

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNITED SERVICES AUTOMOBILE ASSOCIATION,
Petitioner,

v.

PNC BANK, N.A.,
Patent Owner.

IPR2021-01248
Patent 7,949,788 B2

Before MICHAEL R. ZECHER, JULIET MITCHELL DIRBA, and
RUSSELL E. CASS, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner, United Services Automobile Association (“USAA”), filed a Petition requesting an *inter partes* review (“IPR”) of claims 1–5 and 7–10 of U.S. Patent No. 7,949,788 B2 (Ex. 1001, “the ’788 patent”). Paper 1 (“Pet.”). Patent Owner, PNC Bank, N.A. (“PNC”), filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

Based on the authority delegated to us by the Director under 37 C.F.R. § 42.4(a), we may not institute an IPR unless the information presented in the Petition and any response thereto shows that “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) (2018). Taking into account PNC’s Preliminary Response, we conclude that the information presented in the Petition establishes that there is a reasonable likelihood that USAA would prevail in challenging at least one of claims 1–5 and 7–10 of the ’788 patent as unpatentable. Pursuant to § 314, we hereby institute an IPR as to these claims of the ’788 patent.

A. Related Matter

The parties indicate that the ’788 patent is the subject of the district court case captioned *United Services Automobile Association v. PNC Bank, N.A.*, No. 2:20-cv-00319-JRG (E.D. Tex.). Pet. 53; Paper 4 (PNC’s Mandatory Notices), 2. In addition to this Petition, USAA filed a petition requesting an IPR of claims 1–17 of U.S. Patent No. 8,868,786 B1 (Ex. 3001, “the ’786 patent”). *United Services Automobile Ass’n v. PNC Bank, N.A.*, IPR2021-01163, Paper 1 (PTAB June 23, 2021) (Petition). On January 10, 2022, we instituted an IPR of claims 1–17 of the ’786 patent.

United Services Automobile Ass’n v. PNC Bank, N.A., IPR2021-01163,
Paper 9 (PTAB Jan. 10, 2022) (Decision Granting Institution).

B. Real Party In Interest

USAA identifies itself as the only real party in interest. Pet. 53.
PNC identifies itself as the only real party in interest. Paper 4, 2.

C. The ’788 Patent

The ’788 patent, titled “Apparatus, Systems and Methods for Transformation Services,” issued from U.S. Patent Application No. 11/804,664 (“the ’664 application”), filed on May 18, 2007. Ex. 1001, codes (54), (21), (22). The ’664 application is a divisional of U.S. Patent Application No. 13/088,877, filed on April 18, 2011—now the ’786 patent. Ex. 3001, codes (21), (22), (62).

The ’788 patent generally relates to “[d]ata communications between computer applications or networks” and, in particular, to “secure routing and data transformation over one or more communication networks.” Ex. 1001, 1:7–9. According to the ’788 patent, while “[c]orporate reliance on technology has increasingly become more . . . pervasive,” “the proliferation of different computer systems and applications that use different communications protocols, security mechanisms, languages, data structures and platforms has also made the information technology infrastructure of the typical business enterprise more complex.” *Id.* at 1:13–21. The ’788 patent identifies a situation where “a source computer application or network within a corporate enterprise,” such as a bank, “may need to share confidential customer information with external networks of partners or other organizations.” *Id.* at 1:40–43. In this particular situation, the ’788 patent states that “a need exists for an intermediary transformation service to

assign appropriate security controls to messages from source computer applications or networks prior to their transmission over a communications network.” *Id.* at 1:46–50.

The ’788 patent addresses this problem by providing “a web services hub [that] receives a request from a data source system, transforms the request, and transmits the transformed request to an external system.” Ex. 1001, 1:54–56. The ’788 patent discloses using “[a] secure service router coupled to the web services hub [to] authenticate[] the data source system and locate[] a transformation service to transform the request.” *Id.* at 1:56–59.

Figure 1 of the ’788 patent, reproduced below, illustrates “a high-level schematic diagram of one embodiment of a business enterprise network that includes a web services hub.” Ex. 1001, 1:63–67.

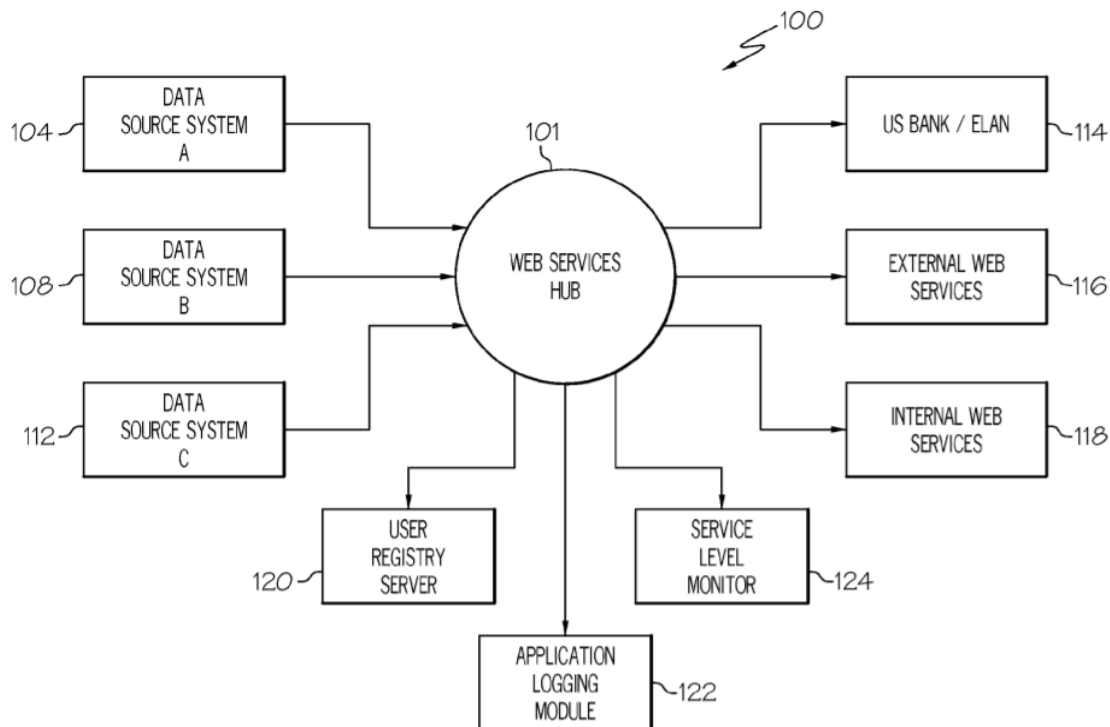


FIG. 1

Figure 1, reproduced above, illustrates business enterprise network 100 that includes web services hub 101, a plurality of business processes employing one or more data source systems 104, 108, 112, one or more target internal or external web services 114, 116, 118, user registry server 120, application logging module 122, and service level monitor 124. *Id.* at 2:56–61, 3:5–10. Notably, “web service hub 101 . . . enable[s] dynamic routing and transformation services for web based applications” using “synchronous or asynchronous processing models.” *Id.* at 3:12–16.

