

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GENIUS SPORTS LTD.,
Petitioner,

v.

SPORTSCASTR INC. d/b/a PANDA INTERACTIVE,
Patent Owner.

IPR2024-01307
Patent 10,805,687 B2

Before THU A. DANG, JON M. JURGOVAN, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Challenged Claims Unpatentable

Denying Petitioner's Motion to Exclude

35 U.S.C. § 318(a); 37 C.F.R. § 42.64(c)

I. INTRODUCTION

A. *Background and Summary*

Genius Sports Ltd. (“Petitioner”) filed a Petition requesting *inter partes* review (“IPR”) of claims 19–25 and 27–30 of U.S. Patent No. 10,805,687 B2 (Ex. 1003, “the ’687 patent”). Paper 1 (“Petition” or “Pet.”). SportsCastr Inc. (“Patent Owner”) filed a Preliminary Response (“Prelim. Resp.”) to the Petition. Paper 7. The Board instituted *inter partes* review. Paper 8 (“Institution Decision” or “Inst. Dec.”).

Thereafter, Patent Owner filed a Response. Paper 14 (“PO Resp.”). Petitioner filed a Reply. Paper 22 (“Pet. Reply”). Patent Owner filed a Sur-Reply. Paper 24 (“PO Sur-Reply”). An oral hearing was conducted, and the transcript is in the record. Paper 44 (“Tr.”).

Petitioner also filed a motion to exclude certain evidence. Paper 33 (“Exclude Mot.”). Patent Owner filed an opposition. Paper 34 (“Exclude Opp.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). Having reviewed the complete trial record, we determine that Petitioner has shown, by a preponderance of the evidence, that challenged claims 19–25 and 27–30 are unpatentable.

B. *Real Parties in Interest*

Petitioner identifies itself as the real party-in-interest. Pet. 3 (Petitioner’s Mandatory Notices).

Patent Owner identifies itself as the real party-in-interest. Paper 4, 1 (Patent Owner’s Mandatory Notices).

C. Related Matters

Petitioner and Patent Owner (“the parties”) identify the following as matters related to this proceeding:

SportsCastr Inc. v. Genius Sports Ltd., 2:23-cv-00471¹ (E.D. Tex.)
 (“the Texas Litigation”);

SportsCastr Inc. v. Sportradar Group, AG, 2:23-cv-00472 (E.D. Tex)

IPR2024-01305 (U.S. Patent No. 10,805,687 B2)

IPR2024-01308 (U.S. Patent No. 10,425,697 B2)

IPR2024-01309 (U.S. Patent No. 10,425,697 B2)

IPR2024-01310 (U.S. Patent No. 11,039,218 B1)

IPR2024-01311 (U.S. Patent No. 11,039,218 B1)

Pet. 3–4; Paper 4, 1.

D. The ’687 Patent

The ’687 patent is titled “Systems, Apparatus, and Methods for Scalable Low-Latency Viewing of Broadcast Digital Content Stream of Live Events, and Synchronization of Event Information with Viewed Streams, Via Multiple Internet Channels.” Ex. 1003, code (54). The ’687 patent generally relates to a live video streaming system that purportedly reduces viewer latency and synchronizes copies of a live video stream amongst multiple viewers while allowing different classes or types of users to access copies via different formats. *Id.* at 2:30–56.

Figure 1A of the ’687 patent is reproduced below.

¹ Petitioner misidentifies this case as “2:23-cv-04771-JRG.” Pet. 3.

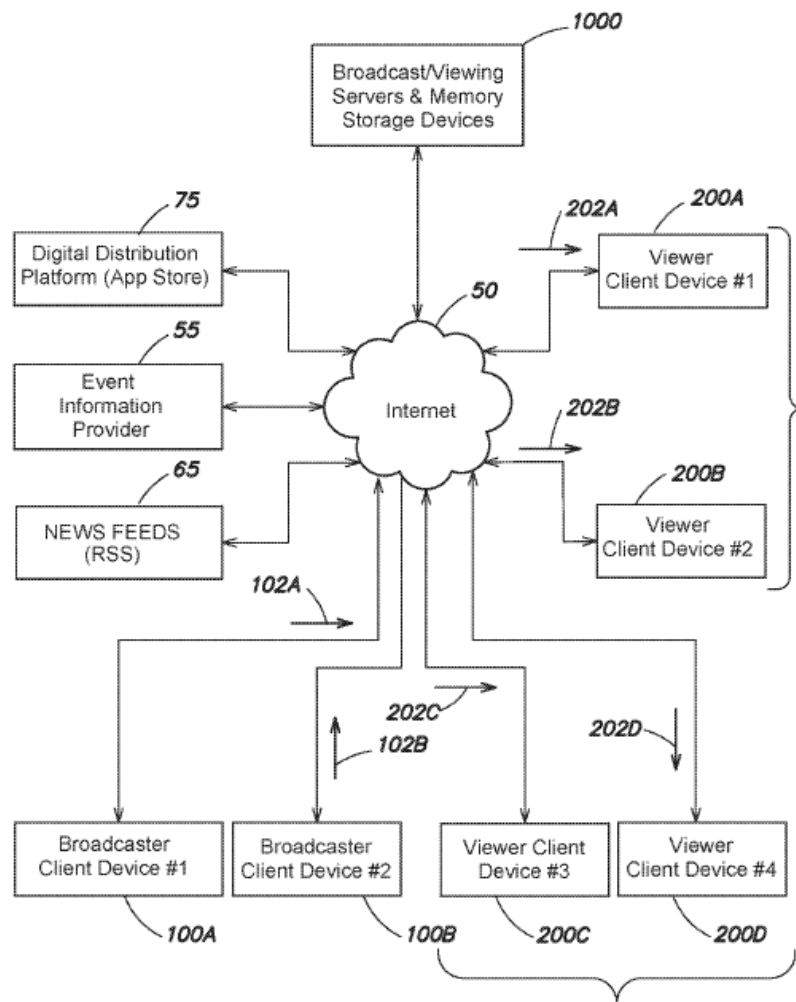


FIG. 1A

Figure 1A shows client devices including broadcaster client devices 100A and 100B and viewer client devices (VCDs) 200A, 200B, 200C, and 200D. *Id.* at 14:52–55. Broadcast/viewing servers and memory storage devices 1000 provide a network platform. *Id.* at 14:55–57. Figure 1A further depicts event information provider 55, one or more news feeds (RSS feeds) 65, and digital distribution platform (app store) 75. *Id.* at 14:57–59. The foregoing components are communicatively coupled via the Internet 50. *Id.* at 14:60.

First broadcaster client device 100A transmits a first live stream of digital content 102A to first VCDs 200A, 200B, which are grouped together, and receive respective copies 202A, 202B of the first live stream. *Id.* at 15:23–28. Similarly, second broadcaster client device 100B transmits a second live stream of digital content 102B to second VCDs 200C, 200D, which are grouped, and receive respective copies 202C, 202D of the second live stream. *Id.* at 15:28–33. Event information may be provided to broadcasters and viewers in a manner synchronized with live broadcasts. *Id.* at 15:3–7. Chat messages may be exchanged between broadcasters and viewers. *Id.* at 14:67–15:2.

Figure 1B of the '687 patent is reproduced below.



FIG. 1B

Figure 1B shows display 250 of VCD 200A includes content elements including the broadcaster's video-based commentary 252, event information 254 relating to the live sporting event about which the broadcaster is providing the video-based commentary, chat messages 258 from viewers

consuming the broadcaster's video-based commentary, and various graphics, special effects, and animation elements 256. *Id.* at 16:3–20.

Figure 2 of the '687 patent is reproduced below.

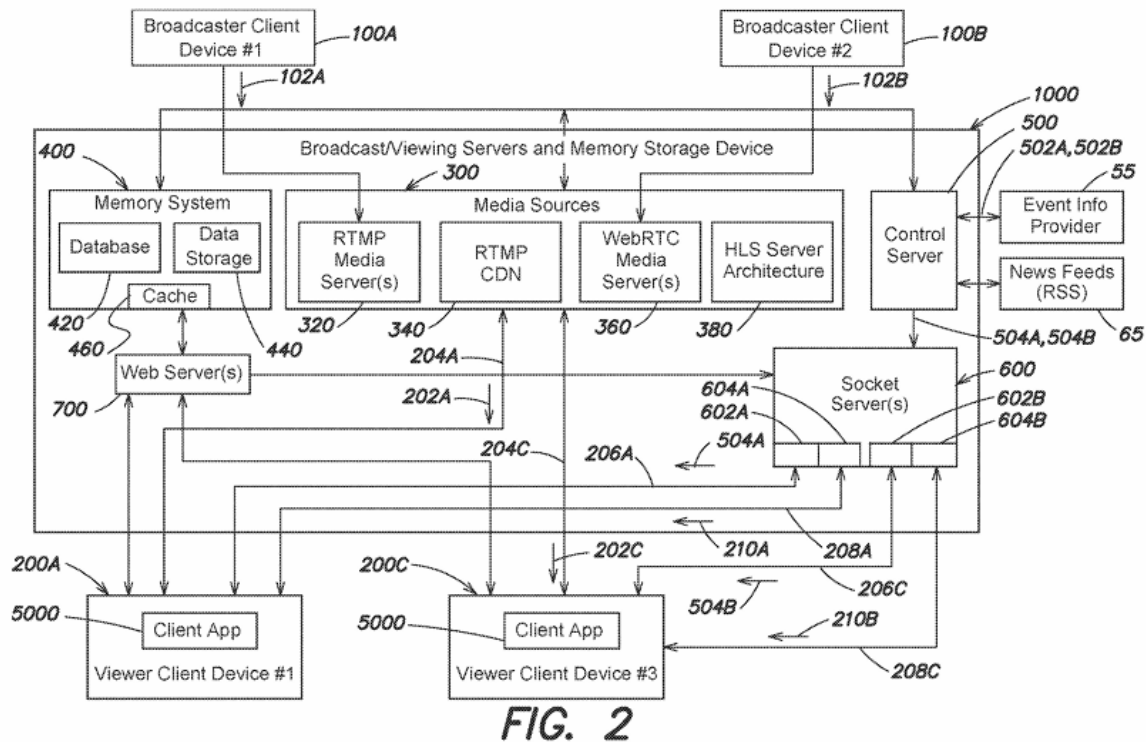


Figure 2 provides another perspective of Figure 1A. *Id.* at 18:36–37. Figure 2 shows a control server 500 coupled to memory system 400, event information provider 55, and news feeds 65, via the Internet. *Id.* at 19:48–51. Control server 500 periodically retrieves event information from event information provider 55 and news feeds 65 that is germane to the broadcasters' video-based commentary. *Id.* at 19:51–55.

In addition, Figure 2 shows a socket server 600 that facilitates communication between broadcasters and viewers of live stream copies, chat messages, event information, and digital gifts. *Id.* at 20:22–54.

E. Challenged Claims

Claim 19 of the '687 patent is an independent system claim.

Claims 20 to 22 depend directly from claim 19.

Claim 23 is an independent method claim. Claims 24 to 26 depend from claim 23, directly or indirectly.

Claim 27 is an independent system claim with means-plus-function limitations. Claims 28 to 30 depend directly from claim 27.

Claim 19 is reproduced below with Petitioner's identifiers shown in brackets.

[19.0] A system for providing a first plurality of copies of a first live stream of digital content relating to a first live sporting event to a first plurality of viewer client devices, and for providing a second plurality of copies of a second live stream of digital content relating to a second live sporting event to a second plurality of viewer client devices, the system comprising:

[19.1] A) a plurality of media sources to:

[19.2] receive the first live stream of digital content and the second live stream of digital content;

[19.3] provide a first copy of the first plurality of copies to a first viewer client device of the first plurality of viewer client devices via a first Internet communication channel between the plurality of media sources and the first viewer client device of the first plurality of viewer client devices; and

[19.4] provide a first copy of the second plurality of copies to a first viewer client device of the second plurality of viewer client devices via a second Internet communication channel between the plurality of media sources and the first viewer client device of the second plurality of viewer client devices;

[19.5] B) a control server to periodically retrieve, via the Internet, first event information germane to the first live sporting event and second event information germane to the second live sporting event; and

[19.6] C) at least one socket server communicatively coupled to the control server to:

[19.7] receive from the control server at least some of the first event information and at least some of the second event information; and

[19.8] transmit the at least some of the first event information to the first viewer client device of the first plurality of viewer client devices via a third Internet communication channel between at least one first event socket of the at least one socket server and the first viewer client device of the first plurality of viewer devices; and

[19.9] transmit the at least some of the second event information to the first viewer client device of the second plurality of viewer client devices via a fourth Internet communication channel between at least one second event socket of the at least one socket server and the first viewer client device of the second plurality of viewer devices.

Ex. 1003, 62:56–63:33.

Claim 23 is reproduced below with Petitioner's identifiers shown in brackets.

[23.0] A method for providing, to a first viewer client device, a first copy of a first live stream of digital content relating to a first live sporting event, the method comprising:

[23.1] A) providing the first copy to the first viewer client device via a first video communication channel between at least one media source and the first viewer client device;

[23.2] B) retrieving, via the Internet, first event information germane to the first live sporting event; and

[23.3] C) transmitting the first event information to at least the first viewer client device via a first event information communication channel between at least one first event socket of at least one socket server and the first viewer client device, wherein the at least one first event socket corresponds to the first event information germane to the first live sporting event.

Id. at 64:65–65:14.

Claim 27 is reproduced below with Petitioner’s identifiers shown in brackets.

[27.0] A system for providing, to a first viewer client device, a first copy of a first live stream of digital content relating to a first live sporting event, the system comprising:

[27.1] means for providing the first copy to the first viewer client device via a first video communication channel;

[27.2] means for retrieving, via the Internet, first event information germane to a first live sporting event; and

[27.3] means for transmitting the first event information to at least the first viewer client device via a first event information communication channel that is different from the first video communication channel.

Id. at 66:10–20.

F. Evidence of Record

Petitioner relies upon the following prior art references:²

Name	Reference	Date	Exhibit No.
Ellis	US 2014/0229992 A1	Published Aug. 14, 2014	1016
Spivey	US 2016/0036910 A1	Published Feb. 4, 2016	1017
Herzog	US 2015/0163379 A1	Published Jun. 11, 2015	1015

² Petitioner alleges that all of the prior art references were filed and published before the ’687 patent’s earliest alleged priority date of August 5, 2016. Pet. 2. Petitioner contends that all of these references are prior art under 35 U.S.C. § 102(a) (Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011)). Pet. 5–6. Patent Owner does not refute these assertions.

Petitioner also supports its challenges with declarations from Dr. Stephen B. Wicker. Exs. 1001, 1064. Patent Owner supports its arguments with a declaration from Dr. Aviel Rubin. Exs. 2001, 2038. Depositions of the parties' experts are in the record. Exs. 1063, 2039. Other evidence is present in the record as well.

G. The Asserted Challenges to Patentability

Petitioner asserts the following challenges to patentability:

Ground	Challenged Claims	35 U.S.C. § ³	Reference(s)
1	19–25, 27–30	103	Ellis, Spivey
2	19–25, 27–30	103	Herzog, Ellis, Spivey

Pet. 6.

