

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS INC.,
Petitioner,

v.

TRANSDVIDEO ELECTRONICS, LTD.,
Patent Owner.

Case IPR2015-01519
Patent 5,594,936

Before THOMAS L. GIANNETTI, MATTHEW R. CLEMENTS, and
ROBERT L. KINDER, *Administrative Patent Judges*.

KINDER, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

Unified Patents Inc. (“Petitioner”) filed a Petition pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1–14 (all claims) of U.S. Patent No 5,594,936, issued on January 14, 1997 (Ex. 1001,

“the ’936 patent”). Paper 2 (“Pet.”). TransVideo Electronics, Ltd. (“Patent Owner”) did not file a Preliminary Response in this proceeding. Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we grant Petitioner’s request and institute an *inter partes* review of all challenged claims.

I. BACKGROUND

A. The ’936 patent (Ex. 1001)

The ’936 patent is entitled “Global Digital Video News Distribution System.” It relates to “an apparatus and method for transmitting digital information to locations throughout the world and in particular to a global news distribution system for transmitting digital news clips and/or digitized photographs for printing simultaneously from one or more locations anywhere in the world to one or more locations anywhere in the world.” Ex. 1001, 1:11–16. The Abstract describes the subject matter as follows:

An information distribution system for a digital network, includes a master communications unit for establishing communications with the network in order to receive a synchronous digital signal, a distribution amplifier unit for receiving and dividing the synchronous digital signal into a plurality of synchronous signals and a plurality of communications units for establishing communications with a plurality of receiving stations. The system also includes a master controller for controlling the plurality of communications units from a central location.

Id. at Abstract. One object of the invention is to ensure “compatib[ility] with digital networks such as ACUNET,” and “provide on-demand access to audio/video news clips.” *Id.* at 1:65–2:5.

Figure 1B of the '936 patent is depicted below:

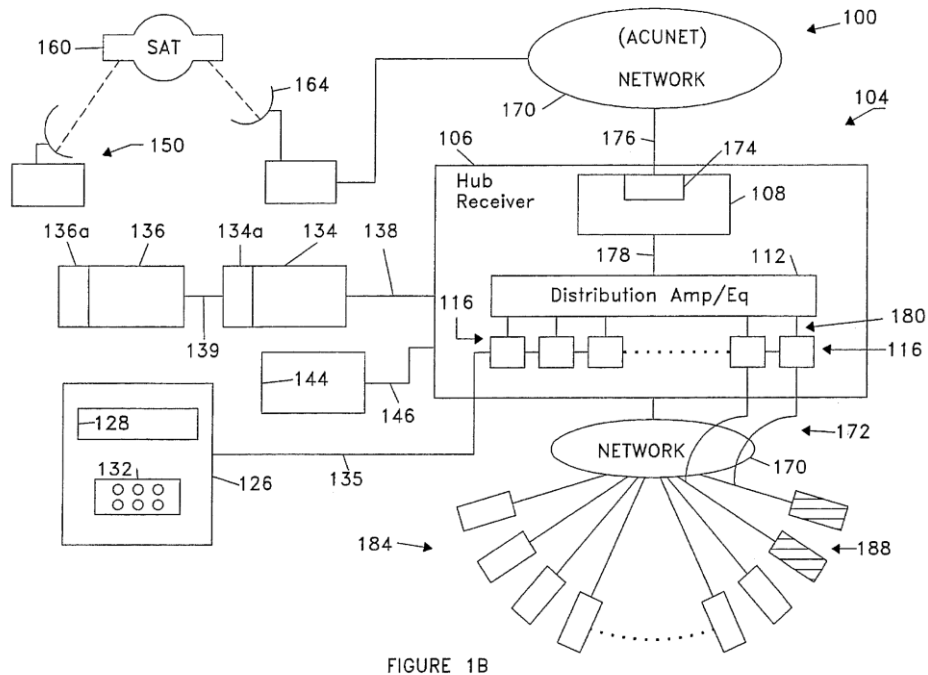


Figure 1B shows digital network 100 having digital information distribution system 104 according to one embodiment of the invention. Ex. 1001, 3:54–56.

Referring to Figure 1B, “suitcase transmission unit” 150 gathers a video clip and transmits the clip to a satellite system, which eventually downlinks the clip to one or more earth stations coupled to digital land network 170. *Id.* at 4:10–26. The digital network is a “synchronous digital system” coupled to hub receiver 106, in particular to “master Customer Service Unit/Data Service Unit” (“CSU/DSU”) (108). *Id.* at 3:56–59. The video clip is input to CSU/DSU 108, which receives “synchronous digital data stream” and initiates communications between the network and “distribution amplifier equalizer” 112. *Id.* According to the Specification, “CSU/DSUs are communications units which perform hand-shaking

functions to initiate communications between synchronous digital equipment.” *Id.* at 3:59–61. CSU/DSU 108 provides video via synchronous digital signal 178 to distribution amplifier/equalizer 112, which then sends the signal to a plurality of communications units, or CSU/DSUs 116, which further distribute the video to receiving stations 184 in the land network. *Id.* at 4:10–26; 4:57–5:8, Abstract, Fig. 1. The system also includes master controller 126 for controlling the communications units 116.

In some embodiments, at the same time that the signal is transmitted out of distribution amplifier/equalizer 112 to CSU/DSUs 116, a “backup signal” is sent to backup units (134 and 136), which transforms the synchronous compressed signal into an asynchronous compressed signal for storage on a hard disk. *Id.* at 4:1–9; 5:8–30; 5:51–57.

