implement the metadata as the header of a video file as opposed to a different part of the file (*e.g.*, the tail end of the file), because doing so "allows an end user of [video] file container 106 to access the metadata without having to process data portion 304." EX1008, 6:9-11. A POSITA would have known that this configuration has a smaller processing burden on the PVR, because video payload size is large compared to the size of metadata and parsing megabytes of data takes substantial

time and processing power, especially considering the limited capabilities of set-top boxes around 2010. EX1003, ¶67.

Therefore, a POSITA would have found it obvious to modify Patten's metadata that includes the restriction code to place it at the header of each advertisement video file. EX1003, ¶68. A POSITA would have had a reasonable expectation of success in making this modification because storing and organizing data is a routine task well within the skill of a POSITA. *Id.*[5]

Alternatively, if Patten alone does not teach use of a header to store information with advertisements, the Patten/Ben-Rubi/AAPA combination teaches this limitation through Ben-Rubi's storage of selection rules and other information in advertisement headers. *Id.*, ¶69. Ben-Rubi discloses that its controller "reads one or more selection rules from … **advertisement headers** or metadata to determine how to match an advertisement with a content file," teaching advertisements with associated headers. EX1006, 15:3-5; EX1003, ¶69; *see* EX1006, 15:7-9, 15:23-25, 17:28-29.

[5] In fact, Patent Owner's infringement contentions in the underlying litigation all but concede this fact by alleging DISH's products infringe through the purported use of headers or "synonymous elements." EX1018.

Moreover, not only does Ben-Rubi teach its advertisements have headers, those headers contain "selection rules." EX1006, 15:3-5; 17:28-29. Ben-Rubi discloses using the "selection rules" to match an appropriate advertisement for insertion into the video content. *Id.* Therefore, a POSITA would have recognized Ben-Rubi's header to be the logical place to store Patten's "restriction codes," which are also selection rules that exclude certain advertisements from being displayed during certain times. EX1003, ¶70. A POSITA would have been motivated to employ Ben-Rubi's header teachings with Patten's restriction code teachings with a reasonable expectation of success, using conventional programming techniques that were well within the skill of a POSITA. EX1003, ¶70, ¶67. Therefore, Patten/Ben-Rubi/AAPA renders obvious advertisements having "a header comprising a first field" relating to the watershed restriction. *Id.*

[1e] and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing:

In the Patten/Ben-Rubi/AAPA combination, Patten teaches this limitation. EX1003, ¶71. Patten's receiver "update[s] a counter associated with respective individual media items, when that media item is output." EX1004, [0057]; *see id.* at [0036] ("the PVR may record viewing data 7 indicating the broadcast programmes and/or media items output for display by the receiver 1, for reporting purposes."). As discussed above, Patten contemplates substitutional advertisements inserted during playback of recorded content (*i.e.*, time-shifted

viewing). *See e.g., id.*, [0002], [00141], [00145]. Thus, Patten tracks the number of times the system has shown each advertisement during time-shifted viewing. EX1003, ¶71. Patten explains that it tracks the number of times the advertisement has been shown because it is "important to determine … how many times the campaign has actually been displayed[.]" EX1004, [00148]. Furthermore, because Patten teaches that each advertisement has associated "attributes and metadata," a POSITA would have understood those attributes and metadata, which are located in a header as discussed regarding element [1d], include a second field related to the number of times an advertisement has been shown during time-shifted viewing. *Id.*, [0060]; EX1003, ¶71.

Alternatively, if Patten does not disclose the second field, a POSITA would have found it obvious to implement such a header field within the header of Patten/Ben-Rubi/AAPA. EX1003, ¶72. As discussed in [1d], a POSITA would have found it obvious to implement a header containing "attributes and metadata" that provide various information regarding the associated advertisement. EX1004, [0060]; EX1003, ¶72. As noted above, a POSITA knew that users often define their own metadata, as illustrated by Dunbar which explains that "metadata portion 400 is extensible" and that "applications and/or users can define their own metadata." EX1008, 6:36-44. Therefore, a POSITA would have found it obvious to extend Patten/Ben-Rubi/AAPA's metadata in the header to include information

regarding advertising playback counts, as a matter of design choice. EX1003, ¶72. The '302 patent specification is silent regarding the benefit of placing the second field in the header of an advertisement as opposed to any other location. *See* EX1001. Simply providing the advertisement playback count in another header field "solves no stated problem" and "presents no novel or unexpected result." *In re Kuhle*, 526 F.2d at 555.

Contemporaneous references, such as Singal (US2009/0070414), corroborate the obviousness of tracking information related to advertisement-playback counts in the header of Patten's video file. As Singal illustrates, POSITAs knew how to include metadata for counting the number of times a media file has been played. EX1011, [0019] (one value of metadata 136 is "number of plays for the media content 138."). Singal explains that the metadata is located at the start of the file, *i.e.*, the header, and "following the asset metadata 136 is the media content 138." *Id.* In other words, a POSITA would have understood how to place metadata, e.g., Singal's metadata 136, before the video data as a header of the video file. EX1003, ¶73. Moreover, as discussed regarding element [1d], a POSITA would have readily understood that metadata is part of a header. *Id.*; *see* EX1008, 6:1-5 ("metadata portion 400 in header portion 302."); EX1009, 17:19-21 ("metadata located in the header of the file."); EX1010, [0002] ("metadata may be built into one or more headers that are appended the encoded video.").