II. ANALYSIS AND DISCUSSION

In this section, we discuss claim construction, legal standards for obviousness, the level of ordinary skill in the art, Petitioner's contentions that claims 19–25 and 27–30 of the '687 patent are obvious in grounds 1 and 2, and Patent Owner's arguments for patentability.

For the reasons that follow, we determine that Petitioner has demonstrated that claims 19–25 and 27–30 of the '687 patent have been shown to be unpatentable as obvious in ground 1. Petitioner has not

³ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. §§ 102 and 103, effective March 16, 2013. Because the application from which the '687 patent issued was effectively filed before this date, the pre-AIA versions of §§ 102 and 103 apply.

demonstrated that any claim would have been unpatentable under ground 2 due to a lack of motivation to combine the asserted prior art references.

A. Claim Construction

We construe the challenged claims under the same standard used by a federal court in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). This standard is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) and its progeny, and includes “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). “Any prior claim construction determination concerning a term of the claim in a civil action . . . that is timely made of record in the *inter partes* review proceeding will be considered.” *Id.*

Petitioner states that Patent Owner asserted in the Texas Litigation that the means-plus-functions of claims 27 to 29 of the ’687 patent are of the same scope as corresponding non-means-plus function claims. Pet. 17.

Petitioner adopts Patent Owner’s constructions in the Texas Litigation for the means-plus-function limitations of claims 27 to 29 as follows.

Limitation	Structure	Function
27.1	Media sources performing the algorithm disclosed in 9:25-50 and Figure 2 of the '687.	Providing the first copy to the first viewer client device via a first video communication channel;
27.2	Control Server performing the algorithm disclosed in 9:50-55 and Figure 2 of the '687.	Retrieving, via the Internet, first event information germane to a first live sporting event; and
27.3	Socket Server performing the algorithm disclosed in 9:55-67 and Figure 2 of the '687.	Transmitting the first event information to at least the first viewer client device via a first event information communication channel that is different from the first video communication channel.
28.1	Socket Server performing the algorithm disclosed in 20:27-35 and Figure 2 of the '687.	Transmitting and receiving first chat information regarding the first live sporting event via at least one first chat/system event Internet communication channel that is different from the first video communication channel and the first event information communication channel.
29.0	Control Server performing the algorithm disclosed in 17:48-55 and Figure 2 of the '687.	Updating the first event information and queueing an asynchronous message including the updated first event information for transmission on the first event information communication channel.
30.0	HLS mother server, HLS child servers, and an	Providing the first copy to the first viewer client device via a first video communication channel between the HLS
	HLS CDN performing the algorithm disclosed in 33:33-45 and Figures 8-9D.	CDN and the first viewer client device, wherein the first copy is based on the first HLS file suite received by the HLS mother server.

Pet. 8–9.

Patent Owner does not dispute Petitioner’s proposed constructions. PO Resp. 13. However, Patent Owner argues that the “means for transmitting” in claim limitation 27.3 should be construed to be a socket server transmitting through an event socket that implements algorithms described in certain figures of the '687 patent and accompanying

disclosures. *Id.* (citing Ex. 1006, 5:38–53, 9:25–10:53, 20:7–21:4, 21:47–23:9, 23:29–54, 26:60–27:37, 29:36–54, 46:17–47:34, 50:49–51:4, 52:45–62, Figs. 2, 3, 21A–21E; Ex. 2001 § IV.B.1).

We agree with Patent Owner’s proposed refinement of the “means for transmitting” to be a socket server transmitting event information through an event socket because this construction is consistent with similar non-means-plus-function limitations which Petitioner agrees should be applied in this case. *See* limitations 19.10, 19.11, 23.3; Pet. 7.

As the parties do not dispute the meaning of any claim term, we need not, and do not, expressly construe the term beyond the parties agreed meaning. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy).

B. Legal Principles of Obviousness

A patent claim is unpatentable as obvious under 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention 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 invention and the prior art; (3) the level of ordinary skill in the art; and (4) where present, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

C. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *See Graham*, 383 U.S. at 17. In our analysis, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quotation marks omitted). Furthermore, the prior art itself can reflect the appropriate level of ordinary skill in the art. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Relying on the declaration of Dr. Wicker, Petitioner contends that a person of ordinary skill in the art (POSA) at the time of the invention of the ’687 patent would have had “at least a bachelor’s degree, or equivalent, in electrical engineering, computer engineering, computer science, or a related field or an equivalent number of years of working experience, and one to two years of experience in networking environments, including at least some experience with live-streaming network architecture.” Pet. 15 (citing Ex. 1001 ¶¶ 72–76). Petitioner also states that “[a]dditional education or experience in related fields could compensate for deficits in the above qualifications.” *Id.*

Patent Owner contends that a POSA at the time of the invention of the ’687 patent would have had “a bachelor’s degree in electrical engineering, computer engineering, computer science, or equivalent degree and, in addition, approximately two years of work experience with Internet video

streaming, Internet communication, and related protocols.” PO Resp. 13–14 (citing Ex. 2001 ¶ 103).

The parties have not addressed whether the differences in these definitions impact the unpatentability analysis before us. We apply Patent Owner’s definition of a POSA at the time of the claimed invention because, based on the record, this proposal is consistent with the ’687 patent, the asserted prior art, and is supported by the testimony of Dr. Wicker. We note that we would reach the same determination under Petitioner’s formulation of the level of ordinary skill.

D. Ground 1: Obviousness Over Ellis and Spivey

Petitioner contends that claims 19–25 and 27–30 are obvious over Ellis in view of Spivey. Pet. 19–60. Patent Owner argues that these claims are not unpatentable. PO Resp. 25–53.

We now address the disclosures of Ellis and Spivey, the motivation to combine them with a reasonable expectation of success, and Petitioner’s and Patent Owner’s contentions, considering Patent Owner’s and Petitioner’s alleged objective evidence of nonobviousness.

The parties’ disputes for this ground center on (1) whether Petitioner’s proposed combination of Ellis and Spivey would be inoperable due to omission of a server component that functions to relay data to Ellis’s user equipment, and (2) whether Spivey’s topic queues disclose the claimed “event socket.” We address these issues in §§ II.D.3 and II.D.4.a, respectively, and conclude they do not negate Petitioner’s combination. For reasons that follow, we decide that claims 19–25 and 27–30 are unpatentable as obvious over the combination of Ellis and Spivey.

1. *Ellis (Ex. 1016)*

Ellis is titled “Systems and Methods for Providing Enhanced Sports Watching Media Guidance.” Ex. 1016, code (54). The disclosed systems and methods provide “enhanced information access and viewing functionality for sports-related programming.” *Id.* ¶ 8.

Figure 1 of Ellis is reproduced below.

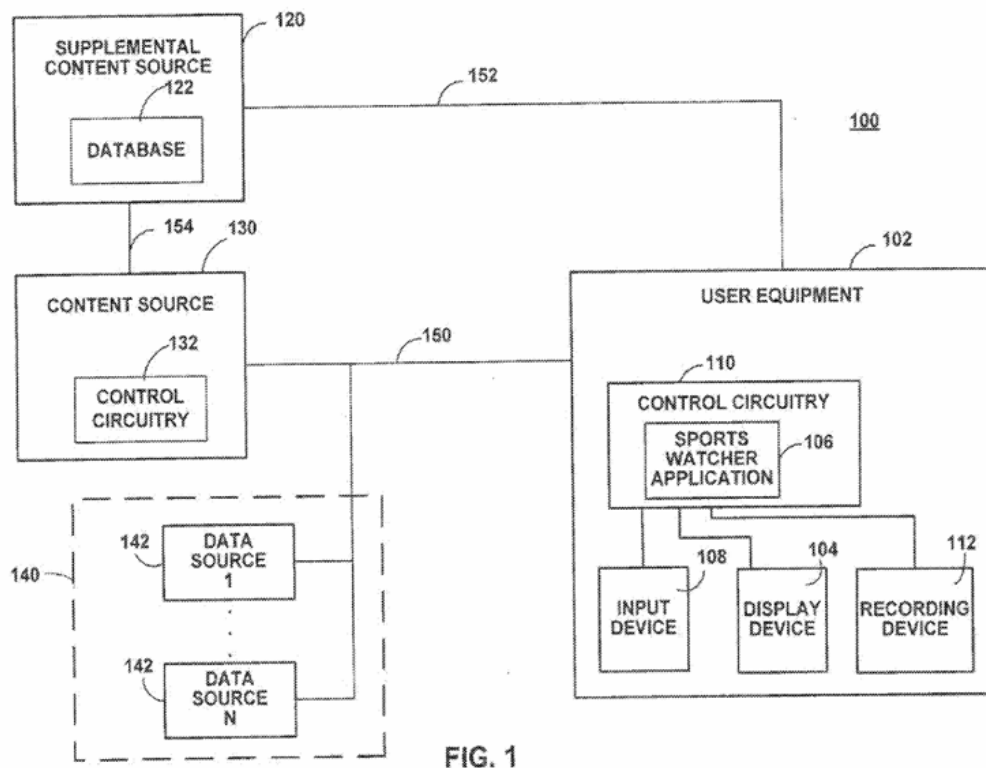


Figure 1 above depicts interactive media system 100 that may be used with sports watcher application 106 on user equipment device(s) 102. *Id.* ¶ 39. User equipment device(s) 102 receive content from content source 130, supplemental content source 120, and data sources 140 over communication paths 150 and 152. *Id.*

Content source 130 may be a cable, satellite, television, on-demand server, or Internet or network media/web server providing media content which may include broadcast programming, video-on-demand (VOD)

programming, digital music, news, interactive applications, Internet resources, and web services. *Id.* ¶ 40.

Supplemental content source 120 provides content such as real-time sports scores, sports commentary, spread and wagering data, and any other sports-related information, to user equipment 102. *Id.* ¶ 41. Supplemental content source 120 may provide multiple real-time data feeds for user equipment(s) 102. *Id.* “For example, sports score and game status information may be included in one real-time data feed, while sports commentary may be included in another feed.” *Id.*

2. *Spivey (Ex. 1017)*

Spivey is titled “Techniques to Broadcast Live Event Data in Real-Time.” Ex. 1017, code (54). Spivey discloses an apparatus with a subscription component executing on a processor circuit to receive a topic entry from a message queue server and to push the topic entry to a subscribed client device via the apparatus’s communication component. *Id.* at code (57). The communication component may also open a connection with the client device to receive a request for a topic therefrom. *Id.*

Spivey’s Figure 1 is reproduced below.

System 100

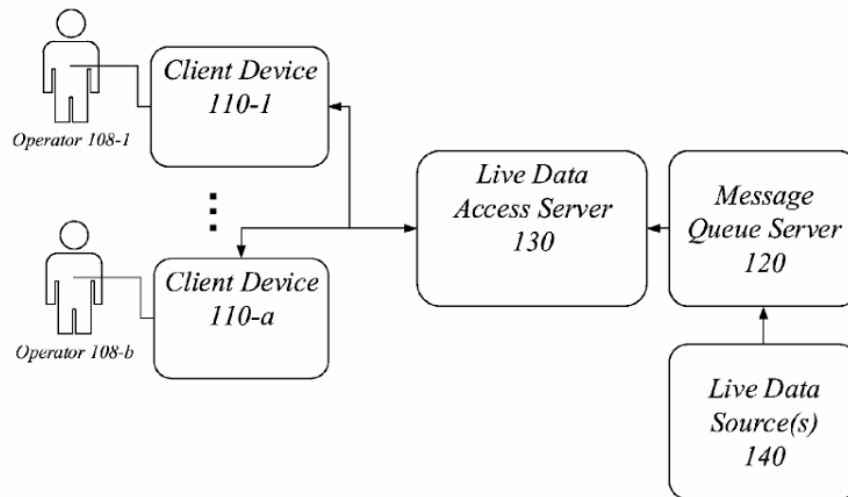
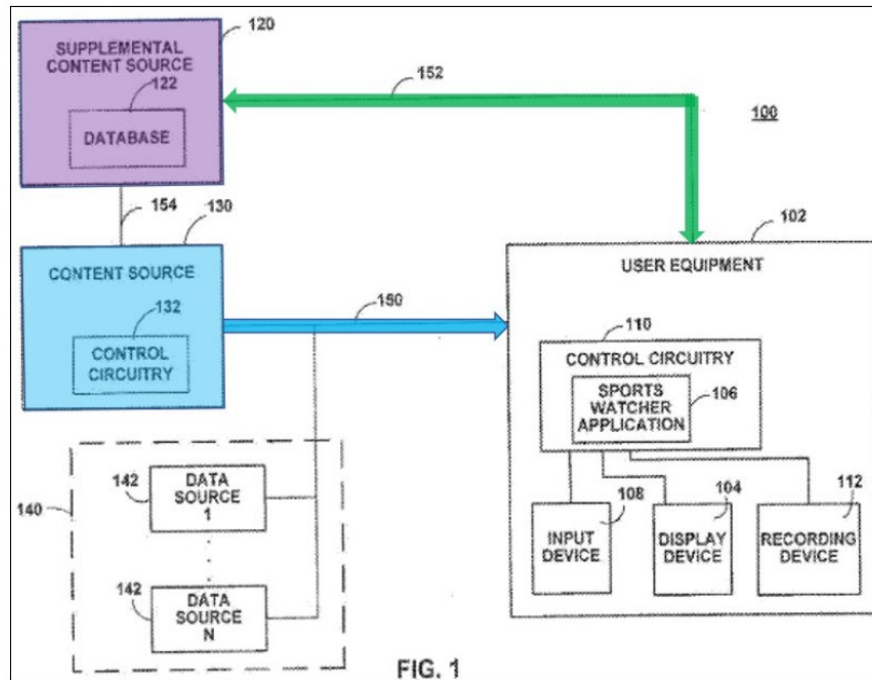


FIG. 1

Figure 1 above illustrates system 100 for broadcasting live data in real-time. *Id.* ¶ 34. System 100 may comprise client devices 110-1 through 110-a, message queue server 120, and live data access server 130. *Id.* Message queue server 120 receives live data from one or more live data sources 140 and provides it to the client devices. *Id.* ¶ 36. Live data sources 140 may include data feeds associated with a live event. *Id.* ¶ 37. Live data access server 130 provides a public interface between client devices 110 and message queue server 120. *Id.* ¶ 38. Live data access server 130 may allow operators 108 of client devices 110 to select topics related to a live event (e.g., news event, gaming event, sporting event, etc.) to subscribe to, and may retrieve and push the topic information to client devices 110. *Id.* ¶¶ 27, 38. Communication between the live data access server 130 and client devices 100 may occur via websocket connection. *Id.* ¶¶ 60–61.