B. Illustrative Claim

Claims 1 and 9 are independent claims. Claim 1 is illustrative of the claims at issue and is reproduced below:

1. An information distribution system for a digital network, comprising:

master communications means coupled to the digital network for establishing communications with the network in order to receive a synchronous digital signal;

distribution amplifier means coupled to said master communications means for receiving and dividing said synchronous digital signal into a plurality of synchronous signals;

plurality of communications means coupled to said distribution amplifier means for establishing communications with a plurality of receiving stations and for receiving and outputting said plurality of synchronous signals to the plurality of receiving stations; and

master controller means coupled to said plurality of communications means for controlling said plurality of communications means from a central location.

Claim 9, directed to a method, recites subject matter that is similar to that of claim 1.

C. Related Proceedings

Petitioner identifies numerous related proceedings involving the '936 patent. Pet. 53. *See also* Paper 6 (Mandatory Notices), 2–3 (listing cases from the District Courts for the District of Columbia, the District of Delaware, and Northern District of California).

D. Real Party-in-Interest

Petitioner certifies that Unified Patents Inc. is the real party-in-interest, and “further certifies that no other party exercised control or could exercise control over Unified’s participation in this proceeding, the filing of this petition, or the conduct of any ensuing trial.” Pet. 53. In support of this assertion, Petitioner files “voluntary interrogatory responses,” signed by its counsel and verified by its CEO. Ex. 1008.

E. Claim Construction

The '936 patent has expired. Thus, we construe the claims in accordance with the claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). *See In Re Rambus*, 694 F.3d 42, 46 (Fed. Cir. 2012); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268 (Fed. Cir. 2015). Under that standard, claim terms are given the meaning that a term would have to a person of ordinary skill in the art in question at the time of the invention. *Id.*

In construing means-plus-function limitations, a petitioner must “identify the specific portions of the specification that describe the structure,

material, or acts corresponding to each claimed function” of any means-or step-plus-function limitation. 37 C.F.R. § 42.104(b)(3); *see also* 35 U.S.C. § 112 ¶ 6.¹ Petitioner proposes constructions for the means-plus-function terms found in claims 1–14. Pet. 9–10.

1. Master Communications Means (Claim 1)

Claim 1 requires a “master communications means coupled to the digital network for establishing communications with the network in order to receive a synchronous digital signal.” Petitioner contends, and we agree, the corresponding function for this means-plus-function limitation is establishing communications with the network in order to receive a synchronous digital signal. Pet. 9. Petitioner contends the corresponding structure is master CSU/DSU 108. *Id.* (citing Ex. 1001, Figs. 1B and 2, 3:56–63, and 5:31–34).

The ’936 patent uses the term “master communications unit” interchangeably with the term “master CSU/DSU.” “Digital information distribution system 104 includes a hub receiver 106 having a master CSU/DSU 108, a distribution amplifier/equalizer 112 and a plurality of CSU/DSUs 116.” Ex. 1001, 3:56–63. The Specification further explains, the “CSU/DSUs are communications units which perform hand-shaking functions to initiate communications between synchronous digital equipment.” *Id.* In reference to Figure 1B, a compressed video or still picture is input to master CSU/DSU 108, “which receives a synchronous

¹ Section 4(c) of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”) re-designated 35 U.S.C. § 112 ¶ 6 as 35 U.S.C. § 112(f). Because the ’936 patent has a filing date prior to September 16, 2012, the effective date of § 4(c) of the AIA, we refer to the pre-AIA version of 35 U.S.C. § 112.

digital data stream and performs hand-shaking functions.” *Id.* at 4:58–63. The Specification describes that “these handshaking functions initiate communications between the network 170 and distribution amplifier/equalizer 112.” *Id.* at 4:61–63. These descriptions of the master communications unit indicate that, to achieve the function of establishing communications with the network, the CSU/DSU must be capable of performing hand-shaking functions between the digital network and other digital equipment within the system.

This interpretation is supported by statements made by Patent Owner during prosecution of the application leading to the ’936 patent as well as by a district court ruling interpreting nearly the same claim term.

During prosecution, Patent Owner argued “CSU/DSUs are communications units which perform hand-shaking functions to initiate and sustain communications between synchronous digital equipment” but may be used to “interconnect asynchronous equipment to synchronous equipment.” Ex. 1003, 100–01. A district court² interpreted the claim term “master communications unit” in a related patent³ as: “A unit that performs handshaking functions between digital equipment and a digital network in order to receive a synchronous digital signal from the network.” Ex. 1013, 7–9. We agree that the corresponding structure of the “master communication means” must perform hand-shaking functions between

² *Trans Video Electronics, Ltd. v. Sony Electronics Inc.*, Case No. C 09-3304 MHP (N.D. Cal.). Ex. 1013 (Claim Construction Memorandum and Order of May 18, 2011).

³ United States Patent No. 5,991,801, is a divisional application of App. No. 08/085,329, which issued as the ’936 patent subject to this proceeding. Ex. 1013, 1–2.

digital equipment and a digital network, as master CSU/DSU 108 is described as doing in the '936 patent.

Based on this record, we determine that the corresponding structure for the “master communication means” is master CSU/DSU 108 as described above.

