

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMERICAN AIRLINES, INC. and SOUTHWEST AIRLINES CO.,
Petitioner,

v.

INTELLECTUAL VENTURES I LLC,
Patent Owner.

IPR2025-00987
Patent 8,407,722 B2

Before KEN B. BARRETT, GEORGIANNA W. BRADEN, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

BELISLE, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

American Airlines, Inc. and Southwest Airlines Co. (collectively, “Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–37 (“Challenged Claims”) of U.S. Patent No. 8,407,722 B2 (Ex. 1001, “the ’722 patent”).¹ Intellectual Ventures I LLC (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b) (2024); 37 C.F.R. § 42.4(a) (2024). We may not institute an *inter partes* review “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). The “reasonable likelihood” standard is “a higher standard than mere notice pleading” but “lower than the ‘preponderance’ standard to prevail in a final written decision.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential). When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim. 37 C.F.R. § 42.108(a).

Applying those standards, and based on the record before us, we determine that Petitioner has not demonstrated a reasonable likelihood of success in proving that any one of the Challenged Claims is unpatentable. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Accordingly, we deny institution of an *inter partes* review of the ’722 patent.

¹ An *ex parte* reexamination certificate for the ’722 patent issued on April 4, 2025. Ex. 3001 (US 8,407,722 C1).

II. BACKGROUND

A. Real Parties in Interest

Petitioner identifies American Airlines, Inc. and Southwest Airlines Co. as real parties in interest. Pet. 1. Patent Owner identifies itself as a real party in interest. Paper 3 (Patent Owner's Mandatory Notices), 2.

B. Related Matters

According to the parties, the '722 patent has been asserted in the following district court actions:

- (1) *Intellectual Ventures I LLC v. Liberty Mutual Holding Company Inc.*, No. 23-cv-525 (E.D. Tex. filed November 15, 2023).
- (2) *Intellectual Ventures I LLC v. Comerica Inc.*, No. 23-cv-524 (E.D. Tex. filed November 15, 2023).
- (3) *Intellectual Ventures I LLC v. JP Morgan Chase Bank, National Association*, No. 23-cv-523 (E.D. Tex. filed November 15, 2023).
- (4) *Intellectual Ventures I LLC v. American Airlines, Inc.*, No. 24-cv-980 (E.D. Tex. filed November 2, 2024).
- (5) *Intellectual Ventures I LLC v. Southwest Airlines, Co.*, No. 24-cv-277 (W.D. Tex. filed November 2, 2024). Pet. 1–2; Paper 3, 2.

Petitioner submits that actions (1), (2), and (3) above have been “dismissed with prejudice.” Pet. 2.

Petitioner identifies the following *inter partes* review as a related matter: *Liberty Mutual Insurance Co. v. Intellectual Ventures I LLC*, IPR2025-00200, Paper 9 (terminated due to settlement prior to institution of trial, April 23, 2025). Pet. 2; Paper 3, 2.

Petitioner also submits:

The '722 Patent was also the subject of an *ex parte* reexamination request filed by Unified Patents, LLC on September 16, 2024 (Control No. 90/019,662) [(“*Ex parte* Reexam”). Reexamination was ordered on October 16, 2024. The Patent Office filed a Notice of Intent to Issue a Reexamination Certificate on March 11, 2025 and issued a Reexamination Certificate on April 4, 2025. *The claims were not amended and no claims were canceled in the reexamination.*

Pet. 2 (emphasis added); Paper 3, 3; Ex. 1017; Ex. 3001. Petitioner does not explain how its Petition differs in substance from this *Ex parte* Reexam, which involved some of the same references applied in the Petition, namely, Tsutsumitake and Bird, discussed below. *See* Ex. 1017, 5.

C. The '722 Patent

The '722 patent is titled “Asynchronous Messaging Using A Node Specialization Architecture In The Dynamic Routing Network,” and issued March 26, 2013, from U.S. Patent Application No. 11/396,251, filed March 30, 2006. Ex. 1001, codes (10), (21), (22), (45), (54). The '722 patent claims priority through various continuation applications to several U.S. provisional applications, the earliest of which was filed on December 18, 2000. *Id.* at codes (60), (63).

The '722 patent generally relates to “transferring information through digital networks and in particular to transferring information for remotely updating content at client devices through the digital networks.” Ex. 1001, 1:24–27. The '722 patent summarizes its twenty-two columns of disclosure as follows:

A network routes update messages containing updates to properties of live objects from input sources to clients having the objects. When the clients receive live objects, the clients identify

the object IDs associated with the objects and register the object IDs with the routing network. The routing network is adapted to selectively send update messages to nodes in the network and the nodes forward the messages to the clients. One implementation uses a hierarchy of registries to indicate which nodes and clients receive which update messages. Another implementation assigns update messages to one or more of N categories and nodes to one or more of M types, and the gateways maintain mapping between categories and types. To ensure that clients receive all of the update messages for which they register, the clients connect to client proxies that in turn connect to at least one node of each type.

Ex. 1001, code (57); *see* 37 C.F.R. § 1.72(b) (“The purpose of the abstract is to enable the Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure.”).

More specifically, the ’722 patent describes a “hierarchy of registries” approach for transferring information in which network nodes maintain a node registry keyed to object IDs for which their connected clients have registered; the registry stores connection-level delivery information sufficient for the node to address and deliver update messages to the correct, current client connections. *See* Ex. 1001, 16:47–17:14, 17:66–18:11 (discussing Figure 8 below), 20:9–44, Fig. 7. An example illustration of this “hierarchy of registries” approach is shown in Figure 8, reproduced below.

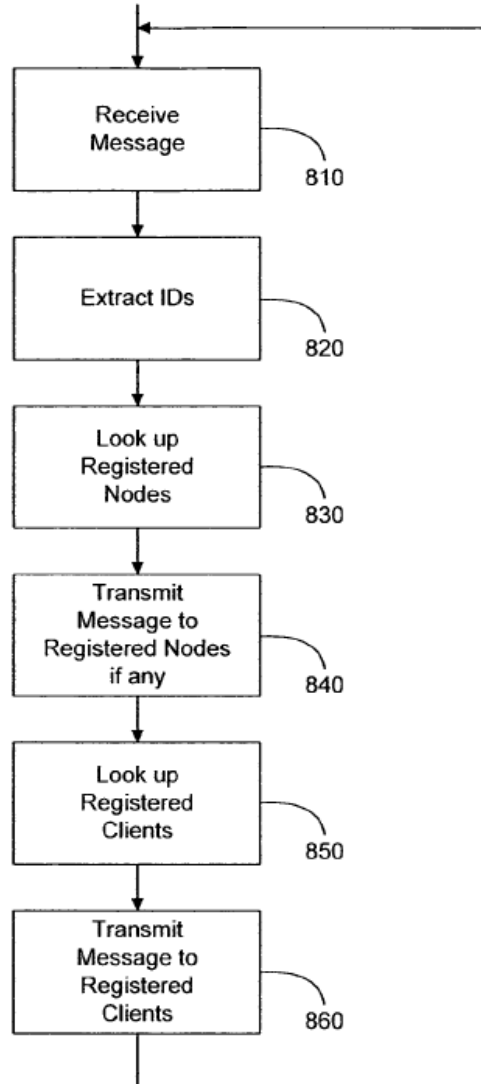


Figure 8 depicts steps performed by a gateway and a node in a cluster to perform object-based routing of a message received from an input source in an embodiment using a hierarchy of registries.

Ex. 1001, 4:28–31, 17:66–18:11, Fig. 8.

The '722 patent also describes a “category—node-type” specialization approach:

[A]ll messages in the routing network 110 are assigned to one or more of N categories, and all of the nodes are assigned to one or more of M types. Mappings are created that specify which

categories of messages are forwarded to which types of nodes. The mappings allow control over the amount of traffic processed by the nodes.

Ex. 1001, 18:23–29. A gateway stores and applies these mappings: on receipt of an update message it identifies the message’s category, identifies the mapped node type(s), and routes the update message accordingly. *See id.* at 21:62–22:16. An example illustration of this “category—node-type” approach is shown in Figure 10, reproduced below.