Alternatively, if Patten alone does not render obvious the claimed second field, the Patten/Ben-Rubi/AAPA combination teaches this limitation through Ben-Rubi's use of the advertisement playback count in its selection process. EX1003, ¶74. Ben-Rubi teaches counting the number of advertisement playbacks because it seeks to keep the inserted advertisement "appear[] 'fresh' or 'live' as opposed to fixed or repetitive" by accounting for the "number of times each of the plurality of" advertisements are "used to augment user content" and the "frequency of insertion of one or more particular advertisements." EX1006, 8:3-15. And as discussed in [1d], Ben-Rubi uses "selection rules" stored in headers for selecting advertisements. EX1006, 15:3-5; EX1003, ¶75. Therefore, a POSITA would have found it obvious to store the number of advertisement playbacks in a header field for each of Patten's advertisements during time-shifted viewing. EX1003, ¶75.

[1f] rules database means containing rules relating to said local broadcasting time regulation;

In the Patten/Ben-Rubi/AAPA combination, Patten teaches this limitation. EX1003, ¶¶76-78. As detailed below, Patten's hard disk 113, having a storage area for storing the metadata and programming schedule, corresponds to the '302 patent's hard disc 62 in PVR 60 with a part that stores a rules database 90, consistent with the proposed construction of "rules database means," and performs the claimed "containing" function by storing metadata, programming schedule, and selection rules. *Supra* § IV; EX1003, ¶¶76-79.

Specifically, Patten discloses a "hard disk 113" with "two or more storage areas, … the other for **storing metadata** and/or recorded media items." EX1004, [00188]. The stored metadata in Patten's hard disk 113, which includes the watershed restriction codes as discussed regarding element [1d], are "rules relating to said local broadcasting time regulation." EX1003, ¶77.

Further, Patten teaches that "[t]he programming schedule itself may include … Restriction codes … such as a watershed." EX1004, [0059]; [0090]. The "programme schedule data may be stored in the hard disk 113." *Id.*, [00185]. Therefore, Patten's programming schedule—itself embedded with rules relating to the local broadcasting time regulation—corresponds to the claimed rules database. EX1003, ¶78.

Moreover, for the reasons above, a POSITA would have found it obvious to arrange in a database the rules and other content stored in Patten's hard disk, therefore rendering obvious the rules database. *See* [1b]-[1c].

Alternatively, if Patten does not disclose the rules database means, the Patten/Ben-Rubi/AAPA combination teaches this limitation through Ben-Rubi. EX1003, ¶79. Ben-Rubi discloses a "second storage area 128" within its data storage device 120 that "stores selection and/or placement rules 178." EX1006, 5:13-17; 14:36-15:1, 19:19-21, Fig. 2. These selection rules "control selection of the particular advertisement 170 from the plurality of other supplemental items

174." *Id.* A POSITA would have understood that Ben-Rubi's selection rules—in context of Patten's watershed restriction compliance function—would include watershed restriction rules, among other selection rules, within Patten/Ben-Rubi/AAPA. EX1003, ¶79.

[1g] clock means to supply a real-time clock signal;

In the Patten/Ben-Rubi/AAPA combination, Patten and AAPA teach this limitation. EX1003, ¶¶80-82. As detailed below, Patten's Internet connection as well as AAPA's backchannel correspond to the '302 patent's backchannel of a PVR via Internet connection 24 or modem 22, consistent with the proposed construction of "clock means," and perform the claimed "supply[ing of] a real-time clock signal" function. *Supra* § IV; EX1003, ¶¶80-81.

As discussed regarding elements [1a], [1d], [1h]-[1i], Patten teaches automatically replacing advertisements in a recorded program in compliance with the "watershed" restriction code. *See, e.g.*, EX1004, [00146] ("The time of day of playback may be taken into account, so that media items having watershed restrictions may not be selected outside the defined watershed times."). To apply a time-based content restriction, a POSITA would have understood that Patten's receiver requires knowledge of the current time, because applying watershed restrictions requires comparing the two. EX1003, ¶81. Therefore, it would have been obvious to a POSITA that Patten's receiver discloses a clock means to supply

a real-time clock signal. *Id.* Further, Patten teaches that its receiver is part of a "broadcast system, such as … [an] Internet broadcast system," which ***requires*** an Internet connection. EX1004, [00198]; EX1003, ¶81. Therefore, Patten discloses to a POSITA the claimed clock means. *Supra* § IV; EX1003, ¶81.

Alternatively, if Patten does not disclose the clock means, the Patten/Ben-Rubi/AAPA combination teaches this limitation through AAPA. EX1003, ¶82. The '302 patent specification states that "[i]t is **well known** that a digital television signal and a **backchannel** each **contain highly accurate time information** which can be used by equipment in a PVR 10." EX1001, 2:26-30. The specification discloses, "a modem 22 and the Internet 24 are as in the prior art," and that "[a] Real Time of day signal RT is received via the backchannel in either the Internet connection 24 or the connection via the modem 22." *Id.*, 4:43-48. The specification admits that the real time of the day "signal is provided in known systems." *Id.*, 4:48-49. Therefore, AAPA discloses the clock means. *Supra* § IV; EX1003, ¶82. Based on those teachings, a POSITA would have been motivated to modify Patten's system to have a clock means to supply a real-time clock signal to ensure accurate application of the watershed restrictions during time-shifted viewing. EX1003, ¶¶80-82

[1h] and control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown;

In the Patten/Ben-Rubi/AAPA combination, Patten teaches the claimed control means arranged as this limitation requires. EX1003, ¶¶83-85. Patten's control means is a processor. Patten explains "receiver 1 is controlled by a processor 123," and thus, acts as the control means for Patten's PVR receiver. EX1004, [00182]. Patten's processor 123 corresponds to the '302 patent's hardware or combination of hardware and software of PVR 60 arranged to perform steps 102, 104, and 112 of FIG. 8, which performs the claimed "read[ing]" and "apply[ing]" functions. *Supra* § IV; EX1003, ¶¶83-84.