As one example of the transformation services provided by web service hub 101, the '788 patent discloses that “secure service router 220” located therein may “verify access and transmission rights of data source system A 104 using SOURCE header parameter.” Ex. 1001, 9:58–61, Fig. 2. “[S]ecure service router 220 may review SOURCE header parameter to determine the format of the incoming request from data source system A 104” and, if necessary, transmit the request to transformation and/or business logic module 212, which, in turn, transforms the request prior to transmitting it to external system 213. *Id.* at 9:61–67, 10:15–23, Fig. 2. After transforming and transmitting the request to the external system, web service hub 101 receives a response from external system 213, transforms the response to a format recognizable by data source system A 104, and then transmits the newly formatted response to data source system A 104. *See id.* at 10:31–42.

D. Challenged Claims

Of the challenged claims, claim 1 is the only independent claim. Independent claim 1 is directed to “[a] method.” Ex. 1001, 14:61. Claims 2–5 and 7–10 directly or indirectly depend from independent claim 1. *Id.* at

15:11–24, 15:31–48. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A method, comprising:

receiving a message from a data source system, the message comprising at least one header parameter stored in at least one header parameter field, the message to be transmitted to an external system;

determining the message type based on the at least one header parameter;

verifying access and transmission rights of the data source system and the external system; and

transmitting the message to a message transformation logic module; [and]

receiving the message to be transformed from the data source system at the message transformation logic module from a secure service router, the message comprising the at least one header parameter stored in the at least one header parameter field.

Id. at 14:61–15:9.

E. Asserted Prior Art References

USAA relies on the prior art references set forth in the table below.

Name¹	Reference	Dates	Exhibit No.
Corneil	US 2003/0065623 A1	published Apr. 3, 2003; filed Oct. 1, 2001	1004
Abjanic	US 2003/0069975 A1	published Apr. 10, 2003; filed Dec. 22, 2000	1005

F. Asserted Grounds of Unpatentability

USAA challenges claims 1–5 and 7–10 of the '788 patent based on the asserted grounds of unpatentability set forth in the table below. Pet. 3–4, 10–49.

¹ For clarity and ease of reference, we only list the first named inventor.

Claims Challenged	35 U.S.C. §	Reference(s)
1–5, 7–10	103(a) ²	Corneil
8–10	103(a)	Corneil, Abjanic

II. ANALYSIS

A. Claim Construction

In an IPR based on a petition filed on or after November 13, 2018, such as here, claim terms are construed using the same claim construction standard as in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2019). That is, claim terms generally are construed in accordance with their ordinary and customary meaning, as would have been understood by a person of ordinary skill in the art, and the prosecution history pertaining to the patent at issue. *Id.* The ordinary and customary meaning of a claim term “is its meaning to the ordinary artisan after reading the entire patent,” and “as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 1321 (Fed. Circ. 2005) (en banc).

In its Petition, USAA contends that “[n]o [claim] terms need to be construed to resolve the issues presented in [the] Petition and the terms should be accorded their plain and ordinary meaning as would be understood by a [person of ordinary skill in the art] in light of the intrinsic evidence,” including the ’788 patent and its prosecution history. Pet. 10. In its

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 March 16, 2013. Because the ’788 patent issued from the ’664 application, which was filed before this date, the pre-AIA version of § 103 applies. Ex. 1001, codes (21), (22).

Preliminary Response, PNC proposes constructions for the following two claim terms: (1) “external system”; and (2) “secure service router.” Prelim. Resp. 8–14. We address each term below.

1. “external system”

PNC proposes to construe the claim term “external system” as “a system external to the institution receiving the request from the data source system.” Prelim. Resp. 8. To support its proposed construction, PNC directs us to a disclosure in the specification of the ’788 patent that purports to distinguish the term “external” based on systems inside an institution and those outside the institution, together with the supporting testimony of its declarant, Mr. Stephen Gray. *Id.* at 8–9 (citing Ex. 1001, 1:40–43; Ex. 2001 (Declaration of Stephen Gray in support of Preliminary Response) ¶ 36). PNC also directs us to Figure 1 of the ’788 patent, which, according to PNC, illustrates external web services 116 and internal web services 118 as separate and distinct components from the institution providing web services hub 101. *Id.* at 9–10 (citing Ex. 1001, 3:5–10, Fig. 1; Ex. 2001 ¶ 37).

At this stage in the proceeding, PNC does not address separately USAA’s explanations and supporting evidence as to how the teachings of Corneil, either alone or in combination with the teachings of Abjanic, account for the “external system” recited in the challenged claims. *See* Prelim. Resp. 15–35. Based on the preliminary record, because there is no controversy as to whether Corneil’s second trading partner 217 teaches the claim term “external system,” we need not construe this claim term for purposes of institution. *See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e 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))).

2. “*secure service router*”

PNC proposes to construe the claim term “secure service router” as “a component that authenticates the data source system, locates a service, and forwards a message or request to the service.” Prelim. Resp. 10. According to PNC, the term “secure service router” “is a specialized component of the claimed inventions that does not have an established meaning in the art, but rather is best understood through the specification” of the ’788 patent. *Id.* (citing Ex. 2001 ¶ 38). Turning to the testimony of its declarant, Mr. Gray, together with multiple dictionary definitions of “router,” PNC argues that the claim term “secure service router” has a specialized meaning in the context of the ’788 patent that is inconsistent with the ordinary and customary meaning of a “router.” *Id.* at 10–12 (citing Ex. 1001, code (57), 1:54–59; Ex. 2001 ¶ 39; Exs. 2002–2005). PNC then argues that the specification of the ’788 patent discloses multiple service routers, including “asynchronous service routers,” “synchronous service routers,” and the claimed “secure service router.” *Id.* at 12 (citing Ex. 1001, 6:14–38, Fig. 2). PNC, however, argues that the specification makes clear that each service router locates a service, and forwards a message or request to that service. *Id.* at 12–13 & n.2 (citing Ex. 1001, code (57), 1:54–59, 6:17–20, 8:1–12, 11:57–61; Ex. 2001 ¶ 40). In addition, PNC argues that the specification consistently reinforces that the “secure service router” must authenticate the data source

system. *Id.* at 14 (citing Ex. 1001, code (57), 1:54–59, 6:42–44, 8:3–6; Ex. 2001 ¶ 41).

Based on the preliminary record, we decline to adopt PNC’s proposed construction of the claim term “secure service router.” As we explain previously, the ’788 patent and the ’786 patent both issued from divisional applications. Ex. 1001, code (21); Ex. 3001, code (62). These two patents share a common specification and trace their origin to the same parent application. The U.S. Court of Appeals for the Federal Circuit has instructed that “[w]here multiple patents ‘derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents.’” *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1316 (Fed. Cir. 2015) (quoting *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1293 (Fed. Cir. 2005)). Because we are charged with interpreting the claim term “secure service router” consistently across the ’788 patent and the ’786 patent, we take the same preliminary position set forth in the Decision Granting Institution entered in IPR2021-01163.

