

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TCL ELECTRONICS HOLDINGS LTD. (f/k/a TCL MULTIMEDIA
TECHNOLOGY HOLDINGS, LTD.),
TCL INDUSTRIES HOLDINGS CO., LTD.,
TCL INDUSTRIES HOLDINGS (H.K.) LIMITED,
TTE TECHNOLOGY, INC. (d/b/a TCL NORTH AMERICA),
TTE CORPORATION, TCL MOKA INTERNATIONAL LIMITED,
TCL MOKA MANUFACTURING S.A. DE C.V.,
TCL KING ELECTRICAL APPLIANCES (HUIZHOU) CO. LTD.,
MANUFACTURAS AVANZADAS S.A. DE C.V.,
TCL SMART DEVICE (VIETNAM) CO., LTD,
SHENZHEN TCL NEW TECHNOLOGY CO., LTD.,
TCL OPTOELECTRONICS TECHNOLOGY (HUIZHOU) CO., LTD.,
TCL OVERSEAS MARKETING LTD., and
TCL TECHNOLOGY GROUP CORPORATION (f/k/a TCL CORP.),
Petitioner,

v.

LG ELECTRONICS INC.,
Patent Owner.

IPR2023-00240
Patent 7,982,803 B2

Before ROBERT J. WEINSCHENK, JOHN A. HUDALLA, and
GARTH D. BAER, *Administrative Patent Judges*.

HUDALLA, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

TCL Electronics Holdings Ltd. (f/k/a TCL Multimedia Technology Holdings, Ltd.), TCL Industries Holdings Co., Ltd., TCL Industries Holdings (H.K.) Limited, TTE Technology, Inc. (d/b/a TCL North America), TTE Corporation, TCL Moka International Limited, TCL Moka Manufacturing S.A. de C.V., TCL King Electrical Appliances (Huizhou) Co. Ltd., Manufacturas Avanzadas S.A. de C.V., TCL Smart Device (Vietnam) Co., Ltd., Shenzhen TCL New Technology Co., Ltd., TCL Optoelectronics Technology (Huizhou) Co., Ltd., TCL Overseas Marketing Ltd., and TCL Technology Group Corporation (f/k/a TCL Corp.) (collectively, “Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–18 (“the challenged claims”) of U.S. Patent No. 7,982,803 B2 (Ex. 1001, “the ’803 patent”). Petitioner filed a Declaration of David B. Lett (Ex. 1005) with its Petition. LG Electronics Inc. (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2022). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the petition and the preliminary response “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at

least 1 of the claims challenged in the petition.” For the reasons that follow, we do not institute an *inter partes* review.

I. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner identifies TCL Electronics Holdings Ltd. (f/k/a TCL Multimedia Technology Holdings, Ltd.), TCL Industries Holdings Co., Ltd., TCL Industries Holdings (H.K.) Limited, TTE Technology, Inc. (d/b/a TCL North America), TTE Corporation, TCL Moka International Limited, TCL Moka Manufacturing S.A. de C.V., TCL King Electrical Appliances (Huizhou) Co. Ltd., Manufacturas Avanzadas S.A. de C.V., TCL Smart Device (Vietnam) Co., Ltd., Shenzhen TCL New Technology Co., Ltd., TCL Optoelectronics Technology (Huizhou) Co., Ltd., TCL Overseas Marketing Ltd., and TCL Technology Group Corporation (f/k/a TCL Corp.) as the real parties-in-interest. Pet. 1–2. Patent Owner identifies LG Electronics Inc. as the real party-in-interest. Paper 6, 2.

B. *Related Matter*

As required by 37 C.F.R. § 42.8(b)(2), the parties identify the following related matter (Pet. 2; Paper 6, 2):

LG Elecs. Inc. v. TCL Elecs. Holdings Ltd., No. 2:22-cv-00122-JRG (E.D. Tex. filed Apr. 21, 2022).

C. *The ’803 patent*

The ’803 patent is directed to “synchronizing an audio signal outputted from a digital video signal processing apparatus to an external device with a video signal outputted to a display device of the apparatus.”

Ex. 1001, 1:6–7. The '803 patent seeks to address the problem of synchronizing outputted audio and video signals in light of the relatively long time it takes to process video signals compared to audio signals. *See id.* at 2:4–34. Figure 3 of the '803 patent is reproduced below.

