

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY INTERACTIVE ENTERTAINMENT LLC
Petitioner,

v.

QUANTUM IMAGING LLC
Patent Owner.

Patent No. 10,991,165

Inter Partes Review No. IPR2023-00996

PETITIONER'S REPLY TO PATENT OWNER RESPONSE

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Petitioner’s Exhibit List for *Inter Partes* Review of U.S. Patent No. 10,991,165

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U.S. Patent No. 10,846,941 (“the ’165 Patent”)	1001
U.S. Pat. Pub. No. US20200234505	1002
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Declaration of David Crane	1004
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International Patent Publication No. WO 02/062436 (“Pisanich”)	1007
Phantasy Star Online Manual (“PSO Manual”)	1008
Order Construing Claims, dated February 12, 2020, in the matter of <i>Barbaro Technologies, LLC v. Niantic, Inc.</i> , No. 3:18-cv-02955 (N.D. Cal.)	1009
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Petitioner Sony Interactive Entertainment LLC (“Sony” or “Petitioner”) provides this Reply under 37 C.F.R. § 42.23 to the Patent Owner Response filed on March 18, 2024 (Paper No. 24; “Response”). With this Reply and its Petition filed on June 6, 2023 (Paper No. 2, “Petition”), Petitioner requests cancellation of claims 1-3, 5-8, 10-12, and 18 of U.S. Patent No. 10,991,165 (“the ’165 patent”; EX-1001).

I. INTRODUCTION

Patent Owner seeks to confuse the Board right from the start of its Response, where it announces its claimed “Quantum Imaging [sic] Environment” as a “Holy Grail” and “major industry breakthrough,” and misrepresents the testimony from Petitioner’s expert, Mr. Crane, as being in agreement. (Response, 1-4.) What Mr. Crane testified to, and what Patent Owner omits from the Board, is that the ’165 patent represents no such breakthrough. Mr. Crane dismissed the notion that Patent Owner had actually invented a “universal translator” for “any device,” highlighting the vast gulf between the Patent Owner’s own statements and the ’165 patent’s “black box” description devoid of implementation detail. (Ex. 2011, 107:23-108:15, 109:17-23, 110:14-111:20, 111:22-112:10, 115:19-116:9; *see also* Ex. 1009, 5 (District Court characterizing specification’s description of QIE as “not a model of clarity.”).) Consistent with Mr. Crane’s skepticism, the actual claims of the ’165 patent are far more modest than any “Holy Grail,” reciting,

among other limitations, a “QIE module” construed by the District Court as making content “accessible on different types of devices.” (Ex. 1001, 43:42-43; Ex. 2015, 4.) As set forth in the Petition and below, these claims merely repackage what had long been known in the art.

II. CLAIM CONSTRUCTION

Patent Owner proposes that the Board adopt the same claim constructions adopted by the district court for the terms “graphics user interface (GUI) module,” “quantum imaging environment (QIE) module,” and “virtual thematic environment.” (Response, 6-8; Ex. 2015, 2-4.)

Patent Owner additionally proposes express constructions for “type,” “software layer,” “client,” and “server.” (Response, 8-11.) Petitioner does not believe, and the Board did not determine, that any express construction is required for any claim terms. (Petition, 8-9; DI (Paper 11), 12.) Except as discussed below, the Board does not need to reach the construction of any term in order to resolve the Parties’ dispute, because, as demonstrated in the Petition and herein, the claims are obvious even under Patent Owner’s proposed constructions.

III. THE CHALLENGED CLAIMS ARE OBVIOUS

All limitations of the challenged claims are met by Pisanich, and independently by the PSO Manual, for the reasons set forth in the Petition and described further herein.

A. Pisanich Ground

1. Claim 1

a) Pisanich teaches a QIE module.

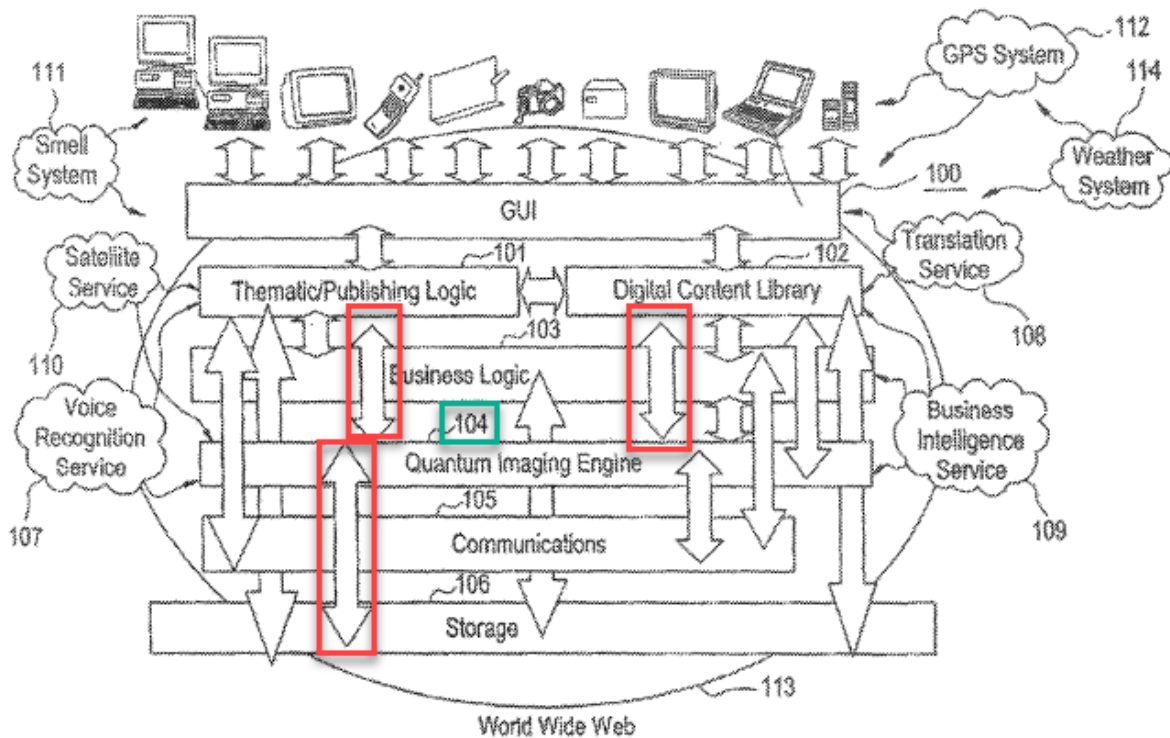
(1) Pisanich's QIE Module meets the claimed software layer.