Patten arranges its processor as in this limitation. Patten teaches, as part of its receiver's "Recording & Playback" operation, that "[t]he time of day of playback may be taken into account, so that media items having watershed restrictions may not be selected outside the defined watershed times." *Id.*, [00140], [00146]; [00145] ("The selection [of advertisements] may depend on the time of playback."), [0052]. "[T]aking into account" the time at playback to avoid watershed-restricted advertisement playback discloses the claimed "apply[ing] said local broadcasting time regulation to each advertisement before said advertisement is shown." EX1003, ¶85.

The Patten/Ben-Rubi/AAPA combination takes into account the time at playback through reading the first field (*i.e.*, restriction code), the clock signal (*i.e.*, real-time clock of Internet broadcast system), and the rules database (as discussed in limitation [1f]). And as discussed regarding element [1d], each media item (*i.e.*, advertisement) contains the first field having watershed restriction codes. The restriction codes of the advertisements and programming schedules are stored in a rules database as discussed regarding element [1f]. Further, as discussed regarding element [1g], Patten's receiver must know the current time to compare against the restricted watershed time period. A POSITA would have understood that a processor must read (1) the watershed restrictions of the advertisements, (2) other restriction codes applicable to advertisement insertion, and (3) the clock signal, before it can apply the rules to avoid playback of watershed-restricted advertisements, or would have found it obvious to do so with a reasonable expectation of success. EX1003, ¶85. Therefore, a POSITA would have understood the Patten/Ben-Rubi/AAPA combination to render obvious the claimed control means arranged "to read said first field and said clock signal and said rules database." *Id.* Patten's processor 123, *i.e.*, control means, orchestrates this process. EX1004, [00182]; EX1003, ¶86.

[1i] wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.

In the Patten/Ben-Rubi/AAPA combination, Patten teaches the claimed control means arranged as this limitation requires. EX1003, ¶¶87-89. Patten teaches that "[t]he receiver may update a counter associated with respective individual media items, when that media item is output." EX1004, [0057]; [00148]. As discussed regarding element [1e], Patten's and Ben-Rubi's playback counter teachings disclose or render obvious the claimed second field. And Patten's "receiver 1 is controlled by a processor 123." *Id.*, [00182]. A POSITA, therefore, would have understood that Patten's processor 123, *i.e.*, control means, performs the claimed updating of the second field when the advertisement is again shown. *Supra* § IV; EX1003, ¶89.

In sum, the combination of Patten/Ben-Rubi/AAPA renders obvious claim 1. EX1003, ¶¶46-90.

6. Dependent Claim 2

[2] The system according to claim 1 in which each header includes a keyword, and the control means checks the keyword against the rules database during application of said local broadcasting time regulation to said advertisement.

In the Patten/Ben-Rubi/AAPA combination, Patten renders obvious this claim. EX1003, ¶¶91-92. Specifically, Patten discloses "Restriction codes," which "define properties of the content of the media item which may **restrict** the scheduling of the media item, such as the **type of product or service being**

advertised." EX1004, [0060]. Patten's "type of product or service being advertised" are words that describe the advertisement, which a POSITA would have understood to be keywords. EX1003, ¶91. Furthermore, as discussed regarding element [1d], a POSITA would have found it obvious to locate restriction codes in the header of each advertisement. *Id.*

Further, a POSITA would have understood that restricting playback of each advertisement based on "type of product or service being advertised" (*i.e.*, keywords) involves comparing those keywords against a set of rules. EX1003, ¶92. For Patten's receiver to make such comparisons, a POSITA would have understood that such rules are stored in the rules database as discussed regarding element [1f]. EX1003, ¶92. And because Patten's "receiver 1 is controlled by a processor 123," EX1004, [00182], a POSITA would have understood that Patten's processor (*i.e.*, control means) checks the keyword against the rules database during application of the local broadcasting time regulation to the advertisement. *Supra* § IV; EX1003, ¶92.

7. Dependent Claim 3

[3] The system according to claim 2 in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity.

In the Patten/Ben-Rubi/AAPA combination, Patten renders obvious this claim. EX1003, ¶¶93-95. As discussed regarding element [1d], Patten discloses

restriction codes that "restrict the scheduling of the media item," and provides various examples of such restrictions in scheduling of advertisements, including watershed regulations. EX1004, [0060]. A POSITA would have recognized that there are only a very limited number of criteria for broadcasting scheduling, namely time of the day and day of the week. EX1003, ¶93. Indeed, Plotnick (US2002/0144262) illustrates a POSITA understood that advertisement scheduling in a time-shifted viewing context "may vary based on … what time of day it is, what day of the week" it is. EX1005, [0194]. This corroborates a POSITA's knowledge that day of the week is a commonly used criteria for determining when to schedule an advertisement. Noble (US 8,782,691) also corroborates this, describing that "[t]he invention can also allow the insertion of a promotion targeted according to the **day that the recorded program is played back** from the video storage device 604." EX1012, 15:58-60. Riedl further corroborates this, describing advertisement targeting using "day/time, etc., that [is] associate[d] with the advertisement." EX1013, 5:32-36; EX1003, ¶¶93-94.

Therefore, a POSITA would have found it obvious, in light of Patten's use of time-based restrictions for complying with broadcasting regulations, to modify Patten's automated regulation compliance to also account for the day of the week, to further ensure compliance with local broadcasting regulations that have day-of-the-week restrictions. EX1003, ¶95. Doing so would have been obvious in light of

the well-known use of day of week in scheduling advertisements, and would have the predictable result of a system that complies with all manner of time-based broadcasting regulations. *Id.* Moreover, because Patten/Ben-Rubi/AAPA includes the restriction codes in a header of the advertisement for automated regulation compliance, as discussed in claim 1, a POSITA would have found it obvious to include another field in the header that indicates a day of the week validity. *Id.* A POSITA would have had a reasonable expectation of success in making this modification because storing and organizing data is a routine task well within the skill of a POSITA as explained regarding element [1d]. *Id.*

8. Dependent Claim 6

[6] The system according to claim 1 in which the broadcast video/audio programme is arranged to contain information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break.