FIG. 3

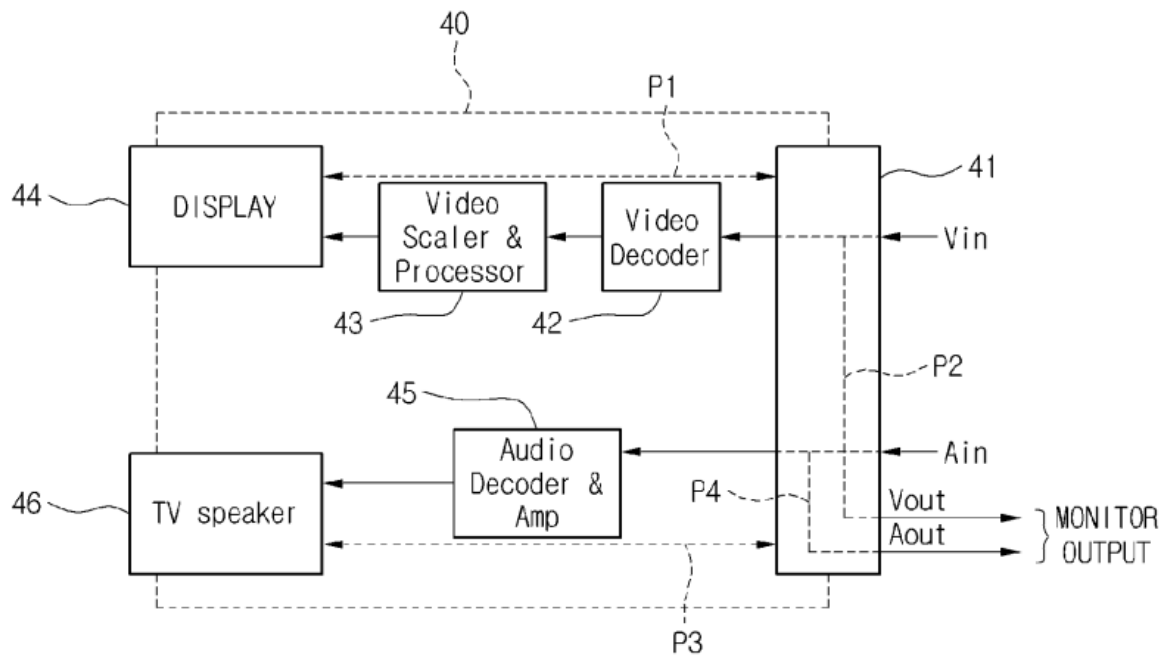


Figure 3 illustrates audio and video signal processing unit 40 of a digital TV. *Id.* at 4:3–5. Processing unit 40 includes AV switch 41 for controlling the processing paths of inputted video signal V_{in} and audio signal A_{in} . *Id.* at 4:5–7, 4:16–17. In first video path P1, video signal V_{in} is decoded by decoder 42 and then scaled and converted by video scaler/processor 43 for output on display 44. *Id.* at 4:5–12, 4:23–31, 4:63–65. In second video path P2, video signal V_{in} is outputted at monitor output port V_{out} . *Id.* at 4:38–43, 4:65–66. In first audio path P3, audio signal A_{in} is decoded and amplified by audio decoder/amplifier 45 for output to TV speaker 46. *Id.* at 4:12–15, 4:32–36, 4:66–5:1. In second audio path P4, audio signal A_{in} is

outputted at monitor output port Aout. *Id.* at 4:38–43, 5:1–3. Based on processing time differences, first video path P1 may not be synchronized with second audio path P4, and first audio path P3 may not be synchronized with second audio path P4. *Id.* at 5:45–55.

Figure 4 of the '803 patent is reproduced below.

FIG. 4

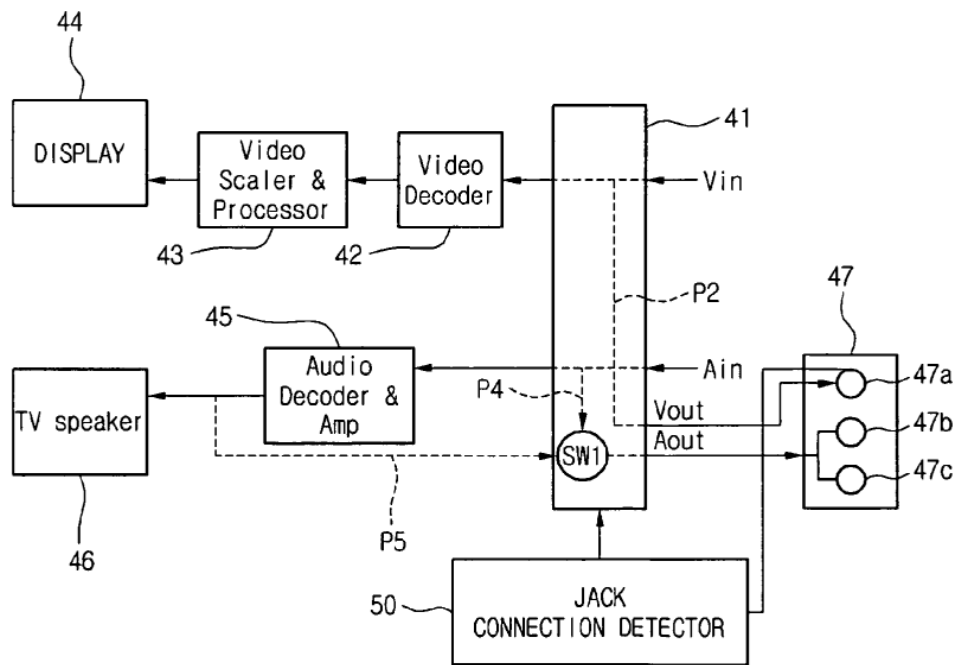


Figure 4 illustrates an audio and video processing circuit of a digital TV that additionally includes jack connection detector 50. Ex. 1001, 6:36–38. Jack connection detector 50 detects whether an external device is connected to monitor output port 47, which comprises video port 47a and audio ports 47b and 47c. *Id.* at 6:23–26, 6:50–53. Based on the detection result, jack connection detector 50 (or a controller in the digital TV) controls selection switch SW1. *Id.* at 6:32–43. If the detection result shows that the external device is connected to all audio and video ports 47a, 47b, and 47c, then the external device is deemed to be an audio/video device. *Id.* at 7:3–6. In this case, selection switch SW1 is controlled to select second audio path P4 such

