

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY INTERACTIVE ENTERTAINMENT LLC,
Petitioner,

v.

QUANTUM IMAGING LLC,
Patent Owner.

IPR2023-00995
Patent 10,846,941 B2

SONY INTERACTIVE ENTERTAINMENT LLC'S NOTICE OF APPEAL

via P-TACTS
Patent Trial and Appeal Board

via Email
Director of the United States Patent and Trademark Office
c/o Office of the General Counsel
efileSO@uspto.gov

via CM/ECF
United States Court of Appeals for the Federal Circuit

INTRODUCTION

Sony Interactive Entertainment LLC’s appeal stems from the Patent Trial and Appeal Board’s Final Written Decision (Paper 53) (the “Final Written Decision”) entered on December 9, 2024, in the above-captioned *inter partes* review of United States Patent No. 10,846,941 (“the ’941 patent”). This notice is timely filed within 63 days of the Final Written Decision. 37 C.F.R. § 90.3(a)(1).

SONY INTERACTIVE ENTERTAINMENT LLC’S APPEAL

Please take notice that under 35 U.S.C. §§ 141(c), 142, 319; 37 C.F.R. §§ 90.2(a), 90.3(a); and Federal Rule of Appellate Procedure/Federal Circuit Rule 15, Sony Interactive Entertainment LLC hereby appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision and all underlying decisions and orders in this action on which that decision is based.

SONY INTERACTIVE ENTERTAINMENT LLC’S ISSUES ON APPEAL

Sony Interactive Entertainment LLC’s issues on appeal include at least (37 C.F.R. § 90.2(a)(3)(ii)):

(i) the Board’s conclusion that claims 1, 3, 5, 7-12, and 23-26 of the ’941 patent had not been proven unpatentable; and

(ii) any findings, analysis, or determinations supporting or related to that issue, including whether the prior art discloses or renders obvious a “quantum imaging environment (QIE) module,” as well as all other issues decided adversely to Sony Interactive Entertainment LLC in any orders, decisions, rulings, or opinions

in this proceeding.

Simultaneously with this submission, Sony Interactive Entertainment LLC is filing a true and correct copy of this Notice of Appeal with the Director of the United States Patent and Trademark Office and a true and correct copy (or copies) of the same, along with the required filing fee, with the Clerk of the United States Court of Appeals for the Federal Circuit as set forth in the accompanying Certificate of Filing.

Dated: February 7, 2025

Respectfully submitted,

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CERTIFICATE OF FILING

The undersigned hereby certifies that, in addition to being electronically filed through P-TACTS, a true and correct copy of the above-captioned SONY INTERACTIVE ENTERTAINMENT LLC'S NOTICE OF APPEAL is being filed via email with the Director on February 7, 2025, at efileSO@uspto.gov, the email address indicated on the United States Patent and Trademark Office's web page for the Office of the General Counsel.

The undersigned also hereby certifies that a true and correct copy of the above-captioned SONY INTERACTIVE ENTERTAINMENT LLC'S NOTICE OF APPEAL and the filing fee is being filed via CM/ECF with the Clerk's Office of the United States Court of Appeals for the Federal Circuit on February 7, 2025.

Dated: February 7, 2025

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on February 7, 2025, the foregoing
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SONY INTERACTIVE ENTERTAINMENT LLC,
Petitioner,

v.

QUANTUM IMAGING LLC,
Patent Owner.

IPR2023-00995
Patent 10,846,941 B2

Before SCOTT A. DANIELS, KEVIN W. CHERRY, and
JAMES J. MAYBERRY, *Administrative Patent Judges*.

CHERRY, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

ORDER
Dismissing Patent Owner's Motion to Exclude (Paper 42)
37 C.F.R. § 42.64(c)

I. INTRODUCTION

A. Background

Sony Interactive Entertainment LLC (“Petitioner”) filed a Petition (“Pet.,” Paper 2) requesting institution of *inter partes* review of claims 1, 3, 5, 7–12, and 23–26 (“the Challenged Claims”) of U.S. Patent No. 10,846,941 B2 (Ex. 1001, “the ’941 patent”). Patent Owner filed a Preliminary Response (Paper 9). Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review as to all claims and grounds set forth in the Petition. Paper 11 (“Inst. Dec.”).

After institution, Patent Owner filed a Patent Owner Response (Paper 24, “PO Resp.”), Petitioner filed a Reply (Paper 31, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 34, “Sur-reply”). Patent Owner also filed a Motion to Exclude (Paper 42, “PO MTE”), Petitioner filed an Opposition (Paper 43, “PO MTE Opp.”), and Patent Owner filed a Reply (Paper 46, “PO MTE Reply”). A consolidated oral hearing was held for this proceeding as well as IPR2023-00996, on September 13, 2024, and the transcript is of record. Paper 51.

We have jurisdiction pursuant to 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the Challenged Claims. Petitioner bears the burden of proving unpatentability of the Challenged Claims. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2022). Having reviewed the arguments and the supporting evidence, we determine that Petitioner has not shown, by a preponderance of the evidence, that the

challenged claims are unpatentable. We dismiss Patent Owner’s Motion to Exclude as moot.

B. Related Proceedings

The parties identify the following district-court proceeding involving the ’941 patent and related patents: *Quantum Imaging LLC v. Sony Group Corporation, et al.*, Case No. 6:22-cv-00573-ADA-DTG (W.D. Tex., filed June 3, 2022). Pet. 2; Paper 5, 1 (Patent Owner’s Mandatory Notices).

C. Real Parties in Interest

Petitioner identifies Sony Interactive Entertainment Inc., Bluepoint Games, Inc., Sony Group Corporation, and Sony Corporation of America as the real parties-in-interest. Pet. 1. Patent Owner identifies Quantum Imaging LLC as real party in interest. Paper 5, 2.

D. The Asserted Grounds of Unpatentability and Declaration Evidence

Petitioner challenges the patentability of claims 1, 3, 5, 7–12, and 23–26 of the ’941 patent on the following grounds:

Claim(s) Challenged	35 U.S.C. §¹	Reference(s)/Basis
1, 3, 5, 7–12, 23–26	103(a)	Pisanich ²

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. The ’941 patent claims benefit of a Mar. 22, 2004, filing date, which is before the effective date of the applicable AIA amendments. Ex. 1001, (60). Petitioner states that “the earliest priority date of the ’941 Patent should be Mar. 22, 2004.” Pet. 9. Thus, we refer to the pre-AIA version of 35 U.S.C. § 103. Our decision would be the same were we to apply the AIA version of the statute.

² Pisanich, WO 02/062436 A2 (published Aug. 15, 2002, filed Feb. 6, 2002) (Ex. 1007, “Pisanich”)

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
1, 3, 5, 7–12, 23–26	103(a)	PSO Manual ³

Pet. 4. Petitioner supports its challenge with a Declaration of David Crane (Ex. 1004), a Declaration of Alexander Harry (Ex. 1009), a Declaration of Nathaniel E. Frank-White (Ex. 1011), and a Declaration of Monika Hudgins (Ex. 1024). Patent Owner supports its arguments with a Declaration of Dr. Nenad Medvidović (Ex. 2005), and a Declaration of Marc A. Brockhaus (Ex. 2010). Additionally, Petitioner submits the cross-examination testimony of Dr. Nenad Medvidović (Ex. 1023). Patent Owner submits the cross-examination testimony of Mr. David Crane (Exs. 2011, 2012), and Alexander Harry (Ex. 2013).

E. The '941 Patent

The '941 patent is entitled “Interactive Virtual Thematic Environment,” and “relates to an interactive software application platform which can be used in entertainment, business, publishing, and other applications to provide a virtual and real world experience to the user by integrating audio, video, two dimensional (2D), and three dimensional (3D) technology, and other applications or services.” Ex. 1001, code (54), 1:26–31. The '941 patent claims priority through a series of continuations and divisionals back to March 22, 2004. *Id.* at code (60). The patent states “virtual environments, especially those present on the internet, for example, have not provided the user with a real world experience.” *Id.* at 1:42–44. The patent is thus “directed to an interactive software application platform

³ Fantasy Star Online Manual (alleged publication date, Mar. 31, 2001) (Ex. 1008, “PSO Manual”).

which can be used in entertainment, business, publishing, and other applications to provide a virtual and real world experience to the user by integrating audio, video, two dimensional (2D), and three dimensional (3D) technology, and other applications or services.” *Id.* at 1:50–55.

Figure 1, reproduced below, “is a schematic showing one embodiment of the six-level logical architecture of an interactive software platform consistent with the present invention.” *Id.* at 6:40–42.