That is, for purposes of institution, we do not adopt PNC’s proposed construction of the claim term “secure service router” in this proceeding, which is the same construction it proposes in IPR2021-01163, because it would render superfluous the language that already is recited in independent claims 1 and 7 of the ’786 patent—namely, “the secure service router [is operative] to authenticate the data source system” and “the secure service router . . . locate[s] a transformation service to transform the request.” IPR2021-01163, Paper 9 at 10–11 (citing *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016)). Instead, at this stage of the proceeding, we determine that, at a minimum, the claim term “secure service router”

must “authenticate the data source system” that sends a message or request. *Id.* at 11. This preliminary determination also finds support in the specification of the ’788 patent, which, as PNC correctly argues, consistently reinforces that the “secure service router” must authenticate the data source system. Prelim. Resp. 14 (citing Ex. 1001, code (57), 1:54–59, 6:42–44, 8:3–6). We, however, invite the parties to provide further briefing during trial to help clarify the impact, if any, of the word “router” when arriving at the proper construction of the claim term “secure service router” in the context of the ’788 patent.³

B. Obviousness Over the Teachings of Corneil

USAA contends that claims 1–5 and 7–10 of the ’788 patent are unpatentable under § 103(a) as obvious over teachings of Corneil. Pet. 10–49. USAA contends that the teachings of Corneil account for the subject matter of each challenged claim, and provides reasoning as to why a person of ordinary skill in the art would have been prompted to modify the teachings of this reference. *Id.* USAA also relies on the testimony of Sam

³ On January 5, 2022, which was roughly two weeks before our due date to issue a decision on institution in this proceeding, USAA submitted a “Claim Construction Memorandum Opinion and Order” (“Order”) issued by the U.S. District Court for the Eastern District of Texas as Exhibit 1037. In this Order, the district court construed the claim term “secure service router” to mean a “servicer router than can verify authentication and authorization.” Ex. 1037, 88. During trial, we encourage the parties to address the impact of the district court’s claim construction on the issues raised in this proceeding. *See* 37 C.F.R. § 42.100(b) (“Any prior claim construction determination concerning a term of the claim in a civil action, or a proceeding before the International Trade Commission, that is timely made of record in the *inter partes* review proceeding will be considered.”).

Malek, Ph.D. to support its positions. Ex. 1003 (Declaration of Sam Malek, Ph.D. in support of Petition).

Based on the preliminary record, we determine that USAA has shown that there is a reasonable likelihood that it would prevail in challenging at least one of claims 1–5 and 7–10 of the '788 patent as unpatentable. We begin our analysis with the principles of law that generally apply to an asserted ground based on obviousness, an assessment of the level of skill in the art, followed by a brief overview of Corneil, and then we address the parties' contentions with respect to the challenged claims.

1. Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter 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 in evidence, objective indicia of non-obviousness (i.e., secondary considerations).⁴ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze the asserted grounds based on obviousness with the principles identified above in mind.

⁴ In its Preliminary Response, PNC does not present arguments or evidence of secondary considerations. *See* Prelim. Resp.

2. Level of Skill in the Art

For purposes of institution, there is sufficient evidence in the record that enables us to determine the knowledge level of a person of ordinary skill in the art. Relying on the testimony of Dr. Malek, USAA argues the following:

[a] person of ordinary skill in the art . . . at the time of the alleged invention would have had a Bachelor's degree in computer science, software engineering, or electrical engineering and two years of experience in software development and programming in the area of web services, including familiarity with enterprise systems and standard web transport and security protocols. This level of skill is approximate, and more experience would compensate for less formal education, and vice versa.

Pet. 10 (citation omitted) (citing Ex. 1003 ¶ 53).

Relying on the testimony of Mr. Gray, PNC offers a slightly different assessment of the level of skill in the art, arguing the following:

[a] “person of ordinary skill in the art” . . . at the time of the alleged invention would have had a degree in electrical engineering, computer engineering, computer science or the equivalent knowledge gained through experience; and at least two years of computer programming experience in the design and implementation of distributed computing systems and related Internet technologies.

Prelim. Resp. 8 (citing Ex. 2001 ¶ 34).

The level of skill in the art advanced by each party requires at least a Bachelor of Science degree in electrical engineering, computer/software engineering, computer science, or equivalent. We do not discern a material difference between the industry experiences advanced by either party, nor does either party premise its arguments exclusively on its own industry experience. To the extent necessary, and for purposes of institution, we

adopt USAA's assessment of the level of skill in the art because Dr. Malek's identification of relevant industry experience applicable to software development and programming in the area of web services, including familiarity with enterprise systems and standard web transport and security protocols, is consistent with the '788 patent and the asserted prior art. We note, however, that our obviousness analysis would be the same under either party's assessment.

3. Overview of Corneil

Corneil generally relates to “[a] service, method, apparatus and/or network configuration that provides the exchange of electronic data or message transactions through a third party network service between trading partners that have disparate systems.” Ex. 1004, code (57). According to Corneil, its system provides data processing services that include, but are not limited to, “authentication, validation, transformation and routing of a plurality of trading partners’ electronic transactions.” *Id.* “The system uses a centralized computing platform to receive input messages from one or more trading partners in one or more message formats. If required[,] messages are transformed to a second message format The data is then sent to the plurality of trading partners as required by the originating trading partner.” *Id.*

Figure 2 of Corneil, reproduced below, illustrates a transaction processing system for electronic messages in accordance with one embodiment. Ex. 1004 ¶¶ 15, 32.