Patent Owner argues, based on Dr. Medvidovic's declaration, that Pisanich does not meet Patent Owner's narrow definition of software layer, in which modules of a software layer interact "only with those that are assigned to adjacent layers." (Response, 9-10, 17-19.) "Software layer" cannot be limited to this specific meaning, because it is inconsistent with the specification's depictions of software layers. *See Grace Instrument Indus., LLC v. Chandler Instruments Co., LLC*, 57 F.4th 1001, 1010 (Fed. Cir. 2023) ("The district court erred in its reliance on extrinsic evidence ... that contradict the scope and meaning of "enlarged chamber" that a skilled artisan would ascertain by reading the intrinsic record.").

For example, Fig. 1, which Patent Owner relies on to support its proposed construction, depicts a "virtual platform" with six "layers," in which software layer modules interact across many other layers of the platform. (Ex. 1001, 11:62-67, Fig. 1.) However, in Fig. 1, as shown by the arrows between layers, the Quantum Imaging Environment (QIE) module 104 (annotated in green below) interacts not only with adjacent layers (e.g., business logic 103, communications 105), but with

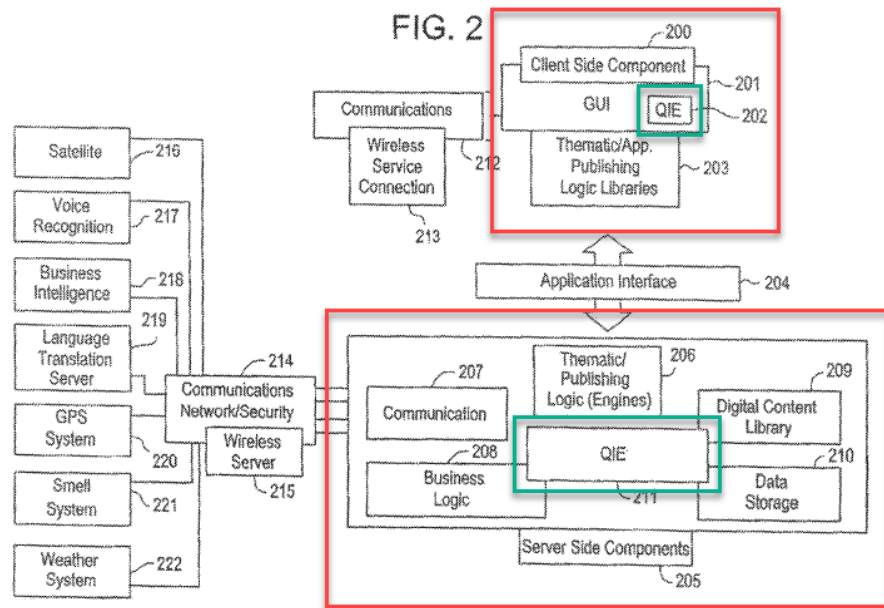
non-adjacent layers such as thematic/publishing logic 101, digital content library 102, and storage 106 (selected arrows annotated in red below):

FIG. 1



(Ex. 1001, Fig. 1 (annotated).)

As another example, Fig. 2 shows the QIE module overlapping with other, non-adjacent layers in the platform (e.g., business logic 206, digital content library 209, data storage 210, and/or GUI 201):



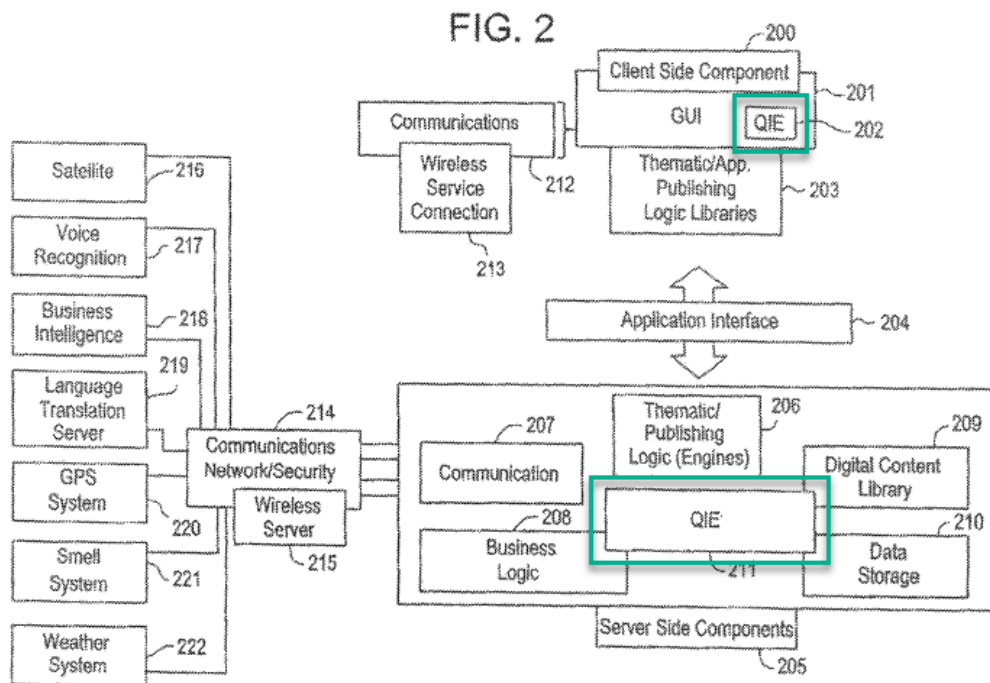
(Ex. 1001, Fig. 2 (annotated), 16:4-11; *see also* Fig. 5.)

These illustrations are thus inconsistent with Patent Owner's requirement that a software layer, such as the QIE module, be limited to an interface that communicates only with adjacent layers. Instead, the plain and ordinary meaning of software layer should apply, as set forth in the Petition. (Petition, 9-10.)

Patent Owner also argues that Pisanich's game data server 108 cannot meet the QIE module because Pisanich's game data server is described as an object-oriented design, which is incompatible with Patent Owner's view of software layers. (Response, 18-19.) But as discussed above, Patent Owner's view of software layers is so narrow that it fails to capture the QIE module contemplated by the '165 patent itself. A proper reading of software layers must encompass the QIE module that, in turn, is shown in the '165 patent in a manner consistent with

object-oriented design. For example, Fig. 2 of the '165 patent shows the QIE module 211 as part of server system 205, where it interfaces with various other modules (*e.g.*, business logic 206, digital content library 209, data storage 210). (Ex. 1001, 14:59-63, Fig. 2.) While this relationship between these modules is *inconsistent* with Patent Owner's view of software layers, it is *consistent* with Dr. Medvidovic's description of object-oriented design as having "objects [that] operate independently," and his description of Pisanich's game data server 108 as a "subsystem constructed of separate modules." (Ex. 2005, ¶102.)