that signals bypassed from AV switch 41 to audio output port Aout and video output port Vout are outputted to audio output ports 47b and 47c and video output port 47a of monitor output port 47. *Id.* at 7:27–33. If the detection result shows that the external device is connected only to audio ports 47b and 47c and not connected to video port 47a, then the external device is deemed to be just an audio device. *Id.* at 7:6–9. In this case, selection switch SW1 is controlled to select third audio path P5, which is a path from an output port of audio decoder/amplifier 45 or an input port of TV speaker 46 to audio output port Aout (and on to audio output ports 47b and 47c of monitor output port 47). *Id.* at 6:7–10, 7:12–17. In this way, the audio signal synchronized with a video signal that is outputted to display 44 is also outputted to the audio device connected to monitor output port 47. *Id.* at 7:17–20.

D. Illustrative Claim

Of the challenged claims, claims 1, 6–10, and 16 are independent. Claims 2–5 depend directly or indirectly from claim 1; claims 11–15 depend from claim 10; and claims 17 and 18 depend from claim 16. Claim 1 is illustrative of the challenged claims and recites:

1. [pre] An audio and video synchronizing apparatus comprising:
 - [a] a video signal processing unit processing a video signal that is provided to a display device of video processing equipment;
 - [b] an audio signal processing unit processing an audio signal that is provided to an audio device of the video

processing equipment, the audio signal synchronized with the video signal;

[c] a switching unit selecting paths for the video signal that is input to the video signal processing unit and the audio signal that is input to the audio signal processing unit, and selecting at least an audio signal for output to an external device that is not part of the video processing equipment;

[d] an outputting unit outputting the selected at least an audio signal to the external device; and

[e] an output selecting unit controlling the switching unit according to a kind of the external device, wherein the switching unit is controlled to select a first audio signal that bypasses the audio signal that is input to the audio signal processing unit as the at least an audio signal for output to the external device or to select a second audio signal output from the audio signal processing unit as the at least an audio signal for output to the outputting unit.

Ex. 1001, 8:30–54 (Petitioner’s designators added in brackets).

E. Prior Art

Petitioner relies on the following prior art:

U.S. Patent Application Publication No. 2004/0117858 A1, filed Dec. 12, 2002, published June 17, 2004 (Ex. 1003, “Boudreau”).

F. The Asserted Ground

Petitioner challenges claims 1–18 of the ’803 patent based on the following ground (Pet. 4):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–18	103(a) ¹	Boudreau

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102 and 103. The Petition

II. ANALYSIS

We now consider Petitioner’s asserted grounds and Patent Owner’s arguments to determine whether Petitioner has met the “reasonable likelihood” standard for institution under 35 U.S.C. § 314(a).

A. *Legal Standards*

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations.² *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We also recognize that prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

takes inconsistent positions as to whether the pre- or post-AIA versions of §§ 102 and 103 apply. *Compare* Pet. 4 (arguing for post-AIA), *with id.* at 15–16 (arguing for pre-AIA). Because the ’803 patent claims priority to an application filed before March 16, 2013 (the effective date of the relevant amendments), the pre-AIA versions of §§ 102 and 103 apply.

² The present record does not include any evidence of secondary considerations of nonobviousness.

B. Level of Ordinary Skill in the Art

Citing testimony from Mr. Lett, Petitioner contends a person of ordinary skill in the art “would have had at least an undergraduate degree in electrical or computer engineering or closely related scientific field, or similar advanced post-graduate education, and at least two years of experience with audio and video synchronization.” Pet. 13 (citing Ex. 1005 ¶¶ 54–58). Patent Owner does not dispute Petitioner’s proposed level of ordinary skill in the art at this time. Prelim. Resp. 7.

For purposes of this Decision, we adopt Petitioner’s definition of the level of ordinary skill in the art without the two instances of “at least,” which introduce ambiguity. On the present record, we are satisfied that this definition comports with the level of skill necessary to understand and implement the teachings of the ’803 patent and the asserted prior art.

C. Claim Interpretation

In an *inter partes* review, we construe each claim using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b). Accordingly, our claim construction standard is the same as that of a district court. *See id.* Under the standard applied by district courts, claim terms are generally given their plain and ordinary meaning, as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005)

(en banc). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

Neither Petitioner nor Patent Owner puts forth terms of the challenged claims for construction. *See* Pet. 4; Prelim. Resp. 8. For purposes of this Decision, we determine that no aspects of the challenged claims require explicit construction. *See, e.g., Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Obviousness Ground Based on Boudreau

Petitioner contends the subject matter of claims 1–18 would have been obvious over Boudreau. Pet. 29–51. Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 14–18.

1. Boudreau

Boudreau is a U.S. patent application publication directed to synchronizing content displayed on a television set with related content presented at an external device. Ex. 1003 ¶ 16. Figure 2A of Boudreau is reproduced below.