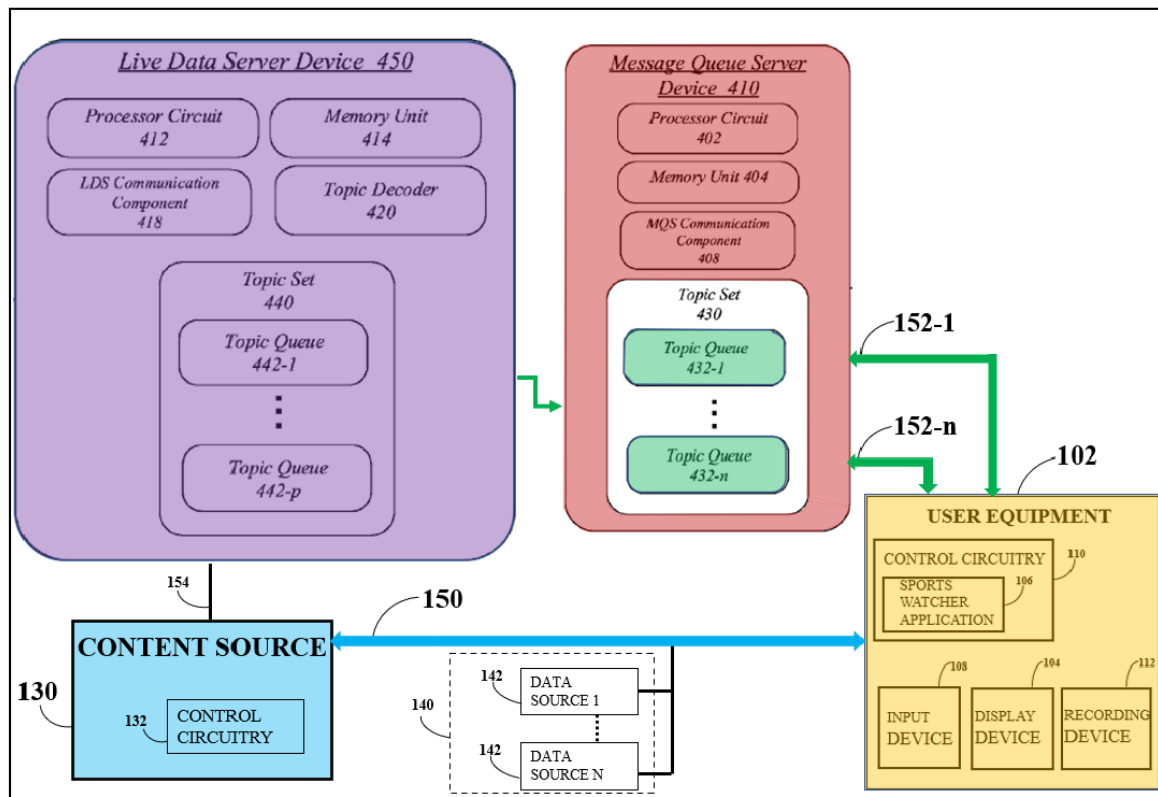
3. Reasons to Combine Ellis and Spivey

To explain its motivation to combine, Petitioner provides the following annotated version of Ellis's Figure 1. Pet. 20.



Petitioner's annotated version of Ellis's Figure 1 above shows a video stream (blue) from content source 130 and an event data stream (green) from supplemental content source (SCS) 120, which are provided to user equipment 102 over separate connections 150 (blue) and 152 (green). *Id.* at 19–20 (citing Ex. 1001 ¶ 106).

Petitioner contends that Spivey augments Ellis by providing details for the backend server architecture and its functionality. Pet. 20. Petitioner's combination is illustrated below. *Id.* at 21.



Petitioner’s above figure combines Ellis’s Figure 1 (blue, white, yellow at bottom) with the Live Data Server Device (LDSD) and Message Queue Server Device (MQSD) of Spivey’s Figure 4 (purple and red at top) to provide a content delivery system with reduced latency. *Id.* at 20–21 (citing Ex. 1016 ¶¶ 39, 41, Fig. 1; Ex. 1017, Fig. 4; Ex. 1001 ¶¶ 27, 28, 107–111).

Petitioner contends that a POSA would have been motivated to combine Ellis and Spivey for multiple reasons. First, Petitioner asserts that Ellis and Spivey are similar and complimentary because they both relate to content delivery of real-time events; both stream video and event data to users simultaneously; and both solve similar problems of providing video and event data to multiple users over the Internet. Pet. 22–23 (citing Ex. 1016, code (57), ¶¶ 39–41, 45, 74, 156, 176; Ex. 1017, code (57), ¶¶ 27, 58; Ex. 1001 ¶¶ 112–115). Second, Petitioner contends that Spivey provides

details for the backend architecture for transmitting event data to multiple users with reduced latency using websocket connections. *Id.* at 20–22 (citing Ex. 1016 ¶¶ 39, 41, Fig. 1; Ex. 1017, code (57), ¶¶ 27–28, Fig. 4; Ex. 1001 ¶¶ 107–111, 115); Pet. Reply 13–15 (citing *id.* § II; Ex. 1001 ¶ 109; Ex. 1064 ¶¶ 17–26); Ex. 1016 ¶ 5; Ex. 1017 ¶¶ 28, 61); *see also* Ex. 1017 ¶¶ 43, 61, 92, claim 3, claim 8 (disclosing websocket connections). Third, Petitioner argues that the combination constitutes merely a simple substitution of Ellis’s SCS with Spivey’s LDSD and MQSD. Pet. at 23–24 (citing Ex. 1016 ¶ 47; Ex. 1017 ¶ 34; Ex. 1001 ¶¶ 114–115).

Petitioner contends that a POSA would have had a reasonable expectation of success in using Spivey’s system of “topic queues and open duplex communication connections” employing websockets and the MQSD to broadcast data from a live event to multiple users in real-time. Pet. 23 (citing Ex. 1017 ¶ 27, 58; Ex. 1001 ¶ 115).

Patent Owner argues that Petitioner’s omission of Spivey’s LDAS in the Ellis-Spivey combination renders it inoperable because it lacks a server component to relay data to a user equipment; eliminates communication channels for live video content and event data; eliminates the database; and eliminates Ellis’s SCS which provides event data. PO Resp. 1, 3–6, 44–47; PO Sur-Reply 11–14. Patent Owner further asserts that Petitioner’s combination would not reduce latency. PO Resp. 43–47.

After review of the parties’ arguments and evidence, we agree with Petitioner that a POSA would have been motivated to combine Ellis and Spivey. Pet. 19–24. As Petitioner contends, Ellis and Spivey have many similarities. *Id.* at 22–23. For example, both disclose content delivery systems for real-time events (such as sports scores and chat), and both seek

to enhance speed of providing video and event data to multiple users over the Internet. *Id.* at 22–23 (citing Ex. 1016, code (57), ¶¶ 39–41, 45, 74, 156, 176; Ex. 1017, code (57), ¶¶ 27, 58; Ex. 1001 ¶¶ 112–115). We agree with Petitioner that these similarities would have led a POSA to consider Ellis and Spivey together. *Id.* at 22–23.

As Petitioner argues, Ellis and Spivey differ in that Ellis uses HTTP request-response messages whereas Spivey uses websocket connections between the content delivery system’s server and user equipment. Pet. 20 (citing Ex. 1001 ¶¶ 106–115). Petitioner asserts that, in Ellis’s HTTP connections, a user equipment requests the server to respond with any new messages. *Id.* at 10 (citing Ex. 1001 ¶¶ 41–51); Ex. 1016 ¶¶ 37, 40. Petitioner alleges that Spivey’s websocket connections were a known alternative to HTTP requests. *Id.* at 10–11 (citing Ex. 1001 ¶¶ 52–53, 58–59). Petitioner argues that such websockets constitute bidirectional, full-duplex, stateful, and persistent connections that provide instant updates from the server to the user equipment without the need for the user equipment to request them from the server (referred to as “push” technology). *Id.* at 10–11.

We agree with Petitioner that, under some scenarios, a POSA would have viewed Spivey’s websocket connections as more advantageous for providing video content and event data to end-users than Ellis’s HTTP request-response protocol, thus motivating simple substitution of Spivey’s LDSD and MQSD for Ellis’s SCS. Pet. 23–24 (citing Ex. 1016 ¶¶ 34, 47; Ex. 1017 ¶ 34; Ex. 1001 ¶¶ 114–115). *See KSR*, 550 U.S. at 417 (simple substitution of one known element for another is a recognized rationale supporting a motivation to combine).

For example, if server requests are frequent, a POSA would have recognized that the processing overhead of setting up and tearing down HTTP connections would exceed any latency disadvantages of Spivey's persistent websocket connections. Ex. 1064 ¶ 35. Thus, under some circumstances, a POSA would have been motivated to make the Ellis-Spivey combination, and we do not agree with Patent Owner's arguments to the contrary.

Patent Owner argues that Petitioner's omission of Spivey's LDAS in the Ellis-Spivey combination renders it inoperable because it lacks an intermediary server component to carry out the functions of the LDAS, which includes relaying data to Ellis's user equipment. PO Resp. 3–6; PO Sur-Reply 1–7. Patent Owner further contends that Petitioner's substitution would eliminate the LDAS's video and event data feeds as well as its database. PO Resp. 1, 3–6 (citing Ex. 2038 ¶ 12); PO Sur-Reply 11–12. However, Spivey's LDSD and MQSD are servers capable of carrying out communication, data storage, and other functions of the LDAS. *See, e.g.*, Pet. 23; Ex. 1017 ¶¶ 46, 58 (discussing functions of RABBITMQ™ server). For example, servers were known to be used for communication over the Internet and data storage, and the term “queue” in Spivey's “topic queue” implies the capability to store or buffer data. Pet. 23; Ex. 1017 ¶ 58. Thus, we do not agree with Patent Owner's arguments.

Patent Owner argues that Spivey only mentions websocket connections in relation to certain embodiments of which Spivey's Figure 4 (which Petitioner asserts in the combination) is not one, viewing the reference as a whole. PO Resp. 30–36. We agree with Petitioner, however, that Patent Owner is reading Spivey too strictly and not fully considering

what the reference's teachings would have suggested to a POSA. This rigid approach to obviousness was rejected by the Supreme Court in *KSR* in favor of a flexible one. *See* 550 U.S. at 415. We see no reason why a POSA considering Spivey's websocket teachings, even if confined to certain embodiments in Spivey as Patent Owner argues, would not be concepts applicable to Spivey's Figure 4 embodiment since they are taught in the same reference and would be useful to reduce latency under some scenarios. *See, e.g., General Elec. Co. v. Raytheon Tech. Corp.*, 983 F.3d 1334, 1352 (Fed. Cir. 2020) (patent challenger is not required to show motivation to combine elements present together in the same prior art reference).

Patent Owner further argues that Spivey's MQSD topic queues are not uniquely addressable endpoints required for websockets. PO Resp. 1–3. We address this argument in a later section and conclude they are uniquely addressable endpoints. *See* § II.D.4.a, *infra*. Consequently, Patent Owner's argument is unavailing.

Patent Owner further argues that Petitioner's replacement of Ellis's SCS and database with Spivey's LDSD and MQSD eliminates the LDAS, and thus, in the combination, there is no server component that functions to relay data between the MQSD and the user equipment. PO Resp. 45. However, we agree with Petitioner that the "source" need not generate the event data but may simply receive and relay it to the user equipment. Pet. Reply 16–17 (citing Ex. 2001 ¶ 208; Ex. 1001 ¶¶ 109, 346, 347, 274–375; Ex. 1016 ¶¶ 41, 42; Ex. 1064 ¶¶ 28, 29). Consequently, we do not agree with Patent Owner's argument.

We further agree with Petitioner that, to the extent Patent Owner argues the contrary, neither Ellis nor the challenged claims require

synchronization of the video and event information feeds. Pet. Reply 15–16 (citing Ex. 1004, claim 19; Ex. 1016 ¶ 41; Ex. 1064 ¶ 27).

Accordingly, we determine that Petitioner has shown by a preponderance of the evidence that a POSA would have combined Ellis and Spivey with a reasonable expectation of success.

4. *Claim 19*

In our analysis for claim 19, we first address the parties’ disputes concerning “event socket” in limitations 19.8 and 19.9. We then address Petitioner’s correspondence of the claim limitations to the combination of Ellis and Spivey, and determine that Petitioner has shown by a preponderance of the evidence that claim 19 would have been obvious over the combination.

a) *Dispute Over “Event Socket” In Limitations 19.8 and 19.9*

Limitations 19.8 and 19.9 of claim 1 recite that a socket server is communicatively coupled to a control server to:

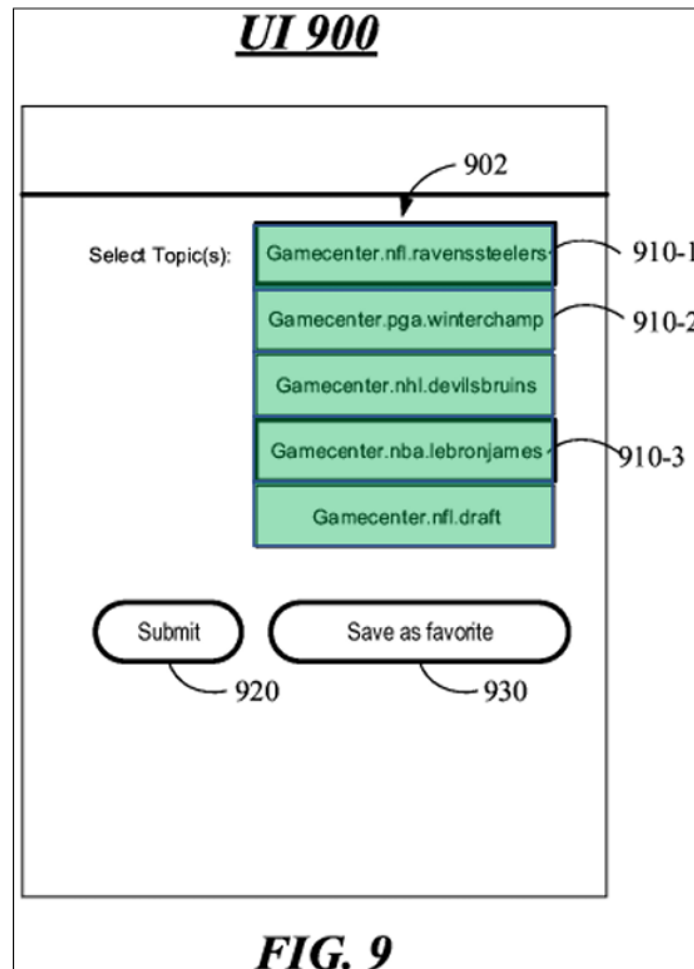
[19.8] transmit the at least some of the first event information to the first viewer client device of the first plurality of viewer client devices via a third Internet communication channel between at least one first event socket of the at least one socket server and the first viewer client device of the first plurality of viewer devices; and

[19.9] transmit the at least some of the second event information to the first viewer client device of the second plurality of viewer client devices via a fourth Internet communication channel between at least one second event socket of the at least one socket server and the first viewer client device of the second plurality of viewer devices.

Ex. 1003, 63:20–33. The parties do not dispute that “event socket” should be construed as a “uniquely addressable endpoint on a server where first

event information is provided to a [viewer client device].” Pet. 39; PO Resp. 2–3. However, the parties disagree about whether the combination of Ellis and Spivey discloses this feature. Pet. 38–43; PO Resp. 2–3, 25–30; Pet. Reply 2, 12–13; PO Sur-Reply 1–9.

Specifically, Petitioner asserts that Spivey’s topic queues disclose the claimed “event socket.” Pet. 38–41 (citing Ex. 1017 ¶¶ 36, 38, 46, 48–52, 66, 81–84, 96, Fig. 9; Ex. 1001 ¶¶ 352, 354). To support its contention, Petitioner provides the following annotated version of Spivey’s Figure 9. *Id.* at 41.