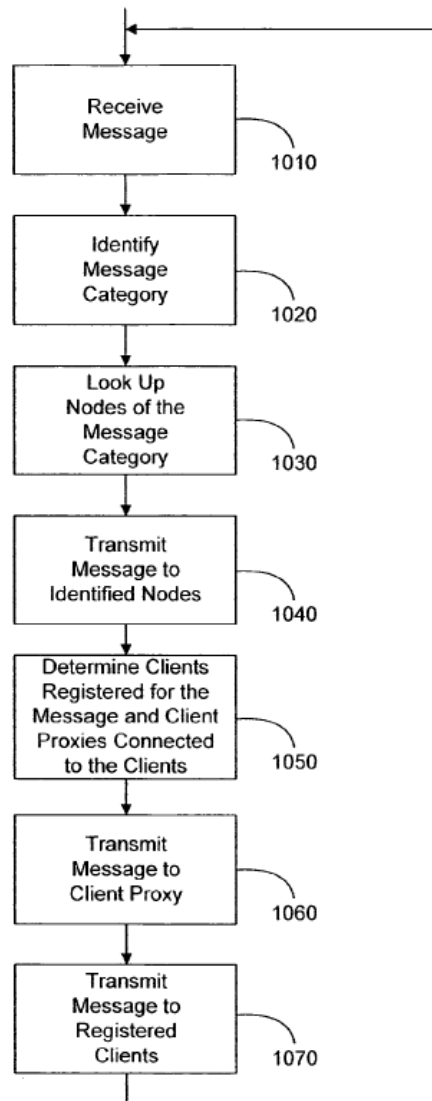


Figure 10 depicts steps performed by a gateway, a node that stores client registration information, and a pass-through client proxy to perform object-based routing of a message received from an input source.

Ex. 1001, 4:35–38, 21:62–22:16, Fig. 10.

D. Illustrative Claims

The '722 patent includes thirty-seven claims, all of which are challenged. Independent claims 1 and 14 are illustrative of the claimed subject matter and are reproduced below with labels, such as “[1.0],” added to limitations in the same manner as used by the parties.

1. [1.0] A method comprising:

[1.1] receiving, using a processing device, an update message from an input source, the update message identifying a live object and containing data for updating a property of the live object;

[1.2] identifying a category of the update message based on the input source;

determining a node having a node type to which the update message is to be routed based on a mapping of categories of update messages to node types, the mapping controlling an amount of update message traffic through nodes of a routing network;

[1.3] routing, using the processing device, the update message to the node having the determined node type;

[1.4] causing the node, through the update message, to determine a client, different from the input source, that has registered for updates of the live object;

causing the node to route the update message from the node to the client; and

[1.5] causing the client to process the update message and to update the property of the live [sic: live] object.

Ex. 1001, 22:27–47.

14. [14.0] A method comprising:

[14.1] providing, using a processing device of an input source, a data representation to a client device, different from the input source, coupled to a routing network, wherein the data representation includes at least one live object recognizable by the client device, and [14.2] causing the client device to respond to the live object of the data representation by determining an object identifier (ID) of the live object and to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to a node in the routing network; and

[14.3] sending, using the processing device of the input source, an update message to the routing network, wherein the update message identifies the live object and contains update data that updates a property of the live object,

[14.4] wherein a gateway device at the routing network is configured to identify a category of the update message based on the input source, to determine a node type to which the identified category maps, and [14.5] to route the update message to the node, having the node type, at the routing network,

[14.6] wherein the node is configured to identify the client device as a registered device and to route the update message to the client device, and

[14.7] wherein the client device processes the update message upon receipt to update the property of the live object at the client device.

Ex. 1001, 23:54–24:14.

E. Evidence of Record

Petitioner relies on the following evidence.

Name	Patent Document	Exhibit
Lawson	U.S. Patent No. 5,721,825, issued February 24, 1998	1005

Tsutsumitake	U.S. Patent No. 6,480,883 B1, issued November 12, 2002	1006
Choquier	U.S. Patent No. 5,951,694, issued September 14, 1999	1007
Bird	EP1043671 A2, published October 11, 2000	1008
Herz	U.S. Patent No. 5,754,939, issued May 19, 1998	1009

Pet. 5.

Petitioner also relies upon the Declaration of William C. Easttom II, Ph.D., D.Sc. (Ex. 1003).

Patent Owner does not rely upon its own expert testimony at this stage of the proceeding.

F. Asserted Challenges to Patentability

Petitioner challenges the patentability of claims 1–37 of the ’722 patent on the following bases (Pet. 5).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–37	103 ²	Lawson, Tsutsumitake, Choquier
3, 5, 9, 11, 12, 15, 21, 27, 33	103	Lawson, Tsutsumitake, Choquier, Herz
1–37	103	Choquier, Bird, Tsutsumitake
3, 5, 9, 11, 12, 15, 21, 27, 33	103	Choquier, Bird, Tsutsumitake, Herz

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103 effective on March 16, 2013. Because the application of the ’722 patent was filed March 30, 2006, the pre-AIA version of § 103 applies.

III. PATENTABILITY

A. Applicable Law

Petitioner challenges the patentability of claims 1–37 of the ’722 patent on grounds that the claims would have been obvious under 35 U.S.C. § 103 in light of various references, namely Lawson, Tsutsumitake, Choquier, Herz, and Bird. “In an [*inter partes* review], the petitioner has the burden from the onset to show *with particularity* why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)) (emphasis added). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when of record, objective evidence of obviousness or non-obviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Secondary considerations may include the following: “commercial success, long felt but unsolved needs,

failure of others, etc.”³ *Id.* The totality of the evidence submitted may show that the challenged claims would not have been obvious to one of ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *Id.* at 415. Whether a patent claiming a combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. To reach this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.* “To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

³ Patent Owner has not presented objective evidence of non-obviousness.

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art, at the time of the invention of the '722 patent:

would have [had] [(1)] a bachelor's degree in an academic area emphasizing computer networking (i.e. computer science, computer information systems, computer engineering, etc.) and (2) at least two years of work experience with Internet routing with additional education substituting for less experience and vice versa.

Pet. 10 (citing Ex. 1003 ¶¶ 22–23).

Patent Owner proffers a substantively similar description of the skilled artisan, but does so without any supporting evidence. Prelim.

Resp. 10.

In determining 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) (citation omitted). The level of ordinary skill in the art also may be reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Neither party argues that the outcome of this case would differ based on our adoption of any particular definition of the level of ordinary skill in the art. Considering the subject matter of the '722 patent, the background technical field, the prior art, and Petitioner's proposed definition of the

skilled artisan, which is supported with testimony of Dr. Easttom (Ex. 1003 ¶¶ 22–23), we apply the level of skill set forth above.

C. Claim Construction

We construe claims “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b); *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

In this context, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips*, 415 F.3d at 1312–13; *see CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (noting “a ‘heavy presumption’ that a claim term carries its ordinary and customary meaning”). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317.

Only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017

(Fed. Cir. 2017) (stating that “we need only construe 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 submits a proposed construction for the term “activation module” implicated in dependent claims 17–19, 23–25, 29–31, and 35–37. Pet. 10–12. Petitioner otherwise argues, “[n]o express construction of the other challenged claims is necessary in this IPR because the prior art renders these claims obvious under any reasonable construction.” Pet. 12. Patent Owner argues that “the Board should apply the plain and ordinary meaning to all challenged claim terms under the Phillips standard.” Prelim. Resp. 9.

We find that no express construction of any term is necessary to resolve this case.

D. Alleged Obviousness of Claims 1–37 over the Combination of Lawson, Tsutsumitake, and Choquier

Petitioner contends claims 1–37 would have been unpatentable under 35 U.S.C. § 103 as obvious over the combination of Lawson (Ex. 1005), Tsutsumitake (Ex. 1006), and Choquier (Ex. 1007). Pet. 13–19, 22–63. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 15–40. Based on our review of the record before us, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of independent claims 1, 7, 14, 20, 26, and 32 (and thus any Challenged Claim) would have been unpatentable as obvious over the combination of Lawson, Tsutsumitake, and Choquier, as discussed below. We turn first to overviews of Lawson, Tsutsumitake, and Choquier.

1. Overview of Lawson (Ex. 1005)

Lawson is directed to “event notification and distribution between computer systems, and more specifically to global event notification in a distributed computing environment, such as a computer network.” Ex. 1005, 1:14–17. An embodiment of Lawson’s global event notification system having global and local event registries is shown in Figure 2, reproduced below.