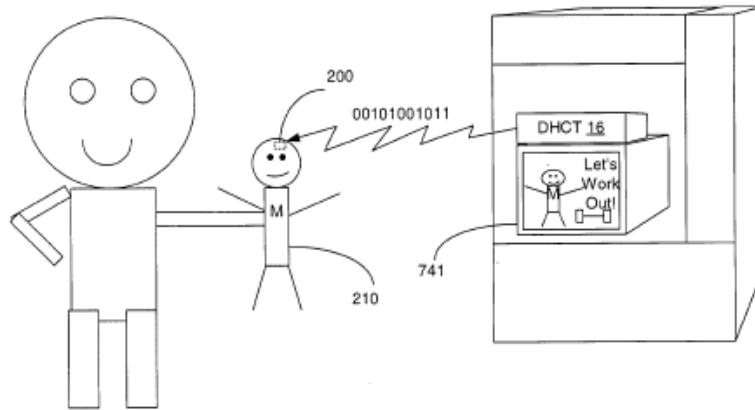


FIG. 2A

Figure 2A illustrates an example of a recreational and educational TV implementation for a multi-media system including “an external device embodied as a doll 210” that is implemented in a subscriber television system. *Id.* ¶¶ 7, 23. External device circuitry 200 (hardware and/or software) incorporated into doll 210 receives content (as represented by the zigzag line) from digital home communication terminal (DHCT) 16. *Id.* ¶ 24. Television show audio emanates from television set 741 (or from remote speakers for television set 741) and from doll 210 (or from only doll 210). *Id.* Doll 210 preferably receives this audio content in real-time with the television show presentation. *Id.* “The presentation of content displayed on the television set can be synchronized with the related content presentation at the external device.” *Id.* ¶ 16.

Figure 6B of Boudreau is reproduced below.

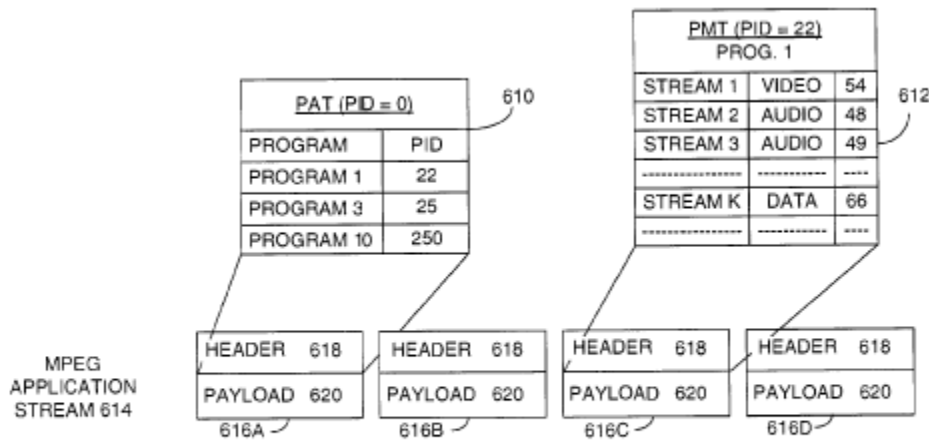


FIG. 6B

Figure 6B depicts information that is transmitted to DHCT 16 to enable the DHCT 16 to parse out and route content to the proper destinations. Ex. 1003 ¶ 49. Headers 618 of MPEG application streams 614 include Program Association Table (PAT) 610 and Program Map Table (PMT) 612. *Id.* PAT 610 associates the MPEG programs transmitted from a headend with their respective Program Map Table 612 using the packet identifier (PID) value of the PMTs. *Id.* PMT 612 maps the elementary streams of a program to their respective PID streams. *Id.* ¶ 50. For the depicted program 1, the PID value for the video stream is 54, the PID value for the audio stream is 48, and the PID value for the related content (e.g., audio distinguished from audio content slated for the television set) is 49. *Id.*

Figure 7A of Boudreau is reproduced below.