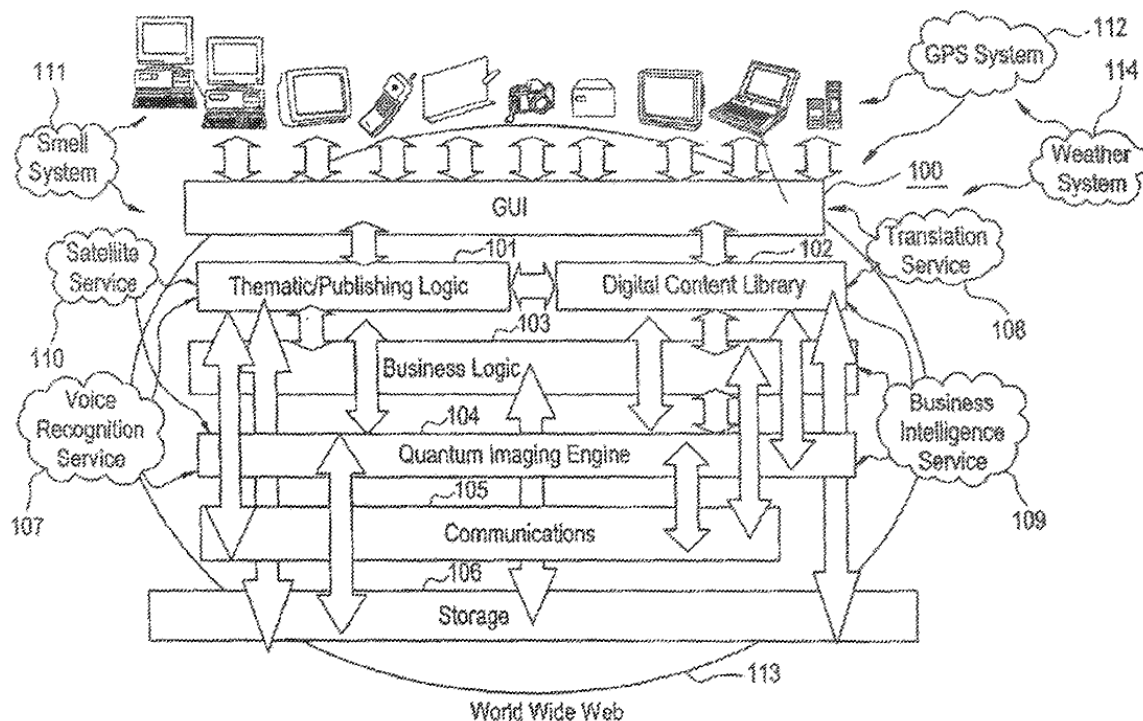


Figure 1 illustrates:

The six layers of the virtual platform include 1) a graphical user interface (GUI) 100, 2) a Thematic/Publishing Logic 101 and a Digital Content Library 102, 3) a Business Logic 103, 4) a thematic or zone application builder and interpreter (i.e., a Quantum Imaging Engine 104), 5) Communications 105, and 6) a Data Storage 106.

Id. at 11:60–65. The program of the '941 patent is “in a Quantum Imaging Environment (QIE),” where the logical architecture “is implemented on a 6-

tier modular system (i.e., six layers), and at least six (6) service area modules, which are fully distributed across the internet.” *Id.* at 11:54–59.

Figure 2 of the ’941 patent is reproduced below:

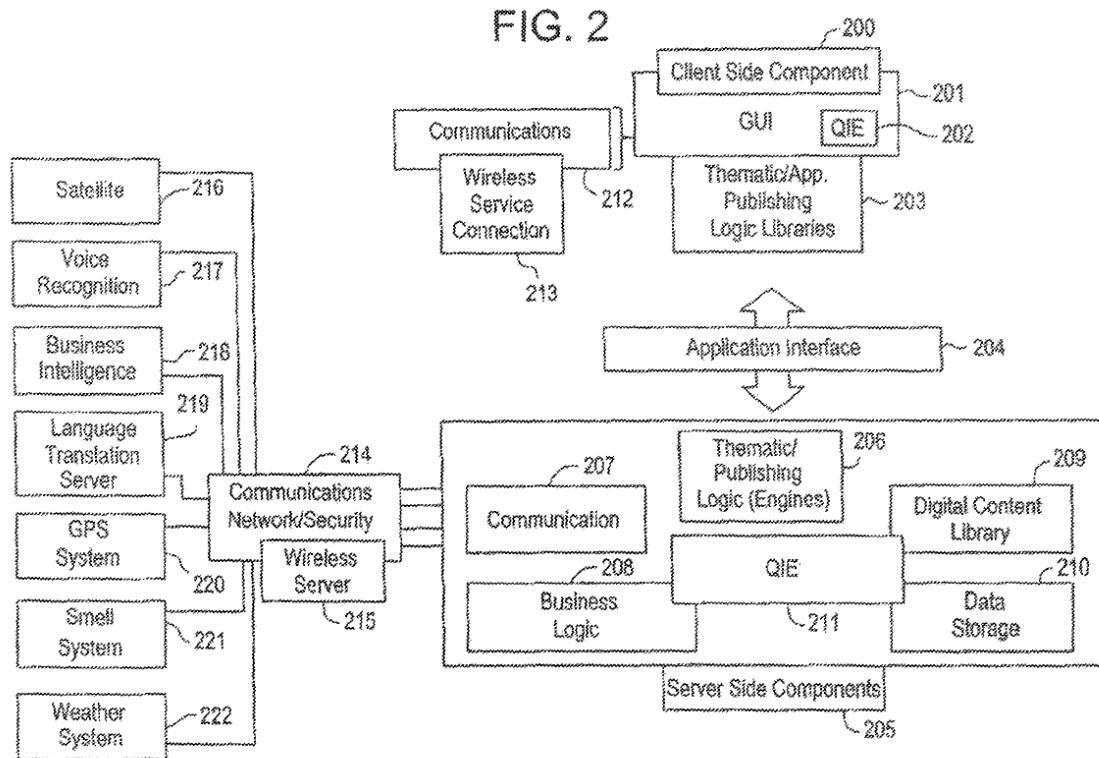


Figure 2 is a schematic showing one embodiment of the interactive software platform consistent with the present invention in a client-server arrangement. *Id.* at 6:43–45.

The ’941 patent explains that “in one embodiment, the present invention may be presented in a client-server arrangement . . . , with a client system 200 including components such as a GUI 201, and which may contain a Quantum Imaging Environment (QIE) 202, and Thematic/Application Publishing Logic Libraries 203. The client system 200 interacts with the server system 205 via an Application Interface 204.” *Id.* at 14:50–56. The ’941 patent states that “[t]he server system 205

includes a GUI 211 . . . , Thematic/Publishing Logic (Engines) 206, a Communications module 207, Business Logic module 208, a Digital Content Library 209, and Data Storage 210, all interfacing with a QIE 211.”
Id. at 14:57–61. With respect to the QIE 202 and 211, the ’941 patent explains:

The QIE 202/211 is both part of the client and the server components in the embodiment of FIG. 2. The QIE 202/211 includes an interpreter that will allow data to be transmitted to any device, and is the basis for the design structure and layout for applications. The QIE 202/211 allows developers to develop objects and applications from the interpreter. For gaming or other thematic environments, the representation of the layout and design may be in the representation of “zones”, and the layout and design may be set up as zones and content, for medical, retail, educational purposes, etc. The QIE 202/211 pertains to the most common denominator—the application architecture, and the content. QIE 202/211 is an interpreter that will take all of the rich content, interpret the information into objects to be manipulated and accessed via any device and place these objects or information in the appropriate format that is designed or will be designed by the developer.

Id. at 15:51–67.

F. Illustrative Claim

Petitioner challenges claims 1, 3, 5, 7–12, and 23–26 of the ’941 patent. Pet. 1. Of the challenged claims, claims 1 and 23 are independent. Claim 1, reproduced below, is illustrative of the subject matter recited in the challenged claims (bracketing added).

[1Pre] One or more non-transitory computer readable medium storing an interactive software application platform comprising:

[1a] at least one thematic/publishing logic module containing virtual thematic environment rules to coordinate actions to be taken to constitute and provide a virtual thematic

environment on a visual component, the virtual thematic environment being a theme-based virtual world environment;

- [1b]** a primary application providing the virtual thematic environment; and a secondary application within the primary application, the secondary application being different from the primary application, the secondary application being launched from the primary application, and having first content utilized within a same application environment as second content provided by the primary application;
- [1c]** a graphics user interface (GUI) module including software that renders graphical display elements onto the visual component and permits a user to interact with a graphical display element within the virtual thematic environment, the GUI module providing a first user interface that is associated with the primary application and enabling the user to access the primary application through the first user interface, and a second user interface associated with the secondary application and enabling the user to access the secondary application through the second user interface;
- [1d]** a quantum imaging environment (QIE) module, the QIE module being a software layer that receives, interprets, and manipulates the second content so as to be accessible on different types of devices for use within the virtual thematic environment, the QIE module obtaining first real-time information and second real-time information, the QIE module supplying the first real-time information into the primary application, and supplying the second real-time information into the secondary application, the primary application configured to provide access to the first real-time information to the user within the virtual thematic environment via the first user interface, the secondary application configured to provide the second real-time information to the user within the virtual thematic environment via the second user interface; and

- [1e] at least one digital content library module storing information, the information containing 2 dimensional and 3 dimensional content, and providing content management of information within the virtual thematic environment coordinated by the thematic/publishing logic module, the digital content library module being a content management application.

