

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Cisco Systems, Inc.,

Petitioner

v.

FOCAL IP, LLC,

Patent Owner

Case IPR2016-01257
Patent Number: 8,457,113 B2

NOTICE OF APPEAL TO THE FEDERAL CIRCUIT (35 U.S.C. § 141(c))

To: Office of the General Counsel
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Patent Owner hereby provides notice of appeal to the United States Court of Appeals for the Federal Circuit under 35 U.S.C. §§ 141 and 142 from the Final Written Decision of the Patent Trial and Appeal Board entered December 27, 2017, (Paper No. 63).

Pursuant to 37 C.F.R. § 90.2(a)(3)(ii) the expected issues on appeal will include:

1. Whether Petitioner has shown by a preponderance of the evidence that claims 38, 65, 143-147, 149, 150, 163, and 176-178, of U.S. Patent No. 8,457,113 B2 are unpatentable as discussed in the Final Written Decision.

2. Whether the Board's construction of the disputed terms and phrases at issue was correct, as discussed in the Final Written Decision.

3. Whether Petitioner has shown by a preponderance of the evidence that claims 38, 65, 143-147, 149, 150, 163, and 176-178, of U.S. Patent No. 8,457,113 B2 are obvious/anticipated in light of the cited prior art references, as discussed in the Final Written Decision.

4. Whether the PTAB misapprehended or overlooked evidence or arguments in its Final Written Decision.

Patent Owner has electronically filed this notice with the Patent Trial and Appeal Board, pursuant to 37 C.F.R. § 90.2(a)(1), 37 C.F.R. § 42.6(b)(1) and

Federal Circuit Rule 15(a)(1).

Simultaneously herewith, patent owner is providing the Federal Circuit an electronic copy of the present Notice of Appeal (pursuant to 37 C.F.R. § 90.2(a)(2)(i) and 15(a)(1)) together with a \$500 fee (pursuant to 37 C.F.R. § 90.2(a)(2)(ii) and Federal Circuit Rule 52(a)(3)(A)). A copy of the Final Written Decision is also included.

Dated: February 28, 2018

Respectfully Submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that, in addition to being filed electronically through the Patent Trial and Appeal Board End to End (PTAB E2E), this Notice of Appeal was filed with the Director of the United States Patent and Trademark Office, at the following address:

Office of the General Counsel
U.S. Patent and Trademark Office
Alexandria, Virginia 22313-1450

The undersigned also certifies that a true and correct copy of this Notice of Appeal and the required fee were filed electronically via CM/ECF on February 28, 2018, with the Clerk of Court for the United States Court of Appeals for the Federal Circuit.

The undersigned also certifies that a true and correct copy of this Notice of Appeal was served on February 28, 2018 on counsel of record for Petitioner by electronic mail (by agreement of the parties) at the following addresses:

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

FOCAL IP, LLC,
Patent Owner.

Cases IPR2016-01254 and IPR2016-01257
Patent 8,457,113 B2

Before SALLY C. MEDLEY, JONI Y. CHANG, and
BARBARA A. PARVIS, *Administrative Patent Judges*.

PARVIS, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background*

In IPR2016-01254, Cisco Systems, Inc. (“Petitioner”) filed a Petition (IPR2016-01254, Paper 2, “1254 Pet.”) requesting that we institute *inter partes* review of claims 38 and 65 of U.S. Patent No. 8,457,113 B2

(Ex. 1001, “the ’113 Patent”).¹ In IPR2016-01257, Petitioner filed a second Petition (IPR2016-01257, Paper 2 (“1257 Pet.”)) requesting that we institute *inter partes* review of claims 143–147, 149, 150, 163, and 176–178² of the ’113 Patent. In support of its Petitions, Petitioner proffers a Declaration of Mr. Dean Willis, who has been retained as an expert witness for the instant proceeding. Ex. 1002 ¶ 3; Ex. 1102 ¶ 3. In each proceeding, Focal IP, LLC (“Patent Owner”) filed a Preliminary Response (IPR2016-01254, Paper 8 (“1254 Prelim. Resp.”); IPR2016-01257, Paper 8 (“1257 Prelim. Resp.”)) and a Declaration of Mr. Regis J. Bates, who has been retained as an expert witness for the instant proceeding. IPR2016-01254, Ex. 2001 ¶¶ 1, 2 (“1254 Ex. 2001”); IPR2016-01257, Ex. 2001 ¶¶ 1, 2 (“1257 Ex. 2001”). Upon consideration of the parties’ contentions and supporting evidence, we instituted an *inter partes* review pursuant to 35 U.S.C. § 314, as to the challenged claims of the ’113 Patent. IPR2016-01254, Paper 15 (“1254 Dec. on Inst.”); IPR2016-01257, Paper 15 (“1257 Dec. on Inst.”).

¹ The ’113 Patent was submitted as Exhibit 1101 in IPR2016-01257. We use either exhibit number, i.e., 1001 or 1101, to refer to the ’113 Patent throughout. Petitioner uses different ranges of exhibit numbers so that each exhibit filed in the two proceedings has a unique exhibit number. More specifically, in IPR2016-01254, Petitioner’s exhibits are numbered 1001 through 1060 and in IPR2016-01257, Petitioner’s exhibits are numbered 1101 through 1163. For ease of reference, therefore, we use only the exhibit number and not the proceeding number to refer to Petitioner’s exhibits in these proceedings.

² Claims 38, 65, 143–147, 149, 150, 163, and 176–178 are referred to herein as the challenged claims.

After institution, in each of IPR2016-01254 and IPR2016-01257, Patent Owner filed a Patent Owner Response (IPR2016-01254, Paper 25 (“1254 PO Resp.”); IPR2016-01257, Paper 25 (“1257 PO Resp.”) and an additional Declaration of Mr. Regis Bates in support of its Patent Owner Response (’1254 Ex. 2022; ’1257 Ex. 2022). In only IPR2016-01257, Patent Owner filed a Motion to Amend (Paper 26, “Mot. to Amend”) and additional Declarations of Mr. Regis Bates. ’1257 Ex. 2040 (supporting Motion to Amend); ’1257 Ex. 2070 (supporting Reply to Opposition to Motion to Amend).³ In each of IPR2016-01254 and IPR2016-01257, Petitioner filed a Reply. IPR2016-01254, Paper 34 (“1254 Pet. Reply”); IPR2016-01257, Paper 35 (“1257 Pet. Reply”).⁴ In IPR2016-01257, Petitioner filed an Opposition to Patent Owner’s Motion to Amend (IPR2016-01257, Paper 30 (“Oppn. MTA”) and a Declaration of Dr. Thomas F. La Porta (Ex. 1157) and Patent Owner filed a Reply to Petitioner’s Opposition to the Motion to Amend (IPR2016-01257, Paper 39, “PO MTA Reply”).⁵ In each of IPR2016-01254 and IPR2016-01257, each

³ Patent Owner also submits declaration and deposition testimony from other proceedings, including that of declarants of other Petitioners from other *inter partes* review proceedings. *See, e.g.*, ’1257 Exs. 2026–2030. Patent Owner, however, must include a detailed explanation of the significance of the evidence including, for example, why it should be considered in the instant proceeding. 37 C.F.R. §§ 42.22, 42.23, 42.120. To the extent appropriate, we address Patent Owner’s contentions herein.

⁴ With authorization, Petitioner filed revised Replies in IPR2016-01254 and IPR2016-01257, which we refer to herein unless otherwise noted.

⁵ Subsequent to the oral hearing, Petitioner was authorized to file a supplemental brief in light of the Federal Circuit’s en banc decision in *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017) (“*Aqua Products*”).

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of Petitioner and Patent Owner filed a Motion to Exclude. IPR2016-01254, Paper 41 (“’1254 PO Mot. to Exclude”), Paper 43 (“’1254 Pet. Mot. to Exclude”); IPR2016-01257, Paper 44 (“’1257 PO Mot. to Exclude”), Paper 46 (“’1257 Pet. Mot. to Exclude”). A transcript of the hearing held on September 19, 2017 has been entered into the record of each proceeding. *See, e.g.*, IPR2016-01254, Paper 55 (“Tr.”).⁶

This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). Because the subject matter of the claims and the challenges significantly overlap, we enter this one Final Written Decision in both proceedings. For the reasons that follow, we determine that Petitioner has demonstrated by a preponderance of evidence that the challenged claims of the ’113 Patent are unpatentable. Additionally, in IPR2016-01257, we deny Patent Owner’s Motion to Amend.

B. Related Proceedings

The parties state that the ’113 Patent is the subject of pending lawsuits in the Middle District of Florida, and these lawsuits include assertions against Bright House Networks, LLC, WideOpenWest Finance, LLC, YMax Corporation, Birch Communications, Inc., and T3 Communications, Inc. *See, e.g.*, ’1257 Pet. 2; IPR2016-01257, Paper 4 (’1257 Patent Owner’s Mandatory Notices), 2–3; IPR2016-01257, Paper 6 (’1257 Petitioner’s Updated Notice), 1. Additional petitions have been filed challenging claims of the ’113 Patent (i.e., IPR2016-01260 and IPR2016-01261), and two

IPR2016-01257, Paper 57. Petitioner filed the supplemental brief on October 31, 2017. IPR2016-01257, Paper 59.

⁶ The oral hearings were consolidated in Cases IPR2016-01254 and IPR2016-01257. IPR2016-01254, Paper 46.

IPR2016-01254 and IPR2016-01257
Patent 8,457,113 B2

related patents: (1) U.S. Patent No. 7,764,777 B2 (“the ’777 Patent”), which issued from the parent of the ’113 Patent Application; and (2) U.S. Patent No. 8,155,298 B2 (“the ’298 Patent”), which issued from a continuation of a parent of the ’777 Patent Application.

C. Instituted Grounds of Unpatentability

We instituted on the following grounds of unpatentability (’1254 Dec. on Inst. 29; ’1257 Dec. on Inst. 28):

Challenged Claims	Basis	Reference(s)
38, 65, 143–147, 149, 150, 163, and 176–178	§ 103	U.S. Patent No. 6,353,660 B1 (“Burger,” Ex. 1103) and the knowledge of a person of ordinary skill in the art ⁷
38, 65, 143–147, 149, 150, 163, and 176–178	§ 103	Burger and U.S. Patent No. 6,798,767 B1 (“Alexander,” Ex. 1106) ⁸
38, 65, 143–147, 149, 150, 163, and 176–178	§ 103	U.S. Patent No. 6,683,870 B1 (“Archer,” Ex. 1104) and the knowledge of a person of ordinary skill in the art
38 and 65	§ 103	Archer and Chang

D. The ’113 Patent

The ’113 Patent relates to telephone services. Ex. 1001, 1:23. In the background section, the ’113 Patent explains that the Public Switched

⁷ In IPR2016-01257, with respect to claims 143–147, 149, 150, 163, and 176–178, for grounds involving Burger, we specify that the knowledge of a person of ordinary skill in the art includes a reference, filed as Exhibit 1114.

⁸ In IPR2016-01254, for claims 38 and 65, we further specify that this asserted ground includes Admitted Prior Art (Ex. 1001, 1:42–51).

Telephone Network (PSTN) consists of a plurality of edge switches connected to telephones on one side and to a network of tandem switches on the other. *Id.* at 1:45–47. The tandem switch network allows connectivity between all of the edge switches, and a signaling system is used by the PSTN to allow calling and to transmit both calling and called party identity. *Id.* at 1:48–51.

According to the '113 Patent, at the time of the invention, there were web-based companies managing third-party call control, via the toll-switch network, which allow users to enter call control information through a web portal. *Id.* at 1:34–36. Edge devices such as phones and PBXs that include voice mail, inter-active voice response, call forwarding, speed calling, etc., have been used to provide additional call control. *Id.* at 2:41–44.

The '113 Patent discloses a system for allowing a subscriber to select telephone service features. *Id.* at 1:23–26. Figure 1 of the '113 Patent is reproduced below (with annotations).

