UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SPORTRADAR AG.,
Petitioner,

v.

SPORTSCASTR INC.
(d/b/a PANDA Interactive),
Patent Owner.

IPR2025-00265

U.S. Patent No. 10,425,697

PATENT OWNER PRELIMINARY RESPONSE

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EXHIBIT LIST

Exhibit	Description
EX-2001	Declaration of Aviel Rubin, Ph.D.
EX-2002	*Curriculum vitae* of Aviel Rubin, Ph.D.
EX-2003	Joint Claim Construction and Prehearing Statement, Dkt. 124
EX-2004	Memo on Interim Processes for PTAB Workload Management
EX-2005	*Reserved*
EX-2006	Yahoo Finance Tanner Simkins, April 20, 2017
EX-2007	NBA.com, Steve Ashburner April 27, 2017 Article
EX-2008	Sportstechie, Robert Roble, April 22, 2017
EX-2009	Sports Tech Tokyo Award; 2019 Yahoo! Sports Tech Awards; Sports Business Awards
EX-2010	Various Media Reports on the Patented Invention
EX-2011	CNBC, December 20, 2018
EX-2012	https://sportscastr.com/about
EX-2013	https://pandainteractive.com/patents
EX-2014	https://sportscastr.com
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EX-2016	Sportradar August 2019 Email
EX-2017	Guidance on USPTO's recission of "Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation"
EX-2018	'697 Patent Sportradar Infringement Claim Chart
EX-2019	https://www.opensourceforu.com/2015/03/a-guide-to-using-raw-sockets
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EX-2021	Oracle documentation in 2011: Anatomy of the Client/Server Model. https://docs.oracle.com/cd/E13203_01/tuxedo/tux80/atmi/intbas3.htm
EX-2022	Peng, Gang. "CDN: Content distribution network." arXiv preprint cs/0411069 (2004) https://arxiv.org/pdf/cs/0411069
EX-2023	The History of Streaming Media. https://boyetblog.s3.amazonaws.com/PCPlus/324.Streaming.pdf

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EX-2024	RFC 2326: Real Time Streaming Protocol (RTSP) https://www.ietf.org/rfc/rfc2326.txt
EX-2025	Adobe's Real Time Messaging Protocol https://rtmp.veriskope.com/pdf/rtmp_specification_1.0.pdf
EX-2026	WebRTC 1.0: Real-time Communication Between Browsers https://www.w3.org/TR/2011/WD-webrtc-20111027/
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EX-2032	How to watch Obama's inauguration (and the parties) online https://www.cnet.com/tech/tech-industry/how-to-watch-obamas-inauguration-and-the-parties-online/
EX-2033	Twitch is 4th in Peak US Internet Traffic https://blog.twitch.tv/en/2014/02/05/twitch-is-4th-in-peak-us-internet-traffic-90b1295af358/
EX-2034	Twitch Engineering: An Introduction and Overview https://blog.twitch.tv/en/2015/12/18/twitch-engineering-an-introduction-and-overview-a23917b71a25/
EX-2035	*Proceedings of the 25th ACM workshop on network and operating systems support for digital audio and video*, pp. 55-60, 2015 https://arxiv.org/pdf/1502.04666
EX-2036	Twitch Engineering: An Introduction and Overview https://blog.twitch.tv/en/2015/12/18/twitch-engineering-an-introduction-and-overview-a23917b71a25/

SportsCastr Inc. (d/b/a PANDA Interactive) ("Patent Owner" or "PANDA") submits this Preliminary Response to the Petition of Sportradar AG. ("Petitioner" or "Sportradar") seeking *inter partes* review of U.S. Patent No. 10,425,697 ("the '697 patent").

I. DISCRETIONARY DENIAL REQUEST TO DIRECTOR

Pursuant to Acting Director Stewart's March 26, 2025 memorandum ("Stewart Memo"), Patent Owner will file a separate request for discretionary denial to the Director by April 26, 2025. (EX-2004.) The forthcoming discretionary denial brief will demonstrate that in view of the abrogation of the 2022 Vidal Memo (EX-2017) and the guidance outlined in the Stewart Memo (EX-2004), the Board should exercise its discretionary authority to deny institution under 35 U.S.C. § 314(a).

II. INTRODUCTION

The Board should deny institution for two reasons. First, a POSITA would not be motivated to combine Spivey with either Ellis or Herzog. Second, Ellis, Spivey, and Herzog, alone or in combination, fail to teach or render obvious an "event socket". And even if they did, the proposed combination fails to teach how information is allegedly transmitted via a channel between an event socket and a viewer client device, as claimed in the '697 patent.

Petitioner's invalidity grounds rely on mischaracterizing the innovations of the '697 patent as a television game clock from the 1990s. (Petition, 2-3.) But contrary to Petitioner's arguments, the '697 patent discloses and claims a novel one-

to-many socket architecture that supplies multiple client devices real-time, actionable event information, which may be paired with a video stream. (EX-1006, 9:16-58; EX-2001, ¶86.) This novel architecture, *inter alia*, reduces latency among client devices receiving these updates, which plagued prior art systems—even those like Spivey that purport to reduce latency, but create a bottle neck of additional processing. In short, the technology of the '697 patent did not exist in 1994. And none of Petitioner's cited references (Ellis, Spivey, and Herzog) demonstrate, alone or in combination, that this technology existed before the '697 patent's priority date.

Petitioner's principal motivation-to-combine allegations stitch together disparate elements of Ellis's and Spivey's architectures using improper hindsight. (Petition, 18-20.) But Petitioner's combination fundamentally does not work. A POSITA would have recognized the inoperability of Petitioner's creation, and never attempt it because there would have been no reasonable expectation of success. Indeed, examining each of Petitioner's proposed rationales for combining Ellis and Spivey reveals improper hindsight: Petitioner simply started with the blueprint of the '697 patent's claim 1 and attempted to map servers from totally different references onto claim 1 without any regard for whether a POSITA would have done so.

The Herzog combination fares no better. Herzog requires latency to achieve its timestamp matching techniques—latency is a feature, not a bug. To the extent

that faster provision of data would even be possible in Herzog using Spivey's architecture (which it would not be), faster data in Herzog would contradict Herzog's teachings. Nevertheless, unfettered data delivery in Herzog (according to Petitioner's proposal) could not possibly result in synchronization of contextual-matched event information with video streaming, as claimed by the '697 patent.

Even if a POSITA would have been motivated to create Petitioner's combination, the cited references, alone or in combination, lack any teaching of the claimed "event socket," such that even if the references were inappropriately combined, the challenged claims remain patentable over the art.

Specifically, in both primary grounds, Petitioner alleges that Spivey's "topic queues"—*i.e.*, some form of internal data structure within the MQS itself—are themselves "event ***sockets.***" But Spivey's "topic queues" do not even meet Petitioner's expert, Dr. Kia's, own implicit definition of an "event socket": "a uniquely addressable communication endpoint on a server . . . where information about one sporting event is provided to a [viewer client device]." Spivey is at best silent as to any socket architecture, and the Petition does not explain how in the modified system Spivey's topic queues are "uniquely addressable communication

endpoints." For at least these reasons, the proposed combination does not render obvious any challenged claim.

Patent Owner respectfully requests that the Board deny the petition.

III. THE '697 PATENT

A. Inadequacy of the Prior Art

Synchronized data and video streams form cornerstone technologies that support the exploding online broadcasting market. Interactive features alongside germane video content may allow, and even encourage, viewers to engage and interact—all without the viewer leaving an immersive viewing experience. (EX-2001, §§III, IV.)

However, despite years and countless investments in streaming technology, conventional systems continue to suffer from significant drawbacks that have hindered product offerings. (EX-1006, 2:22-64; EX-2001, §III.C.) "One such technological problem relates to viewer 'latency,' i.e., the delay between a first user generating a live video stream for transmission via the Internet and a second user receiving a copy of the live video stream via the Internet for viewing." (EX-1006, 2:27-31; EX-2001, §III.B.2.) While any video streaming technology may seek to reduce latency, the inventors of the '697 patent sought to address specific problems related to latency. (EX-1006, 24:61-25:33.) For example, conventional techniques made it challenging to provide "relatively low latency copies of live video streams with relatively high quality (e.g., high definition HD and high bit rate)." (EX-1006,

2:34-40; EX-2001, §III.C.) The inventors also addressed synchronizing high quality ("e.g., high definition HD and high bit rate, such as 2 to 5 megabits per second") copies of a live video stream amongst multiple viewers—particularly a large number of viewers—while ***maintaining low latency delivery***, and also "allowing for different classes or types of viewers to flexibly access copies…via different live streaming formats." (EX-1006, 2:39-47.)

"Particularly in the context of a 'second screen' experience relating to a live event"—as is common among sports viewers and sports betting fans—any "discernible delay between the observation of the live event itself [e.g., a sport] and a given broadcaster's video-based commentary would significantly undermine viewer experience." (EX-1006, 4:26-40.) For example, any noticeable offset between the video signal and contextually matched information (e.g., information or commentary that may be used for betting purposes) may confuse the viewer and detract from the ability to place wagers due to the problem of out-of-date, stale, or unsynchronized data served to the viewer. (EX-2001, ¶¶73-76, 309-311.) Conventional approaches also struggle to synchronize the broadcasting of contextual-matched event information and video signals to multiple viewers because the "offset" between the video signal and matched information may become more pronounced as additional viewers, each having potentially differing bandwidths and connections speeds, join the broadcast. (EX-2001, ¶309.)

Accordingly, there was a need for improved systems and techniques to synchronize contextually matched information with delivered video content.

B. Innovations of the ’697 Patent

The ’697 patent discloses systems and processes related to delivering video with contextual-matched event information. (EX-1006, 4:41-63, 9:16-58; EX-2001, ¶77.) Instead of contending with a viewer-noticeable offset between a delivered video stream and associated information, the claimed inventions implement a novel, technologically improved, one-to-many socket architecture. (EX-1006, 19:64-20:11, 21:37-52, 22:7-39; EX-2001, ¶¶78-79.) This socket architecture allows multiple client devices to establish an event information channel with an “event socket,” which may supply real-time, actionable event information to each client device that is contextually matched with a delivered video stream. (EX-1006, 21:37-52, 22:7-39; EX-2001, ¶77.) The ’697 patent discloses and claims transmitting such event information to the client device via an event information Internet communication channel. (EX-1006, 9:16-58; EX-2001, ¶¶84, 85.)

Among the innovations of the ’697 patent is a novel architecture with a dedicated channel to transmit event information, separate from a communication channel for video streaming, to facilitate pairing of real-time, actionable information with related video content. (EX-1006, 21:37-52, 27:5-27; EX-2001, ¶86.) By transmitting video signals to the viewer device separate from event information, the

’697 patent facilitates the inclusion of real-time, contextually matched data alongside the video stream. (EX-1006, 9:16-58, 21:37-52, 27:5-27; EX-2001, ¶91.) For example, all event viewers (regardless of the video stream they receive) may receive synchronized information from the same event socket dedicated to that event. (EX-1006, 9:16-58, 26:50-27:4, FIG. 2, FIG. 4; EX-2001, ¶¶82-83.) All live streams, across multiple viewer client devices, may therefore similarly receive synchronized event information, received in real-time via the “event information Internet communications channel”. (EX-1006, 21:65-22:6, 26:50-27:4; EX-2001, ¶¶80-81.)

This represents a significant improvement over the prior art not found in the references cited by Petitioner. (EX-2001, ¶91.) The ’697 patent solves a technical challenge of providing the same event information in a synchronized manner to all viewers of such broadcast (e.g., via the socket architecture and paired video stream). (EX-1006, 24:61-25:33, 27:5-27.) Because all viewers of the broadcast may receive the same synchronized information via the same event socket, each viewer client device may be capable of receiving the same information, at generally the same time, in real-time, regardless of video transmission protocol. (EX-1006, 26:50-27:27; EX-2001, ¶89.)

The claimed inventions facilitate enhanced online sports offerings because each viewer may interact with (and, more generally, make decisions based on) the

same information as other viewers, all while watching the same video content. (EX-1006, 26:50-27:27; EX-2001, ¶90.) Using this novel socket architecture and paired video stream enables the claimed invention to leverage real-time communication protocols in a distributed network to deliver high-quality, low-latency copies of a video stream to multiple viewers, each of whom are receiving synchronized event information. (EX-1006, 26:50-27:27; EX-2001, ¶¶77, 81, 91.)

C. Claim Construction

Petitioner takes conflicting claim construction positions in two proceedings. Here, Petitioner contends the Board need not construe any claim terms. (Petition, 7.) But, in co-pending district court litigation, Petitioner has proposed construction of twenty-two claim terms. (EX-2003.) Except for the "event socket" term for which Patent Owner applies Petitioner's construction as discussed below, for purposes of this preliminary response, Patent Owner agrees that no terms require construction and construes all other terms consistent with their plain and ordinary meaning.

D. Level of Ordinary Skill in the Art

A person of ordinary skill in the art would have 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. (EX-2001, §IV.C, ¶99.)

IV. PRIOR ART OVERVIEW

A. Ellis

Ellis recognized that media guidance applications (e.g., television program guides) were typically generalized applications that failed to leverage the increased capabilities of television equipment, such as having multiple tuners. (EX-1016, ¶¶3-7; EX-2001, §V.A, ¶103.) Specifically, television viewers were "unable to efficiently switch" between programs of interest. (EX-1016, ¶7; EX-2001, ¶¶104-105.)

Accordingly, Ellis discloses systems and methods directed to an "intelligent tuning module" that facilitates a user (e.g., of a television) rapidly switching between programs. (EX-1016, Abstract; EX-2001, ¶¶103-104.) For example, using the system Ellis describes, a viewer may tune into a first television program while concurrently tuning into a second television program. (EX-1016, ¶¶5, 49; FIG. 2A; EX-2001, ¶106.) Because the television is tuned to both (or more) programs simultaneously, the user may switch between the sporting events quickly. (EX-1016, ¶¶5, 137, 176, 178; EX-2001, ¶¶107, 112, 123.)