Patent Owner further argues that the QIE module must be a "single" software layer and thereby not met by Pisanich, which contemplates multiple versions of a flight simulator game. (Response, 17-19.) Claim 1 does not recite "single," and Patent Owner offers nothing from the specification or prosecution history to support limiting the QIE module to one single software layer. To the contrary, Fig. 2 undermines Patent Owner's proposed limitation by disclosing that the QIE module has *two* layers, 202 and 211, "pertain[ing] to the most common denominator—the application architecture":



(Ex. 1001, Fig. 2 (annotated), 14:52-58, 15:54-16:3.)

Notwithstanding the above, the QIE module in Pisanich (game data server 108) is a software layer even under Patent Owner’s narrow understanding of “software layer.” For example, Fig. 2 of Pisanich demonstrates the game data server 108 (highlighted in red below) interacts only with its adjacent layers: the data providers 100, 104 in the layer above game data server 108 (orange); and the game 112 in the layer below game data server 108 (blue). Fig. 2 also shows game data server 108 as a single layer—*i.e.*, the single layer encompassed by the red box below—thereby also meeting Patent Owner’s proposed “single” software layer limitation.

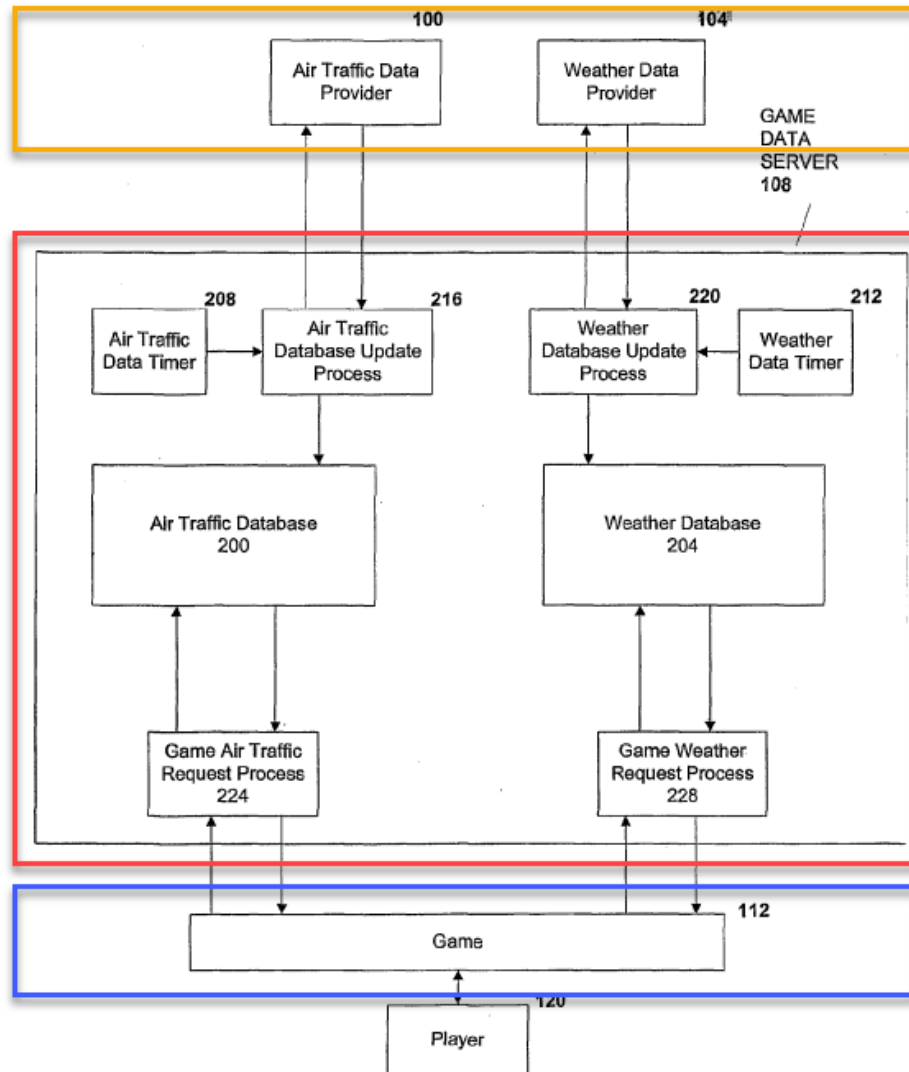


Figure 2

(Ex. 1007, Fig. 2 (annotated), Fig. 1, 5:13-6:2, 6:18-9:23.)

- (2) **Pisanich’s QIE Module makes the content accessible for use within the virtual thematic environment.**

Patent Owner argues, with reference to the claimed QIE module, that Pisanich does not meet “second content ... accessible on different types of devices

for use within the virtual thematic environment.” (Response, 7, 19-21¹.) As best understood, Patent Owner interprets the claimed QIE module to require the different types of devices accessing a *single* virtual thematic environment.

As the Petition explains, the virtual thematic environment is met by the interaction of the game data server’s content with rule-based game logic, such as in a game application like a flight simulator. (Petition, 15-16, 21; Ex. 1007, 35:20-36:1.) Different types of devices (e.g., different types of PCs) can run the flight simulator application and thereby access the content in the flight simulator’s virtual thematic environment. (Petition, 19-20; Ex. 1007, 5:13-6:2, Fig. 1; Ex. 1004, ¶¶73-84.) For instance, as the Board recognized, Mr. Crane illustrates six different types of gaming devices running the SubLOGIC Flight Simulator II game. (DI, 23-24’ Ex. 1004, ¶83.) Patent Owner’s “single” limitation is thus met by the virtual thematic environment of the flight simulator. (Ex. 1004, ¶¶73-84.) This is true even if—as Patent Owner incorrectly contends²—different types of devices

¹ Emphases added unless otherwise noted.

² Patent Owner selectively cites Mr. Crane’s testimony that Pisanich’s games 116 “could be” other versions of a flight simulator. Mr. Crane did not testify that different versions were *required* for different types of devices. As his declaration explained, alternatives to creating different versions included “creating ... at least

require different versions of a flight simulator game. As Mr. Crane testified, different versions of the flight simulator share the same theme and at least similar thematic environments. (Ex. 2012, 419:16-420:6; Ex. 1004, ¶¶73-84.)