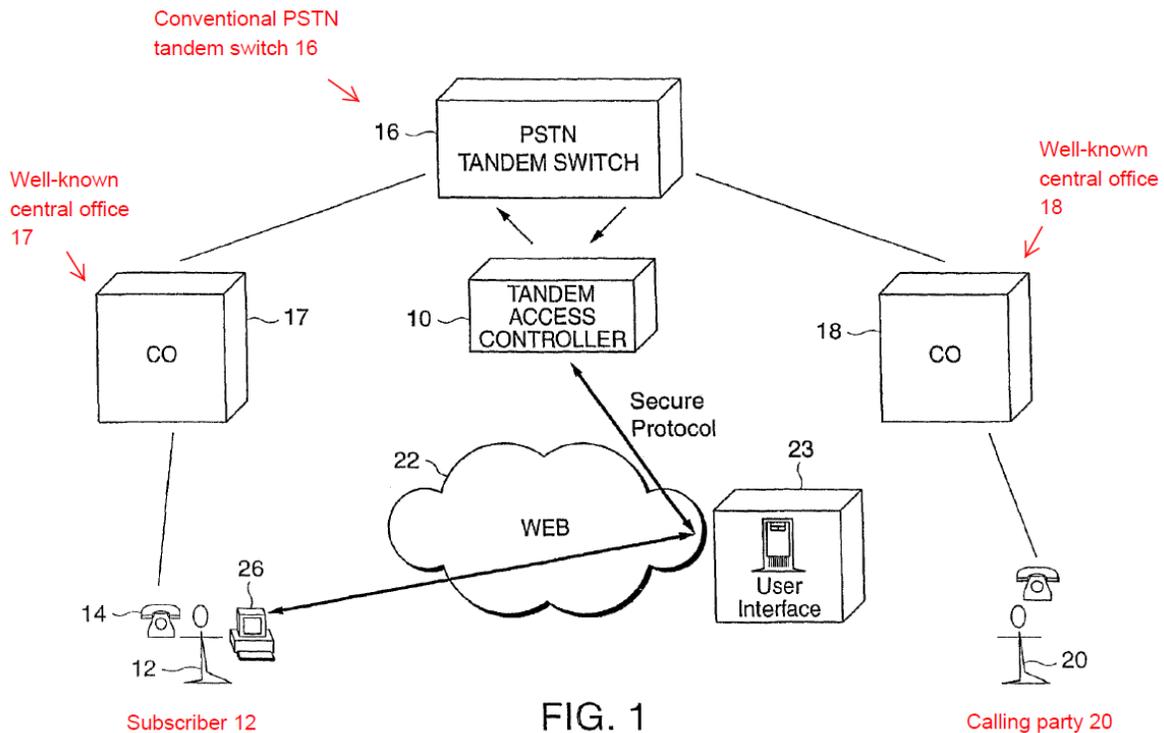


Figure 1 illustrates a tandem access controller connected to an existing PSTN tandem switch.

Annotated Figure 1 illustrates tandem access controller 10 connected to conventional Public Switched Telephone Network (PSTN) tandem switch 16. *Id.* at 4:43, 44. According to the '113 Patent, “[d]etails of the operation of the existing phone network,” including directing of phone calls by “existing” PSTN tandem switch 16 to central offices 17, 18 are further described in a publication incorporated by reference, as well as “numerous books describing the PSTN.” *Id.* at 4:43–54.

The call flow in the network illustrated in Figure 1 with tandem access controller 10 remains the same as that in a conventional network, “except that additional third-party features are applied to the call.” *Id.* at 4:43–47. More specifically, in the network illustrated in Figure 1, a call from calling

party 20 to subscriber's phone 14 is directed to tandem access controller 10, which places a second call, subject to third-party control information, to subscriber 12. *Id.* at 4:55–58. The second call is placed “to the subscriber’s ‘private’ phone number,” without terminating the first call. *Id.* at 4:58–60. When subscriber 12 answers the call, tandem access controller 10 connects the first call to the second call so as to connect calling party 20 to subscriber 12. *Id.* at 4:62–65.

Figure 1 also shows web server 23 within World Wide Web 22, which is connected to tandem access controller 10. *Id.* at Fig. 1. Subscriber 12 specifies third-party call control features via web server 23 and these features are then relayed via World Wide Web 22 to tandem access controller 10. *Id.* at 5:17–25.

E. Illustrative Claims

Claims 38, 65, 143, and 163 are the independent claims challenged in these proceedings. Claims 144–47, 149, 150, and 176–78 depend directly from one of claims 143 or 163. Independent claims 38 and 143 are illustrative of the claimed subject matter and are reproduced below:

38. A method performed by a web enabled processing system including one or more web servers coupled to a call processing system serving as an intelligent interconnection between at least one circuit-switched network and a packet network in a telecommunications network, the circuit-switched network comprising edge switches for routing calls from and to subscribers within a local geographic area and switching facilities for routing calls to other edge switches or other switching facilities local or in other geographic areas, the method for enabling voice communication from a calling party to a called party across both the circuit-switched network and a packet network, the method comprising the steps of:

receiving call data which is associated with a call originated by the calling party via the circuit-switched network, at the call processing system, the calling party using a communications device to originate the call for the purpose of initiating voice communication, the call processing system coupled to at least one switching facility of the circuit-switched network, the call processing system processing the call across the circuit-switched network and the packet network to complete the call to the called party; and

establishing the voice communication between the calling party and the called party after the call is completed, across both the circuit-switched network and the packet network.

Ex. 1001, 15:30–56.

143. A method of providing an intelligent interconnection between a first communication network and a second communication network, comprising:

receiving at a controller call data which is associated with a first call via a first communication network;

accessing control criteria by the controller based upon the call data;

initiating a second call via a second communication network by the controller using the call data and the control criteria, wherein at least one of the first and the second communication networks is a voice over IP (VOIP) network; and

enabling communication between the first call and the second call by the controller.

Ex. 1101, 22:50–63.

F. Patent Owner’s Request to Repanel the Case

In only IPR2016-01257, Patent Owner “requests assignment of a new panel to preside over this trial and to render the Board’s final decision in this case” because the “IPR statutes . . . establish a ‘bifurcated’ IPR process.”

PO Resp. 14–15, n.2. Paneling of cases rests with the Chief Judge on behalf of the Director. *See, e.g., AOL Inc. v. Coho Licensing LLC*, Case IPR2014-00771, slip. op. at 2 (PTAB Mar. 24, 2015)(Paper 12)(informative); *see also* PTAB SOP 1, rev. 14 (May 8, 2015) at 2. Patent Owner’s suggestion was considered by the Chief Administrative Patent Judge, who declined to assign a new panel for this case.

II. CLAIM CONSTRUCTION

A. *Legal Standard*

In an *inter partes* review, we construe claim terms in an unexpired patent 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). Under this standard, claim terms are presumed to have their ordinary and customary meaning, as understood by a person of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

B. *Decisions on Institution*

In the Decisions on Institution, we made determinations regarding the broadest reasonable interpretations of “call data,” “switching facility,” “call processing system,” “control criteria,” and “controller.” ’1254 Dec. on Inst. 7–14; ’1257 Dec. on Inst. 7–12. These determinations are summarized in the table below.

Claim Term	Broadest Reasonable Interpretation Determination in Decision on Institution
“call data”	“Petitioner contends that ‘the plain and ordinary meaning of ‘call data’ at least includes telephone numbers, IPR addresses and/or call requests.’” “[W]e determine that the broadest reasonable interpretation, in light of the ’113 Patent Specification, of the term ‘call data’

	encompasses the examples set forth by Petitioner.” <i>See, e.g.,</i> ’1254 Dec. on Inst. 7 (citing ’1254 Pet. 15).
“switching facility”	“[W]e determine that the broadest reasonable interpretation of the term is any switch in the circuit-switched network.” ’1254 Dec. on Inst. 10.
“call processing system”	“[W]e determine that the broadest reasonable interpretation of the term ‘call processing system’ is any call processing system in the communications network.” <i>Id.</i> at 14.
“control criteria”	“Petitioner also contends that ‘the plain and ordinary meaning of “control criteria” at least includes selection of a telephone number or feature.’” “[W]e determine that the broadest reasonable interpretation, in light of the ’113 Patent Specification, of . . . ‘control criteria’ encompasses the examples set forth by Petitioner.” ’1257 Dec. on Inst. 7 (citing ’1257 Pet. 15).
“controller”	“[W]e determine that the broadest reasonable interpretation of the term ‘controller’ is any controller in the communications network.” ’1257 Dec. on Inst. 12.

C. *The Parties’ Contentions*

Patent Owner provides contentions regarding the broadest reasonable interpretation of “switching facility,” “call processing system,” and “controller.” ’1254 PO Resp. 10–34; ’1257 PO Resp. 10–38. We address the parties’ disputes regarding these terms below.

Patent Owner does not dispute our determinations regarding “call data” or “control criteria” in the Decisions to Institute. *Id.* We, therefore, make no further determinations regarding these terms for these proceedings. Only terms which are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

D. “switching facility”

Each of challenged independent claims 38 and 65 recites “switching facility.” No other challenged claim recites “switching facility,” and none of the challenged claims in these proceedings recites “tandem switch.” Apart from the claims, the term “switching facility” does not appear in the Specification. The term was introduced into the claims by amendment during prosecution of the ’777 Patent Application. Ex. 1008, 67–79.

At institution, we adopted Petitioner’s proposed construction for “switching facility,” as it is consistent with the intrinsic evidence and the term’s plain and ordinary meaning, construing “switching facility” as “any switch in the circuit-switched network.” ’1254 Dec. on Inst. 10; ’1254 Pet. 16–17; Ex. 1008, 87, 87 n.1 (Applicants defined a “switching facility” as “[a]ny point in the switching fabric of converging networks”);

TELECOMMUNICATIONS: GLOSSARY OF TELECOMMUNICATION TERMS, THE FEDERAL STANDARD 1012C, S-35 (1996) (’1254 Ex. 3001, 391) (defining “switching center” and “switching facility” as synonyms that mean “a facility in which switches are used to interconnect communications circuits on a circuit-, message-, or packet-switching basis”); THE NEWTON’S TELECOM DICTIONARY, (15th ed. 1999) (’1254 Ex. 3002) (defining “switching centers” to refer to all five classes of switches in the PSTN)). We rejected Patent Owner’s proposed construction because it would improperly import limitations into the claim. ’1254 Dec. on Inst. 7–10.

In its Response, Patent Owner maintains that “switching facility” is not an edge switch or edge device. ’1254 PO Resp. 1–34. Patent Owner argues that the claim expressly distinguishes that a “switching facility” is not an “edge switch,” and that construing “switching facility” to include “edge

switch” would render the claim terms superfluous. *Id.* at 29–34. In Patent Owner’s view, Applicants of the ’113 Patent “unequivocally disclaimed controllers that applied call control features through an edge switch, or controllers that were themselves an edge device, from the scope of their inventions.” *Id.* at 1–34. We disagree and address below each of Patent Owner’s arguments in turn.

First, based on the evidence before us, we decline to adopt Patent Owner’s proposed claim construction, as it would import limitations—“connecting the Tandem Access Controller (‘TAC’) to a PSTN tandem switch, rather than edge switches and edge devices”—from a preferred embodiment into the claim. *Id.* at 1–2, 9–10, 14–20; Ex. 1001, 2:1–3, 3:29–30, 3:66–4:3. Significantly, neither “Tandem Access Controller” nor “tandem switch” appears in any of the challenged claims. In fact, Patent Owner admits that Applicants used “switching facility” in the claim instead of “tandem switch” to indicate that “switching facility” has broader scope than “tandem switch.” ’1254 Prelim. Resp. 36–37; ’1254 PO Resp. 33–34.

A person of ordinary skill in the art would have understood that these two terms have different meanings. In the context of telecommunication and network communication, the plain and ordinary meanings of these terms are clear—“tandem switch” refers to class 4 switches in the PSTN (’1254 Ex. 2022 ¶ 36), whereas “switching facility” refers to all five classes of switches in the PSTN (Ex. 3002) or “a facility in which switches are used to interconnect communications circuits on a circuit-, message-, or packet-switching basis” (Ex. 3001, 391).⁹ This is consistent with

⁹ A “hybrid” switch has combined class 4 and class 5 switching features. Ex. 1037, 113, Fig. 4-5; Ex. 2002, 159 (cited in ’1254 Ex. 2022 ¶ 38). As

Applicants' definition of "switching facility"—"[a]ny point in the switching fabric of converging networks"—that was submitted with the Amendment that introduced the term. Ex. 2005, 82, 82 n.1. Moreover, "the general assumption is that different terms have different meanings." *Symantec Corp. v. Comput. Assocs. Int'l, Inc.*, 522 F.3d 1279, 1289 (Fed. Cir. 2008).