Ex. 1001, 43:35–44:18; Pet. 16–26.

Independent claim 23 recites a computer system that includes similar limitations to claim 1, except it additionally recites “a client system and a server system communicating to provide an interactive software application platform, the interactive software application platform.” *Id.* at 46:61–63. Claims 3, 7, 8, and 10–12 depend directly from claim 1. Claim 9 depends from claim 8. Claims 24–26 depend from claim 23.

G. Level of Ordinary Skill in the Art

We consider the asserted grounds of unpatentability in view of the understanding of a person of ordinary skill in the art. In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). “[O]ne or more factors may predominate.” *Id.*

Relying on the declaration testimony of Mr. Crane, Petitioner contends that an ordinarily skilled artisan for the ’941 patent

would have had a bachelor degree in computer engineering, computer science, or a similar discipline, and/or two years of professional experience in the fields of networking and

network-based systems or applications, such as client-server and web-based systems, in the specific context of console and gaming or an equivalent level of skill, knowledge, and experience. A POSITA^[4] would have at least a general knowledge of online and in-game advertising methods prevalent in the field, as well as at least a general knowledge of 3D rendering and virtual reality.

Pet. 10 (citing Ex. 1004 ¶ 43). Patent Owner largely agrees with this definition but submits that Petitioner’s definition includes general knowledge of advertising and virtual reality and that “these backgrounds do not specifically apply to the ’941 Patent at issue, and Patent Owner is unaware why Petitioner would include them in [its] definition.” PO Resp. 4–5.

We do not agree with Patent Owner that “Petitioner’s definition of a POSITA includes a general knowledge of advertising and virtual reality, but these backgrounds do not specifically apply to the ’941 Patent at issue, and Patent Owner is unaware why Petitioner would include them in their definition.” *Id.* at 5. The ’941 patent claims and describes a “virtual thematic environment” in detail. Indeed, the ’941 patent describes an embodiment “having a program for integrating holographic images into a virtual thematic environment using a computerized system, includes means for displaying images from a virtual thematic environment; and means for projecting the images as holographic projections using a holographic projection system.” Ex. 1001, 3:61–67. As for advertising, the ’941 patent discusses that advertising can be included in the virtual thematic environment, *id.* at 7:42–57, and explains that “digital content library 209

⁴ “POSITA” is “person of ordinary skill in the art.”

may also include scheduling directions for when the web site access and identification of where to place the web content or advertising, e-commerce, video, etc. are to be placed,” *id.* at 17:35–39. We adopt Petitioner’s articulation of the level of ordinary skill in the art, which is consistent with the ’941 patent and the asserted prior art, and we apply it in our obviousness evaluations below. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art, itself, can reflect appropriate level of ordinary skill in art). We note that we would reach the same conclusions applying either Petitioner’s or Patent Owner’s definition of the level of skill in the art.

II. CLAIM CONSTRUCTION

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

If the specification “reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess[,] . . . the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Another exception to the general rule that claims are given their ordinary and customary meaning is “when the patentee disavows

the full scope of a claim term either in the specification or during prosecution.” *Uship Intellectual Props., LLC v. United States*, 714 F.3d 1311, 1313 (Fed. Cir. 2013) (quoting *Thorner v. Sony Comput. Ent. Am., LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)).

Additionally, only terms that are in controversy need to be construed, and these terms need be construed only to the extent necessary to resolve the controversy. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner indicates it “believes that no express constructions of the claims are necessary to assess whether the prior art reads on the Challenged Claims.” Pet. 11.

In our Institution Decision, we noted that, in a prior district court litigation, *Barbaro Technologies, LLC v. Niantic, Inc.*, No. 3:18-cv-02955 (N.D. Cal.), the following terms were construed as follows (“prior district court constructions”):

“*graphics user interface (GUI) module*” – “software that provides a graphical display and processes user inputs to allow a user to interact with the graphical display.”

“*quantum imaging environment (QIE) module*” – “a software layer which 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.”

“*virtual thematic environment*” – “a theme-based virtual computer interface.”

*“secondary application within the primary application” –
“secondary computer program within the primary computer
program.”*

Inst. Dec. 10–11 (quoting Prelim. Resp. 6–7; Ex. 1012, 4–14).

As we noted in our Institution Decision, these constructions largely repeat the claim language of the ’941 patent with the clarification that what is claimed is computer software. *See id.* at 11.

In its Patent Owner Response, Patent Owner asks for express construction of the following terms: (1) “first user interface” and “second user interface;” (2) “type;” (3) “software layer;” and (4) “a client system and a server system.” PO Resp. 5–8.

With respect to “first user interface” and “second user interface,” Patent Owner argues that these terms should each be construed to mean “a portion of a program with which a user interacts to accept input commands from the user as well as outputting information (e.g., visual, auditory, haptic, etc.) to a user.” *Id.* at 5 (citing Ex. 2005 ¶¶ 59, 60).

Patent Owner argues that the term “type” should be defined as “a particular kind, class, or group.” *Id.* at 6 (citing Ex. 2005 ¶¶ 61, 62).

Patent Owner contends that a “software layer” is “used to guide the partitioning of a system’s functionality into modules, where the modules assigned to one layer interact only with those that are assigned to adjacent layers.” *Id.* at 7. Patent Owner argues that “[s]eparating a system’s functionality into layers allows changes to be made to modules in one layer without affecting the modules of the other layers. It also provides application independence from evolving hardware.” *Id.* (citing Ex. 2005 ¶ 63; Ex. 2006, 199, 203; Ex. 2010 ¶ 3).

Finally, Patent Owner argues that “a client system and a server system” refer “to a client-server computer architecture.” *Id.* at 8.

In its Reply, Petitioner argues that no construction of any term is necessary. Pet. Reply 2. Petitioner also argues that Patent Owner’s construction of “software layer” is incorrect because “software layer” cannot “be limited to an interface that communicates only with adjacent layers.” *Id.* at 5. Petitioner further argues that a “software layer” should include an object-oriented design, such as Pisanich’s. *Id.* at 5–6. Finally, Petitioner disputes Patent Owner’s assertion that the QIE must be a “single” software layer. *Id.* at 6–7. Thus, Petitioner contends that we should apply the plain and ordinary meaning of the term “software layer.”

Having considered the record, we determine that no express claim construction is necessary for any claim terms beyond those construed in the Institution Decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (holding that only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

III. ANALYSIS

A. Legal Standards – Obviousness

The U.S. Supreme Court set forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the

obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.^[5]

The Supreme Court explained in *KSR International Co. v. Teleflex Inc.* that

[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (alteration in original))).

“Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted).

“[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan ‘would have had a reasonable expectation of success from doing so.’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting

⁵ Patent Owner does not present any evidence relating to objective indicia of nonobviousness.

In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig., 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

B. Ground 1: Obviousness over Pisanich

Petitioner asserts that Pisanich would have rendered the subject matter of claims 1, 3, 5, 7–12, and 23–26 obvious to one of ordinary skill in the art at the time of the invention. Pet. 12–36. Patent Owner opposes. PO Resp. 14–43.

1. Scope and Content of the Prior Art

a. Pisanich (Ex. 1007)

Pisanich is a published international patent application entitled “Integration of Real-Time Data into a Gaming Application.” Ex. 1007, code (54). Pisanich relates “to games using real world data to simulate game play.” *Id.* at 1:2–3. Pisanich explains that prior to the invention, “in a flight simulator game, the player typically chooses different weather conditions, traffic conditions, and other features of the gaming environment,” and the “application generates a simulated environment which then conforms to those parameters.” *Id.* at 1:14–16. “As such, conventional flight simulators may ‘simulate’ external data but this data does not reflect actual current weather or traffic conditions.” *Id.* at 1:16–18. Therefore, according to Pisanich, “a new gaming architecture is needed in which real world events, environments, actors, and objects can be incorporated during a gaming experience, providing a player with the true simulation of a real world experience, and also the added excitement of taking part in actual real world events as they occur.” *Id.* at 2:11–14. Thus, in Pisanich, “real world information is incorporated into a virtual environment provided for a game.” *Id.* at 2:17–18.

Pisanich explains that:

For a flight simulator game, the real world information includes weather information such as cloud cover, precipitation, wind, fog, as well as air traffic data, including the location of other planes near the player, altered routes of other planes, and airport conditions, for the selected location, at a time period at or near to the time the information is requested.

Id. at 2:22–3:3. Then, “the application module generates simulated real world constructs responsive to the real world information.” *Id.* at 3:3–4.

Figure 3, reproduced below, is a block diagram of Pisanich’s game system.