(3) Pisanich’s QIE Module makes the content accessible on different types of devices.

Patent Owner further argues that in Pisanich, the QIE module fails to make the second content accessible on different types of devices within the same virtual thematic environment. (Response, 22-30.) Patent Owner speculates that in Pisanich, “any interpretation and manipulation of the data” would have to be performed in each game played on each device—not in the game data server 108 (the QIE module). (Response, 23.) But Patent Owner concedes that the game data server 108 “makes that data available for use in games 112 and 116” which include different games that operate on different types of devices (e.g., different types of PCs). (Response, 23; Petition, 20; Ex. 1007, 5:2-6:2, Fig. 1; Ex. 1004, ¶¶73-84; Ex. 2011, 128:15-25; *see also* DI, 23-24.) That is, it is the QIE module—game

different size and resolution images” for different device types. (Ex. 1004, ¶82.)

In any event, as Mr. Crane explained in testimony omitted by Patent Owner, the POSITA would understand that even in different versions of the flight simulator, “the theme would be the same,” consistent with the claimed QIE module. (Ex. 2012, 419:12-420:6.)

data server 108—that makes the content accessible on those different types of devices. (Petition, 19-20.)

The game data server 108 making data available for different games on different devices is consistent with the '165 patent's description of the QIE module. For instance, in a clock application, updated clock information is passed to QIE 211, which provides “interpretation or rasterization to a particular display or device,” and then to a clock object on that particular display or device. (Ex. 1001, 33:54-34:7.) As another example, QIE 211 “processes the information to determine the type of device and thematic environment, and may re-rasterize the information to format to that device and thematic environment.” (Ex. 1001, 27:36-39.)

Analogously, as shown in Fig. 2 of Pisanich, the game data server 108 in Pisanich interprets air traffic and weather content from providers 100 and 104, at least via request processes 224 and 228, for provision of that content to various games 112:

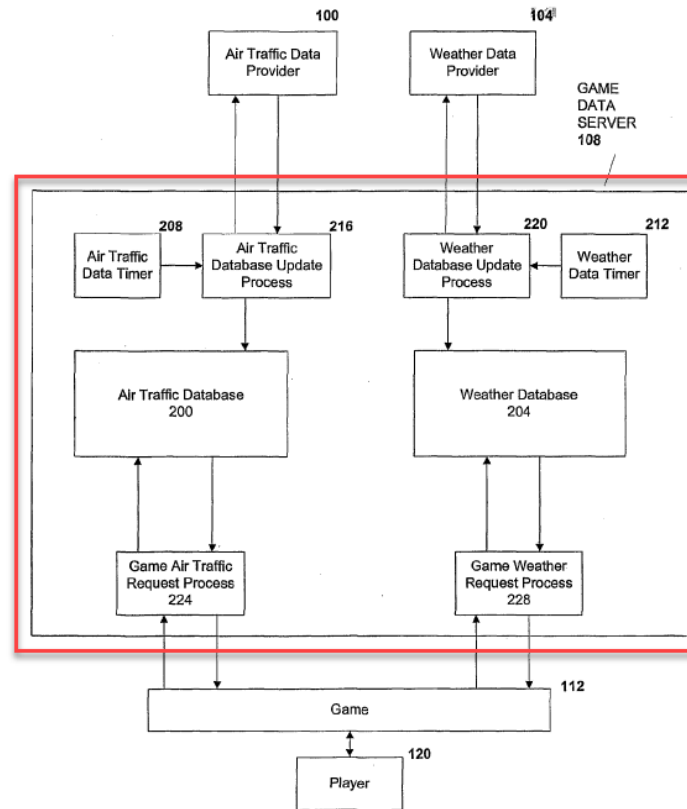


Figure 2

(Ex. 1007, Fig. 2 (annotated), 6:18-9:23.)

For instance, request processes 224, 228 can interpret the content to the specific needs of the game, such as by “consider[ing] the aircraft performance (747 vs. Piper cub), state (cruise, landing, takeoff, taxiing), current aircraft data (position, heading, speed and direction), and the previous request (position, heading, speed, and direction).” (Ex. 1007, 8:18-9:2.) By interpreting the content in this manner, the game data server makes the content accessible to the different types of devices that may be running the game. For example, different versions of a flight simulator game for different devices may feature different aircraft, and

different devices may require different tradeoffs between detail and performance.

(Ex. 1004, ¶¶73-84.)

b) Pisanich meets sending a request for first real-time information via the QIE module to the World Wide Web.

Patent Owner argues this limitation is not met by Pisanich because Pisanich allegedly fails to meet the claimed QIE module. (Response, 31-33.) Patent Owner is incorrect, and Pisanich meets the claimed QIE module, for at least the reasons described above in Section III.A.1.(a).

Moreover, Patent Owner disregards that, under the agreed-upon level of ordinary skill, the POSITA has two years of professional experience “in the fields of networking and network-based systems or applications, such as client-server and *web-based systems*.” (Petition, 8-9; Response, 5.) The POSITA would thus understand, based at least on this professional experience with web-based systems, that Pisanich’s game data server 108 (the QIE module) requesting real-time traffic and weather data from respective data provider systems (100, 104) teaches sending such requests to the World Wide Web, and similarly obtaining such requests from the World Wide Web, as set forth in the Petition at 22-24. (Ex. 1009, 13.)

c) Pisanich meets sending a request for second real-time information via the QIE module.

Patent Owner argues Pisanich does not meet “sending a request for second real-time information via the QIE module.” (Response, 33-34.) Patent Owner observes that, in support of this limitation (element 1[k]), the Petition referred to its analysis of element 1[f]. (Response, 33-34.) Patent Owner disputes that element 1[f] is met by Pisanich, but does not advance independent reasons why element 1[k] is allegedly not met by Pisanich. (Response, 33-34.) Patent Owner’s rebuttal of element 1[f] is deficient, and this claim element is met by Pisanich, for at least the reasons described above in Sections III.A.1(a) and (b).

d) Pisanich teaches integrating real-time information into a virtual thematic environment using a computer system including a client and a server.

Patent Owner argues that Pisanich does not expressly recite a “client” or “client computer” that interfaces with its game data server 108, and argues the POSITA “would not assume” that an object that communicates with a server (*e.g.*, game data server 108) is “necessarily a client system.” (Response, 34-35.) But Patent Owner does not dispute that a client system and server system would be compatible with Pisanich—only that such a configuration would be the *preferred* configuration. (Response, 35-36.) For example, Patent Owner speculates that a “three-tiered architecture with two servers” would be “more beneficial than a client and server system.” (Response, 35-36.)