Importantly, even if we were to interpret "switching facility" as a "tandem switch," it would not affect our analysis below because the language of claims 38 and 65 does not require a *direct* connection between the processing system and the switching facility. Indeed, claim 38 recites "the call processing system *coupled to* at least one *switching facility*." Ex. 1001, 15:47–49 (emphases added).¹⁰

In the instant proceedings, Patent Owner does not present contentions regarding the broadest reasonable interpretation of the term "coupled to." '1254 PO Resp. 1–34; '1257 PO Resp. 1–38.¹¹ It is settled that "coupled to" generally means that direct connection is not required. *See, e.g., Bradford*

noted in our claim construction discussion in our Decision on Institution, a reference relied upon by Patent Owner (Prelim. Resp. 5 (Ex. 2003, 474)) indicates "[i]n a contemporary PSTN, a tandem switch commonly is a hybrid Class 4/5, functioning as both a tandem and a CO (Class 5)" (Ex. 2003, 474–75). This reference is extrinsic evidence *offered by Patent Owner*. Nonetheless, this evidence is not necessary for us to arrive at our determinations herein, but adds contextual background that further supports our analyses.

¹⁰ Similarly, claim 65 recites "the web-enabled processing system designed to be coupled to at least one switching facility." *Id.* at 17:51–53.

¹¹ As set forth in our Order of December 28, 2016, issued with our Decision on Institution, Patent Owner has been cautioned "that any arguments for patentability not raised in the response will be deemed waived."

Co. v. Conteyor N. Am., Inc., 603 F.3d 1262, 1270–71 (Fed. Cir. 2010). We use that plan and ordinary meaning for our analysis.¹²

Additionally, we decline to construe “switching facility” as not an edge switch or edge device, as urged by Patent Owner. As our reviewing court has explained, “each claim does not necessarily cover every feature disclosed in the specification,” and “it is improper to limit the claim to other, unclaimed features.” *Ventana Med. Sys., Inc. v. BioGenex Labs., Inc.*, 473 F.3d 1173, 1181 (Fed. Cir. 2006). Furthermore, the court “has repeatedly cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346–47 (Fed. Cir. 2015); *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (noting that “it is important not to import into a claim limitations that are not a part of the claim”). “[I]t is the *claims*, not the written description, which define the scope of the patent right.” *Williamson*, 792 F.3d at 1346–47; *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (noting that “[i]t is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude”).

Second, we are not persuaded by Patent Owner’s arguments that the claims expressly distinguish that a “switching facility” is not an “edge switch,” and that construing “switching facility” to include “edge switch”

¹² During oral argument in a related proceeding also involving challenges to the ’113 Patent, Patent Owner agreed that the controller need not be connected directly to the tandem access switch. IPR2016-01261, Paper 68, 56:18–20.

would render the claim terms superfluous. '1254 PO Resp. 29–34; '1254 Ex. 2022 ¶¶ 61–65. Patent Owner's arguments fail to appreciate that each of claims 38 and 65 sets forth two separate functional requirements: (1) "edge switches for *routing calls from and to subscribers* within a local geographic area"; and (2) "switching facilities for *routing calls to other edge switches or other switching facilities* local or in other geographic areas." Ex. 1001, 15:35–38, 17:37–40 (emphases added). The evidence before us shows that edge switches can perform the function recited in the first claim element, as well as "routing calls to other edge switches or other switching facilities local or in other geographic areas," as recited in the second claim element. Ex. 1002 ¶ 77. The two terms, "edge switches" and "switching facilities," are not mutually exclusive, but rather "switching facilities" encompasses all five classes of switches in the PSTN, including an edge switch. '1254 Ex. 3001, 391; '1254 Ex. 3002; '1254 Ex. 2005, 82, 82 n.1.

Notably, an ordinarily skilled artisan would have recognized that an edge switch can route calls to other edge switches directly via a direct trunk group or indirectly through a tandem switch, and to other switching facilities (e.g., a tandem switch). Ex. 1002 ¶¶ 38–39, 77, 119, 121; Ex. 1012, Figs. 4-3, 4-4. Mr. Willis' testimony regarding background information on the PSTN (*id.*) cites to the Bell reference, which includes Figure 4-4 reproduced below (with highlighting added).

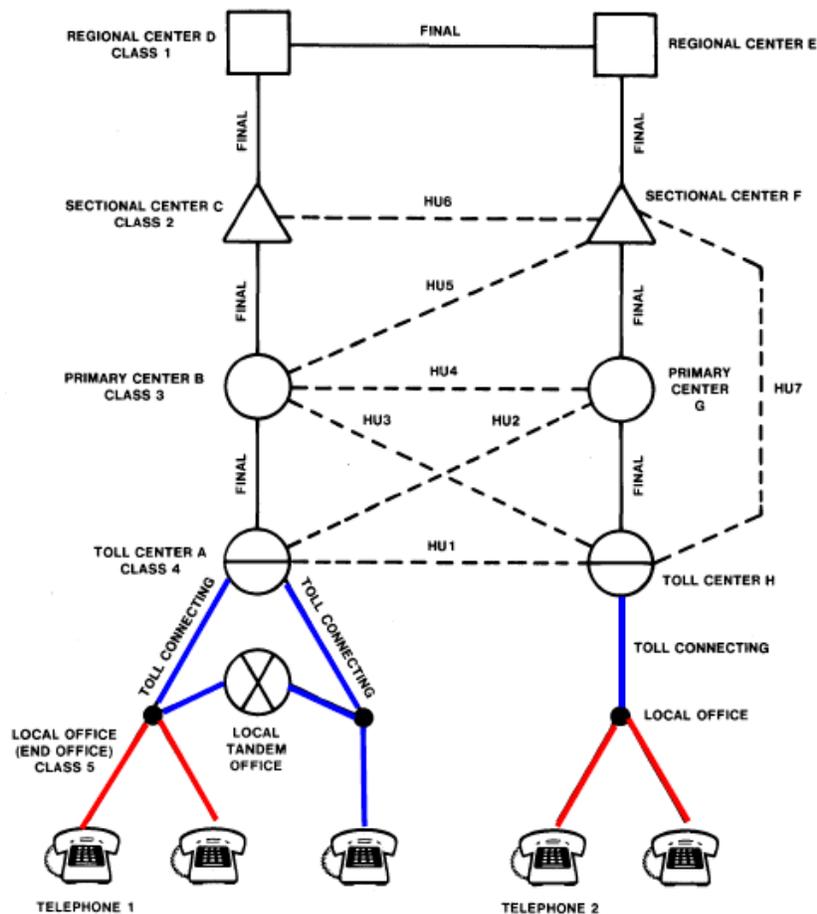


Figure 4-4. The switching hierarchy.

Annotated Figure 4-4 Illustrating the PSTN Switch Hierarchy

As shown in highlighted Figure 4-4 above, an edge switch (a class 5 switch) can route calls from and to users within local geographic area (highlighted in red). An edge switch also can route calls to a tandem switch and other edge switches directly using a direct trunk or indirectly through a tandem switch (highlighted in blue). Ex. 1002 ¶¶ 38–39, 77, 119, 121; Ex. 1012, 110–117, 131–136, 150–152, Figs. 4-3, 4-4.

The aforementioned functional claim elements map to the switches in the PSTN. The first claim element takes into account routing calls from and to users within a local geographic area. For the second claim element, the

claim language “switching facilities for routing calls to *other edge switches*” takes into account routing calls *from an edge switch to other edge switches*. The claim language “switching facility for routing calls . . . to other switching facilities” takes into account routing calls *from an edge switch to a tandem switch*, as well as from a tandem switch to other switches, including edge switches, in the network. Therefore, construing “switching facility” to include “edge switch” would not render the claim terms superfluous.

Patent Owner also attempts to show that an edge switch is not capable of performing the recited functions in the second claim element, arguing that “an edge switch cannot ‘interconnect end office switches to other geographic areas that are *not local* to an end office switch.’” ’1254 PO Resp. 31; ’1254 Ex. 2022 ¶¶ 61–65 (emphasis added). However, that argument is not commensurate with the scope of the claims. For instance, claims 38 and 65 do not require every switching facility to perform that function. In fact, each of claims 38 and 65 uses the term “or” rather than “and”—“switching facilities for routing calls to other edge switches *or* other switching facilities *local or* in other geographic areas.” Ex. 1001, 15:35–38, 17:37–40 (emphasis added). Patent Owner does not identify, nor can we discern, a reason to read “or” as “and.” As discussed above, an edge switch is capable of routing calls to other edge switches and other switching facilities within local geographic areas. Ex. 1002 ¶¶ 38–39, 77, 119, 121; Ex. 1012, 106–113, Figs. 4-3, 4-4.

In light of the foregoing, Patent Owner’s arguments (’1254 PO Resp. 29–34) and Mr. Bates’ testimony (’1254 Ex. 2022 ¶¶ 61–65) that each of claims 38 and 65 expressly distinguishes that a “switching facility” is not an

“edge switch,” and that construing “switching facility” to include “edge switch” would render the claim terms superfluous, are unavailing.

Third, we are not persuaded by Patent Owner’s argument or its expert’s testimony that the Specification sets forth an unmistakable disclaimer that “switching facility” is not an edge switch or edge device. ’1254 PO Resp. 1–2, 8–19, 28–34. There is a presumption that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). To overcome this presumption, the patentee must “clearly set forth” and “clearly redefine” a claim term away from its ordinary meaning. *Bell Atlantic Network Servs., Inc. v. Covad Commc’ns Grp., Inc.*, 262 F.3d 1258, 1268 (Fed. Cir. 2001). The disavowal must be “unmistakable” and “unambiguous.” *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1322 (Fed. Cir. 2012).

Claims 38 and 65 do not recite “tandem switch,” but rather “switching facility.”¹³ Our construction for “switching facility” is consistent with its plain and ordinary meaning, encompassing all five classes of switches in the PSTN, including edge switches. ’1254 Ex. 3001, 391; ’1254 Ex. 3002; Ex. 1002 ¶¶ 53–55.¹⁴

Turning to the Specification, the term “switching facility” is not found anywhere in the Specification. Accordingly, there is not much, if anything, intrinsically in the Specification that explicitly defines or informs a person of ordinary skill in the art at the time of the invention the meaning of “switching facility.” As discussed above, Patent Owner, in fact, admits that

¹³ Claims 143–147, 149, 150, 163, and 176–178 do not recite either “tandem switch” or “switching facility.”

¹⁴ None of the challenged claims recites “tandem access controller.”

Applicants introduced the term “switching facility” into the claims by Amendment to indicate that “switching facility” has *broader* scope than “tandem switch.” ’1254 Prelim. Resp. 36–37; ’1254 PO Resp. 33–34; ’1254 Ex. 2005, 82, 82 n.1.

We note that Patent Owner’s arguments and Mr. Bates’ testimony rely on the discussions in the Specification regarding *both edge switches and edge devices* (Ex. 1001, 1:37–40, 1:59–67, 2:40–54), to support their assertion that Applicants disparage the application of call control features at an *edge switch*. ’1254 PO Resp. 13–15; ’1254 Ex. 2022 ¶¶ 46–48. In any event, the Specification clearly states that connecting a controller at a tandem switch, rather than an *edge switch*—to eliminate the problems regarding the provision of call features through the local service telephone company (telco) business office—is *a preferred embodiment*. Ex. 1001, 2:1–3 (“A preferred embodiment of the inventive system described herein connects at the tandem, thereby eliminating these problems.”), 3:28:–29 (“In one embodiment, the system includes a processor, referred to herein as a tandem access controller.”), 3:66–4:1 (“FIG. 1 illustrates the tandem access controller (TAC) in one embodiment of the present invention connected to the existing PSTN tandem switch.”).