For example, the user's equipment may include control circuity, having multiple "tuners" (e.g., Tuners 202, 204, 206, 208)—the first being tuned to a primary event and a second tuned to a second event. (EX-1016, ¶¶57-59; FIG. 2A;

EX-2001, ¶¶106, 107.) The systems and methods described in Ellis allow for ranking and prioritization of content streamed into the tuners. (EX-1016, ¶¶64, 73, 164; EX-2001, ¶¶109-111.)

Ellis further describes a graphical user interface (e.g., "display screen 300") to facilitate switching from the primary sporting event to the second sporting event, as shown in Ellis FIG. 3 (below). (EX-1016, ¶¶68-69; EX-2001, ¶¶113-114.) For example, an interactive scoreboard 302 may be overlaid in a main window. The interactive scoreboard may include scoreboard entries 304, 306 with information indicative of the currently tuned events. (EX-1016, ¶68 EX-2001, ¶113.) In some cases, the viewer may select scoreboard entries to facilitate viewing the tuned-in game on the device, for example, by indicating with a television icon when that game is available for viewing. (EX-1016, ¶73; FIG. 4; EX-2001, ¶¶115-116.)

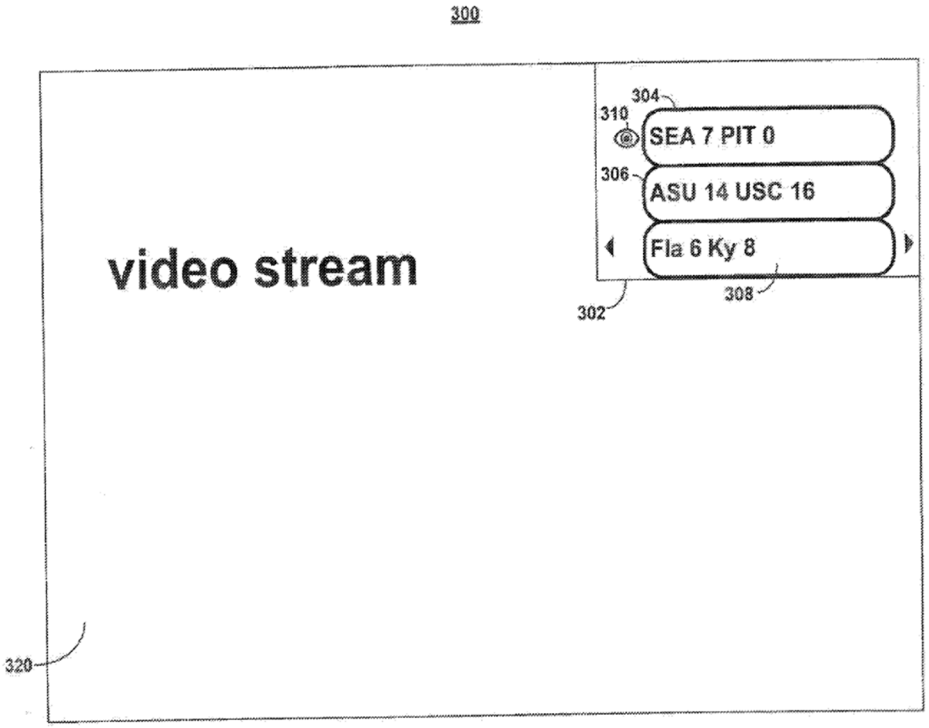


FIG. 3

Ellis describes a generic two-track architecture whereby the user's equipment "receives content in the form of signals from content source 130 and/or supplemental content source 120 over communications paths 150 and 152, respectively," for example, as shown in FIG. 1 (below). (EX-1016, ¶39; FIG. 1; EX-2001, ¶117.) The viewer may view content from content source 130 via communication path 150, while also receiving data from supplemental content source 120 via communication path 152 (e.g., data used to update the scoreboard). (EX-1016, ¶¶39-41, 70-71; FIG. 1; EX-2001, ¶¶118, 120, 122.)

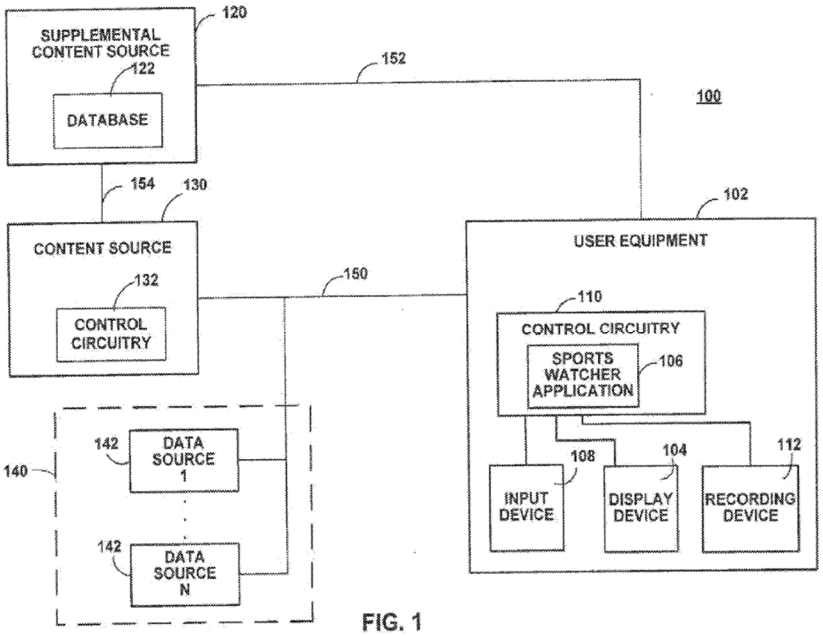


FIG. 1

Petitioner's own expert, Dr. Kia, conceded the lack of specificity in Ellis's data delivery, noting that "Ellis does not explicitly disclose the backend architecture/process flows for delivering the supplemental content data." (EX-1001, ¶106.)

Ellis differs from the inventions of the '697 patent in multiple ways. As acknowledged by Petitioner's own expert, Dr. Kia, Ellis discloses only a generic computer architecture, with no discussion of a socket server of any type. (EX-1016, ¶¶39-42; EX-1001, ¶106; EX-2001, ¶¶103, 121.) Further, Ellis discloses using the equipment of each viewer, individually, and is irrelevant to the problem, addressed by the '697 patent, of delivering data to multiple users in a synchronized manner.

B. Spivey

Spivey discloses an apparatus directed to rapidly distributing live event data

to users in "real-time" utilizing a message queue server (MQS). (EX-1017, Abstract; EX-2001, §V.B, ¶¶124, 126.) According to Spivey, content providers experience obstacles providing real-time event data to mobile devices. (EX-1017, ¶2; EX-2001, ¶125.) For example, conventional systems that must store data to a database before sending it to a requesting client often fail to timely deliver real-time data to mobile devices. (EX-1017, ¶¶27-28; EX-2001, ¶125.) Spivey therefore discloses a "message queue server" that operates to receive, sort, and transmit data payloads "immediately," without the need for interim storage in a database. (EX-1017, ¶¶51, 46, 128, 131; EX-2001, ¶¶126-127, 139.) For example, as shown in FIG. 1 (below), Spivey discloses data topic entries (which include both a topic label and data payload) transmitted from live data sources (e.g., data feeds generated by computers at a live event) to a message queue server. (EX-1017, ¶37; EX-2001, ¶¶128-129, 131.) The message queue server sorts the data payload into a designated queue based on the topic label, and then sends the data payload from the data queue to a live access server. (EX-1017, ¶¶47, 67; EX-2001, ¶¶130-131.) Notably, in the example of FIG. 1, the queue server 120 (which may sit "behind a firewall") pushes the payload to live data access server 130, and "is not accessible to clients over the network directly." (EX-1017, ¶36; FIG. 1; EX-2001, ¶¶131-133.)

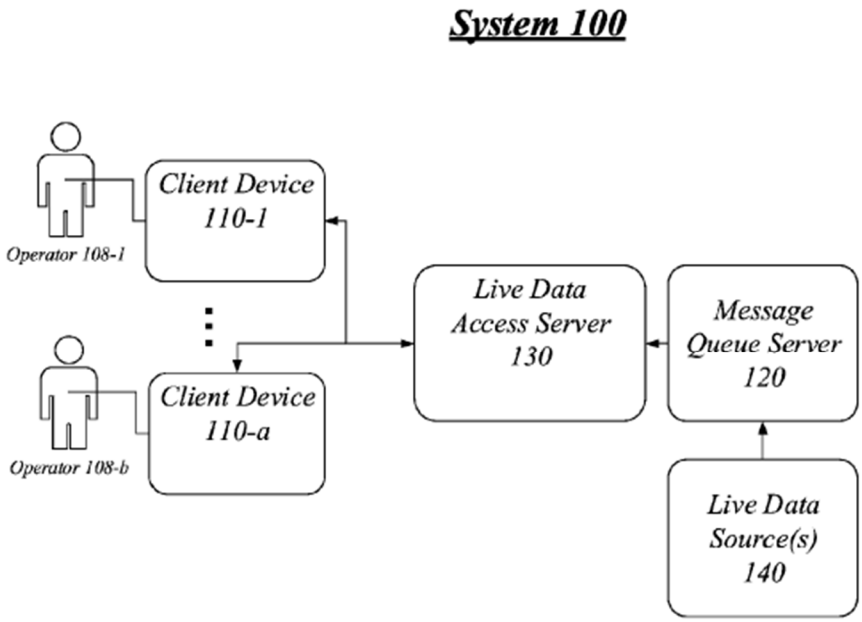


FIG. 1

Live data access server 130 serves as a "public interface" for the message queue server 120 and various client devices. (EX-1017, ¶38; EX-2001, ¶¶133-135.) At the live data access server, client devices may select topics related to a given event to which they want to subscribe. (EX-1017, ¶38; EX-2001, ¶¶133-135.)

Spivey discloses implementing message queue server 120 as two separate devices to "protect proprietary data." (EX-1017, ¶57; EX-2001, ¶¶137-138.) For example, as shown in FIG. 4 (below), message queue server 120 may be implemented by message queue server device 410 and live data server device 450. (EX-1017, ¶53; EX-2001, ¶¶138-139.) The live data server device includes topic decoder 420, which sorts a topic entry into one or more appropriate queues (e.g., topic queue 442-1, 442-2, etc.) before sending the data payload to the message queue

server device. (EX-1017, ¶¶49, 56; EX-2001, ¶138.) The message queue server device may in turn operate as a "message broker" to facilitate receiving published messages from the live data server device and sending such messages to subscribers (e.g., the "aggregator component" and/or "live data access server") via MQS communication component 408. (EX-1017, ¶¶57, 128, 131; EX-2001, ¶139.)

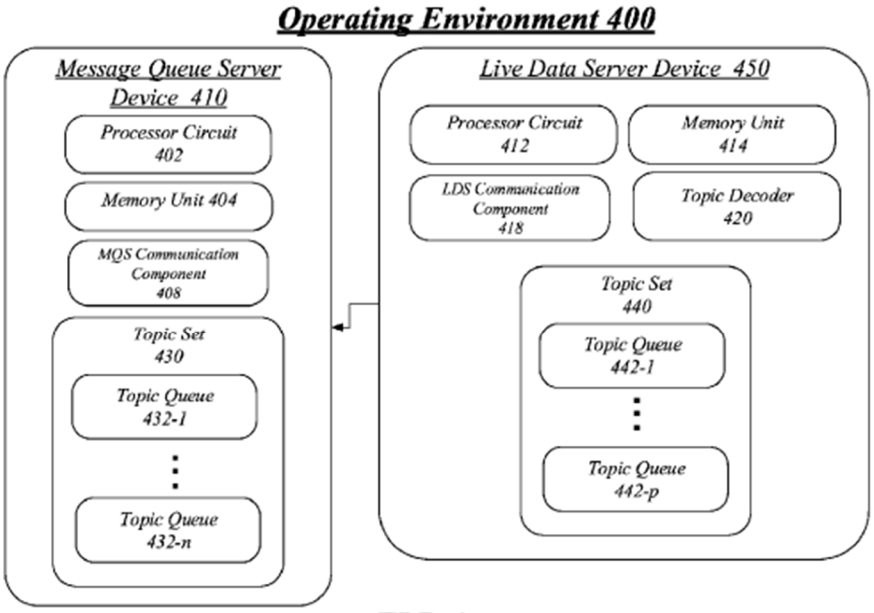


FIG. 4

Spivey differs from the inventions of the '697 patent in multiple ways. For example, Spivey does not address video delivery. Indeed, the Spivey's illustrative use case is a mobile device user trying to access real-time statistics of the latest professional sporting event on the go. (EX-1017, ¶¶2, 27.) Spivey attempts to solve the user's dilemma with a messaging server for quick sending of message payloads.

C. Herzog

Herzog discloses methods and software applications for separately

transmitting video and data streams from a live event and then assembling them together by matching their timestamps. (EX-1015, Abstract, ¶¶18, 53-60; EX-2001, §V.C, ¶141.) Herzog's operative use case is an "Indy race" in which audio/video streams (e.g., of a racecar driver in a racecar) and associated telemetry data (e.g., data pertaining to said racecar) are collected during an event and subsequently transmitted from the event as separate streams at different physical locations "up to a mile apart within the same venue." (EX-1015, Abstract, ¶54; EX-2001, ¶¶142-144.) For example, FIG. 4 shows sources 48a-48d within the venue (e.g., system 40), from which audio/video and associated metadata may be captured. (EX-1015, Abstract, ¶¶46-47, 54; EX-2001, ¶¶145-146.) Audio/video streams may be transmitted from the venue via satellite truck 51 separate and apart from telemetry data ERP gen server 49, which may transmit the associated metadata from the venue. (EX-1015, Abstract, ¶¶47, 54; EX-2001, ¶147.)

