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Paper 28
Entered: September 11, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GLOBAL TEL*LINK CORPORATION,
Petitioner,

v.

SECURUS TECHNOLOGIES, INC.,
Patent Owner.

Case IPR2014-00749
Patent 8,577,003 B2

Before KEVIN F. TURNER, BARBARA A. BENOIT, and GEORGIANNA W. BRADEN, *Administrative Patent Judges*.

BENOIT, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–14 of U.S. Patent No. 8,577,003 B2 (Ex. 1001; "the '003 patent") are unpatentable.

A. Procedural History

Global Tel*Link Corporation ("Petitioner") filed a Petition (Paper 1; "Pet.") for an *inter partes* review of claims 1–14 ("the challenged claims") of the '003 patent. Patent Owner, Securus Technologies, Inc., filed a Preliminary Response opposing institution of a review. On September 17, 2014, pursuant to 35 U.S.C. § 314(a), we instituted an *inter partes* review for claims 1–14 of the '003 patent as unpatentable under 35 U.S.C. § 103(a) over the following references.

Reference(s)	Claims Challenged
Spadaro[1]	1–4 and 8–11
Spadaro and Hodge[2]	4–7 and 11–14

Paper 6 ("Inst. Dec.") 22.

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 12; "PO Resp."), and Petitioner filed a Reply (Paper 16;

[1] U.S. Patent No. 7,505,406 B1, issued Mar. 17, 2009, filed July 13, 2001 (Ex. 1004; "Spadaro").
[2] U.S. Patent No. 7,333,798 B2, issued Feb. 19, 2008, filed Aug. 8, 2002 (Ex. 1005; "Hodge").

"Reply"). Patent Owner filed observations on the cross-examination of Petitioner's declarant (Paper 20), to which Petitioner filed a response (Paper 21).

An oral hearing was held on June 4, 2015.[3]

B. Related Matters

A Final Written Decision in an *inter partes* review of a related patent—U.S. Patent No. 7,899,167 B1 (IPR2014-00493)—is being issued concurrently with this decision. *See* Paper 4 (Related Matters). *Inter partes* reviews of related patents—U.S. Patent No. 8,340,260 B1 (IPR2014-00824), and U.S. Patent No. 7,529,357 B1 (IPR2014-00825)—are pending. *Id.*

C. The '003 Patent

The '003 patent, titled "Centralized Call Processing," issued November 5, 2013 from an application that is a continuation of an application filed August 15, 2003. The '003 patent describes a centralized architecture for call processing that uses Voice over Internet Protocol ("VoIP") to carry calls from a location at which calling services are provided to a centralized call processing platform. Ex. 1001, Abstract, 1:41–43, 3:18–20. The call processing platform serves multiple facilities and provides, for example, calling party identification, call validation, call routing, and connection to the public switched telephone network (PSTN) or a digital

[3] At the joint request of the parties, the oral arguments for this proceeding and IPR2014-00493 were conducted at the same time. Paper 26, 2. A transcript of the oral hearing is included in the record as Paper 27.

network. *Id.* at Abstract, 8:41–45. The call processing platform may be used to provide calling services to prison facilities. *Id.* at 5:57–60.

Figure 1 of the '003 patent is set forth below:

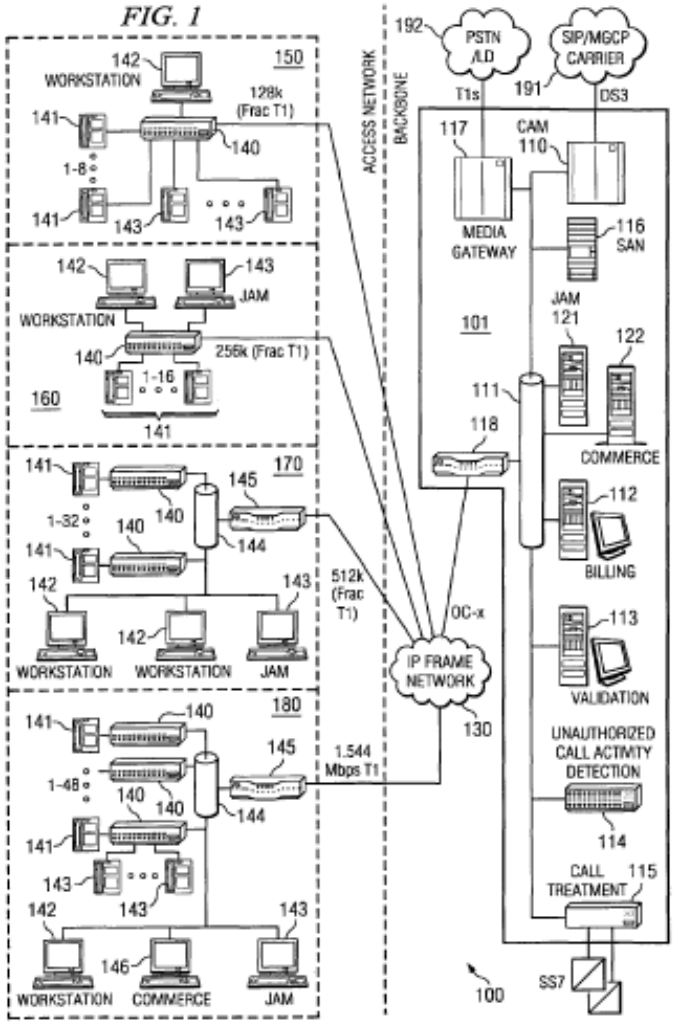

Figure 1 illustrates call processing system 100.

Call processing system 100 includes call processing platform 101, which communicates with facilities 150, 160, 170, 180 through network 130. *Id.* at 5:45–48. Call processing gateways 140, at or near each facility 150, 160, 170, 180, convert analog signals associated with telephone

terminals 141 (or visitation telephones 143) to digital data packets sent over network 130. *Id.* at 6:14–18.

Call processing platform 101 includes, among other components, call application management system 110, which controls completing a call between a party using one of telephone terminals 141 (or visitation telephones 143) and another party using telephone terminal (not shown), over PSTN 192 or digital network 191. *Id.* at 8:12–65. Call processing system 101 also includes validation system 113 and unauthorized call activity detection system 114 to provide "call intelligence" to determine whether a particular call should be permitted. *Id.* at 9:35–39. Billing system 112, another system of call processing system 101, collects billing information and deducts fees from prepaid accounts. *Id.* at 11:58–12:3.

D. Illustrative Claims of the '003 Patent

Of the challenged claims in the '003 patent, claims 1 and 8 are independent. Claims 1 and 8, reproduced below, are illustrative of the claimed subject matter:

> 1. A centralized call processing system, comprising:
>
> a networking device connected to a plurality of call processing gateways of a plurality of prison facilities located remotely from the centralized call processing system via a wide area network (WAN), the networking device configured to:
>
> receive outgoing Voice over Internet Protocol (VoIP) data packets from prison facilities; and
>
> send incoming VoIP data packets to the prison facilities;

> an unauthorized call activity detection system connected to the networking device for detecting three-way call activity associated with the outgoing VoIP data packets or the incoming VoIP data packets via a local area network (LAN);
>
> a call application management system connected via the LAN to the networking device for processing the outgoing VoIP data packets for transmission to a telephone carrier network, the call application management system processing signals from the first[4] telephone carrier network into the incoming VoIP data packets; and
>
> a validation system connected via the LAN to the call application management system and configured to allow or disallow completion or continuing of a particular call of the plurality of prison facilities through the telephone carrier network based on the outgoing VoIP data packets or the incoming VoIP data packets.

Ex. 1001, 18:57–19:15.

> 8. A method comprising:
>
> receiving outgoing Voice over Internet Protocol (VoIP) data packets from a plurality of prison facilities by a networking device via a wide area network (WAN);
>
> sending incoming VoIP data packets to the prison facilities via the WAN by the networking device;
>
> routing the outgoing VoIP data packets or the incoming VoIP data packets in a local area network (LAN) in a centralized call processing system to detect three-way call

[4] We note that claim 1 recites "the *first* telephone carrier network" (emphasis added), which refers by antecedent basis to the only telephone carrier network previously recited by claim 1—"a telephone carrier network." As the only telephone carrier network previously recited, "a telephone carrier network" necessarily also is the *first* telephone carrier network.

> activity associated with the outgoing VoIP data packets or the incoming VoIP data packets;
>
> routing the outgoing VoIP data packets via the LAN to process the outgoing VoIP data packets for transmission to a telephone carrier network;
>
> processing signals from the telephone carrier network into the incoming VoIP data;
>
> routing the incoming VoIP data packets via the LAN for transmission to the plurality of prison facilities via the WAN; and
>
> allowing or disallowing completion or continuation of a particular call of the plurality of prison facilities through the telephone carrier network based on the outgoing VoIP data packets or the incoming VoIP data packets by communicating data over the LAN.

Id. at 19:38–20:20.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278, 1279 (Fed. Cir. 2015) ("Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA," and "the standard was properly adopted by PTO regulation."), *reh'g en banc denied*, 793 F.3d 1297 (Fed. Cir. 2015). Under that standard, claim terms are presumed to be given their

ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An inventor may provide a meaning for a term that is different from its ordinary meaning by defining the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

We construe "call application management system" and discuss the dispute over call processing in accordance with these principles. No other terms require express construction.

Independent claim 1 is directed to a "centralized call processing system" that includes a networking device, an unauthorized call activity detection system, a call application management system, and a validation system. Claim 1 further requires particular system connections. The networking device, for example, must be connected via a wide area network (WAN) to call processing gateways of prison facilities. The call application management system and unauthorized call activity detection system must be connected to via a local area network (LAN) to the networking device. In turn, the validation system must be connected via the LAN to the call application management system.

Claim 1 also recites functions performed by the call application management system—(1) "processing the outgoing VoIP data packets [from the prison facilities] for transmission to a telephone carrier network" and (2) "processing signals from the first telephone carrier network into the incoming VoIP data packets."

A central dispute between the parties concerns the broadest reasonable construction, in view of the Specification, of the recited "call application management system." Patent Owner contends, with support of its declarant Dr. James L. Olivier and extrinsic evidence, the proper construction of "call application management system" is "a system performing call processing for a plurality of prisons." PO Resp. 16. According to Patent Owner, "call processing" is a term of art in telephony and is understood as "control a call from origination, maintenance of that call, and subsequent release of that call [and] does not include call authorization functionality."[5] PO Resp. 15.

Patent Owner does not identify an express disclosure of a "call application management system" performing call processing in the way that "call processing" is defined by Patent Owner (i.e., controlling a call from origination, maintenance of that call, and subsequent release of that call, and not including call authorization). *See generally* PO Resp. 16. Rather, Patent Owner relies on the '003 patent's description of call application management system 110 as "form[ing] the heart of call processing functionality provided by call processing platform 101," which, according to Patent Owner's declarant, would be understood by one of ordinary skill in the art as meaning "that call connection control and switching control is

[5] Patent Owner at one point proposes a different construction of call processing—"control a call state model for calls and selectively permit calls to connect to an outgoing phone network." PO Resp. 12. Later, Patent Owner seems to abandon this proposed construction in favor of "control a call from origination, maintenance of that call, and subsequent release of that call [and] does not include call authorization functionality." *See, e.g.*, PO Resp. 15.

performed at a centralized location." *Id.* (citing Ex. 1001, 8:12–16; Ex. 2001 ¶ 165).

Petitioner opposes Patent Owner's proposed construction. Reply 3. According to Petitioner's declarant Dr. Leonard J. Forys, the location of and functions performed by the recited call application management system are defined within the claim, and call application management system should be given its ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure, using the understandable language of claim 1. Ex. 1018 ¶¶ 6, 8; *see* Reply 3 (indicating "no need exists to go beyond the easily understandable language of Claim 1"). Further, Petitioner disagrees with Patent Owner's proposed constructions as impermissibly narrowing claim 1 and being inconsistent with the Specification. Reply 3–5.