Furthermore, the ’113 Patent Specification describes other embodiments. For instance, the Specification explains that in one embodiment the *web-enhanced services* “coexist with and overlay the local phone service at the local level.” *Id.* at 3:41–57. As Mr. Bates confirms, edge switches “serve end users through local loop connections,” and “interconnect subscriber lines within a local area.” ’1254 Ex. 2022 ¶ 38; ’1254 Ex. 2002, 159; ’1254 Ex. 2003, 102.

The Specification also does not support Patent Owner’s position regarding *edge devices*. ’1254 PO Resp. 13–16; ’254 Ex. 2022 ¶¶ 46–50. The allegedly disparaging statements are directed to only *certain types of edge devices*, such as phones, PBXs, and edge devices that provide extremely limited features. Ex. 1001, 1:34–37, 2:37–51. Therefore, if there is a disclaimer, such a disclaimer, at most, is limited to those prior art edge devices discussed specifically in the Specification.

More importantly, recognizing the advantages of a preferred embodiment over the prior art systems does not amount to an unmistakable disclaimer. As our reviewing court has explained, “patentees [are] not required to include within each of their claims all of [the] advantages or features described as significant or important in the written description.” *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1331 (Fed. Cir. 2004). “An invention may possess a number of advantages or purposes, and there is no requirement that every claim directed to that invention be limited to encompass all of them.” *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1370 (Fed. Cir. 2003).

Here, claim 38 is directed to a method performed by a *web-enabled* processing system including one or more *web servers* coupled to a call processing system with access to two networks and the call processing system is coupled to a switching facility. Claim 65 is directed to a communication network comprising a *web-enabled* processing system including one or more *web servers* and the web-enabled processing system is coupled to at least one switching facility. In the “web-enhanced services” embodiments, the Specification does not describe requiring a controller to be connected to a tandem switch *directly*. Ex. 1001, 3:41–57. Even in cases

where the specification describes only a single embodiment, our reviewing court consistently has not construed the claim as being limited to that embodiment. *Thorner v. Sony Computer Entm't Am. L.L.C.*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (holding that it is not enough that the only embodiment, or all of the embodiments, contain a particular limitation to limit a claim to that particular limitation.); *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004).

In light of the foregoing, we do not agree with Patent Owner that the Specification sets forth an unmistakable disclaimer.

Finally, we also are not persuaded by Patent Owner's argument that the prosecution history confirms the alleged disclaimer set forth in the Specification. PO Resp. 19–27; '1254 Ex. 2022 ¶¶ 55–59. As an initial matter, no unmistakable disclaimer is found in the Specification for the reason stated above. Therefore, Patent Owner's assertion that Applicants did not rescind the clear disclaimer is misplaced.

Further, in the Institution Decision, we rejected Patent Owner's argument that the prosecution history makes clear that “switching facility” cannot include an edge switch. '1254 Dec. on Inst. 9–10. We noted that the remarks made during prosecution are equivocal, and do not persuade us of a disavowal or disclaimer of the scope of the term “switching facility” to exclude an edge switch. *Id.* For example, the portion of the prosecution history that Patent Owner cites includes a footnote for defining a “switching facility” as:

Any point in the switching fabric of converging networks, also referred to in industry as a signal transfer point (STP), signal control point (SCP), session border controller (SBC), gateway, access tandem, class 4 switch, wire center, toll office, toll center,

PSTN switching center, intercarrier connection point, trunk gateway, hybrid switch, etc.

'1254 Ex. 2005, 82, 82 n.1.

The above description does not explain that a switching facility excludes an edge switch. Indeed, “[a]ny point in the switching fabric of converging networks” appears broad. As Petitioner points out ('1254 Reply 23), these examples provided by Applicants include “a combination Class IV/Class V switch (hybrid switch), devices that only receive signaling (STP, SCP), and devices that would be located on packet networks and never on the PSTN (SBC).” '1254 Ex. 2002, 159; '1254 Ex. 1008, 87 n. 1.

Patent Owner counters that we “misread” the Applicants’ definition, suggesting that the Applicants’ remarks should be read without that definition. '1254 PO Resp. 25–27. Relying on Mr. Bates’ testimony, Patent Owner argues the Applicants’ remarks “make clear that they have always consistently distinguished edge switches and tandem switches throughout the prosecution history.” *Id.*; '1254 Ex. 2022 ¶¶ 58–59.

However, as discussed above, the Applicants’ definition, which is a part of the intrinsic evidence in this record, is consistent with the term’s plain and ordinary meaning ('1254 Ex. 3001, 391; '1254 Ex. 3002) and the usage of the term in claims 38 and 65 (Ex. 1001, 12:30–56), as well as the general knowledge of a person with ordinary skill in the art (Ex. 1002 ¶ 77). Mr. Bates’ testimony ('1254 Ex. 2022 ¶¶ 58–59), which is extrinsic evidence, merely repeats Patent Owner’s arguments. Moreover, “extrinsic evidence may be used only to assist in the proper understanding of the disputed limitation; it may not be used to vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or file history.” *Bell Atl. Network Servs. v. Covad Commc’ns*

Grp., 262 F.3d 1258, 1269 (Fed. Cir. 2001). Our reviewing court also has explained that “extrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence.” *Phillips*, 415 F.3d at 1318.

In any event, the portions of the prosecution history relied upon by Patent Owner are ambiguous, and do not amount to an unmistakable disclaimer that limits the scope of “switching facility” to *exclude* an edge switch. Notably, Patent Owner and Mr. Bates (’1254 PO Resp. 25–27; ’1254 Ex. 2022 ¶ 58) cite to the following Applicants’ remarks for support:

The PSTN is a configuration of *switching facilities for routing calls from calling parties to called parties*, comprising a plurality of end office switches (also referred to as central office switches or edge switches (e.g., a class 5 switch)) and a plurality of *interconnected switching facilities (also referred to as tandem switches)*. The end office switches connect calling parties to called parties only within a local geographic area. The *tandem switching facilities* route calls received via end office switches or other tandem switching facilities to called parties within other geographic areas (national or international, beyond the local geographic area that a subscriber is in). Typically, a telephone call involves an originating end office switch, a plurality of tandem switches, and a terminating end office switch.

’1254 Ex. 2005, 82 (emphases added).

The phrase “switching facilities for routing calls from calling parties to called parties” in the first sentence makes clear that “switching facilities” encompasses edge switches. As discussed above, edge switches, not tandem switches, route calls from and to users. Ex. 1002 ¶ 39; Ex. 1012. The above paragraph also makes clear that “switching facilities” encompasses tandem switches, referring to this type of “switching facilities” sometimes, as

“interconnected switching facilities” and “tandem switching facilities.” Applicants’ usage of “switching facilities” in this paragraph is consistent with our claim construction, and the term’s plain and ordinary meaning, encompassing all five classes of switches in the PSTN, including edge switches. ’1254 Ex. 3001, 391; ’1254 Ex. 3002; Ex. 1002 ¶ 39. Therefore, the Applicants’ remarks do not support Patent Owner’s position that “switching facilities” excludes edge switches.

Patent Owner also maintains that Applicants distinguished their claimed controller from Schwab, the prior art asserted by Examiner. ’1254 PO Resp. 20–27. As support, Patent Owner cites to the record of Applicants’ in-person interview with the Examiner that states:

Applicant explained the differences between Schwab et al and their apparatus. The major difference being that the subscriber is allowed to connect to *a tandem access switch directly through a tandem access controller* without any modification to the network. Applicant is going to file an RCE stressing this difference.

’1254 PO Resp. 21 (citing Ex. 2005, 110) (emphasis added by Patent Owner). However, notwithstanding this agreement between Applicants and Examiner during the prosecution history of the ’777 patent, the claims at issue here in the ’113 Patent do not recite that limitation. Neither a “tandem access controller” nor a “tandem switch” is recited in any of the challenged claims. Therefore, the purported disclaimer in the prosecution history of the ’777 patent regarding Schwab does not apply to the challenged claims. *See Ventana*, 473 F.3d at 1182 (holding that the alleged disclaimer made with respect to another claim limitation did not apply to the assert claims that used different claim language).

Upon consideration of the entire trial record, we maintain that the remarks made during prosecution are equivocal, and do not persuade us of a disavowal or disclaimer that limits the scope of “switching facility” to exclude an edge switch.

In light of the foregoing, we are not persuaded by Patent Owner’s argument and Mr. Bates’ testimony that Applicants of the ’113 Patent “unequivocally disclaimed controllers that applied call control features through an edge switch, or controllers that were themselves an edge device, from the scope of their inventions.” ’1254 PO Resp. 1–34; ’1254 Ex. 2022 ¶¶ 46–66. For the reasons stated above, in light of the Specification, the relevant prosecution history, and the knowledge of an ordinarily skilled artisan, we decline to construe “switching facilities” to exclude “edge switches.”

For this Decision, we discern no reason to modify our claim construction set forth in the Institution Decision with respect to “switching facility,” construing the term as “any switch in the circuit-switched network,” which, as discussed above, is consistent with its plain and ordinary meaning as understood by a person of ordinary skill in the art in the context of the ’113 Patent (’1254 Ex. 3001, 391; ’1254 Ex. 3002; Ex. 1002 ¶ 77, the usage of the term in the claim (Ex. 1001, 12:30–59), and the intrinsic evidence (Ex. 2005, 82, 82 n.1).

E. “call processing system”

Each of challenged independent claims 38 and 65 recites “call processing system.” As we noted in the Institution Decision (’1254 Dec. on Inst. 10–11), Patent Owner does not dispute that the plain and ordinary meaning of this term does not exclude an edge device or a system that

communicates with an edge device. Nonetheless, Patent Owner, relying on its disclaimer arguments presented in connection with the term “switching facility,” alleges that a “call processing system” cannot apply call control features through an edge switch, or be an edge device. ’1254 PO Resp. 34.

We have considered and addressed Patent Owner’s disclaimer arguments and the evidence before us. As discussed above, we are not persuaded by those disclaimer arguments, and decline to import limitations from a preferred embodiment into the claim. *Williamson*, 792 F.3d at 1346–47. Accordingly, we maintain that the broadest reasonable interpretation of “call processing system” does not exclude an edge device or a system that applies call control features through an edge switch. ’1254 Dec. on Inst. 14.

F. “controller”

Each of challenged independent claims 143 and 163 recites “controller,” although in claim 163 the only recitation of “controller” is in the preamble. Regarding recitation of “controller” in the preamble, Petitioner does not dispute that “controller” is limiting and provides contentions showing teaching of the controller in the asserted art. ’1257 Pet. 20–23, 43–44.

Patent Owner alleges that a “controller” cannot be an edge device or a system that applies call control features through an edge switch, relying on its disclaimer arguments. ’1257 PO Resp. 37–38. Patent Owner’s disclaimer arguments regarding claims 143 and 163 challenged in IPR2016-01257 are substantially the same as those we addressed fully *supra* Section II.D with respect to claims 38 and 65 challenged in IPR2016-01254. *Compare* ’1257 PO Resp. 1–38 *with* ’1254 PO Resp. 1–34. Patent Owner modifies its arguments slightly in its discussion claims 143 and 163, in

particular, to adjust for the recitation of “controller,” rather than “call processing system.” *Id.*

Patent Owner, however, does not take into account that independent claims 143 and 163 recite only “controller,” and not “tandem access controller,” “tandem switch,” “switching facility,” or a direct connection between any such devices. *Id.* Indeed, in another proceeding also involving challenges to the ’113 Patent, Patent Owner acknowledges that claim 163 is broader than other claims of the ’113 Patent. *See* IPR2016-01261, Paper 30, 47 n. 1.

Once again, Patent Owner attempts to import limitations from a preferred embodiment into the claim. *Williamson*, 792 F.3d at 1346–47. The Specification clearly discloses that connecting a controller *directly* to a tandem switch is *a preferred embodiment*. Ex. 1101, 1:65–66, 3:7:–8, 4:15–19. In other embodiments that disclose web-enhanced services, the Specification does not disclose such a connection. *Id.* at 3:29–43.

We have considered and addressed Patent Owner’s disclaimer arguments and the evidence before us. As discussed above, we are not persuaded by those disclaimer arguments. In light of the claim language and Specification, we determine that the plain and ordinary meaning of “controller” does not require a controller that is connected *directly to a tandem switch*.