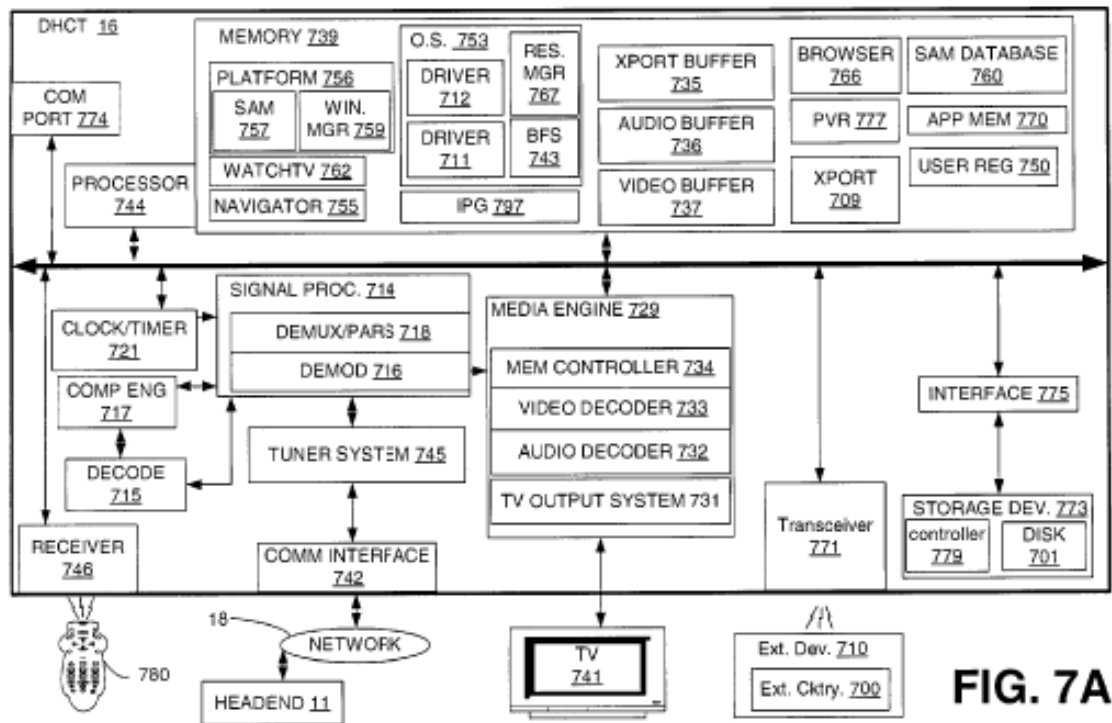


Figure 7A depicts DHCT 16 that is coupled to headend 11, television set 741, and external device 710. Ex. 1003 ¶ 51. DHCT 16 includes signal processing system 714, which comprises demodulating system 716 and transport demultiplexing and parsing system 718 to process broadcast content. *Id.* ¶ 53. Parsing capabilities within demultiplexing and parsing system 718 allow for interpretation of sequence and picture headers, including annotating their locations within their respective compressed stream for future retrieval from storage device 773 and/or acquiring routing instructions for particular buffer destinations in memory 739. *Id.* ¶ 58. The destination buffers may include XPORT buffer 735, audio buffer 736, and video buffer 737. *Id.* ¶¶ 58, 60, 62–63. In particular, XPORT buffer 735 is used to buffer related content for subsequent delivery to external device 710. *Id.* ¶ 52. DHCT 16 also includes a transceiver 771 driven by transceiver

driver 711 in operating system 753 that preferably formats the signal to enable communication to (and from) external device 710. *Id.* ¶ 52.

Memory 739 includes XPORT application 709, which effects the retrieval of related content from a data stream, routing of related content to an appropriate buffer or buffers, and interpretation of time stamps for related content designated for transmittal and/or download to external device 710 in association with presenting content on television set 741. Ex. 1003 ¶ 72. The characteristics of the external device 710 (e.g., decoding functionality) may be acquired by transceiver driver 711. *Id.* ¶ 73. Based on these characteristics, XPORT application 709 decides whether to route content from XPORT buffer 735 to decoding functionality in DHCT 16 and/or to process the content (in cooperation with transceiver driver 711) for transmittal to external device 710. *Id.* Thus, when external device 710 has resident decoding functionality, content in XPORT buffer 735 is processed and routed using transceiver driver 711 to the local cache for transceiver 771, and then transmitted to the external device 710, thus bypassing decoding functionality in DHCT 16. *Id.* ¶¶ 58, 60. When external device 710 does not have decoding functionality, content in XPORT buffer 735 is processed in the same manner as TV audio and video from audio buffer 736 and video buffer 737: it is presented as input to media engine 729 for decompression by audio decompression engine 732 and video decompression engine 733. *Id.*

2. *Independent Claim 1*

a. Petitioner's Contentions

The preamble of claim 1 (“1[pre]”) recites “[a]n audio and video synchronizing apparatus.” Ex. 1001, 8:30. Petitioner cites Boudreau’s teaching of DCHT 16, “which connects to a TV 741 to display video and provide associated audio such that the video on the TV 741 is synchronized with audio played from the TV’s speaker or from the external audio device/speaker.” Pet. 29 (citing Ex. 1003 ¶¶ 23–24, Fig. 2A; Ex. 1005 ¶ 117).

Limitation 1[a] recites “a video signal processing unit processing a video signal that is provided to a display device of video processing equipment.” Ex. 1001, 8:32–34. Petitioner cites the following elements in Boudreau’s DHCT 16 for teaching the “video signal processing unit”: signal processing system 714 (which includes demodulating system 716 and transport demultiplexing and parsing system 718) and media engine 729 (which includes video decompression engine 733). Pet. 30 (citing Ex. 1003 ¶¶ 53–58). Petitioner contends “demodulating system 716, transport demultiplexing and parsing system 718, . . . and media engine 729 process video signals to provide signals that can be displayed on the TV 741.” *Id.* at 31 (citing Ex. 1005 ¶¶ 120–121); *see also id.* at 30 (stating that the “video signal” is the “signal that is provided to a television for display”).