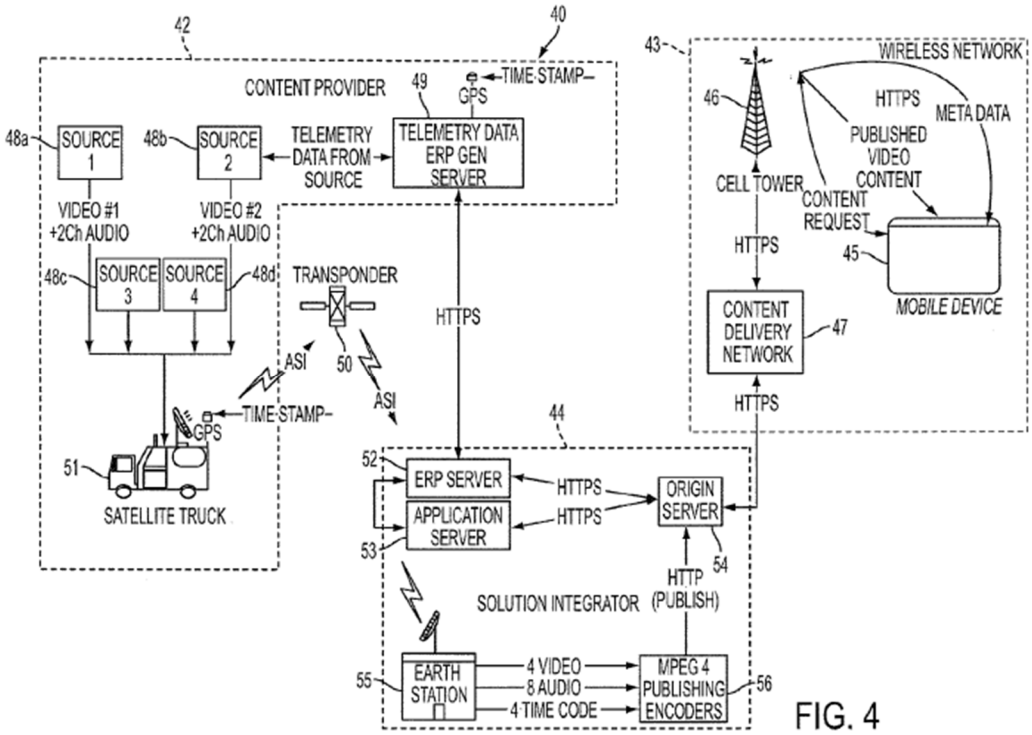


FIG. 4

Herzog discloses timestamping the audio/video stream and metadata stream using GPS protocols at both satellite struck 51 and telemetry data ERP gen server 49. (EX-1015, ¶¶17-18; EX-2001, ¶¶143, 150.) As described in Herzog, "[t]wo time stamps now exist in the system"—one associated with the video, and one associated with the metadata. (EX-1015, ¶56; EX-2001, ¶¶151-153.) In order to address latency between the audio/video stream and metadata stream, the audio/video stream "is deemed to be the master time for synchronization" with the now timestamped metadata "slaved to the master time generate by the VITC [audio/video] time code." (EX-1015, ¶¶54, 58 EX-2001, ¶¶143, 156.)

The audio/video stream and the metadata stream may be sent to a mobile device as separate protocols (e.g., in which the audio/video stream is sent via HLS protocol and the metadata is sent via HTTP protocol), as shown in FIG. 5 (below).

(EX-1015, ¶¶59-61; EX-2001, ¶¶154-155.) Only when the two separate streams arrive at the mobile device are "[b]oth types of data [] assembled in the mobile device 45 via the client application software that resides within the mobile device, for appropriate presentation on the device's display." (EX-1015, ¶58; EX-2001, ¶155.)

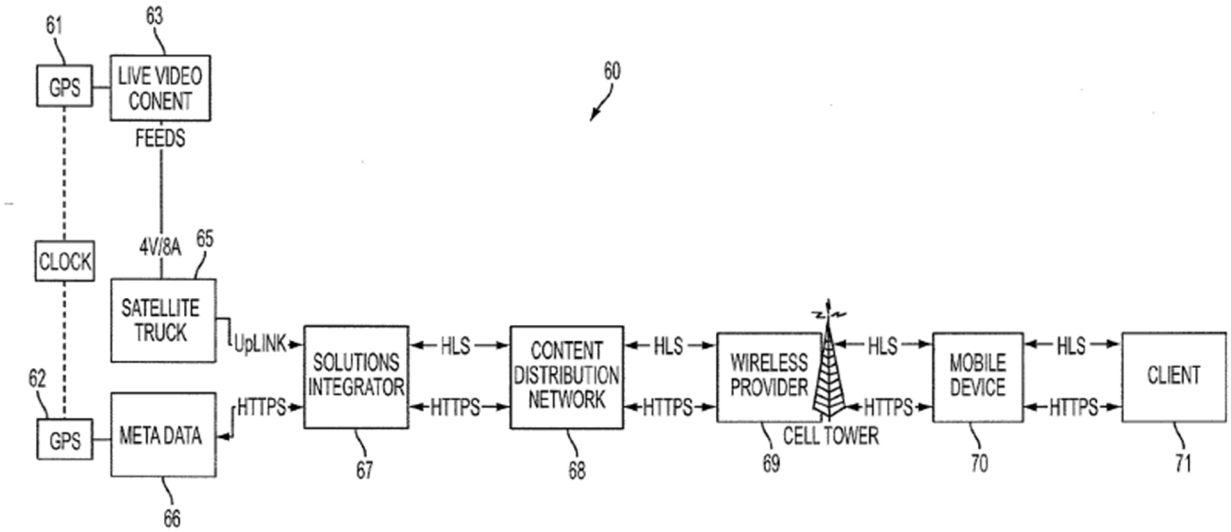


FIG. 5

FIG. 6 (below) shows that while latency associated with a "live time stamped video" may be greater than 24 seconds, latency associated with a "live time stamped meta data" may be less than 1 second. (EX-1015, ¶56; EX-2001, ¶156.) Herzog's system implements a process for "listening" for the video stream, determining a

timestamp or code of said video stream, and then retrieving the metadata with the corresponding time stamp. (EX-1015, ¶¶70-77; EX-2001, ¶¶157-159.)

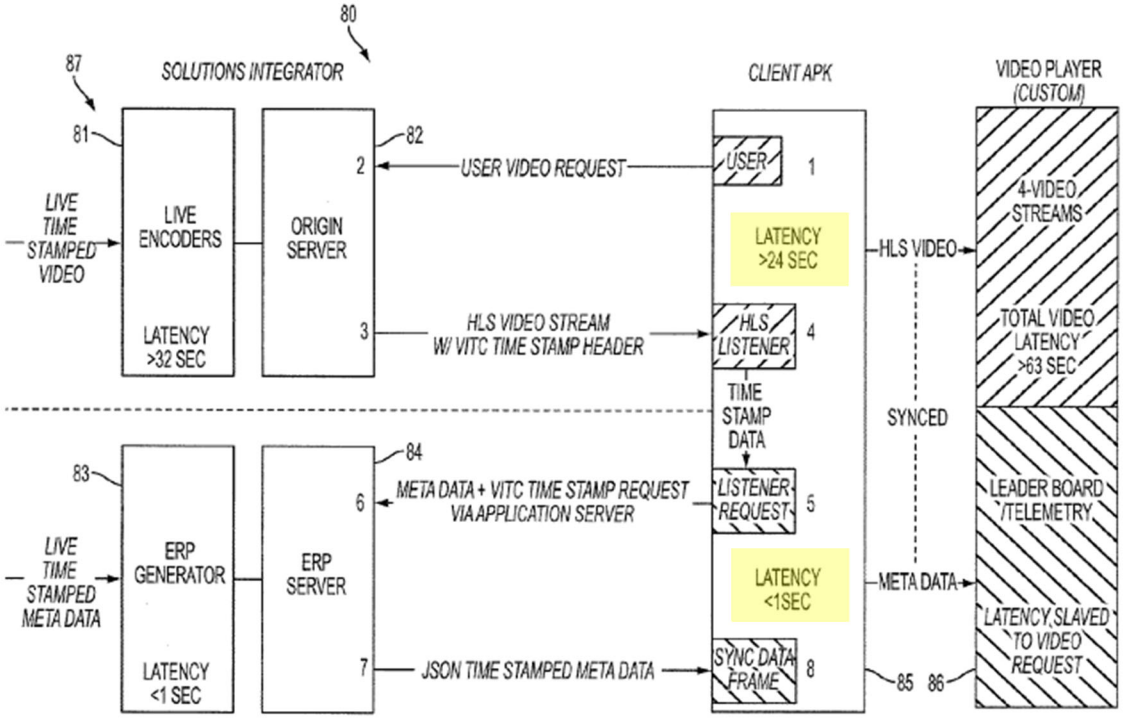


FIG. 6

(EX-1015, Fig. 6 (highlighted).)

Herzog differs from the inventions of the ’697 patent in multiple ways. For example, as Dr. Kia concedes, Herzog does not disclose the claimed socket server. (EX-1001, ¶126; EX-2001, ¶160.) Further, Herzog does not address the technical problem addressed by the ’697 patent–synchronization of real-time, contextually matched and actionable event information across multiple client devices with an associated video stream. (EX-2001, ¶161.) Instead, Herzog teaches an individual

user watching a timestamp-matched (if delayed) audio/video stream and metadata stream (EX-1015, ¶¶56, 58), but timestamp matching at a mobile device does not ensure or even allow for numerous other users to have the ***same*** synchronized, low-latency experience.

V. THE CHALLENGED CLAIMS ARE PATENTABLE

The Board should deny institution because Petitioner fails to show it is reasonably likely to prevail on any claim.

"In an *inter partes* review, the burden of persuasion is on the Petitioners…. Failure to prove the matter as required by the applicable standard means that the party with the burden of persuasion loses on that point—thus, if the fact trier of the issue is left uncertain, the party with the burden loses." *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378-79 (Fed. Cir. 2015); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (noting petitioners have the "burden from the onset to show with particularity why the patent it challenges is unpatentable").

Petitioner identifies three grounds challenging claims 1-9 of the '697 patent:

Ground	Claims	Argument
1A	1, 7-9	§103: Obvious over Ellis in view of Spivey
1B	2-6	§103: Obvious over Ellis in view of Spivey and Herzog

Ground	Claims	Argument
2	1-9	§103: Obvious over Herzog in view of Spivey and Ellis

Petitioner's grounds suffer from multiple critical deficiencies. In both grounds challenging independent claim 1, Petitioner cherry-picks disclosures from incompatible references and relies on impermissible hindsight to reconstruct the claimed invention, when a POSITA would not have been motivated to combine the references' teachings in the first place. Finally, despite Petitioner's cobbled-together references, the resulting combination fails to disclose the recited "event socket" of the challenged claims.

A. Ground 1A: Petitioner Fails to Establish that Ellis in View of Spivey Renders Obvious Every Limitation of the Challenged Claims.

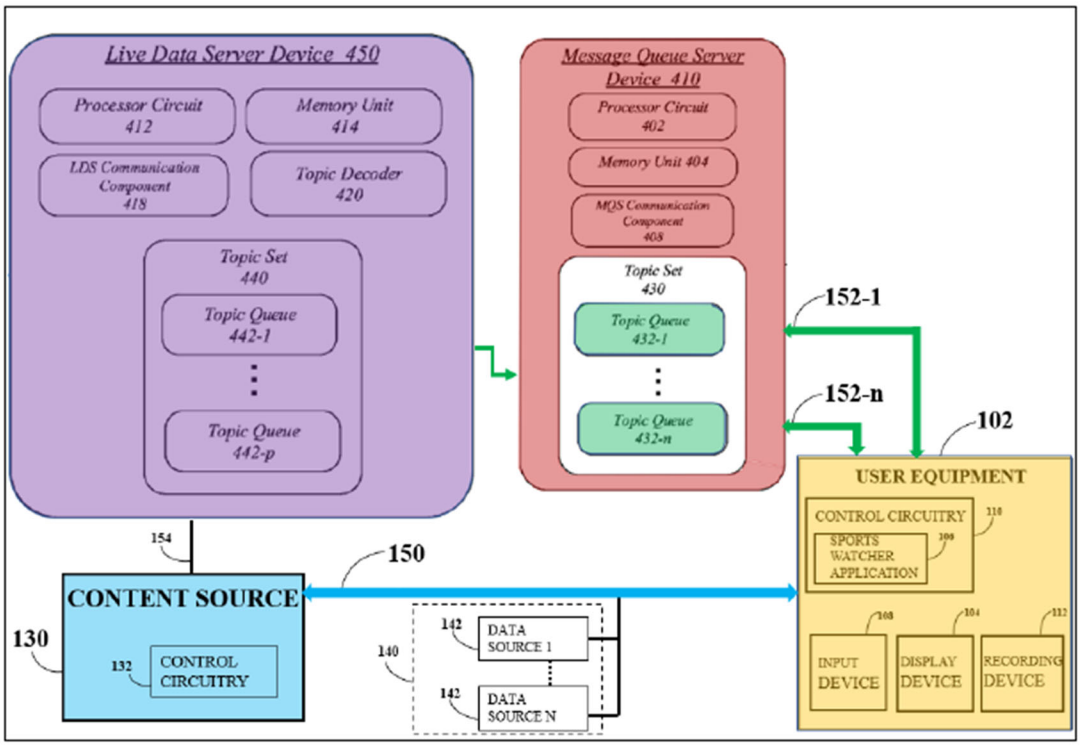
Petitioner fails to show a reasonable likelihood of success as to any challenged claim because Petitioner: (1) fails to show that a POSITA would have been motivated to combine Ellis with Spivey; and (2) fails to demonstrate that the references, alone or in combination, render obvious the claimed "event socket."