The plain language of the challenged claims support the position taken by Petitioner, as explained by its declarant (Ex. 1018 ¶¶ 6, 8), that an express construction of call application management system is unnecessary. Claim 1 recites the connections required for the call application management system—the call application management system must be connected via the LAN to the networking device and a validation system must be connected via the LAN to the call application management system. Claim 1 further requires the networking device (to which the call application management system must be connected via a LAN) to be connected via a WAN to call processing gateways at the prison facilities, which are located remotely from the call processing system which includes the networking device and the call

application management system, among other components. The plain language of claim 1 recites certain functions performed by the call application management system—processing VoIP data packets and signals from a telephone carrier network in particular ways.

In contrast, the plain language of claim 1 does not recite the functions of call processing that Patent Owner contends are required to be performed by the call application management system—controlling a call from origination, maintenance of that call, and subsequent release of that call, and not including call authorization. Further, we note that claim 1 recites a "call *application* management system"—not a call *processing* management system.

Turning to Patent Owner's proposed construction of call processing, we note that, although the challenged claims recite a "centralized call processing system" and "call processing gateways," none of the challenged claims recite performing "call processing." Moreover, Patent Owner's proposed definition of call processing as "control a call from origination, maintenance of that call, and subsequent release of that call [and] does not include call authorization functionality" (PO Resp. 15) is inconsistent with the Specification and is not supported by the prosecution history of the application that issued as U.S. Patent No. 7,899,167 ("the '167 patent"), which is the parent of the application that issued as the '003 patent. Ex. 1001, 1:4–9 ("This application is a continuation of" the application that issued as the '167 patent.).

The Specification is inconsistent with Patent Owner's proposed definition of call processing, because Patent Owner's proposed definition excludes call authorization functionality, which is expressly described by the '003 patent as an example of call processing functionality. *See* Ex. 1001, 3:23–25 ("call processing functionality, such as . . . call validation"), 9:10–15 (claim 1 indicates call validation involves call authorization—"a validation system connected via the LAN to the call application management system and configured to allow or disallow completion or continuing of a particular call").

The Specification descriptions of call processing functionality also indicate "call processing" is broader than defined by the Patent Owner. For example, the Specification includes additionally providing call intelligence as a type of call processing functionality, which is not included in Patent Owner's proposed definition. Ex. 1001, 9:33–46. The Specification also indicates that other elements recited in claim 1—a validation system and an unauthorized activity detection system—work with a call application management system to provide call processing. *Id.* at 7:49–63.

The Specification indicates an earlier patent application,[6] which the '003 patent incorporates by reference, as providing "[d]etail with respect to

[6] U.S. Patent Application No. 10/135,878, titled "Information Management and Movement System and Method." Ex. 1001, 8:31–35; *see also id.* at 1:9–12, 36–37 (indicating the patent application number corresponding to the patent application titled "Information Management and Movement System and Method" and incorporation of that disclosure by reference).

operation in providing call processing by a call application manager."[7] Ex. 1001, 8:31–35. The earlier patent application is inconsistent with Patent Owner's proposed definition of "call processing." Rather, the earlier application describes[8] call application manager 221 as providing distance telephony, prepaid and postpaid toll calling services, telephonic commerce, account balance verification and refill, and credit worthiness determination. Ex. 3001, 47 (¶ 27), 52 (¶ 38). The earlier application also depicts call application manager 110 as having modules for detainee calling, word search, and visitation and administration phones. *Id.* at 52 (¶ 38). The earlier application further discloses that "calls placed through communication/transaction services 221" can be analyzed. *Id.* at 56 (¶ 47). Neither Patent Owner nor its declarant Dr. Olivier directly addresses the disclosure of the earlier application.

The prosecution history of the application that issued as the '167 patent, which is the parent of the continuation application that issued as the '003 patent, also is inconsistent with Patent Owner's proposed definition of "call processing." During examination of the application that issued as the

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[7] The '003 patent uses the term "call application management system 110" interchangeably with "call application manager 110." *Compare* Ex. 1001 8:35–40 ("call application management system 110") *with id.* at 8:45–46 ("call application manager 110").

[8] To be precise, the earlier application describes call application manager 221 as operating substantially as communication/transaction services 221, which, in turn, is described as "provide distance telephony, prepaid and postpaid toll calling services, telephonic commerce, account balance verification and refill, and credit worthiness determination." Ex. 3001 47 (¶ 27), 52 (¶ 38).

'167 patent, the applicant represented that "call processing" included detection of unauthorized calls. Ex. 3003, 8 (Applicant response to November 7, 2008 action, p. 8) ("The feature of 'a networking device connected via digital data links to call processing gateways at the multiple prison facilities" is advantageous because various call processing activities including detection of unauthorized call[s] may be performed at the call processing platform"). *See Microsoft v. Proxyconn*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) ("The PTO should also consult the patent's prosecution history in proceedings in which the patent has been brought back to the agency for a second review."). Applicant's representation is relevant to the '003 patent because substantially the same claim limitation is used in both patents—a networking device connected via digital data links (in the '167 patent) or via a wide area network (in the '003 patent) to call processing gateways at prison facilities. *See Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc.*, 265 F.3d 1294, 1305 (Fed. Cir. 2001) ("The prosecution history of a related patent can be relevant if, for example, it addresses a limitation in common with the patent in suit."); *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation.").

Applicant's representation that call processing activities include detection of unauthorized calls does not support Patent Owner's position that "call processing" would have been understood by one of ordinary skill in the

art as "control a call from origination, maintenance of that call, and subsequent release of that call [and] does not include call authorization functionality" (PO Resp. 15).

Next, we examine extrinsic evidence and testimony proffered by Patent Owner of how one ordinarily skilled in the art would have understood "call processing." Specifically, Patent Owner indicates one would have turned to U.S. Patent No. 6,052,454 (Ex. 2004, "Kek") to understand the meaning of "call processing" as used in the '003 patent and, based on the disclosure of Kek, would have understood "call processing" as defined by Patent Owner. *See, e.g.*, PO Resp. 13–15. Kek is referenced in the "Background of the Invention" section of the '003 patent discussing automated systems for providing call processing functions and is incorporated by reference. Ex. 1001, 1:63–66. According to the '003 patent, Kek (titled "Telephone Apparatus With Recording of Phone Conversations on Massive Storage") teaches call authorization functionality being remote to a prison facility and teaches call processing being provided at the prison facility itself. Ex. 1001, 1:63–2:3, 2:10–14. Patent Owner's extrinsic evidence provides little probative value, however, because it does not comport with the detailed description of the invention in the '003 patent—either the '003 patent description of call processing functionality or the earlier patent application's description of a call application manager for the reasons discussed earlier.

Weighing Dr. Oliver's testimony supporting Patent Owner's contentions that call application management system performs call

processing—meaning controlling a call from origination, maintenance of that call, and subsequent release of that call, but which does not include call authorization functionality (PO Resp. 15 (citing Ex. 2001 ¶ 162)) against evidence of the written description of the term in the Specification and language of claim 1, we do not agree that call application management system necessarily must control a call from origination, maintenance of that call, and subsequent release of that call. It is within our discretion to assign the appropriate weight to the testimony offered by Dr. Oliver. *See, e.g.*, *Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010) (holding the Board has discretion to give more weight to one item of evidence over another "unless no reasonable trier of fact could have done so"); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) ("[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.").

First, as discussed above, the Specification and earlier application provide examples of call processing functionality that contradict Dr. Oliver's position and which are not addressed directly by Dr. Olivier. Second, the inconsistency of Dr. Olivier's own testimony regarding the definition of call processing undercuts his position. In his declaration, Dr. Olivier identified additional functions as part of call processing—including call authorization which Dr. Olivier testifies is not included in call processing. *See* Ex. 2001 ¶¶ 67 (showing Dr. Olivier's annotation of Figure 2 of the '003 patent to identify call processing), 69, 70, 73. Third, we are unpersuaded by

Dr. Olivier's reliance on a vague statement of the Specification that the call application management system "forms the heart of call processing functionality provided by call processing platform 101" (PO Resp. 16 (citing Ex. 2001 ¶ 165)). Dr. Olivier testifies that the context of "forms the heart" would be understood by one of ordinary skill in the art as meaning "that call connection control and switching control is performed at a centralized location," because the Specification describes the call application management system as controlling completing a call between parties (Ex. 2001 ¶ 165).

We are mindful that, according to the Specification, the call application management system "*control[s] completing a call* between" two parties. Ex. 1001, 8:16–22 (emphasis added). Even so, "controlling completing a call" on its face seems more limited than Patent Owner's position that call application management system is a system performing call processing—"control a call from origination, maintenance of that call, and subsequent release of that call." We also are mindful that Petitioner's declarant, Dr. Forys, does not agree with Dr. Olivier's position regarding call processing. Ex. 1018 ¶¶ 7–12.

Therefore, in light of the plain language of the claim, the Specification of the'003 patent, and according Patent Owner's evidence and the testimony of Patent Owner's declarant appropriate weight, we construe "call application management system" to mean a system that is located as required by claim 1—"connected via the LAN to the networking device" and to which a validation system is connected via the LAN—and performs at

least the functions recited by claim 1—processing the outgoing VoIP data packets for transmission to a telephone carrier network and processing signals from the telephone carrier network into the incoming VoIP data packets. A "call application management system" is not required to perform call processing as defined by the Patent Owner—"control a call from origination, maintenance of that call, and subsequent release of that call [and] does not include call authorization functionality" (PO Resp. 15).

B. Principles of Law

To prevail in challenging claims 1–14 of the '003 patent, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). A claim is unpatentable under 35 U.S.C. § 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 the following: (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 ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

C. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to determine the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere,* 383 U.S. at 17. "The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry." *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.* Generally, it is easier to establish obviousness under a higher level of ordinary skill in the art. *Innovention Toys, LLC v. MGA Entm't, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011) ("A less sophisticated level of skill generally favors a determination of nonobviousness . . . while a higher level of skill favors the reverse.").

With support of their respective declarants, both Petitioner and Patent Owner agree that, based on the disclosure of the '003 patent, one of ordinary skill in the art would have a Bachelor of Science degree in electrical engineering, computer science, or an equivalent field, as well as three to five years of academic or industry experience. Pet. 6 (citing Ex, 1003 ¶ 30); PO

Resp. 7 (citing Ex. 2001 ¶ 156). Petitioner indicates communications system (or comparable industry experience) is the relevant academic or industry experience (Pet. 6), whereas Patent Owner indicates telephony systems (PO Resp. 7).

The parties propose similar levels of ordinary skill in the art and do not directly challenge the other's proposal. We consider the level of ordinary skill in the art to be reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The prior art references, like the '003 patent, relate to telephone communication systems. *See* Ex. 1001, 1:41–42 (indicating the technical field relates to call processing); Ex. 1004, 1:7–9 (indicating the field of the invention relates to the processing of voice telephone calls); Ex. 1005, 1:7–9 (indicating the field of the invention relates to telephone communication systems).

In general, we adopt the areas of agreement in the parties' proposals. Patent Owner's proposed academic or industry experience of telephony[9] systems comports with the level of ordinary skill in the art reflected in the prior art of record, which relate to telephone communication systems. Petitioner has not explained sufficiently why the broader field of communications systems is a more appropriate are of academic or industry experience than telephony systems. Thus, we generally adopt Patent Owner's proposed academic or industry experience in telephony systems.

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[9] MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 2112 (6th ed. 2003) (defining telephony as "[t]he transmission of speech to a distant point by means of electric signals") (Ex. 3002).

Therefore, one of ordinary skill in the art would have a Bachelor of Science degree in electrical engineering, computer science, or an equivalent field, as well as at least three years of academic or industry experience in telephony systems.