Limitation 1[b] recites “an audio signal processing unit processing an audio signal that is provided to an audio device of the video processing equipment, the audio signal synchronized with the video signal.” Ex. 1001, 8:35–38. Petitioner cites the following elements in Boudreau’s DHCT 16 for teaching the “audio signal processing unit”: signal processing

system 714 (which includes demodulating system 716 and transport demultiplexing and parsing system 718) and media engine 729 (which includes audio decompression engine 734). Pet. 31 (citing Ex. 1003 ¶¶ 53–58). Regarding the recited “audio signal,” Petitioner cites Boudreau’s teaching of an “audio elementary stream,” which is a part of encoded MPEG video that is processed and outputted to TV 741. *Id.* at 31–32 (citing Ex. 1003 ¶¶ 43, 53–58). Petitioner contends that an ordinarily skilled artisan would have known at least some MPEG audio frames to be synchronized with MPEG pictures when outputted to the TV. *Id.* (citing Ex. 1003 ¶ 43; Ex. 1005 ¶ 124).

Limitation 1[c] recites “a switching unit selecting paths for the video signal that is input to the video signal processing unit and the audio signal that is input to the audio signal processing unit, and selecting at least an audio signal for output to an external device that is not part of the video processing equipment.” Ex. 1001, 8:39–43. Petitioner maps the recited “switching unit” to Boudreau’s XPORT application 709 as implemented in software. Pet. 32. Petitioner contends that Boudreau’s transceiver driver 711 acquires “[t]he characteristics of the external device 710 (e.g., decoding functionality, etc.)” and then XPORT application 709 cooperates with transceiver driver 711 “to decide whether to route the content from the XPORT buffer 735 to decoding functionality in the DHCT 16 and/or to process (in cooperation with the transceiver driver 711) for transmittal to the external device 710.” *Id.* at 32–33 (quoting Ex. 1003 ¶ 73). As such, Petitioner contends that XPORT application 709 “rout[es] signals input to the XPORT buffer 735, Audio buffer 736, and Video buffer 737, audio and video processing units, and select[s] video and audio outputs to external

device 710.” *Id.* at 32 (citing Ex. 1005 ¶ 126); *see also id.* at 25–26 (citing Ex. 1003 ¶ 72; Ex. 1005 ¶ 111) (“An XPORT application 709 controls the multimedia system functionality of the DHCT 16 . . . including providing AV switching functionality.”).

Limitation 1[d] recites “an outputting unit outputting the selected at least an audio signal to the external device.” Ex. 1001, 8:44–45. Petitioner cites Boudreau’s “transceiver 771 that is driven by a transceiver driver 711 in the operating system 753 that preferably formats the signal to enable communication to (and from) an external device 710.” Pet. 33 (quoting Ex. 1003 ¶ 52). Petitioner also cites Boudreau’s teaching of audio emanating from doll 210. *Id.* at 33–34 (citing Ex. 1003 ¶ 24).

Limitation 1[e] recites

an output selecting unit controlling the switching unit according to a kind of the external device, wherein the switching unit is controlled to select a first audio signal that bypasses the audio signal that is input to the audio signal processing unit as the at least an audio signal for output to the external device or to select a second audio signal output from the audio signal processing unit as the at least an audio signal for output to the outputting unit.

Ex. 1001, 8:48–54. Regarding the recited “output selecting unit,” Petitioner highlights Boudreau’s teachings of detecting the characteristics, such as decoding functionality, of external device 710. Pet. 34–35 (citing Ex. 1003 ¶¶ 18, 73. Petitioner further cites Boudreau’s teaching of XPORT application 709 “decid[ing] whether to route the content from the XPORT buffer 735 to decoding functionality in the DHCT 16 and/or to process (in cooperation with the transceiver driver 711) for transmittal to the external device 710” based on the detected characteristics of external device 710. *Id.* at 35 (quoting Ex. 1003 ¶ 73).

For “select[ing] a first audio signal that bypasses the audio signal that is input to the audio signal processing unit as the at least an audio signal for output to the external device,” Petitioner cites Boudreau’s teaching related to embodiments where external device includes decoding functionality, in which case “the video, audio, and/or other data comprising the content in the XPORT buffer 735 can bypass the decoding functionality of the media engine 729.” Pet. 37 (citing Ex. 1003 ¶ 65); *see also id.* (citing Ex. 1003 ¶ 58) (similar teaching from Boudreau). For “select[ing] a second audio signal output from the audio signal processing unit as the at least an audio signal for output to the outputting unit,” Petitioner cites Boudreau’s teaching about how “packetized compressed streams can be also output by the signal processing system 714, buffered to the video, audio, and/or XPORT buffers 735-737, and presented as input to the media engine 729 for decompression by the video decompression engine 733 and the audio decompression engine 732.” *Id.* at 37 (quoting Ex. 1003 ¶ 60).

b. Patent Owner’s Arguments

Patent Owner criticizes Petitioner’s analysis of claim 1 as being “based on a piecemeal mapping of Boudreau’s doll audio and television audio.” Prelim. Resp. 15. In particular, Patent Owner notes that Boudreau’s XPORT application (i.e., the recited “switching unit”) is “used exclusively for the doll’s audio (‘related content’) and not the television’s audio signal.” *Id.* (citing Pet. 32–33; Ex. 1003 ¶ 72). Patent Owner argues that Petitioner fails to show that Boudreau’s “XPORT application . . . has any ability to control the DHCT’s audio processing for the main television audio.” *Id.* at 16 (citing Pet. 31–32, 34–35).