1. Petitioner fails to show that a POSITA would have been motivated to combine Ellis with Spivey.

Petitioner fails to show that a POSITA would have been motivated to combine Ellis with Spivey. (EX-2001, §VI.A.1.) Rather, Petitioner's rationale to combine the prior art rests on impermissible hindsight.

a) Petitioner's proposed combination is fundamentally inoperable and departs from the express teachings of the prior art.

In an attempt to recreate the claimed architecture of the '697 patent, Petitioner cobbles together elements of Ellis's media system with Spivey's "second operating environment" in order to create the following concept:



Petitioner replaces the Ellis supplemental content source 120 and database 122 with Spivey's message queue server device 410 and the live data server device

450, all in an effort to somehow "upgrade the data delivery system" of Ellis. (Petition, 21; EX-1017, ¶53; EX-2001, ¶¶169-171, 176.) But a POSITA would not have been motivated to implement Spivey's database-less system in the Ellis architecture because such formulation would be fundamentally inoperable. (*See* EX-2001, §VI.A.1, ¶¶171, 190-192, 215.)

Ellis describes, among other things, delivering supplemental content to inform the television viewer of the status of currently tuned in (but not necessarily presently displayed) television content. (EX-1016, ¶¶49-52.) For delivered data to bear some meaning to the television viewer, it must be delivered in coordination with the TV/video stream. (EX-1016, ¶68, FIG. 3; EX-2001, ¶¶190, 197-198.)

First, Petitioner's combination would be inoperable because Spivey not only fails to address video delivery, but also fails to address how immediately pushed data could somehow be throttled or gated in a manner to synchronize with any associated television programming. (§IV.A, *supra*; EX-2001, ¶¶197-198.) To the extent Spivey was even considered by a POSITA, a POSITA would understand that Spivey's teachings, which are not tied to video delivery, would render Ellis's system inoperable, at least because unfettered delivery of "immediate" data would not be relevant or even helpful to a television viewer, especially to the extent that such data was not synchronized with a slower-moving video stream. (EX-2001, ¶¶188, 197-198.) Neither Ellis nor Spivey offers any guidance for how to implement a message

queue server architecture with video streaming. (EX-2001, ¶¶167-168.) Therefore, quite apart from improving undisclosed "latency issues" in Ellis, a POSITA would have no reasonable expectation of succuss in implementing Spivey's message queue server with Ellis. (EX-2001, ¶208.)

Second, Petitioner's combination would be inoperable because it removes the "*source*" of supplemental content data and thereby eliminates the very functionality—data delivery—Petitioner proposes to upgrade. Petitioner's proposed diagram raises a fundamental unanswered question: with Ellis's supplemental content source 120 and database 122 removed, from where does Ellis's user equipment 102 receive said supplemental content? (EX-2001, ¶¶191-193.)

Ellis describes supplemental content source 120 and database 122 as a "*source*" of supplemental content that is paired with database 122 to "*store*" among other things, that supplemental content. (EX-1016, ¶¶41-43.) In contrast, Spivey's message queue server device 410 and live data server device 450 are not "*sources*" of data, nor do they include a database, as Spivey particularly teaches a database-less solution. (EX-1017, ¶¶53-56; EX-2001, ¶¶191-193.) Spivey discloses a message queue server, which stores messages temporarily in "topic queues" until they are processed, rather than in a database, as specified by Ellis. On its face, Petitioner's

proposed combination is inoperable due to the removal of the source of data in Ellis. (Petition, 20; EX-2001, ¶¶191-193.)

Moreover, Petitioner's removal of database 122 is flawed because it would eliminate the ability to store "sports watcher application 106" remote from user equipment 102. (EX-2001, ¶194.) In so doing, Petitioner removes numerous core functions and features of Ellis, including storing the sports watcher application 106, and even banking user-profile information and other non-transitory information at or associated with the supplemental content source 120. (EX-1016, ¶¶42-44; EX-2001, ¶194.)

The POSITA, when faced with Ellis, would not have found such removal to complement Ellis's operation nor constitute a "simple substitution," but rather would have seen it as hindering the operation of a fundamental principle of operation of Ellis (namely, providing an "intelligent tuning module"), and therefore, the POSITA would not have attempted such combination. (EX-2001, ¶¶191-193.) Thus, a POSITA would not have been motivated to substitute the database of Ellis for a database-less system of Spivey, as proposed by Petitioner, because the POSITA would have understood that doing so would have decreased the functionality of the Ellis system, and rendered it inoperable. (EX-2001, §VI.A.1.)

b) None of Petitioner's proposed motivations to combine Ellis and Spivey withstand scrutiny.

Petitioner attempts to paper over the fundamental inoperability of its proposed

combination with six conclusory rationales for combining Ellis and Spivey. None of Petitioner's proposed rationales remedy the deficiency in the combination, nor satisfy the Federal Circuit's obviousness rubric—obviousness turns on "whether a skilled artisan not only could have made but ***would have been motivated*** to make the combinations or modifications of prior art to arrive at the claimed invention." *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (emphasis added).

First, Petitioner alleges, without evidence, that a POSITA would seek to improve "Ellis's latency issues," and look to Spivey for a solution. (Petition, 19-20.) Petitioner manufactures a data latency problem in Ellis, without any explanation as to why a POSITA would understand one to exist. (EX-2001, ¶211.) Furthermore, as previously explained, Petitioner's modifications to Spivey's teachings radically alter the solution Spivey purportedly taught for reducing latency (§IV.A.1.a, *supra*), and a POSITA would not have a reasonable expectation that any beneficial reductions in latency would be achieved in the resulting combination. (EX-2001, ¶¶209-213.) Petitioner's bare assertion that a POSITA would look to improve Ellis's "latency issues" (which Ellis does not identify as a problem) ignores the necessary modifications that would render the proposed combination inoperable, and as such, a POSITA would have no reasonable expectation of success. (*See* §IV.A.1.a, *supra*; EX-2001, §VI.A.1.)

Second, Petitioner alleges that a POSITA would be motivated to combine Ellis and Spivey because each reference allegedly relates to "content delivery for real-time events." (Petition, 21.) But a "cursory assertion that the references are drawn from the same broadly characterized field" is insufficient to meet Petitioner's burden. *Securus Techs., Inc. v. Global Tel*Link Corp.*, IPR2015-00155, Paper 30 at 17 (PTAB Apr. 7, 2016). Furthermore, Ellis and Spivey do not relate to the same subject matter. (§§III.A-B, *supra*.) Spivey delivers data—i.e., information; Ellis helps a viewer change a TV channel. Ellis therefore resides within a field that necessarily includes video delivery, unlike Spivey. *See id*., *supra*. When faced with the primary Ellis reference and its video-based "***viewing*** and ***tuning*** enhancements" for television, a POSITA would not find a reference concerned solely with data-delivery to be relevant, or even helpful to modify Ellis's video-based "enhancements," and therefore a POSITA would not attempt such modification. (EX-2001, ¶¶215, 216.)

Third, Petitioner alleges that Ellis and Spivey solve similar problems: "quickly providing video and/or event data to multiple users over the Internet." (Petition, 21.) However, Ellis and Spivey do not solve similar problems. (§§III.A-B, *supra*.). Ellis purports "to better match how certain types of viewers (e.g., sports viewers) commonly watch and interact with sporting events displayed on the user equipment device" by implementing "sports-specific ***viewing*** and ***tuning***

enhancements" (EX-1016, ¶¶2, 5 (emphasis added).) Spivey cannot be credibly read as solving, much less addressing, or even being relevant to, matching how sports viewers commonly ***watch*** and interact with displayed sporting events. Ellis provides viewing and tuning enhancements that allow said viewer's television to "tune," simultaneously, into the NFL and collegiate games, despite the television optionally only showing the viewer, e.g., the NFL broadcast. (EX-1016, ¶¶68-69, 108, 151.) Spivey does not solve any problems related to how sports viewers commonly watch and interact with displayed sporting events, and as such, a POSITA would not find Spivey relevant, and would lack the motivation to pluck the Spivey servers into the Ellis enhanced viewing and tuning techniques. (EX-2001, ¶¶171, 190.)

Fourth, Petitioner alleges that a POSITA would have successfully combined Ellis and Spivey because the references "disclose complementary means of achieving the common goal of synchronizing multiple forms of data—including video/audio and event data." (Petition, 21.) However, Ellis and Spivey do not disclose complementary means of achieving a common goal. (EX-2001, ¶¶213-214.) The immediate "push" provision of data taught by Spivey is not complementary to the enhanced viewing and tuning techniques of Ellis, and a POSITA would not have a reasonable expectation of success. (EX-2001, ¶¶213-214.) For example, video streaming requires the continuous, ordered delivery of video and audio components for proper playback and message queues are not designed for the high-frequency,

continuous delivery needed for real-time streaming of video content. (EX-2001, ¶202.) The total lack of teaching in Ellis and/or Spivey concerning how to integrate Spivey's rapid-fire data delivery with Ellis's video streaming means that a POSITA would be cautioned against such combination as potentially hindering the television viewing enhancements taught by Ellis, and therefore the POSITA would not have been motivated to combine Ellis and Spivey as proposed by Petitioner. (EX-2001, ¶¶197, 198.)

Fifth, Petitioner alleges that "Spivey provides a complementary solution describing the details of the backend architecture for transmitting event data to multiple users." (Petition, 22.) However, even where two pieces of technology could somehow be combined, the resulting combination is not considered obvious unless the results are predictable. MPEP § 2143.01(III); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007); *see, also, id.*, 550 U.S. at 418 ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art"). Absent a clear teaching in the prior art directed to reconfiguring the non-video related teachings of Spivey for operation with Ellis's video delivery, the results of such combination could not have been predicted by a POSITA, and therefore would not have been attempted. (EX-2001, ¶¶220, 197-201.) Petitioner's argument appears to rest on the notion that because Ellis does not specify the backend architecture of the supplement content source 120,

that literally any architecture could be slotted into the Ellis interactive media system 100. (EX-2001, ¶¶207-208.) However, absent an articulated reason why a POSITA would specially choose Spivey's architecture (among a universe of options), the Petitioner's rational is merely conclusory, and therefore insufficient to demonstrate a motivation to combine Ellis with Spivey.

Sixth, Petitioner alleges that implementing "certain portions" of the Spivey disclosure into Ellis's disclosed architecture would "have been obvious because doing so would have required only the simple substitution of known elements to obtain predictable results." (Petition, 22.) However, to establish a prima facie case of obviousness there must be a reasonable expectation of success. *In re Merck & Co.,* 800 F.2d 1091, 1097 (Fed. Cir. 1986); *see, also, KSR*, 550 U.S. 398 at 418. A POSITA would understand the fundamental incompatibility of Spivey's immediate "push" data delivery and Ellis's video delivery, and therefore would have no reasonable expectation of a successful combination at least because such combination would have decreased performance. (EX-2001, ¶¶197-199.)

c) Impermissible hindsight bias undergirds Petitioner's alleged prior art combination.

Absent a clearly articulated reason to combine Ellis and Spivey, ***Petitioner relies exclusively on impermissible hindsight*** to stitch together unrelated elements of the prior art in a misguided attempt to reconstruct the invention addressed by the '697 patent. In this regard, Petitioner divorces prior art elements from their disclosed

context, and instead uses the ’697 patent as a guidepost for reconstructing the claimed invention.

As set forth by the Federal Circuit, “[t]he invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.” *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138 (Fed. Cir. 1985). Petitioner must put forward some “explanation as to how or why the references would be combined to arrive at the claimed invention…[otherwise] hindsight bias [becomes] the thread that stitches together prior art patches into something that is the claimed invention.” *Metalcraft of Mayville, Inc. v. The Toro Co*., 848 F.3d 1358, 1367 (Fed. Cir. 2017) (citation omitted). Hindsight reconstruction of the claimed invention must be carefully guarded against. *KSR*, 550 U.S. at 418.

Rather than drawing from the state of the art explicitly described in Ellis and Spivey, Petitioner appears to “fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.” *W.L. Gore & Assocs. v. Garlock, Inc*., 721 F.2d 1540, 1553 (Fed. Cir. 1983).

As one example of Petitioner’s reliance on hindsight, absent reference to the blueprint of claim 1 of the ’697 patent, a POSITA would not have been prompted to remove both of Ellis’s supplemental content *source* and *database* and replace those components with a multi-component messaging architecture cherry-picked from an alternative embodiment of Spivey. (EX-2001, ¶¶210-213.) For example, in

attempting to reconfigure Ellis's interactive media center to match claim 1 of the '697 patent (Petition, 20), Petitioner bypasses the explicit teachings of the prior art by wrongly equating the function of Ellis's supplemental content source and database with Spivey's message queue server 410 and live data server 450. Those components of Ellis and Spivey serve different functions and are not interchangeable, nor would doing so improve performance. (EX-2001, ¶¶168-171.)

Rather than represent a "*source*" of data, Spivey's message queue server and live data server form a multi-component messaging queue architecture that sits *between* a live data "source" and a downstream live data access server 130. (EX-1017, ¶¶53-56; FIG. 1, FIG. 4.) Accordingly, the motivation to arrange these select components of Ellis and Spivey in the Petitioner-generated diagram apparently derives from the recited elements of claim 1 rather than any teaching and/or motivation expressed in either Ellis or Spivey. (*See* EX-2001, ¶¶217-219.)