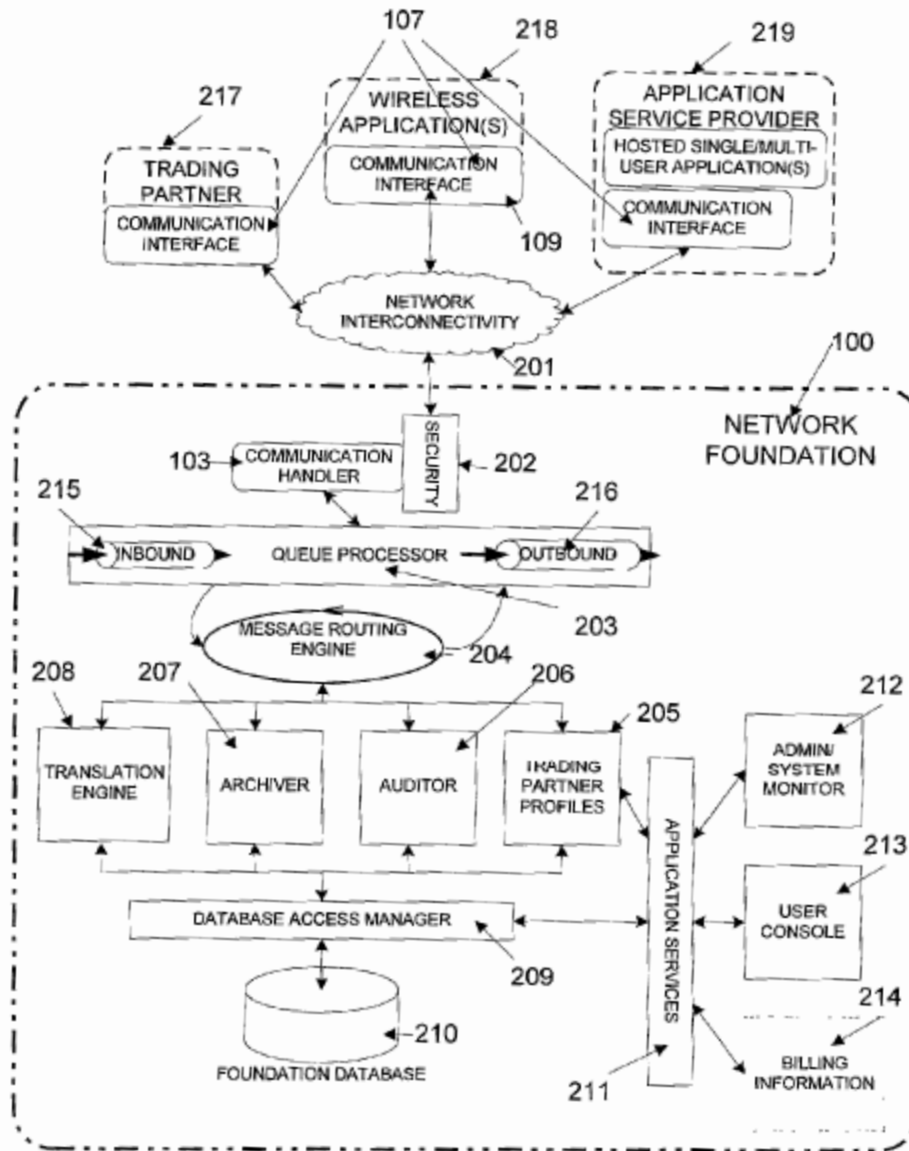


FIGURE 2

Figure 2, reproduced above, illustrates how messages are routed from trading partners 217 through network interconnectivity 201 to network foundation 100. *Id.* ¶¶ 32, 33. Network foundation 100 further includes, among other things, security handler 202 that “executes processes to assure the security of the messages received over” network interconnectivity 201

(e.g., “by validating authentication information”), communication handler 103 that “understands and manages” different communication protocols used by trading partners 217, queue processor 203 that maintains inbound 215 and outbound 216 electronic message queues, and message routing engine 204 that serves as “the main execution thread for transaction processing.” *Id.* ¶¶ 33, 34.

In connection with Figure 2 (not reproduced here), Corneil discloses that “Trading Partner Profiles 205 are . . . managed within the service.” Ex. 1004 ¶ 35. “Trading Partner Profiles 205 contain information about each specific trading partner connected to . . . [n]etwork [f]oundation 100. The information includes, but is not limited to location, division, contact information, applications used, data formats, communication protocols used, other trading partners within their network, etc.” *Id.* In connection with Figure 6 (not reproduced here), Corneil discloses that the processing of messages as they are received by network foundation 101 includes checking the messages “to ensure that they are sent by the authorized Trading Partner by reconciling 604 the message[s] with a Trading Partner Profile.” *Id.* ¶ 45, Fig. 6, step 604.

4. Claim 1

The preamble of independent claim 1 recites “[a] method, comprising.” Ex. 1001, 14:61. To the extent the preamble should be treated as limiting, USAA contends that Corneil teaches the preamble because Figure 2 of Corneil illustrates a system having all the elements of independent claim 1, including multiple “data source systems” and “external systems,” a “secure service router,” and a “message transformation logic

module.” Pet. 11. Each of these elements is illustrated in the annotated version of Figure 2 of Corneil, reproduced below.

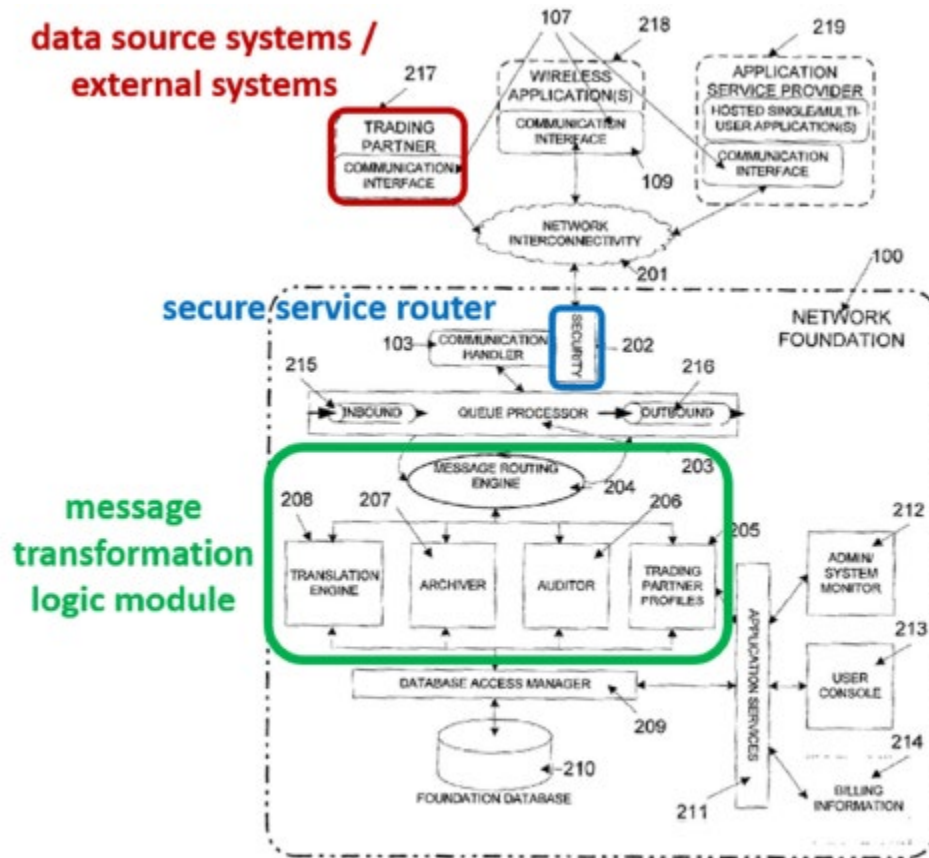


FIGURE 2

Id. Based on the annotated version of Figure 2, reproduced above, which illustrates a transaction processing system for electronic messages, USAA argues that “trading partner 217” (in red) represents a collection of “distinct, plural trading partners [who] communicate with each other by routing electronic documents through the managed network.” *Id.* (quoting Ex. 1004 ¶ 23). More specifically, USAA argues that first trading partner 217 is the “data source system” (in red) that sends a message or request via web services hub to second trading partner 217 that is the “external system” (also in red). *Id.* at 11–12 (citing Ex. 1003 ¶ 85).