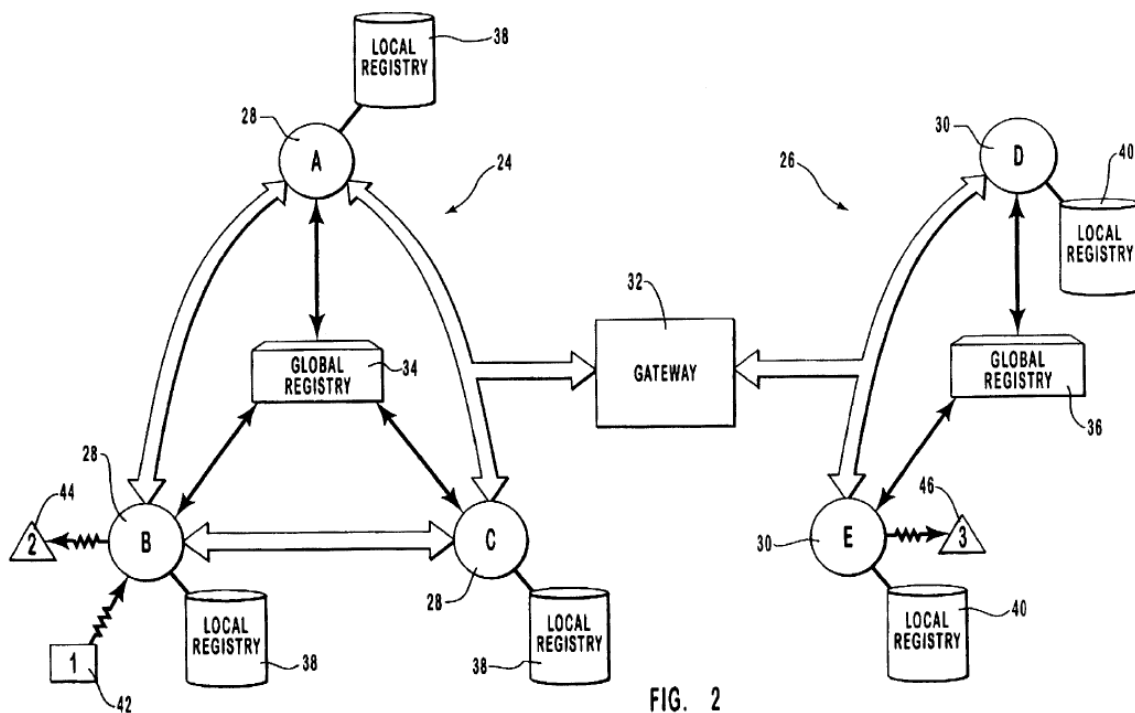


Figure 2 depicts an embodiment of a network view of Lawson’s global event notification system.

Ex. 1005, 5:58–59, 9:16–10:46, Fig. 2. As shown above in Figure 2, the global event notification system includes two separate networks 24, 26, where network 24 comprises servers 28, labeled A, B, and C, and network 26 comprises servers 30, labeled D and E, and networks 24, 26 are interconnected by gateway 32. *Id.* at 9:16–21. According to Lawson, “[t]he

purpose and function of gateway 32 is to translate message traffic in network 24 to a format that is understood by network 26 and to translate message traffic in network 26 to a format that is understood by network 24,” such that “gateway 32 allows messages from network 24 to flow into network 26 and vice versa so that all servers may communicate.” *Id.* at 9:22–30.

In Lawson, global event registries 24, 36 “comprise information allowing the servers which should receive notification of particular events to be identified.” Ex. 1005, 9:42–46. Local event registries 38, 40 “comprise a list of events and a corresponding list of local event consumers that desire notification of the events.” *Id.* at 10:9–12. Lawson describes the operation of the system in Figure 2 by way of the following example:

Suppose event producer 42 initiated an event. Further, assume that event consumers 44 and 46 had registered for the event. When server B recognized that event producer 42 had initiated an event, server B would check global event registry 34. Global event registry 34 would identify that server E needed notification of the event. Server B would then send the event through gateway 32 to server E. Server B would then check its local event registry 38 and discover that event consumer 44 needed notification of the event. Server B would then send the event to event consumer 44 using an appropriate transfer method. Server E, after receiving notification of the event from server B, would check its local event registry and discover that event consumer 46 had registered for the event. Server E would then transfer the event to event consumer 46 using an appropriate transfer method.

Id. at 10:20–35. Lawson continues:

In the above example [using Figure 2], it is easy to see that both local event consumer 44 and remote event consumer 46 receive notification of an event produced by event producer 42

without server B needing to know that event consumer 46 required notification of the event. All server B needed to know is that server E required notification of the event. Furthermore, event notification was transferred from server B to server E without broadcasting the event to servers A, C and D. Thus, such a method can globalize an event to required locations while, simultaneously, reducing message traffic due to broadcast type events.

Id. at 10:36–46.

We further discuss below the disclosures of Lawson in connection with the parties’ arguments.

2. Overview of Tsutsumitake (Ex. 1006)

Tsutsumitake is generally directed to a “a client/server type system wherein an information providing server provides information upon request from an information display client,” and more particularly to “a real-time information transmission system” for doing so. Ex. 1006, 1:6–12.

Tsutsumitake’s “real-time information transmission system can immediately transmit information updated on a server to a client,” using a client/server system in a web-enabled environment as shown, for example, in Figure 1, reproduced below. *Id.* at code (57).

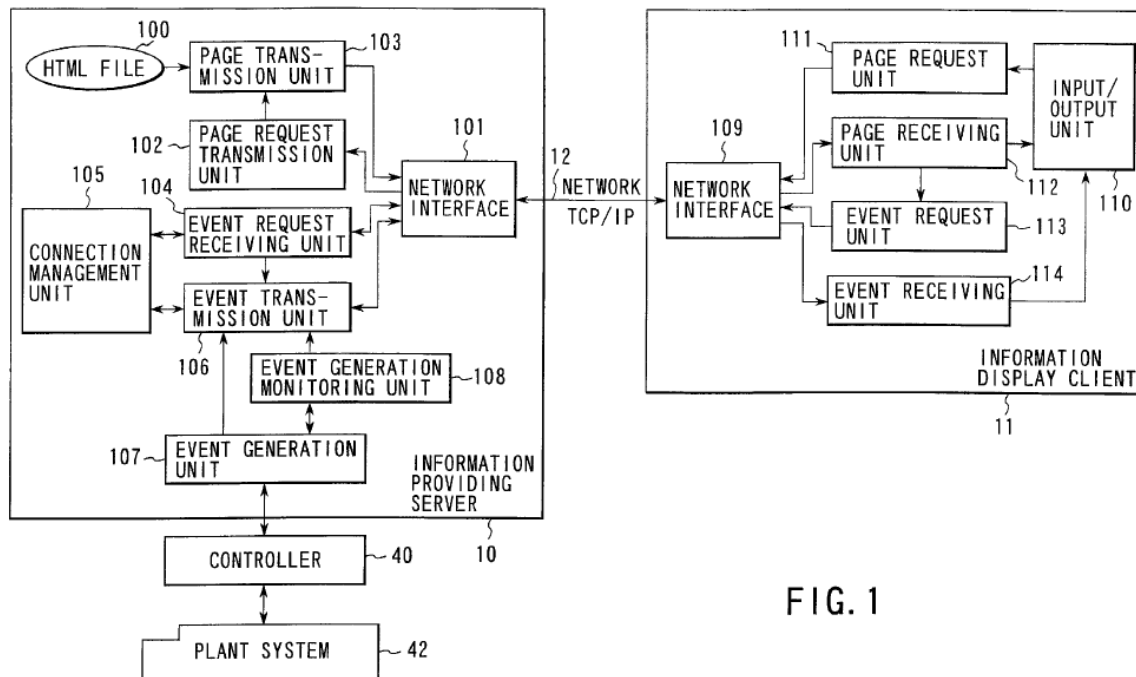


FIG. 1

Figure 1 depicts an exemplary structure of Tsutsumitake's real-time information transmission system.

Id. at 7:22–24, 7:63–10:19, Fig. 1.

In Tsutsumitake, a web “client analyzes [a web] page” and “[i]f an event request is included in the analyzed page[,] . . . [a] connection ID [is used by] the server [to] send[] an event to the client each time the event has occurred,” whereupon the “client processes the event and reflects the processed result on a screen of a display” to, e.g., update in real-time data being monitored. Ex. 1006, code (57); *see id.* at 13:31–65 (“generated events are transmitted in real time to the client”), Fig. 7.

We further discuss below the disclosures of Tsutsumitake in connection with the parties’ arguments.