III. ANALYSIS

A. Principles of Law

A patent 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: (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. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). Petitioner’s declarant, Mr. Willis testifies that a person with ordinary skill in the art “would have been an engineer with at least a bachelor’s degree in electrical engineering, computer science, or a related field, or equivalent experience of at least three years of working in [the] field of telecommunications or networking.” Ex. 1002 ¶ 21; Ex. 1102 ¶ 21. Mr. Bates, Patent Owner’s declarant, agrees with this assessment. ’1254 Ex. 2022 ¶ 22; ’1257 Ex. 2022 ¶ 22.

Therefore, we adopt Mr. Willis’ assessment of a person with ordinary skill in the art. We further note that the prior art of record in the instant proceeding (e.g., the Bell System reference) reflects the appropriate level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1354–55 (Fed. Cir. 2001) (“the prior art itself reflects an appropriate level” of ordinary skill in the art).

C. Obviousness

Based on Petitioner's contentions in the Petitions, we instituted on grounds that the challenged claims are unpatentable, under 35 U.S.C. § 103, as obvious (1) over Burger in combination with the knowledge of a person of ordinary skill in the art¹⁵ or Alexander¹⁶ (Burger grounds); and (2) as obvious over Archer and the knowledge of a person of ordinary skill in the art (Archer grounds).¹⁷ '1254 Dec. on Inst. 29; '1257 Dec. on Inst. 28. For each asserted prior art combination, Petitioner explains how the combination describes all of the claim limitations and articulates a reason to combine the prior art teachings, citing to Mr. Willis' testimony for support. '1254 Pet. 5–14, 17–67 (citing 1002); '1257 Pet. 5–13, 16–70 (citing Ex. 1102).

Relying on Mr. Bates' testimony, Patent Owner opposes and advances several arguments including that the prior art combinations do not teach a processing system or controller coupled to at least one switching facility. '1254 PO Resp. 40–62 (citing '1254 Ex. 2022); '1257 PO Resp. 48–53 (citing '1257 Ex. 2022).

We begin our discussion below with an overview of asserted prior art including Burger, Alexander, Archer, Chang, and the Admitted Prior Art, and then we address the parties' contentions in turn.

¹⁵ In IPR2016-01257, with respect to claims 143–147, 149, 150, 163, and 176–178, for grounds involving Burger, we specify that the knowledge of a person of ordinary skill in the art includes a reference, submitted as Exhibit 1114.

¹⁶ In IPR2016-01254, for claims 38 and 65, we further specify that the ground of obviousness based on the combination of Burger and Alexander also includes the Admitted Prior Art (Ex. 1001, 1:42–51)

¹⁷ In IPR2016-01254, for claims 38 and 65, we further institute on the ground of obviousness based on the combination of Archer and Chang.

1. Overview of Burger

Burger is directed to a network with an enhanced services platform (ESP) that implements methods for voice call screening. Ex. 1003, 4:1–3.¹⁸

Figure 1 of Burger is reproduced below.

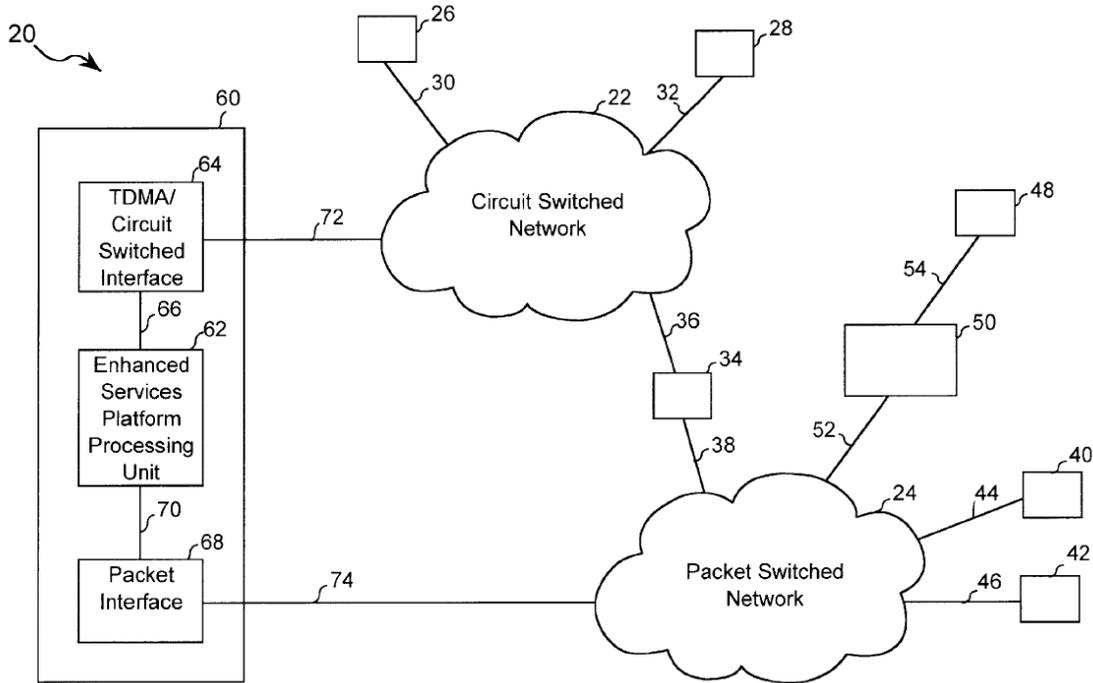


FIG. 1

Figure 1 is a block diagram of a network including an ESP.

In ESP 60 is ESP processing unit 62 connected to circuit switched interface 64 and packet interface 68. *Id.* at 4:3–5. Circuit switched interface 64 connects ESP 60 to circuit switched network 22. *Id.* at 4:9–12. Packet interface 68 connects ESP 60 to packet switched network 24. *Id.* Packet switched network 24 is an internet. *Id.* at 7:2–3.

¹⁸ Burger was submitted as Exhibit 1103 in IPR2016-01257. We use either exhibit number, i.e., 1003 or 1103, to refer to Burger throughout.

Figure 5 of Burger provides further details regarding ESP 60 and is reproduced below.

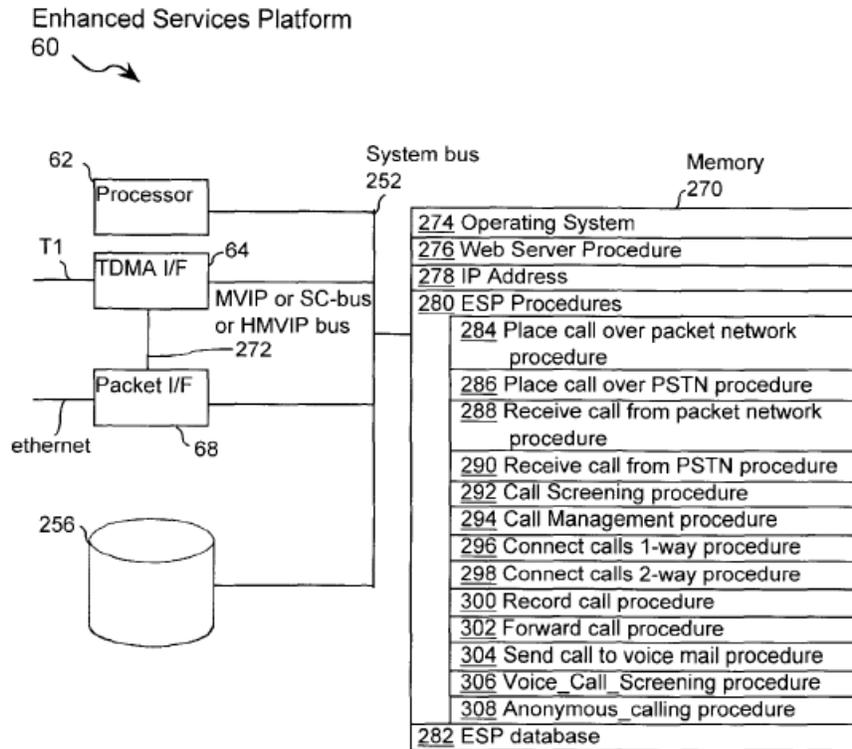


FIG. 5

Figure 5 is a block diagram of the ESP showing memory storing procedures implementing the method of call screening.

As shown in Figure 5, ESP 60 includes system bus 252, which connects ESP processing unit 262, circuit switched (Time Division Multiple Access (TDMA)) interface 64, packet interface 68, disk drive 256, and memory 270. *Id.* at 8:48–54. Memory 270 stores instructions that are executed by ESP processing unit 62. *Id.* at 8:54–56. These instructions include web server procedure 276 that causes ESP 60 to act as a web server with respect to packet-based network 24 and provides a user interface to packet-based network 24. *Id.* at 8:59–62. The instructions also include procedures for placing a call over the packet network (*id.* at 9:2–4), placing

Protocol (IP). *Id.* at 2:60–65. LANs 20 are connected to Internet 40, which is an IP network. *Id.* at 3:8–11. LANs 20 also are coupled to central offices 62 through gateways 64. *Id.* at 3:34–36. As shown in Figure 1, central offices 64 are within PSTN 60. *Id.* at Fig. 1.

Voice over IP (VoIP) is technology that allows an IP network to transmit telecommunications. *Id.* at 3:64–4:1. IP telephony devices 22–24 encapsulate a user’s voice into IP packets so that the voice can be transmitted over LANs 20 and Internet 40. *Id.* at 4:1–4. Call manager 26a controls IP telephony devices 22–24. *Id.* at 4:26–27. Call manager 26 checks availability and then instructs the originating telephony device to set up an audio stream with the called telephony device. *Id.* at 4:42–46.

3. *Overview of the SS7 Paper*²⁰

Petitioner additionally submits the SS7 Paper, which teaches “[t]he current set of protocol standards for *network signaling* is known as the Signaling System No. 7 (SS7).” Ex. 1114, 1. Figure 10 of the SS7 Paper, reproduced below.

²⁰ Abdi R. Modarressi and Ronald A. Skoog, An Overview of Signaling System No. 7, 80 Proceedings of the IEEE 590 (1992) (“SS7 Paper,” Exhibit 1114).

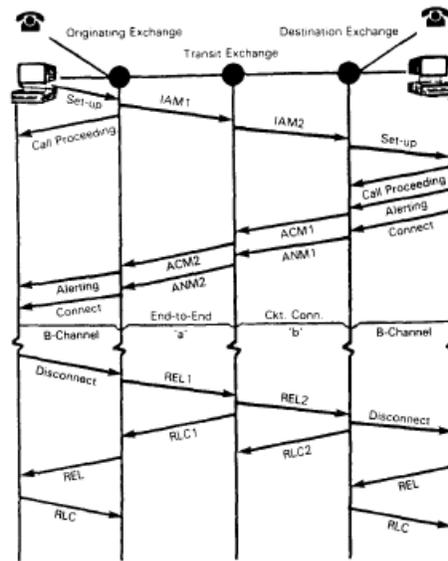


Fig. 10. ISDN-UP call setup example.

Figure 10 illustrates a Call Setup

As shown in Figure 10, a call is received from a caller by an “Originating Exchange,” is transmitted via a “Transit Exchange” (tandem switch), and is connected via a “Destination Exchange,” to the called party’s telephone. Ex. 1114, 10.

4. Overview of Archer

Archer is directed to transmitting simultaneously call notifications to communication devices, such as a telephone, pager, and computer. Ex. 1004 Abstract.²¹ Figure 2 of Archer is reproduced below.

²¹ Archer was submitted as Exhibit 1104 in IPR2016-01257. We use either exhibit number, i.e., 1004 or 1104, to refer to Archer throughout.