The first step of independent claim 1 recites “receiving a message from a data source system, the message comprising at least one header parameter stored in at least one header parameter field, the message to be transmitted to an external system.” Ex. 1001, 14:62–65. USAA contends that Corneil teaches this limitation, because similar to hypertext transfer protocol (“HTTP”) or hypertext transfer protocol secure (“HTTPS”) requests described in the specification of the ’788 patent, Corneil teaches that message routing engine 204 receives messages or requests from first trading partner 217 via HTTP connection protocols that are transmitted to second trading partner 217. Pet. 12–13 (citing Ex. 1004, code (57), ¶ 34; Ex. 1003 ¶¶ 86, 87). USAA further argues that Corneil discloses that message routing engine 204 receives messages that include header information storing multiple message parameters, including “sender and receiver information,” “message incoming and outgoing formats, trading partner information, routing characteristics and application information for [the] transaction.” *Id.* at 13–15 (quoting Ex. 1004 ¶¶ 34, 52) (citing Ex. 1004 ¶¶ 35, 45, Fig. 2; Ex. 1003 ¶ 88).

The second step of independent claim 1 recites “determining the message type based on the at least one header parameter.” Ex. 1001, 14:66–67. USAA contends that Corneil teaches this limitation because it discloses that the system examines the header information of each message or request “to ‘determine the processes that will be performed on the data,’ i.e., what transformation is required to convert the message from its current type to the desired outgoing format.” Pet. 16–17 (quoting Ex. 1004 ¶ 45) (citing Ex. 1004 code (57), ¶ 34; Ex. 1003 ¶¶ 88, 90). USAA argues that this is the same type of determination disclosed in the specification of the ’788 patent,

which provides “determin[ing] whether transformation is required before transmitting the request to external system 213.” *Id.* at 17–18 (quoting Ex. 1001, 9:61–67).

The third step of independent claim 1 recites “verifying access and transmission rights of the data source system and the external system.” Ex. 1001, 15:1–2. USAA contends that Corneil teaches this limitation because it discloses verifying the identity of the parties to the transaction (i.e., first trading partner 217 and second trading partner 217) and whether they are authorized to perform the requested action. Pet. 18. According to USAA, Corneil accomplishes this verification by cross referencing the header information of a message or request with the “Trading Partner Profile” records maintained for each trading partner 217 authorized to use the system. *Id.* at 19 (quoting Ex. 1004 ¶ 45). Relying on the testimony of Dr. Malik, USSA argues that “[a person of ordinary skill in the art] would have understood this to include verifying access and transmission rights of the data source system and the external system.” *Id.* (citing Ex. 1003 ¶ 92).

As one example, USAA contends that Corneil’s “Trading Partner Profile” records contain information about “each specific trading partner,” including “other trading partners within their network.” Pet. 19 (quoting Ex. 1004 ¶ 35). USAA then argues that reconciling the header information of a message or request with the “Trading Partner Profile” records not only includes verifying that first trading partner 217 and second trading partner 217 have access rights to Corneil’s system, but also includes verifying that the two trading partners are within each other’s network and, therefore, authorized to transmit messages to one another. *Id.* at 19–20 (citing Ex. 1003 ¶ 92). Moreover, USAA asserts that “[a]uthenticating and

authorizing the source and destination of messages between trading partners was well-known in the prior art in order to maintain the security of sensitive business information and prevent unnecessary expenditure of processing resources by intermediary hub systems such as Corneil's." *Id.* at 20–21 (citing Ex. 1003 ¶ 92). Indeed, USAA argues that Corneil itself provides a sufficient reason to verify the access and transmission rights of first and second trading partners 217 because it tracks how often each trading partner uses the system and bills them accordingly. *Id.* at 21 (citing Ex. 1004 ¶¶ 11, 45, 46). Relying on the testimony of Dr. Malek, USAA asserts that "[a person of ordinary skill in the art would . . . have had good reason to verify access and transmission rights of the data source system and the external system in order to ensure that trading partners [217] are not billed for transactions that they did not authorize." *Id.* at 21–22 (citing Ex. 1003 ¶ 92).

The fourth step of independent claim 1 recites "transmitting the message to a message transformation logic module." Ex. 1001, 15:3–4. USAA contends that Corneil teaches this limitation because the claimed "message transformation logic module" includes, among other things, Corneil's message routing engine 204 and translation engine 208. Pet. 23–24 (citing Ex. 1004, Fig. 2 (annotated)). More specifically, USAA argues that message routing engine 204 receives a message or request from security handler 202 and, if necessary, transmits the message to translation engine 208 for transformation to a desired outgoing format. *Id.* at 24–25 (citing Ex. 1004 ¶¶ 33–35, 45; Ex. 1003 ¶ 94).

The last step of independent claim 1 recites "receiving the message to be transformed from the data source system at the message transformation logic module from a secure service router, the message comprising the at

least one header parameter stored in the at least one header parameter field.”
Ex. 1001, 15:5–9. USAA contends that Corneil teaches this limitation because it discloses transmitting the message or request from first trading partner 217 through security handler 202 to message routing engine 204 via inbound 215 electronic message queue of queue processor 203 and, if necessary, to translation engine 208 for transformation to a desired outgoing format. Pet. 26–27 (citing Ex. 1004 ¶¶ 33, 35, Fig. 2 (annotated); Ex. 1003 ¶ 95). USAA argues that, as discussed above with respect to the first method step of independent claim 1, Corneil discloses that the received message includes header information storing at least one message parameter. *Id.* at 27 (citing Ex. 1004 ¶¶ 32, 35, 52). According to USAA, Corneil passes the message from security handler 202 to message routing engine 204 and, if necessary, to translation engine 208, “without stripping the header information from the message, so that [message routing engine 204 and translation engine 208] can also access the header information.” *Id.* (citing Ex. 1004 ¶ 34; Ex. 1003 ¶ 96).