3. Overview of Choquier (Ex. 1007)

Choquier is directed to “a client-server architecture for an on-line services network . . . in which on-line services are distributed and replicated

on groups of application servers,” where the “on-line services are implemented as client-server applications,” as shown, for example, in Figure 1, reproduced below. Ex.1007, 1:45–52, Fig. 1.

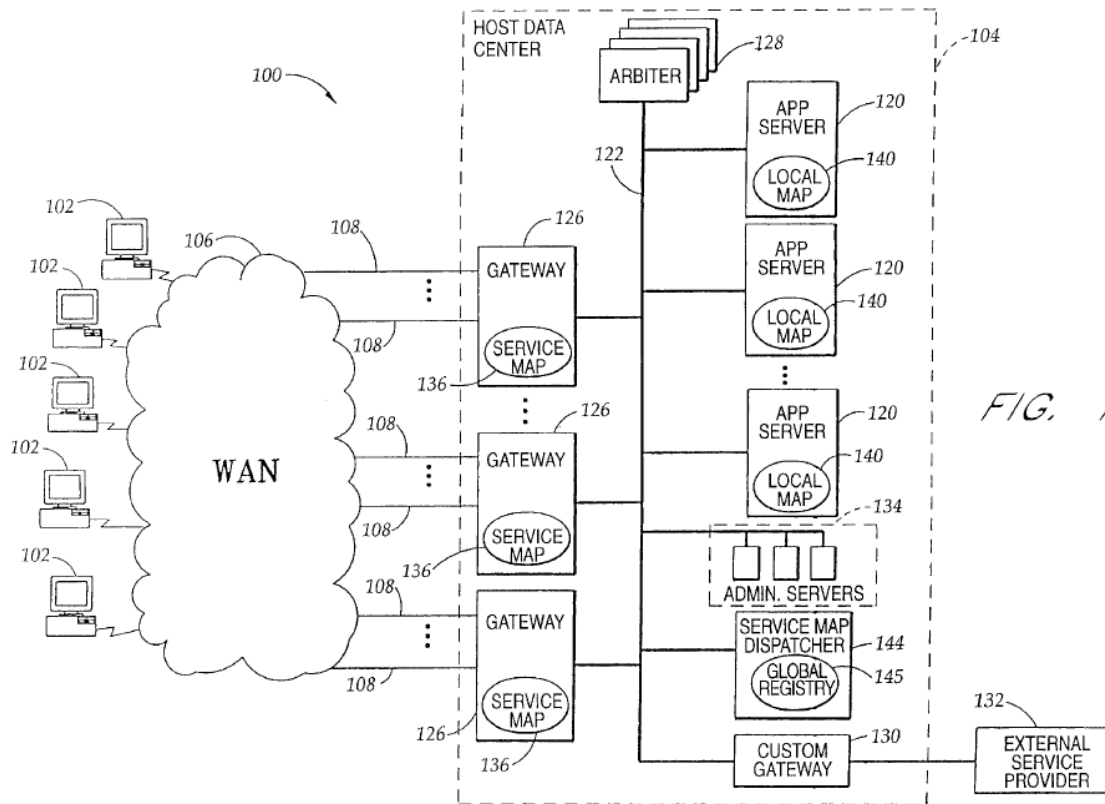


Figure 1 is a high-level diagram illustrating an architecture of an on-line services network.

Id. at 3:65–67, Fig. 1.

As shown above in Figure 1, on-line services network 100 includes multiple client microcomputers 102 connected to host data center 104 by wide area network (WAN) 106. Ex. 1007, 4:63–67. Choquier summarizes the operation of exemplary on-line services network 100 as follows:

An on-line services network includes application servers and Gateway microcomputers that are interconnected by a LAN. The Gateway microcomputers receive service requests which are transmitted over a WAN from client microcomputers operated

by end users. Upon receiving a request to open a service, the Gateway microcomputers access a periodically-updated service map to locate the replicated application servers that are currently running the corresponding service application, and then *apply a load balancing method (using server load data contained within the service map) to select an application server that has a relatively low processing load.*

Id. at code (57) (emphasis added).

We further discuss below the disclosures of Choquier in connection with the parties' arguments.

4. Analysis of Independent Claims 1 and 7⁴

Claim 1 recites, in relevant part, “determining a node having a node type to which the update message is to be routed *based on a mapping of categories of update messages to node types, the mapping controlling an amount of update message traffic through nodes of a routing network*” (“Mapping Limitation”). Ex. 1001, 22:34–38 (emphasis added). Claim 7 recites substantially the same limitation. *Id.* at 23:15–20. The parties dispute whether the combination of Lawson, Tsutsumitake, and Choquier would have taught or suggested these features to the skilled artisan. *See* Pet. 38–44; Prelim. Resp. 17–31.

a. Petitioner's Argument

Petitioner argues that Lawson teaches “categorizing messages based on input source,” because Lawson discloses “event/object filtering so event consumers registering for events can ‘prevent notifications of irrelevant

⁴ *See infra* Section III.D.4.d (Summary) for how the parties' arguments concerning independent claims 1 and 7 apply to independent claims 14, 20, 26, and 32.

events,” and particularly, “filtering based on *event producer* (input source).” Pet. 39; *see id.* at 39–40 (discussing Lawson’s Figure 3).
Petitioner argues, “[i]n Lawson, to determine which servers (nodes) should receive events (updates), entries are placed in the ‘global event registry’ so ‘the global event registry is updated to contain an entry identifying the server where the event consumer is located and the desired event.’” Pet. 40.
Petitioner argues Lawson’s Figure 2, reproduced again below for convenience, teaches the subject Mapping Limitation. Pet. 41–42.

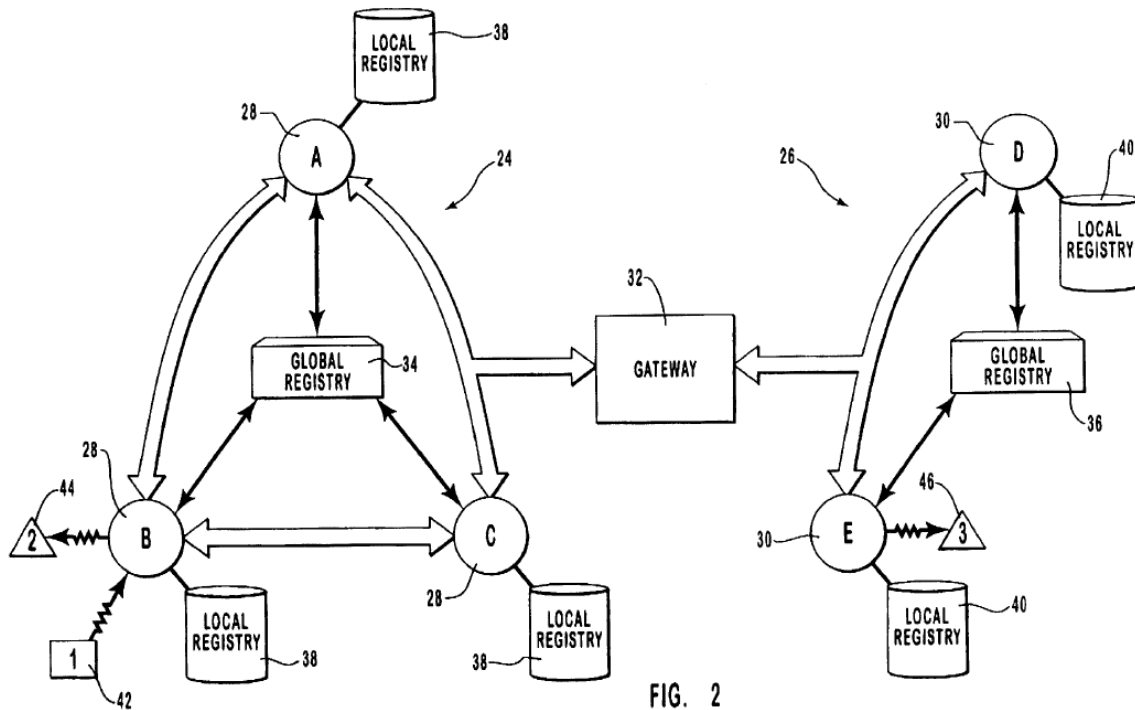


Figure 2 depicts an embodiment of a network view of Lawson’s global event notification system.

Ex. 1005, 5:58–59, Fig. 2.