D. Obviousness over Spadaro

Petitioner contends claims 1–4 and 8–11 are unpatentable under 35 U.S.C. § 103(a) as obvious over Spadaro. To support its contentions, Petitioner provides analysis and claim charts, relying on declaration testimony of Dr. Forys. Pet. 7–25 (citing Ex. 1003). Patent Owner responds, relying on declaration testimony of Dr. Oliver. PO Resp. 32–60 (citing Ex. 2001). Having considered the parties' contentions and supporting evidence, we determine that Petitioner has demonstrated by a preponderance of evidence that claims 1–3 and 8–11 are unpatentable for obviousness over Spadaro. We determine that Petitioner has not demonstrated by a preponderance of evidence that claim 4 is unpatentable for obviousness over Spadaro.

As an initial matter, Petitioner represents that Spadaro is prior art under 35 U.S.C. § 102(e) to the challenged claims. Pet. 3–4. Spadaro is a patent, which issued from an application filed on July 13, 2001—a date prior to the earliest effective filing date claimed by the '003 patent—August 15, 2003. Patent Owner does not dispute that Spadaro is prior art to the challenged claims.

1. Summary of Spadaro

Spadaro that describes monitoring and controlling public telephone usage by inmates at a prison. Ex. 1004, 2:38–42. Telephones are connected to a control computer that establishes a connection to a telephone network, such as a public switched telephone network ("PSTN"). *Id.* at 2:48–57; *see id.* at Fig. 1. The control computer is located at the prison and provides for switching, accessing, routing, timing, billing, and the control of the telephones at the prison. *Id.* at 2:45–49. As a way to control telephone usage, the control computer includes a three-way call detection system. *Id.* at 3:35–42; *see* Fig. 1.

Spadaro describes a multiple site telephone system in Figure 3, which is set forth below:

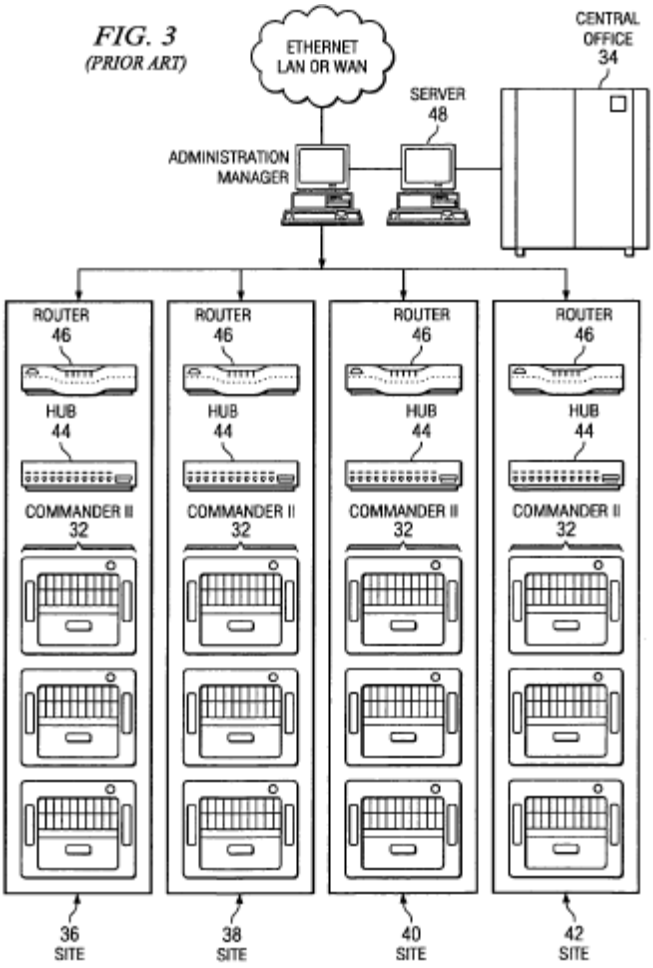

Figure 3 illustrates a multiple site telephone system.

See Ex. 1004, 2:25–26. Figure 3 shows four sites 36, 38, 40, 42, each of which has multiple control computers 32 connected through hubs 44 to router 46. *Id.* at 3:53–55. Each of the sites may be a prison in a state-wide prison system. *Id.* at 3:61–62. Calls from each of the four sites are routed from each site's router 46 to server 48, which connects the calls to central office 34. *Id.* at 3:55–57. Spadaro describes obtaining lower cost and efficiency by operating the system shown in Figure 3 over Ethernet and Voice over Internet Protocol ("VoIP") networks. *Id.* at 3:58–62.

Spadaro also describes telephone systems in which control functions, including the billing function, are distributed to a remote location over an Ethernet network (*id.* at 4:4–10; Fig. 4) and over a network that includes both VoIP and data (*id.* at 2:30–31; Fig. 5). Spadaro's Figure 5 is set forth below:

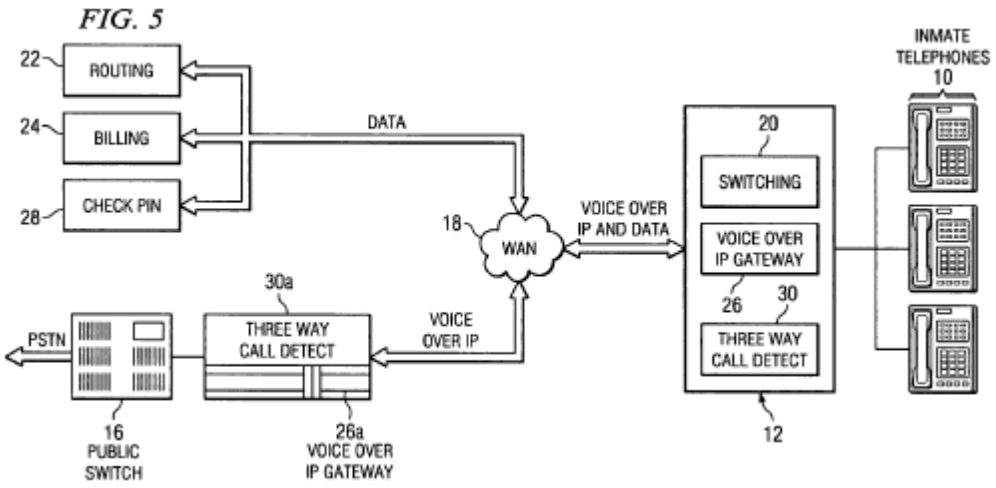

Figure 5 illustrates a telephone system that distributes control functions to a remote location over a VoIP and data network.

Ex. 1004, 2:27–30, 4:4–9, 4:25–27. Figure 5 shows control functions—routing 22, billing 24, and PIN checking 28—distributed to a location remote from the inmate telephones 10. *Id.* at 4:6–10, 4:25. Spadaro explains that an advantage of distributing these functions to a remote location is that "the functions can be centralized with the functions being performed at a central administration location." *Id.* at 4:10–13.

Also shown in Figure 5 is "three-way call detection 30a [that] is moved from the site, i.e. in the control computer 12 as indicated at 30, to a point beyond the VoIP network." *Id.* at 4:27–30. Spadaro explains that

VoIP transmission requires voice compression and packetizing, which are detrimental to the ability to perform three-way call detection. *Id.* at 4:30–32. "Therefore, three way call detection is performed at 30a after the telephony signals have been decompressed and depacketized by the VoIP gateway 26a." *Id.* at 4:32–35.

2. Independent Claim 1

We focus our discussion on independent claim 1, the center of the parties' dispute. Petitioner and Patent Owner dispute the scope and content of Spadaro and, thus, dispute the differences between the claimed invention and the prior art.

Independent claim 1 is a claim directed to a "centralized call processing system" that requires a networking device, an unauthorized call activity detection system, a call application management system, and a validation system to perform certain recited functions and to be connected via a LAN. Claim 1 further requires "call processing gateways" be located at prison facilities, which are located remotely from the centralized call processing system. The call processing gateways are connected via a WAN to the networking device.

Petitioner's Contentions Regarding Claim 1

Petitioner, with support from its declarant, generally contends that combining Spadaro's "centralized call-processing used to serve multiple prison facilities" (as shown in Figure 3) with Spadaro's "VoIP technology together with a centralized call processing system" (as shown in Figure 5)

would have rendered obvious the subject matter of claim 1. Pet. 10; *see also id*. at 7–13 (overview of Spadaro), 14–20 (discussing Spadaro with respect to claim 1).

According to Petitioner, Spadaro's three-way call detect system 30a discloses or suggests the recited "unauthorized call activity detection system . . . for detecting three-way call activity associated with the outgoing VoIP data packets [from prison facilities] or the incoming VoIP data packets" sent to the prison facilities. Pet. 16–17. Spadaro's VoIP Gateway 26a discloses or suggests the recited "call application management system" for processing outgoing VoIP data packets from prison facilities for transmission to a telephone carrier network. *Id.* at 17–18. As shown in Figure 5 and noted by Petitioner, Spadaro's VoIP Gateway 26a transmits outgoing calls from the telephone terminals in the prison facility to a telephone carrier network (Spadaro's public switch 16). *Id.* at 17–19 (citing Ex. 1004, 4:49-53). Petitioner relies on Spadaro's PIN checking 28 as disclosing or suggesting the recited "validation system." Pet. 19–20.

For the recited "call processing gateways," Petitioner relies on control computers (also called "Commander™ units" after a particular model) are located at each of the sites 36, 38, 40, 42, which may be prison facilities. *Id.* at 14–15; *see* Ex. 1004, 3:53–62, 2:41–42. Petitioner notes Spadaro discloses that each of the control computers have a VoIP gateway and Ethernet capability. Pet. 14–15 (citing Ex. 1004, 3:67–4:3); *see* Ex. 1004, 4:4–13; *see* Ex. 1003 ¶¶ 65–66. Petitioner further relies on Spadaro's disclosures that remote functions being distributed over a WAN and that the

IP network may be a WAN. Pet. 15 (citing Ex. 1004, 4:9–10, 3:1–6); *see* Ex. 1003 ¶ 66.

According to Petitioner, Spadaro's server 48 discloses or suggests the recited "networking device." Pet. 14–15. For the recited "LAN," Petitioner relies on its declarant's explanation that one skilled in the art would recognize that associated systems implementing functions at a central administration location would be connected via a LAN. *See Id.* at 17 (citing Ex. 1003, ¶ 71 (concerning the recited "unauthorized call activity detection system")), 18 (citing Ex. 1003, ¶ 72 (concerning the recited "call application management system")), 19 (citing Ex. 1003, ¶ 77 (concerning the recited "validation system")).

For the reasons explained in more detail below, we determine that Spadaro's "centralized call-processing used to serve multiple prison facilities" (as shown in Figure 3) with Spadaro's "VoIP technology together with a centralized call processing system" (as shown in Figure 5), combined as Petitioner proposes, would have conveyed the subject matter of claim 1 as a whole to one of ordinary skill in the art. This is a pertinent question under 35 U.S.C. § 103(a)—whether the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art in view of Spadaro, not merely whether Spadaro discloses the subject matter of each element of claim 1 individually. *See In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) ("[T]he test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art." (citing *In re Keller*, 642 F.2d 413, 425 (CCPA 1981))).

Patent Owner's Contentions Regarding Claim 1

Patent Owner contends that Spadaro does not teach centralization of call processing as defined by Patent Owner and so does not teach many of the limitations of claim 1, such as the recited "call application management system" as construed by Patent Owner. Patent Owner also contends that Spadaro does not teach the recited "networking device," "three-way call detection system," and "validation system." We address these and other contentions by Patent Owner below.

Centralization of Call Processing

Central to many of Patent Owner's contentions is that Spadaro does not teach centralization of call processing, but rather teaches distributed call processing located at the prison facilities. *See, e.g.*, PO Resp. 17–19; *see also id.* at 17 (Spadaro "does not teach centralization of call processing"), 18 ("Spadaro teaches a distributed network architecture, in which call control is performed at each location by a control computer"), 19 (Spadaro's Figure 6 "illustrates the call processing, switching, and control" at the prison facilities), 24 (the claims of the Spadaro patent "all place call processing functionality at the prisons"), 50 ("Spadaro explicitly shows that call processing must remain at the prison facility").