Based on the preliminary record, we discern no deficiency in USAA’s characterizations of Corneil and the knowledge in the art, or in USAA’s reasoning as to why a person of ordinary skill in the art would have been prompted to modify this reference. In addition, for purposes of institution, we accept Dr. Malek’s testimony concerning the relevant teachings of Corneil. At this stage of the proceeding, PNC raises the following arguments: (1) Corneil does not teach “verifying access and transmission rights of the data source system,” as recited in independent claim 1; (2) Corneil does not teach “verifying access and transmission rights of . . . the external system,” as recited in independent claim 1; and (3) Corneil does

not teach the claim term “secure service router,” if that term is construed properly. Prelim. Resp. 19–32. We address these arguments in turn.

a. “verifying access and transmission rights of the data source system”

In its Preliminary Response, PNC contends that Corneil’s disclosure of cross referencing the header information of a message or request with the “Trading Partner Profile” records maintained for each trading partner 217 authorized to use the system does not teach “verifying access and transmission rights of the data source system,” as recited in independent claim 1. Prelim. Resp. 19–20 (citing Ex. 1004 ¶¶ 42, 52; Ex. 2001 ¶ 49). According to PNC, USAA “implicitly acknowledges Corneil’s deficiency” in this regard by arguing that “[a person of ordinary skill in the art] would have understood this to include verifying access and transmission rights of the data source system and the external system.” *Id.* at 20 (quoting Pet. 19). PNC, however, argues that USAA improperly relies on inherency because USAA fails to provide sufficient evidence that “verifying access and transmission rights of the data source system” necessarily flows from the relevant teachings of Corneil. *Id.* at 20–21. Instead, PNC argues that Corneil’s disclosure of reconciling the header information of a message or request sent by first trading partner 217 with “Trading Partner Profile” records merely includes checking the message to ensure that it was sent by a trading partner. *Id.* at 21–22 (citing Ex. 1004 ¶ 45). PNC further argues that USAA does not provide a sufficient reason why a person of ordinary skill in the art “would conclude that Corneil *necessarily* verifies that two trading partners are permitted to exchange messages.” *Id.* at 22 (citing Ex. 2001 ¶ 51).

PNC disagrees with USAA's argument that Corneil itself provides a sufficient reason to verify the access and transmission rights of first trading partner 217 because it tracks the usage of each trading partner and bills them accordingly. Prelim. Resp. 22. According to PNC, the passages in Corneil cited by USAA to support this argument merely disclose that "Corneil's system captures billing information and processes and delivers bills," but those disclosures do not teach "verifying access and transmission rights of the data source system." *Id.* (citing Ex. 1004 ¶¶ 11, 45, 46; Ex. 2001 ¶ 52). PNC also disagrees with USAA's argument that "[a]uthenticating and authorizing the source and destination of messages between trading partners was well-known in the prior art." *Id.* (quoting Pet. 20–21). PNC argues that USAA does not explain adequately how "authenticating and authorizing the source and destination" systems teach or suggest the verification of "access and transmission rights" of those systems. *Id.* at 22–23. Lastly, PNC asserts that we should accord little, if any, weight to the supporting testimony of USAA's declarant, Dr. Malek, because he "merely parrots the Petition," without providing any additional evidentiary support. *Id.* at 23–24.

As an initial matter, we are not persuaded by PNC's argument that USAA relies on the doctrine of inherency in the Petition to support its position that Corneil teaches "verifying access and transmission rights of the data source system," as recited in independent claim 1. *See* Prelim. Resp. 19–22. Contrary to PNC's argument, USAA does not use language that implicates inherency (e.g., necessarily, necessarily present, inherently, etc.). *See* Pet. 18–19. Instead, we understand USAA to argue that, when viewing the teachings of Corneil through the perspective of a person of ordinary skill

in the art as evidenced by the testimony of Dr. Malik, Corneil's disclosure of cross referencing the header information of a message or request with "Trading Partner Profile" records includes verifying the access and transmission rights of first trading partner 217. *See id.* (citing Ex. 1004 ¶¶ 45, 52, Fig. 2; Ex. 1003 ¶ 92). This argument presented by USAA in the Petition is typical of an obviousness ground that relies on the knowledge of a person of ordinary skill in the art to understand whether a reference discloses or teaches a limitation. *See Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1361 n.3 (Fed. Cir. 2008) ("What a prior art reference discloses or teaches is determined from the perspective of one of ordinary skill in the art.")

Based on the preliminary record, we are not persuaded by PNC's argument that USAA does not present sufficient evidence that "[a]uthenticating and authorizing the source and destination" systems teaches or suggest "verifying access and transmission rights" of those systems. *See* Prelim. Resp. 22–23. In connection with Figure 6, which illustrates a method of processing messages embodying certain aspects of Corneil's disclosed invention, Corneil states "[m]essages are checked to ensure that they are sent by the authorized Trading Partner by reconciling 604 the message[s] with a Trading Partner Profile." Ex. 1004 ¶ 45. As one example of how Corneil's cross referencing procedure works, Dr. Malik testifies that "Corneil teaches that its Trading Partner Profile records include information about 'each specific trading partner' including 'other trading partners within their network.'" Ex. 1003 ¶ 92 (quoting Ex. 1004 ¶ 35). He then testifies that "[r]econciling the message header information with the Trading Partner Profile records . . . would thus include not only verifying

that the data source system and external system are authorized users of the Corneil's system (i.e., have appropriate 'access' rights) but that the two trading partners [217] are within each other's network and thus permitted to send and receive messages to and from one another (i.e., have 'transmission' rights)." *Id.* In our view, Corneil's disclosures cited above, together with the supporting testimony of Dr. Malik, amounts to sufficient evidence that would support a finding that Corneil's cross referencing of a message or request sent by first trading partner 217 with "Trading Partner Profile" records includes verifying whether first trading partner 217 has access rights to Corneil's system and is authorized to transmit a message to second trading partner 217.

Nor are we persuaded by PNC's argument that Corneil's disclosure of tracking how often each trading partner uses the system and billing them accordingly does not amount to a sufficient reason to verify the access and transmission rights of first trading partner 217. *See* Prelim. Resp. 22. Once again, in connection with Figure 6, Corneil states that, "[t]hroughout the processing of the message" or request, which includes cross referencing the header information of the message with the "Trading Partner Profile" records maintained for each trading partner 217 authorized to use the system, "there is billing information captured 607 based on the value added services performed." Ex. 1004 ¶ 45; *see also id.* ¶ 11 (disclosing that "bills [may be] directed to one of the trading partners identified with the input message" or "bills [may be] directed to one of the trading partners identified with the output message"). Regardless of whether bills may be directed to first trading partner 217, second trading partner 217, or both, Dr. Malek testifies that "[a person of ordinary skill in the art] would . . . have had good

reason to verify access and transmission rights of the data source system and the external system in order to ensure that trading partners [217] are not billed for transactions that they did not complete.” Ex. 1003 ¶ 92.

Accordingly, for purposes of institution, we are persuaded that USAA has presented a sufficient reason that would support a finding that Corneil teaches verifying the access and transmission rights of first trading partner 217 so that it can track how often first trading partner 217 uses Corneil’s system and bill first trading partner 217 accordingly.