According to Petitioner:

Lawson provides an example, referring to Fig. 2, in which “[w]hen server B recognized that event producer 42 had initiated an event, server B would check global event registry 34,” which

“would identify that server E needed notification of the event,” and “[s]erver B would then send the event through gateway 32 to server E.” [Ex. 1005,] 10:23-28. In this example, server B acts as the gateway, as server B receives the initial event from event producer 42, and server B checks the mapping provided by the global event registry to determine which nodes (servers) need the event (update) based on the message category (filtering).

Pet. 41–42. Petitioner argues that “this mapping provided by the global registry is for ‘controlling . . . message traffic,’” because Lawson discloses that the system in Figure 2 “reduc[es] message traffic” by not broadcasting events to all servers. Pet. 42.

Petitioner argues that each of Lawson’s nodes “can be considered different node types (types A, B, C, D, etc.),” and thus Lawson’s “global registry is used to map message categories to node types.” Pet. 42. But even if not so considered, “it would [have] be[en] obvious to include ‘node types’ in Lawson based on Choquier,” because “Choquier discloses assigning servers to server groups (node types) based on message categories (‘a specific topic or set of topics’) using service maps.” Pet. 42–43 (citing, *inter alia*, Choquier’s Figure 1, reproduced above). We find Petitioner’s arguments unpersuasive, as discussed below.

b. Patent Owner’s Response and Analysis

Patent Owner provides a useful summary, with which we agree, of how the Specification explains the subject Mapping Limitation:

[T]he system “assign[s]” messages to categories and nodes to types, and “[m]appings are created that specify which categories of messages are forwarded to which types of nodes. The mappings allow control over the amount of traffic processed by the nodes.” (EX1001, 18:26-29). The routing network “holds” the data structures that specify node types and store the mappings; when an update message is received, the routing

network “determines the category” and then “determines the node type(s) to which the message category maps,” and routing takes place on that basis. (see EX1001, 21:66-22:16; Fig. 10 (steps 1020→1030→1040)).

Accordingly, the claimed “mapping” itself is the ex-ante routing rule at the mapping network that decides which node types will receive which categories, thereby governing how much update traffic each node type must process. It is not a generic observation that some traffic is lower; it is a specific mapping between category and node type that is used in routing and, by doing so, controls the amount of update traffic that flows through the nodes that belong to those types.

Prelim. Resp. 17–18.

Patent Owner argues, and we agree, that Lawson’s system teaches “targeted delivery and consumer filtering” of events, “not a [update message] category→node-type mapping that controls node traffic.” Prelim. Resp. 18–22. In particular, we find Petitioner does not show sufficiently “how” Lawson (and the asserted combination) teaches that any control of the amount of update message traffic through its nodes results from a mapping of categories of update messages to node types, as required by claims 1 and 7. *See id.* at 19–20. As noted by Patent Owner, “Lawson achieves reduced broadcast by checking a global registry to see which specific servers have registered consumers, and then sending the event to those servers—i.e., it is server-specific delivery based on consumer registration and filtering,” not mapping from message categories to node types. *See id.* at 20 (citing Ex. 1005, 10:63–67, 12:36–43) (arguing “Lawson’s core mechanism is endpoint selection using registries, not typed-node routing”).

Patent Owner persuasively explains how Lawson's Figure 2, relied upon by Petitioner as discussed above, does *not* teach the subject Mapping Limitation:

Lawson's worked example underscores that this is targeted server-specific delivery—not a gateway-kept category→node-type mapping. Lawson explains that server B transfers the event to server E “without broadcasting ... reducing message traffic due to broadcast,” because all server B needed to know (from the registry) was that server E required notification (EX1005, 10:40–46). The example then reiterates the two-step endpoint flow: check the global registry to find server E; server E checks its local registry to notify the local consumer (EX1005, 10:63–67). Nothing in this example (or elsewhere in Lawson) describes routing based on node types or a gateway's category→node-type mapping used to route messages through a routing fabric.

Prelim. Resp. 21; *see id.* at 21–22 (“Lawson also implements consumer-side filtering, further confirming its endpoint paradigm. . . . Filtering is expressly tied to the local registry / event consumer context, not to any gateway mapping that controls throughput through routing nodes.”).

Patent Owner argues, and we agree, that Choquier teaches service-group dispatch and load balancing, not update message category→node-type mapping that controls update traffic through nodes. Prelim. Resp. 23–26. Choquier's “service map” contains server IDs, service types, and load data and is used by gateways to select a server within a service group for client service requests and by the system to perform dynamic load balancing and allocation. *See, e.g.*, Ex. 1007, 10:32–46, 10:55–61, 11:1–25. As argued by Patent Owner, “that is classical resource balancing, not the claimed category→node-type mapping that controls the amount of update message traffic through nodes.” Prelim. Resp. 23; *see* Ex. 1007, 2:52–57 (Choquier

disclosing that “[t]he Gateway microcomputer then determines the current load of each application server in the service group, and applies a load balancing method to select an application server that is relatively lightly loaded. The service request is then passed to the selected application server for processing.”). We find Petitioner does not show sufficiently how the combination of such service-map “load balancing” features in Choquier and the targeted delivery and consumer filtering features in Lawson would have taught or suggested to the ordinarily skilled artisan the subject category→node-type mapping limitation, where the mapping itself controls an amount of update message traffic through nodes of a routing network.

c. Impermissible Hindsight

Petitioner argues it would have been obvious, based on the combination of Lawson and Choquier, (1) “for Lawson’s servers to be included in server groups to provide for server groups/clusters (e.g., providing server[] groups at each of servers A, B, C, D in Lawson) assigned according to ‘topic’ or set of ‘topics’ (message category of ‘event producer’ based on Lawson’s filtering) as disclosed in Choquier,” and (2) “for Lawson’s servers to determine which server groups (node types) should receive an event update based on this server groups to event producer mapping.” Pet. 44. Petitioner argues the ordinarily skilled artisan “would have been motivated to include server groups/clustering in Lawson’s system, as it was well-known to do so *to increase efficiency, redundancy, and scalability of Lawson’s routing network.*” Pet. 44 (emphasis added); *see id.* at 23 (“Doing so would provide Lawson’s system with ‘a high degree of scalability,’ ‘dynamic[] balancing of processing load among...servers,’ and redundancy regarding server failure or overloading.”). We find these

generic “reasons” to combine the alleged teachings of Lawson and Choquier lack rational underpinning, particularly for the specific and substantial modifications of Lawson necessary to reach the subject Mapping Limitation, and are beset with impermissible hindsight.

The Board must “recognize that we cannot allow hindsight bias to be the thread that stitches together prior art patches into something that is the claimed invention.” *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (“Without any explanation as to how or why the references would be combined to arrive at the claimed invention, we are left with only hindsight bias that *KSR* warns against.”); *see KSR*, 550 U.S. at 421 (2007) (“A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.”). “Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant’s disclosure, such a reconstruction is proper.” *In re McLaughlin*, 443 F.2d 1392, 1313–14 (CCPA 1971).

In this case, Petitioner does not show sufficiently how or why an alleged desire to “increase efficiency, redundancy, and scalability of Lawson’s routing network” would have led the ordinarily skilled artisan specifically to the subject Mapping Limitation, but for using claim 1 as a roadmap. Indeed, as Patent Owner persuasively argues:

The Petition fails to tie these generic design goals to the specific functionality that the Petition seeks to cherry-pick from Choquier and import into Lawson. Put another way, the Petition does not explain what about Choquier’s scalability, load balancing and

redundancy techniques would have motivated [the skilled artisan] to have configured Lawson’s servers to “determine which server groups (node types) should receive an event update based on this server groups to event producer mapping.”

Prelim. Resp. 26–27.

Petitioner never identifies how Lawson’s registries of servers/consumers become the claimed gateway-kept category→node-type mapping (EX1005, 10:63–67; 12:36–43). Nor does Petitioner show that Choquier’s service map—not keyed by message category and used for CPU-based server selection—somehow supplies the missing category→node-type routing rule that controls update-message traffic through routing nodes (EX1007, 11:2–22; 12:33–36; 12:56–61). To the contrary, Choquier’s update path increases processing by replicating each update to every server in the service group (EX1007, 21:27–50), which is the opposite of the claim’s mapping-based control that limits which nodes must process a given update.