For the reasons set forth previously, we disagree that the challenged claims require call processing as defined by Patent Owner to be performed by a centrally located system and, therefore, are not persuaded by Patent Owner's contentions that rely on Patent Owner's definition of call processing.

Patent Owner's Reliance on Extrinsic Evidence

To support various contentions, Patent Owner cites documentation for an example software architecture ("BubbleLINK®") and documentation for an example of specific equipment ("Integrator C-2000® series," including the "Commander II Inmate Control" phone system), both of which are mentioned in the '003 patent, as evidence of how one of ordinary skill in the art would have understood Spadaro. *See, e.g.*, PO Resp. 23 (citing Ex. 1004, 4:15–21) (identifying example software architecture and example equipment), 23, 26–28 (citing Science Dynamics Corporation, BubbleLink Software Architecture (2003) (Ex. 2003)), 25 (citing Science Dynamics Corporation, "Inmate Telephone Control Systems" (2001) (Ex. 2005)).

To be clear, none of these documents is asserted in any ground challenging the claims of the '003 patent. Nor does Spadaro incorporate by reference any of these documents. Because Spadaro indicates these merely are examples, we accord some but relatively little weight to these documents. Ex. 1004, 4:15–16 ("such as BubbleLINK®"), 4:18–19 ("[s]uch equipment includes the Integrator C-2000® series"). Another reason for according relatively little weight to these documents is that Spadaro expressly indicates the described technology is not limited to implementations covered by these documents. *Id.* at 4:66–52 ("While a particular embodiment of the invention has been shown and described[,] various modifications may be made. The appended claims are, therefore, intended to cover all such modifications within the true spirit and scope of the invention.").

"Call Application Management System"

Turning to the elements recited in claim 1, we determine that Petitioner has demonstrated by a preponderance of evidence that Spadaro would have conveyed to one of ordinary skill in the art the recited "call application management system." Claim 1 recites

> a call application management system connected via the LAN to the networking device for processing the outgoing VoIP data packets for transmission to a telephone carrier network, the call application management system processing signals from the first telephone carrier network into the incoming VoIP data packets.

Ex. 1001, 19:4–9. Regarding the recited "call application management system," Petitioner relies on VoIP gateway 26a, shown in Figure 5, as being separated from inmate telephones 10 by WAN 18. *See* Pet. 17–19 (citing Ex. 1004, 4:49–53); *see also id.* at 11 (showing Petitioner's Figure A, which incorporates portions of Spadaro's Figure 5).

We agree with Petitioner (*id.* at 17–18) that Spadaro's VoIP Gateway 26a would have conveyed to one of ordinary skill in the art the recited "call application management system" for processing the outgoing VoIP data packets for transmission to a telephone carrier network. As shown in Figure 5, Spadaro's VoIP Gateway 26a transmits outgoing calls from the telephone terminals in the prison facility to a telephone carrier network (Spadaro's public switch 16). Ex. 1004, 4:49–53. As acknowledged by Patent Owner (PO Resp. 36), Spadaro's VoIP Gateway 26a performs "decompression and depacketization" of telephone signals and distributes the signals to a public switch. Ex. 1004, 4:51–53. As explained by Petitioner's declarant Dr. Forys, switches and routers are designed to

transmit and receive call signals and, therefore, a person of ordinary skill in the art would have understood that the disclosure of distributing outbound calls or data to a telephone network presumes an analogous ability to handle incoming calls or data from the telephone network carrier. Pet. 18–19 (citing Ex. 1003 ¶ 74).

We are not persuaded by Patent Owner's contentions that rely on its overly narrow construction of "call application management system" and which, in turn, rely on Patent Owner's definition of call processing, which does not comport with the '003 patent for the reasons discussed previously in Section II.A. For this reason, for example, we are not persuaded by Patent Owner's contention that calls are routed to one of several possible VoIP egress points and, therefore, Spadaro does not teach a centralized call platform. PO Resp. 29–31 (depicting and discussing Dr. Olivier's figure showing multiple egress points).

"Networking Device"

We determine that Petitioner has demonstrated by a preponderance of evidence that Spadaro would have conveyed to one of ordinary skill in the art the recited "networking device." Claim 1 recites

> [a] centralized call processing system . . . comprising:
>
> a networking device connected to a plurality of call processing gateways of a plurality of prison facilities located remotely from the centralized call processing system via a wide area network (WAN), the networking device configured to:

> receive outgoing Voice over Internet Protocol (VoIP) data packets from prison facilities; and
>
> send incoming VoIP data packets to the prison facilities.

Ex. 1001, 18:57–19:3. The networking device recited by claim 1 is included as an element in the centralized call processing system, which is located remotely from the prison facilities. The networking device also must be connected by a WAN to call processing gateways, which are located at the prison facilities. Further, the recited networking device is configured to perform two functions—"*receive* outgoing Voice over Internet Protocol (VoIP) data packets from prison facilities; and *send* incoming VoIP data packets to the prison facilities" (emphasis added). These broad functions of receiving and sending VoIP data packets are the only enumerated functions that claim 1 requires the networking device to perform. For example, it is the recited call application management system—not the networking device—that processes outgoing VoIP data packets for transmission by a telephone carrier network and processes signals from the telephone carrier network into VoIP data packets.

Turning to the parties' contentions regarding the recited "networking device," Petitioner contends Spadaro's server 48 depicted in Figure 3 would have conveyed to one of ordinary skill the subject matter of the networking device recited in claim 1. Pet. 14–16. Patent Owner disagrees. PO Resp. 38–41.

As shown previously in Figure 3, Spadaro "depicts four sites 36, 38, 40, and 42 each of which has a plurality of Commander™ units connected through hubs 44 to a router 46. The router 46 *routes calls to a server 48*

which connects the calls to a central office 34" of a Publicly Switched Telephone Network (PSTN). Ex. 1004, 3:51–57 (emphasis added). Thus, Spadaro's server 48 performs two functions. First, Spadaro's server 48 expressly connects calls from routers 46 located at each site to central office 34—the PSTN. Second, because Spadaro's router 46 routes calls to server 48, Spadaro's server 48 implicitly must receive the calls from router 46 to be able to connect the calls to the PSTN. Accordingly, Spadaro's server 48 *receives* calls made from the sites 36, 38, 40, and 42 and connects those calls to the PSTN.

Spadaro also discloses that "[i]n accordance with the present invention, lower cost and efficiency are obtained by operating systems such as shown in Figs. 2 and 3 over Ethernet and Voice over Internet Protocol networks." Ex. 1004, 3:58–61. Thus, Spadaro expressly indicates that the multiple site telephone system depicted in Figure 3 can be operated using VoIP and further indicates advantages ("lower cost and efficiency") obtained by doing so.

Therefore, we determine that Spadaro's server 48 would have conveyed to one skilled in the art that it receives VoIP data packets from multiple sites located remotely from the server 48. Accordingly, we agree with Petitioner's contention, which is supported by Dr. Forys' testimony, that "VoIP packets are collected by the server 48 and directed to their destinations." Pet. 15 (citing Ex. 1003 ¶ 65 (relying on Ex. 1004, 3:55–57 to support Spadaro's disclosure that "call signals between the sites and the central office 34 are collected and distributed by server 48")). We also agree

with Petitioner that, because Spadaro discloses advantages of operating systems shown in Figure 3 over Ethernet and VoIP, the centralized server 48 "receive[s] outgoing Voice over Internet Protocol (VoIP) data packets from prison facilities; and send[s] incoming VoIP data packets to the prison facilities," as recited in claim 1. *See* Pet. 15 (citing Ex. 1004, 3:58–61).

We also note that the determination that Spadaro's server 48 performs the functions recited by the networking device is in accordance with the prosecution history of the application that issued as the '003 patent. *See Microsoft*, 789 F.3d at 1298 ("The PTO should also consult the patent's prosecution history in proceedings in which the patent has been brought back to the agency for a second review."). In rejecting application claim 1[10] as obvious over Spadaro,[11] the examiner relied on Spadaro's server 48 as disclosing or suggesting the recited networking device. Ex. 1002, 68 (Office

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[10] Application claim 1, similarly to patent claim 1, recited "a networking device connected to a plurality of call processing gateways of a plurality of prison facilities located remotely from the centralized call processing system via a wide area network (WAN), the networking device configured to: receive outgoing Voice over Internet Protocol (VoIP) data packets from prison facilities; and send incoming VoIP data packets to the prison facilities." Ex. 1002, 39 (Amendment in response to Office action of June 4, 2013).

[11] Although Spadaro was before the Office during prosecution, Petitioner's arguments concerning Spadaro are not the same arguments applied by the examiner. For instance, the examiner relied on the Commando™ units in Figure 3 as disclosing or suggesting the recited call application management system, whereas Petitioner relies on VoIP Gateway 26 for disclosing or suggesting the call application management system. *Compare* Pet. 17–18 *with* Ex. 1002, 68 (citing Spadaro 3:50–57 (describing the Commander units at each site) for the recited "call application management system."

action dated June 4, 2013 citing Spadaro, 3:50–57 for the recited networking device).

In response, rather than contesting the examiner's findings, the applicant amended application claim 1 to recite a validation system with certain enumerated characteristics and argued that Spadaro does not "disclose the feature of "centralized call processing system comprising . . . a validation system . . ." as recited in amended claim 1. Ex. 1002, 47; *see* Ex. 1002, 39 (amending application claim 1), 41 (amending application claim 9. The application subsequently was allowed. *See* Ex. 1002, 13 (Notice of Allowance issued September 18, 2013). Although the prosecution history does not indicate that Patent Owner acquiesces to the view of the examiner concerning the recited networking device, the prosecution history does show the examiner held the same view, as discussed herein, that Spadaro discloses the recited networking device, in view of the disclosure of the '003 patent.

Neither Patent Owner nor its declarant Dr. Oliver acknowledges Spadaro's server 48 performs the function of receiving VoIP data packets from the multiple sites. Patent Owner has not provided sufficient argument or evidence that using Spadaro's server 48 to receive and distribute VoIP data packets in the Petitioner's proposed combination would have been beyond the level of ordinary skill or would not yield predictable results. We also note the rather high level of ordinary skill in the art, which requires a Bachelor of Science in electrical engineering or computer science as well as at least three years of experience in telephony systems.

Turning to Patent Owner's contentions that Spadaro does not teach the recited networking device, Patent Owner first contends that Petitioner's proposed location of Spadaro's server 48 is incongruent with its actual function, because server 48 only connects analog calls to the central office. PO Resp. 38–40. Patent Owner's contention does not acknowledge, much less address sufficiently, Spadaro's express disclosure that the multiple site telephone system depicted in Figure 3, which includes server 48, can be operated using VoIP and indicates advantages obtained by doing so (Ex. 1004, 3:58–61).

Patent Owner also contends, with support from its declarant Dr. Oliver, that Spadaro's analog server 48 is not needed in a VoIP implementation of Spadaro's invention. PO Resp. 40. To support its contention, Patent Owner relies on its conclusion that Spadaro's server 48 is an analog server having its "only function . . . to connect calls received from the sites to the analog central office 34." *Id.* Spadaro's server 48, however, is not limited to analog calls, which undermines Patent Owner's argument. Patent Owner does not address directly Spadaro's express disclosure that the multiple site telephone system depicted in Figure 3, which includes server 48, can be operated using VoIP and Spadaro's indication of the advantages ("lower cost and efficiency") of using VoIP (Ex. 1004, 3:58–61). Nor does Patent Owner address sufficiently Petitioner's proposed combination that does not rely on server 48 for distributing signals to the public switch, but rather relies on server 48 for its other function—receiving calls from the prison sites. *See* Pet. 15 (concluding that the centralized server 48 receives

outgoing VoIP data packets); Ex. 1004, 3:55–57 ("The router 46 routes calls to a server 48 which connects the calls to central office 34").