Lastly, we are not persuaded by PNC’s argument that we should accord little, if any, weight to the supporting testimony of Dr. Malek. *See* Prelim. Resp. 23–24. PNC will have an opportunity during trial to cross-examine Dr. Malek regarding his relevant testimony. Moreover, as we explain above, it is Corneil’s cross referencing of a message or request with the “Trading Partner Profile” records *together with* the supporting testimony of Dr. Malek that amounts to sufficient evidence that would support a finding that Corneil teaches “verifying access and transmission rights of the data source system,” as recited in independent claim 1.

b. “verifying access and transmission rights of . . . the external system”

In its Preliminary Response, PNC contends that USAA’s arguments with respect to “verifying access and transmission rights of the data source system and the external system” solely focus on verifying that a message or request was sent by an authorized trading partner, but fails to address verifying the access and transmission rights of the external system. Prelim. Resp. 25 (citing Ex. 2001 ¶ 58). According to PNC, Corneil “says nothing about verifying the access and transmission rights of” the external system nor does USAA provide arguments or evidence explaining “why Corneil

would necessarily perform such verification.” *Id.* At most, PNC argues that Corneil “might check the right of [the external system] to receive the message, but verifying a reception right is clearly different from verifying a transmission right.” *Id.* at 25–26 (emphasis omitted) (citing Ex. 1004 ¶ 45; Ex. 2001 ¶¶ 59, 60). Lastly, PNC reiterates that we should accord little, if any, weight to the supporting testimony of USAA’s declarant, Dr. Malek, because he “merely parrots the Petition,” without providing any additional evidentiary support. *Id.* at 26.

Based on the preliminary record, we are not persuaded by PNC’s argument that USAA fails to address whether Corneil teaches “verifying the access and transmission rights of . . . the external system,” as recited in independent claim 1. *See* Prelim. Resp. 25–26. To extent PNC is arguing, once again, that USAA relies on the doctrine of inherency in the Petition to support its position that Corneil teaches this limitation, we are not persuaded for the same reasons we identify above. *See supra* Section II.B.4.a. Instead, we understand USAA to argue that Corneil’s disclosure of cross referencing the header information of a message or request with the “Trading Partner Profile” records maintained for each trading partner 217 authorized to use the system also includes verifying whether the second trading partner 217 has access rights to Corneil’s system and is authorized to receive a message sent by first trading partner 217. *See* Pet. 19–22 (citing Ex. 1004 ¶¶ 45, 52; Ex. 1003 ¶ 92). As we explain above, PNC will have an opportunity during trial to cross-examine Dr. Malek regarding his relevant testimony. To be clear, it is Corneil’s cross referencing of the message or request with the “Trading Partner Profile” records *together with* the supporting testimony of Dr. Malek that amounts to sufficient evidence that would support a finding

that Corneil teaches “verifying access and transmission rights of . . . the external system,” as recited in independent claim 1.

c. PNC’s arguments based on the claim term “secure service router,” if that term is construed properly

In its Preliminary Response, PNC contends that the claim term “secure service router” should be construed as “a component that authenticates the data source system, locates a service, and forwards a message or request to the service.” Prelim. Resp. 27. According to PNC, Corneil’s security handler 202 does not teach the claimed “secure service router” because it does not meet the three elements identified in PNC’s proposed construction: (1) it does not authenticate the identity of first trading partner 217; (2) it does not locate any service, much less the claimed “service”; and (3) message routing engine 204—not security handler 202—is responsible for forwarding the message or request to translation engine 208. *Id.* at 27–31 (citing Ex. 1004 ¶¶ 33–35, 41, 45, 51, Fig. 2; Ex. 2001 ¶¶ 64–73).

Based on the preliminary record, we are not persuaded by PNC’s argument that Corneil does not teach the claim term “secure service router.” As we explain in our claim construction section above, we do not adopt PNC’s proposed construction of the claim term “secure service router.” *See supra* Section II.A.2. Instead, at this stage of the proceeding, we determine that, at a minimum, this claim term must “authenticate the data source system” that sends a message or request. *Id.* Based on this minimum requirement, we are persuaded that USAA has presented sufficient evidence that would support a finding that Corneil’s security handler 202 teaches the claimed “secure service router” because it authenticates the identity of first

trading partner 217 by “validating authentication information” to ensure the security of the message or request sent by first trading partner 217. *See* Pet. 26–27 (quoting Ex. 1004 ¶ 33) (citing Ex. 1004 ¶ 35, Fig. 2; Ex. 1003 ¶ 95).

d. Summary

In summary, USAA has shown a reasonable likelihood that it would prevail on its assertions that the subject matter of independent claim 1 would have been obvious over the teachings of Corneil.

5. Claims 2–5 and 7–10

USAA also contends that dependent claims 2–5 and 7–10 of the ’788 patent are unpatentable under § 103(a) as obvious over teachings of Corneil. Pet. 28–49. USAA explains how the teachings of Corneil account for the subject matter of each dependent claim, and provides reasoning as to why a person of ordinary skill in the art would have been prompted to modify the teachings of this reference. *Id.*

As one example, claim 2 directly depends from independent claim 1 and further recites “receiving the message at a secure service router.” Ex. 1001, 15:10–11. USAA contends that Corneil teaches this limitation because security handler 202 receives a message or request from first trading partner 217 over network interconnectivity 201. Pet. 28 (citing Ex. 1004 ¶ 33; Ex. 1003 ¶ 97).

As another example, claim 3 indirectly depends from independent claim 1 and further recites “mapping the message to the secure service router based on the message type.” Ex. 1001, 15:12–14. USAA contends that the ’788 patent provides little guidance as to what it means to “map” a message to a secure service router beyond the plain language of dependent claim 3. Pet. 28. Based on a few passages in the specification of the ’788 patent,

USAA argues that mapping a message to a router may include routing the message to or otherwise designating the router to handle the message. *Id.* (citing Ex. 1001, 8:49–52, 8:55–60; Ex. 1003 ¶ 98). With this in mind, USAA contends that Corneil teaches the limitation of dependent claim 3 because it discloses that security handler 202 is designated to handle certain types of messages, such as HTTP, HTTPS, file transfer protocol, java message service (“JMS”), and simple mail transfer protocols. *Id.* at 29 (citing Ex. 1004 ¶ 45). According to USAA, messages of these types are routed to security handler 202 to “validat[e] authentication information.” *Id.* (quoting Ex. 1004 ¶ 33) (citing Ex. 1003 ¶ 99).

USAA further contends that messages delivered via the various protocols supported by Corneil’s security handler 202 include distinct header parameters that indicate the message type. Pet. 29. As one example, USAA argues that HTTP messages include a set of parameters defined by the HTTP standard. *Id.* (citing Ex. 1033, 21, 23–26; Ex. 1003 ¶ 100). As another example, USAA argues that JMS messages have different header parameters. *Id.* at 29–30 (citing Ex. 1034, 27–28). Relying on the testimony of Dr. Malek, USAA asserts that “[a person of ordinary skill in the art] would . . . have understood Corneil to teach mapping messages of a type supported by secure service router (e.g., HTTP, or JMS) to the secure servicer router based on the message type.” *Id.* at 30 (citing Ex. 1003 ¶ 100).

Based on the preliminary record, USAA’s arguments and supporting evidence with respect to dependent claims 2–5 and 7–10 are sufficient for purposes of institution. At this stage of the proceeding, PNC does not address separately USAA’s arguments and supporting evidence as to how

the teachings of Corneil account for the limitations of these dependent claims. *See* Prelim. Resp. 33. When considering USAA’s un rebutted arguments and supporting evidence, USAA has demonstrated a reasonable likelihood that it will prevail on its assertions that the subject matter of dependent claims 2–5 and 7–10 would have been obvious over the teachings of Corneil.