Id. at 30–31. We find this context shows that Petitioner’s reasons for combining Lawson and Choquier (and Tsutsumitake) to achieve the subject Mapping Limitation lack rational underpinning, and that Petitioner’s proposed combination of teachings is based on impermissible hindsight.

d. Summary

We have considered Petitioner’s arguments and cited evidence concerning whether the combination of Lawson, Tsutsumitake, and Choquier would have taught or suggested to the ordinarily skilled artisan the features of the Mapping Limitation, and do not find them sufficiently persuasive on the record before us. Rather, we find Patent Owner’s arguments and cited evidence outlined above sufficiently persuasive to demonstrate Petitioner failed to meet its burden of proof in this case. Accordingly, for the reasons expressed above and based on the record before

us, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that either of independent claims 1 or 7 is unpatentable as obvious over the combination of Lawson, Tsutsumitake, and Choquier.

Although Patent Owner addresses limitations other than the Mapping Limitation in arguing for the patentability of independent claims 14, 20, 26, and 32 (*see infra* Section III.D.5), both parties and the Reexamination Specialist in the *Ex parte* Reexam recognize that these claims also implicate the Mapping Limitation. *See* Pet. 39 (“Each independent claim recites identifying (by a gateway device) a category of the update message based on the input source and a mapping of a node type to the message category.”); Prelim. Resp. 16 (“For claims 14–37, the claims retain that category→node-type routing but add a different, client-facing requirement directed to registration and delivery.”); Ex. 1017, 4 (*Ex parte* Reexamination Specialist grouping claims 14, 20, 26, and 32 with claims 1 and 7 as implicating Mapping Limitation). Thus, we also determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of independent claims 14, 20, 26, and 32 is unpatentable as obvious over the combination of Lawson, Tsutsumitake, and Choquier based on the Mapping Limitation. Nonetheless, for completeness, we address below Patent Owner’s additional arguments concerning independent claims 14, 20, 26, and 32.

5. *Analysis of Independent Claims 14, 20, 26, and 32*

Claim 14 recites, in relevant part, “registering the client device with the routing network provides *client connection information* to a node in the routing network” (“Connection Information Limitation”). Ex. 1001,

23:63–65 (emphasis added). Claims 20, 26, and 32 recite substantially the same limitation. *Id.* at 24:46–48 (Claim 20), 25:26–29 (Claim 26), 26:16–18 (Claim 32). The parties dispute whether the combination of Lawson, Tsutsumitake, and Choquier would have taught or suggested these features to the skilled artisan. *See* Pet. 30–34; Prelim. Resp. 32–38.

Petitioner argues that Lawson “discloses client registration for updates” and quotes various passages in Lawson. Pet. 31. Petitioner likewise argues, “Lawson as modified by Tsutsumitake provides for causing a client device to respond to a live object to determine the ID and register for updates,” and quotes various passages in Tsutsumitake. Pet. 32; *see id.* at 33 (arguing Tsutsumitake “causes the client to register for updates”; “At the server 10, ‘[i]f they are not registered, a pair of the...event ID...and...client ID...are registered in the connection management unit 105 (step B11).’”). But although Petitioner argues that Lawson discloses “client registration,” Petitioner does not present clearly how or why Lawson or the combination of Lawson and Tsutsumitake (and Choquier) allegedly teaches or suggests that registering the client device “*provides client connection information to a node in the routing network.*”⁵

Patent Owner argues that “the Petition never identifies what ‘client connection information’ is, never says where the prior art discloses it, and never maps it to the claims. Indeed, in Petitioner’s own element-by-element mapping (see Petition, 30-34), the phrase ‘client connection information’ does not appear at all.” Prelim. Resp. 33. Patent Owner argues, in Lawson,

⁵ *See* 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”).

“[t]here is no disclosure that the act of client ‘registration’ provides client connection information to a node,” and Petitioner cites to none. *Id.* at 34. Patent Owner argues that “Petitioner never identifies any disclosure in Lawson, Choquier, or Tsutsumitake where a client device’s act of registering with a routing network . . . provid[es] client connection information to a node as the claims require.” *Id.* at 36; *see id.* at 34–36.

The burden of proof here lies with Petitioner, not Patent Owner, and we do not ourselves create and adopt unpatentability arguments on behalf of Petitioner as to whether or how Lawson, Tsutsumitake, and/or Choquier might teach or suggest the subject limitation. *See Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017) (“It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify with particularity the evidence that supports the grounds for the challenge to each claim.” (quoting *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016))); *In re Magnum Oil Tools*, 829 F.3d at 1381 (“[W]e find no support for the PTO’s position that the Board is free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner during an IPR.”); *DeSilva v. DiLeonardi*, 181 F.3d 865, 866–67 (7th Cir. 1999) (“A brief must make all arguments accessible to the judges, rather than ask them to play archeologist with the record.”).

We agree with Patent Owner that Petitioner’s cited passages concerning client registration, on their face, do not appear to explicitly or inherently disclose the features of the Connection Information Limitation, and we discern no explanation as to how or why the cited disclosures in Lawson and Tsutsumitake (and Choquier) allegedly teach or suggest such

limitation (or whether Petitioner is relying on a particular claim construction to give effect to its argument). Likewise, Petitioner does not cite to any expert testimony or other evidence showing how or why the cited statements in Lawson and Tsutsumitake (and Choquier) allegedly teach or suggest such limitation. Indeed, Petitioner appears to place the onus on Patent Owner—*and the Board*—to ascertain how or why the cited statements allegedly teach or suggest the Connection Information Limitation.

Accordingly, constrained by the record before us, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of independent claims 14, 20, 26, and 32 is unpatentable as obvious over the combination of Lawson, Tsutsumitake, and Choquier.

6. Dependent Claims 2–6, 8–13, 15–19, 21–25, 27–31, and 33–37

Claims 2–6, 8–13, 15–19, 21–25, 27–31, and 33–37 depend, directly or indirectly, from independent claims 1, 7, 14, 20, 26, and 32. Ex. 1001, 22:27–26:56. Based on the record before us, we determine that Petitioner’s analysis for claims 2–6, 8–13, 15–19, 21–25, 27–31, and 33–37 does not remedy the deficiencies identified above with respect to the independent claims. *See* Pet. 49–63. Thus, for the same reasons discussed in connection with the challenges to the independent claims, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of claims 2–6, 8–13, 15–19, 21–25, 27–31, and 33–37 is unpatentable as obvious over the combination of Lawson, Tsutsumitake, and Choquier.

E. Alleged Obviousness of Claims 3, 5, 9, 11, 12, 15, 21, 27, and 33 over the Combination of Lawson, Tsutsumitake, Choquier, and Herz

Petitioner contends claims 3, 5, 9, 11, 12, 15, 21, 27, and 33 would have been unpatentable under 35 U.S.C. § 103 as obvious over the combination of Lawson (Ex. 1005), Tsutsumitake (Ex. 1006), Choquier (Ex. 1007), and Herz (Ex. 1009). Pet. 63–65. Patent Owner opposes Petitioner’s contentions based on its same arguments for independent claims 1, 7, 14, 20, 26, and 32. *See* Prelim. Resp. 40–42. Based on the record before us, we determine that Petitioner’s analysis for claims 3, 5, 9, 11, 12, 15, 21, 27, and 33, for which Herz is invoked, does not remedy the deficiencies identified above with respect to the independent claims. Thus, for the same reasons discussed in connection with the challenges to independent claims 1, 7, 14, 20, 26, and 32, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of claims 3, 5, 9, 11, 12, 15, 21, 27, and 33 is unpatentable as obvious over the combination of Lawson, Tsutsumitake, Choquier, and Herz.

F. Alleged Obviousness of Claims 1–37 over the Combination of Choquier, Bird, and Tsutsumitake

Petitioner contends claims 1–37 would have been unpatentable under 35 U.S.C. § 103 as obvious over the combination of Choquier (Ex. 1007), Bird (Ex. 1008), and Tsutsumitake (Ex. 1006). Pet. 15–21, 65–95. Patent Owner opposes Petitioner’s contentions. Prelim. Resp. 43–59. Based on our review of the record before us, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of independent claims 1, 7, 14, 20, 26, and 32 (and thus any Challenged Claim) would have been unpatentable as obvious over the combination of

Choquier, Bird, and Tsutsumitake, as discussed below. We discuss Choquier and Tsutsumitake above in Sections III.D.2 and III.D.3, and turn next to an overview of Bird.

1. Overview of Bird (Ex. 1008)

Bird is directed to “a message broker providing a publish/subscribe service, and to a method of processing message content in a publish/subscribe environment,” as shown, for example, in Figure 1, reproduced below. Ex. 1008 ¶ 1, Fig. 1.