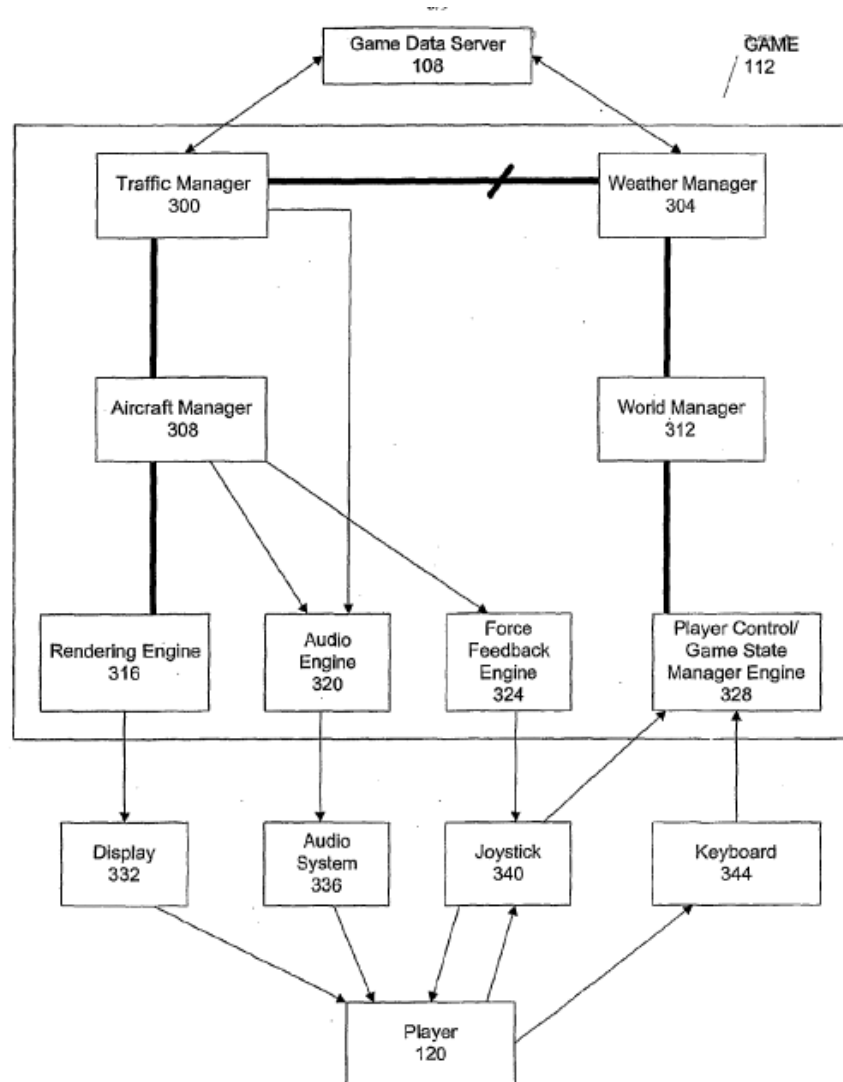


Figure 3

Figure 3 shows game server 108, game 112, traffic manager 300, weather manager 304, aircraft manager 308, world manager 312, rendering engine 316, audio engine 320, force feedback engine 324, and player control 328. *Id.* at 5:13–15, 10:1–8. Traffic manager 300 maintains an internal database of the real-time traffic in the world that the user experiences and simulates the movement of the traffic and its control by air traffic controllers. *Id.* at 10:9–11. Render engine 316 requests air traffic data position from traffic

manager, and this data is used to display the aircraft within the world on the game display. *Id.* at 10:17–20. Weather manager 304 maintains an internal database of the real-time weather in the world that the user experiences and simulates realistic, changing weather based on the real time weather feed. *Id.* at 11:5–18.

2. *Differences Between the Prior Art and the Claims*

Petitioner sets forth a detailed analysis showing how the teachings of Pisanich meet the elements of claims 1, 3, 5, 7–12, and 23–26. Pet. 12–36. Patent Owner opposes. PO Resp. 14–43. Because we conclude that Petitioner has failed to show by a preponderance of the evidence that Pisanich accounts for the claimed QIE module, we focus our analysis on that limitation.

a. *“a quantum imaging environment (QIE) module, the QIE module being a software layer that receives, interprets, and manipulates the second content so as to be accessible on different types of devices for use within the virtual thematic environment...”*

The parties’ arguments and evidence here focus on the “quantum imaging environment (QIE) module” which recites in relevant part:

a quantum imaging environment (QIE) module, the QIE module being a software layer that receives, interprets, and manipulates the second content so as to be accessible on *different types of devices* for use within the virtual thematic environment.

Ex. 1001, 43:63–67 (emphasis added).

i. *Petitioner’s Arguments*

Petitioner argues that in accordance with the claim language, “Pisanich discloses that game data server 108 receives, interprets, and

manipulates content, i.e., real world information, in real time so as to be accessible on different types of devices for use within the game.” Pet. 23 (citing Ex. 1007, 5:13–15). Petitioner asserts that “[a] POSITA would have understood that the players 120, 124 etc. may access such second content on different types of devices for use with the game.” *Id.* (citing Ex. 1004 ¶¶ 152–53, 159). Petitioner contends:

Specifically, “[A]s a player 120 controls a gaming unit within a game 112, for example, an aircraft, a car, or the like, the game 112 requests data from the game data server 108 as required to provide a realistic environment for the game. The data requested by the game 112 includes data such as weather reports or air traffic in the direction that the player 120 is guiding the vehicle in the game 112.”

Id. at 23–24 (citing Ex. 1007, 6:18–22).

We reproduce Petitioner’s annotated Figure 3 from Pisanich, below, where Petitioner equates game data server 108 and the QIE module.

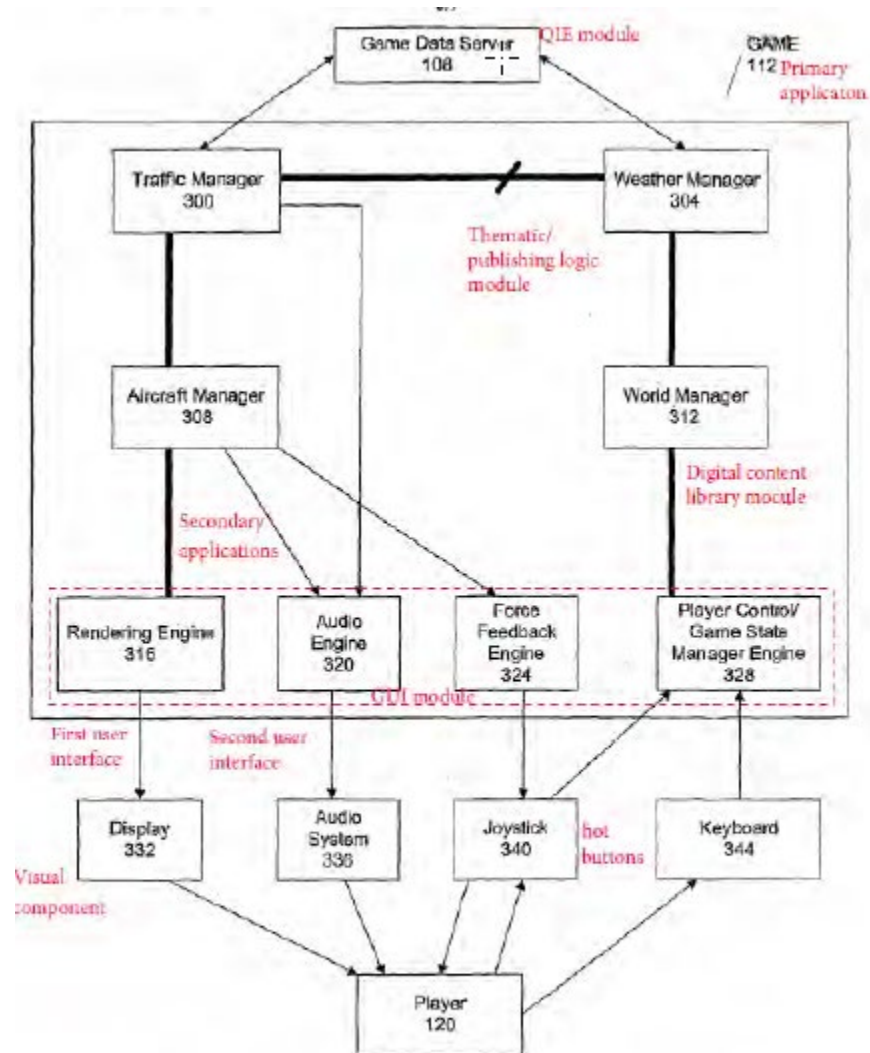


Figure 3 (Annotated)

Pisanich’s Figure 3, as annotated by Petitioner, illustrates game data server 108 interfacing with game 112 including various software modules such as traffic manager 300, weather manager 304, aircraft manager 308, each connected through rendering engine 316 to a player’s, i.e., a client’s, display 332. Pet. 19.