Petitioner contends that Spivey’s client device 110 uses text strings (i.e., topic labels shown in green in Spivey’s Figure 9 above) similar to uniform resource locators (URLs) for each selected topic to connect and subscribe to the MQSD’s topic queues. *Id.* at 39–41 (citing Ex. 1017 ¶¶ 36, 38, 46, 48, 49, 51, 52, 66, 81–84, 96, Fig. 9; Ex. 1001 ¶¶ 352, 354). The MQSD then pushes event information germane to the selected topic to the client device via the event socket. *Id.* at 41 (citing Ex. 1017 ¶ 96; Ex. 1001 ¶ 354).

Patent Owner argues that Petitioner fails to show that Spivey’s topic queues disclose the claimed “event socket” because they are not uniquely addressable communication endpoints. PO Resp. 30. Patent Owner further argues that Spivey’s MQSD (which hosts the topic queues) does not have the capability to communicate with individual client devices. *Id.* at 29.

Furthermore, Patent Owner states that Petitioner relies on Spivey’s user interfaces as support for its combination. PO Resp. 29. Yet, according to Patent Owner, properly considered “as a whole,” Spivey’s figures actually show the LDAS is required for the client devices to communicate with the MQSD. *Id.* at 29–32 (citing *In re Hedges*, 783 F.2d 1038, 1041 (Fed. Cir. 1986); Ex. 1017 ¶¶ 63, 81–90, Figs. 9, 10; Ex. 2038 ¶¶ 11–14, 25–27).

Patent Owner further argues that Spivey fails to disclose that the MQSD is a communication endpoint with (i) a publicly-accessible URL or address that is (ii) designed to handle real-time access from a potentially large number of individual clients and is (iii) capable of pushing its data packets to multiple individual clients. PO Resp. 33 (citing Ex. 1017 ¶¶ 59–64; Ex. 2038 ¶ 18).

Furthermore, Patent Owner argues that Petitioner fails to show that Spivey's topic queues are "event sockets" because they are merely an organization of data, such as a database table, that includes information about a particular topic, which would not be considered an "uniquely addressable communication endpoint." PO Resp. 40–41 (citing Ex. 2001 ¶¶ 235, 236, 240, 241, 245; Ex. 2039, 62:18–63:8).

Petitioner responds that its expert, Dr. Wicker, explains that Spivey's topic queues are uniquely addressable via URLs that include topic labels as part of their URLs and thus are communication endpoints for multiple client devices. Pet. Reply 8 (citing Ex. 1001 ¶¶ 352, 354, 355, 357, 358). According to Petitioner, a text string such as "gamecenter.nfl.ravenssteelers" may be used by client devices to connect and subscribe to MQSD's topic queues. *Id.* at 8 (citing Ex. 1017 ¶¶ 82–84, 134). Petitioner further asserts that Spivey's topic queue connections are bidirectional websocket connections that transmit event information. *Id.* at 9–10 (citing Ex. 1017 ¶¶ 43, 61, claim 8; Ex. 1064 ¶ 15).

Petitioner notes that Spivey teaches that its MQSD may be implemented as a RABBITMQ™ server which "facilitates topic queues that receive published messages and push the messages to clients that have subscribed to the topic queues." Pet. Reply 10–12 (citing Ex. 1017 ¶ 58) (emphasis omitted).

In its Sur-Reply, Patent Owner maintains that Spivey's LDAS is a required intermediary between the MQSD and end-user client devices, and that Spivey's topic queues are not uniquely addressable communication endpoints. PO Sur-Reply 1–9. Furthermore, Patent Owner contends that Spivey's mention of the RabbitMQ™ server does not confirm that the LDAS

is optional because the LDAS is the “client” to which Spivey refers. *Id.* at 9–10.

After review of the parties’ contentions and evidence, we agree with Petitioner that Spivey’s topic queues each constitute an “event socket” as claimed. Pet. 41 (citing Ex. 1001 ¶ 354). There is no dispute that Spivey discloses websocket connections. Ex. 1017 ¶¶ 43, 61, 74, 92, claim 3, claim 8. Although some mentions of websocket connections in Spivey relate to the connection between the LDAS and client devices, Spivey also teaches that a single server device may implement the LDAS and MQSD. *See, e.g., id.* ¶ 160. This teaching suggests that, in essence, features of the LDAS, such as communicating with client devices over the Internet using URLs and websocket connections, optionally would be incorporated in the MQSD on the same server.

Further undermining Patent Owner’s arguments is that Spivey teaches that RABBITMQ™ server “facilitates topic queues that receive published messages and push the messages to clients that have subscribed to the topic queues.” Ex. 1017 ¶ 58. Although Patent Owner argues that an LDAS is implied as an intermediary between the MQSD, there is no mention of any LDAS in this Spivey paragraph relating to “an embodiment” which does not necessarily include the LDAS. *Id.* This paragraph teaches, or at least suggests, that the MQSD has the capability to push messages from the topic queue to client devices without using an LDAS. *Id.* There is no dispute that the information in the topic queues corresponds to the claimed “event information.”

Further evidence that an LDAS is not required as an intermediary between the topic queues and client devices is provided elsewhere in Spivey.

Specifically, Spivey teaches that the MQS may receive requests to subscribe to topics and may push data from topic queues to subscribers. Ex. 1017 ¶ 46.

Faced with this evidence, we determine that Petitioner has shown by a preponderance of the evidence that Spivey teaches, or at least suggests, the claimed “event socket” despite Patent Owner’s arguments to the contrary.

b) Limitation 19.0

Limitation 19.0 (the preamble) of claim 19 recites:

A system for providing a first plurality of copies of a first live stream of digital content relating to a first live sporting event to a first plurality of viewer client devices, and for providing a second plurality of copies of a second live stream of digital content relating to a second live sporting event to a second plurality of viewer client devices, the system comprising:

Petitioner contends that to the extent the preamble is limiting, Ellis discloses it. Pet. 24–26. Specifically, Petitioner asserts that Ellis discloses a system for providing digital content relating to live sporting events (“*a system for providing digital content relating to . . . a first live sports event . . . and for providing digital content relating to . . . a second live sports event*”). *Id.* at 24–25 (citing Ex. 1016 code (57), ¶¶ 8, 11).

Petitioner reproduces Ellis’s Figure 2B, shown below. Pet. 25.

220		230		
222	224	232	234	236
Tuner	Primary Source ID	Source ID	Type	Profile Score
1	<sourceid_2>	<sourceid_1>	Game	90
2	<sourceid_1>	<sourceid_2>	Game	95
3	<sourceid_8>	<sourceid_3>	Commentary	45
4	<sourceid_4>	<sourceid_4>	News	75
		<sourceid_5>	Movie	25
		<sourceid_6>	Movie	35
		<sourceid_7>	Highlights	65
		<sourceid_8>	Game	80

Figure 2B above shows tuner data tables 220 and 230 showing multiple available live broadcasts (“*first live stream*” and “*second live stream*”). *Id.* at 23 (citing Ex. 1016 ¶¶ 40, 62, 63, Fig. 2B; Ex. 1001 ¶ 333).

Petitioner further contends that Ellis discloses providing copies of the live video stream to a plurality of user devices with the broadcast system where any number of users may receive signal from a content source (“*a first plurality of VCDs*”; “*a first plurality of copies*”; “*a second plurality of VCDs*”; “*a second plurality of copies*”). *Id.* at 25–26 (citing Ex. 1016 ¶¶ 39, 40, 45, 62, 74, Fig. 2B; Ex. 1001 ¶ 334).

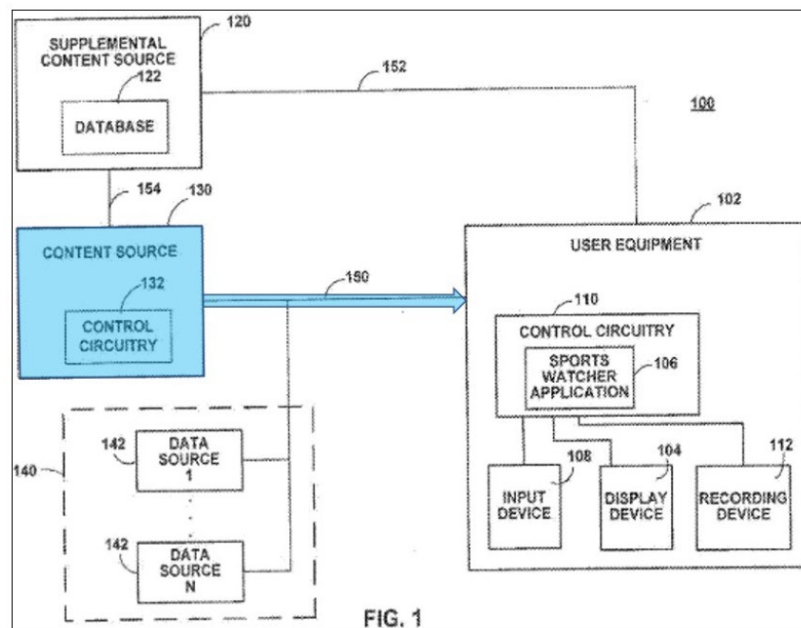
Patent Owner does not dispute that Ellis discloses limitation 19.0.

We determine that Petitioner has shown preponderant evidence that Ellis teaches limitation 19.0.

c) Limitation 19.1

Limitation 19.1 recites “A) a plurality of media sources to:”

Petitioner contends that Ellis discloses this feature. Pet. 26–27. To support its contention, Petitioner provides the following annotated version of Ellis’s Figure 1 below. *Id.* at 27.



Petitioner asserts that Ellis’s content source 130 (shown in blue in Figure 1 above) discloses limitation 19.1. Pet. 26–27 (citing Ex. 1016 ¶¶ 39–41, 45, 47; Ex. 1001 ¶ 336). Petitioner notes that Ellis teaches that “there may be numerous instances of content source 130” (“*a plurality of media sources*”). *Id.* at 27 (citing Ex. 1016 ¶ 39).

Patent Owner does not dispute Petitioner’s contentions for limitation 19.1.

We determine that Petitioner has shown preponderant evidence that Ellis teaches limitation 19.1.

d) Limitation 19.2

Limitation 19.2 recites that the plurality of media sources “receive the first live stream of digital content and the second live stream of digital content.”

Petitioner contends that Ellis discloses limitation 19.2. Pet. 27–28. Specifically, Petitioner asserts that the content source may be any suitable source of media content including a television broadcast facility, Internet,

network media/web server, or any other suitable facility or system distributing content to user equipment (“*receive the first live stream of digital content and the second live stream of digital content*”). *Id.* (citing Ex. 1016 ¶¶ 40, 45, 61, 62, 74; Ex. 1001 ¶ 372).

Patent Owner does not dispute Petitioner’s contentions.

We determine that Petitioner has shown preponderant evidence that Ellis teaches limitation 19.2.

e) Limitation 19.3

Limitation 19.3 recites that the media sources “provide a first copy of the first plurality of copies to a first viewer client device of the first plurality of viewer client devices via a first Internet communication channel between the plurality of media sources and the first viewer client device of the first plurality of viewer client devices.”

Petitioner contends that Ellis discloses limitation 19.3. Pet. 28–30. Specifically, Petitioner contends that Ellis discloses a system that provides live streams of digital content as individual copies (“*provide a first copy of the first plurality of copies to a first viewer client device*”). *Id.* at 28–29 (citing Ex. 1016 ¶¶ 39, 45, 61, 62, 94, Fig. 2B; Ex. 1001 ¶¶ 342, 373).

Petitioner contends that Ellis discloses a first viewer device of a plurality of viewer devices (“*a first viewer client device of the first plurality of viewer client devices*”). Pet. 28 (citing Ex. 1016 ¶¶ 39, 55, 61, 62, 94, 132, Fig. 2B; Ex. 1001 ¶¶ 340, 373).

Petitioner further contends that Ellis discloses providing video from a content source to user equipment over a communication path on the Internet (“*via a first video Internet communication channel between the plurality of media sources and the first viewer client device of the first plurality of*

viewer client devices”). Pet. 29–30 (citing *id.* §§ VIII.A.2.d.i–ii; Ex. 1016 ¶¶ 39, 40, 45, 48, 74; Ex. 1001 ¶¶ 343, 373).

Patent Owner does not dispute Petitioner’s contentions for limitation 19.3.

We determine that Petitioner has presented preponderant evidence that Ellis discloses limitation 19.3.

f) Limitation 19.4

Limitation 19.4 recites to “provide a first copy of the second plurality of copies to a first viewer client device of the second plurality of viewer client devices via a second Internet communication channel between the plurality of media sources and the first viewer client device of the second plurality of viewer client devices.”

Petitioner contends that Ellis discloses limitation 19.4. Pet. 28–30. Specifically, Petitioner contends that Ellis discloses a system that provides live streams of digital content as individual copies (“*provide a first copy of the second plurality of copies to a first viewer client device*”). *Id.* at 28–29 (citing Ex. 1016 ¶¶ 39, 45, 61, 62, 94, Fig. 2B; Ex. 1001 ¶¶ 342, 373). Petitioner contends that Ellis discloses a first viewer device of a second plurality of viewer devices (“*a first viewer client device of the second plurality of viewer client devices*”). *Id.* at 28 (citing Ex. 1016 ¶¶ 39, 55, 61, 62, 94, 132, Fig. 2B; Ex. 1001 ¶¶ 340, 373).

Petitioner further contends that Ellis discloses providing video from a content source to user equipment over a communication path on the Internet (“*via a first video Internet communication channel between the plurality of media sources and the first viewer client device of the second plurality of*

viewer client devices”). Pet. 29–30 (citing *id.* §§ VIII.A.2.d.i–ii; Ex. 1016 ¶¶ 39, 40, 45, 48, 74; Ex. 1001 ¶¶ 343, 373).

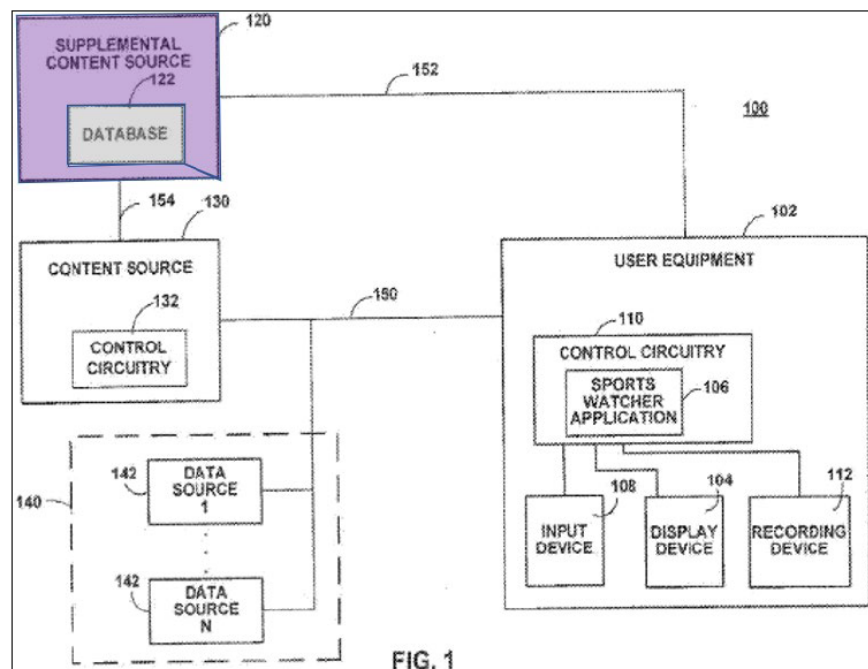
Patent Owner does not dispute Petitioner’s contentions for limitation 19.4.