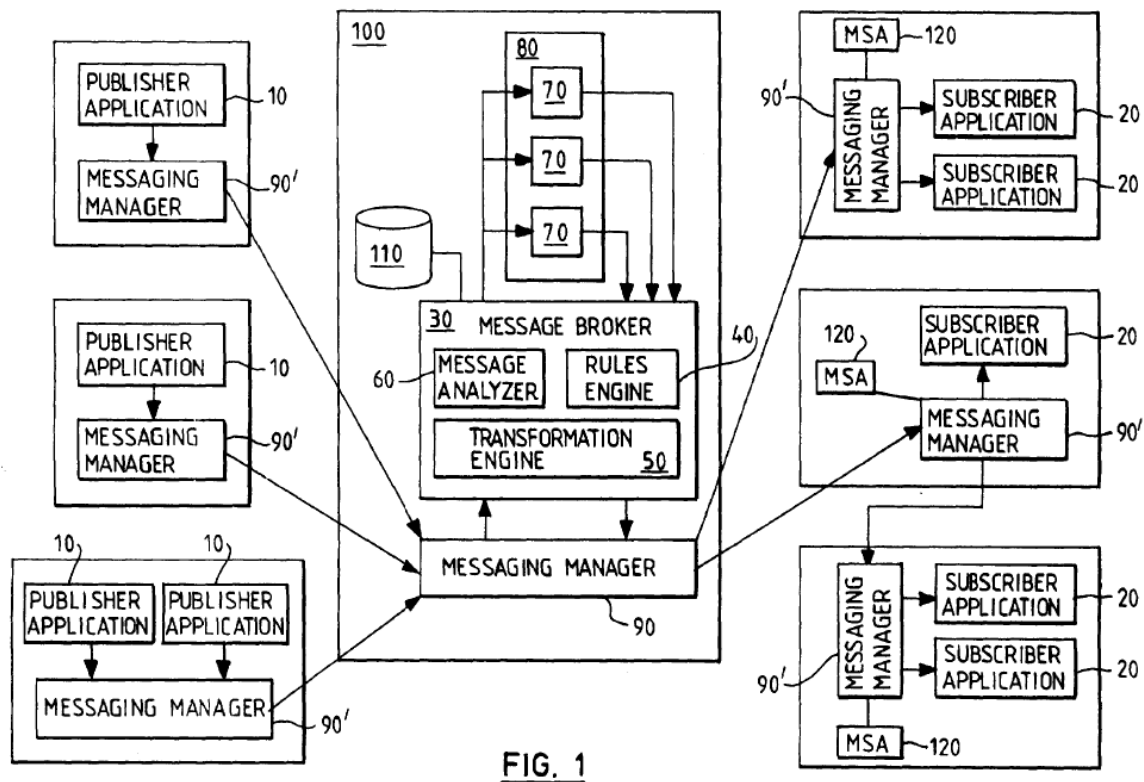


Figure 1 depicts a schematic representation of a computer network including publisher application programs sending messages to a broker and subscriber application programs receiving messages from the broker.

Id. ¶ 29, Fig. 1.

As shown above in Figure 1, messages flow between publishing application programs 10 and subscribing application programs 20 via message broker 30. Ex. 1008 ¶ 36. Bird summarizes the operation of such an exemplary message brokering system as follows:

The message broker and method extends publish/subscribe service capability to heterogeneous communications networks in which different subscriber systems can have very different capabilities in terms of their multimedia presentation capabilities, processing capabilities and storage capabilities. The broker modifies the content of messages received from publisher application programs to conform to the subscriber system capabilities prior to distribution to subscriber applications. The broker is adapted to identify characteristics of the content of received messages and to use this information to determine which of a set of message handler modules to pass the message to. Derived messages are generated by the selected message handler module and sent to subscribers for which this message type or message content has been requested. A multimedia processing module is preferably selected in response to identification of certain multimedia content.

Id. at code (57).

We further discuss below the disclosures of Bird in connection with the parties' arguments.

2. Analysis of Independent Claims 1 and 7⁶

The parties dispute whether the combination of Choquier, Bird, and Tsutsumitake would have taught or suggested the features of the Mapping Limitation to the skilled artisan. *See* Pet. 78–80; Prelim. Resp. 43–49.

⁶ *See infra* Section III.F.2.d (Summary) for how the parties' arguments concerning independent claims 1 and 7 apply to independent claims 14, 20, 26, and 32.

a. Petitioner's Argument

Petitioner argues that “Choquier discloses assigning servers to server groups (node types) based on the type of services they are configured to provide using a service map.” Pet. 78. Petitioner argues “Choquier further discloses serv[er] groups assist with controlling traffic on the network.” Pet. 79. Petitioner argues “Bird discloses it was well-known for publish/subscribe systems to categorize messages according to input source, that is, messages from specific publishers (‘company name’ ‘specific publisher organisation’) and that headers of received messages can be analyzed to determine the identification of the sender for the message for use in subsequent routing of the message.” Pet. 80. According to Petitioner, the skilled artisan “would have been motivated to map Choquier’s server groups, which Choquier discloses can be organized by type to handle a specific topic or a set of topics, to handle messages from specific publishers (message categories based on input source), as disclosed by Bird.” Pet. 80; *see id.* at 65–68. We find Petitioner’s arguments unpersuasive, as discussed below.

b. Patent Owner's Response and Analysis

Patent Owner argues, “Bird is directed to examining message content, selecting a message-handler module, generating one or more derived messages, and delivering those derived messages to subscribers whose requirements/capabilities are met.” Prelim. Resp. 45. Patent Owner further argues:

Where Bird references a “distributed broker infrastructure,” *it is to select among processing systems* (for example, a system near a database for SQL, or a system with image-processing hardware for images) *based on capabilities*

and identified content—i.e., handler/processor placement for content processing, not category→node-type routing of update messages in a typed routing fabric, and certainly not a mapping that controls update-traffic through nodes of a routing network. (EX1008, ¶[0037]) (distributed collection of brokers; selection by capabilities and identified content). Bird’s “selectors” choose processing modules/systems, not routing node types, and nowhere does Bird disclose a routing network that holds a category→node-type mapping or applies such a mapping to route update messages.

Id. at 46 (emphasis added).

Patent Owner argues, as it did regarding the Lawson–Tsutsumitake–Choquier challenge discussed above, that Choquier teaches service-group dispatch and load balancing, not update message category→node-type mapping that controls update traffic through nodes. Prelim. Resp. 46–47; *see supra* § III.D.4.b; Prelim. Resp. 23–26 (Choquier teaches “classical resource balancing, not the claimed category→node-type mapping that controls the amount of update message traffic through nodes.”); Ex. 1007, 2:52–57.

Patent Owner summarizes, and we agree, that (1) “Bird chooses processing handlers and emits derived messages in a publish/subscribe system, including optionally distributing broker functions across processing systems according to capabilities and identified content, but it is not a routing network and does not control node throughput via any category→type mapping held in a routing network”; and (2) “Choquier chooses servers for client sessions via CPU metrics and replicates updates to all servers in a group; it neither recognizes message ‘categories (based on input source)’ nor assigns ‘node types,’ and it certainly does not use a gateway mapping to limit which nodes must process a given update.”

Prelim. Resp. 48 (citing Ex. 1008 ¶ 37, claims 21–24). Patent Owner persuasively argues:

There is no articulated reason to combine these disparate systems in a way that would yield the claimed architecture without fundamentally altering their operation. Bird’s core utility lies in content analysis and transformation for subscribers; Choquier’s in CPU-based server selection and consistency via replication Re-engineering them to implement a gateway-maintained category→node-type mapping that controls update traffic through routing nodes is not a predictable combination of prior-art elements; it is a reconstruction no reference proposes and that runs counter to Choquier’s choice to replicate each update to every server in a group.