But even assuming that were true, a reference “must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.” *In re Applied Materials, Inc.*, 692 F.3d 1289, 1298 (Fed. Cir. 2012). Pisanich teaches a computer system including a client, as well as the game data server 108, as set forth in the Petition. For example, the POSITA would have understood Pisanich’s game data server 108 to be configured to serve data to a client player’s computer. (Petition, 21; Ex. 1004, ¶199.) This is particularly so given the agreed-upon level of skill, under which the POSITA has specific professional experience in systems or applications “such as *client-server* and web-based systems” and thus would not require express direction from Pisanich to appreciate its teachings of client-server systems. (Petition, 8-9; Response, 5.)

e) The Petition established that Pisanich meets additional claim elements.

Patent Owner identifies various additional limitations of claim 1, and analogous limitations of claim 18, that are allegedly unaddressed by the Petition with respect to Pisanich.³ (Response, 56-57.) But the Petition explained how these limitations are met by Pisanich, as described below.

³ Patent Owner alleges these deficiencies with respect to the Pisanich grounds, *i.e.*, by reference to the Petition’s discussion of claim 1 in view of Pisanich at 22-27.

(1) “providing access to the first real-time information within the virtual thematic environment via the first user interface”

Patent Owner alleges the Petition failed to specifically address this limitation (1[i]). (Response, 56.) But as Patent Owner acknowledges, the Petition identified how this limitation is met by Pisanich with reference to its analysis of limitations 1[e] and 1[f]. (Response, 56; Petition, 24.) As explained in the Petition in its discussion of 1[e] and 1[f], as credited by the Board, access to the first real-time information (*e.g.*, real-time traffic and weather data) is provided within the game’s virtual thematic environment at least via the rendering engine 316 (a first user interface). (Petition, 22-24; DI, 32-33.)

(2) “providing at least one secondary application within the primary application at the client system”

Patent Owner alleges the Petition failed to specifically address the language “at the client system” of this limitation (1[j]). (Response, 56-57.) Not so: as the Petition explained, and as the Board credited, the at least one secondary application (one or more of Pisanich’s managers or engines, such as audio engine 336) is

(Response, 56-57.) Patent Owner does not allege any such deficiencies with respect to the PSO Manual grounds, and does not appear to dispute that these limitations are met by the PSO Manual.

provided within the primary application (game 112) “at the client system” because the user’s computer system is the client system that executes the game. (Petition, 25-26, 21-22; DI, 33-35.)

(3) “sending a request for second real-time information via the QIE module”

Patent Owner alleges the Petition failed to specifically address the language “via the QIE module” of this limitation (1[k]). (Response, 57.) But as credited by the Board, in the Petition’s discussion of limitation 1[k], which referenced the Petition’s Sections VII.A.2(c) and (g) (discussing limitations 1[b] and 1[f]), the Petition explained that Pisanich teaches sending a request for second real-time information (real-time air traffic data) via the QIE module (game data server 108). (Petition, 19-20, 22, 26-27; DI, 35-36.)

(4) “obtaining the second real-time information via the world wide web”

Patent Owner alleges the Petition failed to specifically address this limitation (1[l]). (Response, 57.) But as Patent Owner acknowledges, and as credited by the Board, the Petition identified how this limitation is met by Pisanich with reference to its analysis of limitations 1[f] and 1[k]. (Response, 56; Petition, 27.) The Petition explained that Pisanich meets obtaining the second real-time information (real-time air traffic data) via the World Wide Web, *e.g.*, “using web-based protocols such as HTTP and HTTPS.” (Petition, 22-24, 26-27; DI, 36.)

(5) “downloading the second real-time information into the secondary application”

Patent Owner alleges the Petition failed to specifically address this limitation (1[m]). (Response, 57.) But as Patent Owner acknowledges, the Petition identified how this limitation is met by Pisanich with reference to its analysis of limitations 1[j] and 1[k]. (Response, 56; Petition, 27.) As the Petition explained, as credited by the Board, Pisanich meets downloading the second real-time information (real-time air traffic data) into the secondary application (Pisanich’s managers or engines, such as audio engine 336). (Petition, 25-27; DI, 36-37.)

(6) “enabling the user to control the at least one secondary application through a second user interface”

Patent Owner alleges the Petition failed to specifically address the above language of limitation (1[o]). (Response, 57.) But the Petition’s discussion of limitation 1[o] specifically referenced section VII.A.2(c), in which the Petition discussed limitation 1[b], and additionally referenced the Petition’s annotated Fig. 3 of Pisanich. The Petition, as credited by the Board, thus explained that Pisanich meets enabling the user to control the at least one secondary application (Traffic Manager 300) through a second user interface (the audio engine). (Petition, 18-20, 28; DI, 38-39.)

B. PSO Manual Ground

1. The PSO Manual is available as prior art.

Patent Owner alleges that Petitioner has failed to authenticate Ex. 1008, the PSO Manual, for lack of evidence that Ex. 1008 is “a document shipped along with the *Phantasy Star Online* video game for Sega Dreamcast before the priority date of the ’165 patent.” (Response, 49-53.)

Petitioner herein provides Ex. 1024, the declaration of Monika Hudgins, to confirm that information. As Ex. 1024 provides, and as corroborated by Ex. 1008 itself, Ms. Hudgins was a Sega employee who was personally involved with the development and production of the printed materials that were included with the game *Phantasy Star Online*. (Ex. 1024, ¶1; Ex. 1008, 30.) Specifically, Ms. Hudgins translated and wrote the manual for the U.S. version of the game, having completed it in December 2000 and provided the manual for processing and printing for its January 2001 public release. (Ex. 1024, ¶¶1-2.) Ms. Hudgins confirms, based on her personal knowledge, that Ex. 1008 is a true and correct copy of the manual that she prepared in 2000. (Ex. 1024, ¶2.)

Ms. Hudgins’ declaration corroborates the evidence already in the record substantiating Ex. 1008 and not seriously rebutted by Patent Owner. In addition to indicia in Ex. 1008 itself that establish its publication date, such as a copyright notice dated 2000 and an announcement for a future game “coming 2001,” Petition

at 37-39, Petitioner previously provided declarations of Alex Harry (Ex. 1011) and Nathan White (Ex. 1012). Mr. Harry stated in his declaration and deposition testimony that he purchased a copy of the game *Phantasy Star Online* from eBay, that the game and its manual arrived in “fully intact” cellophane wrap that appeared to be original from the factory, and that Ex. 1008 is an identical copy of the manual he received. (Ex. 1011, 6-12; Ex. 2013, 38:6-39:8.) Mr. Harry also provided various public documents from 2000 and 2001, corroborated by Mr. White of the Internet Archive as to their archival and retrieval. (Ex. 1012.)