<u>As another example</u> of Petitioner's reliance on hindsight, Petitioner uses the claims of the '697 patent as a guidepost to fill in certain missing details of the Ellis supplemental content source delivery architecture. As Dr. Kia concedes, "Ellis does not explicitly disclose the backend architecture/process flows for delivering the supplemental content data." (EX-1001, ¶106.) Petitioner attempts to describe such an architecture to address hypothetical "latency issues" in Ellis (which Ellis does not identify as a problem), by alleging that a POSITA would seek to: (1) "upgrade the

data delivery system" and (2) use the non-video-related teachings of Spivey's messaging queue server to do so. (Petition, 19-21.)

A POSITA would not create such a system without knowledge of the '697 patent claims (*see* EX-2001, §VI.A.1). For example, claimed invention addresses, among other things, the technical challenge of providing the same event information in a synchronized manner to all viewers of a broadcast (e.g., via the claimed socket architecture and paired video stream). There is simply no basis in Ellis to suggest that supplemental content provided to a single (first) television viewer is concurrently provided to other television viewers in a manner *synchronized*, for example, between multiple client devices. (EX-1016, ¶70.) Instead, Ellis describes user equipment accessing "real-time data feeds," which are customized to the preferences of a particular television viewer, but does not recognize the need to synchronize data among television viewers so that each viewer, across multiple client devices, can be sent information in a synchronized manner. (EX-1016, ¶70.) Thus, without first examining the '697 patent, a POSITA would not attempt to implement Spivey's messaging queue architecture in Ellis. (*See* EX-2001, ¶¶217-219.)

Moreover, absent reference to the '697 patent, there was no reason for implementing Spivey's non-video-related teachings into Ellis's system, which necessarily requires video delivery. Spivey does not teach or suggest how to

implement either message queue server device 410 or live data server device 450 with video streaming. Indeed, Spivey teaches techniques to "push" data payloads out "immediately," which at least implies inoperability with video streaming for the obvious reason that the entirety of any paired video steam is unlikely to be available "immediately." (EX-1017, ¶¶38, 46, 51.) Again, ***synchronization*** of contextual-matched event information with video streaming is taught only in the specification of the '697 patent, which is unavailable to Petitioner as a basis for formulating a rationale to combine Ellis and Spivey.

In sum, Petitioner fails to articulate a sufficient rationale to combine Ellis and Spivey, and therefore, Petitioner has not met its burden in showing a reasonable likelihood of success. Petitioner's hindsight-based reconstruction of Ellis and Spivey cannot be used to institute an *inter partes* review, and Patent Owner respectfully requests the Board deny institution of the Petition.

2. Petitioner's combination does not render obvious the claimed "event socket."

Petitioner argues that Spivey's message queue server device 410 and live data server device 450 disclose a "*socket server*" and the "*event socket*" functionality recited in claim 1 of the '697 patent. (Petition, 33-41 (Limitations 1.6-1.8).) Petitioner's argument fails at least because: (a) a POSITA would not understand the message queue server device 410 and/or the live data server device 450 as transmitting information through an "event socket" or between an "event socket"

and a downstream client device; (b) regardless of the message queue servers' transmission destination, Spivey's topic queues are not "*event sockets*;" and (c) Petitioner fails to show that a POSITA would have been motivated to combine or modify the references in such a way as to teach the claimed limitations. (EX-2001, §VI.A.2.)

a) Spivey's message queue server device 410 and/or live data server device 450 do not render obvious transmitting information between an "event socket" and a downstream client device.

First, a POSITA would not understand Spivey's message queue server device 410 and/or live data server device 450 as transmitting information between an "event socket" and a downstream client device. For example, Spivey does not disclose a "websocket connection" or channel between its message queue server and client devices. (EX-1017, ¶¶43, 61; EX-2001, ¶¶223, 225-226.) Rather, Spivey discloses a websocket connection between a live data access server and client devices (EX-1017, ¶¶43, 61, 74; EX-2001, ¶¶227-229), and Petitioner has omitted the live data access server without explaining a POSITA's motivation to modify Spivey's teachings and/or to expect any measure of success. (Petition, 20, 38, footnote 4; EX-2001, §V.A.2.a.)

Petitioner's combination omits Spivey's live data access server 130, which sits between various message queue servers and client devices, in an attempt to allege that client devices communicate directly with the message queue server.

(Petition, 43-44; EX-2001, ¶225.) But Spivey describes a message queue server 120 that is communicatively separated from client devices 110-1, 110-a (e.g., by a live data access server 130). (EX-1017, FIG. 1 (reproduced below); EX-2001, ¶229.)

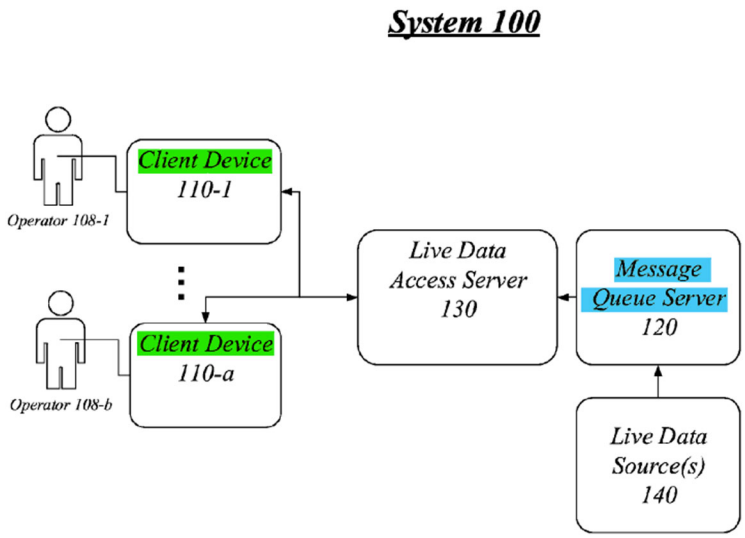


FIG. 1

And the message queue server device 410 and live data server device 450 (i.e., Spivey's two-component alternative embodiment of message queue server 120) are also described as communicatively separated from the client devices 110-1, 110-a. (EX-1017, ¶¶53, 57; FIG. 4 (reproduced below) ("FIG. 4, message queue server 120 may be implemented with at least two separate devices: a message queue server device 410 and a live data server device 450.").)

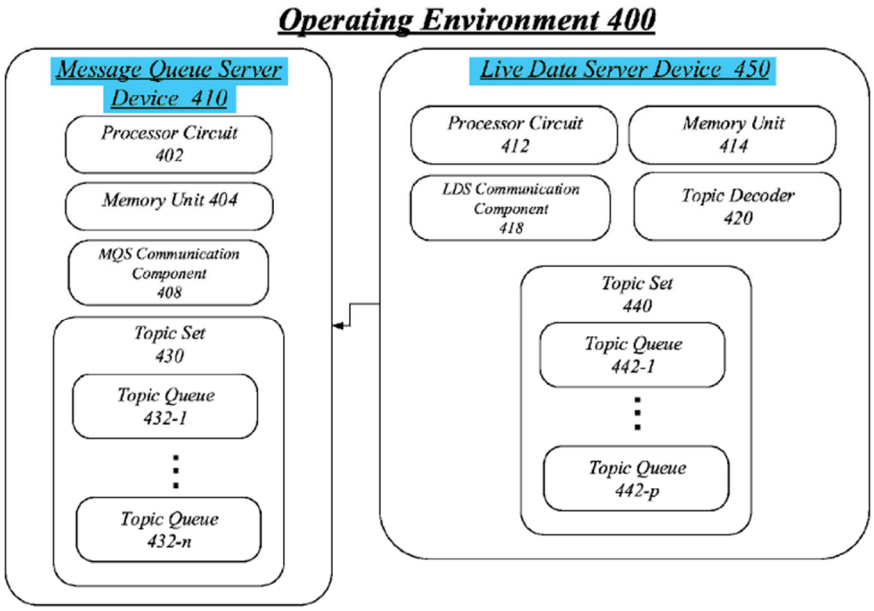


FIG. 4

Petitioner fails to demonstrate that message queue server 120 (or the combination of message queue server device 410 and live data server device 450) includes an event socket at least because neither of these servers "***transmit[s]*** the first score information to at least the first viewer client device…***between at least one first event socket*** of the at least one socket server and the first viewer client device," as recited in claim 1 of the '697 patent. (EX-1017, ¶¶53-58; EX-2001, ¶¶223, 230-234.) In an apparent attempt to demonstrate some type of coordinated sending from the message queue servers, Petitioner states that "Spivey also discloses that the message queue server device may be 'accessible to clients over the network directly,'" citing Spivey at [0036] and [0084]. (Petition, 38.) But paragraph [0036] of Spivey does not support this position; rather, the complete sentence of Spivey is as follows: "In some embodiments, message queue server 120 is ***not*** accessible to

clients over the network directly." (EX-1017, ¶36 (emphasis added).) Petitioner's quote at footnote 4 leaves out the word "not." (Petition, 38.)

Instead of supporting the concept of client devices accessing message queue servers without a live data access server, Spivey's paragraph [0036] merely explains that in FIG. 1, the message queue server does ***not*** communicate with the client device directly. (EX-1017, ¶36; EX-2001, ¶229, 264.) Each of Spivey client devices 110-1, 110-a are connected, individually, to live data access server 130 via a "websocket connection." (EX-1017, ¶61; EX-2001, ¶229.) In view of Spivey's teaching of an intervening live data access server 130, it is unclear how Spivey's message queue server device 410, which lacks an interface through which it could communicate with client devices, could include the claimed event socket, and Petitioner does not demonstrate otherwise. EX-2001, ¶231-234.)

b) Regardless of the messaging queue servers' transmission destination, Petitioner fails to show that Spivey's topic queues are "event sockets."

Second, Petitioner fails to show that Spivey's topic queues are "*event sockets*" under Petitioner's (and its expert's) implied definition, which requires them to be

"uniquely addressable communication endpoints."[1] Spivey's topic queues are merely an internal data structure within the message queue server. Petitioner does not identify any disclosure that would suggest to a POSITA that Spivey's topic queues are "uniquely addressable communication endpoints." To the contrary, Spivey's disclosures would have suggested the opposite to a POSITA. (EX-2001, §V.B.) Therefore, the Petition has failed to show that Spivey's message queue server device satisfies the limitations of claim 1 of the '697 patent, regardless of whether it communicates with any client devices. (EX-2001, ¶¶235-240.)

Petitioner and Dr. Kia state that "a POSA would have understood a 'socket' to be a uniquely addressable communication endpoint on a server where first event information is provided to VCDs." (EX-1001, ¶560; Petition, 38.) Petitioner then alleges that "a POSA would have understood that ***Spivey's topic queues disclose first event sockets***." (Petition, 40 (emphasis added).) But Spivey's topic queues are not "uniquely addressable communication endpoints." (EX-1017, ¶¶46-54; EX-2001, ¶¶ 238-239.) Instead, Spivey discloses that its topic queues are internal to its

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[1] Although the parties dispute the meaning of "socket" and "event socket" in the district court, Petitioner does not address either party's constructions. And even if one were to apply Petitioner's proposed district court constructions of those terms here, Petitioner would still not meet its burden for institution.

MQS, and Spivey nowhere discloses or suggests that the topic queues are "uniquely addressable" or "communication endpoints." (EX-2001, ¶¶235-240.) At most, Spivey discloses that a single component—the message queue server (MQS) communication component—"may receive requests to subscribe to topics in a topic set" and "push data from topic queues," without providing any details of that process. Ex. 2001, ¶236 (citing EX-1017, ¶46). Accordingly, a POSITA would have understood that Spivey's "topic queue" is merely an organization of data, such as a database table, that includes information about a particular topic. (EX-2001, ¶¶235, 240.) And without more, a POSITA would not consider such a database, message queue, or other internal data structure by itself to be a "uniquely addressable communication endpoint" because as disclosed by Spivey, the queues themselves lack any address at all through which they communicate. (EX-2001, ¶¶236.)

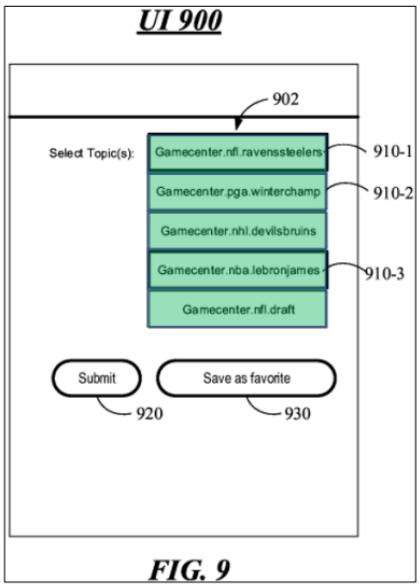
Indeed, the only potential "communication endpoint" Spivey discloses as being "uniquely addressable" is its live data access server, not any of the topic queues within the message queue servers. (EX-1017, ¶¶38-39; EX-2001, ¶237.) Petitioner relies on the following portion of the '697 patent specification for its definition of "*event sockets*": "The first event socket has a corresponding EventID that the VCD 'uses … to connect to the … socket,' e.g., by using a '***URL including the … EventID in a path of the URL***.'" (Petition, 37-38 (citing EX-1006, 21:53-65) (emphasis added).) But the only URL that Spivey's clients are provided is for the

live data access server, not the message queue server, and certainly not the topic queues therein: "UI 800 may also include an address UI element 830 to allow the operator to select or enter the address or connection information ***to a particular live data access server***." EX-1017, ¶82; *see also id*. ("The address may resemble a uniform resource locator (URL), for example, 'torq.cbssports.com/torq.' In an embodiment, address UI element 830 may be a text field or a pull-down menu pre-populated with addresses ***of live data access servers*** available to live data app 210.") Nowhere does Spivey disclose or suggest any topic queue with its own "unique" URL—and neither Petitioner nor Dr. Kia argue otherwise.