In the Patten/Ben-Rubi/AAPA combination, Patten renders obvious this claim. EX1003, ¶96. Specifically, Patten teaches that the broadcasted "programming [has] a **break defined therein** such that media stored at the receiver may be output during the break." EX1004, [0019]. A POSITA would have understood defining a break for playing an advertisement as at least providing information relating to when the advertisement break is to start relative to the programming, and the duration of the break. EX1003, ¶96. Furthermore, the information on start time of the advertisement relative to the programming is, by

definition, information on the duration of each programming segment. *Id.* Indeed, for Patten to provide "a time-divided system in which the insertable media items are output during **breaks within or between programmes**," EX1004, [00201], a POSITA would have understood that Patten's programming contains information including the duration of each segment of programme between periodic breaks and the duration of the next periodic break. EX1003, ¶96.

In addition, Patten repeatedly discusses "break schedule data" and scheduling advertisement playback in those scheduled breaks, EX1004, [0054], [00120], [00144-45], as well as "programme schedule data … defining the scheduling of programmes in each channel." *Id.*, [00185]; [0069], [0091]. These disclosures further indicate information on programme segment durations as well as duration of periodic breaks. Therefore, Patten discloses this limitation. EX1003, ¶96.

9. Dependent Claim 7

[7] The system according to claim 1, wherein the system is a personal video recorder (PVR), and wherein the rules database means is a rules database stored locally in the PVR.

In the Patten/Ben-Rubi/AAPA combination, Patten renders obvious this claim. EX1003, ¶97. Specifically, Patten discloses "broadcast receiver 1 comprises a personal video recorder (PVR)." EX1004, [0034]; [00140]. Furthermore, as discussed regarding element [1f], the rules database is stored

within Patten's "hard disk 113" of receiver 1. *Id.*, [00185], [00188], Fig. 15. Therefore, Patten discloses a rules database stored locally in the PVR. EX1003, ¶97.

10. Dependent Claim 8

[8] The system according to claim 1, wherein the control means is further arranged to, when the application of said local broadcasting time regulation to a particular advertisement indicates that showing the particular advertisement would violate the local broadcasting time regulation, search the advertisements stored in the advertisement supply means until either an advertisement is found that does not violate the local broadcasting time regulation or it is determined that no advertisement stored in the advertisement supply means is suitable for showing under the local broadcasting time regulation.

In the Patten/Ben-Rubi/AAPA combination, Patten renders obvious this claim. EX1003, ¶98. As discussed regarding claim 1, Patten discloses targeted substitutional advertising that automatically applies watershed restrictions associated with each advertisement, "so that media items having watershed restrictions may not be selected outside the defined watershed times." EX1004, [00146]. A POSITA would have understood that selecting advertisements that comply with Patten's watershed restrictions involves the claimed "application of said local broadcasting time regulation to a particular advertisement," to filter out advertisements when "showing the particular advertisement would violate the local broadcasting time regulation." EX1003, ¶98.

Further, Patten discloses that "the receiver 1 obtains the long list LL" of potential advertisement candidates for a given advertisement break, and "filters out

invalid or unavailable items at step P2 to obtain a short list" of candidate advertisements. EX1004, [00132]; [00125]. A POSITA would have understood that Patten's creation of a shortlist of candidate advertisements by filtering out invalid advertisements involves the claimed "search[ing] the advertisements stored in the advertisement supply means until [] an advertisement is found that does not violate the local broadcasting time regulation." EX1003, ¶99. A POSITA would have also understood that Patten's watershed restriction compliance operation would display no advertisement if all candidate advertisements violate the watershed (*i.e.*, the claimed "it is determined that no advertisement stored in the advertisement supply means is suitable for showing under the local broadcasting time regulation"), in order to comply with the statutory watershed regulation. EX1003, ¶99; *see* EX1007, [0071], [0130]. Indeed, searching through a list of data entries to determine whether there are any entries that meet the criteria is a well-known, elementary operation of a computing system like Patten's. EX1003, ¶99. And as discussed regarding element [1h], Patten's processor 123 performs the operations discussed above, thereby disclosing the control means. EX1004, [00182]; *supra* § IV; EX1003, ¶99.

11. Dependent Claim 9

[9] The system according to claim 8, wherein the advertisements stored in the advertisement supply means include advertisements that were broadcast live with a programme being shown during time-shifted viewing and also include advertisements that were received by the system other than in the live broadcast of the programme being shown in time-shifted viewing, and wherein the control means is further arranged to show during time-shifted viewing of the programme a mix of advertisements that were received during the live broadcast of the programme and advertisements that were received other than in the live broadcast of the programme being shown during time-shifted viewing.

In the Patten/Ben-Rubi/AAPA combination, Patten renders obvious this claim. EX1003, ¶100. Patten teaches storing and displaying advertisements originally broadcasted with the recorded program because it discloses a scenario where "the inserted substitutional items," *i.e.*, advertisements, "may be **recorded within** the recording of the received broadcast stream, so that the displayed content on playback is **identical to that seen when watching the live broadcast stream** with any inserted substitutional media items." EX1004, [00140]. In other words, the advertisements played back by Patten's receiver in this particular time-shifted viewing are the same advertisements that were "broadcasted live with a programme being shown during time-shifted viewing," as claimed. EX1003, ¶100.