We do not agree with Patent Owner that Spadaro's server 48 would not be used in a VoIP context because server 48 would be redundant in a VoIP context. First, as noted above, Spadaro expressly states Figure 3 can be used in a VoIP context. Spadaro's server 48 might be duplicative if Petitioner's proposed combination relied on server 48 to connect the calls to the PSTN, but that is not the case. Petitioner's combination relies on server 48 to collect and distribute VoIP data packets, not for distributing telephone signals to a public switch.

Moreover, in Petitioner's proposed combination, Spadaro's server 48 performs the recited functions of the networking device—to collect VoIP data packets associated with calls from prison facilities and to distribute VoIP data packets associated with calls to the prison facilities. Patent Owner does not address sufficiently that function of Spadaro's server 48. Thus, we agree with the location indicated by Dr. Forys, Petitioner's declarant, of Spadaro's server 48 in Petitioner's proposed combination. Pet. 14–16; Ex 1003 ¶ 65.

Third, Patent Owner contends that Spadaro's server 48 does not perform "intelligent packet routing" to provide different routing of data and voice packets, as Patent Owner contends would be required in the Petitioner's proposed combination. PO Resp. 38. Patent Owner has not persuaded us that such intelligent packet routing would not be an inherent part of any VoIP system, which is disclosed in Spadaro, as discussed above.

Additionally, Patent Owner appears to be arguing that Spadaro's server 48 cannot be bodily incorporated into system depicted in Spadaro's Figure 5, which is not required to show obviousness. *See In re Keller*, 642 F.2d at 425) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference."). Patent Owner's contentions do not take into account adequately what the collective teachings of Spadaro would have conveyed to one of ordinary skill in the art. *Id.* ("[T]he test [for obviousness] is what the combined teachings of the references would have suggested to those of ordinary skill in the art."). In addition, we agree with Petitioner, with support from its declarant, that "[b]ecause server 48 serves multiple sites [as shown in Figure 3], server 48 must be able to determine which site among the multiple sites to route (distribute) the incoming VoIP data packets associated with the calls." Reply 7 (citing Ex. 1018 ¶ 33).

"Unauthorized Call Activity Detection System

We determine that Petitioner has demonstrated by a preponderance of evidence that Spadaro would have conveyed to one of ordinary skill in the art the recited "unauthorized call activity detection system." Claim 1 recites

> an unauthorized call activity detection system connected to the networking device for detecting three-way call activity associated with the outgoing VoIP data packets or the incoming VoIP data packets via a local area network (LAN).

Ex. 1001, 18:66–19:3.

According to Petitioner, Spadaro's three-way call detect system 30a discloses or suggests the recited "unauthorized call activity detection

system . . .for detecting three-way call activity associated with" VoIP data packets." Pet. 16–17. Petitioner indicates Spadaro's three-way call detect system 30a is "moved from the site . . . to a point beyond the VoIP network" and "is located remotely [from the] prison telephone system." *Id.* at 17 (citing Ex. 1004, 4:27–30).

Patent Owner acknowledges that Spadaro performs three-way call detection between the call processing gateway 26a and the PSTN (PO Resp. 42) and asserts, with support from its declarant, that Spadaro and Salibrici performs three-way call detection on an analog line (*id.* at 41 (citing Ex. 2001 ¶¶ 50–54)). According to Patent Owner, this is insufficient because claim 1 "requires that the three-way call activity is detected *based on*" the VoIP data packets. PO Resp. 41. According to Patent Owner's arguments, Patent Owner seems to assert that the prohibited activity must be detected by processing VoIP data packets and cannot be detected by processing analog packets that are associated with the VoIP data packets of calls. PO Resp. 41–42 (contending that Spadaro "cannot adequately detect three-way calls on VoIP packets" and Spadaro does not have a "viable three-way call detection system for VoIP").

We disagree with Patent Owner's understanding of the scope of claim 1. Rather, the plain language of claim 1 requires "an unauthorized call activity detection system . . . for detecting three-way call activity *associated with*" VoIP data packets. Ex. 1001, 18:66–19:2 (emphasis added).

Further, the '003 patent does not support Patent Owner's contention that three-way call detection must be made by processing VoIP data packets.

The ’003 patent indicates the unauthorized call activity detection system 114 may use silence detection techniques and refers to two patent applications as disclosing further detail, which are incorporated by reference. Ex. 1001, 9:43–50 (identifying two patent applications, one of which issued as U.S. Patent No. 7,079,636), 1:22–24, 35–37 (indicating the two patent applications are incorporated by reference); *see also* Ex. 2015 (U.S. Patent No. 7,079,636, which issued from application 10/252,956 titled “Three-way Telephone Call Prevention System and Method”). Both Patent Owner and Petitioner’s declarants agree that these references disclose performing three-way call detection in the analog domain using silence detection. Ex. 1019, 167:8–168:23; Ex.1018 ¶¶ 45–47. Thus, we are not persuaded that an “unauthorized call activity detection system . . . for detecting three-way call activity *associated with*” VoIP data packets precludes determining three-way call activity using analog signals that represent the same call as the VoIP data packets.

Accordingly, we agree with Petitioner and its declarant that “the analog signals resulting from decompression and depacketization of the VoIP data packets are ‘associated’ with the VoIP data packets [because] the analog signals and VoIP data packets represent the same call.” Reply 10 (citing Pet. 16–17).

"Validation System"

We determine that Petitioner has demonstrated by a preponderance of evidence that Spadaro would have conveyed to one of ordinary skill in the art the recited "validation system." Claim 1 recites

> [a] centralized call processing system . . . comprising:
>
> a validation system connected via the LAN to the call application management system and configured to allow or disallow completion or continuing of a particular call of the plurality of prison facilities through the telephone carrier network based on the outgoing VoIP data packets or the incoming VoIP data packets.

Ex. 1001, 19:10–15.

Spadaro describes checking a personal identification number ("PIN") entered by a caller before authorizing a call. Ex. 1004, 3:30–34 ("[A] prison environment . . . has rules and regulations regarding what each inmate is allowed for telephone usage. The telephone user first dials a calling card number and a PIN code which is checked at [function] 28."); *see also id.* at 6:27–30 (claim 16 reciting "authorizing the call responsive to receiving a person identification number (PIN) associated with an account stored in the centralized system."). Petitioner relies on Spadaro's PIN checking function 28 as disclosing or suggesting the recited "validation system." Pet. 19–20 (citing Ex. 1004, 3:30–34, 6:27–30 (claim 16)). Spadaro discloses the PIN checking function can be distributed to a centralized location by a network, which could be either a LAN or a WAN. Ex. 1004, 4:4–13. Spadaro indicates that the distribution of the PIN checking function to remote locations has the advantage that the function

can be centralized with functions being performed at a centralized administration location. *Id.*; Pet. 19. Petitioner's declarant relies on this disclosure for support that Spadaro would have conveyed to one of ordinary skill in the art that these functions would be connected via a LAN. Pet 19 (citing Ex. 1003 ¶ 77).

Patent Owner contends that Spadaro does not disclose the requisite "validation system connected via the LAN to the call application management system." PO Resp. 43–46. According to Patent Owner, Spadaro's Figure 4 shows a WAN, not a LAN connection; the BubbleLINK software architecture document undermines the testimony of Petitioner's declarant Dr. Forys; and the recited call application management system would be located necessarily in Spadaro's system next to the PSTN. PO Resp. 44–46. Therefore, Patent Owner concludes, Spadaro's PIN checking function (corresponding to the recited "validation system") would not be connected to VoIP gateway 26a (corresponding to the recited "call application management system") via a LAN and, thus, would not teach the recited "validation system." PO Resp. 43–44.

Patent Owner, however, does not address what Spadaro's disclosures of centralization, LANs, and WANs would have conveyed to one of ordinary skill in the art, which is the test for obviousness. Thus, Patent Owner's contentions do not take into account adequately what the collective teachings of Spadaro would have conveyed to one of ordinary skill in the art. *See In re Mouttet*, 686 F.3d at 1332 ("[T]he test for obviousness is what the

combined teachings of the references would have suggested to those having ordinary skill in the art." (citing *In re Keller*, 642 F.2d at 425)).

Patent Owner also contends that Spadaro does not teach that the validation system determines completion or continuing a call "based on the outgoing VoIP data packets or the incoming VoIP data packets," as recited in claim 1. PO Resp. 46–48. According to Patent Owner, this is because Spadaro's PIN check function is performed prior to completing a call and, thus, Spadaro does not teach continuing a call. *Id.* at 47. Patent Owner's contention is not persuasive because the plain language of claim 1, which recites "allow or disallow completion *or* continuing of a particular call" (emphasis added). The conjunction "or" indicates the only one of "completion" or "continuing" is required. As Patent Owner acknowledges, Spadaro's PIN check is performed prior to completing a call (PO Resp. 47) and, therefore, Spadaro's PIN checking function discloses the validation system determining completion of a call.

Patent Owner also contends that Spadaro's PIN check is not performed on VoIP packets. PO Resp. 47. According to Patent Owner, such processing is inconsistent with Commander documentation (*id.*), which we do not find persuasive for the reasons regarding extrinsic evidence discussed earlier. Moreover, we credit Dr. Forys' testimony that Spadaro's disclosure of a PIN entered by a caller at a prison and PIN checking function being performed at a centralized location would have conveyed to one of ordinary skill in the art that "the dialed PIN would be transmitted to the centralized location in one or more outgoing VoIP data packets from a prison facility."

Ex. 1003 ¶ 76; *see also* Pet. 19 (citing Ex. 1003 ¶ 76). We are not persuaded that the plain language of claim 1 requires the PIN checking to be performed on VoIP data packets that are processed into outgoing analog call signals. Rather, the plain language of claim 1, which broadly recites "based on," encompasses the activity to which Dr. Forys testified: transmitting the dialed PIN to a centralized location in one or more outgoing VoIP data packets from a prison facility.

Reason to Combine

Despite having determined that Petitioner's position that Spadaro would have conveyed to one of ordinary skill in the art all of the limitations in claim 1 is supported by a preponderance of the evidence, our inquiry nonetheless continues because "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). "Care must be taken to avoid hindsight reconstruction by using 'the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.'" *Grain Processing Corp. v. Am.-Maize Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (quoting *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1012 (Fed. Cir. 1983)).

As discussed previously, Petitioner asserts the subject matter of claim 1 would have been obvious in view of various disclosures of Spadaro—Spadaro's "centralized call-processing used to serve multiple

prison facilities" (as shown in Figure 3); Spadaro's "VoIP technology together with a centralized call processing system" (as shown in Figure 5); and Spadaro's disclosure of the benefits of using VoIP for the system depicted in Figure 3, among others.

Patent Owner contends that Petitioner improperly "blend[s] different embodiments of Spadaro" and amounts to improper hindsight reconstruction. PO Resp. 18. Patent Owner further contends that an ordinarily skilled artisan would not have modified Spadaro in the manner that Petitioner contends to centralize control functions, but rather an ordinarily skilled artisan would have modified Spadaro to distribute control functions. *Id.* at 48–49.

We are not persuaded by Patent Owner. Spadaro itself indicates the reason one of ordinary skill in the art would combine the "centralized call-processing used to serve multiple prison facilities" (as shown in Figure 3) with "VoIP technology together with a centralized call processing system" (as shown in Figure 5)—"because of the lower cost and efficiency" obtained by operating systems such as shown in Figure 3 over a Voice over Internet Protocol network (Ex. 1004, 3:58–65). Although the rote application of the teaching-suggestion-motivation test (or TSM test), requiring an express teaching in the prior art, is inappropriate, "[t]here is no necessary inconsistency between the idea underlying the TSM test and the *Graham* analysis." *KSR*, 550 U.S. at 419.