We determine that Petitioner has presented preponderant evidence that Ellis discloses limitation 19.4.

g) Limitation 19.5

Limitation 1.5 recites “B) a control server to periodically retrieve, via the Internet, first event information germane to the first live sporting event and second event information germane to the second live sporting event.”

Petitioner argues that Ellis and Spivey both disclose limitation 1.5. Pet. 30–34. Petitioner presents an annotated version of Ellis’s Figure 1, shown below. *Id.* at 32.



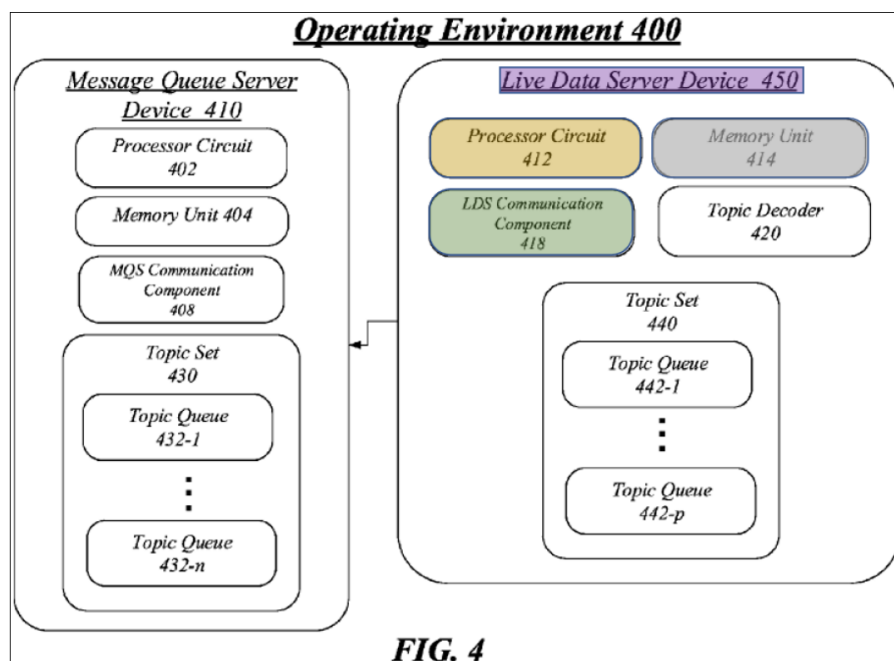
Petitioner contends that Ellis’s SCS (shown in purple in the annotated version of Ellis’s Figure 1 above) discloses the claimed “control server.”

Pet. 30–31 (citing Ex. 1016 ¶¶ 41, 42, 72, 117, 142; Ex. 1001 ¶ 345).

Specifically, Petitioner contends that Ellis’s SCS retrieves real-time sports scores and game summaries via the Internet and provides them as first and second event information germane to the multiple live sporting events, to the user equipment (“*B) a control server to . . . retrieve, via the Internet, first event information germane to the first live sporting event and second event information germane to the second live sporting event*”). *Id.* at 30–31.

Petitioner contends that a POSA would have understood that updates would occur on a periodic basis, and asserts that this would merely be a design choice (“*a control server to periodically retrieve*”). *Id.* at 30–31 (citing Ex. 1016 ¶¶ 41, 42, 72, 117, 142; Ex. 1001 ¶ 345); *see also* Ex. 1016 ¶¶ 44 (user equipment may periodically query SCS for updates), 68 (scores within 24-hour period displayed on input device), 175 (scores and game summary information updated every 5 seconds).

In addition, to the extent Ellis does not disclose it, Petitioner argues that Spivey’s live data server device (LDSD) corresponds to the claimed “*control server*.” Pet. 32. Petitioner provides an annotated version of Spivey’s Figure 4, reproduced below. Pet. 33.



Petitioner’s annotated Figure 4 of Spivey above shows the LDS as a server with processors (gold), memory devices (grey), and communication interfaces (green). *Id.* (citing Ex. 1001 ¶ 346). Petitioner contends that the LDS’s communication component receives live data and transmits the data payloads to the MQSD (“*B) a control server to . . . retrieve . . . first event information*”). *Id.* (citing Ex. 1017 ¶ 55). Petitioner asserts that the live data received by the LDS includes “sports scores and breaking news” such as scores, plays, errors, etc. (“*first event information germane to the first live sporting event and second event information germane to the second live sporting event*”). *Id.* (citing Ex. 1017 ¶¶ 27, 48, 66; Ex. 1001 ¶ 346). In addition, Petitioner contends that the LDS retrieves the first event information germane to the first live sporting event, and the second event information germane to the second live sporting event, via the internet (“*a control server to . . . retrieve, via the Internet*”). *Id.* at 34 (citing Ex. 1017 ¶¶ 35, 37, 178; Ex. 1001 ¶ 346).

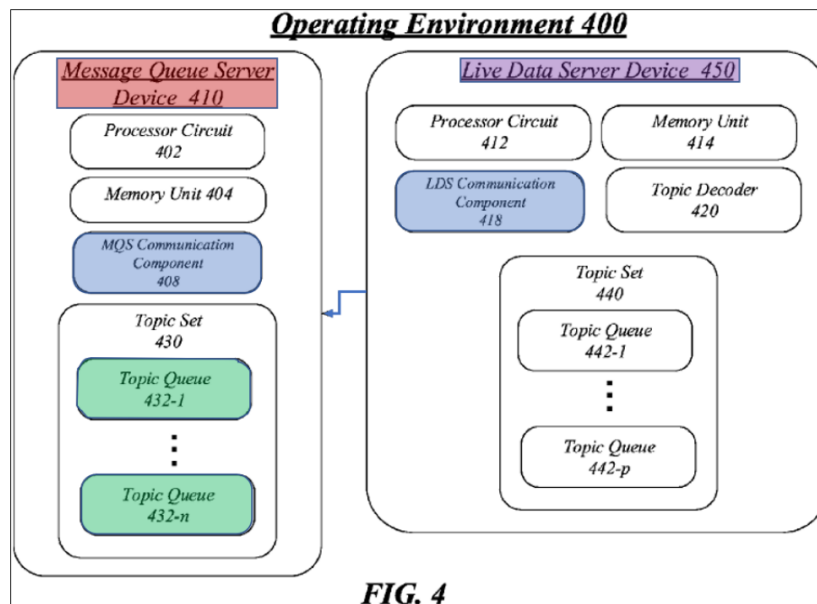
Patent Owner does not dispute Petitioner’s contentions for limitation 19.5.

We determine that Petitioner has shown preponderant evidence that Ellis teaches limitation 19.5. We further determine that Spivey teaches limitation 19.5 with the exception of “*periodically*” which is taught by Ellis. Ex. 1016 ¶¶ 44, 68, 175.

h) Limitation 19.6

Limitation 19.6 recites “C) at least one socket server communicatively coupled to the control server to:”

Petitioner contends that the combination of Ellis and Spivey discloses limitation 19.6. Pet. 35–37. Petitioner provides the following annotated version of Spivey’s Figure 4 to explain its contentions for limitation 19.6. *Id.* at 36.



Specifically, as shown in the above figure, Petitioner contends that Ellis in view of Spivey discloses a socket server (red) communicatively coupled to the control server (purple) (“*at least one socket server communicatively*

coupled to the control server”). Pet. 35. Petitioner argues that Ellis provides event information over a separate connection, to the user equipment. *Id.* at 35 (citing Ex. 1016 ¶¶ 39–41, Fig. 1). Petitioner relies on Spivey’s MQSD to receive, process, and provide live data to subscribed client devices substantially simultaneously. *Id.* at 35–36 (citing Ex. 1017 ¶¶ 35, 36, 45, 53–55, 96, 165, Figs. 3, 4; Ex. 1001 ¶¶ 347–348). Petitioner states that Spivey’s MQSD is communicatively coupled to the LDS through MQS and LDS communication components. *Id.* at 36–37 (citing Ex. 1017 ¶¶ 46, 54, 55). Petitioner asserts that the MQSD then organizes the received live data into topic queues dedicated to storing information about a specific game and shares the information “substantially simultaneously” to “the subscribed connected client devices.” *Id.* at 37 (citing Ex. 1017 ¶¶ 47, 52, 96). Petitioner contends that a POSA thus would have understood Spivey’s MQSD to disclose a socket server communicatively coupled to a control server. *Id.* (citing Ex. 1001 ¶ 375).

Patent Owner does not dispute Petitioner’s contentions for limitation 19.6.

We determine that Petitioner has shown preponderant evidence that Spivey’s MQSD teaches limitation 19.6.

i) Limitation 19.7

Limitation 19.7 recites that the socket server “receive[s] from the control server at least some of the first event information and at least some of the second event information.”

Petitioner argues that Spivey discloses limitation 19.7. Pet. 37–38. Specifically, Petitioner contends that Spivey’s LDS (“*control server*”) receives live data and transmits payloads to Spivey’s MQSD (“*socket*

server”). *Id.* at 37–38 (citing Ex. 1017 ¶¶ 55, 117, Fig. 10; Ex. 1001 ¶¶ 350, 376). This includes information from at least two different live events. (“*first event information*” “*second event information*”). *Id.* at 38 (citing *id.* §§ VIII.A.2.e–f). Live data payloads may include a score, player name, play, etc. *Id.* at 37.

Patent Owner does not dispute Petitioner’s contentions for limitation 19.7.

We determine that Petitioner has shown preponderant evidence that Spivey teaches limitation 19.7.

j) Limitation 19.8

Limitation 19.8 recites that the socket server is communicatively coupled to the control server to “transmit the at least some of the first event information to the first viewer client device of the first plurality of viewer client devices via a third Internet communication channel between at least one first event socket of the at least one socket server and the first viewer client device of the first plurality of viewer devices.”

Petitioner contends that Spivey discloses that the MQSD may push data from topic queues to subscribers of topics corresponding to those topic queues. Pet. 41–42 (citing Ex. 1017 ¶ 46; Ex. 1001 ¶ 355). Petitioner relies on Ellis to disclose that its SCS may be configured to provide real-time sports scores and game summary information to user equipment. *Id.* at 42 (citing Ex. 1016 ¶ 41; Ex. 1017 ¶ 46; Ex. 1001 ¶ 355).

From these disclosures, we agree with Petitioner that Ellis and Spivey together teach to “*transmit the at least some of the first event information to the first viewer client device of the first plurality of viewer client devices.*”

Petitioner contends that Spivey provides live event data in real-time. Pet. 39 (citing Ex. 1017, code (57)). Petitioner further asserts that the MQSD can be an internet server that communicates over wired and wireless networks including the Internet. *Id.* (citing Ex. 1017 ¶¶ 35, 179). Petitioner states that Spivey discloses that client devices may request and participate in a websocket connection which typically comprises a two-way connection between two entities. *Id.* at 42 (citing Ex. 1017 ¶¶ 43, 61). Petitioner further contends that the combination of Spivey and Ellis provide event information over a separate communication path 152 than the video signal 150. *Id.* (citing Ex. 1016⁴ ¶¶ 39–41, Fig. 1).

Petitioner contends that event information is provided via a connection between a topic queue and the first VCD. Pet. 40. Petitioner further contends that users can access the MQSD using a URL. *Id.* (citing Ex. 1017 ¶¶ 81–82). According to Petitioner, the user accesses the topic queue they wish to receive information from by using a text string (topic label or Event ID) associated with a topic queue. *Id.* (citing Ex. 1017 ¶ 179, Fig. 9 (“gamecenter.nfl.ravenssteelers”)). Petitioner asserts that a POSA thus would have understood that Ellis in view of Spivey discloses distributing event information from a first socket to a first user device of a first plurality of user devices over an internet connection. *Id.* (citing Ex. 1001 ¶ 358). In addition, Petitioner asserts that a POSA would have understood that the internet connection is established using a URL and text string identifying a uniquely addressable communication endpoint on the MQSD, where first event information is transmitted to a VCD. *Id.*

⁴ Petitioner cites this exhibit as “Ex. 1017.” From context, we infer this should have been “Ex. 1016.”

We agree with Petitioner that the combination of Ellis and Spivey discloses “*via a third Internet communication channel between at least one first event socket of the at least one socket server and the first viewer client device of the first plurality of viewer devices.*”

k) Limitation 19.9

Limitation 19.9 recites that the socket server is communicatively coupled to the control server to “transmit the at least some of the second event information to the first viewer client device of the second plurality of viewer client devices via a fourth Internet communication channel between at least one second event socket of the at least one socket server and the first viewer client device of the second plurality of viewer devices.”

Petitioner contends that Spivey discloses that the MQSD may push data from topic queues to subscribers of topics corresponding to those topic queues. Pet. 41–42 (citing Ex. 1017 ¶ 46; Ex. 1001 ¶ 355). Petitioner relies on Ellis to disclose that its SCS may be configured to provide real-time sports scores and game summary information to user equipment. *Id.* at 42 (citing Ex. 1016 ¶ 41; Ex. 1017 ¶ 46; Ex. 1001 ¶ 355).

From these disclosures, we agree with Petitioner that Ellis and Spivey together teach to “*transmit the at least some of the second event information to the first viewer client device of the second plurality of viewer client devices.*”

Petitioner contends that Spivey provides live event data in real-time. Pet. 39 (citing Ex. 1017, code (57)). Petitioner further asserts that the MQSD can be an internet server that communicates over wired and wireless networks including the Internet. *Id.* (citing Ex. 1017 ¶¶ 35, 179). Petitioner states that Spivey discloses that client devices may request and participate in

a websocket connection which typically comprises a two-way connection between two entities. *Id.* at 42 (citing Ex. 1017 ¶¶ 43, 61). Petitioner further contends that the combination of Spivey and Ellis provide event information over a separate communication path 152 than the video signal 150. *Id.* (citing Ex. 1016⁵ ¶¶ 39–41, Fig. 1).

Petitioner contends that event information is provided via a connection between a topic queue and the first VCD. Pet. 43. Petitioner argues that users can access the MQSD using a URL. *Id.* (citing Ex. 1017 ¶¶ 81–82). The user accesses the topic queue they wish to receive information from by using a text string (topic label or Event ID) associated with a topic queue. *Id.* (citing Ex. 1017 ¶ 179, Fig. 9 (“gamecenter.nfl.ravenssteelers”)). Petitioner asserts that a POSA thus would have understood that Ellis in view of Spivey discloses distributing event information from a first socket to a first user device of a first plurality of user devices over an internet connection. *Id.* (citing Ex. 1001 ¶ 358). In addition, Petitioner asserts that a POSA would have understood that the internet connection is established using a URL and text string identifying a uniquely addressable communication endpoint on the MQSD, where first event information is transmitted to a VCD. *Id.*

We agree with Petitioner that the combination of Ellis and Spivey discloses “*via a fourth Internet communication channel between at least one second event socket of the at least one socket server and the first viewer client device of the second plurality of viewer devices.*”

⁵ Petitioner cites this exhibit as “Ex. 1017.” From context, we infer this should have been “Ex. 1016.”

l) Conclusion for Claim 1

Petitioner has shown by a preponderance of the evidence that the combination of Ellis and Spivey discloses each and every limitation of claim 19.