Further, Patten discloses storing and displaying advertisements that were ***not*** originally broadcasted with the recorded program because it discloses a time-shifted viewing scenario where "user experience is **different from conventional recording**, in which the user expects to see on playback the same content that was

previously viewed live." EX1004, [00141]. In other words, the advertisements played back by Patten's receiver in this scenario have been "received by the system other than in the live broadcast of the programme being shown in time-shifted viewing," as claimed. EX1003, ¶101. Patten discloses a process for creating such a viewing experience, where "the recording may include data identifying the splice points and substitutional schedule, and media substitution may be performed on playback," resulting in advertisement playback that was not broadcasted with the original program. EX1004, [00141]; EX1003, ¶102. Furthermore, a POSITA would have understood Patten's disclosure that "media substitution **may be performed** on playback" to mean that media substitution is sometimes not performed, resulting in playback of originally recorded advertisement. *Id.*; EX1003, ¶103. Indeed, a POSITA would have recognized that advertisement substitution is not always necessary, nor desirable. EX1003, ¶¶101-103. Therefore, Patten discloses displaying "a mix of advertisements" that were broadcasted live with the recorded program and others that were later recorded for advertisement substitution. EX1003, ¶103.

Moreover, Patten discloses a "processor 123" that functions as a control means for Patten's PVR receiver. EX1004, [00182]. A POSITA would have understood that Patten's processor 123 performs the claimed functions discussed

above, and thus processor 123 is the claimed control means. *Supra* § IV; EX1003, ¶104.

12. Independent Claim 12

[12a] A Personal Video Recorder (PVR) for use in a system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening, the PVR comprising:

To the extent it is limiting, the Patten/Ben-Rubi/AAPA combination teaches the preamble for the reasons discussed in Ground 1, element [1a] and claim 7, incorporated herein. EX1003, ¶105.

[12b] data storage means storing a programme episode database, an advertisement database, and a rules database,

The Patten/Ben-Rubi/AAPA combination teaches this limitation for the reasons discussed in Ground 1, elements [1b], [1c], and [1f], incorporated herein. EX1003, ¶106. Patten's hard disk 113 corresponds to the '302 patent's hard disc 62 in PVR 60, consistent with the proposed construction of "data storage means," and performs the claimed "storing" function. *Supra* § IV; EX1003, ¶106.

[12c] each stored advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown,

The Patten/Ben-Rubi/AAPA combination teaches this limitation for the reasons discussed in Ground 1, element [1d], incorporated herein. EX1003, ¶107.

[12d] and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing,

The Patten/Ben-Rubi/AAPA combination teaches this limitation for the reasons discussed in Ground 1, element [1e], incorporated herein. EX1003, ¶108.

[12e] wherein the rules database contains rules relating to said local broadcasting time regulation

The Patten/Ben-Rubi/AAPA combination teaches this limitation for the reasons discussed in Ground 1, element [1f], incorporated herein. EX1003, ¶109.

[12f] and wherein the stored programme episodes have periodic breaks for the insertion of advertisements;

The Patten/Ben-Rubi/AAPA combination teaches this limitation for the reasons discussed in Ground 1, claim 1 element [1b], incorporated herein. EX1003, ¶110.

[12g] input connection means for connection to a source of video/audio signals and a real-time clock signal;

The Patten/Ben-Rubi/AAPA combination teaches this limitation through Patten and AAPA. EX1003, ¶¶111-114. As detailed below, Patten's connections to tuners and the Internet as well as AAPA's backchannel connection correspond to the '302 patent's one or more connections between a PVR and (i) aerial 20, and (ii) internet connection 24 or modem 22, consistent with the proposed construction of "input connection means," and perform the claimed "connect[ing]" functions. *Supra* § IV; EX1003, ¶¶112-14.

Patten's "received signals are input to first and second tuners 110a and 110b" for satellite television broadcasts, which perform "simultaneous reception of the same or different television programmes and/or media items." EX1004, [00178]. A POSITA would have understood that Patten's tuners connect to the source of video/audio signals for the signals to be input to the tuners. EX1003, ¶112. Patten also discloses this limitation because a POSITA would have understood that Patten's satellite-television-receiver system requires a satellite antenna, and that the antenna connects to the satellite tuners that receive satellite broadcast programming. *Id.*

As discussed regarding element [1g], the claimed "real-time clock signal" is provided through a modem or an Internet connection. EX1001, 4:43-48. Patten discloses an Internet connection, EX1004, [00198], thereby teaching the claimed "input connection means for connection to a source of … a real-time clock signal" with the corresponding structure of one or more connections between a PVR and internet connection 24 or modem 22. *Supra* § IV; EX1003, ¶113.

Further, if Patten does not disclose this limitation, the Patten/Ben-Rubi/AAPA combination renders obvious this limitation through AAPA's teachings. Specifically, the '302 patent specification states that "the connections to an aerial 20, a modem 22 and the Internet 24 are **as in the prior art**." EX1001, 4:43-45. These structures admitted to be in the prior art are the very structures

corresponding to the input connection means. *See supra* § IV. And these structures provide the claimed functions as well. EX1001, 4:43-48 ("A Real Time of day signal RT is received via the backchannel in either the Internet connection 24 or the connection via the modem 22."), 1:65-67 ("The PVR receives broadcast digital television and audio signals from an aerial 20."). Therefore, AAPA discloses the input connection means. EX1003, ¶114.

[12h] output means for connection to a consumer's viewing/listening unit;

The Patten/Ben-Rubi/AAPA combination teaches this limitation. EX1003, ¶115. Patten teaches "a High Definition Multimedia Interface (HDMI) interface 126" that "output[s] to an HDMI input of a high definition TV." EX1004, [00181]. The HDMI interface 126 corresponds to the '302 patent's connection between PVR 60 and TV set 68, consistent with the proposed construction of "output means," and performs the claimed "connect[ing]" function. *Supra* § IV; EX1003, ¶115.

[12i] and control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown during one of the periodic breaks;

The Patten/Ben-Rubi/AAPA combination teaches this limitation for the reasons discussed in Ground 1, claim elements [1b] and [1h], incorporated herein. EX1003, ¶116.

[12j] wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.

The Patten/Ben-Rubi/AAPA combination teaches this limitation for the reasons discussed in Ground 1, element [1i], incorporated herein. EX1003, ¶117.