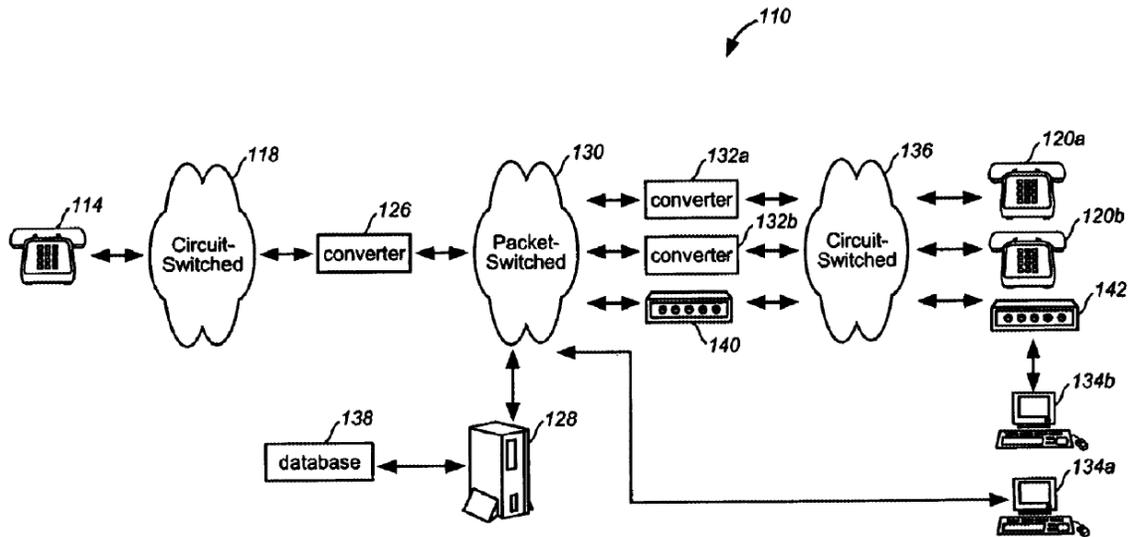


FIG. 2

Figure 2 is a communication system.

As shown in Figure 2 above, telephone 114 is connected to circuit-switched network 118. *Id.* at 4:66–67. Circuit-switched network 118 is coupled to converter 126, which converts telephone signals into packets. *Id.* at 5:32–34. The packets are formatted in accordance with IP and routed through packet-switched network 130. *Id.* at 5:41–46. Packet-switched network 130 is the Internet. *Id.* at 6:3–11. Converters 132a and 132b are coupled to packet-switched network 130 to convert digital packets into signals which can be transmitted across circuit-switched network 136. *Id.* at 8:18–21. In the preferred embodiment, converters 126 and 132 are interchangeable depending on which device 114, 120, or 134 initiates the call and where the call is routed. *Id.* at 8:23–26.

Server processor 128 queries database 138 using the number generated at telephone 114 to look up the forwarding phone numbers

assigned to the user. *Id.* at 6:33–37. Server processor 128 will then transmit the packets simultaneously to each of destinations 132, 134. *Id.* at 7:3–4.

5. Overview of Chang

Chang discloses a system that has a web browser interface for allowing subscribers to control call features. Ex. 1005, Abstract, 4:45–58, 7:9–16.²² Figure 1 of Chang is reproduced below.

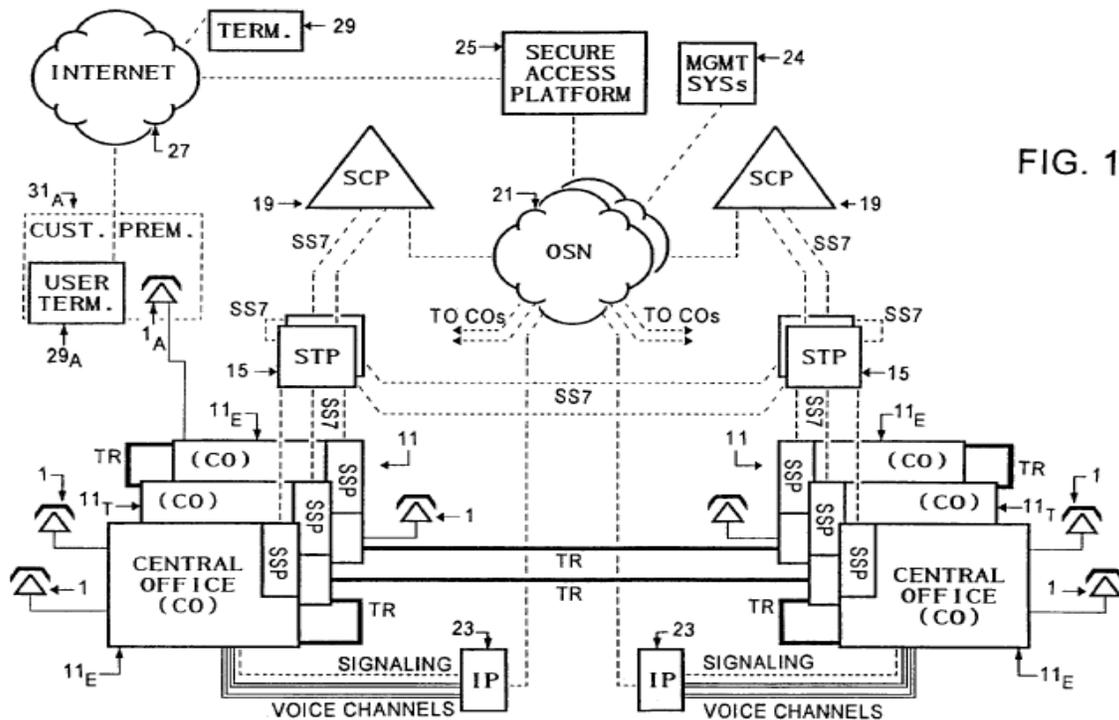


Figure 1 shows a telephone network.

Figure 1 of Chang illustrates a telephone network that includes one or more tandem switching offices (11_T) that provide connections between end offices and/or between other tandem offices. *Id.* at 8:2–5. Secure access platform 25 allows the subscribers to control their call features using a Web browser through the Internet, and provides user control selections to the

²²Chang was submitted as Exhibit 1105 in IPR2016-01257. We use either exhibit number, i.e., 1005 or 1105, to refer to Chang throughout.

tandem switches (11_T) through Service Control Point (SCP) 19 and Signaling Transfer Point (STP) 15 using Signaling System 7 (SS7) signaling. *Id.* at Abstract, 8:48–9:7, 11:9–12:17, 12:64–13:27.

6. *Overview of the Admitted Prior Art*

According to the '113 patent, it was known at the time of the invention that the PSTN “consists of a plurality of edge switches connected to telephones on one side and to a network of tandem switches on the other.” Ex. 1001, 1:45–47. The tandem switch network allows connectivity between all of the edge switches, and a signaling system is used by the PSTN to allow calling and to transmit both calling and called party identity. *Id.* at 1:47–51. People had used various means for limiting interruptions due to the telephone, such as voice mail systems. *Id.* at 1:30–32. There were web-based companies managing third party call control, via the toll-switch network, which allow users to enter call control information through a web portal. *Id.* at 1:34–37.

7. *Claims 38 and 65*

a. *Burger Grounds*

Petitioner takes the position that the limitations recited in claims 38 and 65 are taught or suggested by Burger in combination with the knowledge of a person of ordinary skill in the art or Alexander. '1254 Pet. 19–47. For instance, with respect to the “web-enabled processing system including one or more web servers,” recited in each of claims 38 and 65, Petitioner contends that Burger’s packet-switched network 24 is the Internet, which uses Internet Protocol (IP) to route data from its source to its destination. *Id.* We are persuaded by Petitioner’s contentions as they are consistent with the evidence cited therein. *See, e.g.,* Ex. 1003, 2:6–8, 4:57–

58, 7:2–3; *see also id.* at 1:9–20 (explaining that in the Internet, a collection of packet-switching networks are interconnected by gateways that use IP). For instance, Mr. Willis testifies that it was known that subscribers could use a web browser (on a web server) to configure services and these configurations would be used when calls were placed. Ex. 1002 ¶ 55. Mr. Willis also testifies that Burger’s ESP 60 is “web-enabled” because it has web server procedure 276 that causes ESP 60 to act as a web server and provide a user interface to the Internet. 1002 ¶¶ 110–13 (citing Ex. 1003, 8:58–62, Fig. 5). We credit Mr. Willis’ testimony as it is consistent with Burger’s teaching, for example, that “web server procedure 276” “causes the ESP 60 to act as a web server” “and to provide an user interface.” Ex. 1003, 8:58–62; *see also id.* at Fig. 5 (illustrating procedures stored in memory that are used for call screening including web server procedure 276.)

Petitioner shows the Burger’s teachings encompass examples of “web-enabled” set forth in the ’113 Patent Specification which are within the scope of claims 38 and 65.²³ Patent Owner does not dispute Petitioner’s showing that each of the combinations of Burger with the knowledge of a person of ordinary skill in the art or Burger and Alexander teaches the “web-enabled” features recited in claims 38 and 65. ’1254 PO Resp. 40–56.

²³ As noted in the Decision on Institution (Dec. on Inst. 19), the ’113 Patent Specification sets forth examples of systems that are web-enabled including: (1) systems that allow users to enter information through “a web portal” (Ex. 1001, 1:36–37, 41); and (2) “TAC 10 or other interface system” (*id.* at 5:38–39) that allows a user to add or change features by accessing a “public internet portal” (*id.* at 5:38–44) and/or “[a] user-friendly web page” (*id.* at 5:44). Patent Owner does not dispute our analysis regarding Petitioner’s claim construction contentions for “web-enabled” in the Decision on Institution. *See generally* ’1254 PO Resp.

Accordingly, we are persuaded by Petitioner’s analysis that Burger alone or in combination with the knowledge of one of ordinary skill in the art teaches the “web-enabled processing system including one or more web servers,” recited in each of claims 38 and 65.

The disputes between the parties pertain to two features: (1) the call or web-enabled processing system “coupled to at least one switching facility of the circuit-switched network,”²⁴ recited in claims 38 and 65; and (2) “establishing the voice communication . . . after” the call is completed,²⁵ recited in claims 38 and 65. ’1254 PO Resp. 48–56.

We first turn to the call or web-enabled processing system “coupled to at least one switching facility of the circuit-switched network,” recited in claims 38 and claim 65 (Ex. 1001, 15:47–49, 17:51–53). Petitioner contends that Burger’s ESP 60 is coupled to central office 94, which is a switching facility in the PSTN. Pet. 33–35 (citing *e.g.*, Ex. 1003 4:24–65, Fig. 2; Ex. 1002 ¶¶ 45–51, 151–56). Consistent with Petitioner’s contentions and Mr. Willis’ testimony, which we credit (*id.*), Burger teaches “circuit switched network 22 is the PSTN that includes central office switches (Telco CO) 92, 94 and 96.” Ex. 1003, 4:29–31. Also consistent with Petitioner’s contentions and Mr. Willis’ testimony, which we credit (Pet. 33–35; Ex. 1002 ¶¶ 45–51, 151–56), Burger teaches “ESP 60 is connected to the circuit switched network 22 via interconnection 100,” which includes “a set of DID lines from the Central office switch 94 to the ESP 60.” Ex. 1003, 4:34–37;

²⁴ Claim 38 recites “call processing system,” and claim 65 similarly recites “web-enabled processing system.” Ex. 1001, 15:47–49, 17:51–53.

²⁵ Claim 38 recites “after the call has been completed,” and claim 65 similarly recites Ex. 1001, 15:53–56, 17:58–62.

see also id. at Fig. 2 (illustrating interconnection 100 between ESP 60 and Central Office switch 94).

Regarding this same recitation, Petitioner also points to Burger's teaching of ESP 60 itself, in particular its TDMA/circuit switched interface 64 and packet interface 68. '1254 Pet. 31–33 (citing *e.g.*, Ex. 1003, 4:1–15, 4:19–22, 5:3–9, Figs. 1, 2; Ex. 1002 ¶¶ 142–50). Consistent with Petitioner's contentions, Burger teaches that interface 68 "can be a CISCO AS5300 Voice Gateway" (Ex. 1003, 4:19–22) and TDMA/circuit switched interface 64 is connected to circuit switched network 22 by communication medium (*e.g.*, T1 line) 72 (*id.* at 4:3–18, Fig. 1).

Additionally, for the call or web-enabled processing system "coupled to at least one switching facility of the circuit-switched network," recited in claims 38 and claim 65, Petitioner points to Burger in combination with the knowledge of a person of ordinary skill in the art ('1254 Pet. 35–37) or the combined teachings of Burger and Alexander ('1254 Pet. 38–40).