This is fundamental to how Spivey operates: the client connects to the live data access server and selects the topics they subscribe to; the live data access server then subscribes to those topics on the MQS for the client. (EX-1017, ¶¶49, 128, 131; 71-78, Figure 7; EX-2001, ¶¶132-134, 178-180.) When there is an update for a topic queue, the live data access server must receive that update, determine which of the clients are subscribed to that topic, and then push that data to the client. (EX-1017, ¶¶38, 46, 49; 79-80.) There is no disclosure of any connection for the client to anything other than the live data access server, and certainly no disclosure that each topic queue is a "uniquely addressable communication endpoint." (*See generally* EX-1017; EX-2001, ¶¶176-178.)

Petitioner and Dr. Kia attempt to overcome this deficiency by referencing

Spivey's disclosure that topic queues may be ***identified*** by text strings. Petition, 38-39 ("Client devices use these topic label text strings to connect and subscribe to MQSD's topic queues".) Petitioner cites to Spivey's Figure 9, which shows text strings for topic queues—but those text strings are not URLs themselves, nor are they used in URLs (or any other address in Spivey):



(Petition, 39.)

But even if one were to accept Petitioner's argument that requires a "socket" to be a "uniquely addressable communication endpoint on a server where first event information is provided to a VCD" (Petition, 38), the fact that each "topic queue" has a text identifier does not mean that topic queues are either endpoints or uniquely "addressable." (EX-2001, ¶¶246-247.) For example, Spivey does not disclose that any URL in its system includes a topic text identifier or that a URL corresponds to any of the topic queues. (*See generally* EX-1017.) The only Spivey components that

have an address (corresponding to a URL in Spivey) are the servers (specifically the live data access server, not the message queue server) themselves, not the topic queues within the message queue server. (EX-1017, ¶¶81-82.)

The Petition does not show otherwise. Petitioner and its expert, Dr. Kia, only argue that the client devices disclosed in Spivey "use…topic label text strings to connect and subscribe to MQSD's topic queues" (EX-1001, ¶564; Petition, 38-39). But this is incorrect—Spivey does not disclose that the text strings are used to "connect" to the MQD's topic queues. To support this incorrect statement, Petitioner and Dr. Kia must erroneously state that the client devices "request a live data connection" with the MQSD by "selecting or entering address or connection information to a particular MQSD," citing paragraphs 81-82 of Spivey. (EX-1001, ¶564.) But those paragraphs of Spivey are explicit that the client devices request a live data connection with the ***live data access*** server, ***not*** the message queue server (and not the topic queues within the MQS):

> UI 800 may include various UI elements that allow an operator 108 of a client device 110 ***to request a live data connection with <u>a live data server</u>***…. UI 800 may also include an address UI element 830 to allow the operator to select or enter the address or connection information ***to a particular <u>live data access server</u>***…. In an embodiment, address UI element 830 may be a text field or a pull-down menu pre-populated with addresses ***of live data access servers*** available to live data app 210.

(EX-1017, ¶¶81-82; EX-2001, ¶¶ 246-247.)

Accordingly, Petitioner fails to show that Spivey's topic queues are "***uniquely addressable communication endpoints*** on a server where first/second event information is provided to VCDs," which it contends is required for the "event socket" limitation. (EX-1017, ¶¶46-49; EX-2001, ¶¶238--, 239.)

Petitioner relies entirely on Spivey's topic queues as allegedly disclosing the claimed "event sockets," which Petitioner combines with Ellis. (Petition, 34-36.) Accordingly, Petitioner fails to establish that Spivey, alone or in combination with the other references, teaches or renders obvious the claimed "event sockets." Petitioner's combination of Ellis and Spivey fails to disclose or render obvious this limitation.

c) Petitioner fails to articulate sufficient motivation to combine and modify the prior art.

Petitioner does not establish a reasonable likelihood of success in combining the teachings of Ellis and Spivey to render obvious an event socket, as claimed.

As discussed above in IV.A.1, *supra*, Petitioner's combination fails to account for critical distinctions between Ellis's and Spivey's teachings, explain the modifications necessary to combine such teachings, or articulate why a POSITA would have been motivated to make the necessary modifications and proposed combination. *Supra,* IV.A.1.

Regarding Limitation 1.8, Petitioner provides nothing more than a single conclusory statement that a POSITA "would have looked to Spivey to add additional

backend architecture to reduce latency in Ellis's real-time data delivery system." (Petition, 34, 40-41.) This single statement merely restates Petitioner's general, non-limitation-specific motivation to combine. (*See* Petition, 19-20.) As previously explained above, critical distinctions between Ellis's and Spivey's teachings make them incompatible, and Petitioner invents "latency issues" in Ellis where there were none and fails to articulate any reasonable expectation of success in implementing Spivey's message queue server within Ellis's system. *Supra,* VI.A.1.

Again, Petitioner's lack of specific motivation to combine the prior art teachings demonstrates its impermissible reliance on hindsight bias. *KSR*, 550 U.S. at 418; Bolt, 64 EMORY LAW J. at 1158. Accordingly, Petitioner fails to articulate sufficient motivation to combine the prior art teachings.

B. Ground 1B: Petitioner Fails to Establish that Ellis in view of Spivey and Herzog Renders Obvious Every Limitation of the Challenged Claims

Petitioner's Ground 1B challenges only dependent claims and relies on its arguments under Ground 1A as allegedly disclosing independent claim 1. Because Petitioner has failed to establish that Ground 1A renders obvious all limitations of the independent claim 1, Petitioner's Ground 1B fails to render obvious dependent claims 2-6 for the same reasons.

C. Ground 2: Petitioner Fails to Establish that Herzog in View of Spivey and Ellis Renders Obvious Every Limitation of the Challenged Claims

Petitioner fails to show a reasonable likelihood of success as to any challenged claim because Petitioner: (1) fails to show that a POSITA would have been motivated to combine Herzog with Spivey and/or Ellis; and (2) fails to demonstrate that the references, alone or in combination, render obvious fails to demonstrate that the references, alone or in combination, render obvious the claimed "event socket."

1. Petitioner fails to show that a POSITA would have been motivated to combine Herzog with Spivey and/or Ellis.

Petitioner fails to show that a POSITA would have been motivated to combine Herzog with Spivey and/or Ellis. Rather, Petitioner's rationale to combine the prior art rests on impermissible hindsight.

a) Petitioner's proposed combination is fundamentally inoperable and departs from the express teachings of the prior art.

Petitioner admits that "Herzog does not specifically disclose some backend server architecture supporting the data distribution—the claimed socket server," and instead proposes to supply such functionality by implementing Herzog's origin server as a "websocket server, as taught by Spivey." (Petition, 60-61; EX-1015, FIG. 4.) Moreover, apparently acknowledging that Herzog's methods and systems are not directed to multiple live events, Petitioner states, without evidence, that such multi-event functionality would be "obvious to implement…as taught by Ellis." (Petition,

63.)

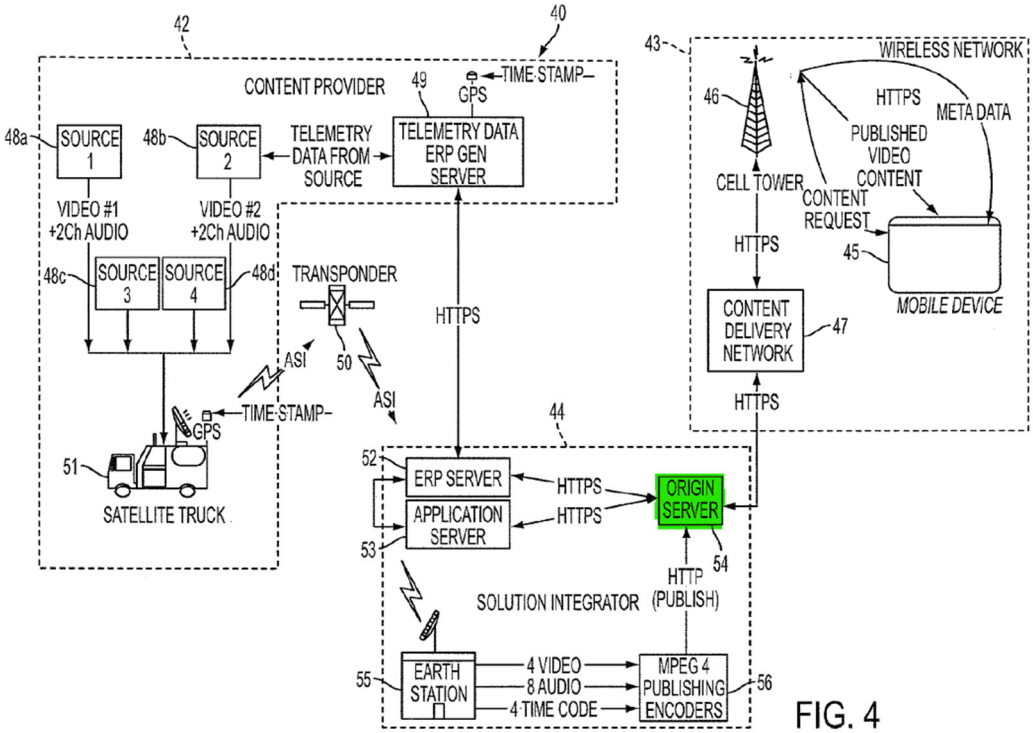


FIG. 4

But Petitioner's proposed revamp of the origin server to "improve Herzog's latency issues" ignores that Herzog's system *requires* a robust latency period to achieve its stated goal: matching timestamped video/audio steams with timestamped meta-data streams at a mobile device. (*See* EX-1015, ¶¶56, 64, 74; EX-2001, §VI.C.1, ¶¶281-283.) Herzog teaches a process to be performed during the latency of video/audio delivery, which synchronizes different latencies between video/audio streams and meta-data streams. (EX-1015, ¶¶74, 82.) Herzog needs the projected latency period to perform synchronization between the video/audio stream and the meta-data stream. (EX-1015, ¶¶74, 82; EX-2001, ¶¶281-283.) Therefore, as a threshold matter, nothing in Spivey would help Herzog's video-based latency

because Herzog uses disparate latencies to implement its timestamping techniques—latency is a feature of Herzog, not a bug. (*see* EX-1015, ¶¶56, 64, 74, 82; EX-2001, ¶¶281-283.)

First, Petitioner's combination would be inoperable because, notwithstanding the absence of any reason to upgrade Herzog's data delivery system, unfettered provision of data by Spivey's architecture would detract from and even prevent Herzog's synchronization between various video/audio streams and meta-data streams, which requires a robust latency period to perform. (*see* EX-1015, ¶¶74, 82; EX-2001, ¶¶281-283, 285.) According to Herzog, in part because the video/audio stream enjoys a longer delay, the delayed time allows Herzog to retrieve corresponding meta-data with the same VITC time stamp as the audio/video stream. Still during the latency of the video/audio stream delivery, when the meta-data is received, Herzog translates the meta-data's .JSON time stamp to the same the VITC time code. (EX-1015, ¶58.) As the latency of the audio/video stream ends, both the video/audio and the meta-data are decoded and presented on the mobile device's display, with the meta-data fully aligned with the video/audio stream, ensuring that both elements are synchronized for accurate display. (EX-1015, ¶¶58-59, 63.)

Accordingly, providing faster data with Spivey (as Petitioner proposes) could only possibly result in such data waiting longer for the video/audio stream to arrive—an outcome that a POSITA would not view as an improvement, and thus,

would not be attempted. (EX-2001, ¶283.) Rather, a POSITA would have understood Spivey's teachings of providing "immediate" data without the constraints of associated video feeds to render Herzog substantially inoperable. (EX-2001, ¶¶281-283.) That is, even if Spivey's message-based architecture were somehow manipulated to replace Herzog's origin server 54 (which a POSITA would not do), the resulting combination would include unfettered provision of Spivey data payloads to the mobile device. A POSITA would not understand unfettered immediate delivery of data payloads to the Herzog mobile devices as necessary or even helpful to the mobile device user because Herzog still needs the projected latency period to perform synchronization between audio/video data and meta-data. (*See* EX-1015, ¶¶74, 82; EX-2001, ¶¶281-285.)

Second, Petitioner's combination would be inoperable because Spivey fails to address how immediately "pushed" data could be somehow throttled or gated in a manner to synchronize with any associated television program. (*See generally* EX-1015; EX-2001, ¶¶281-285.) Spivey does not teach or suggest how to implement either its message queue server or its live data server, or any other component of its architecture, with video streaming. (EX-2001, ¶282.) Indeed, Spivey teaches techniques to "push" data payloads out "immediately," which implies inoperability with video streaming for the obvious reason that any paired video steam will not be available "immediately." (EX-1017, ¶¶38, 46, 51.) The synchronization of

contextual-matched event information with video streaming is taught only in the specification of the ’697 patent, which is unavailable to Petitioner as a basis for formulating a rationale to combine Herzog and Spivey.

Third, Petitioner’s combination would be inoperable because it lacks mission critical details pertaining to how, exactly, Herzog would work for ***multiple live events***. (EX-2001, §VI.C.2.) Specifically, Petitioner fails to explain how the Herzog pairing of the audio/video stream and telemetry stream (which are associated with the same source (e.g., a racecar), are applicable to, or even modifiable to accommodate, multiple events (especially since different events would include drastically different GPS coordinates, timestamps, and other properties that would require adaptation and processing well outside of the teachings of any cited prior art). (EX-2001, ¶¶300-301.) Petitioner also fails to explain how Ellis’s multi-tuner system could be modified in view of Herzog to account for the exponential technical complexity involved in timestamp matching across multiple live events. And even if multiple Herzog-like systems could be implemented separately for various live events (which Petitioner does not allege), it is not clear how Herzog’s timestamp matching techniques of Herzog would be workable in this context, much less how Ellis’s multi-tuner would prompt a POSITA to implement multiple Herzog like systems at different events in a coordinated manner. (EX-2001, ¶¶300-301.)

b) None of Petitioner's proposed motivations to combine Herzog, Spivey and Ellis withstand scrutiny.