2. Distribution Amplifier Means (Claim 1)

Claim 1 requires “distribution amplifier means coupled to said master communications means for receiving and dividing said synchronous digital signal into a plurality of synchronous signals.” We agree with Petitioner that the claimed function of “receiving and dividing a synchronous digital signal into a plurality of synchronous signals” is performed by the corresponding structure of distribution amplifier/equalizer 112. Pet. 9.

3. Plurality of Communications Means (Claim 1)

Claim 1 requires a “plurality of communications means coupled to said distribution amplifier means for establishing communications with a plurality of receiving stations and for receiving and outputting said plurality of synchronous signals to the plurality of receiving stations.” Petitioner contends the corresponding structure is a plurality of CSU/DSUs 116. Pet. 9 (citing Ex. 1001, Figs. 1B, 2, 4, 5, and 3:59–63).

We determine that the corresponding structure for each of the “plurality of communication means” is CSU/DSU 116. *See* Ex. 1013, 17–18 (interpreting the claim term “communications unit” as “a unit that initiates communications between digital equipment to receive and transmit signals”).

4. Master Controller Means (Claim 1)

Claim 1 requires a “master controller means coupled to said plurality of communications means for controlling said plurality of communications means from a central location.” We agree with Petitioner that the function of “controlling the plurality of communications means” is performed by the corresponding structure of master controller 126. Pet. 9–10 (citing Ex. 1001, Figs. 1B, 2, 4, 5:58–64 and 6:7–18).

5. Converting Means (Claim 2)

Claim 2 requires the “distribution amplifier means further includes converting means for converting at least one of said plurality of synchronous signals into at least one asynchronous signal.” We agree with Petitioner that the function of “converting at least one of said plurality of synchronous signals into at least one asynchronous signal” is performed by signal converter 450T / 550R. Pet. 10 (citing Ex. 1001, at Figs. 1C, 1D, 4:47–50; 5:13–25); *see also id.* at 5:35–38 (“V35 input 174 is in turn coupled to a synchronous-to-asynchronous converter 210 (such as converter 450T in FIG. 1C and in U.S. patent application Ser. No. 08/047,089) in distribution amplifier/equalizer 112”).

6. Input Means (Claim 3)

Claim 3 requires “input means for inputting instructions to control said plurality of communications means.” We agree with Petitioner that the corresponding structure is keypad 132. *See* Pet. 10 (citing Ex. 1001, 2:48–51, 3:66 (describing “master controller keypad 132”), Figs. 1B, 2, and 4), claim 7 (“wherein said input means [of claim 3] comprises a keyboard”).

7. Display Means (Claim 6)

Claim 6 requires a “display means for displaying information associated with said plurality of communications means.” We agree with Petitioner that the corresponding structure is display 128. Pet. 10 (citing Ex. 1001, at Fig. 1B and 3:65).

8. Equalizing Means (Claim 8)

Claim 8 specifies the “distribution amplifier means comprises equalizing means for equalizing respective amplitudes of said plurality of synchronous signals.” Petitioner contends the function of “equalizing respective amplitudes of said plurality of synchronous signals,” corresponds to the structure identified as “an equalizing unit for equalizing respective amplitudes of the plurality of synchronous signals.” Pet. 10 (citing Ex. 1001, 2:56–59). We agree with Petitioner that the corresponding structure is an equalizing unit within distribution amplifier/equalizer 112.

F. References

Petitioner relies on the following references:

1. US Patent No. 5,181,106 issued to Sutherland, Jan. 19, 1993 (Ex. 1004).
2. US Patent No. 5,161,152 issued to Czerwiec, Nov. 3, 1992 (Ex. 1005).
3. A.D. Gelman et al., *A Store-And-Forward Architecture for Video-on-Demand Service*, BELLCORE PUBLICATION, 842–46 (1991) (Ex. 1006) (hereinafter “Gelman”).
4. US Patent No. 4,887,152 issued to Matsuzaki, Dec. 12, 1989 (Ex. 1014).
5. Johan Bergendahl et al., *Transport Network Development*, 67 ERICSSON REVIEW 54–108 (1990) (Ex. 1015) (hereinafter “Bergendahl”).

6. US Patent No. 5,115,425 issued to Ardon, May 19, 1992 (Ex. 1020).

G. Grounds Asserted

Petitioner challenges the patentability of claims 1–14 of the '936 patent on the following grounds (Pet. 2–3):

Reference(s)	Basis	Claims Challenged
Sutherland	§ 102(e)	1–4 and 9–12
Sutherland and Gelman	§ 103(a)	1–5 and 9–13
Sutherland and Matsuzaki, and/or Sutherland, Gelman, and Matsuzaki	§ 103(a)	6 and 7
Sutherland and Bergendahl, and/or Sutherland, Gelman, and Bergendahl	§ 103(a)	8 and 14
Sutherland and Ardon and/or the above-discussed combinations of Sutherland, Gelman, Matsuzaki, and/or Bergendahl, further in view of Ardon	§ 103(a)	1–14

II. ANALYSIS

A. Anticipation of Claims 1–4 and 9–12 Based on Sutherland

Claims 1–4

Petitioner contends that these claims are anticipated by Sutherland under 35 U.S.C. § 102(e). Pet. 10–29. Sutherland was filed on July 31,

1991, and is prior art under pre-AIA 35 U.S.C. § 102(e). Ex. 1003; Pet. 10. For the reason that follows, we do not institute a review of claims 1–4 based on this challenge.