To support its contention that Pisanich discloses that the real time data is manipulated for use on “different types of devices” as the claim states, Petitioner relies on the testimony of Mr. Crane who testifies that “Pisanich

explicitly taught that the real-time, real-world data collected by game data server 108 could be served into different games, presumably on different devices.” Ex. 1004 ¶ 152. Mr. Crane testifies that because

Each type of game relied on the [g]ame [d]ata [s]erver to provide a range of information specific to that game’s needs. Thus, Pisanich taught that [g]ame [d]ata [s]erver 108 could be connected to multiple devices playing different games, and said server interpreted and manipulated content to said multiple devices as claimed.

Id. ¶ 153 (emphasis omitted). In other words, Mr. Crane’s testimony is that where Pisanich expressly teaches multiple devices that can play the same or differently themed games, it would have been obvious to a person of ordinary skill in the art to understand that those multiple devices could also be *different types* of devices as the claim requires. *Id.* ¶ 152.

ii. Patent Owner’s Arguments

Patent Owner makes several arguments relating to the “QIE module” limitation. First, Patent Owner argues that Pisanich does not disclose a “software layer” as the claim requires. PO Resp. 15–17. Second, Patent Owner argues that Pisanich does not teach a “single” software layer that makes the content accessible “on different types of devices for use within the same virtual thematic environment.” *Id.* at 17–19. Third, Patent Owner argues that Pisanich does not teach the QIE module renders content accessible on different devices as the claim also requires. *Id.* at 19–31. Fourth, Patent Owner argues that Petitioner failed to show that the QIE module receives, interprets, and manipulates second content provided by the primary application. *Id.* at 31–32. Finally, summarizing its previous arguments, Patent Owner contends that Petitioner has not met its burden to show that the claims as properly construed would have been obvious over

Pisanich. Because at least Patent Owner’s argument relating to “different devices” is dispositive as to this limitation, which is found in all the challenged claims, we focus our following analysis on this argument.

iii. Analysis

Patent Owner’s main point, articulated in its second and third arguments, is that neither the Petition, nor Mr. Crane, sufficiently explains how or why a person of ordinary skill in the art would have understood Pisanich’s disclosure of separate games, i.e., separate clients, for example game 112 and other games 116, teaches that these separate games, or clients, are actually different types of devices as the claim requires. *See* PO Resp. 25–31. For the reasons below, we agree.

Pisanich clearly discloses that game data server 108 can service multiple games 112/116 including real time aircraft and weather data 100/104 as shown in Figure 1 reproduced below.

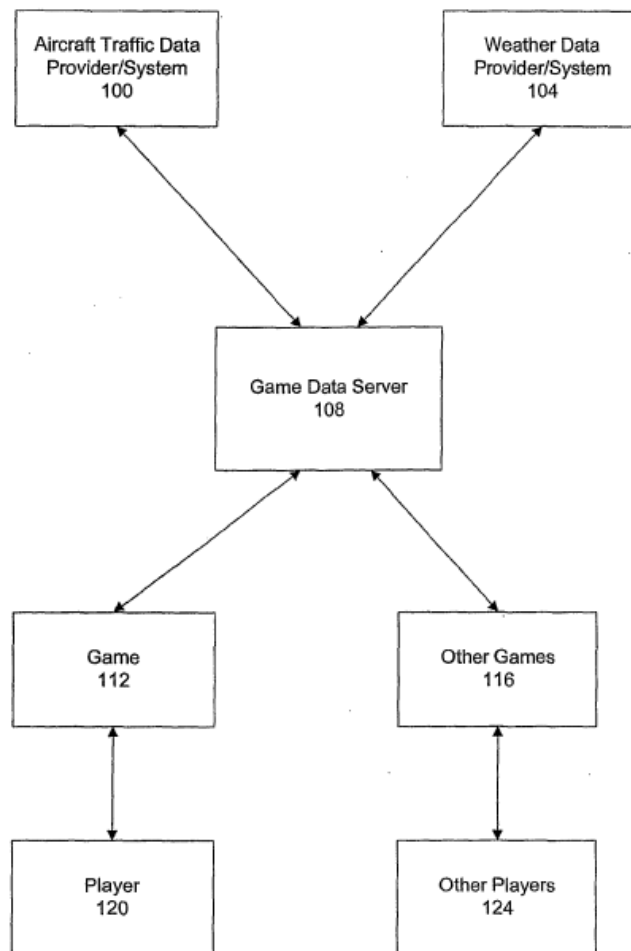


Figure 1

Pisanich's Figure 1 diagrammatically illustrates real time aircraft traffic data 100 and weather data 104 made available to game data server 108, which disseminates the real time data to game 112, other games 116, and players 120, 124 respectively. Pisanich explains that

game data server 108 processes the data requests of the game 112 and provides [real time] data requested to the game 112 for rendering and simulation within the game 112. Multiple players 124 can play different copies of the game 116 and can access the game data server 108 for data responsive to some other area of the world or the same area of the world as the player 120. Moreover, a second player 124 may play an entirely different

game 116 (for instance, a car racing game, or a football game) than the game 112 being played by the first player 120.

Ex. 1007, 7:5–11. Thus, Pisanich clearly describes multiple and different games, e.g., differently-themed games, which can request and receive real time data.

However, nowhere does Pisanich describe that the real time data is manipulated and rendered by game data server 108 for different types of devices. This is even tacitly acknowledged by Mr. Crane who testifies that Pisanich teaches game data server 108 “could be served into different games, *presumably on different devices.*” Ex. 1004 ¶ 152 (emphasis added). Yet Mr. Crane’s testimony on this point is entirely without support either in Pisanich or from any persuasive supporting reference or evidence that it was known, at the time of filing of the application which became the ’941 patent, that the multiple devices could, in fact, be *different types* of devices.

We acknowledge Mr. Crane’s explanation that it was well-known in the art that “games were often made available for multiple devices. This allowed for players to enjoy a game regardless of what game system they had in their home or pocket.” *Id.* ¶ 81. Mr. Crane testifies that different screen size and resolution between client devices was a problem and that “the conventional method . . . involved creating a different version of the game for each device or at least different size and resolution images.” *Id.* ¶ 82. Mr. Crane provides six examples of the SubLOGIC Flight Simulator, circa 1984–1987, played on different devices, for example, Apple II computer (1984) and Commodore 64 (1984). *Id.* ¶ 83. Considering these examples, Mr. Crane testifies that “[a]s far back as the 1980s, conventional rendering technology was configured to interpret and manipulate game content so as to be accessible on different types of devices.” *Id.* ¶ 84.

In response, Patent Owner argues that

[Mr.] Crane refers to the conventional rendering technology that could be used to create the six different versions of the same flight simulator game referenced in ¶¶ 82–83 of Ex-1004.

PO Resp. 27–28. Patent Owner’s point here is persuasive. Mr. Crane testifies that different versions of the SubLOGIC flight simulator game were played on different devices, and during cross-examination he explained that these versions essentially constitute different programs:

Q. Okay. And for paragraph 84, that conventional rendering technology, would it require a different version of the game for each display?

A. Yeah, it’s hard to explain that to a nontechnical person. But every time rendering technology is written, it uses the same procedures, the same concepts, the same techniques, but it’s never the same program.

Ex. 2011, 132:25–134:2. Mr. Crane was then asked if his explanation in his declaration described a QIE:

Q. . . . The concept in the – in the end of paragraph 84: “The concept of – of interpreting and manipulating content such that the content is accessible on different types of devices was well known.”

Do you see that –

A. Yes.

Q. – sentence?

Is that referring to the QIE that we discussed in paragraph 66?

A. It’s just a generic statement of what a person of ordinary skill in the art would have known.

Ex. 2011, 133:12–134:2.

We find Mr. Crane’s testimony that Pisanich discloses or teaches a QIE because “Pisanich taught a rendering engine that used conventional

technology to display objects internal to the cockpit, and to display objects external to the aircraft in the virtual thematic environment” and “[s]aid ‘conventional technology’ included rendering technology configured to account for differences between multiple gaming devices as needed” to be without sufficient factual support. *See* Ex. 1004 ¶¶ 147–148 (citing Ex. 1007, 16:10–11; Ex. 1004 ¶ 83). Although it may have been known in the art to create different versions or programs of a game for different devices, Mr. Crane points to no disclosure in Pisanich that explains or discloses a QIE consistent with the plain language of the claim. He points to no textbook, technical disclosure, or other independent evidence that would have led a person of ordinary skill considering Pisanich to implement a “software layer” that receives real time data and manipulates this data “so as to be accessible on different types of devices for use within the virtual thematic environment.” *See, e.g., Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, at 15–17 (PTAB Aug. 24, 2022) (precedential) (holding an expert’s declaration testimony is entitled to little weight when it “is conclusory and unsupported, [and] adds little to the conclusory assertion for which it is offered to support”). Our Trial Practice Guide cautions against crediting unsupported testimony:

The Board has broad discretion to assign weight to be accorded expert testimony. *Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010). However, the testimony must be based on sufficient facts and data. Fed. R. Evid. 702(b). “Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.” 37 C.F.R. § 42.65(a).