In light of the disclosures and knowledge of a POSITA discussed above, Patten/Ben-Rubi/AAPA renders obvious claim 12. EX1003, ¶¶105-117.

13. Dependent Claim 13

[13] The PVR according to claim 12 arranged to read the real-time clock to read the first field in the header of an advertisement to read the rules database, and to provide that advertisement to a consumer's viewing/listening unit only when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal.

The Patten/Ben-Rubi/AAPA combination renders obvious this claim for the reasons discussed in Ground 1, claim elements [1h] and [12i], incorporated herein. EX1003, ¶118. As discussed regarding elements [1h] and [12i], Patten's watershed compliance system only allows playback of advertisements that do not violate the watershed time restriction based on the "time of day of playback," EX1004, [00140], [00145], [00146], *i.e.*, "when its header and the rules database do not indicate that the advertisement may not be viewed at the real time of day indicated by the clock signal," as claimed. EX1003, ¶118.

14. Dependent Claim 15

[15] The PVR according to claim 13, further arranged to update the second field in the header when said advertisement is provided to the consumer's viewing/listening unit.

The Patten/Ben-Rubi/AAPA combination renders obvious this claim for the reasons discussed in Ground 1, claim elements [1e] and [1i], incorporated herein. EX1003, ¶119. Patten discloses that "[t]he receiver may update a counter associated with respective individual media items, **when that media item is output**." EX1004, [0057]. A POSITA would have understood that outputting of a media item is providing the advertisement to the viewer's viewing/listening unit, such as a television. EX1003, ¶119.

B. [GROUND 2] – Patten in view of Ben-Rubi, AAPA, and Plotnick (claims 3, 4, 14)

1. Overview of Plotnick

Plotnick is titled, "Alternative Advertising in Prerecorded Media." EX1005, cover. Plotnick is directed to set-top boxes with PVR functionality, *id.*, [0107], which implement "client side STB ad targeting system 600," that "select and present advertisements based on user profiles" and other criteria. *Id.*, [0134], [0154]. Plotnick discloses the benefit of using "interactive ads" in which the "user is participating in the advertisement." *Id.*, [0131]; EX1003, ¶120.

2. Motivation to combine Plotnick with Patten/Ben-Rubi/AAPA

A POSITA would have been motivated to modify the system of Patten/Ben-Rubi/AAPA to incorporate Plotnick's targeted advertising rules and interactive advertisements with a reasonable expectation of success. EX1003, ¶121. As discussed above, both Patten and Plotnick are directed to inserting targeted advertisements into recorded programs played back by a PVR. EX1004, [0002]; EX1005, [0134]. Further, Plotnick teaches various benefits of interactive advertisements, such as "a significant and positive impact on recall" and their ability to "supply a vast amount of information to the viewer." EX1005, [0131]. In light of such benefits of interactive advertisements, a POSITA would have been motivated to implement interactive advertisements in Patten's PVR, to improve the value of the advertisements displayed by the PVR. EX1003, ¶121.

Similarly, Plotnick describes various benefits of targeting advertisements based on the time of day and the day of the week such that, as explained in claims 3 and 4 below, a POSITA would have been motivated to incorporate these rules into Patten's PVR. EX1005, [0194]; EX1003, ¶¶121-22. Combining these elements would require simple software integration of Plotnick's advertisement targeting and interactive advertisements to Patten's receiver to be executed by Patten's processor. EX1003, ¶122. As such, a POSITA would have had a reasonable expectation of success in making the combination. *Id.*

1. Dependent Claim 3

[3] The system according to claim 2 in which a further local broadcasting regulation forbids the provision of certain types of advertisement on certain days of the week and each header further indicates a day of the week validity.

The Patten/Ben-Rubi/AAPA/Plotnick combination renders obvious this claim through Plotnick. EX1003, ¶123. As discussed regarding element [1d] in Ground 1, Patten discloses restriction codes that "restrict the scheduling of the media item," and provides various examples of such restrictions in scheduling of advertisements, including watershed regulations. EX1004, [0060]. A POSITA would have recognized that there are only a finite number of criteria for broadcasting scheduling, namely the time of the day and the day of the week. EX1003, ¶123. A POSITA, therefore, would have looked to combine Plotnick's teaching that advertisement scheduling in a time-shifted viewing context "may vary based on … what time of day it is, what day of the week" it is. EX1005, [0194]; EX1003, ¶123. Numerous contemporaneous references confirm a POSITA would have been motivated to incorporate this functionality in the PVR of Patten/Ben-Rubi/AAPA. For example, Noble (US 8,782,691) corroborates the same, describing that "[t]he invention can also allow the insertion of a promotion targeted according to the **day that the recorded program is played back** from the video storage device 604." EX1012, 15:58-60. Riedl also corroborates the same,

describing advertisement targeting using "day/time, etc., that [is] associate[d] with the advertisement." EX1013, 5:32-36; EX1003, ¶124.

A POSITA would have had a reasonable expectation of success in incorporating the day-of-the-week scheduling into Patten/Ben-Rubi/AAPA. EX1003, ¶125. Because Patten's PVR already includes the restriction codes in a header of the advertisement for automated regulation compliance, a POSITA would have found it obvious to include another field in the header that indicates a day of the week validity. *Id.* A POSITA would have had a reasonable expectation of success in making this modification because storing and organizing data is a routine task well within the skill of a POSITA as explained regarding element [1d] and required no more than the routine modification of software that was well within the skillset of a POSITA. *Id.*

2. Dependent Claim 4

[4] The system according to claim 1 in which the advertisements include interactive advertisements to which a response by a consumer is requested.