Patent Owner also argues that Petitioner “fails to establish that Boudreau discloses the claimed ‘switching unit’ that ‘select[s] for the video signal that is input to the video signal processing unit.’” Prelim. Resp. 17. Patent Owner notes Petitioner’s mapping of the “switching unit” to Boudreau’s XPORT application and argues that “Petitioner fails to show that the XPORT application is capable of controlling anything beyond the doll’s audio, let alone selecting paths for the *video* signal that is input to the video signal processing unit.” *Id.* (citing Pet. 32–36).

c. Analysis

We agree with Patent Owner’s arguments. First, Petitioner cites components in Boudreau’s DHCT 16, which process audio elementary streams outputted at TV 741, for teaching the “audio signal processing unit.” Pet. 31–32. In addition, Petitioner relies on Boudreau’s XPORT application for teaching the recited “switching unit” (*id.* at 32), which means that Petitioner must establish that the XPORT application “select[s] paths for . . . the audio signal that is input to the audio signal processing unit” and that “an output selecting unit” controls the XPORT application “to select a second audio signal output from the audio signal processing unit.” Yet Petitioner fails to show that Boudreau’s XPORT application selects paths for any audio signal destined for TV 741, i.e., “the audio signal that is input to the audio signal processing unit” and the “second audio signal output from the audio signal processing unit.” Instead, Petitioner conflates “content from the export buffer 735” with other audio and video signals as part of its contention that the XPORT application “rout[es] signals input to the XPORT buffer 735, Audio buffer 736, and Video buffer 737, audio and video

processing units, and selecting video and audio outputs to external device 710.” Pet. 32 (citing Ex. 1005 ¶ 126). This contention misstates the role of the XPORT application described in Boudreau.

Specifically, Boudreau describes the XPORT application as follows:

The XPORT application 709 includes functionality for effecting the retrieval of related content from a data stream, routing related content to an appropriate buffer or buffers, and interpreting time stamps for the related content designated for transmittal and/or download to the external device 710 in association with the presentation of a content instance on the television set 741.

Ex. 1003 ¶ 72; *see also* Pet. 27–28 (citing Ex. 1005 ¶ 114) (Petitioner making similar statement). Although Petitioner correctly asserts that XPORT application 709 routes signals from XPORT buffer 735 to decoding functionality in DHCT 16 or directly to external device 710 (*see* Pet. 26, 32–33, 36 (all quoting Ex. 1003 ¶ 73)), these teachings only pertain to the XPORT application processing related content, i.e., content destined for external device 710. *See* Ex. 1003 ¶ 52 (“The XPORT buffer 735 is preferably used to buffer related content for subsequent delivery to the external device 710.”). Importantly, Boudreau distinguishes “related content” from content presented at the TV. *See* Ex. 1003 ¶¶ 15 (“[C]ontent that is related (e.g., relatedness as to subject matter, message, theme, etc.) to programming presented on a television and is for download (or transmittal) to an external device will be referred to as related content.”), 50 (noting that TV video, TV audio, and related content elementary streams are mapped to respective packet identifier (PID) streams so that, *inter alia*, “related content designated for the external device . . . can be identified (and distinguished from audio content . . . slated for the television set) as content slated for the

external device”). And the preliminary record does not establish that Boudreau’s XPORT application processes anything other than related content destined for an external device. *See* Ex. 1003 ¶ 72. Thus, Petitioner fails to show that Boudreau’s XPORT application “select[s] paths for . . . the audio signal that is input to the audio signal processing unit” or that any “output selecting unit” controls the XPORT application “to select a second audio signal output from the audio signal processing unit.”

Furthermore, Petitioner presents no evidence to support its assertion that Boudreau’s XPORT application “rout[es] signals input to . . . Audio buffer 736, and Video buffer 737.” Pet. 32 (citing Ex. 1005 ¶ 126). Petitioner’s only supporting citation is to Mr. Lett’s testimony, but the cited testimony, which merely parrots the Petition, includes no further evidence or explanation. *See* Ex. 1005 ¶ 126. And, as stated above, Boudreau does not describe the XPORT application as routing signals destined for output on a television, which undermines Petitioner’s assertion. We also have considered Petitioner’s characterization of “XPORT buffer 735, Audio buffer 736, and Video buffer 737” as being “audio and video processing units.” Pet. 32. We reject this characterization to the extent that Petitioner purports to shift or augment its analysis of the “video signal processing unit” and “audio signal processing unit” limitations recited earlier in the claim. *See* Pet. 30–32. Notably, Petitioner does not mention audio buffer 736 and video buffer 737 as part of its analysis of the recited “video signal processing unit” and “audio signal processing unit” limitations. *See id.* Nor does Petitioner attempt to explain how it could shift its analysis in such a way as to remain consistent with its earlier analysis.