Noting minor cosmetic wear on the 23-year old paper manual that Mr. Harry purchased, Patent Owner would have the Board believe a hypothetical scenario in which the eBay seller—a veteran seller with an overwhelmingly positive feedback reputation from over 11,000 sales, Ex. 1011 at 13—combined a copy of the *Phantasy Star Online* game with a tampered-with copy of the manual; bundled the two in “fully intact” cellophane wrap to mimic the game’s original packaging; applied an “aged quality” to the wrap, Ex. 2013 at 38:24-39:8; and fraudulently sold it to Mr. Harry, an experienced gamer from the Dreamcast era, Ex. 2013 at 25:15-22. (Response, 50.) Patent Owner’s speculation that this incredible sequence of events is as “equally possible” as the manual being authentic would have the Board suspend all disbelief—particularly in view of Ms. Hudgins’ corroborating declaration. (Response, 50; Ex. 1024.) Mr. Harry’s testimony

instead offered more plausible explanations for the minor cosmetic wear: degradation of the paper manual over 23 years; artifacts from scanning the manual; or wear from opening the manual after it was received. (Ex. 2013, 61:22-62:3, 54:18-55:2.)

2. Claim 1

a) The PSO Manual meets the QIE module.

Patent Owner alleges that the PSO Manual does not meet the claimed QIE module for various reasons, addressed individually below.

Patent Owner argues generally that the PSO Manual “describes how to play a game, but it does not describe or otherwise disclose how the game is implemented in either the software or hardware architecture.” (Response, 37.) Patent Owner errs in limiting the PSO Manual to its literal disclosures, rather than to its broader teachings from the vantage point of a POSITA. *See Dow Jones & Co. v. Abblaise Ltd.*, 606 F.3d 1338, 1349 (Fed. Cir. 2010)(obviousness analysis “requires an assessment of ... the background knowledge possessed by a person having ordinary skill in the art.”) A reference “must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.” *Applied Materials, supra* at 1298; *see also Netflix, Inc. v. DivX, LLC*, No. 2022-1083, 2023 WL 2298768 (Fed. Cir. Mar. 1, 2023) (PTAB decision vacated for

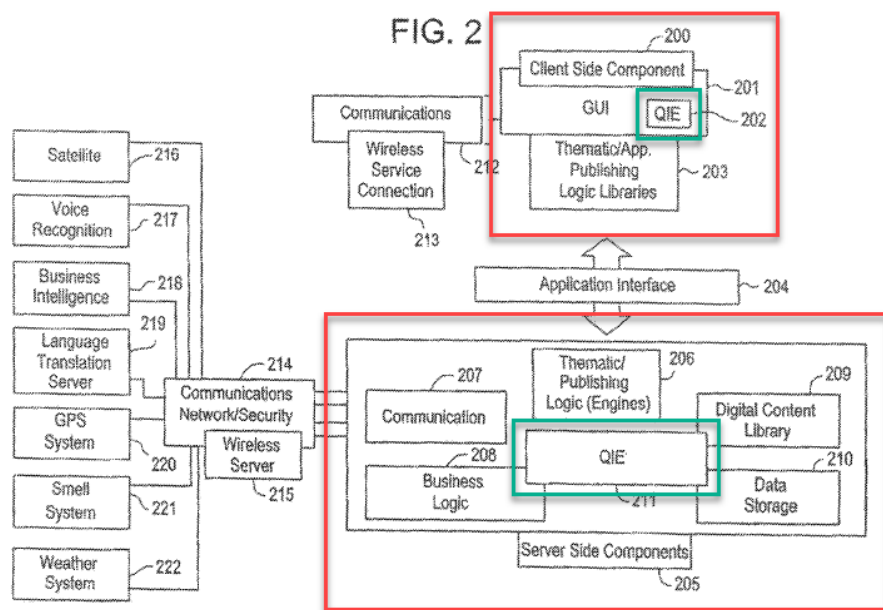
committing “fundamental legal error” in failing to consider reference’s broader “teachings” in obviousness analysis).

The PSO Manual corresponds to a video game, *Phantasy Star Online*, that was designed for use with Sega Dreamcast video game consoles. (Ex. 1024, ¶3.) Under the agreed-upon level of ordinary skill, the POSITA has two years of professional experience “in the specific context of console and gaming.” (Petition, 8-9; Response, 5.) The POSITA would thus understand, based at least on this professional experience with console gaming, that a game designed for use with a game console must be technically compatible with that game console and adhere to the limitations of that game console. More specifically, Sega Dreamcast was an example of a popular game console available in 2002; the POSITA, having specific console and gaming experience, would have been specifically familiar with the Dreamcast and its hardware and software characteristics. The POSITA would have understood the PSO Manual in that context—particularly given the PSO Manual’s admonition to “read the operating manual for the software and console before operating them”, Ex. 1008 at 2—and the teachings of the PSO Manual must thus be understood in the context of describing a game for use on the Dreamcast.

(1) PSO Manual teaches that the QIE module is a software layer.