5. Claim 20

Claim 20 recites

[20.0] The system of claim 19, wherein:

[20.1] in A), the plurality of media sources:

[20.2] provide a second copy of the first plurality of copies to a second viewer client device of the first plurality of viewer client devices via a third video Internet communication channel between the plurality of media sources and the second viewer client device of the first plurality of viewer client devices; and

[20.3] provide a second copy of the second plurality of copies to a second viewer client device of the second plurality of viewer client devices via a fourth video Internet communication channel between the plurality of media sources and the second viewer client device of the second plurality of viewer client devices; and

[20.4] in C), the at least one socket server:

[20.5] transmits at least the first event information to the second viewer client device of the first plurality of viewer client devices via a third event information Internet communication channel between the at least one first event socket of the at least one socket server and the second viewer client device of the first plurality of viewer devices; and

[20.6] transmits at least the second event information to the second viewer client device of the second plurality of viewer client devices via a fourth event information Internet communication channel between the at least one second event socket of the at least one socket server and the second viewer client device of the second plurality of viewer devices.

For limitations 20.0 and 20.1, Petitioner points to its showing for similar limitations in claim 19. Pet. 43 (citing *id.* § VIII.A.2).

For limitations 20.2 and 20.3, Petitioner contends that Ellis in view of

Spivey discloses these limitations, which are substantially the same as limitations 19.3 and 19.4, which recite providing a second copy of the first/second plurality of copies to a second VCD of the first/second VCDs via a third/fourth video Internet communication channel. Pet. 43–45 (citing *id.* § VIII.A.2.d; Ex. 1001 ¶¶ 379–380). In other words, Petitioner contends that Ellis in view of Spivey⁶ discloses providing individual copies, to multiple different users, of multiple different broadcaster’s live streams of digital content, related to different live sporting events, over individual ‘video’ Internet communication channels. *Id.* at 44–45 (citing *id.* §§ VIII.A.2.d; Ex. 1001 ¶ 380).

For limitation 20.4, Petitioner relies on its showing for limitation 19.6. Pet. 45 (citing *id.* § VIII.A.2.d; Ex. 1001 ¶ 380).

For limitations 20.5 and 20.6, Petitioner contends that Ellis in view of Spivey and Herzog⁷ discloses these limitations. Pet. 45–46 (citing Ex. 1001 ¶¶ 282–283). Petitioner contends that these limitations are substantially the same as limitation 19.8 and 19.9 and simply add transmitting first/second event information, to a second VCD, of the same first/second plurality of VCDs. *Id.* (citing Ex. 1016 ¶¶ 39, 41; Ex. 1017 ¶ 46; Ex. 1001 ¶ 383).

Patent Owner does not dispute Petitioner’s contentions for claim 20.

We determine that Petitioner has shown preponderant evidence that all limitations of claim 20 are taught by the combination of Ellis and Spivey.

⁶ Petitioner misidentifies Spivey here as “Herzog.” This is clearly an error because the discussion here is with regard to the Ellis-Spivey ground 1 and not the Herzog-Spivey-Ellis ground 2 which begins at page 60 of the Petition.

⁷ This mention of Herzog is a typographical error. See previous note.

6. *Claim 21*

Claim 21 recites

[21.0] The system of claim 19, wherein in C), the at least one socket server further:

[21.1] transmits and receives first chat information regarding the first live stream of digital content via at least one first chat/system event Internet⁸ communication channel between at least one first chat/system event socket of the at least one socket server and the first viewer client device of the first plurality of viewer client devices, wherein the at least one first chat/system event socket corresponds to the first chat information; and

[21.2] transmits and receives second chat information regarding the second live stream of digital content via at least one second chat/system event Internet communication channel between at least one second chat/system event socket of the at least one socket server and the first viewer client device of the second plurality of viewer client devices, wherein the at least one second chat/system event socket corresponds to the second chat information.

For this claim, Petitioner refers to its showing for claim 19. Pet. 46 (citing *id.* § VIII.A.2).

Petitioner contends that Ellis in view of Spivey discloses transmitting and receiving chat information via individual communication channels between a first/second socket and a first VCD of a first/second plurality of VCDs who are watching different events. Pet. 46–47 (citing *id.*

⁸ Petitioner contends that use of “Internet” in this claim, which does not appear in claim 19, is a result of a cut and paste error from claim 4. Pet. 45, n. 9. The parts of Spivey cited by Petitioner disclose that the MQSD may be an Internet server, so we need not consider further whether the occurrence of “Internet” in this claim is an error. *See, e.g., id.* at 42 (citing Ex. 1017 ¶ 35 (disclosing that the MQS may be an Internet server)).

§§ VIII.A.2.h, VIII.A.3, VIII.B.2.h; Ex. 1016 ¶¶ 41, 126, 132; Ex. 1001 ¶¶ 386–387).

Petitioner further asserts that Ellis in view of Spivey and Herzog⁹ discloses a socket for chat/system information, specifically, Spivey’s topic queues. Pet. 47 (citing *id.* § VIII.A.2.h; Ex. 1017 ¶¶ 48, 51, 52, 104; Ex. 1001 ¶ 388). Petitioner asserts that, thus, Spivey discloses a first/second chat/system event socket corresponding to the first/second chat information related to the first/second live stream of digital content. *Id.* at 47–48.

Patent Owner argues that Spivey’s topic queues push data to client devices, but do not receive data from them. PO Resp. 52–53 (citing Ex. 1017 ¶¶ 46, 49, 51; Ex. 2001 ¶ 143). According to Patent Owner, Petitioner proposes an entirely new functionality which neglects that they are first-in, first-out queues and that the LDAS sits between the message queue server and the client devices. *Id.* at 53 (citing Ex. 2001 ¶¶ 143, 207).

Petitioner responds that Ellis discloses the functionality of chat rooms related to first and second live streams of digital content; that Spivey discloses RabbitMQ as an MQSD, which are routinely used for chat room implementations; that Spivey discloses a dedicated chat/system event socket because it discloses multiple event sockets per live event with hierarchical topics; and that Spivey discloses bidirectional websocket connections between the topic queues and client devices, which support communications to and from the event sockets. Pet. Reply 12–13 (citing Ex. 1017 ¶ 61; Ex. 1064 ¶¶ 17–19).

Patent Owner responds that Spivey’s bidirectional websocket

⁹ See previous note.

connections are between the LDAS, not MQS, and client devices, and that Spivey does not disclose that its topic queues are bidirectional. PO Sur-Reply 10–11.

We do not agree with Patent Owner’s arguments. Spivey discloses that its MQSD receives requests from client devices to subscribe to a topic, provides the client devices with an address or connection to access subscribed topic queues in the MQS, and pushes data from topic queues to subscribers using that address or connection. *See, e.g.*, Ex. 1017 ¶¶ 46, 94, 96, 160, claims 2 and 6–8.

Furthermore, as Petitioner asserts, Spivey describes that its websocket connection may be a two-way connection between two entities that can send and receive data simultaneously. Pet. Reply 13 (citing Ex. 1017 ¶ 61; Ex. 1064 ¶ 19). Hence, communications between the MQSD and client devices are bidirectional.

In addition, Spivey teaches that the LDAS and MQSD may be implemented on the same server. Ex. 1017 ¶ 160. This undermines Patent Owner’s argument that the MQSD does not have the capability to communicate with client devices (if the LDAS can communicate on this server, so can the MQSD).

Moreover, Spivey teaches that the MQS can be implemented as open-source message broker software RABBITMQ™ which receives published messages and pushes them to clients that have subscribed to the topic queues. Ex. 1017 ¶ 58. Patent Owner argues that the client mentioned in Spivey is the LDAS, not client devices. PO Sur-Reply 9–10. However, Spivey discloses that operators of client devices, as well as the LDAS, may subscribe to topic queues. *See, e.g.*, Ex. 1017 ¶¶ 75, 84, 96, Fig. 9.

We further note that Patent Owner does not refute Petitioner’s assertion that the RabbitMQ server mentioned in Spivey was known to provide chat functionality. Pet. Reply 13; Ex. 1017 ¶ 58; Ex. 1064 ¶¶ 17–18. Spivey describes RabbitMQ as a “message broker” which supports Petitioner’s contention. Ex. 1017 ¶ 58.

In addition, Ellis defines “sporting event” and “sports-related content” consumable by user equipment devices in its system to include chat rooms. Pet. 46–48; Ex. 1016 ¶¶ 38, 40, 126, 132. Hence, even if Patent Owner was correct that Spivey’s topic queues (and the connections thereto) do not provide chat capability, the feature is clearly taught by the combination.

Hence, for the foregoing reasons, Patent Owner’s arguments do not undermine Petitioner’s showing for claim 21.

Accordingly, we determine that Petitioner has shown preponderant evidence that all limitations of claim 21 are disclosed by Ellis in view of Spivey.

7. *Claim 22*

Claim 22 recites

- [22.0] The system of claim 21, wherein:
- [22.1] in A), the plurality of media sources:
- [22.2] provide a second copy of the first plurality of copies to a second viewer client device of the first plurality of viewer client devices via a third video Internet communication channel between the plurality of media sources and the second viewer client device of the first plurality of viewer client devices; and
- [22.3] provide a second copy of the second plurality of copies to a second viewer client device of the second plurality of viewer client devices via a fourth video Internet communication channel between the plurality of media sources and the second viewer client device of the second plurality of viewer client devices; and
- [22.4] in C), the at least one socket server:

[22.5] transmits at least the first event information of the first event information to the second viewer client device of the first plurality of viewer client devices via a third event information Internet communication channel between the at least one first event socket of the at least one socket server and the second viewer client device of the first plurality of viewer devices;

[22.6] transmits and receives the first chat information regarding the first live sporting event video-based commentary included in the first live stream of digital content via at least one third chat/system event Internet communication channel between the at least one first chat/system event socket of the at least one socket server and the second viewer client device of the first plurality of viewer client devices;

[22.7] transmits at least the second event information of the second event information to the second viewer client device of the second plurality of viewer client devices via a fourth event information Internet communication channel between the at least one second event socket of the at least one socket server and the second viewer client device of the second plurality of viewer devices; and

[22.8] transmits and receives the second chat information regarding the second live sporting event video-based commentary included in the second live stream of digital content via at least one fourth chat/system event Internet communication channel between the at least one second chat/system event socket of the at least one socket server and the second viewer client device of the second plurality of viewer client devices.

For limitation 20.0, Petitioner refers to claim 21. Pet. 48 (citing *id.* § VIII.A.4).

For limitations 22.1 to 22.5 and 22.7, Petitioner contends that Ellis in view of Spivey discloses these limitations, which are substantially the same as limitations 20.1 to 20.6 except that limitations 22.5 and 22.7 contain a repeated phrase, which does not change their meaning. Pet. 48 (citing *id.* § VIII.A.3; Ex. 1001 ¶ 390).

For limitations 22.6 and 22.8, Petitioner contends that these limitations are substantially the same as limitation 21.1 and 21.2, but further require that the first/second chat information is sent to a second VCD of the first/second plurality of VCDs. Pet. 48. Petitioner contends that the slight difference between “first live sporting event video-based commentary” versus “first live stream of digital content” does not change the meaning of the claim as already defined in claim 21 from which claim 22 depends. *Id.* at 48–49 (citing *id.* § VIII.A.4.a; Ex. 1001 ¶ 291).

Patent Owner does not dispute Petitioner’s contentions for claim 22.

We determine that Petitioner has shown preponderant evidence that all limitations of claim 22 are disclosed by the combination of Ellis and Spivey.

8. *Claim 23*

Claim 23 recites

[23.0] A method for providing, to a first viewer client device, a first copy of a first live stream of digital content relating to a first live sporting event, the method comprising:

[23.1] A) providing the first copy to the first viewer client device via a first video communication channel between at least one media source and the first viewer client device;

[23.2] B) retrieving, via the Internet, first event information germane to the first live sporting event; and

[23.3] C) transmitting the first event information to at least the first viewer client device via a first event information communication channel between at least one first event socket of at least one socket server and the first viewer client device, wherein the at least one first event socket corresponds to the first event information germane to the first live sporting event.

For limitation 23.0, Petitioner contends that it is substantially the same as limitation 19.0 but recites a method implementing the system of claim 19. Pet. 49 (citing *id.* § VIII.A.2; Ex. 1001 ¶ 392).

For limitation 23.1, Petitioner contends that it is substantially the same as limitation 19.3. Pet. 49 (citing *id.* §§ VIII.A.2.b–d; Ex. 1001 ¶ 393).

For limitation 23.2, Petitioner contends that the limitation is substantially the same as limitation 19.5. Pet. 50 (citing *id.* § VIII.A.2.e; Ex. 1001 ¶ 394).

For limitation 23.3, Petitioner contends that it is substantially the same as limitation 19.8. Pet. 50 (citing *id.* § VIII.A.4; Ex. 1001 ¶ 397).

Patent Owner does not dispute Petitioner’s contentions.

We determine that Petitioner has shown preponderant evidence that all limitations of claim 23 are disclosed by the combination of Ellis and Spivey.

9. Claim 24

Claim 24 recites

[24.0] The method of claim 23, further comprising:

[24.1] D) transmitting and receiving first chat information regarding the first live sporting event via at least one first chat/system event Internet communication channel between at least one first chat/system event socket of the at least one socket server and the first viewer client device, wherein the at least one first chat/system event socket corresponds to the first chat information.

For limitation 24.0, Petitioner relies on its contentions for claim 23 asserting that the combination of Ellis and Spivey discloses the limitation. Pet. 50 (citing *id.* § VIII.A.6).

For limitation 24.1, Petitioner contends that Ellis discloses the limitation for substantially the same reasons stated for limitation 21.1. Pet. 50 (citing *id.* § VIII.A.4; Ex. 1001 ¶ 397).

Patent Owner does not dispute Petitioner’s contentions specific to claim 24.

We determine that Petitioner has shown preponderant evidence that the limitations of claim 24 are disclosed by the combination of Ellis and Spivey.

10. Claim 25

Claim 25 recites

[25.0] The method of claim 23, wherein B) comprises:
[25.1] B1) periodically updating the first event information; and
[25.2] B2) for each updating of the first event information, queueing an asynchronous message including the updated first event information for transmission to the at least one first event socket of the at least one socket server.

For limitation 25.0, Petitioner relies on its contentions for claim 23. Pet. 51 (citing *id.* § VIII.A.6).

For limitation 25.1, Petitioner contends that Ellis and Spivey both disclose this limitation. Pet. 51 (citing Ex. 1001 ¶ 399). According to Petitioner, both Ellis and Spivey disclose a control server periodically retrieving real-time event information from a provider. Pet. 51 (citing *id.* § VIII.A.2.e; Ex. 1017 ¶ 48). Petitioner contends claim 25 further requires that the system update the control server's memory storage system with the event information details that were periodically retrieved. *Id.* (citing Ex. 1001 ¶ 623). Petitioner contends that Ellis and Spivey disclose a memory system including a database communicatively coupled to a control server. *Id.* at 51–53 (citing Ex. 1016 ¶¶ 42–43, 47, Fig. 1; Ex. 1017 ¶¶ 56–57, 161, 167, Fig. 4; Ex. 1001 ¶ 360). Petitioner contends that it would have been obvious to store (update) information in the LDS for redundancy. *Id.* at 53 (citing Ex. 1001 ¶¶ 362, 369).