In addition, we have considered Petitioner’s cited teachings from Boudreau about how audio outputted at external device 710 can be synchronized with content presented on television set 741. *See, e.g.*, Pet. 19 (citing Ex. 1003 ¶ 16), 32 (citing Ex. 1003 ¶ 69). The fact that audio processed by XPORT application 709 for output at external device 710 might be synchronized with audio destined for TV 741 does not mean the audio signals are one and the same in Boudreau’s disclosure. *See, e.g.*, Ex. 1005 ¶ 50, Fig. 6B (describing and depicting the mapping of different TV video, TV audio, and related content elementary streams). Nor does Petitioner attempt to establish as much in connection with its “switching unit” analysis. And, as stated above, Petitioner itself cites two different audio signals as part of its analysis for claim 1: an MPEG audio elementary stream destined for TV 741 and a “related content” audio signal destined for external device 710. *See* Pet. 31–34.

For similar reasons, we agree with Patent Owner that Petitioner fails to establish that XPORT application (i.e., the recited “switching unit”) “select[s] paths for the video signal that is input to the video signal processing unit.” Petitioner maps the recited “video signal” of claim 1 to the video signal in Boudreau that is processed by a video processing unit and provided to a television (i.e., TV 741) for display. *See* Pet. 30–32. Yet Petitioner does not establish that Boudreau’s XPORT application ever selects a path for this video signal. Further, Petitioner offers no explanation as to why an ordinarily skilled artisan would have considered Boudreau to teach as much. This represents another flaw in Petitioner’s analysis.

For these reasons, Petitioner has not shown that Boudreau teaches or suggests (1) “a switching unit selecting paths for the video signal that is

input to the video signal processing unit and the audio signal that is input to the audio signal processing unit”; or (2) “an output selecting unit controlling the switching unit . . . to select a second audio signal output from the audio signal processing unit.” Thus, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the subject matter of claim 1 would have been obvious over Boudreau.

3. *Claims 2–5*

Petitioner’s analysis for dependent claims 2–5 relies on the same deficient analysis based on Boudreau that is discussed with respect to claim 1. Further, Petitioner’s analysis for these claims does not cure the deficiencies discussed above with respect to claim 1. Thus, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the subject matter of claims 2–5 would have been obvious over Boudreau.

4. *Independent Claims 6–9*

Independent claims 6–9 are apparatus claims that each have a different scope than claim 1. Nevertheless, each of claims 6–9 recites an element that selects an audio signal outputted from the audio signal processing unit. *See* Ex. 1001, 9:12–17 (claim 6 reciting that “the output selecting unit . . . selects a second audio signal output from the audio signal processing unit”), 9:27–32 (claim 7 reciting “the audio output selecting unit . . . selects an audio signal output from the audio signal processing unit”); 9:46–52 (claim 8 reciting “the output selecting unit controls the outputting unit . . . to select a second audio signal output from the audio signal

processing unit”); 10:3–9 (claim 9 reciting “the output selecting unit controls the outputting unit . . . to select a second audio signal output from the audio signal processing unit”). For these limitations, Petitioner relies on the same analysis of the “audio signal processing unit” discussed above with respect to claim 1. *See* Pet. 40–45. Petitioner also relies on the same “output selecting” analysis based on Boudreau’s XPORT application that is discussed above with respect to limitation 1[e]. *See id.* Thus, for the same reasons discussed above, Petitioner fails to show that Boudreau’s XPORT application controls the selection of (or is controlled to select) audio that is outputted to a TV. Accordingly, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the subject matter of claims 6–9 would have been obvious over Boudreau.

5. *Independent Claims 10 and 16*

Independent claims 10 and 16 are method claims that each have a different scope than claim 1. Claim 10 recites, *inter alia*, “selecting an audio signal . . . wherein the selected audio signal is . . . a second audio signal output from the audio signal processing unit.” Ex. 1001, 10:14–23. Claim 16 recites, *inter alia*, “selecting an audio signal . . . wherein the selected audio signal is . . . a second audio signal output from the audio device.” *Id.* at 10:45–47, 10:10–55. For the “output from the audio signal processing unit” in claim 10 and “output from the audio device” in claim 16, Petitioner relies on the same analysis related to the “audio signal processing unit” discussed above with respect to claim 1. *See* Pet. 46, 50–51. Petitioner also relies on the same “output selecting” analysis based on Boudreau’s XPORT application that is discussed above with respect to

limitation 1[e]. *See id.* Thus, for the same reasons discussed above, Petitioner fails to show that Boudreau's XPORT application controls the selection of (or is controlled to select) audio that is outputted to a TV. Accordingly, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the subject matter of claims 10 and 16 would have been obvious over Boudreau.

6. *Claims 11–15, 17, and 18*

Claims 11–15 depend from claim 10, and claims 17 and 18 depend from claim 16. Petitioner's analysis for these claims relies on the same deficient analysis based on Boudreau that is discussed with respect to claims 10 and 16. Further, Petitioner's analysis for these claims does not cure the deficiencies discussed above with respect to claims 10 and 16. Thus, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the subject matter of claims 11–15, 17, and 18 would have been obvious over Boudreau.

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Therefore, we do not institute an *inter partes* review on the asserted grounds as to any of the challenged claims.

IV. ORDER

Accordingly, it is

ORDERED that the Petition is denied as to all challenged claims, and no *inter partes* review is instituted.

IPR2023-00240
Patent 7,982,803 B2

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