Sutherland describes a telecommunications network providing video services subscribers. *See generally* Ex. 1004. Sutherland discloses an optical fiber telecommunications network that provides broadband switched video services as well as a video line shelf arrangement that permits growth in subscribers. *Id.* at 1:30–35. The system described in Sutherland was designed around a family of SONET (Synchronous Optical Network) access products. *Id.* at 3:37–39. Sutherland provides an integrated platform for switched video and standard narrowband telephone services. Therefore, we agree with Petitioner that it is an information distribution system for a digital network. Pet. 12 (citing Ex. 1004, 3:1–8).

Figure 1 of Sutherland, reproduced below, illustrates a network architecture, comprising Central Office 10, Remote Terminals 12, Optical Network Units 16, and Set-Top Converters 21, that is designed to distribute data. *Id.* at 3:57–4:65, 6:5–43.

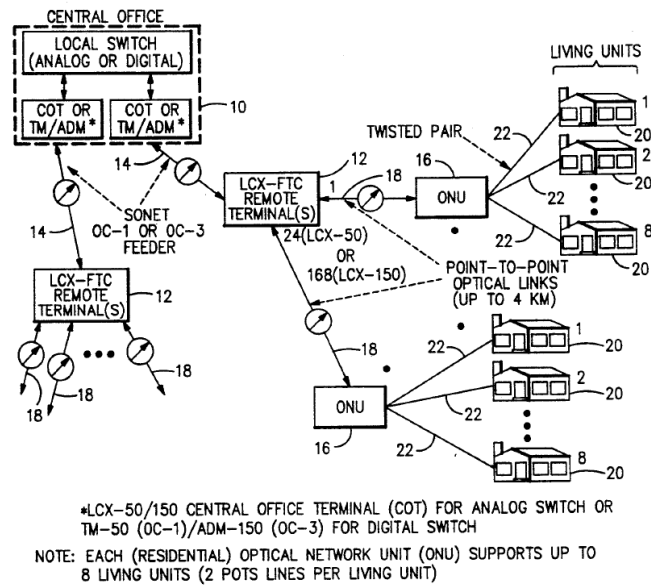


FIG.1

Central Office (CO) 10 provides data over a SONET network (e.g., a digital synchronous network) to Remote Terminals (RTs) 12. *Id.* at Fig. 2, 3:57–60, 6:5–6. Once data, such as a video clip, reaches an RT, the RT can amplify and distribute the data to a plurality of other devices. *Id.* at 6:49–58, 11:25. The system uses a distribution network where optical fibers radiate from an RT to Optical Network Units (ONUs) 16. *Id.* at Fig. 2, 3:63–66, 6:28–31. Each ONU can distribute data to multiple living units 20, which contain set-top converters 21. *Id.* at Figs. 2, 11, 3:65–67, 13:42–44. In addition to these devices, core 24 can be included in various devices, and accessed by Broadband Network Management OS/operations support unit 167 to control information sent to and/or received by COs, RTs, ONUs, etc. *Id.* at Fig. 9A, 12:17–19.

Claim 1 first recites a “master communication means” with master CSU/DSU 108 as the corresponding structure. Pet. 9. As we previously determined, master CSU/DSU 108 establishes communications with the network in order to receive a synchronous digital signal by performing hand-

shaking functions between digital equipment and a digital network. Petitioner's anticipation analysis does not adequately explain where Sutherland discloses a structure that establishes communications with the network through hand-shaking in order to receive a synchronous digital signal.

Specifically, Petitioner identifies Sutherland's CO [Central Office] 10 as disclosing the "master communications means . . . for establishing communications with the network in order to receive a synchronous digital signal." Pet. 15. Petitioner does not allege, however, that Sutherland discloses, either expressly or inherently, that CO 10 performs hand-shaking functions between digital equipment and a digital network in order to receive the synchronous digital signal from the network. Therefore, we are not persuaded that Sutherland's CO 10 qualifies as the "master communications means" required by claim 1.

For this reason we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on its challenge to claims 1–4 of the '936 patent based on Sutherland alone.

Claims 9–12

We rely on Petitioner's claim charts, which demonstrate where each element of claims 9–12 is found in Sutherland. *See, e.g.*, Pet. 23–28.

Claim 9 recites "[a] method for distributing information to various locations in a digital network." We agree with Petitioner that CO 10 of Sutherland performs the function of establishing communications with the network in order to receive a synchronous digital signal from the network. Pet. 23; Ex. 1002 (Eldering Decl.) ¶¶ 81–82. We also agree remote terminal (RT 12) of Sutherland acts to receive and divide the synchronous digital

signal into a plurality of synchronous signals as explained by Petitioner. Pet. 24.

Petitioner persuasively establishes that Sutherland's optical network units (ONUs 16) act to establish communications with a plurality of receiving stations. *Id.* at 24. Claim 9 further requires "receiving and outputting a respective one of the plurality of synchronous signals to a respective receiving station." We agree this step is disclosed by Sutherland. *See id.* at 25 (quoting Ex. 1004 13:42–44 ("the 24 channels from the primary fiber 18 are demultiplexed via the ODU [Optical Distribution Unit] 70 and converted for subscribers 1-4 by the SVD [Switched Video Distribution card] 74")). Finally, we are persuaded that Sutherland's Broadband Network Management OS 167 (a/k/a operations support unit 167) acts as a controller unit for controlling the receiving and outputting steps as explained by Petitioner. *Id.* at 26–27.