Petitioner attempts to resolve the fundamental inoperability of its Herzog/Spivey/Ellis combination with numerous proposed rationales for making the combination. (Petition, 59-64.) But each proposed rationale fails.

First, Petitioner alleges that a POSITA would have "look[ed] to improve Herzog's latency issues," and would have looked to "upgrade the [Herzog] data delivery system to reduce latency." (Petition, 61.) However, faster Herzog data (if that were even possible with Spivey's architecture) would not solve any video latency problem in Herzog because Herzog does not have a latency problem. (*Supra*.) Herzog *relies on* different latencies between the video/audio stream and the meta-data stream to effectuate its timestamp matching techniques. (EX-1015, ¶¶74, 82; EX-2001, ¶¶287-289.) According to Herzog, in part because the video/audio stream enjoys a longer delay, "[t]he meta-data (the slave) is now synchronized to the video/audio data (the master)." (EX-1015, ¶58.) Both the video/audio stream and meta-data stream are aligned and synchronized with the same VITC time code during the projected latency of such streams. (EX-1015, ¶58.) Accordingly, a POSITA would not have been motivated to improve alleged data latency issues in Herzog, much less looked in Spivey for a solution. (EX-2001, ¶¶290, 291.)

Second, Petitioner alleges that Herzog and Spivey "relate to the same subject matter" and "solve the same or similar problems." (Petition, 61-62.) But Herzog and

Spivey do neither. (EX-2001, ¶¶290-294.) Petitioner's interpretation of Spivey depends on broadening the data-delivery disclosure of Spivey, beyond what the reference discloses, to some nebulous notion of "content." (Petition, 21, 62.) Herzog, meanwhile, provides timestamp matching techniques whereby a video/audio stream and meta-data stream can be paired at a mobile device by matching a GPS-prepared time stamp of each respective stream. (EX-1015, ¶¶74, 83-84.) Herzog's audio/video stream exhibits greater latency, and thus a stream timestamp allows the mobile device to match a slower stream with relevant information. (EX-1015, ¶¶64, 74; EX-2001, ¶289.)

Moreover, Herzog and Spivey do not solve similar problems because Herzog addresses the problem of matching a slower audio/video stream to a faster meta-data stream, and Spivey does not concern video. Accordingly, when faced with the primary Herzog reference and its audio/***video*** stream timestamp matching techniques, a POSITA would not find a reference concerned solely with data delivery to be relevant, and therefore, a POSITA would not have attempted such modification. (EX-2001, ¶¶282-285.)

Third, Petitioner alleges that "Spivey contemplates being implemented in a digital content delivery system such as Herzog," and that despite Herzog's failure to disclose the claimed socket server, "Spivey provides a complementary solution describing the details of the backend architecture for organizing and transmitting

event data to multiple users." (Petition, 62.) However, merely because two pieces of technology could somehow be combined, the resulting combination is not considered obvious unless the results are predictable. MPEP § 2143.01(III); *KSR*, 550 U.S. at 417; *see also id.*, 418 ("a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art"). Petitioner's argument appears to rest on the notion that because Herzog does not specify the backend architecture of the supplemental content source 120, that literally any architecture could be slotted into Herzog's system. (Petition, 60-63.) However, absent an articulated reason why a POSITA would specially choose Spivey's architecture (among a universe of options), the Petitioner's rational is merely conclusory. (*see* EX-2001, ¶¶295.) Indeed, not only does the Petitioner fail to demonstrate why a POSITA would specifically select Spivey's architecture, the Petitioner fails to recognize the significant drawbacks of Spivey's architecture, which as demonstrated herein, is unsuited for the Herzog system. (§VI.C.1, s*upra*; EX-2001, ¶¶278, 281-282.)

Fourth, Petitioner alleges that combining select portions of Herzog and Spivey would "require only the simple substitution of known elements for another to obtain predictable results." (Petition, 62-63.) However, as demonstrated herein, the Spivey disclosure does not concern video delivery- it concerns the "immediate" push of data to a subscribed device. (§VI.C.1, *supra*.) Therefore, at a fundamental

level, whatever server is plucked from the Spivey disclosure to implement the Herzog origin server as, it is clear that the resulting combination would not be operable to transmit an audio/video stream and meta-data stream in the manner contemplated by Herzog, because there is nothing Spivey concerning how to implement the Spivey teachings with video content delivery. (EX-2001, ¶¶282-285.)

Fifth, with respect to multiple event functionality (which Petitioner admits Herzog does not teach), Petitioner alleges that a user could somehow "configure Herzog with Ellis's multiple event functionality" because users enjoy additional content options. (Petition, 63.) Petitioner further proposes that providing a second live event to the Herzog architecture "applies a known technique to a known device that was ready for improvement to yield a predictable result." (Petition, 64.) However, Petitioner's proposals rest on conclusory statements that provide no guidance for how, exactly, Herzog would work in the context of a multi-event system, especially as the Herzog teachings are limited to a single event (e.g., an Indy race). (EX-2001, ¶¶298-301; §III.C, s*upra*.) to explain how the Herzog pairing of the audio/video stream and telemetry stream (which are associated with the same source (e.g., a racecar), are applicable to, even modifiable to accommodate, multiple events (especially as such different event would obviously include wildly different GPS coordinates, timestamps, and other properties that would require adaptation and processing well outside of the teachings of any of the cited prior art references). (EX-

2001, ¶¶300-301.)

The Petitioner further fails to explain how Ellis's multi-tuner system could modify or be useful to a POSITA in view of Herzog to account for the exponential technical complexity involved in time stamp matching across multiple live events. And even if multiple Herzog-like systems could be implemented separately for various live events (which Petition does not even allege), it is not clear how the time stamp matching techniques of Herzog would be workable in this context, much less how Ellis's multi-tuner would prompt a POSITA to implement multiple Herzog like systems at different events in a coordinated manner. Rather, Petitioner's argument at pages 62-63 appears to suggest a mapping of the prior art based on the claims of the '697 patent (first/second live sporting events), rather than the disclosure of Herzog or Ellis, which is impermissible hindsight reasoning. (EX-2001, ¶¶300-301.)

c) Impermissible hindsight bias undergirds Petitioner's alleged prior art combination.

Absent a clearly articulated reason to combine Herzog with Spivey and/or Ellis, ***Petitioner appears to rely exclusively on impermissible hindsight*** to stitch together to unrelated elements of the prior art in a misguided attempt to reconstruct the invention addressed by the '697 patent. (EX-2001, ¶284.) In this regard, the Petitioner divorces prior art elements from their disclosed context, and instead uses the '697 patent as a guidepost for reconstructing the claimed invention.

Petitioner admits that "Herzog does not specifically disclose some backend server architecture supporting the data distribution—the claimed socket server," and instead proposes to supply such functionality with a "websocket server, as taught by Spivey." (Petition, 60-61 ("implement Herzog's Origin Server as a websocket server, as taught by Spivey").) Moreover, in an apparent acknowledgment that the Herzog methods and systems are not directed to multiple live events, the Petition states, without evidence, that such multi-event functionality would be "obvious to implement…as taught by Ellis." (Petition, 63.) Rather that draw from the state of art explicitly described in Herzog, Spivey and Ellis, the Petition appears to, as cautioned against by the Federal Circuit "fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *W.L. Gore*, 721 F.2d at 1553.

<u>As one example</u> of Petitioner's reliance on hindsight rationale, the Petition uses the claims of the '697 patent as a guidepost for seeking to fill in certain missing details of Herzog "backend" architecture. Per the Petitioner: "Herzog does not specifically disclose some backend server architecture supporting the data distribution—the claimed socket server." (Petition, 60-61; *see*, *also*, EX-2001, ¶284.) A POSITA would never embark on Petitioner's proposed quest to upgrade the Herzog data delivery system without full knowledge of the '697 patent claims. For example, the '697 patent invention addresses, among other things, the technical

challenge of providing the same event information in a synchronized manner to all viewers of such broadcast (e.g., via the socket architecture and paired video stream). There is simply no basis in Herzog to suggest that the meta-data from the origin server 54 is also concurrently provided to numerous viewers in a numerous viewers in a *synchronized manner*.

Instead, each mobile device in Herzog apparently waits for its own video/audio stream and meta-data, as requested by the respective device. (EX-1015, ¶¶70-77; EX-2001, ¶289.) Herzog describes the mobile device matching the timestamped meta-data to the video/audio stream on receipt, but Herzog fails to describe or recognize a need for ensuring that all such mobile devices are sent such streams in a synchronized manner. (*See generally* EX-1015.) To the contrary, Herzog recognizes the variability of timing such feeds, and therefore outsources this feature to each respective mobile device. (*See* EX-1015, ¶¶64, 70-77; EX-2001, ¶289.) In this regard, without first examining claim 1 of the '697 patent, a POSITA would not attempt to implement Spivey's architecture; the rationale for improvement of Herzog rather appears to derive solely from the specification of the '697 patent.

<u>As another example</u> of Petitioner's reliance on hindsight rationale, absent reference to the '697 patent, there is no guidepost for implementing the non-video-related teachings of Spivey into the system of Herzog, which foundationally requires video delivery. (EX-2001, ¶¶282-284.) Again, the synchronization of the contextual-

matched event information with video streaming is taught only in the specification of the ’697 patent, which is unavailable to Petitioner as a basis for formulating a rational to combine Herzog and Spivey.

<u>As yet another example</u> of Petitioner’s reliance on hindsight rationale, Petition’s argument that Herzog could be used with multiple events (as purportedly taught by Ellis) is derived entirely from the ’697 patent. Petitioner states that a “POSA would have understood that Herzog was already equipped to provide multiple different live video and meta-data streams, so configuring this system to provide multiple events would have been obvious and well within the skill of a POSA.” (Petition, 63.) However, this statement ignores a fundamental teaching of Herzog: pairing a video/audio stream with meta-data that, while transmitted to a mobile device separately, are ultimately ***associated with the same source***, at the same physical event venue, e.g., an “Indy race.” (EX-1015, ¶¶45-47.) For example, Herzog describes receiving a video/audio stream and telemetry data from a common source (e.g., a racecar at an Indy race). (EX-1015, ¶¶45-47.) The video/audio stream and telemetry data are paired with one another at the mobile device based on a GPS timestamp of each respective stream, which are transmitted “up to a mile apart within the same venue.” (EX-1015, ¶¶45-47, 54, 58-59, 63.) Even if multiple Herzog-like systems could be implemented separately for various live events, it is not clear how the time stamp matching techniques of Herzog would be workable in this context,

much less how Ellis's multi-tuner would prompt a POSITA to implement multiple Herzog like systems at different events in a coordinated manner. (EX-2001, ¶¶300-301.) Petitioner's argument at pages 62 and 63 appears to suggest a mapping of the prior art based on the claims of the '697 patent (first/second live sporting events), rather than the disclosure of Herzog or Ellis, which is impermissible hindsight reasoning.

In sum, Petitioner fails to articulate a sufficient rationale to combine Herzog and Spivey and/or Ellis, and therefore, Petitioner has not met its burden in showing a reasonable likelihood of success. (EX-2001, ¶¶209, 301.) Petitioner's hindsight-based reconstruction of Herzog, Spivey and Ellis cannot be used to institute an *inter partes* review, and Patent Owner respectfully requests the Board deny institution of the Petition.

2. The cited prior art combination does not disclose the claimed "event socket."

As Petitioner does in Ground 1A, it again relies on Spivey as allegedly disclosing the claimed socket server and teaching transmission of score information via a channel between an "*event socket*" and a viewer client device. (Petition, 70-75; Limitations 1.6, 1.7, 1.8.) For the reasons stated above, Spivey—alone or in combination with the other cited prior art references—does not teach or render obvious the claimed "event socket." (§VI.A.2, s*upra*.)

Accordingly, Petitioner fails to show a reasonable likelihood of success under

Ground 2.

D. Petitioners' Grounds Fail to Render Obvious All Dependent Claims

Because Petitioner has failed to establish that any of its grounds render obvious all limitations of the independent claims, Petitioner cannot show that such grounds render obvious dependent claims 2-9.

E. Other Limitations Not Addressed

At this preliminary stage, Patent Owner addresses those deficiencies in the prior art which clearly show a lack of reasonable likelihood of the petition's success. Patent Owner's decision not to address certain limitations or secondary prior art references at this preliminary stage in no way reflects Patent Owner's agreement with the petition or lack of dispute as to additional limitations or prior art.

VI. OBJECTIVE INDICIA SHOW THAT THE CLAIMS WOULD NOT HAVE BEEN OBVIOUS

When assessing obviousness of the claimed invention, objective evidence of secondary considerations pertaining to nonobviousness must be considered, including long-felt but unsolved needs, industry praise, commercial success, etc. *In re Huang*, 100 F.3d 135, 139 (Fed. Cir. 1996). These indicia constitute "the most probative evidence of nonobviousness," "crucial in avoiding the trap of hindsight when reviewing, what otherwise seems like, a combination of known elements." *Leo Pharm. Products, Ltd. v. Rea*, 726 F.3d 1346, 1358 (Fed. Cir. 2013). Such evidence "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).

A patentee is entitled to a presumption of nexus "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." *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33, 32 (PTAB Jan. 24, 2020) (precedential). Even where this presumption is not established, nexus may be shown where "the evidence of secondary considerations is the direct result of the unique characteristics of the claimed invention." *Id.* at 33.

A. The Claimed Invention Satisfied a Long-Felt Need.

Objective evidence that there was a recognized problem which existed in the prior art for a long period of time without a solution demonstrates long-felt need. *Newell Cos., Inc. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988).