For limitation 25.2, Petitioner contends that Ellis in view of Spivey

discloses this limitation. Pet. 54–55. Petitioner asserts that this limitation requires that for each event information update at the control server, the control server readies a message including the first event information that will be processed and sent to the socket server’s first event socket in turn. *Id.* at 54 (citing Ex. 1001 ¶ 368).

Petitioner contends, in the same way, Spivey’s LDS D may have its own topic set and topic queues, and may sort live event data in data payloads of received messages into topic queues for transmission to the MQSD’s topic queues. Pet. 54–55 (citing Ex. 1017 ¶¶ 55–56, 67, Fig. 4).

Petitioner further contends that when the LDS D places updated real-time data in topic queues for transmission to the MQSD’s topic queues, it is queueing an asynchronous message including the updated first event information for transmission to the first event socket of the socket server. Pet. 55 (citing Ex. 1017 ¶ 51; Ex. 1001 ¶ 369); *see also* Ex. 1016 ¶¶ 44, 68, 175.

Patent Owner does not dispute Petitioner’s contentions specific to claim 25.

We determine that Petitioner has shown preponderant evidence that the combination of Ellis and Spivey discloses the limitations of claim 25.

11. Claim 27

Claim 27 recites

[27.0] A system for providing, to a first viewer client device, a first copy of a first live stream of digital content relating to a first live sporting event, the system comprising:

[27.1] means for providing the first copy to the first viewer client device via a first video communication channel;

[27.2] means for retrieving, via the Internet, first event information germane to a first live sporting event; and

[27.3] means for transmitting the first event information to

at least the first viewer client device via a first event information communication channel that is different from the first video communication channel.

For limitation 27.0, Petitioner contends that this limitation is disclosed by Ellis in view of Spivey for the reasons stated for limitation 19.0. Pet. 55 (citing *id.* § VIII.A.2.a). In addition, Petitioner contends that Ellis’s Figure 30 discloses this limitation. *Id.* at 55–56 (citing Ex. 1016, Fig. 30; Ex. 1001 ¶ 400).

For limitation 27.1, Petitioner refers to its contentions for limitations 19.1 to 19.4 and Ellis’s Figure 30. Pet. 56 (citing *id.* §§ VIII.A.2.b–d; Ex. 1016, Fig. 30).

For limitations 27.2 and 27.3, Petitioner refers to its contentions for limitations 19.5 to 19.9 and Ellis’s Figure 30. Pet. 56–57 (citing *id.* §§ VIII.A.2.e–h; Ex. 1016, Figs. 30, 32; Ex. 1017 Figs. 12–13; Ex. 1001 ¶ 402).

Patent Owner contends that the “means for transmitting” of limitation 27.3 includes an “event socket” which is not disclosed by the combination of Ellis and Spivey. PO Resp. 25–43.

We have already considered this argument and concluded that the combination of Ellis and Spivey discloses an “event socket” as claimed. *See* § II.D.4.a, *supra*.

Patent Owner does not otherwise dispute Petitioner’s contentions for claim 27.

We determine that Petitioner has shown preponderant evidence that the combination of Ellis and Spivey discloses the limitations of claim 27.

12. Claim 28

Claim 28 recites

[28.0] The system of claim 27, further comprising:

[28.1] means for transmitting and receiving first chat information regarding the first live sporting event via at least one first chat/system event Internet communication channel that is different from the first video communication channel and the first event information communication channel.

For limitation 28.0, Petitioner refers to its showing for claim 27.

Pet. 57 (citing *id.* § VIII.A.9).

For limitation 28.1, Petitioner refers to its showing for claim 21.

Pet. 58 (citing *id.* § VIII.A.4.a). In addition, Petitioner contends that Ellis's Figures 30 and 32 and Spivey's Figures 12 and 13 also disclose this limitation. *Id.* (citing Ex. 1016, Figs. 30, 32; Ex.1017, Figs. 12–13; Ex. 1001 ¶ 404).

Patent Owner does not dispute Petitioner's contentions specific to claim 28.

We determine that Petitioner has demonstrated preponderant evidence that the combination of Ellis and Spivey discloses the limitations of claim 28.

13. Claim 29

Claim 29 recites

The system of claim 27, wherein the means for retrieving includes means for updating the first event information and queueing an asynchronous message including the updated first event information for transmission on the first event information communication channel.

For limitation 29.0, Petitioner refers to its showing for claims 25 and 27. Pet. 58 (citing *id.* §§ VIII.A.8, VIII.A.9).

Patent Owner does not dispute Petitioner's contentions for claim 29.

We determine that Petitioner shows preponderant evidence that the combination of Ellis and Spivey discloses limitation 29.0.

14. Claim 30

Claim 30 recites

[30.0] The system of claim 27, wherein the means for providing the first copy to the first viewer client device via a first video communication channel comprises:

[30.1] an HTTP live streaming (HLS) mother server to receive a first HLS file suite representing the first live stream of digital content; and

[30.2] a plurality of HLS child servers, communicatively coupled to the HLS mother server and an HLS content delivery network (HLS CDN), to provide the first copy to the first viewer client device via the first video communication channel between the HLS CDN and the first viewer client device, wherein the first copy is based on the first HLS file suite received by the HLS mother server.

For limitation 30.0, Petitioner refers to its showing for claim 27. Pet. 58 (*id.* § VIII.A.9).

For limitation 30.1, Petitioner contends that Ellis discloses this limitation. Pet. 58–59. Specifically, Petitioner asserts that Ellis teaches streaming video from content source 130 to a client device over the internet using standard protocols including HLS streaming. *Id.* (citing Ex. 1016 ¶¶ 40, 74).

For limitation 30.2, Petitioner contends that Ellis discloses this limitation. Pet. 59–60 (citing Ex. 1001 ¶ 409). Specifically, Petitioner contends that Ellis discloses a generic server and system that streams copies of an HLS file suite to user devices over a communication channel between the CDN and user device. Pet. 60

(citing *id.* §§ VIII.A.2, VIII.A.12.b). Petitioner further contends that Ellis discloses a content source that provides video feeds using multiple systems at multiple facilities, e.g., child servers. *Id.* (citing Ex. 1016 ¶ 47; Ex. 1001 ¶ 410). Petitioner contends that Ellis discloses an entire media system or network which necessarily would use conventional CDN. *Id.* (citing Ex. 1001 ¶ 410).

Patent Owner does not dispute Petitioner’s contentions concerning claim 30.

We determine that Petitioner has shown preponderant evidence that Ellis discloses the limitations of claim 30.

15. Objective Indicia of Nonobviousness and Obviousness

We next consider Patent Owner’s evidence concerning objective indicia of nonobviousness. PO Resp. 65–75; *see Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1047–48 (Fed. Cir. 2016) (en banc). Objective evidence of nonobviousness “may often be the most probative and cogent evidence in the record” and “may often establish that an invention appearing to have been obvious in light of the prior art was not.” *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012).

For objective indicia of nonobviousness to be accorded substantial weight, “its proponent must establish a nexus between the evidence and the merits of the claimed invention.” *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). “[T]here is no nexus unless the evidence presented is ‘reasonably commensurate with the scope of the claims.’” *Id.* (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). The

patentee “bears the burden of showing that a nexus exists.” *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999).

A rebuttable presumption of nexus arises “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). Whether a rebuttable presumption of nexus arises “turns on the nature of the claims and the specific facts.” *Teva Pharm. Int’l GmbH v. Eli Lilly & Co.*, 8 F.4th 1349, 1362 (Fed. Cir. 2021). Absent a presumption of nexus, the patentee may prove nexus by showing that the objective evidence resulted directly from “the unique characteristics of the claimed invention.” *Fox Factory*, 944 F.3d at 1373–74; see *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996). “Where the offered secondary consideration actually results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention,” meaning that “there must be a nexus to some aspect of the claim not already in the prior art.” *In re Kao*, 639 F.3d 1057, 1068–69 (Fed. Cir. 2011).

a) *Long-Felt Need*

“Evidence of a long-felt but unresolved need can weigh in favor of the non-obviousness of an invention because it is reasonable to infer that the need would not have persisted had the solution been obvious.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1056 (Fed. Cir. 2016). Patent Owner asserts that there was a long-felt need for a system that “allows broadcasters to deliver synchronized, low-latency video and audio content with scalable, flexible access for different types of views and service qualities.” PO

Resp. 66. Patent Owner argues that the claimed invention of the '687 patent satisfied this long felt need by “allow[ing] for enhanced live video streaming using a novel one-to-many socket architecture, allowing multiple viewer devices to receive synchronized, contextually matched event information from a single socket server.” *Id.* at 67. According to Patent Owner, “the inventors were the first to recognize that incorporating dedicated socket servers, web servers, and control servers within a livestreaming server architecture could improve network functionality, enabling scalable, low-latency viewing of live events and commentary by many viewers.” *Id.* at 67–68.

As support, Patent Owner relies on the declaration of Dr. Rubin. PO Resp. 66–68 (citing Ex. 2001 ¶¶ 313–317). Dr. Rubin explains that “[u]nlike the systems and methods described in the prior art, . . . [t]he '687 patent describes a socket architecture that allows multiple view client devices to receive information from a dedicated event information channel over an ‘event socket’ for that event.” Ex. 2001 ¶¶ 77–79.

Considering the totality of the evidence, we find Patent Owner has not demonstrated that a long-felt but unresolved need existed for the claimed invention. *See Apple v. Samsung*, 839 F.3d at 1056. As Petitioner points out, although Patent Owner argues that there is a long-felt need for a system that “allows broadcasters to deliver synchronized, low-latency video and audio content . . . ” (PO Resp. 66), Patent Owner does not contest Petitioner’s showing that Ellis also discloses “a video streaming system that provided event information over a separate channel, which is not hard embedded in the video stream.” Pet. Reply 23.

Further, as Petitioner also points out, “representative claim 19 simply requires a media source to receive the video stream and distribute it.” Pet. Reply 23. In fact, during Oral Argument, although Patent Owner argues that its invention is “the synchronization and the latency improvements through that one-to-many socket architecture,” Patent conceded that the claims “could be broader than that.” Tr. 44:24–46:16. We agree with Petitioner’s argument that the “claim language” does not “relate to any synchronized, low-latency, scalable, flexible, or new and improved video streaming technique.” Pet. Reply 23.

As Petitioner points out, Patent Owner does not cite to any evidence of long-felt but unresolved needs. Pet. Reply 23 (citing PO Resp. 67–68). In particular, Patent Owner merely provides conclusory statements that, prior to the claimed invention, “conventional video streaming systems” include “hard-embedded event information,” and that “[t]he claimed invention satisfied the long-felt need for an innovative system.” PO Resp. 66–68.

Thus, considering the totality of the evidence, we agree with Petitioner that Patent Owner has failed to establish that there was a long-felt but unresolved need for the claimed invention.

b) Industry Praise

Evidence that the industry praised a claimed invention or a product that embodies the patent claims weighs against an assertion that the same claim would have been obvious. *WBIP, LLC v Kohler Co.*, 829 F.3d 1317, 1334 (Fed. Cir. 2016). Patent Owner contends that it has “earned numerous accolades such as being a finalist in Sports Tech Tokyo, the Yahoo! Sports Technology Awards, and Sports Business Journal’s Best in Sports

Technology.” PO Resp. 68 (citing Ex. 2009). Further, according to Patent Owner, its technology and platform “have been featured in dozens of publications and TV broadcasts.” *Id.* (citing Ex. 2008; Ex. 2009). Patent Owner contends that “[f]ormer NBA commissioner David Stern opined in an article that states ‘SportsCastr.Live will allow a budding sportscaster to overlay streams carrying enhancements to update in real time (e.g., live betting lines) and lend a professional look to the presentation.’” *Id.* at 69 (Ex. 2006; Ex. 2007). Patent Owner contends that “[t]he benefits and advantages highlighted by the industry result directly from the claims.” *Id.*

We find Patent Owner has not provided sufficient evidence showing the industry praised a claimed invention or a product that embodies the patent claims. *WBIP*, 829 F.3d at 1334. In particular, other than Patent Owner’s mere conclusory statement that the benefits and advantages highlighted by the industry “result directly from the claims” (PO Resp. 69), we see no evidence in the record that the subject matter specifically recited by claim 1 of the ’687 patent, for example, was the object of the praise. That is, Patent Owner does not explain how the relied-upon praise particularly relates to the claims of the ’687 patent. *Id.*

For Patent Owner’s evidence concerning objective indicia of non-obviousness to be considered, Patent Owner must establish a nexus between the evidence concerning objective indicia of non-obviousness and the merits of the claimed invention. *See ClassCo*, 838 F.3d at 1220.

We find availing Petitioner’s argument that the evidence of industry praise submitted by Patent Owner does not “explain[] how those awards related to any embodying product, much less any relation between the award and the ’687’s claims.” Pet. Reply 23–24. For example, although Patent

Owner notes that it was a finalist for “Best App,” as Petitioner argues, Patent Owner “does not explain how that award is related to the claimed ‘inventive server and memory storage architecture.’” *Id.* at 24.

Although Patent Owner also relies on the opinion of former NBA commissioner David Stern, Petitioner contends that “the late David Stern was an investor,” and thus, “in no way provides evidence of industry praise.” Pet. Reply 24. We are persuaded by Petitioner’s contention that the opinion from an investor is insufficient evidence of “*industry* praise.” *Id.* (emphasis added). Thus, we find this evidence from Mr. Stern would be entitled to little weight in our analysis.

Since Patent Owner has not provided evidence that a product subject to industry praise embodies the claimed features and is coextensive with the claims, it is not entitled to presumption of nexus. Absent a presumption of nexus, the Board considers whether the patentee has demonstrated a legally and factually sufficient connection between the evidence and the claimed invention. *See Fox Factory*, 944 F.3d at 1373–74; *In re Huang*, 100 F.3d at 14. Here, Patent Owner also does not demonstrate any legally and factually sufficient connection of Patent Owner’s provided evidence to the claims of the ’687 patent. *See generally* PO Resp. 68–69.

Thus, considering the totality of the evidence, we agree with Petitioner that Patent Owner has failed to establish that there was industry praise of the claimed invention.

c) Copying

Patent Owner contends that “Petitioner gained knowledge of Patent Owner’s products under the guise of exploring partnership, but in reality, was developing its own products by copying Patent Owner’s patented

products.” PO Resp. 70. In particular, Patent Owner references emails from “Ben Turner” from “geniussports.com” as “evidence” that “Petitioner has been aware of and praised Patent Owner’s patented products,” and contends that this copying shows that the challenged claims are not obvious. *Id.* at 69–71 (citing Exs. 2015, 2016).

Petitioner denies Patent Owner’s “unsubstantiated accusations that Petitioner copied its products or was aware of its patents.” Pet. Reply 24. Petitioner contends that the two emails that Patent Owner provides “show Petitioner, at most, saw [Patent Owner’s] basic features and spoke politely over email correspondence.” *Id.* at 24–25.