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(Nov. 2019).⁶

Having considered Mr. Crane’s testimony, including the evidence of the different versions of the SubLOGIC flight simulator games for different computer systems, and his cross-examination testimony, we are not persuaded to extend Mr. Crane’s testimony regarding different programs to encompass a software layer that provided the manipulated real time data to different types of devices. Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight. 37 C.F.R. § 42.65(a). We credit Dr. Medvidović’s testimony that at the time of filing of the ’941 patent

a POSITA would understand that each version of the game was required to be written for the unique hardware and software of each computer in order to be run. *See also* Ex-2011 at 129:1–17. This does not teach any type of interpreter (software layer) that receives, interprets, and manipulates the content so as to be accessible on different types of devices.

Ex. 2005 ¶ 88. Accordingly, based on the conventional technology as Mr. Crane explains it, we find Dr. Medvidović’s testimony persuasive that “even if Pisanich discloses that second content may be accessible on different games, it does not disclose that second content is accessible ‘on different types of devices for use within the virtual thematic environment,’ as required by claim 1.” *Id.* ¶ 90 (emphasis omitted). Dr. Medvidović summarizes his testimony on this point stating

A POSITA would not presume that the different games of Pisanich were necessarily on different types of devices. . . . Different games in Pisanich could be played on the same type of

⁶ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

device. Pisanich is silent on this issue and a POSITA would know that the devices could be the same type of devices.

Id. ¶ 92.

A plain reading of Pisanich’s disclosure relating to data used in different games, as opposed to different devices, is more consistent with Dr. Medvidović’s testimony that “a POSITA would understand that Pisanich in view of the common knowledge identified by Mr. Crane does not teach a software layer that receives, interprets, and manipulates the second content to be accessible on different types of devices.” *Id.* ¶ 88.

With respect to “software layer” as provided in the language of the claim, Petitioner disputes Patent Owner’s contention that Pisanich does not disclose such a “software layer” as the claim requires. Pet. Reply. 2–3 (citing PO Resp. 7–8, 15–17). Petitioner also disagrees with Patent Owner’s construction that requires “modules assigned to one layer interact only with those that are assigned to adjacent layers” and that there be a “single” software layer. *Id.* at 2–8. Patent Owner, in contrast, contends that “Pisanich’s game data server 108 is constructed of separate objects using an object-oriented architecture, not a ‘software layer.’” PO Resp. 16 (citing Ex. 2005 ¶¶ 78–81, 86–89, 93). Even if Pisanich’s game data server 108 is considered a software layer, we find Petitioner’s analysis and Mr. Crane’s testimony to be deficient in explaining how Pisanich teaches or suggests to a person of ordinary skill in the art a software layer that makes the games “accessible on different types of devices” as the claim construction requires. Thus, we do not need to decide whether Pisanich discloses a “software layer” as Petitioner argues.

Nor do we find it necessary for this Decision to address Patent Owner’s argument based on Dr. Medvidović’s testimony that “Pisanich does not teach the QIE module . . . such that the content is manipulated so as to be accessible on different types of devices for use within the virtual thematic environment,” in other words, *the same* virtual thematic environment.

Ex. 2005 ¶ 84. Whether or not the claim can be interpreted such that “the virtual thematic environment” refers to *the same* virtual thematic environment, it does not change our conclusion that Petitioner has failed to show by a preponderance of evidence that Pisanich teaches or suggests to a person of ordinary skill in the art a software layer that makes the games “accessible on different types of devices” as the claim requires.

In summary, we find that Pisanich discloses to a person of ordinary skill in the art a computer game system that incorporates real world data into multiple games, and even games with different themes, but not accomplishing these tasks for different devices. Ex. 1004 ¶ 87. We find insufficient evidence by Petitioner and Mr. Crane that a person of ordinary skill in the art, considering Pisanich, would have understood that multiple games included multiple games on different types of devices as required by claim 1.

iv. Claims 1, 3, 5, 7–12, and 23–26

All of the Challenged Claims—claims 1, 3, 5, 7–12, and 23–26—require a QIE module that receives, interprets, and manipulates content so as to be accessible on different types of devices, and Petitioner relies on the same analysis for all the claims challenged in this ground. For the reasons given above, we find that Petitioner has failed to show by a preponderance

of the evidence that claims 1, 3, 5, 7–12, and 23–26 would have been obvious over Pisanich.

C. Ground 2: Obviousness over PSO Manual

Petitioner contends that the PSO Manual would have rendered the subject matter of claims 1, 3, 5, 7–12, and 23–26 obvious to one of ordinary skill in the art at the time of the invention. Pet. 41–51. Patent Owner opposes. PO Resp. 62–65.

1. Scope and Content of the Prior Art

a. PSO Manual (Ex. 1008)

PSO Manual is a guide for an electronic game, “Phantasy Star Online,” which is a role-playing online multiplayer video game. Pet. 38. The manual “discloses . . . various functions of the *Phantasy Star Online* video game, where players interact with a graphical user interface on their screen to access and select real-time information in the form of quest missions, items, player positions, and Guild Cards.” Pet. 39 (citing Ex. 1008, 10, 14, 15, 21, 25).

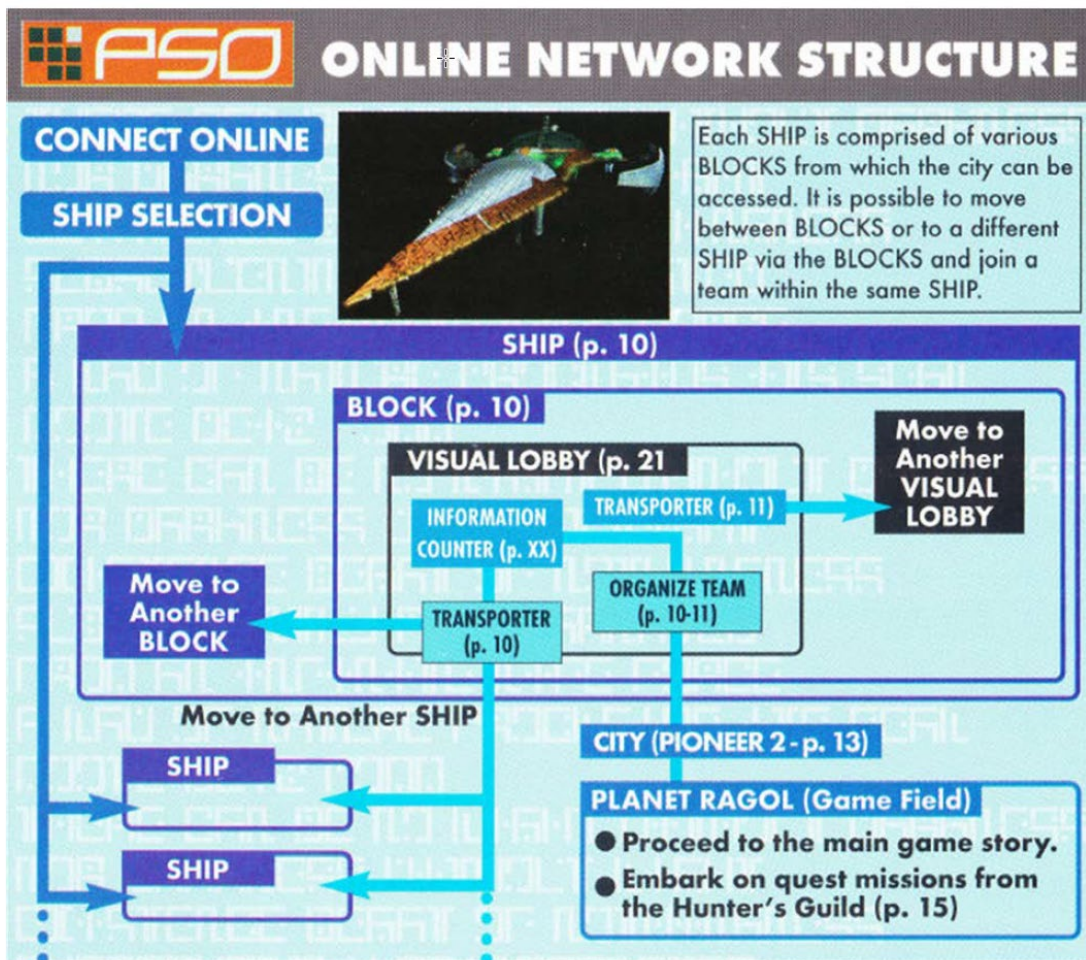
The cover of the PSO Manual is reproduced below.



The manual cover shows it is a manual for an online multi-player game for the Sega Dreamcast game console. Ex. 1008, 1.