Moreover, as noted by the Court in *KSR*, "[t]he combination of familiar elements according to known methods is likely to be obvious when

it does no more than yield predictable results." *KSR*, 550 U.S. at 416. Spadaro's server 48 performs a known function—receiving call signals and, in a VoIP context noted by Spadaro, collecting VoIP data packets from multiple sites. Here, in the combination proposed by Petitioner, Spadaro's server 48 performs one of the functions for which server 48 is used in Spadaro—receiving calls from multiple sites. We also note that electrical arts, such as claimed here, involve predictable factors. *See In re Fisher*, 427 F.2d 833, 839 (CCPA 1970) (indicating patents in the mechanical or electrical arts involve predictable factors). Thus, using server 48 in the proposed combination, used in the same manner as used in Spadaro, yields predictable results. *Cf.* Ex. 1003 ¶ 61 (Petitioner's declarant Dr. Forys testifying, in the proposed combination, server 48 connects the centralized location to the inmate facilities). As another factor favoring a finding of obviousness, we again note the rather high level of ordinary skill in the art, which requires a Bachelor of Science in electrical engineering or computer science as well as at least three years of experience in telephony systems. *Innovention Toys*, 637 F.3d at 1314 ("A less sophisticated level of skill generally favors a determination of nonobviousness . . . while a higher level of skill favors the reverse.").

Patent Owner also contends that Spadaro teaches away from centralizing call processing and transmitting calls to a single egress point. PO Resp. 48–49. To the contrary, according to Patent Owner, Spadaro teaches the advantages of a local access circuit at the prison. *Id.* at 49.

We do not agree that Spadaro teaches away from using server 48 to route VoIP calls. *Id.* at 44 (generally stating that Spadaro teaches away). Rather than criticizing, discrediting, or discouraging the use of VoIP, Spadaro describes the advantages of using the system depicted in Figure 3, including server 48, with VoIP. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (To teach away, prior art must "criticize, discredit, or otherwise discourage the solution claimed."). Moreover, Patent Owner contends that Spadaro teaches away "from centralizing call processing" as Patent Owner defines call processing, with which we do not agree for the reasons discussed previously.

Therefore, we determine that Petitioner has established by a preponderance of evidence that the subject matter recited in claim 1 as a whole would have been obvious to one of ordinary skill in the art in view of Spadaro. *See* 35 U.S.C. § 103(a).

3. Independent Claim 8

As recognized by both parties, independent claim 8 is a method claim that recites many similar limitations as recited by independent claim 1. Pet. 22; PO Resp. 57. For instance, the method of claim 8 recites "receiving outgoing Voice over Internet Protocol (VoIP) data packets from a plurality of prison facilities by a networking device via a wide area network (WAN)" and "sending incoming VoIP data packets to the prison facilities via the WAN by the networking device." These steps are substantially similar to the functions recited as being performed by the networking device required by claim 1. In another example, method claim 8 also recites "processing

signals from the telephone carrier network into the incoming VoIP data packets," which is substantially similar to a function performed by the call application management system recited in claim 1. Method claim 8 also recites "allowing or disallowing completion or continuation of a particular call of the plurality of prison facilities through the telephone carrier network based on the outgoing VoIP data packets or the incoming VoIP data packets by communicating data over the LAN." Claim 1 requires the recited validation system be configured to perform a substantially similar function.

Method claim 8 recites three "routing" steps that require routing VoIP data packets in a LAN in a centralized call processing system. Similarly to the function performed an unauthorized call activity detection system recited in claim 1, claim 8 recites "routing the outgoing . . . or the incoming VoIP data packets in a local area network (LAN) in a centralized call processing system to detect three-way call activity associated with the outgoing VoIP data packets or the incoming VoIP data packets." Similarly to the function performed by the call application management system recited in claim 1, claim 8 recites "routing the outgoing VoIP data packets via the LAN to process the outgoing VoIP data packets for transmission to a telephone carrier network." Unlike claim 1, independent claim 8 does not recite "processing signals from the first telephone carrier network into the incoming VoIP data packets." Claim 8, however, recites "routing the incoming VoIP data packets via the LAN for transmission to the plurality of prison facilities via the WAN."

In contending the subject matter of claim 8 would have been obvious to one of ordinary skill in the art, Petitioner relies on substantially the same arguments and disclosures in Spadaro as Petitioner did for claim 1. Pet. 22–24.

Patent Owner maintains that Spadaro does not teach call processing, according to Patent Owner's proposed construction, at the central location performing the functions recited in claim 8. PO Resp. 56–57. For the reasons indicated previously and with respect to claim 1, we do not agree with Patent Owner that call processing as defined by Patent Owner is required to be performed at the central location.

Patent Owner points out that claim 8 expressly requires routing VoIP data packets in a LAN in a centralized call processing system to detect three-way call activity, to process outgoing VoIP data packets for transmission to a telephone carrier network, and for transmission to the prison facilities via the WAN. PO Resp. 57 (noting claim 8 requires "various features of the method are performed . . . via routing VoIP data packets on the LAN"). Patent Owner also points out that claim 8 expressly requires allowing or disallowing particular calls "by communicating data over the LAN." *Id.* (noting claim requires "various features of the method are performed on a LAN").

Patent Owner, however, does not provide sufficient argument or evidence as to why such express statements would render the steps recited in claim 8 nonobvious in view of the previous discussion as to the reasons that the subject matter recited in claim 1 as a whole would have been obvious to

one of ordinary skill in the art in view of Spadaro. Indeed, many of Patent Owner's contentions are more appropriate to a ground of anticipation, which requires a prior art reference to disclose, expressly or inherently, every limitation of the claim as arranged in the claim. *See Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008).

More specifically, Patent Owner contends that "[r]elative to claim 1, claim 8 further emphasizes that the three-way call detect is performed within a centralized location where the VoIP data packets are collected by expressly routing the data packets for the three-way call detection." PO Resp. 57. Based on its argument, Patent Owner seems to further contend that claim 8 requires performing the three-way call detect "on VoIP packets," instead of using analog signals associated with VoIP data packets as Spadaro discloses. *Id.*

Patent Owner, however, does not provide sufficient argument or evidence as to the routing limitation related to detecting three-way call activity requires performing three-way call detect *on VoIP data packets*, in view of the plain language of claim 8 that recites "to detect three-way call activity *associated with"* VoIP data packets. For the reasons discussed with respect to claim 1, we are not persuaded that "*associated with* VoIP data packets" requires performing three-way call activity on VoIP data packets. Because we do not agree that claim 8 requires performing three-way call activity on VoIP data packets, we also do not agree that Spadaro teaches away from what is claimed because Spadaro describes disadvantages of performing three-way call detection on VoIP data packets. PO Resp. 57.

Nor are we persuaded that claim 8 requires collecting VoIP data packets by expressly routing the data packets for three-way call detection (*see* PO Resp. 57). The plain language of claim 8 does not recite "collecting." Moreover, as discussed with a similar limitation recited by claim 1 and as seen in Spadaro's Figure 5, VoIP packets are received by WAN 18 and routed to the three way call detect 30a function, which "is moved . . . to a point beyond the VoIP network." Ex. 1004, 4:27–30; *see* Pet. 17 (discussing three-way call detection with respect to claim 1). Petitioner notes that Spadaro discloses the VoIP packets "can be applied through the WAN 18, or a LAN, to the VoIP Gateway 26a." Pet. 18 (citing Ex. 1004, 4:49–53 with respect to claim 1), 22–24 (contentions regarding claim 8 referring back to contentions regarding claim 1). As noted by Petitioner with respect to claim 8, Spadaro also discloses that the IP network 18 may be a WAN or a LAN. Pet. 22 (citing Ex. 1004, 3:1–6).

Therefore, we determine that Petitioner has established by a preponderance of evidence that the subject matter recited in independent claim 8 as a whole would have been obvious to one of ordinary skill in the art in view of Spadaro. *See* 35 U.S.C. § 103(a).

4. Dependent Claims 2 and 9

Claim 2, which depends from independent claim 1, additionally recites "a billing system connected to the LAN and configured to manage billing associated with the calls made through the system." Similarly, claim 9, which depends from independent claim 8, additionally recites

"managing billing associated with the calls made through the networking device by communicating data over the LAN."

For these additional features, Petitioner relies on Spadaro's disclosure of telecommunications billing as including "various computing and switching means which record the call numbers and timing and further arrange the accounting and billing for the public telephones and calls." Pet. 20 (citing Ex. 1004, 1:24–30); *see* Pet. 24–25 (regarding claim 9). Petitioner further relies on Spadaro's billing function 24, which is another of Spadaro's control functions that Spadaro discloses can be centralized. Pet. 20 (citing Ex. 1004, 3:28–30, 4:10–13, Figs. 4, 5); *see* Pet. 24–25 (regarding claim 9). Petitioner further points to Spadaro's claim 10, which recites a call processing system "providing billing with respect to [an] authorized call." *Id*. at 20.

Based on the disclosures of Spadaro, Petitioner's declarant testifies that one of ordinary skill in the art would understand Spadaro's billing function 24 "manage[s] billing associated with calls made through the system." *Id.* (citing Ex. 1003 ¶ 81). Also, according to Petitioner's declarant, because Spadaro discloses the centralization of various functions, one of ordinary skill in the art would understand the billing function, three-way call detection, PIN checking, the VoIP gateway would be connected by a LAN. *Id.* (citing Ex. 1003 ¶ 80).

Patent Owner relies on the same arguments in its contentions regarding claims 2 and 9. *See* PO Resp. 58. Patent Owner challenges, without relying on testimony by its declarant, Petitioner's contentions that

the three-way call detection would be connected to a WAN and, therefore, Spadaro's billing function 24 would not be connected to the LAN or co-located with other functions performed by the claimed centralized call processing system, as required by claims 2 and 9. *See* PO Resp. 51–52, 58.

We are not persuaded by Patent Owner's challenge based on the extrinsic evidence of documents describing the BubbleLINK software architecture or assertions that Spadaro's three-way call detection is distributed geographically to multiple egress points for the reasons discussed previously.

Nor are we persuaded that Spadaro's Figures 4 and 5 showing the billing function 24 separated from the three-way call detection function by a WAN precludes the billing function 24, PIN checking function 28, and three way call detection being centralized and connected via a LAN. First, we credit Petitioner's declarant's testimony (Pet. 20 (citing (citing Ex. 1003 ¶ 81)), which is not countered by Patent Owner's declarant, that Spadaro would have conveyed to one of ordinary skill in the art the billing function, three-way call detection, PIN checking, the VoIP gateway would be connected by a LAN. Further, Spadaro supports the testimony of Patent Owner's declarant—Spadaro teaches that control functions, including the billing function 24, PIN checking function 28, and three way call detection can be centralized and connected by a LAN. *See* Ex. 1004, 4:4–13 (noting "the programming of control functions may be distributed to remote locations over the Ethernet network," which may be a LAN or a WAN; identifying PIN checking 28 and the billing function 24 as functions that

may be centralized at a remote location and the advantage of doing so), 4:22–24 (identifying three way call fraud detection as a control function). Spadaro also supports the testimony of Petitioner's declarant, at least somewhat, by disclosing that various networks of Spadaro may be a LAN or a WAN. *See* Ex. 1004, 4:8–10 ("As shown in FIG. 4, the network 50 is a local area network (LAN). However these functions may also be distributed over a WAN."), 4:49–51 ("The packets are processed in the Ethernet network interface 60 so that they can be applied through the WAN 18, or a LAN, to the VoIP Gateway 26a.").

Second, Spadaro's express disclosure undermines Patent Owner's reliance on WAN 18 in Figures 4 and 5. As noted above, Spadaro discloses that WAN 18 that transports packets to the VoIP gateway 26a may be a LAN. Ex. 1004, 4:49–51 (discussing WAN 18 in the context of FIG. 6B); *compare* Fig. 6B (showing WAN 18 connected to three way call detect 30a with voice over IP gateway 26a) *with* Figs. 4 and 5 (showing same).