Regarding Burger in combination with the knowledge of a person of ordinary skill in the art, Petitioner argues that coupling ESP 60 to a tandem switch in the PSTN would have been nothing more than the combination of known elements using known methods (*e.g.*, the known global SS7 standard transmitted through SS7 signaling channels and signaling control points (SCPs)) to achieve predictable results. *Id.* at 35–37 (citing *e.g.*, Ex. 1002 ¶¶ 157–68; Ex. 1005, Fig. 1, 9:28–33, Ex. 1006, 5:42–45, Fig. 1; Ex. 1008, 87, Ex. 1010, 1–4, Fig. 1). Regarding combined teachings of Burger and Alexander, Petitioner points to Alexander's teaching of gateway 64 that converts voice over IP to SS7 for calls from LAN 20 to PSTN 60, or performs the reverse conversion for transmission from PSTN 60 to LAN 20.

Id. at 38–40 (citing Ex. 1006, Abstract, 5:26–67, Fig. 1, 5A; Ex. 1002 ¶¶ 170–73). Petitioner also points to Alexander’s teaching of coupling call manager 26 to the circuit-switched network, which includes Dallas Central Office 62a, 62b, long distance network 66, and San Jose Central Office 62c. *Id.* at 38–40 (citing *e.g.*, Ex. 1006, Fig. 1; Ex. 1002 ¶¶ 170-71). Petitioner further provides reasons for combining the teachings of Burger and Alexander. *Id.* at 38–42; Ex. 1002 ¶¶ 95, 169–86.

Patent Owner’s contentions regarding this recitation are premised on its proposed narrow interpretation of “switching facility” and “call processing system.” ’1254 PO Resp. 49–56. For reasons provided *supra* Sections II.D and II.E, we decline to adopt Patent Owner’s proposed interpretations and disclaimer.

For instance, regarding Burger’s teachings that ESP 60 is connected to Central Office switch 94, in circuit switched network 22 (PSTN), by interconnection 100 (Ex. 1003 4:24–65, Fig. 2; Ex. 1002 ¶¶ 45–51, 151–56), Patent Owner contends “a central office is synonymous with an edge switch” (’1254 PO Resp. 51 (citing Ex. 1002 ¶ 39; ’1254 Ex. 2022 ¶ 88). Patent Owner’s position is that Petitioner’s analysis “fail[s] to give effect to the ’113 Patent’s disclaimer.” *Id.* at 52.

As discussed *supra* Sections II.D and II.E, the Specification does not set forth any disclaimer to exclude an edge switch or edge device, much less a PSTN switch and a voice gateway, and further does not disclaim all configurations noted by Patent Owner. Claims 38 and 65 recite the broader terms *i.e.*, “switching facility” and “switching facilities,” not “tandem switch” or “tandem switches.” Ex. 1001, 15:30–56, 17:31–62. Furthermore, Burger teaches that ESP 60 and, in particular its packet interface 68 is, for

example, a “CISCO AS5300 Voice Gateway.” *See, e.g.*, Ex. 1003, 4:19–22, 5:3–9, Figs. 1, 2. Patent Owner does not identify, nor can we discern, any disparaging statements regarding a *converter or gateway* in the Specification or prosecution history. PO Resp. 53–57; ’1254 Ex. 2022 ¶¶ 86–91. In fact, the Applicants’ definition includes a “gateway” as an example of a “switching facility.” Ex. 2005, 82, 82 n.1. Additionally, Patent Owner’s contention that Petitioner points to the same ESP 60 as both the call processing system and switching facility (’1254 PO Resp. 50) is unavailing at least because packet interface 68 is different from processing unit 62, which Petitioner identifies, for example, as the call processing system. *See, e.g.*, ’1254 Pet. 21–23.

Patent Owner also contends that ESP 60 does not route calls. ’1254 PO Resp. 49–51. Consistent with Petitioner’s contentions and Mr. Willis’ testimony (*see, e.g.*, ’1254 Pet. 20; Ex. 1002 ¶¶ 107–109), ESP 60 routes calls, for example, by retrieving address information and establishing an audio connection to the particular subscriber using that address. *See, e.g.*, Ex. 1003, 1:50–2:38, 3:36–4:23, 6:60–8:46, 10:48–14:20, Figs. 1, 2, 4, 10–16. For instance, Burger teaches ESP 60 receiving a call from caller 82, identifying the called subscribers public phone number used by caller 82, accessing a database that associates that public phone number with a private URL of the subscriber, retrieving the subscriber’s private URL, and accessing the subscriber using that private URL. *Id.* at 6:60–7:60. For these reasons, we are persuaded Petitioner’s showing is sufficient, after consideration of Patent Owner’s contentions and evidence.

Patent Owner further disputes Petitioner’s contentions regarding combining Burger and the knowledge of one of ordinary skill in the art or

Alexander. '1254 PO Resp. 53–55. Regarding combining Burger and the knowledge of one of ordinary skill in the art, Patent Owner contends that to make the combination ESP 60 would have to be coupled through SS7 signaling channels to route calls over the PSTN and ESP 60 would not understand SS7 signaling. *Id.* at 53–54 (citing Ex. 1002 ¶ 91). Patent Owner's contentions are not commensurate with the scope of claims 38 and 65 as these claims do not require SS7 signaling, and do not recite "tandem switch," or require a direct connection, as discussed with respect to claim construction *supra* Section II.D. Mr. Bates testimony is the same as Patent Owner's contentions ('1254 Ex. 2022 ¶ 91) and he does not cite sufficient evidentiary support for his conclusion that ESP 60 would not work if coupled to a tandem switch. *See* 37 C.F.R. § 42.65 (a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.") Additionally, consistent with Petitioner's contentions and Mr. Willis' testimony ('1254 Pet. 20, 22–24; Ex. 1002 ¶¶ 107–09, 114–21), Burger expressly teaches ESP 60 connected to circuit switched network (PSTN) 22 and Telco CO 94, within PSTN 22. Ex. 1003, 1:50–2:38, 3:36–4:41 (describing circuit switched interface 64 of ESP 60 connected to circuit switched network 22 and, more particularly, to "Central Office switch 94"), 6:60–8:46, 10:48–14:20, Figs. 1, 2. Although not necessary for our determination, further evidence supporting Petitioner's contentions is Mr. Willis' testimony that Burger's ESP 60 would be connected at the tandem switch within PSTN 22. Ex. 1048, 205:15–206:11.

We also are persuaded by Petitioner's argument and Mr. Willis' testimony that coupling ESP 60 to a tandem switch in the PSTN would have been nothing more than the combination of known elements using known

methods (e.g., the known global SS7 standard transmitted through SS7 signaling channels and signaling control points (SCPs)) to achieve predictable results, as such arguments and testimony are consistent with the evidence cited therein. '1254 Pet. 35–37 (citing *e.g.*, Ex. 1002 ¶¶ 157–68; Ex. 1005, Fig. 1, 9:28–33, Ex. 1006, 5:42–45, Fig. 1; Ex. 1008, 87, Ex. 1010, 1–4, Fig. 1).²⁶ For instance, we credit Mr. Willis' testimony (Ex. 1002 ¶¶ 157–68) that one of ordinary skill in the art would have had a reason to connect Burger's ESP 60 at a PSTN switching facility and, more particularly, at a PSTN tandem switch to take advantage of the improved implementation of call control features and ability to deploy new features, as his testimony is consistent with the evidence of the state of the art. Ex. 1003, 3:42–43; Ex. 1015, 9, 31–32 (describing physical nodes), 34–38, 67 (describing deploying and managing Intelligent Network services); Ex. 1010, 1, 2 (describing intelligent networking as a solution for deploying new services and software updates); Ex. 1008, 87 n. 1; Ex. 1005, Fig. 1, 9:28–33. We also credit Mr. Willis' testimony (Ex. 1002 ¶¶ 157–68) that one of ordinary skill in the art would have known to connect Burger's ESP 60 to a switching facility and, specifically, a tandem switch in PSTN 22 because options for connecting to PSTN 22 were limited and connections with the tandem were known and standardized, so there would have been a reasonable expectation of success. Ex. 1003, 3:42–43; Ex. 1015, 9, 31–32, 34–38, 67; Ex. 1010, 1, 2; Ex. 1008, 87 n. 1; Ex. 1005, Fig. 1, 9:28–33.

²⁶ We indicated in our Decision to Institute, that we were persuaded by Petitioner's reasoning and evidence of the state of the art. *See, e.g.*, Dec. on Inst. 21–22 (citing *e.g.*, Exs. 1005, 1006, 1008, 1010).

Regarding Petitioner's reasons for combining Burger and Alexander ('1254 Pet. 38–42; Ex. 1002 ¶¶ 95, 169–86), Patent Owner contends that Alexander's call manager 26 is not connected directly to a tandem switch, but is instead only indirectly connected to a switching facility because it is connected to local area network (LAN) 20a and that any connection necessarily would have to travel through a central office, which was disclaimed. '1254 PO Resp. 54–56; '1254 Ex. 2022 ¶¶ 92–97. Patent Owner's contentions and Mr. Bates' testimony is premised on Patent Owner's overly narrow construction of “switching facility” and “call processor,” and a required direct connection, which we declined to adopt for the reasons set forth *supra* Section II.D. For the reasons set forth in that section, we also are not persuaded by Patent Owner's contentions that connection through a central office is a disclaimed configuration.

Instead, we agree with Petitioner's contentions and Mr. Willis' testimony ('1254 Pet. 38–40; Ex. 1002 ¶ 170–73) as they are consistent with Alexander's teaching of coupling call manager 26 to the circuit-switched network, which includes Dallas Central Office 62a, 62b, long distance network 66, and San Jose Central Office 62c, as well as the converting by gateway 64 between voice over IP and SS7. Ex. 1006, Abstract, 5:26–67, Fig. 1, 2, 5A. We further credit Mr. Willis' testimony (Ex. 1002 ¶¶ 169–86) that one of ordinary skill in the art would have had a reasonable expectation of success in combining the prior art teachings as set forth in Mr. Willis' testimony because Alexander's call manager 26 is a processor with an address mapping table, like ESP 60, and Alexander teaches coupling such a device to the PSTN and performing Web to PSTN translations. Ex. 1006, Abstract, 4:26–37, 5:26–67, Figs. 1 (annotated by Mr. Willis), 2. We also

credit Mr. Willis' testimony (Ex. 1002 ¶¶ 169–86) that one of ordinary skill in the art would have had a reason to combine the teachings as there were a limited number of known options and Burger specifically suggests the combination by describing ESP 60 as connected to PSTN 22. *See, e.g.*, Ex. 1003, 3:42–43, 4:19–41, Figs. 1, 2, 4, 5.

We next turn to Petitioner's showing for "establishing the voice communication . . . *after*" the call is completed, recited in claims 38 and 65 (Ex. 1001, 15:53–56, 17:58–62 (emphasis added)) and Patent Owner's dispute regarding that limitation ('1254 PO Resp. 40–48). Petitioner contends that Burger teaches that ESP 60 establishes voice communications by executing procedure 298 to connect a two way call between the caller and the subscriber across PSTN 22 and packet network 24, if the subscriber answers the call. '1254 Pet. 20, 45–47 (citing Ex. 1003, Abstract, 1:50–2:38, 3:36–4:23, 6:60–8:46, 9:19–23, 10:48–14:20, Figs. 1, 4, 5, 10–16; Ex. 1002 ¶¶ 107–09, 193–96). Patent Owner contends that Burger teaches only connecting the call across a circuit switched network, not packet network 24. '1254 PO Resp. 41–44. However, we are persuaded by Petitioner's contentions and credit Mr. Willis' testimony, for example, because Burger teaches a caller using the PSTN connecting to a subscriber using the packet network, such as the Internet. *See, e.g.*, Ex. 1003, 7:4–24, 7:46–52, 8:21–26, 11:30–32, Figs. 4, 5, 11. Patent Owner acknowledges that certain of these teachings describe calls made to the subscriber from callers using the PSTN ('1254 PO Resp. 42–43 (citing e.g., Ex. 1003, Fig. 4)), but Patent Owner does not take into account that these same disclosures teach the call being completed over the packet network. *See, e.g., id.; see also id.* at 7:4–24 (describing ESP 60 accessing a database and retrieving the private URL for

the subscriber), 7:46–60 (describing subscriber’s computer 106 executing a packet procedure receiving a notification from ESP 60 through packet network 24 of an incoming call and allowing the subscriber “to take the call.”); 9:19–23 (describing procedure 298 residing in and executed by ESP 60 that provides a bidirectional call path between the caller and the subscriber such that both can “hear and communicate with each other.”). We agree with Petitioner’s contentions and Mr. Willis’ testimony (’1254 Pet. 20, 45–47 (citing Ex. 1003, Abstract, 1:50–2:38, 3:36–4:23, 6:60–8:46, 9:19–23, 10:48–14:20, Figs. 1, 4, 5, 10–16; Ex. 1002 ¶¶ 107–09, 193–96)) for the reasons given and because the contentions and testimony are consistent with the evidence cited therein.