The Patten/Ben-Rubi/AAPA/Plotnick combination renders obvious this claim through Plotnick. EX1003, ¶126. Specifically, Plotnick discloses that "[i]nteractive ads can also be utilized to deliver advertising to subscribers." EX1005, [0131]. In an interactive advertisement, "a user may be prompted to indicate which ad he/she wants to watch and then may be asked to interact with that ad." *Id.; supra* Section V.B.2.

3. Dependent Claim 14

[14] The PVR according to claim 13 further arranged to supply to the viewing unit interactive advertisements which request a response from the viewer, and to record such a response.

The Patten/Ben-Rubi/AAPA/Plotnick combination renders obvious this limitation for the reasons discussed in Ground 2, claim 4, incorporated herein. EX1003, ¶127. Plotnick discloses that "a user may be prompted to indicate which ad he/she wants to watch and then may asked to interact with that ad." EX1005, [0131]. A POSITA would have understood that a PVR, likes those in Patten and Plotnick, record input in a storage medium (*e.g.*, a register or a memory) for a processor to be able to process the viewer's response (*e.g.*, user's ad preference) and react to the viewer's response (*e.g.*, play the requested ad). EX1003, ¶127.

VI. DISCRETIONARY DENIAL IS UNWARRANTED

A. The Petition Applies New Prior Art and Arguments Not Previously Considered

The two-part *Advanced Bionics* framework confirms discretionary denial is unwarranted. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential); *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph).

***Advanced Bionics* Part 1**—The Office never considered the disclosures of Patten or Ben-Rubi—two of the three references advanced in combination–when

allowing the '302 patent. Nor did the Office address, through this or substantially similar prior art, the combinations that are advanced by this Petition through integration of Ben-Rubi, AAPA, and Plotnick. Equally significant, the new disclosures of Patten, Ben-Rubi, and Plotnick are materially different from the references the Examiner relied upon. Only Plotnick has been presented to the Office in a petition for *inter partes* review, filed by a party unrelated to the Petitioner, for which no institution decision has been published. *See* IPR2023-00652, Paper No. 1. And the proffered use of Plotnick is entirely different than found in the instant Petition. In the earlier petition, Plotnick serves to disclose the conventional elements of a PVR system and is used in combination with another reference that supplies the dynamic selection of advertisements. Here Plotnick stands for, and teaches, the ubiquity of interactive advertisements and weekday targeting. Thus, Plotnick's use and the relied-upon teachings are materially different.

Becton factors [a], [b], and [d] counsel in favor of institution. Neither Patten, Ben-Rubi, nor Plotnick was discussed during prosecution (factor [a]); nor are they cumulative of other art relied on by the Examiner, such as Poel (factor [b]). EX1002, 128. There are also no overlapping arguments (factor [d]) between the prosecution record and the Grounds above. Thus, *Becton, Dickinson* factors (a), (b), and (d) favor Petitioner.

***Advanced Bionics* Part 2**—The Board need not reach part 2 since part 1 is not satisfied. Nonetheless, each of *Becton, Dickinson* factors (c), (e), and (f) favors Petitioner. For factor (c), none of Patten, Plotnick, or Ben-Rubi was cited during prosecution, and thus did not form the basis of any rejection. As for factors (e) and (f), by not considering Patten, Plotnick, or Ben-Rubi, or combinations based on them, the Office erred in its evaluation of the prior art, thus warranting reconsideration. *Advanced Bionics*, Paper 6, 10. The Grounds above demonstrate why further consideration is warranted.

B. *Fintiv* Factors Favor Institution

Consistent with Congressional intent, the goals of *Fintiv*, and Director Vidal's interim guidance issued on June 21, 2022 ("Director's Guidance"), Petitioner asks the Board to consider this Petition's challenges. IPR2020-00019, Pap. 11, 6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"). A holistic analysis of the *Fintiv* framework favors institution.[6]

[6] Apart from Petitioner's showing that the *Fintiv* factors favor institution, the framework should not be followed because it is legally invalid. The framework exceeds the Director's authority, is arbitrary and capricious, and was adopted without notice-and-comment rulemaking.

1. Factor 1: Institution Supports Stays in Parallel Proceedings

Factor 1 is neutral because neither party in the co-pending litigation has, to date, requested a stay pending the result of IPR and the Board "will not attempt to predict" how a district court might adjudicate a future motion to stay. *Apple Inc. v. Fintiv, Inc*., IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020); *Sand Revolution II, LLC v. Cont'l Intermodal Grp. – Trucking LLC*, IPR2019-01393, Paper 24 at 7 (PTAB June 16, 2020) ("*Sand Revolution*") (informative); *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 14 (PTAB Dec. 1, 2020) ("*Sotera*") (precedential).

2. Factor 2: Timing of Final Written Decision

No trial date exists in the district court litigation. And due to delays in the identification of proper parties, transfer of venue, and a pending Motion to Dismiss under Fed. R. Civ. P. 12(b)(6), DISH has yet filed an Answer to the complaint. Moreover, the scheduling order reflects a lengthy schedule. The deadline to complete fact discovery is September 8, 2024. EX1015, 7. The deadline to complete expert discovery is nearly two years away, on May 2, 2025. *Id.* And the scheduling order requires the parties to seek permission to file dispositive motions in August 2025. *Id.*

The Board has consistently adhered to the one-year statutory deadline for Final Written Decisions ("FWD") prescribed by 35 U.S.C. § 316(a)(11) and, in

fact, routinely issues decisions before their statutory deadlines. *See Sand Revolution II* at 9. Based on the 18-month IPR schedule and a typical delay in issuance of notice of filing date accorded of less than 1 month, the Board will likely issue its Final Written Decision ("FWD") in February 2025, which is before the close of expert discovery in the district court litigation and well-before any anticipated trial. Therefore, *Fintiv* Factor 2 weighs against discretionary denial.