2. Differences Between the Prior Art and the Claimed Invention

Petitioner provides a mapping of claims 1, 3, 5, 7–12, and 23–26 to the disclosure of the PSO Manual and contends that a person of ordinary skill in the art would understand that it teaches or suggests the limitations of the challenged claims. Pet. 39–60. We focus here only on one of the disputed limitations—the “quantum imaging environment (QIE) module”—because it is dispositive for our analysis for all of the challenged claims. In particular, Petitioner contends that “[a]s shown by the screenshot of the *Phantasy Star Online* network structure . . . , PSO Manual discloses that *Phantasy Star Online* receives, interprets, and manipulates the second content, *i.e.*, real world information, in real time so as to be accessible on a player’s Dreamcast for use while playing *Phantasy Star Online*.” *Id.* at 47 (citing Ex. 1008, 9–11). We reproduce below the online network structure diagram from the PSO manual to which Petitioner refers.



Above is reproduced a block diagram showing the “PSO Online Network Structure.” Ex. 1008, 9.

Petitioner also relies on Mr. Crane’s testimony to support its contention that “the game console such as Dreamcast can be of different hardware and/or software types.” Pet. 47 (citing Ex. 1004 ¶ 238). Petitioner argues that “PSO Manual discloses that the first real-time information supplied into the game can be in the form of data regarding a player’s real-time position and movements on the *Phantasy Star Online* world map.” *Id.* at 48 (citing Ex. 1008, 21 (“Item Pack: Use the item pack menu to . . . view a map of the area you are currently in . . . ”)). Petitioner contends that “[a] game window, *i.e.*, first user interface, was updated with the game play,

locations, and action of the remote players,” *id.* (citing Ex. 1004 ¶ 240), and that “PSO Manual further discloses, as an example, the second-real time information supplied into *Phantasy Star Online* in the form of real-time chat messages to other players,” *id.* (citing Pet. 42–46; Ex. 1004 ¶¶ 238–41).

We note that Mr. Crane’s testimony appears to offer a different theory from the Petition for how the PSO Manual teaches or suggests the claimed QIE module. *See* Ex. 1004 ¶¶ 238–241. Mr. Crane testifies that the PSO Manual teaches this limitation “in the form of a multi-lingual chat feature” that “allowed a player to construct sentences to be sent via chat (**second real-time information**) to any destination around the world.” Ex. 1004 ¶ 238. Mr. Crane explains that “[t]he ‘Word Select’ system at the destination **receive, interpret, and manipulate** the content for any device, translated into the language of the recipient.” *Id.* (footnote omitted). Mr. Crane also testifies that

It was well known in the art at the time that game systems/consoles such as Dreamcast sold into different countries were different hardware and/or software systems, including the use of different voltage sources, different language operating systems, and compatible with different television standards.

Id. n. 14.

Patent Owner disputes Petitioner’s contention that the PSO Manual teaches or suggests the “quantum imaging environment module,” and we agree. PO Resp. 44–54; Sur-reply 18–22. As Patent Owner explains and we agree, the PSO Manual describes how to play a game, but there is no identified disclosure about how the game is implemented in either hardware or software architecture. *See* PO Resp. 44 (citing Ex. 2005 ¶ 118); *see also* Ex. 2005 ¶ 114 (“As an instruction manual for end-user video game players,

the Manual offers little, if any, technical information regarding the specification of the game itself or its execution by the console. The Manual does not delineate which functions are provided by software or hardware—it is silent as to this information.”).

Importantly, the challenged claims require the presence of “a quantum imaging environment (QIE) module, the QIE module being a software layer that receives, interprets, and manipulates the second content so as to be accessible on different types of devices for use within the virtual thematic environment.” But the PSO Manual provides no description of how exactly the PSO Online Network Structure performs the functions Petitioner identifies. As Patent Owner and Dr. Medvidović persuasively explain, a person of ordinary skill in the art would have recognized that many other architectural layouts were possible at the time of the priority date of the challenged patent. *See* PO Resp. 44; Ex. 2005 ¶¶ 118–119 (citing Ex. 2006, 119, 203; Ex. 2008, 22, 372, 373); *see also* Ex. 2005 ¶ 115 (“[A person of ordinary skill in the art] would not be able to ascertain from the Manual what type of architecture is used, e.g., whether there is a multi-tiered architecture or other architecture between the server and the consoles used by the players in the online version of the game. Furthermore, the user would not be able to ascertain what components are readily identifiable in the architecture, whether layers are used anywhere and for any reason, what the organization and flow of data and control is, etc.”). Here, it is impossible to ascertain from the disclosure provided in the PSO Manual what type of structure is used, and Petitioner provides no explanation of what structure is used or how the PSO Online Network Structure is a “software layer” under any construction of that term.

We agree with Patent Owner that Petitioner fails to adequately explain how the “Online Network Structure” diagram, reproduced above, accounts for the QIE Module. PO Resp. 45; Ex. 2005 ¶¶ 117–121. In the Petition, Petitioner simply asserts that the *Phantasy Star Online* performs the alleged functions of the QIE module, but it provides no explanation for why simply performing those functions necessarily means that the QIE module is present. See Pet. 47–48. In its Reply, Petitioner contends now that the “Online Network Structure” diagram is “akin to the modular architecture in Fig. 2 of the ’941 patent.” Reply 24–25. Even considering this new argument, we disagree. Figure 2 of the challenged patent is reproduced below.

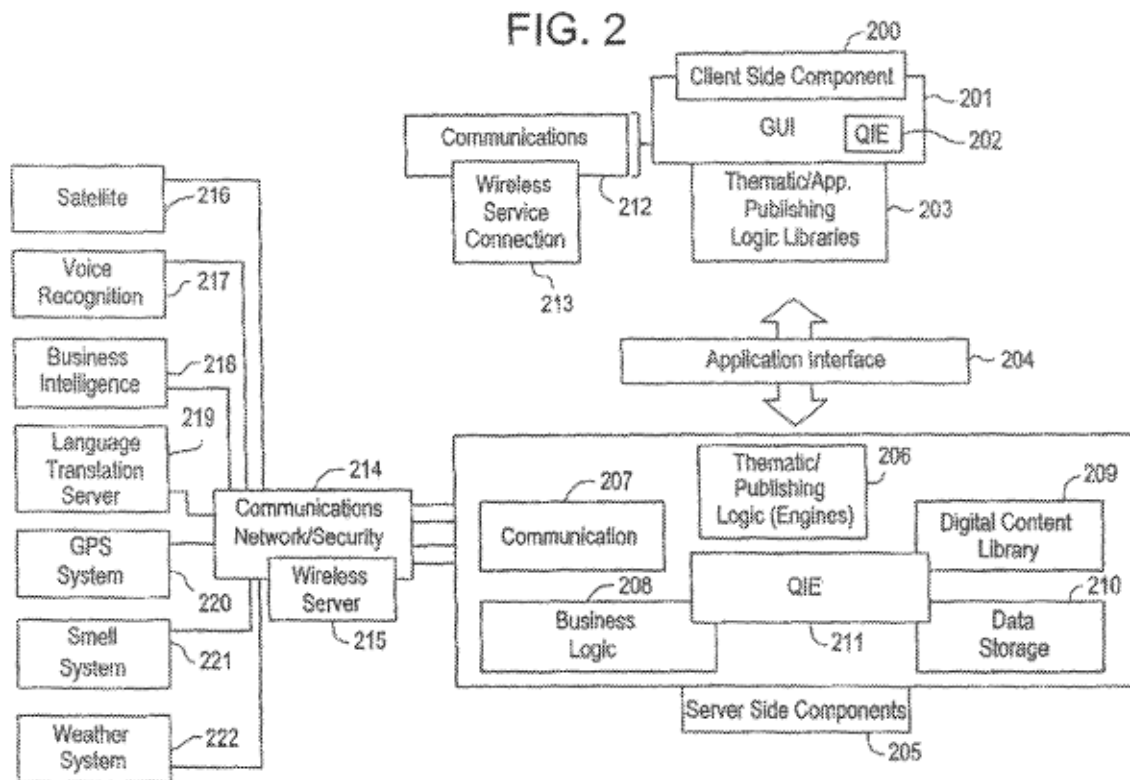


Figure 2 is a schematic showing one embodiment of the interactive software platform of the challenged patent. Ex. 1001, 6:43–45.

In its Reply, Petitioner now explains that “[a]s shown on page 9 [of the PSO Manual], each ship is comprised of various ‘blocks.’” Pet. Reply 25 (citing Ex. 1008, 9). Petitioner contends that “[a]s 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.’” *Id.* (citing Ex. 1008, 9). Petitioner argues that “[b]y moving between ship or block modules, *Phantasy Star Online* users can interact with users located in different lobbies of different modules.” *Id.* at 25–26 (citing Ex. 1008, 9, 11). Petitioner asserts that “[t]his is an example of inter-module communication, such as shown above in Fig. 2 of the ’941 patent.” *Id.* at 26.