Id. at 48–49. We find Petitioner does not show sufficiently how the combination of such service-map “load balancing” features in Choquier and the content-processing publish/subscribe broker features in Bird would have taught or suggested to the skilled artisan the subject category→node-type mapping limitation, where the mapping itself controls an amount of update message traffic through nodes of a routing network.

c. Impermissible Hindsight

Petitioner argues that the skilled artisan “would have been motivated to map Choquier’s server groups . . . to handle messages from specific publishers (message categories based on input source), as disclosed by Bird” (Pet. 80), and the only reasons Petitioner proffers for doing so are “improved scalability, resource allocation, and load balancing” (Pet. 66). But Petitioner does not show sufficiently how or why an alleged generic desire for “improved scalability, resource allocation, and load balancing” would have led the ordinarily skilled artisan specifically to the subject Mapping Limitation, but for using claim 1 as a roadmap. *See* Prelim. Resp. 49 (“[I]t is

a reconstruction no reference proposes and that runs counter to Choquier's choice to replicate each update to every server in a group.""). We find again, that in this context, Petitioner's reasons for combining Choquier and Bird to achieve the subject Mapping Limitation lack rational underpinning, particularly for the specific and substantial modifications of Choquier necessary to reach the subject Mapping Limitation, and that Petitioner's proposed combination of teachings is based on impermissible hindsight.

d. Summary

We have considered Petitioner's arguments and cited evidence concerning whether the combination of Choquier, Bird, and Tsutsumitake would have taught or suggested to the ordinarily skilled artisan the features of the Mapping Limitation, and do not find them sufficiently persuasive on the record before us. Rather, we find Patent Owner's arguments and cited evidence, as outlined above, sufficiently persuasive to demonstrate that Petitioner failed to meet its burden of proof in this case. Accordingly, for the reasons expressed above and based on the record before us, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that either of independent claims 1 or 7 is unpatentable as obvious over the combination of Choquier, Bird, and Tsutsumitake.

As explained above in Section III.D.4.d, we also determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of independent claims 14, 20, 26, and 32 is unpatentable as obvious over the combination of Choquier, Bird, and Tsutsumitake based on the Mapping Limitation. Nonetheless, for completeness, we address below

Patent Owner's additional arguments concerning independent claims 14, 20, 26, and 32.

3. Analysis of Independent Claims 14, 20, 26, and 32

The parties dispute whether the combination of Choquier, Bird, and Tsutsumitake would have taught or suggested the features of the Connection Information Limitation to the ordinarily skilled artisan. *See* Pet. 72–75; Prelim. Resp. 43–49.

Petitioner argues, “Choquier specifies that communication links are established via between [sic] clients and servers of Choquier’s network to facilitate exchange of information such as ‘update transactions,’” and “Bird specifies that client devices initiate requests to register for content updates.” Pet. 72. But Petitioner does not explain sufficiently the import of these asserted disclosures vis-à-vis the Connection Information Limitation. Petitioner then turns to Tsutsumitake for the same disclosures and teachings discussed (unpersuasively) above regarding the Lawson–Tsutsumitake–Choquier challenge. Pet. 72–75 (asserting Tsutsumitake discloses “registering for updates”); *see supra* § III.D.5. Petitioner also argues that Tsutsumitake discloses that “[c]onnection information is also provided as part of the registration request,” and quotes various passages in Tsutsumitake, but does not explain sufficiently how or why such quoted passages allegedly support its proposition. Pet. 74; *but see* Prelim. Resp. 54–55 (“Petitioner’s characterization—‘connection information is also provided as part of the registration request’—does not appear in [Tsutsumitake].”). Although Petitioner argues Bird and Tsutsumitake disclose registering for updates, Petitioner does not present clearly how or why Choquier, Bird, or Tsutsumitake, or any combination thereof, allegedly

teaches or suggests that registering the client device “*provides client connection information to a node in the routing network.*”

Patent Owner responds, “Nothing in Petitioner’s Ground 3 combination of Choquier (EX1007), Bird (EX1008), and Tsutsumitake (EX1006) discloses or suggests that the claimed registration provides client connection information to a node.” Prelim. Resp. 50. Patent Owner persuasively summarizes its argument as follows:

Choquier provides no client-to-node registration channel and no node-side storage of client connection information; Bird provides no routing-network node or node-resident connection state, only subscriber requirements/capabilities used for content processing; and Tsutsumitake provides server-local (event ID, client ID) pairs in a direct push model. None of these disclosures—alone or together—teaches registration with a routing network that, as part of that act, stores node-resident client connection information that the node later uses to route an update message to the correct client connection (EX1001, 24:8–36). The “client connection information” required by the claims is absent from the combination.

Id. at 52–53; *see id.* at 53–54 (“Tsutsumitake’s ‘client ID’ at best identifies ‘client information.’ . . . However, the Petition fails to allege -- let alone demonstrate -- that this ‘client ID’ expressly or inherently disclose[s] ‘client connection information,’ such as ‘a socket identifier or some other information for identifying how to route the message to the named entity.’”). Furthermore regarding Tsutsumitake, Patent Owner persuasively argues that “Petitioner offers no explanation as to why a client ID is anything other than an identity label,” and that “the Petition doesn’t even explain how the Client ID is client connection information as required by the claims.”

As discussed above, the burden of proof here lies with Petitioner, not Patent Owner, and we do not ourselves create and adopt unpatentability

arguments on behalf of Petitioner as to whether or how Choquier, Bird, and/or Tsutsumitake might teach or suggest the subject limitation. *See Wasica Fin.*, 853 F.3d at 1286; *In re Magnum Oil Tools*, 829 F.3d at 1381; *DeSilva*, 181 F.3d at 866–67 (“A brief must make all arguments accessible to the judges, rather than ask them to play archeologist with the record.”).

We agree with Patent Owner that Petitioner’s cited passages concerning client registration and client IDs, on their face, do not appear to explicitly or inherently disclose the features of the Connection Information Limitation, and we discern no explanation as to how or why the cited disclosures in Choquier, Bird, and Tsutsumitake allegedly teach or suggest such limitation (or whether Petitioner is relying on a particular claim construction to give effect to its argument). Likewise, Petitioner does not cite to any expert testimony or other evidence showing how or why the cited statements in Choquier, Bird, and Tsutsumitake allegedly teach or suggest such limitation. Indeed, Petitioner again appears to place the onus on Patent Owner—and *the Board*—to ascertain how or why the cited statements allegedly teach or suggest the Connection Information Limitation.

Accordingly, constrained by the record before us, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of independent claims 14, 20, 26, and 32 is unpatentable as obvious over the combination of Choquier, Bird, and Tsutsumitake.

4. *Dependent Claims 2–6, 8–13, 15–19, 21–25, 27–31,
and 33–37*

Claims 2–6, 8–13, 15–19, 21–25, 27–31, and 33–37 depend, directly or indirectly, from independent claims 1, 7, 14, 20, 26, and 32. Ex. 1001, 22:27–26:56. Based on the record before us, we determine that Petitioner’s

analysis for claims 2–6, 8–13, 15–19, 21–25, 27–31, and 33–37 does not remedy the deficiencies identified above with respect to the independent claims. *See* Pet. 85–95. Thus, for the same reasons discussed in connection with the challenges to the independent claims, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of claims 2–6, 8–13, 15–19, 21–25, 27–31, and 33–37 is unpatentable as obvious over the combination of Choquier, Bird, and Tsutsumitake.

G. Alleged Obviousness of Claims 3, 5, 9, 11, 12, 15, 21, 27, and 33 over the Combination of Choquier, Bird, Tsutsumitake, and Herz

Petitioner contends claims 3, 5, 9, 11, 12, 15, 21, 27, and 33 would have been unpatentable under 35 U.S.C. § 103 as obvious over the combination of Choquier (Ex. 1007), Bird (Ex. 1008), Tsutsumitake (Ex. 1006), and Herz (Ex. 1009). Pet. 96–98. Patent Owner opposes Petitioner’s contentions based on its same arguments for independent claims 1, 7, 14, 20, 26, and 32. *See* Prelim. Resp. 60–62. Based on the record before us, we determine that Petitioner’s analysis for claims 3, 5, 9, 11, 12, 15, 21, 27, and 33, for which Herz is invoked, does not remedy the deficiencies identified above with respect to the independent claims. Thus, for the same reasons discussed in connection with the challenges to independent claims 1, 7, 14, 20, 26, and 32, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that any of claims 3, 5, 9, 11, 12, 15, 21, 27, and 33 is unpatentable as obvious over the combination of Choquier, Bird, Tsutsumitake, and Herz.

IV. CONCLUSION

Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to any of claims 1–37 of the '722 patent under any of its proffered challenges.

V. ORDER

For the reasons given, it is hereby

ORDERED that the Petition is *denied*, and an *inter partes* review of U.S. Patent No. 8,407,722 B2 is not instituted.

IPR2025-00987
Patent 8,407,722 B2

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