Claims 10–12 depend directly or indirectly from claim 9. Claim 10 requires "the step of converting at least one of said plurality of synchronous signals into at least one asynchronous signal." Ex. 1001, 8:34–42. Claim 11 recites the same step. *Id.* On this record, we agree with Petitioner that Sutherland inherently discloses converting at least one of said plurality of synchronous signals into at least one asynchronous signal. *See* Ex. 1002 ¶¶ 73, 92–93, 131 ("*Sutherland* discloses many devices, some which contain systems which operate on the basis of synchronous digital signals, and others which operate on the basis of asynchronous signals" and such signals "would be inherent in any device using asynchronous communications interfaces or for communications systems operating on the Asynchronous

Transfer Mode (ATM) standard, which frequently operated over, and incorporated SONET network(s) as part of the infrastructure.”).

Claim 12 adds the additional “step of storing the at least one asynchronous signal in a memory.” Petitioner persuasively establishes that the asynchronous signal as disclosed by Sutherland would be stored in buffer memory of one of the distribution nodes or a set top box. Pet. 28, n.4 (citing Ex. 1004 at 8:15–28); Ex. 1002 ¶ 97. Sutherland discloses that “redundancy is carried through the LCX-50 core,” and we agree this redundancy acts as back-up memory. Pet. 40.

We are persuaded that Petitioner’s proffered evidence, including Dr. Eldering’s Declaration, is sufficient at this stage to demonstrate a reasonable likelihood of prevailing on this challenge as to claims 9–12.

B. Obviousness of Claims 1–5 and 9–13 Over Sutherland and Gelman

Claims 1–5

Petitioner contends claims 1–5 are obvious over Sutherland and Gelman. Pet. 29–41. Claims 2–5 depend, directly or indirectly, from claim 1. Petitioner relies on only Sutherland as teaching the “master communication means” of claim 1. *See* Pet. 32, 33. Because we find no persuasive evidence that master CSU/DSU in Sutherland performs hand-shaking functions between the digital network and other digital equipment within the system to establish communications, we likewise determine that Sutherland does not teach or suggest this limitation. Petitioner does not rely on Gelman to cure this deficiency. For these reasons, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing on its challenge to claims 1–5 of the ’936 patent based on Sutherland and Gelman.

Claims 9–13

As previously determined, we are persuaded that Petitioner’s challenge to claims 9–12 based on Sutherland is sufficient at this stage to demonstrate a reasonable likelihood of prevailing. We likewise determine that Petitioner’s proffered evidence is sufficient at this stage to demonstrate a reasonable likelihood of prevailing on the obviousness challenge as to claims 9–12 over Sutherland and Gelman. *See* Pet. 41–44. We examine Claim 13 below.

The Gelman article, *A Store-And-Forward Architecture for Video-on-Demand Service*, was published in June 1991 by Bellcore, and is therefore, prior art under § 102(b). Ex. 1006; Ex. 1016. Gelman describes a data distribution architecture providing video-on-demand services, as well as other data-base distribution services, over a synchronous digital network. *Id.* at 842–43. Gelman likewise discloses video-on-demand services distributed over a synchronous digital network that includes Information Warehouses, Central Office (CO) service circuits, and customer premise equipment. *Id.* Gelman also describes mediums for storing video data, from non-random access for archival material, video juke-boxes for medium speed access, and magnetic disk drives for on-line popular material. *Id.* at 843. Further, Gelman describes the transmission of data using a SONET interface over a DS-1 (a/k/a T1) stream. *Id.* at 844.

Claim 13, dependent from claim 11, further recites “the step of recording the at least one asynchronous signal with a back-up recorder.” Ex. 1001, 8:46–48. Petitioner persuasively establishes that the combination of Sutherland and Gelman teaches or suggests this additional requirement. *See* Pet. 44–45; Ex. 1002 ¶¶ 172–74. For example, Sutherland teaches that

“redundancy is carried through the LCX-50 core,” and this redundancy acts as back-up memory. Pet. 40 (also noting that “*Czerwiec* teaches redundant processors at 3:29–39 and asynchronous DS-1 signals at 3:49–54”).

Likewise, “*Gelman* also discloses at pages 843–44 backup memory in the form of multiple information warehouses and central office circuits as shown in Fig. 1.” *Id.*; see also Pet. 45, n.9 (“thus creating numerous copies of the data”). As explained by Petitioner’s expert, Dr. Charles Eldering:

[D]ata is retrieved by one or more Central Office service circuits from one or more Information Warehouses, then buffered (e.g., stored) at the Central Office service circuits and converted to a uniform transport rate—such that a user’s premise equipment receives the data in a manner that allows it to be reconstructed efficiently. *Id.* at 843-844.

Ex. 1002 ¶ 142. Gelman further teaches “[m]agnetic disk recording technology (e.g., Winchester disk drives) is the most mature technology for on-line playback (storage to network) purposes.” Ex. 1006, 845.

Petitioner provides a persuasive rationale for combining the teachings of Sutherland and Gelman. Pet. 30–32. As explained by Dr. Eldering, “[i]t was standard practice in the field of media content distribution to combine useful knowledge from different sources to design content delivery and storage systems,” and “both *Sutherland* and *Gelman* are in the same field of video on demand and network architectures.” Ex. 1002 ¶¶ 102, 103.

Further, on this record, we agree it would have been obvious to one of ordinary skill in the art to apply the various types of content storage and recordation taught by Gelman to the content delivery and distribution system taught by Sutherland to arrive at the claimed invention because the results were predictable and both systems operate over similar compatible networks (digital services deployed over a SONET based network). *Id.* ¶¶ 104, 105,

126 (“In light of the inventions associated with SONET, video on demand systems, and the like, *Gelman* suggests that features that could be combined with *Sutherland*, or any other video distribution system.”).