Based on the record before us, we find that Patent Owner’s arguments that Petitioner “was developing its own products by copying Patent Owner’s patented products” (PO Resp. 70) are conclusory without sufficient supporting evidence. Although Patent Owner provides as evidence the two emails from Ben Turner (Exs. 2015, 2016), Patent Owner does not reference any specific product allegedly being copied that embodies and is coextensive with the claimed features, nor does Patent Owner show that the evidence is a direct result of unique characteristics of the claimed invention. PO Resp. 70. We find that these emails alone do not support sufficiently that Petitioner had access to a patented product, and we are left to speculate as to what Patent Owner asserts has been copied and how. We decline to “play archeologist with the record” in order to understand Patent Owner’s arguments. *Gen. Access Sols., Ltd. v. Sprint Spectrum L.P.*, 811 F. App’x 654, 657–58 (Fed. Cir. 2020).

Thus, considering the totality of the evidence, we agree with Petitioner that Patent Owner has failed to sufficiently establish that there was copying of the claimed invention.

d) Commercial Success

Patent Owner then contends that it “implemented the claimed invention of the ’687 patent to meet the growing demand or improved user interactions with livestream broadcasters.” PO Resp. 71. According to Patent Owner, “the extensive promotion by Patent Owner of the improved user experience and revenue generation underscores how the patented technology drives demand and commercial success of the patented products.” *Id.* at 74.

Petitioner points out that Patent Owner “does not discuss or cite any sales information of any patented product in any market.” Pet. Reply 25 (citing PO Resp. 71–75). Further, Petitioner contends that Patent Owner “does not explain how there is a nexus between the nonexistent sales and the patented invention’s claims.” *Id.* (citing PO Resp. 71–73). According to Petitioner, Patent Owner advertised its “‘custom-tailor[ing] for the unique needs of sports publishers’ and ‘new ways to increase engagement’” as selling points, but “not any patented, allegedly ‘inventive server and memory storage architecture.’” *Id.* (quoting Ex. 2011) (alteration in original).

We find Patent Owner has not provided sufficient evidence showing commercial success of a claimed invention or a product that embodies the patent claims. *WBIP*, 829 F.3d at 1334. In particular, other than Patent Owner’s mere conclusory statement that the extensive promotion by Patent Owner of the improved user experience and revenue generation underscores

how the patented technology drives demand and commercial success (PO Resp. 74), we see no evidence in the record that the subject matter specifically recited by claim 19 of the '687 patent, for example, was the object of commercial success. That is, Patent Owner does not explain how any commercial success particularly relates to the claims of the '687 patent. *Id.* As Petitioner points out, Patent Owner does not discuss or even cite any sales information, and its advertisements are not directed to the claimed invention. Pet. Reply 25.

Patent Owner must establish a nexus between the evidence concerning objective indicia of non-obviousness and the merits of the claimed invention. *See ClassCo*, 838 F.3d at 1220.

Since Patent Owner has not provided evidence that a product subject to commercial success embodies the claimed features and is coextensive with the claims, it is not entitled to presumption of nexus. Further, Patent Owner also does not demonstrate any legally and factually sufficient connection of Patent Owner's provided evidence to the claims of the '687 patent. *See generally* PO Resp. 65–75.

Thus, considering the totality of the evidence, we agree with Petitioner that Patent Owner has failed to sufficient establish that there was commercial success of the claimed invention.

a) Simultaneous Invention

Petitioner contends that the “sheer number” of independently made simultaneous inventions within a short space of time are persuasive indicia of obviousness. Pet. 88–89 (citing Ex. 1001 ¶ 768; *Geo. M. Martin v. Alliance Machine*, 618 F.3d 1294, 1304–05 (Fed. Cir. 2010)). Petitioner has not shown that the alleged simultaneous inventions are commensurate in

scope with the '687 patent's claims. In any case, this evidence weighs, if at all, toward Petitioner's position.

b) Objective Indicia of Non-Obviousness Conclusion

For these reasons, although we have considered Patent Owner's evidence of objective indicia of non-obviousness, we accord it little weight, and do not find that it outweighs the countervailing evidence supporting a conclusion of obviousness.

16. Conclusion for Ground 1

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that a POSA would have been motivated to combine Ellis and Spivey with a reasonable expectation of success, and that Petitioner has demonstrated that each and every limitation of claims 19–25 and 27–30 are taught or suggested by the combination despite Patent Owner's assertion of objective indicia of nonobviousness, which we find unpersuasive.

E. Ground 2: Obviousness over Herzog, Spivey, and Ellis

Petitioner contends that claims 19–25 and 27–30 are obvious under 35 U.S.C. § 103 over the combination of Herzog in view of Spivey and Ellis. Pet. 60–88. Patent Owner argues that these claims are not unpatentable over Petitioner's combination. PO Resp. 53–65.

We consider the disclosure of Herzog and Petitioner's motivation to combine Herzog, Spivey, and Ellis. We determine that a POSA would not have combined them as Petitioner proposes. Consequently, we determine that claims 19–25 and 27–30 would not have been obvious under this ground for the following reasons.

1. Herzog (Ex. 1015)

Herzog is titled “Time Synchronization of Video and Data Inside a Mobile Device.” Ex. 1015, code (54). Herzog discloses a video player tablet or mobile device that includes a processor configured to receive live video and audio data for display on the tablet. *Id.* at code (57). The processor is also configured to receive live meta-data from the communication network and format it for display on the tablet or device. *Id.* The processor is further configured to select meta-data and time synchronize the selected meta-data with the video and audio data for simultaneous display on the tablet or mobile device. *Id.*

Herzog’s Figure 4 is reproduced below.

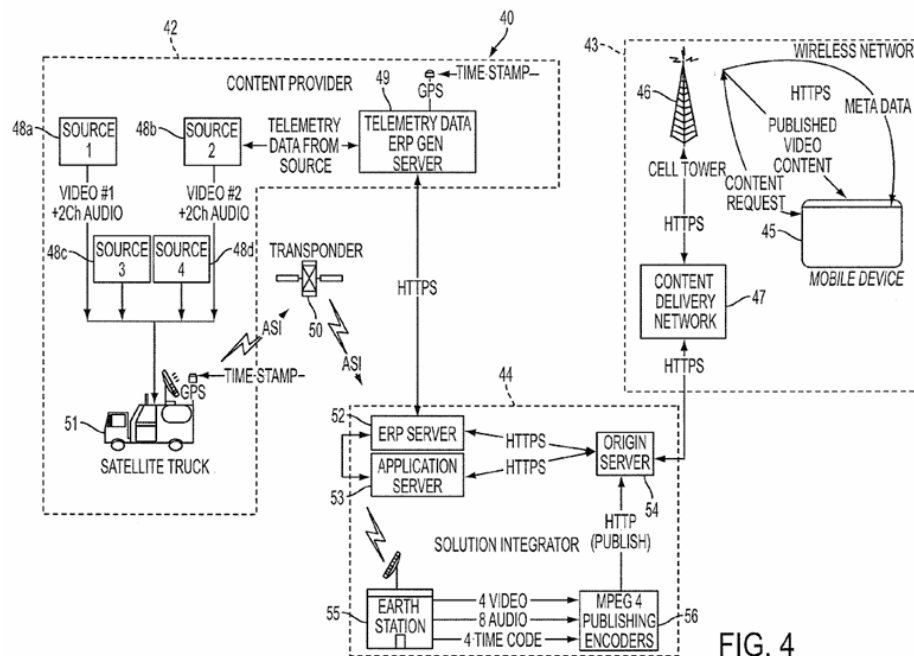


FIG. 4

Figure 4 shows a synchronization method incorporated in system 40 providing communications to mobile device 45 via network 43. *Id.* ¶ 43. Contentprovider 42 provides video and audio data of an event occurring in real time and telemetry data (meta-data) to mobile device 45. *Id.* ¶ 45.

Content provider 42 includes an Enhanced Result Protocol (ERP) generator server 49 which receives telemetry data (meta-data) from multiple sources 48a–48d. *Id.* ¶ 47. ERP generator server 49 formats the meta-data into HTTPS format and transmits it to solution integrator 44. *Id.* Solution integrator 44 publishes video, audio, and meta-data onto content delivery network 47 via origin server 49 for presentation to users of mobile devices such as mobile device 45. *Id.* ¶¶ 48, 49.

2. *Reasons to Combine*

In the Institution Decision, the panel preliminarily found that, on the record and their understanding of the art at that time, “Petitioner[] put forth a sufficient rationale for combining Ellis and Spivey with Herzog” for purposes of institution. Inst. Dec. 62. However, on further review of the Petition and further consideration of the parties’ briefing on this issue and the relevant case law, and based on the complete record before us, we now conclude otherwise. *Cf. Fanduel, Inc. v. Interactive Games LLC*, 966 F.3d 1334, 1340 (Fed. Cir. 2020) (“There is nothing inherently inconsistent about the Board instituting IPR on obviousness grounds and then ultimately finding that the petitioner did not provide preponderant evidence that the challenged claim was obvious.”); *see In re Magnum Oil Tools*, 829 F.3d at 1376 (“[T]he decision to institute and the final written decision are ‘two very different analyses,’ and each applies a ‘qualitatively different standard.’” (quoting *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016))). In particular, we determine that Petitioner’s proffered reasons for combining Herzog and Spivey to achieve the subject limitations lack rational underpinning, as discussed below.

Petitioner contends that a POSA would have been motivated to combine Herzog, Spivey, and Ellis. Pet. 60–66. Specifically, Petitioner contends that a POSA would have combined Herzog’s different views of the same live event and meta-data from which the user can select. *Id.* at 61. Petitioner further asserts that incorporation of Spivey’s websocket server would have been desirable to achieve full-duplex communication between a client and remote host with low latency by substituting it for Herzog’s HTTP server. *Id.* at 62–63 (citing *id.* § IV.B; Ex. 1017 ¶¶ 27, 28, 35, 43, 61, 74, 92, 96; Ex. 1001 ¶¶ 142–144).

We agree with Patent Owner, however, that adding additional views of the same live event and associated meta-data would not improve latency but diminish it because more data transmission (for multiple views of the same event) generally produces more latency. PO Resp. 54–56.

In addition, Patent Owner asserts that Herzog requires different delays between the video/audio stream and meta-data stream in order to synchronize them. PO Resp. 55–56 (citing Ex. 2001 ¶¶ 286, 287, 293). We agree with Patent Owner’s argument because reducing latency also reduces the time in which to perform synchronization, and Petitioner does not sufficiently address this trade off posed by the manner in which it combines the references.

Patent Owner further notes that accelerating meta-data delivery would add unnecessary processing burden and undermine synchronization because the primary source of latency in Herzog is not the meta-data stream, but the video stream. PO Sur-Reply 14 (citing Ex. 1015 ¶¶ 58, 70–77). According to Patent Owner, reducing data-only latency would not reduce latency because the metadata is slaved to the video/audio data. *Id.* at 14–15 (citing

Ex. 1015 ¶ 58). Patent Owner further argues that early arrival of data requires buffering to manage. *Id.* at 15.

We agree with Patent Owner that a POSA would not have combined Herzog and Spivey for the reasons Petitioner proposes in this ground. Although Petitioner points to reasons to combine that we found persuasive in ground 1, here, Petitioner emphasizes improvement in latency as the central reason to combine. Pet. 59–64. As presented, we determine that Petitioner’s reasons to combine Herzog with Spivey are, taken as a whole, unpersuasive. *See SAS Institute, Inc. v. Iancu*, 584 U.S. 357, 364 (2018) (Ppetitioner defines contours of proceeding).

3. *Conclusion for Ground 2*

Consequently, we determine that Petitioner has not established by a preponderance of the evidence a reason to combine Herzog, Spivey, and Ellis. Accordingly, claims 19–25 and 27–30 are not unpatentable as obvious over the combination of Herzog, Spivey, and Ellis.

F. Motion to Exclude

Ppetitioner moves to exclude “paragraph 315¹⁰” of Dr. Rubin’s Declaration (Ex. 2001) and Exhibits 2006–2016 submitted therewith because each item “relates to Patent Owner’s unreliable and impermissible evidence of secondary indicia of non-obviousness.” Exclude Mot. 1. Petitioner argues that Dr. Rubin’s testimony “relies on inadmissible hearsay evidence (Exhibits 2015 and 2016).” *Id.* Patent Owner then argues that Exhibits 2006, 2007, 2010, 2015, and 2016 are “unauthenticated documents under

¹⁰ Petitioner misidentifies the relevant paragraph of Dr. Rubin’s declaration as “paragraph 315” when it appears that paragraph 319 was intended because it is the only paragraph that discusses the emails at issue.

[Federal Rules of Evidence] FRE 901” and “inadmissible hearsay,” while Exhibits 2008, 2009, and 2011–2014 are “unauthenticated documents under FRE 901.” *Id.* at 1–2.

Patent Owner responds by arguing that “Petitioner has failed to establish any basis to exclude the challenged evidence.” Exclude Opp. 1. Petitioner argues that “concerns about authentication or hearsay are typically handled through weight, not wholesale exclusion.” *Id.* We agree with Patent Owner.

Although Petitioner argues that a portion of Dr. Rubin’s Declaration and Exhibits submitted therewith should be excluded because they relate to “unreliable and impermissible evidence” (Exclude Mot. 1–2), such arguments are directed to the evidence’s weight, rather than its admissibility. As the Board has previously indicated, “there is a strong public policy for making all information filed in an administrative proceeding availing to the public.” *See Liberty Mut. Ins. Co. v. Progressive Cas. Ins. Co.*, CBM2012-00010, Paper 59 at 40 (PTAB February 24, 2014). Here, as to Dr Rubin’s testimony and supporting Exhibits, the Board, sitting as a non-jury tribunal with administrative expertise, is well positioned to determine and assign appropriate weight to evidence presented. *See, e.g., Donnelly Garment Co. v. NLRB*, 123 F.2d 215, 224 (8th Cir. 1941) (“One who is capable of ruling accurately upon the admissibility of evidence is equally capable of sifting it accurately after it has been received . . .”). Thus, in this proceeding, the better course is to have a complete record of the evidence to facilitate public access as well as appellate review. *See id.* (“If the record on review contains not only all evidence which was clearly admissible, but also all evidence of doubtful admissibility, the court which is called upon to review the case can

usually make an end of it, whereas if evidence was excluded which that court regards as having been admissible, a new trial or rehearing cannot be avoided.”).

On this record, we deny Petitioner’s Motion to Exclude.

G. Conclusion

In light of the foregoing, we determine that Petitioner has shown by a preponderance of the evidence that claims 19–25 and 27–30 are unpatentable as obvious over the combination of Ellis and Spivey (ground 1). Claims 19–25 and 27–30 are not unpatentable as obvious over the combination of Herzog, Spivey, and Ellis (ground 2). Petitioner’s Motion to Exclude is denied.

III. ORDER

For the foregoing reasons, it is

ORDERED that pursuant to 35 U.S.C. § 318(a), claims 19–25 and 27–30 of the ’687 patent have been shown to be unpatentable;

FURTHER ORDERED that Petitioner’s Motion to Exclude is denied; and

FURTHER ORDERED that any party seeking judicial review must comply with the notice and service requirements of 37 C.F.R. § 90.2.¹¹

¹¹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner’s attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
19–25, 27–30	103	Ellis, Spivey	19–25, 27–30	
19–25, 27–30	103	Herzog, Spivey, Ellis		19–25, 27–30
Overall Outcome			19–25, 27–30	

Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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