Even if this explanation was not a new argument, we do not find it persuasive for two interrelated reasons. First, although both the “Online Network Structure” of the PSO Manual and Figure 2 of the ’941 patent are schematic diagrams, they represent completely different levels of a game. As Patent Owner persuasively argues, the “Online Network Structure” diagram on page 9 of the PSO Manual represents how a player navigates within the *Phantasy Star Online* game, not the underlying software architecture of the game. Sur-reply 19; Ex. 2005 ¶ 121. Figure 2 of the ’941 patent represents a client-server level relationship of a game, not how the game is played. Thus, Petitioner’s effort to compare the diagrams is an apples-to-oranges comparison, not an apples-to-apples comparison. This difference between the two diagrams leads to the second fundamental problem with Petitioner’s new argument—Petitioner provides no evidence to support why this comparison of two dissimilar diagrams is correct. Petitioner seems to suggest that because the game allows certain types of game play, the underlying software structure must be consistent with Figure

2 of the '941 patent. *See* Pet. Reply 25–26. However, without any additional evidence supporting why this understanding of the “Online Network Structure” diagram is correct, we do not find this unsupported attorney argument to be sufficient to meet Petitioner’s burden of proof. Moreover, as Dr. Medvidović credibly testifies, there are many possible software architectures for the *Phantasy Star Online* game based simply on the disclosure of the PSO Manual. *See* Ex. 2005 ¶¶ 118–119. Petitioner provides no persuasive evidence to the contrary.

As for the theory articulated in Mr. Crane’s declaration that appears to place the QIE functionality in the “Word Select” system, *see* Ex. 1004 ¶ 238, we do not find it persuasive. In its Reply, Petitioner expands on the argument presented in Mr. Crane’s declaration arguing that

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; *interprets* the input as a message for translation into a second language; and *manipulates* the message by providing it for presentation to a different user, on a different type of Dreamcast console, in the second language. (Petition, 41, 43–44, 46–48; 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, ¶¶ 103, 106.) This translation feature of the PSO Manual is consistent with an embodiment specifically disclosed in the '941 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, 10:13–16.)

Pet. Reply 28–29.

We find there are several problems with Mr. Crane's and Petitioner's reliance on the PSO Manual's Word Select feature. First, as we explain above with respect to Petitioner's discussion of the "Online Network Structure" diagram, the PSO Manual has insufficient detail about the underlying architecture and Petitioner and Mr. Crane have provided insufficient explanation to account for the limitations as claimed. Second, neither Petitioner nor Mr. Crane ever attempt to explain how or why the "Word Select" feature meets *all* of the claim language. Petitioner and Mr. Crane merely assert that the Word Select performs the functions of receiving, interpreting, and manipulating the second content, without providing any evidence or explanation of why a person of ordinary skill in the art would understand that Word Select meets the "software layer" requirement under any construction of that term. As Patent Owner persuasively notes, Mr. Crane admitted on cross examination that Word Select was a "secondary application," not a QIE module or a software layer. PO Resp. 54 (citing Ex. 2012, 397:22–25). Although Petitioner is correct that it does not specifically map Word Select to the claimed "secondary application," the Petition does map the "secondary application" to the "chat system" and it is unclear how the "Word Select" feature is not considered part of the "chat system." *See* Pet. 43–44. But, more importantly, Mr. Crane's admission that "Word Select" is a "secondary application" undermines Petitioner's assertion that "Word Select" is the claimed QIE module or a "software layer" generally.

Finally, we agree with Patent Owner that Petitioner has not adequately explained how "Word Select" makes second content "accessible on different types of devices." As Patent Owner explains, "Word Select" is necessarily

found on each user's Sega Dreamcast console. *See* PO Resp. 53; Ex. 2005 ¶ 126. As Dr. Medvidović credibly testifies, any interpretation by "Word Select" takes place separately on each console, and only for that console. Ex. 2005 ¶¶ 126, 132. Indeed, this is confirmed by Mr. Crane who testifies that a person of ordinary skill in the art would understand that different Sega Dreamcast consoles would require different software versions specifically written for each differing version of the Dreamcast console. *See* Ex. 2011, 129:1–17; Ex. 2005 ¶¶ 126–127.

Petitioner's reliance on Figure 2 of the '941 patent to show that the QIE can be located on the client computer is also not persuasive. *See* Pet. Reply 6–7, 24. In the Figure 2 embodiment, the QIE module exists on both the server and the client. *See* Ex. 1001, Fig. 2. Petitioner provides no explanation how that is similar to a secondary application like Word Select residing only on the client device. Moreover, Petitioner provides no testimony to support its interpretation of Figure 2 and why that interpretation supports its theory that Word Select is the claimed QIE. We find Petitioner's attorney argument insufficient to meet its burden. *See Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) ("Attorney argument is not evidence."). Thus, we agree with Patent Owner that Petitioner has failed to meet its burden to explain how the "Word Select" feature makes second content accessible on different types of devices, when each console would have its own unique version of the "Word Select" feature that would only make content available on that type of console.

Petitioner also argues that the PSO Manual's "Word Select" disclosure "is consistent with" the real time translation feature of some

embodiments described in the '941 patent. However, as we explain above, the fact that the program described in the '941 patent performs similar ultimate functions as does *Phantasy Star Online* does not mean that they have the same underlying architecture. *See* Ex. 2005 ¶¶ 118–119.

Moreover, the '941 patent does not equate the translation functionality to the QIE module as Petitioner contends. Instead, the '941 patent describes the translation service as one of the secondary applications that make use of the QIE. *See, e.g.*, Ex. 1001, 12:5–11 (describing “language translation services 108” as one of the “six service area modules”), 19:28–62 (describing the translation library as one of the libraries stored in the GUI module), 20:39–55 (describing how the libraries, such as the translation library, “process information . . . through the QIE, for display on the screen”), Figs. 1, 2, 4, 5 (showing QIE and translation as separate modules). Thus, we find that Petitioner’s and Mr. Crane’s contentions that the “Word Select” meets the claimed QIE module are not persuasive.

Accordingly, we find that Petitioner has failed to show by a preponderance of the evidence that the PSO Manual teaches or suggests the claimed “quantum imaging environment module.”⁷ This limitation is found in both independent claims 1 and 23. Thus, we conclude that Petitioner has

⁷ We note that this finding is entirely independent of whether we were to adopt Patent Owner’s or Petitioner’s construction of “software layer.” Patent Owner has presented evidence that many architectures for the game described in the PSO Manual are possible, and Petitioner has failed to show that any of these architectures are “software layers” under either parties’ understanding of that term. Thus, Petitioner has failed to show that the PSO Manual teaches or suggests this limitation.

failed to show by a preponderance of the evidence that the PSO Manual accounts for all the limitations of claims 1 and 23.

a. Claims 3, 7, 8–12, and 24–26

Claims 3, 7, 8, and 10–12 depend directly from claim 1. Claim 9 depends from claim 8. Claims 24–26 depend from claim 23. These dependent claims incorporate the limitations of the claims from which they depend, including those addressed in connection with our analysis of claims 1 and 23, *supra*. For the reasons given for claims 1 and 23, we find that Petitioner has failed to show by a preponderance of the evidence that claims 3, 7, 8, 10–12, and 24–26 would have been obvious over the PSO Manual.

3. Conclusion as to Obviousness over the PSO Manual

Accordingly, for the reasons explained above, we find that Petitioner has failed to show by a preponderance of the evidence that the PSO Manual would have rendered the subject matter of claims 1, 3, 5, 7–12, and 23–26 obvious to one of ordinary skill in the art at the time of the invention.

IV. PATENT OWNER’S MOTION TO EXCLUDE

Patent Owner seeks to exclude Exhibit 1004. PO MTE 1; *see* PO MTE Reply. Petitioner opposes Patent Owner’s Motion. PO MTE Opp. Exhibit 1004 is Mr. Crane’s declaration. Because we determine that Petitioner has failed to show the challenged claims are unpatentable even if we consider Mr. Crane’s declaration, we dismiss Patent Owner’s Motion to Exclude as *moot*.

V. SUMMARY

For the reasons discussed above, Petitioner *has not demonstrated*, by a preponderance of the evidence, that claims 1, 3, 5, 7–12, and 23–26 of the '941 patent are unpatentable. Patent Owner's Motion to Exclude is dismissed as *moot*.

Our conclusions regarding the Challenged Claims are summarized below:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 3, 5, 7–12, 23–26	103(a)	Pisanich		1, 3, 5, 7–12, 23–26
1, 3, 5, 7–12, 23–26	103(a)	PSO Manual		1, 3, 5, 7–12, 23–26
Overall Outcome				1, 3, 5, 7–12, 23–26

VI. ORDER

In consideration of the foregoing, it is:

ORDERED that Patent Owner's Motion to Exclude (Paper 42) is *dismissed as moot*;

FURTHER ORDERED that claims 1, 3, 5, 7–12, and 23–26 of U.S. Patent No. 10,846,941 B2 are not determined to be unpatentable; and

FURTHER ORDERED that, because this a Final Written Decision, parties to this proceeding seeking judicial review of this Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Patent 10,846,941 B2

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