C. Obviousness of Claims 6 and 7 Over Sutherland and Matsuzaki, and/or Over Sutherland, Gelman, and Matsuzaki

Petitioner contends claims 6 and 7 are obvious over Sutherland and Matsuzaki, and/or over Sutherland, Gelman, and Matsuzaki. Pet. 45. Claims 6 and 7 depend directly or indirectly from claim 1. Petitioner again relies on Sutherland as teaching the “master communication means” of claim 1. See Pet. 32, 33. As discussed above, we are not persuaded that Sutherland’s CO 10 teaches the “master communication means.” We, therefore, determine Petitioner has not demonstrated a reasonable likelihood of prevailing on its challenge to claims 6 and 7 of the ’936 patent based on Sutherland and Matsuzaki, and/or over Sutherland, Gelman, and Matsuzaki.

D. Obviousness of Claims 8 and 14 Over Sutherland and Bergendahl, and/or Over Sutherland, Gelman, and Bergendahl

Claim 8

Claim 8 depends from claim 1. Petitioner relies upon only Sutherland to teach the “master communication means” of claim 1. As discussed above, we are not persuaded that Sutherland’s CO 10 teaches the “master communication means.” Because Petitioner does not rely on Bergendahl to cure the deficiency noted above for claim 1, we determine Petitioner has not demonstrated a reasonable likelihood of prevailing on its challenge to claim 8 of the ’936 patent based on Sutherland and Bergendahl, and/or on Sutherland, Gelman, and Bergendahl.

Claim 14

Claim 14 depends from claim 11. As discussed in Section II.A *supra*, we are persuaded that the limitations of claim 11 are disclosed by Sutherland and by the combination of Sutherland and Gelman. Claim 14 further requires “the step of equalizing respective amplitudes of the plurality of synchronous signals.” Petitioner contends that the step of equalizing is inherent in Sutherland, and also is taught by Bergendahl. *See* Ex. 1002 ¶¶ 190 (“the remote terminals of *Sutherland* provide equalization to comply with the SONET standard disclosed by *Sutherland*. Ex. 1004 at 3:32-41”). We are persuaded that the combination of Sutherland and Bergendahl teaches the additional limitation recited in claim 14.

Bergendahl is a compilation of articles included in the Ericsson Review that was available to the public by subscription in 1990, making it prior art under § 102(b). Ex. 1015. Bergendahl describes synchronous transmission networks that can branch and form various configurations. *See* Ex. 1015, 59–60. The various networks described in Bergendahl describe equalizing synchronous digital signals. *Id.* at 69 (“rate, when necessary, is equalized so that it can be synchronized”).⁴ Petitioner persuasively establishes equalizing synchronous digital signals is a part of a process

⁴ Portions of Bergendahl relied on by Petitioner appear to be independent articles within the same Ericsson Review. For instance, some of the cited portions related to equalizing synchronous digital signals appear to be from an article entitled “Synchronous Transmission Networks” by Hans-Jürgen Breuer and Bengt Hellström. Ex. 1015, 60, 69. Although we find this meshing of articles somewhat confusing, given Dr. Eldering’s explanation (Ex. 1002 ¶¶ 187–88) we determine that, at this stage of the proceedings, Petitioner has demonstrated a reasonable likelihood that it would prevail as to claim 14.

called grooming. Pet. 49 (citing Ex. 1002 ¶¶ 187–88). A synchronous digital signal would commonly be groomed and equalized by various devices in order to communicate with other network devices as suggested by Bergendahl. *Id.*

We agree with Petitioner that a person of ordinary skill in the art would have known to apply the teachings of Bergendahl to the system of Sutherland to allow the system to transmit signals over a synchronous digital network as described in Bergendahl. *See id.* We are persuaded that Petitioner’s proffered evidence, including Dr. Eldering’s Declaration, is sufficient at this stage to demonstrate a reasonable likelihood of prevailing on this challenge based on Sutherland and Bergendahl as to claim 14.

We exercise our discretion and decline to institute trial on claim 14 based on the combination of Sutherland, Gelman, and Bergendahl because we already institute based on Sutherland and Bergendahl. *See* 35 U.S.C. § 314(a); 37 C.F.R. §§ 42.108(a–b); *see also* Section II.E.iv *infra* (explaining our discretion).

E. Obviousness of Claims 1–14 Over Sutherland and Ardon and/or the above-discussed combinations of Sutherland, Gelman, Matsuzaki, and/or Bergendahl, further in view of Ardon

In these grounds, Petitioner addresses the deficiency of Sutherland discussed in Section II.A above by citing Ardon and its teaching of “[a] handshake protocol . . . between the module control units” Pet. 50–52 (quoting Ex. 1020, 9:26–29). We agree with Petitioner that, with the addition of Ardon to the prior proposed grounds of obviousness, each limitation of claims 1–14 is taught or suggested pursuant to § 103(a) as further explained below for each ground.

i. Obviousness of Claims 1–5 and 9–13 Over Sutherland, Ardon, and Gelman

Ardon issued May 19, 1992, and is prior art under at least pre-AIA 35 U.S.C. § 102(a). Ex. 1020. Ardon’s disclosure relates to a SONET system, the same type of network system Sutherland was designed around. *Compare* Ex. 1020, 11:57–60, *with* Ex. 1004, 3:32–37.