3. Factor 3: Early Stage of Parallel Proceedings

This Petition was filed before the one-year statutory bar date and well before any party has made a substantial investment in the district court litigation. *Mylan*, IPR2018-01680, Paper 22 at 18 (finding that petition filed two months before bar date is "well within the timeframe allowed by statute, weighing heavily in [petitioner's] favor"). Petitioner's diligence and substantial investment in IPR outweighs the parties' minimal investment of resources in the companion litigation. For example, Petitioner has diligently prepared and filed this Petition before the complaint has been answered, and Patent Owner served infringement contentions just two weeks ago, which first disclosed the full list of asserted claims. Petitioner's diligence in filing this Petition within weeks of first learning the asserted claims and at an early stage of the companion litigation weighs strongly against discretionary denial. *See*, *e.g.*, *Apple Inc. v. Seven Networks LLC*, IPR2020-00156, Paper 10 at 11-12 (PTAB Jun. 15, 2020); *Sotera*, 16-17.

4. Factor 4: The Petition Raises Unique Issues

As noted above, the co-pending litigation is in an early stage (*e.g.*, no depositions, no substantive orders, and no hearings have been held). At present, there is no overlap in issues between the litigation and any IPR resulting from this petition. Moreover, consistent with *Fintiv*, Petitioner asks the Board alone to consider the unique challenges raised in the Petition. EX1016. A lack of overlap between the petition and the district court proceeding "has tended to weigh against exercising discretion to deny institution." *Fintiv*, IPR2020-00019, Paper 11 at 12-14. Factor 4 weighs against discretionary denial. *See*, *e.g.*, *Fintiv* at 12-13; *Sand Revolution* at 11-12.

5. Factor 5: DISH's Involvement in Parallel Proceedings

Petitioner and Patent Owner are parties to the co-pending litigation. Petitioner will not pursue in the parallel district court proceeding the same grounds as in this Petition or those presented in *Google LLC f/k/a Google Inc. v. Safecast Limited LLC*, IPR2023-00652, Paper No. 1 (P.T.A.B. Mar. 1, 2023), if the PTAB institutes this IPR. EX1016. This favors institution and promotes judicial efficiency. *See Sand Revolution* at 11-12. At worst, where the district court and IPR parties are the same, such as in this case, Factor 5 is neutral. *Cisco Sys., Inc. v. Ramot at Tel Aviv Univ. Ltd.*, IPR2020-00122, Paper 15 at *10 (PTAB May 15, 2020) (APJ Crumbley, dissenting).

6. Factor 6: Other Considerations Support Institution

As *Fintiv* noted, "the factors … are part of a balanced assessment of all the relevant circumstances in the case," and, "if the merits of a ground raised in the petition seem particularly strong…the institution of a trial may serve the interest of overall system efficiency and integrity…." *Fintiv*, 14-15.

The merits of this Petition are particularly strong. As demonstrated in the Petition with reference to Mr. Hoarty's declaration and additional evidence, institution would result in a finding of unpatentability of the Challenged Claims, which are obvious based on prior art references that materially differ from those considered by the Examiner during prosecution. The strength of the merits alone is enough to outweigh any inefficiencies born of parallel litigation (and as explained above, institution would actually *promote* efficiency). *See Fintiv* at 14-15.

Accordingly, *Fintiv* Factor 6 weighs strongly against discretionary denial.

VII. PAYMENT OF FEES – 37 C.F.R. § 42.103

Petitioner authorizes the Patent and Trademark Office to charge Deposit Account No. 06-1050 for the fee set in 37 C.F.R. § 42.15(a) for this Petition and further authorizes payment for any additional fees to be charged to this Deposit Account.

VIII. CONCLUSION

Petitioner respectfully requests institution of an IPR and cancellation of all Challenged Claims.

IX. MANDATORY NOTICES UNDER 37 C.F.R § 42.8(a)(1)

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

Petitioner, DISH Network L.L.C. and DISH Technologies L.L.C., are the real parties-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

As set forth in the following table, Petitioner is aware of the following disclaimers, reexamination certificates, petitions for *inter partes* review, and civil actions involving the subject matter for the '302 patent.

Case Number	Filing Date
IPR2023-00652, *Google LLC f/k/a Google Inc. v. Safecast Limited LLC*	March 1, 2023
Safecast Limited v. Dish Network Corporation, 1-22-cv-03037 (DCO)	November 22, 2022
SafeCast Limited v. Microsoft Corporation, 6-22-cv-00983 (WDTX)	September 19, 2022
SafeCast Limited v. AT&T Corp., 6-22-cv-00676 (WDTX)	June 27, 2022
SafeCast Limited v. DISH Network Corporation, 6-22-cv-00677 (WDTX)	June 27, 2022
SafeCast Limited v. Google LLC f/k/a Google Inc., 6-22-cv-00678 (WDTX)	June 27, 2022
SafeCast Limited v. Home Box Office, Inc., 6-22-cv-00679 (WDTX)	June 27, 2022
SafeCast Limited v. NBC Universal, Inc., 6-22-cv-00680 (WDTX)	June 27, 2022
SafeCast Limited v. Paramount Global d/b/a Paramount, Inc., 6-22-cv-00682 (WDTX)	June 27, 2022

Case Number	Filing Date
SafeCast Limited v. Verizon Communications Inc., 6-22-cv-00683 (WDTX)	June 27, 2022

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

Lead Counsel	Backup counsel
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D. Service Information

Please address all correspondence and service to the address listed above. Petitioner consents to electronic service by email at IPR45035-0013IP1@fr.com (referencing Docket No. 45035-0013IP1).

Respectfully submitted,

Dated: June 22, 2023

/Adam R. Shartzer/

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for *Inter partes* Review totals 13,960 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated: June 22, 2023

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on June 22, 2023, a complete and entire copy of this Petition for *Inter partes* Review, Power of Attorney, and all supporting exhibits were provided via Federal Express, to the Patent Owner by serving the correspondence address of record as follows:

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