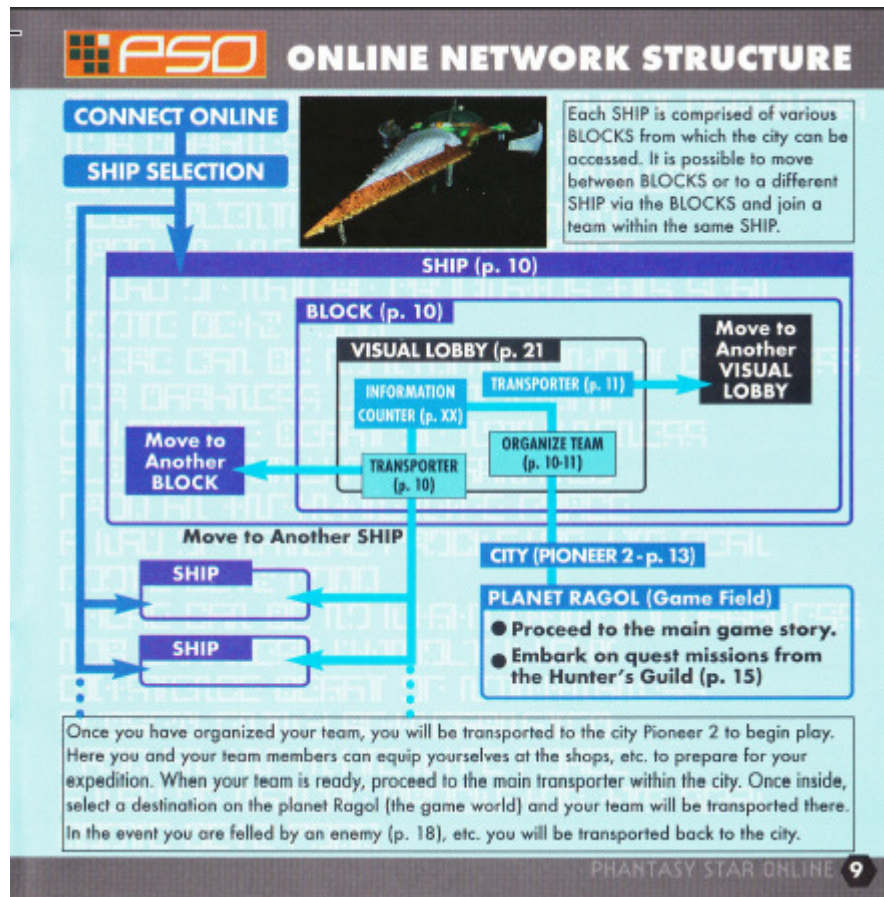
Patent Owner argues the QIE module of the PSO Manual does not meet the claimed software layer under Patent Owner’s narrow understanding of software

layer. (Response, 37-47.) As discussed in Section III.A.1(a)(1), Patent Owner's interpretation of software layer does not apply because it contradicts the intrinsic record. Instead, the '165 patent contemplates that the QIE is a module that communicates with other modules, without Patent Owner's restriction on only communicating with adjacent layers. Fig. 2 illustrates:



(Ex. 1001, Fig. 2 (annotated); *see also* Fig. 5.)

The PSO Manual teaches the claimed software layers for the reasons set forth in the Petition. (Petition, 44-46.) For example, the PSO Manual describes an online network structure akin to the modular architecture of Fig. 2 of the '165 patent. (Petition, 44-46.) Page 9 illustrates:



(Ex. 1008, 9-11; Petition, 44-46.)

As shown on page 9, each ship is comprised of various “blocks.” (Ex. 1008, 9.) As seen in the figure, ships and blocks are modular layers: “It is possible to move between BLOCKS or to a different SHIP via the BLOCKS and join a team within the same SHIP.” (Ex. 1008, 9.) By moving between ship or block modules, *Phantasy Star Online* users can interact with users located in different lobbies of different modules. (Ex. 1008, 9, 11.) This is an example of inter-module communication, such as shown above in Fig. 2 of the ’165 patent.

(2) The PSO Manual's QIE module receives and interprets content such that the content is manipulated so as to be accessible on different types of devices.

Under Patent Owner's proposed construction, which is based on the district court's construction, the QIE module "receives and interprets content such that the content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment." (Response, 7.) Patent Owner argues that the PSO Manual does not make content accessible on "different types of devices" because the *Phantasy Star Online* game is designed for use on Sega Dreamcast consoles. (Response, 40-42.) But Patent Owner proposes that "different types of devices"—within its proposed construction of QIE module—should be construed as "different kinds, classes, or groups." (Response, 8-9.) Patent Owner disregards evidence that multiple kinds, classes, or groups of Sega Dreamcast consoles were produced—for example, for use in different geographic regions having different technical requirements and language requirements—and that the *Phantasy Star Online* game was designed for use with those multiple kinds of Dreamcast consoles. (Ex. 1004, ¶¶102, 236-39.) The PSO Manual indicates *Phantasy Star Online* users interact with other users "from all over the world," who access the game on different kinds of Dreamcast consoles for those users' respective regions. (*Id.*; Ex. 1008, 2.)

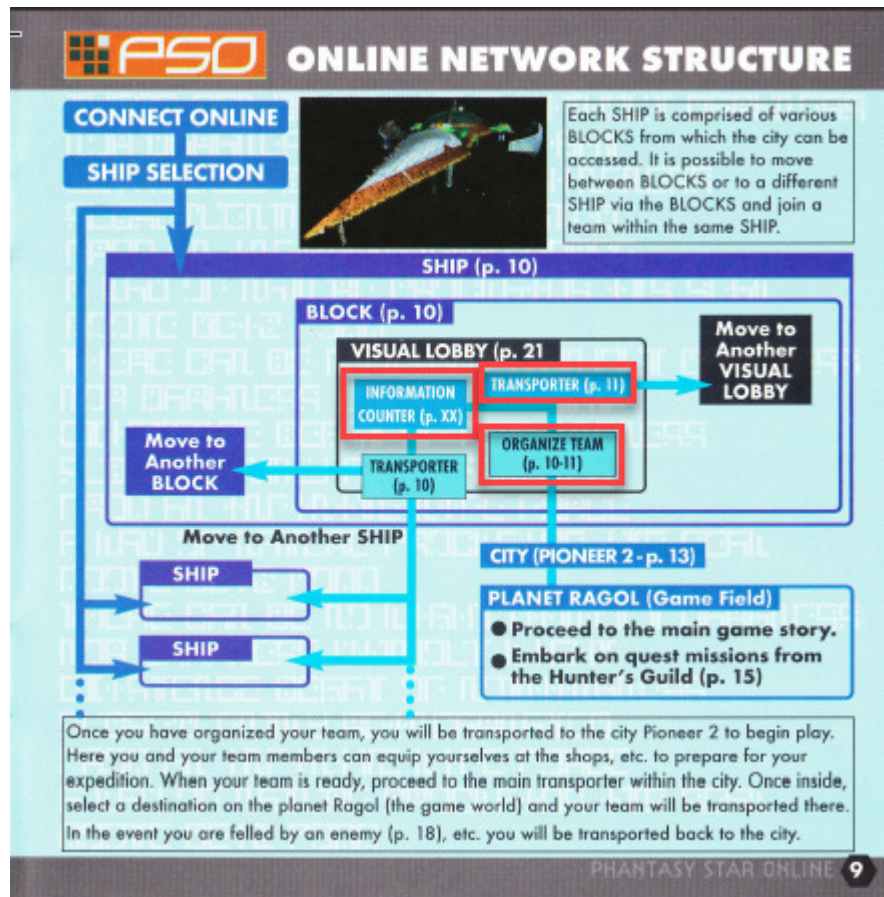
For example, as explained in the Petition, two Sega Dreamcast consoles sold into two different countries had different hardware and/or software systems, including different voltage sources (owing to different power requirements in different countries); different language operating systems; and different video output standards (*e.g.*, different television standards). (Ex. 1004, ¶102.) These differences describe different “kinds, classes, or groups” of Sega Dreamcast consoles, and Patent Owner fails to provide any evidence that the ’165 patent’s “different types” of devices—even under Patent Owner’s own proposed construction—excludes the different types of Dreamcast consoles on which *Phantasy Star Online* was designed to operate. (*See, e.g.*, Response, 40-42.)