We rely on Petitioner’s claim charts, which demonstrate where each element of claims 1–5 and 9–13 is found in the Sutherland-Ardon-Gelman combination. *See, e.g.*, Pet. 29–45, 51, 52. With respect to claim 1, we agree with Petitioner that CO 10 of Sutherland, as modified by Ardon’s disclosure of hand-shake protocol, teaches master CSU/DSU 108 performing hand-shaking functions between digital equipment and a digital network in order to receive a synchronous digital signal from the network. Pet. 32, 33; Ex. 1002 ¶¶ 56–61. We also agree remote terminal (RT 12) of Sutherland acts as distribution amplifier/equalizer 112 (“distribution amplifier means”) as further required by claim 1. Pet. 33–35. Sutherland Figure 1 depicts CO 10 connected to remote terminals (RT 12) via SONET. *Id.* at 34. Further, RTs 12 include a video line shelf (“VLS”) for amplifying the video signal and distributing/dividing it into a plurality of signals. *Id.* at 33, 34 (citing Ex. 1004, 10:25–34 (VLS’s support the transmission of digital signals)).

Sutherland’s optical network units (ONUs 16) meet the “plurality of communications means” limitation, which we construed to correspond to CSU/DSU 116. *Id.* at 35, 36. Finally, we are persuaded that Sutherland’s Broadband Network Management OS 167 (a/k/a operations support unit 167) acts as master controller 126 (“master controller means”) as explained by Petitioner. *Id.* at 38.

For reasons similar to those discussed in Section II.A, we also agree claim 9 is obvious over Sutherland, Ardon, and Gelman. *See* Pet. 41–43.

Claim 3 further requires an “input means,” which we construed to correspond to keypad 132. We agree with Petitioner that Sutherland’s operations support unit 167 has an “input means.” *See id.* at 39, 40 (citing in pertinent part Ex. 1002 ¶ 135).

Claims 2, 4, 5, and 10–13 generally require at least one of the plurality of synchronous signals be converted into at least one asynchronous signal. Sutherland teaches a remote terminal that distributes and amplifies a synchronous signal into a plurality of synchronous signals. *See* Ex. 1004, 9:1–4. Sutherland inherently discloses conversion from a synchronous signal into an asynchronous signal. *See* Section II.A. Petitioner also notes Czerwiec teaches that “[a] low speed interface supports up to 28 DS1 low-speed ports operating in either synchronous or asynchronous fashion.” Ex. 1005, 3:51–53. According to Petitioner, Sutherland teaches “that the synchronous signals are converted to asynchronous signals” (Pet. 22, n.2) because “it is inherent in *Sutherland* that the synchronous signals are converted to asynchronous signals . . . *Czerwiec* [also] illustrates that a synchronous or asynchronous signal can be converted into the correct signal in order for the interface device to operate correctly” (Ex. 1002 ¶ 132). *See also* Pet. 39, n.5 (addressing Czerwiec and noting “[t]he conversion of a synchronous signal into an asynchronous signal would be performed by a converter”).

Petitioner also relies on Gelman as teaching or suggesting a convertor for converting synchronous signals to asynchronous signals. Pet. 39. Petitioner contends “in light of the availability of ATM/SONET (or

synchronous to asynchronous converters) at the time of the filing of the '936 patent, the devices described would have included a converter.” *Id.* (citing Ex. 1006, 844, Fig. 4). At this stage of the proceedings, we are persuaded by Petitioner’s contention that the combination of Sutherland and Gelman teaches or suggests “means for converting at least one of a said plurality of synchronous signals into at least one asynchronous signal,” as recited in claim 2, and the similar limitations in claims 10 and 11.

Claims 4, 5, 12, and 13 also require content storage or recordation capability. Claim 4 requires “a first back-up memory for receiving and storing said at least one asynchronous signal.” Similarly, claim 12 requires “the step of storing the at least one asynchronous signal in a memory.” Claim 5 recites “a recorder for receiving and storing said at least one asynchronous signal.” Claim 13 similarly requires “the step of recording the at least one asynchronous signal with a back-up recorder.” As we determined in Section II.B, Sutherland teaches that “redundancy is carried through the LCX-50 core,” and this redundancy acts as back-up memory. Pet. 40. “*Gelman* also discloses at pages 843–44 backup memory in the form of multiple information warehouses and central office circuits as shown in Fig. 1.” *Id.* Gelman further teaches “[m]agnetic disk recording technology (e.g., Winchester disk drives) is the most mature technology for on-line playback (storage to network) purposes.” Pet. 41. Dr. Eldering explains that because “*Gelman* is compatible with an ATM or SONET system . . . *Gelman* also teaches or suggests claim 5 of the '936 patent since an asynchronous signal provided by a magnetic disk would need to be converted to a synchronous signal for transport over a synchronous network such as SONET.” Ex. 1002 ¶ 142; *see also* Pet. 41 (stating the same).

Petitioner provides a persuasive rationale for combining the teachings of Sutherland and Ardon. Pet. 50–52. Petitioner alleges, and we agree on this record, that:

Based on *Ardon's* handshake disclosure, a POSA would have been motivated to modify *Sutherland* itself or any of the modified versions of *Sutherland* . . . to include a unit that performs handshaking functions between digital equipment and a digital network in order to receive a synchronous digital signal from the network. Ex. 1002 at 196 (citing Ex. 1020 at 9:26-29).