Prior to the claimed invention, conventional video streaming systems hard-embedded event information which causes processing overhead and limited licensing and rights. (EX-1006, 28:39-59; EX-2001, ¶¶76, 78.) Another issue relates to viewer latency—the delay between when a first user generates a live video stream and when a second user receives it for viewing. (EX-1006, 2:22-47; EX-2001, ¶¶72-75, 310.) The industry recognized that "most people aren't aware that when they're watching a live stream on platforms like FaceBook or Periscope they can be

anywhere from 10-30 seconds delayed." (EX-2006; *see also* EX-1006, 2:22-47; EX-2001, ¶¶68-74.) Furthermore, conventional video streaming systems struggled to deliver low-latency copies of high-quality live streams and flexible access for various viewer types. (EX-1006, 2:34-47; EX-2001, ¶75.)

The claimed invention satisfied the long-felt need for an innovative system that allows broadcasters to deliver synchronized, low-latency video and audio content with scalable, flexible access for different types of viewers and service qualities (EX-1006, 2:31-47; EX-2001, ¶¶73-79, 309, 311; EX-2007; EX-2008.)

Specifically, the claimed invention enables 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. (EX-1006, 19:64-20:11, 21:37-52, 22:7-39, 22:53-67, 27:5-27, 29:25-43, 53:21-37; EX-2001, ¶¶78-79, §VIII.)

To this end, the patented technologies use a web server which may provide viewers with an identifier of the particular event. (EX-1006, 21:53-22:6, 23:20-45, EX-2001, ¶88.) Viewers who are interested in watching the live stream of the particular event can then use the received identifier to connect to the dedicated server. *Id*. In response, the socket server transmits the event information associated

with the particular event back to the viewers via an event information channel through the dedicated socket. *Id*.

Furthermore, the patented technologies use of a control server to periodically retrieve live sporting event information, addressed the challenge of displaying event information in a synchronized, low-latency manner across multiple viewers. (EX-1006, 21:37-52; EX-2001, ¶83.) The control server's single point of entry for event information ensures all viewers and broadcasters receive synchronized updates, minimizing latency and synchronization issues. *Id.*

In sum, 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. The patented claims expressly contemplate and claim the means for doing so—*i.e.*, the system comprising "*a control server to periodically retrieve*" (*e.g.*, Claim 1) and "*at least one socket server communicatively coupled to the control server*" (*e.g.*, Claim 1).

B. The Claimed Invention Received Industry Praise.

Industry praise for an invention evidence nonobviousness where the industry praise is linked to the claimed invention. Patent Owner implemented its patented technologies in its video-streaming products, including a consumer-focused social network (SportsCastr) and a B2B software solution for enterprises, sports media,

affiliates, and betting operators (PANDA Studio).

Over the years, Patent Owner has earned numerous accolades such as winning Sports Tech Tokyo and being a finalist in the Yahoo! Sports Tech Awards and Sports Business Journal's Best in Sports Tech. (EX-2009.) Its technology and platform have been featured in dozens of publications and TV broadcasts including ESPN, Yahoo!, Bleacher Report, Forbes and many more. (EX-2010.)

Simply put, the claimed invention empowered everyday sports fans to become professional broadcasters. Unlike conventional graphics that are hard embedded into the live streams of a sports broadcast, the claimed invention allows graphics to be generated by the client device itself; thereby providing sports fan with the capability to overlay streams with real-time enhancements. (EX-1006, 28:41-59.) Former NBA commissioner David Stern opined in an article that states "SportsCastr.Live will allow a budding sportscaster to overlay streams carrying enhancements that update in real time (e.g., live betting lines) and lend a professional look to the presentation." (EX-2007.) "What sets SportsCastr apart from the media companies that dominate the industry like ESPN, Fox Sports, NBCSN, and CBS Sports, is the unique ability for a user to act as a color commentator in a studio like setting." (EX-2008.)

The benefits and advantages highlighted by the industry result directly from the claims—*i.e.*, the architecture discussed above (including a socket server and control server), as well as the system's ability to "*provid[e] a first/second plurality*

of copies of a first/second broadcaster's live stream of digital content including first/second live sporting event video-based commentary" (*e.g.*, Claim 1).

C. The Claimed Invention Was Praised and Copied By Petitioner.

Moreover, Petitioner's own copying and praise of the claimed invention are further evidence that the challenged claims are not obvious. As shown below, Petitioner has been aware of and praised Patent Owner's patented products and technology since 2019.

From: Cody Haugen c.haugen@sportradar.com
Subject: Re: SPORTSCASTR
Date: August 23, 2019 at 8:11 AM
To: Andrew Schupak andrew@sportscastr.com, Javier E. Altamirano j.altamirano@sportradar.com
Cc: kevin@sportscastr.com

CH

Hi Andrew and Kevin,

Pleasure to meet you both!

Yes, I would love to setup a call to discuss how we can possibly work together. Are you available next week anytime?

Look forward to speaking.

Thanks,
Cody

—
Cody Haugen

Director of Sales, Digital Sport
Sportradar
O: 612-361-4012
S: cody.haugen1
E: c.haugen@sportradar.com

(EX-2016 (annotated).)

On Aug 21, 2019, at 15:07, Javier E. Altamirano <j.altamirano@sportradar.com> wrote:

Hi Andrew,

It was great meeting you at STT! Loved your presentation yesterday. We should work together, you are doing something quite innovative and love your traction.
+Cody Haugen our sales director as he should tell you about our Ad:s project, also I would love to carry on our conversation, as I said, I think you can get a lot more bang for your buck with us

What does your next week look like for you for a call?

Best,

Javi

(EX-2016 (annotated).)

Petitioner gain knowledge of Patent Owner's products under the guise of exploring partnerships, but in reality, was developing its own products by copying Patent Owner's patented products. (*See* EX- 2001, ¶315-317; EX-2018). A party may prove copying by showing that an accused copier had access to the patented product combined with substantial similarity to the patented product. *Wyers v. Master Lock Co*., 616 F.3d 1231, 1246 (Fed. Cir. 2010). This copying shows that the challenged claims are not obvious. *Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc*., 344 F.3d 1186, 1196 (Fed. Cir. 2003) (finding that evidence of a competitor responding to the introduction of the patent owner's product with an infringing product indicated copying, which supported nonobviousness).

D. Patent Owner's Patented Product Enjoys Substantial Commercial Success.

A patentee demonstrates commercial success by showing significant sales of the patented product in a relevant market and nexus between the patented invention and the commercial success. *Ormco Corp. v. Align Technology, Inc*., 463 F.3d 1299, 1311-12 (Fed. Cir. 2006). Advertising the benefits of the claimed invention links the invention to commercial success. *Wm. Wrigley Jr. Co. v. Cadbury Adams USA LLC*, 683 F.3d 1356, 1369 (Fed. Cir. 2012). Also, statements that a product was successful due to the patented features support a finding of nexus. *See Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1368 (Fed. Cir. 2013).

As evidenced below, Patent Owner implemented the claimed invention of the '697 patent to meet the growing demand for improved user when interacting with livestream broadcasters.

The claimed invention of client-side rendering enables animations and graphics in livestream content to be user-interactive. (EX-1006, 29:41-59; EX-2001, ¶313.) In the context of live events where a broadcaster provides video-based commentary, event information is sent to both broadcaster and viewer devices via a socket-based "event information channel," separate from the "video channel" carrying the live commentary stream. *Id.* By using one or more sockets specifically

for event information, separate from the live stream, user-interactive features are enabled. *Id.*

This user-interactive feature has revolutionized the industry, as recognized by third parties. "The innovative sports tech product allows users and viewers to interact through an enhanced second screen experience and via social media channels…[the platform] is fully interactive and immersive because of the various clicks on the screen and the social media commentary opportunities." (EX-2008.) On an interview with CNBC, New York Giants Safety Landon Collins stated that the claimed invention embodied in SportsCastr allowed him to interact with fans: "I can tell you what happened, why this play was successful or why this person got beat, from the perspective of a defensive player." (EX-2011.)

Patent Owner advertised its implementation of the claimed invention and its benefits of low latency, live interaction with audience, and studio quality tools to customers:

for Publishers

Take your coverage to the next level with immersive live video, seamlessly integrated into your website or app with just a few clicks. SportsCastr's patented streaming platform is custom-tailored for the unique needs of sports publishers and offers new ways to increase engagement, grow your reach and monetize your audience.

(EX-2012.)

PATENTED TECHNOLOGY

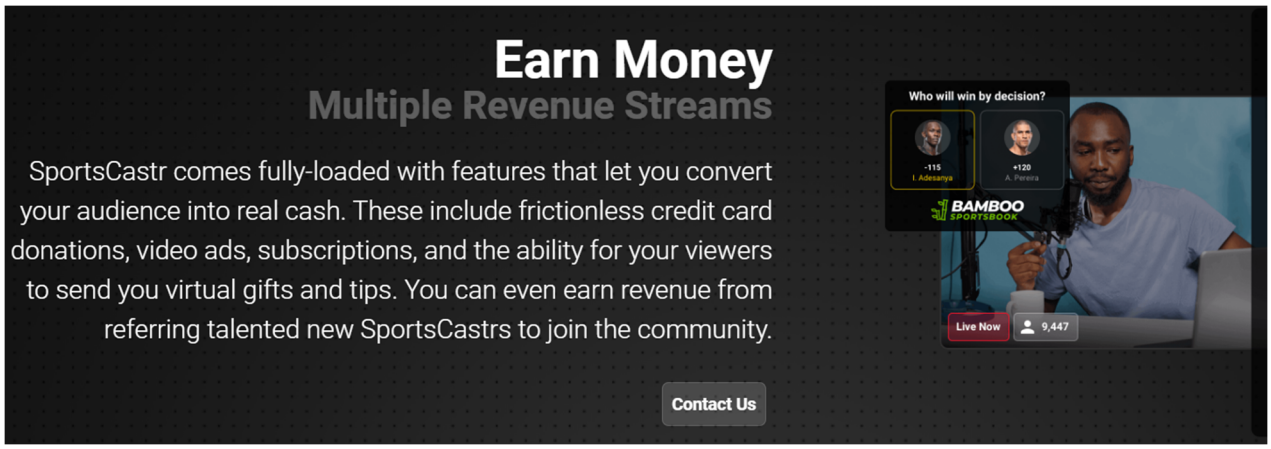
Delight & activate viewers with PANDA's SocketVision technology. SocketVision offers a new way to experience broadcasts — interactively. SocketVision is patent-protected technology developed by PANDA since 2016.

PANDA's patents include:

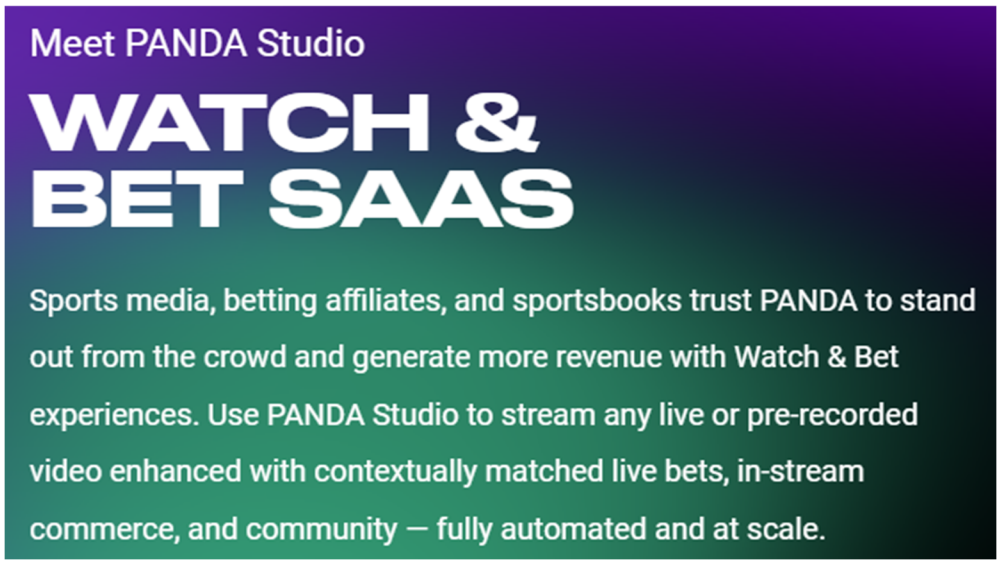
- US 10,425,697
- US 10,805,687
- US 11,039,218
- US 11,356,742
- US 11,770,591

(EX-2013.)

Moreover, 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:



(EX-2014.)



(EX-2015.)

Accordingly, Patent Owner's SportsCastr and PANDA Studio, which implemented the patented method, received widespread industry praise as a direct result of the claimed invention. In addition, others, including Petitioner, have copied and implemented this technology into their own products, which in turn have obtained commercial success because of this technology. The evidence supporting these secondary considerations constitutes strong objective evidence that the claims

are nonobvious and confirms Petitioner's reliance on hindsight in constructing its deficient grounds.

VII. CONCLUSION

For the foregoing reasons, the Board should decline to institute an IPR of the '697 patent.

Dated: April 8, 2025

/s/ Brian Eutermoser

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER PRELIMINARY RESPONSE** specified in 37 C.F.R. § 42.24 have 13,370 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft 365 Word version 2202.

Date:April 8, 2025

Respectfully submitted,

KING & SPALDING LLP

/s/ Brian Eutermoser
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Counsel for Patent Owner SportsCastr Inc. (d/b/a PANDA Interactive)

CERTIFICATE OF SERVICE

I certify that I caused to be served a true and correct copy of the foregoing: **PATENT OWNER PRELIMINARY RESPONSE and EXHIBITS** were served by filing this document through the Patent Trial and Appeal Case Tracking System (P-TACTS) on April 8, 2025, in its entirety on the following:

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