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of evidence that Spadaro would have conveyed to one of ordinary skill in the art the additional limitations recited in claims 2 and 9.

5. Dependent Claims 3 and 10

Claim 3, which depends from independent claim 1, additionally recites "a call recording system connected to the LAN and configured to record at least part of the calls made through the system." Similarly, claim 10, which depends from independent claim 8, additionally recites "recording

at least part of the calls made through the networking device by communicating data over the LAN."

For these additional features, Petitioner relies on Spadaro's disclosure of "real time call recording" as a control function. Pet. 21 (citing Ex. 1004, 4:21–24), 25; *see also* Ex. 1004, 6:7–8 (claim 9 reciting the "call processing system recording the authorized call"). As noted previously, Spadaro also discloses control functions can be centralized with the other control functions. Ex. 1004, 4:4–13. Based on Spadaro's disclosure that real time call recording can be centralized with the other functions, including three way call detection, PIN checking, and the VoIP gateway, Petitioner's declarant testifies that Spadaro would have conveyed to one of ordinary skill in the art that "the associated systems implementing these functions would be connected via a LAN." Ex. 1003 ¶ 83; *see* Pet. 21 (citing Ex. 1003 ¶ 83).

PO relies on the same arguments in its contentions regarding claims 3 and 10. *See* PO Resp. 58. Patent Owner contends that Spadaro's claim 9 discloses real time recording at the control computers located at the prisons and, as such, would not disclose the centralized call application management system or unauthorized call detection systems as required by claim 3. PO Resp. 52–53. First, Patent Owner's contentions are more appropriate to a ground of anticipation, which requires a prior art reference to disclose, expressly or inherently, every limitation of the claim as arranged in the claim. *See Net MoneyIN*, 545 F.3d at 1369. Patent Owner's arguments are not appropriate for a challenge of obviousness, which requires an analysis of whether 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, 35 U.S.C. § 103(a). Second, Patent Owner does not address persuasively Petitioner's contention based on Spadaro's disclosure of real time call recording as a control function that can be centralized.

Further, we are persuaded by the testimony of Petitioner's declarant, which is based on Spadaro's disclosure that real time call recording can be centralized with the other functions, including three way call detection, PIN checking, and the VoIP gateway, that Spadaro would have conveyed to one of ordinary skill in the art that "the associated systems implementing these functions would be connected via a LAN." Ex. 1003 ¶ 61.

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of evidence that Spadaro would have conveyed to one of ordinary skill in the art the additional limitations recited in claims 3 and 10.

6. Dependent Claims 4 and 11

Claim 4, which depends directly from dependent claim 3 and indirectly from independent claim 1, additionally recites "the call application management system is configured to select calls to be recorded by the call recording system." Similarly, claim 11, which depends directly from dependent claim 10 and indirectly from independent claim 8, additionally recites "selecting calls to be recorded by communicating data over the LAN."

According to Petitioner, Spadaro's disclosure of a call processing system that records calls (as discussed above with respect to claims 3 and 10) inherently must select a call before the call can be recorded. Pet. 21, 25. Petitioner's declarant supports Petitioner's position. Ex. 1003 ¶ 85. Patent Owner argues that the plain language of claim 4 requires the call application management system to be configured to select the call. PO Resp. 53.

We agree with Petitioner, and its declarant, that recording a call necessarily requires a call to be selected. We also, however, agree with Patent Owner that selecting a call does not mean necessarily that a particular device—here, Spadaro's VoIP Gateway 26a (corresponding to the recited call application management system)—selects a call for the recording.

Thus, we determine that Petitioner has not demonstrated by a preponderance of evidence that Spadaro would have conveyed to one of ordinary skill in the art the additional limitations recited in claim 4.

PO relies on the same arguments in its contentions regarding claims 4 and 11. *See* PO Resp. 58. Claim 11, however, does not require a particular device to select a call to be recorded. Rather, Claim 11 requires "selecting calls to be recorded by communicating data over the LAN."

As noted previously, we agree with Petitioner, and its declarant, that recording a call necessarily requires a call to be selected. We determine, therefore, that Petitioner has demonstrated by a preponderance of evidence that Spadaro would have conveyed to one of ordinary skill in the art the additional limitations recited in claim 11.

7. Conclusion of Obviousness over Spadaro

We have resolved the question of obviousness based on factual determinations of (1) the scope and content of Spadaro; (2) differences between the subject matter of claims 1–4 and 8–11 and the teachings of Spadaro; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham*, 383 U.S. at 17–18. Patent Owner has not put forth any evidence of secondary considerations for us to consider.

For the foregoing reasons, we determine that Petitioner has established, by a preponderance of evidence, that the subject matter recited in each of claims 1–3 and 8–11 as a whole would have been obvious to one of ordinary skill in the art in view of Spadaro. *See* 35 U.S.C. § 103(a). We determine, however, Petitioner has not established, by a preponderance of evidence, that the subject matter in claim 4 as a whole would have been obvious to one of ordinary skill in the art in view of Spadaro.

E. Obviousness over Spadaro and Hodge

Petitioner contends claims 4–7 and 11–14 are unpatentable under 35 U.S.C. § 103(a) as obvious over Spadaro and Hodge, relying on declaration testimony of Dr. Forys. Pet. 26–33 (citing Ex. 1003). Patent Owner responds, relying on declaration testimony of Dr. Oliver. PO Resp. 52–59 (citing Ex. 2001). Having considered the parties' contentions and supporting evidence, we determine that Petitioner has demonstrated by a preponderance of evidence that claims 4–7 and 11–14 are unpatentable for obviousness over Spadaro and Hodge.

1. Summary of Hodge

As an initial matter, Petitioner represents Hodge is prior art under 35 U.S.C. § 102(e) to the challenged claims. Pet. 4. Hodge is a patent, which issued from an application filed on August 8, 2002—a date prior to the earliest effective filing date claimed by the '003 patent—August 15, 2003. Patent Owner does not dispute that Hodge is prior art to the challenged claims.

Hodge describes a secure telephone call management system for use in penal institutions. Ex. 1005, Abstract, 9:48–53. Hodge's secure telephone call management system includes accounting software capable of limiting access to the system based on funds in a user's account. *Id.* at Abstract. Among Hodge's techniques to monitor calls, Hodge describes a live operator using a "shadow workstation" to monitor telephone calls without detection. *Id.* at 20:47–49. If the operator determines a call being monitored is suspicious, the operator may record the telephone call. *Id.* at 20:54–57. Hodge also describes an investigative workstation 125 used to access recorded conversations and used to detect if a third party is present during the telephone call. *Id.* at 21:1–7. Hodge describes a commissary workstation used "to manage and record a user's financial transactions." *Id.* at 20:32–34.

Hodge describes a central site server through which "[a]ll inmate and call information is routed." *Id.* at 19:25, 37–38. Hodge further describes software on the central site server that is used to monitor calls and activate an audio recorder when "certain key words or phrases are spoken. *Id.* at

20:62–67. According to Hodge, the shadow workstation, the investigative workstation, and the commissary workstation may be connected to a central site server through a local area network or "may be integral within the central site server." *Id.* at 20:35–36, 20:46–47, 21:13–16. Hodge further describes a WAN configuration in which the site server is connected to multiple devices located in separate institutions, a central database is used for the entire system, and administrative and investigative workstations are located at a central facility to administer all user accounts. *Id.* at 10:41–48 (Summary of Invention).

2. Claims 4–8 and 11–14

To support its contention that claims 4–8 and 11–14 would have been obvious, Petitioner augments its contentions that the challenged independent claims would have been obvious over Spadaro with assertions based on Hodge's description of a secure telephone call management system for use in penal institutions. Pet. 25–33.

Claims 4 and 11

As noted previously, claims 4 and 11 depend indirectly from either independent claim 1 or independent claim 8 and additionally require features related to selecting calls to be recorded. We are persuaded that Petitioner has demonstrated by a preponderance of evidence that the combination of Spadaro and Hodge would have conveyed to one of ordinary skill in the art the additional limitations recited in claims 4 and 11.

Petitioner supplements its assertions regarding obviousness of claims 4 and 11 over Spadaro with assertions relying on Hodge's call

management system. Specifically, Petitioner relies on Hodge's central site server 133 that includes software used to monitor calls and activate an audio recorder when "certain key words or phrases are spoken." Pet. 27 (citing Ex. 1005, 20:62–67), 32. Petitioner relies on Hodge discloses that the software can be located on its central site server, through which "[a]ll inmate and call information is routed." Ex. 1005, 19:25, 19: 37–38, 20:62–67. Based on these disclosures, Petitioner contends that Hodge discloses a call application management system "configured to select calls to be recorded by the call recording system," as recited in claim 4.

Patent Owner contends that Petitioner's contentions are insufficient because Petitioner's declarant does not explain how Spadaro's "simple VoIP gateway" would be able to be combined with Hodge's central site server through which all call information is routed and which includes software used to monitor calls and activate an audio recorder when certain key words or phrases are spoken. PO Resp. 53. We are not persuaded by Patent Owner's contentions, which seem to require bodily incorporation of Hodge's recording software in Spadaro's VoIP gateway 26a. *See In re Keller*, 642 F.2d at 425 ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference.").

Moreover, Patent Owner does not address sufficiently what Hodge's disclosures would have conveyed to one of ordinary skill in the art. Thus, Patent Owner's contentions do not take into account adequately what the collective teachings of Spadaro and Hodge would have conveyed to one of

ordinary skill in the art. *In re Mouttet*, 686 F.3d at 1332 ("[T]he test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art." (citing *In re Keller*, 642 F.2d at 425)).

Patent Owner relies on the substantially similar arguments in its contentions regarding claims 4 and 11. *See* PO Resp. 53, 58. With regard to claim 11, Patent Owner relies on its contentions regarding claim 4 and concludes "Spadaro and Hodge provide no teaching that selecting a call to record is based on communicating data over the LAN." PO Resp. 58.

Claim 11 recites "selecting calls to be recorded by communicating data over the LAN" and does not require the act of selecting is based on communicating data over the LAN, for the reasons discussed previously with respect to Petitioner's assertion that claim 11 would have been obvious over Spadaro. Rather, claim 11 requires the act of recording involve "communicated data over the LAN." As Petitioner notes, Hodge expressly discloses that "[t]he system of the current invention is designed to operate on either a local area network (LAN) or a wide area network (WAN)." Pet. 32 (quoting Ex. 1005, 9:62–64). Petitioner's position is supported by its declarant (Ex. 1003 ¶ 123), which we find credible.

Claims 5 and 12

Claim 5 depends from independent claim 1 and additionally recites "a justice application management system connected to the LAN and configured to manage information about inmates at the prison facilities." Petitioner, with support from its declarant, contends Hodge's shadow

workstation teaches or suggests the recited justice application management system for managing inmates. Pet. 28–29 (citing Ex. 1003 ¶ 115). Petitioner further contends, with support of its declarant, that one of ordinary skill in the art would have placed the functions of Hodge's shadow workstation at Spadaro's central administration location. *Id.* at 29 (citing Ex. 1003 ¶ 115). Thus, according to Petitioner, the combination of Spadaro and Hodge would have taught or suggested to one of ordinary skill in the art the recited justice application management system.

Patent Owner opposes, relying on its declarant testimony that Hodge's shadow workstation "has nothing to do with inmate management, such as assigned cells, medications, scheduling, [and] facility resources. . . as claimed." PO Resp. 54 (citing Ex. 2001 ¶¶ 263–64). Notably, Dr. Olivier bases his conclusion on an *example* in the '003 patent. Ex. 2001 ¶ 263 (quoting Ex. 1001, 14:25– 30 ("[f]or example, justice application management, which may comprise a back office software product for a jail to facilitate management of the inmates in the facility (e.g., what cells they are assigned to, what medications are to be administered to them, tracking their medical records, tracking their privileges")).