(3) The PSO Manual’s QIE module receives and interprets the content such that the content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment.

Patent Owner further argues that—under its proposed construction of QIE module—the PSO Manual’s QIE module does not receive and interpret content such that the content is manipulated so as to be accessible for use within the virtual thematic environment. (Response, 39, 43-47). But as explained in the Petition, and as the Board recognized, these features of the QIE module are met by disclosures of the PSO Manual. (DI, 42-43.) For example, as explained in the Petition and credited by the Board, *Phantasy Star Online* receives real time

information for information counter, transporter, and organize team functions.

(Petition, 47-48; DI, 31.) Page 9 of the PSO manual illustrates these features:



(Ex. 1008, 9 (annotated).)

As one example, as described by the PSO Manual, the “information counter” function allows users to “chat with other users within the same block in real time.”

(Ex. 1008, 10-11; Petition, 45-46.) The PSO Manual explains how the information counter chat feature makes the second content accessible on different types of devices, thus “overcom[ing] language barriers” between “a variety of people from all over the world”: *Phantasy Star Online*’s Word Select system *receives* input in

a first language from a user; and *interprets* the input as a message for translation into a second language; such that the message is *manipulated* by presentation to a different user, on a different type of Dreamcast console, in the second language. (Petition, 44-46, 49-52; Ex. 1008, 2, 4, 10, 11.) The PSO Manual explains that the Word Select menu is used to “create sentences that will be understood in five languages”; and that “all messages created and sent will be automatically translated into the language setting designated by each player.” (Ex. 1008, 12, 31; Ex. 1004, ¶¶101, 104.) This translation feature of the PSO Manual is consistent with an embodiment specifically disclosed in the ’165 patent: “The program is also designed to provide real time translations into multiple languages within the virtual environment, so that the virtual environment is international in accessibility.” (Ex. 1001, 10:15-18.)

Patent Owner additionally argues, apparently in connection with the QIE module, that “Mr. Crane does not explain how the ‘Word Select’ feature receives, manipulates, and interprets ‘second content’ provided by the primary application as required by the challenged claims.” (Response, 54.) Patent Owner’s argument is irrelevant to this proceeding: even under Patent Owner’s proposed constructions, the challenged claims do not require receiving, manipulating, and interpreting second content provided by the primary application. (Ex. 1001, 43:37-46:12.)

b) The PSO Manual teaches a computer system including a client and a server.

Patent Owner argues that the PSO Manual is “silent as to the choice of computer architecture” and does not expressly disclose a “client” or “client system.” (Response, 47-48.) As with the Pisanich grounds, Patent Owner does not dispute that the PSO Manual discloses a game that can operate in a client-server configuration, in which a computer system includes a client and a server; and instead argues that the client-server configuration is one of a “range of possible architectural choices” and speculates that a client-server configuration would not be the preferred configuration of those possibilities. (Response, 47-48.)

But as described above in Section III.A.1(d), Patent Owner misapplies the correct legal standard: a reference “must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.” *Applied Materials, supra* at 1298. Further, as described above, the POSITA has specific professional experience in “*client-server* and web-based systems” and thus would not require express direction from the PSO Manual on client-server systems. (Petition, 8-9; Response, 5.) The PSO Manual teaches the claimed computer system including a client and a server for the reasons set forth in the Petition. (Petition, 40-42).

IV. ADDITIONAL ARGUMENTS BY PATENT OWNER

Patent Owner accuses the Petition of violating 37 C.F.R. § 42.6(a)(3) in citing to portions of Mr. Crane’s declaration for evidentiary support. (Response, 15-16.) This is a misapplication of the rules regarding incorporation by reference. Indeed, an expert is *required* to provide “detailed explanations,” but it should not “make additional legal arguments” that are incorporated by reference. *Motorola Mobility LLC v. Largan Precision Co., Ltd.*, IPR2022-01022, Paper 59 at 73-74 (PTAB Dec. 8, 2023). Mr. Crane’s declaration respects that legal standard by providing evidence and explanations of the arguments set forth in the Petition.

Patent Owner accuses Petitioner of deviating from the correct legal standard in its obviousness analysis. (Response, 9-11.) Similarly, Patent Owner repeatedly challenges Mr. Crane and his declaration as “conclusory,” “unsupported,” and “improper” in his analysis of the patentability of the claims. (*See, e.g.*, Response at 12-14.) Petitioner applied the correct legal standard: each of the Petition’s grounds is based on a single prior art reference in view of the POSITA’s knowledge. (Petition, 4-5; Ex. 1004, ¶¶117-19, 223-225.) There was no failure to consider or describe differences: Mr. Crane testified that he “analyz[ed] differences” alongside similarities, Ex. 2011 at 159:23-160:2; and in any event, as demonstrated by the Petition, there are no differences between the claimed subject matter and the prior art in view of the POSITA’s knowledge.

Finally, Patent Owner obfuscates by falsely characterizing its disagreement with the Petition's detailed analysis as a lack of credibility and a disregard for the rules associated with obviousness challenges. But, in its Institution Decision, the Board expressly disagreed that Petitioner's analysis is conclusory, and credited the Petition as providing "sufficient arguments and supporting evidence." (*See, e.g.*, DI, 19.)

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Certification of Word Count (37 C.F.R. § 42.24)

I hereby certify that this PETITIONER’S REPLY TO PATENT OWNER RESPONSE has 5532 words (as counted by the “Word Count” feature of the Microsoft Word™ word-processing system), exclusive of a table of contents, a table of authorities, a listing of facts which are admitted, denied, or cannot be admitted or denied, a certificate of service or word count, or appendix of exhibits.

Dated: June 10, 2024

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Certificate of Service (37 C.F.R. § 42.6(e)(4))

I hereby certify that the attached PETITIONER'S REPLY TO PATENT OWNER RESPONSE was served on the below date on the Patent Owner via e-mail (by consent) to the following counsel of record for the Patent Owner:

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