Pet. 52. Dr. Eldering offers persuasive testimony that it was well known in the art to integrate such handshaking functions and a person of ordinary skill in the art would have done so to facilitate communication between particular devices without causing other devices to undertake unnecessary processing of the communication. Ex. 1002 ¶¶ 195–96 (“combining teachings about telecommunication devices with teachings about communication protocols, such as handshaking and/or using Transport Layer Security (TLS), was standard practice in the telecommunications industry prior to and at the time of filing of the ’936 [patent]”). As explained above in Section II.B, Petitioner also provides a persuasive rationale for combining the teachings of Sutherland and Gelman. *See* Pet. 30–32; Ex. 1002 ¶ 196.

We are persuaded that Petitioner’s proffered evidence, including Dr. Eldering’s Declaration, is sufficient at this stage to demonstrate a reasonable likelihood of prevailing on this challenge as to claims 1–5 and 9–13.

ii. *Obviousness of Claims 6 and 7 Over Sutherland, Ardon, Gelman, and Matsuzaki*

We have reviewed the proffered evidence provided by Petitioner and are persuaded that, based on this record, Petitioner has demonstrated a

reasonable likelihood of prevailing on this challenge as to claims 6 and 7. Pet. 45–48, 50, 51.

Claim 6 requires “said master controller means comprises display means for displaying information” and claim 7 recites “input means comprises a keyboard.” We agree with Dr. Eldering that both limitations recite well-known and common hardware that would have been readily adaptable to any networking system at the time of invention as taught by Matsuzaki. *See* Ex. 1002 ¶¶ 181, 183.

Matsuzaki was filed on January 26, 1988, and is prior art under § 102(b). Ex. 1014. The system described in Matsuzaki transmits video from a head end apparatus to terminal units. *Id.* at 1:42–2:9. Matsuzaki teaches or suggests the limitations of claims 6 and 7 through its “master controller” that “controls the overall system” and is “connected with a display 81 and a keyboard 82.” *Id.* at 4:16–20, Fig. 8; *see* Pet. 47–48.

On this record, we agree with Petitioner that a person of ordinary skill in the art would have been motivated to apply the teachings of Matsuzaki to the system of Sutherland to allow a system administrator to control or monitor the system. Pet. 45–46 (citing Ex. 1002 ¶¶ 178–79).

We are persuaded that Petitioner’s proffered evidence, including Dr. Eldering’s Declaration, is sufficient at this stage to demonstrate a reasonable likelihood of prevailing on this challenge as to claims 6 and 7.

iii. Obviousness of Claims 8 and 14 Over Sutherland, Ardon, Gelman, and Bergendahl

As discussed in Section II.D *supra*, we are persuaded that the combination of Sutherland and Bergendahl teaches or suggests the claim 14 requirement of “equalizing respective amplitudes of the plurality of

synchronous signals.” Claim 8 similarly requires “said distribution amplifier means comprises equalizing means for equalizing respective amplitudes of said plurality of synchronous signals.” Petitioner contends, and we agree on this record, that such equalizing is inherent in Sutherland, and also is taught by Bergendahl. *See* Ex. 1002 ¶ 190 (“the remote terminals of *Sutherland* provide equalization to comply with the SONET standard disclosed by *Sutherland*. Ex. 1004 at 3:32-41”).

We have reviewed the proffered evidence provided by Petitioner and are persuaded that, based on this record, Petitioner has demonstrated a reasonable likelihood of prevailing on this challenge as to claims 8 and 14.

iv. Obviousness of Claims 1–14 Over Sutherland and Ardon

Pursuant to 35 U.S.C. § 316(b), rules for *inter partes* proceedings were promulgated to take into account the “regulation on the economy, the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete proceedings.” The promulgated rules provide that they are to “be construed to secure the just, speedy, and inexpensive resolution of every proceeding.” 37 C.F.R. § 42.1(b). As a result, in determining whether to institute an *inter partes* review of a patent, the Board, in its discretion, may “deny some or all grounds for unpatentability for some or all of the challenged claims.” 37 C.F.R. § 42.108(b).

Petitioner alleges that claims 1–14 would each be obvious over the combination of Sutherland and Ardon. Pet. 50–51. Because we institute review on other grounds proposed by Petitioner as explained above, we exercise our discretion to not institute trial of claims 1–14 as obvious over the combination of Sutherland and Ardon.

III. CONCLUSION

Petitioner has demonstrated a reasonable likelihood that it will prevail in establishing the unpatentability of claims 1–14 of the '936 Patent.

At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or the construction of any claim term.

IV. ORDER

It is, therefore,

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted on the following grounds:

Claims 9–12 under 35 U.S.C. § 102 as anticipated based on Sutherland;

Claims 9–13 under 35 U.S.C. § 103 as obvious over Sutherland and Gelman;

Claim 14 under 35 U.S.C. § 103 as obvious over Sutherland and Bergendahl;

Claims 1–5 and 9–13 under 35 U.S.C. § 103 as obvious over Sutherland, Ardon, and Gelman;

Claims 6 and 7 under 35 U.S.C. § 103 as obvious over Sutherland, Ardon, Gelman, and Matsuzaki;

Claims 8 and 14 under 35 U.S.C. § 103 as obvious over Sutherland, Ardon, Gelman, and Bergendahl; and

FURTHER ORDERED that review based on any other proposed grounds of unpatentability is not authorized; and

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FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this decision.

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