*C. Obviousness Over the Combined Teachings of
Corneil and Abjanic*

USAA also contends that claims 8–10 of the ’788 patent are unpatentable under § 103(a) as obvious over the combined teachings of Corneil and Abjanic. Pet. 41–49. USAA contends that the teachings of Corneil and Abjanic account for the subject matter of each dependent claim, and provides reasoning as to why a person of ordinary skill in the art would have been prompted to combine the teachings of these references. *Id.* USAA also relies on the testimony of Dr. Malek to support its positions. Ex. 1003.

Based on the preliminary record, we determine that USAA has shown that there is a reasonable likelihood that it would prevail in challenging at least one of claims 8–10 of the ’788 patent as unpatentable. We begin our analysis with a brief overview of Abjanic, and then we address the parties’ contentions with respect to the challenged claims.

1. Overview of Abjanic

Abjanic generally relates to a transforming switch “that includes a transformer to transform a message from a first format to a second format, and a switch to switch the message to a selected server or processing node.” Ex. 1005, code (57). In one embodiment, Abjanic discloses transforming

switch 710 that includes, among other things, transformer 715 and switch 165. *Id.* ¶ 73, Fig. 7. “Transformer 715 can transform messages between a variety of different data formats, as required.” *Id.* ¶ 74. As one example of the functionality of transformer 715, Abjanic discloses the following:

a first node may issue a request over network or Internet 130 that is received by a second node. The second node may send a response back to the first node. Both the request and response may typically be routed over the Internet or network 130 and transforming switch 710. The request and response may both include data that may need to be transformed.

Id.; *see also id.* ¶ 75 (discloses “four general cases involving transformation,” one of which being “[transformation] may be performed . . . on data in the request and in the response”).

2. Claims 8–10

As one example, claim 8 directly depends from independent claim 1 and further recites “receiving a response [from] the external system; and routing the response to a response transformer.” Ex. 1001, 15:39–41. USAA contends that, to the extent that Corneil does not teach the “receiving” and “routing” steps required by dependent claim 8, Abjanic teaches these limitations because it discloses transformer 715 that parses and transforms, if necessary, requests and responses into “a format that is compatible with the receiving node.” Pet. 45–46 (quoting Ex. 1005 ¶ 75) (citing Ex. 1005 ¶ 74). USAA argues that Abjanic provides a specific example of a business transaction between “Bookstore.com” and “market.com,” where “Bookstore.com” understands and processes messages in “format A” and “market.com” understands and processes messages in “format B.” *Id.* at 46 (quoting Ex. 1005 ¶ 96) (citing Ex. 1003 ¶ 116).

USAA argues that Abjanic’s system uses “tags” and other information to identify messages that need to be transformed so that “Bookstore.com” and “market.com” can communicate. *See id.* (quoting Ex. 1005 ¶ 98).

Turning to rationale to combine, USAA contends that, when considering the teachings of Abjanic identified above, a person of ordinary skill in the art would have been motivated “to use Corneil’s system to receive a response from the external system after it has completed processing a transformed request and to parse and transform that response into a format understandable and processable by the data source system to which the response is to be transmitted.” Pet. 46–47 (citing Ex. 1003 ¶ 117). According to USAA, “[t]his would have allowed a [person of ordinary skill in the art] to implement a business transaction, such as a purchase order request and response accepting the order, while taking advantage of the translation and efficiency features of Corneil’s system.” *Id.* at 47.

USAA further contends that Corneil “identifies various advantages of its system over the traditional approach of direct communication between trading partners.” Pet. 47 (citing Ex. 1004 ¶¶ 3, 5). USAA then argues the following:

[a person of ordinary skill in the art] would have been motivated to use Corneil’s system for both request and response messages so that the intended benefits of Corneil—i.e., reduced costs, efficiencies, and scalability in performing translation services—could be achieved by both trading partners [217]—i.e., avoiding the need for “difficult, inflexible and expensive point-to-point integration with trading partners” and costly integration of partner-specific format translation software.

Id. (quoting Ex. 1004 ¶ 4) (citing Ex. 1004 ¶¶ 3, 5; Ex. 1003 ¶ 117). USAA also argues that there would have been a reasonable expectation of success

in “[u]sing Corneil’s system to receive and transform a response message from the external system (i.e., second trading partner [217]),” as taught by Abjanic, because it would require “no change to Corneil’s existing functionality,” “it would not add any additional overhead,” and it would result in certain benefits, including “cost savings and efficiency resulting from eliminating point-to-point integrations and improved interoperability between otherwise incompatible systems.” *Id.* at 47–48 (citing Ex. 1003 ¶ 118).

As another example, claim 9 indirectly depends from independent claim 1 and further recites “transforming the response to a format recognizable by the data source system.” Ex. 1001, 15:42–44. USAA contends that Corneil teaches this limitation because, for many of the same reasons identified above with respect to dependent claim 8, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Corneil and Abjanic in a way that routes a response from second trading partner 217 to translation engine 208 to transform the response to a format recognizable by first trading partner 217. Pet. 48–49.

In its Preliminary Response, PNC contends that the teachings of Abjanic do not remedy the deficiencies in Corneil that it identifies above in the asserted obviousness ground based on the teachings of Corneil alone. Prelim. Resp. 34. Based on the preliminary record, there are no such deficiencies in the teachings of Corneil for Abjanic to remedy. *See supra* Section II.B.4.a–d. Moreover, we have reviewed USAA’s unrebutted arguments and supporting evidence as to how the combined teachings of Corneil and Abjanic account for all the limitations of dependent claims 8–10 and, based on the preliminary record, USAA’s arguments and supporting

evidence with respect to these dependent claims are sufficient for purposes of institution. *See* Pet. 41–49. Accordingly, USAA has demonstrated a reasonable likelihood that it will prevail on its assertions that the subject matter of dependent claims 8–10 would have been obvious over the combined teachings of Corneil and Abjanic.

III. CONCLUSION

Taking into account PNC’s Preliminary Response, we conclude that the information presented in the Petition demonstrates that there is a reasonable likelihood that USAA would prevail in challenging at least one of claims 1–5 and 7–10 of the ’788 patent as unpatentable under § 103(a) as obvious. Accordingly, we institute an IPR as to all challenged claims and all the grounds raised in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018) (holding that a decision granting institution under 35 U.S.C. § 314 may not institute on fewer than all challenged claims in the petition); *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (“We read . . . the *SAS* opinion as interpreting the statute to require a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition.”). At this stage of the proceeding, we have not made a final determination with respect to the patentability of the challenged claims or the construction of any claim term.

IV. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a), an IPR is hereby instituted as to all of the challenged claims and all of the grounds raised in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), notice is hereby given of the institution of a trial; the trial will commence on the entry date of this decision.

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Patent 7,949,788 B2

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