We find this approach unpersuasive because we must be careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993); *see also Superguide Corp. v. DirecTV Enters, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) ("Though understanding the claim language may be aided by the explanations

contained in the written description, it is important not to import into a claim limitations that are not a part of the claim."); *In re Self*, 671 F.2d at 1348 (stating that it is well established that limitations not appearing in the claims cannot be relied upon for patentability). Here, the claim language "managing inmates" is broader than the examples in the '003 patent—inmate assignment to cells, medications to be administered to inmates, tracking their medical records, and tracking their privileges.

Moreover, even if we were to accept Dr. Olivier's conclusion that an example in the '003 patent would limit the language of the claim, Dr. Olivier does not address sufficiently why the example in the '003 patent of "managing inmates" by tracking inmate privileges would not encompass the function of Hodge's shadow workstation—monitoring inmate telephone calls. Nor does Dr. Olivier address the expansive description in the '003 patent that a justice application management system "may correspond to any number of information management systems providing data collection and/or sharing among facilities as described herein" (Ex. 1001, 8:7–11).

Weighing Dr. Olivier's testimony against the Dr. Forys' testimony, we credit Dr. Forys' testimony over that of Dr. Olivier, because Dr. Forys' testimony better comports with the disclosure of the '003 patent about a justice application management system. We also discount Dr. Olivier's testimony based on *example* functions of a justice application management system, while not addressing adequately evidence that undercuts Patent Owner's position. It is within our discretion to assign the appropriate weight to the testimony offered by Dr. Olivier and Dr. Forys. *See, e.g.*, *Yorkey*, 601

F.3d at 1284; *Am. Acad. of Sci. Tech Ctr.*, 367 F.3d at 1368. Thus, we are not persuaded by Patent Owner's attempt to construe claim 5 more narrowly than the broad claim language itself—"a justice application management system . . . configured to manage information about inmates at the prison facilities"—based on unclaimed, example functions of a justice application management system.

Claim 12 depends from independent claim 8 and additionally recites "managing information about inmates at the prison facilities by communicating data over the LAN." Similarly to claim 5, Petitioner relies on Hodge's shadow workstation in combination with Spadaro's disclosure. Petitioner further relies, similarly to claim 11, Hodge's disclosure that "[t]he system of the current invention is designed to operate on either a local area network (LAN) or a wide area network (WAN)" and testimony by its declarant supporting its position that the combination of Spadaro and Hodge would have conveyed the subject matter in claim 12 to one of ordinary skill in the art. Pet. 32–33 (citing Ex. 1005, 9:62–64; referring to its contentions regarding claim 5, which includes citing Ex. 1003 ¶ 115).

With regard to claim 12, Patent Owner relies on its contentions regarding claim 5 and concludes "Spadaro and Hodge fail to provide for management of inmates via a LAN connected to a call application management system." PO Resp. 59. We are not persuaded for the reasons discussed previously with respect to claim 5.

Based on the foregoing, we determine that Petitioner has demonstrated by a preponderance of evidence that the combination of

Spadaro and Hodge would have conveyed to one of ordinary skill in the art the additional limitations recited in claims 5 and 12.

Claims 6 and 13

Claim 6 depends from independent claim 1 and additionally recites "a commerce system connected to the LAN and configured to manage commissary orders placed by inmates at the prison facilities." Claim 13 depends from independent claim 8 and additionally recites "managing commissary orders placed by inmates at the prison facilities by communicating data over the LAN."

Petitioner relies on Hodge's commissary workstation 121 "used to manage and record a user's financial transactions." Pet. 30 (citing Ex. 1005, 20:32–34, 51:37–41. Petitioner further contends, with support of its declarant, that one of ordinary skill in the art would have placed the functions of Hodge's shadow workstation at Spadaro's central administration location and it would have been obvious to one of ordinary skill in the art to connect the commissary workstation to the LAN. *Id.* at 30 (citing Ex. 1003 ¶ 118). Thus, according to Petitioner, the combination of Spadaro and Hodge would have taught or suggested to one of ordinary skill in the art the recited managing commissary orders placed by inmates, as required by claims 6 and 13.

Patent Owner contends, without supporting testimony by its declarant, that one of ordinary skill in the art would not centralize commissary workstation and notes that Petitioner's declarant does not provide a reason

why the commissionary workstation would be centralized. PO Resp. 54–55; *see also id.* at 59 (regarding claim 13).

A central dispute between the partiesconcerns Spadaro's centralization of administrative functions. Although Petitioner's declarant does not provide in paragraph 118 a particular reason why Spadaro's commissionary workstation would be centralized (*see* Ex. 1003 ¶ 118), Petitioner has asserted—with support of its declarant and as we have discussed previously—that Spadaro discloses control functions (including the billing function, PIN checking, real time call recording, and three-way call fraud detection) as being centralized with functions being performed advantageously at a central administration location.. Ex. 1004, 4:4–24. Spadaro further discloses expressly "the advantage that the functions can be centralized," on which Petitioner and its declarant have relied and which we have discussed previously. *See* Ex. 1004, 4:10–13. Thus, at this point, we cannot ignore the express disclosure of Spadaro regarding the advantage of centralizing functions that would be performed by a commissionary workstation.

Accordingly, we are persuaded that Petitioner has demonstrated by a preponderance of evidence that the combination of Spadaro and Hodge would have conveyed to one of ordinary skill in the art the additional limitations recited in claims 6 and 13.

Claims 7 and 14

Claim 7 depends from independent claim 1 and further recites "a call treatment system connected to the LAN and configured to communicate

with a signaling network of the telephone carrier network to determine whether a call forwarding feature is activated for call numbers associated with the calls made through the system." Claim 14 depends from claim 8 and similarly further recites "communicating with a signaling network of the telephone carrier network to determine whether a call forwarding feature is activated for call numbers associated with the calls made through the networking device."

Petitioner relies on Petitioner relies on Hodge's description, in the Background of the Invention section, that conventional systems prevent an inmate from using call forwarding. Pet. 31 (citing Ex. 1005, 4:60–67). For the recited "call treatment system," Petitioner relies on Hodge's description of another conventional system's techniques for "detecting tones commonly associated with call bridging and call forwarding attempts," including various types of signals, such as ring signals and busy signals, which are characteristic of placing a telephone call. *Id.* (citing Ex. 1005, 8:21–28). For support of its position, Petitioner relies on testimony from Dr. Forys. *Id.* (citing Ex. 1003 ¶ 120).

Petitioner further contends, with support of its declarant Dr. Forys, that one of ordinary skill in the art would have placed Hodge's call forwarding detection means at the central administration location of Spadaro. *Id.* (citing Ex. 1003 ¶ 121). According to Petitioner's declarant, Spadaro's centralized three-way call detection (Ex. 1004, 4:10–13) and Hodge's call forwarding detection use the same network signaling tones (switch hook flashes). *Id.* at 31–32 (citing Ex. 1003 ¶ 121). Petitioner's

declarant also testifies that one of ordinary skill in the art would recognize that Hodge's call forwarding detection means would be connected to the LAN. *Id.* at 32 (citing Ex. 1003 ¶ 121). Thus, according to Petitioner and its declarant, the combination of Spadaro and Hodge would have disclosed "a call treatment system connected to the LAN." Pet. 32; Ex. 1003 ¶ 121.

Patent Owner contends, with support from its declarant Dr. Olivier, that "the references fail to describe any signaling that indicates 'whether a call forwarding feature is activated for call numbers associated with the calls,'" as recited by claims 7 and 14. PO Resp. 56 (citing Ex. 2001 ¶ 270), 59–60. Dr. Olivier acknowledges that Hodge indicates another reference "includes a means for detecting tones commonly associated with call bridging and call forward attempts." Ex. 2001 ¶ 270 (citing Ex. 1005, 8:21–28). Dr. Olivier indicates that "Hodge omits any description of signaling that indicates" the recited feature. *Id.*

Patent Owner's contentions regarding Hodge unduly focus on specific isolated capabilities described in Hodge without addressing what those capabilities would have suggested to one of ordinary skill in the art at the time of the invention of the '003 patent. Further, Patent Owner's contentions in large measure amount to attacks on the individual elements of claims 7 and 14, without sufficient consideration of what the disclosure of Hodge would have suggested to one of ordinary skill in the art regarding the claimed subject matter as a whole, which is an approach we find unpersuasive. *Mouttet*, 686 F.3d at 1332 ("[T]he test for obviousness is

what the combined teachings of the references would have suggested to those having ordinary skill in the art.").

Thus, we credit Dr. Forys testimony that one of ordinary skill in the art would place Hodge's call forwarding detection means at the central administration location of Spadaro, which supports Dr. Forys' conclusion that Spadaro and Hodge would have conveyed the subject matter of claims 7 and 14 to one of ordinary skill in the art.

Accordingly, we are persuaded that Petitioner has demonstrated by a preponderance of evidence that the combination of Spadaro and Hodge would have conveyed to one of ordinary skill in the art the additional limitations recited in claims 7 and 14.

3. Reason to Support Legal Conclusion of Obviousness

Petitioner has articulated sufficient reasoning with some rational underpinning to support the legal conclusion that the subject matter of claims 4–8 and 11–14 would have been obvious to one of ordinary skill in the art in view of the teachings of Spadaro and Hodge as combined in the manner proposed by Petitioner. *See KSR*, 550 U.S. at 418. For the reasons discussed regarding independent claims 1 and 8, Spadaro would have conveyed to one of ordinary skill in the art the limitations of the independent claims. For the reasons previously discussed, we have determined that Petitioner has established by a preponderance of evidence that the combination of Spadaro and Hodge would have conveyed the features of dependent claims 4–8 and 11–14.

Petitioner, with support from its declarant, indicates the reason that one of ordinary skill in the art would have combined Spadaro and Hodge was the two references were addressing the same problem—control and management of inmate telecommunications. Pet. 26 (citing Ex. 1003 ¶ 108). *KSR*, 550 U.S. at 420 ("Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed."). Petitioner, also relying on its declarant, contends a one of ordinary skill in the art could have combined the functions of Hodge with the system of Spadaro by known methods and the results of the combination would have been predictable to one of ordinary skill in the art. Pet. 27 (citing Ex. 1003 ¶ 110). As noted previously in connection with independent claims 1 and 8, the electrical arts, such as claimed here, involve predictable factors. *See In re Fisher*, 427 F.2d at 833 (indicating patents in the mechanical or electrical arts involve predictable factors).

4. Conclusion Regarding Obviousness of Claims 4–7 and 11–14 in View of Spadaro and Hodge

Accordingly, we determine that the subject matter recited in each of claims 4–7 and 11–14 as a whole would have been obvious to one of ordinary skill in the art in view of Petitioner's combination Spadaro and Hodge. 35 U.S.C. § 103(a). We have resolved the question of obviousness based on factual determinations of (1) the scope and content of Spadaro and Hodge; (2) differences between the subject matter of claims 4–7 and 11–14 and the teachings of Spadaro and Hodge; (3) the level of ordinary skill in the

art; and (4) objective evidence of nonobviousness. *Graham*, 383 U.S. at 17–18. Therefore, we determine that Petitioner has shown by a preponderance of the evidence that the subject matter of claims 4–7 and 11–14 of the '003 patent would have been obvious to a person of ordinary skill in the art in view of the teachings of Spadaro and Hodge.

III. CONCLUSION

Petitioner has proven by a preponderance of the evidence that claims 1–3 and 8–11 of the '003 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Spadaro and claims 4–7 and 11–14 are unpatentable as obvious over Spadaro and Hodge. Petitioner, however, has not proven by a preponderance of the evidence that claim 4 of the '003 patent is unpatentable as obvious over Spadaro.

IV. ORDER

Accordingly, it is hereby

ORDERED that, based on a preponderance of the evidence, claims 1–14 of U.S. Patent No. 8,577,003 B2 are held unpatentable; and

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

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