Patent Owner does not submit separate, specific arguments for other elements recited in claims 38 and 65. ’1254 PO Resp. 40–62. Petitioner explains how the combination of Burger with the knowledge of a person of ordinary skill in the art or Alexander describes all of the claim limitations and articulates a reason to combine the prior art teachings, citing to Mr. Willis’ testimony for support. ’1254 Pet. 19–47 (citing Ex. 1002). Upon consideration of Petitioner’s explanation and supporting evidence, we determine that Petitioner provides sufficient evidence, including Mr. Willis’ testimony, to show that the combined teachings of the asserted prior art teaches those other claim elements. *Id.*

For instance, regarding recitation of “a call processing system serving as an intelligent interconnection between at least one circuit-switched network and a packet network” recited in each of claims 38 and 65, Petitioner contends that Burger’s ESP 60 includes a call processing system and provides intelligent interconnection between the PSTN (a circuit-

switched network) and a packet network. '1254 Pet. 22–23 (citing Ex. 1003, Abstract, 3:36–5:40, 7:4–53, 8:21–9:39, 11:1–32, Figs. 1, 2, 4, 5; Ex. 1002 ¶¶ 110–16). Mr. Willis testifies that ESP 60 is connected to PSTN 22 and packet-based network 24 and provides intelligent interconnection by executing call processing functions and performing call screening and blocking functions. Ex. 1002 ¶¶ 110–16 (citing *e.g.*, Ex. 1003, Abstract, 3:36–5:40, 8:48–9:40, Figs. 1, 4, 5). We agree with Petitioner's contentions and Mr. Willis' testimony because they are consistent with the evidence cited therein, including, for example, Burger's teachings of receiving a call from caller 82, identifying the called subscribers public phone number used by caller 82, accessing a database that associates that public phone number with a private URL of the subscriber, retrieving the subscriber's private URL, and accessing the subscriber using that private URL allowing the subscriber "to take the call." Ex. 1003, 6:60–7:60, Fig. 4.

As an additional example, we are persuaded by Petitioner's showing for the remainder of the recitation in the preambles of claims 38 and 65. For instance, Petitioner contends that Burger's network 22 is the PSTN (a circuit-switched network). *Id.* at 23–24 (citing Ex. 1003, 1:42–43, 1:50–2:39, 3:36–45, 4:29–34, Figs. 1,2; Ex. 1002, 117–22; Ex. 1001, 1:45–51). Consistent with Petitioner's contentions (*id.*), Burger teaches that circuit switched network 22 is the PSTN (Ex. 1003, 3:43–45, 4:29–34). Relying on the testimony of Mr. Willis, Petitioner further contends that Burger's circuit-switched network—*e.g.*, the PSTN was known to include edge switches and tandem switches (switching facilities). Pet. 7, 23 (citing, *e.g.*, Ex. 1003, 1:50–2:39, 3:36–5:40, Figs. 1, 2; Ex. 1002 ¶¶ 117–22; Ex. 1001, 1:42–51). Patent Owner does not dispute these teachings and, indeed, Mr. Bates

testifies that the PSTN comprises both edge switches and tandem switches. '1254 Ex. 2022 ¶¶ 36–38. We also are persuaded by Petitioner's showing for the preambles of claims 38 and 65 for the same reasons discussed above with respect to the other elements of the claims, including the “establishing” step.

Additionally, we are persuaded that Burger teaches “receiving call data which is associated with a call originated by the calling party via the circuit-switched network, at the call processing system, the calling party using a communications device to originate the call for the purpose of initiating voice communication,” recited in claim 38, and similarly recited in claim 65. We agree with Petitioner and Mr. Willis' testimony ('1254 Pet. 20, 28–31; Ex. 1002 ¶¶ 73–74, 130–41), for example, because Burger teaches ESP 60 receiving and identifying a telephone number, e.g., “the particular public telephone number,” and Burger teaches the calling party using a communications device e.g., telephone 88, IP phone 194, or computer 162. *See, e.g.*, Ex. 1003, 1:53–60, 4:24–41, 7:4–19, 9:9–10, 11:1–13, Figs. 1, 2, 4, 11. These contentions are not disputed by Patent Owner. '1254 PO Resp. 40–57.

Furthermore, we are persuaded that Burger teaches “processing the call across the circuit-switched network and the packet network to complete the call to the called party,” recited in claim 38, and similarly recited in claim 65.²⁷ We agree with Petitioner's contentions and Mr. Willis'

²⁷ Claim 65 is directed to a system and recites “a call processing capability within the web-enabled processing system for processing the call” For the reasons given, we are persuaded that Petitioner has shown sufficiently that server processor 128 performs the “processing” step.

testimony ('1254 Pet.20, 42–45; Ex. 1002 ¶¶ 107–09, 187–90) for example, because Burger teaches receiving call data and connecting a two-way call across both the PSTN and packet network. Ex. 1003, Abstract, 1:50–2:38, 3:36–4:23, 6:60–8:46 (describing receiving a call from the PSTN, accessing a database and retrieving the subscriber's URL, and notifying the subscriber of the call thereby allowing the subscriber to take the call and then establishing two way communication), 10:48–14:20, Figs. 1, 2, 4, 5 (illustrating ESP procedures 284–290), 10–16. These contentions are not disputed by Patent Owner. '1254 PO Resp. 40–57.

For the reasons set forth above, upon consideration of the arguments and evidence in the entire trial record, including the arguments and evidence in Patent Owner's Response, we are persuaded by and adopt as our own Petitioner's showing that the limitations recited in claims 38 and 65 are taught or suggested by Burger in combination with the knowledge of a person of ordinary skill in the art or Alexander. '1254 Pet. 19–47. Additionally, we are persuaded by and adopt as our own Petitioner's analysis and Mr. Willis' supporting testimony regarding articulated reasoning to combine the teachings of Burger and the knowledge of a person of ordinary skill in the art and Alexander. *Id.* (citing Ex. 1002).

Accordingly, based on the evidence in the entire trial record, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 38 and 65 are unpatentable as obvious over Burger in combination with the knowledge of a person of ordinary skill in the art or Alexander.

b. Archer Grounds

Petitioner takes the position that the limitations recited in claims 38 and 65 are taught or suggested by Archer and the knowledge of a person of ordinary skill in the art or Chang. '1254 Pet. 47–67. Petitioner, additionally, provides articulated reasoning to combine the teachings of Archer and the knowledge of a person of ordinary skill in the art and Chang, supported by the testimony of Mr. Willis. *Id.* (citing Ex. 1002).

i. “call processing system or web-enabled processing coupled to at least one switching facility”

Claim 38 recites a method performed by “a web-enabled processing system” and claim 65 recites a communication network comprising “a web-enabled processing system,” with commensurately recited features. For instance, each of claims 38 and 65 recite “a web-enabled processing system including one or more web servers,” “coupled to a call processing system serving as an intelligent interconnection” between a packet network and a circuit-switched network (PSTN). Ex. 1001, 15:30–34, 17:31–36. Claim 38 also recites “the call processing system coupled to at least one switching facility of the circuit-switched network,” and claim 65 similarly recites “the web-enabled processing system designed to be coupled to at least one switching facility of the circuit-switched network.” *Id.* at 15:47–49, 17:51–53. As discussed above, we interpret “switching facility” as “any switch in the circuit-switched network.” *See supra* § II.D. Additionally, we use the plain and ordinary meaning of “coupled to,” which means a direct connection is not required. *Id.*

Regarding “the web-enabled processing system including one or more web servers” recited in each of claims 38 and 65, Petitioner alleges that in a preferred embodiment Archer’s packet network 130 is the Internet Protocol

(IP)-based public Internet. *See, e.g.*, '1254 Pet. 51 (citing *e.g.*, Ex. 1004, 4:58–6:47). Mr. Willis testifies that a person of ordinary skill in the art would have understood Archer to teach a system including web servers in packet network (Internet) 130. Ex. 1002 ¶¶ 251–53. We credit Mr. Willis' testimony as it is consistent with Archer's teachings of a preferred IP-based network 130 that is "the public Internet" (Ex. 1004, 4:20-31, 4:43-58, 5:41–42, 6:1–29), as well as Chang's teachings of browsing the Internet by communicating with web servers (Ex. 1005, 4:45–5:58, 6:64-7:12, 13:7-11, 13:15-27).

Additionally, Petitioner contends that Archer's server processor 128 has a web-enabled processor with an IP address that is a component of and is coupled to web servers in the Internet. '1254 Pet 50–51 (citing Ex. 1004, 4:58–8:26, 8:48–9:62, 10:45–11:43, Figs. 2–6; Ex. 1002 ¶¶ 249–51). Petitioner additionally points to Chang's teachings of web servers (e.g., Secure Access Platform 25 and its Web Server 525), as well as provides reasons to combine Archer's teachings with known web technologies and/or Chang's teachings. *Id.* at 60–64 (citing *e.g.*, 1005, 7:43–8:24, 8:64–9:37, 11:30–41, 16:27–63, 18:66–19:12, Figs 1, 2, 5; Ex. 1002 ¶¶ 283–90).

Patent Owner does not dispute Petitioner's showing as to Archer's disclosure of "a web-enabled processing system including one or more web servers," as recited in claims 38 and 65. '1254 PO Resp. 40–62. Upon review of Petitioner's explanation and supporting evidence, we are persuaded by and adopt as our own Petitioner's showing and Mr. Willis' supporting testimony that Archer discloses this limitation.

The parties' dispute centers on whether the asserted prior art combinations, i.e., Archer and the knowledge of a person of ordinary skill in

the art or Chang teaches “the call processing system coupled to at least one switching facility,” recited in claim 38 and “the web-enabled processing system designed to be coupled to at least one switching facility of the circuit-switched network,” recited in claim 65. ’1254 PO Resp. 57–62.

Petitioner takes the position that Archer’s server processor 128 provides intelligent interconnection by executing software to route calls between the PSTN (having switching facilities) and the packet network. ’1254 Pet 51–52 (citing Ex. 1004, 4:21–42, 5:5–58, 6:30–7:21, 8:18–34, 8:43–10:55, Figs. 2–6; Ex. 1002 ¶¶ 251–53). Patent Owner does not contest these contentions. ’1254 PO Resp. 40–62. We are persuaded by Petitioner’s contentions and credit Mr. Willis’ testimony (Pet. 26–27; Ex. 1002 ¶¶ 132–34) that Archer’s server processor 128 provides intelligent interconnection because Archer teaches server processor 128 executing software to route calls according to features selected by the subscribers across both the circuit-switched network (PSTN) and packet network. Ex. 1003, 6:31–56 (describing server processor 128 executing software to take an incoming phone call and querying database 138 to look up the forwarding phone number), 8:43–9:61 (describing operation of server processor 128 providing find-me subscriber service), 10:56–11:43 (describing operation of server processor 128 to provide conference call service), Figs. 2, 4.

Petitioner argues that Archer’s server processor 128 (a call processing system) is coupled to gateways 126, 132, tandem switches, and SCP switching facilities of the PSTN and, in the alternative, coupling to tandem switches would at least have been obvious. *Id.* at 57–60 (citing *e.g.*, Ex. 1004, 5:23–45, 6:51–56, 8:18–35, 8:50–9:16, Figs. 2, 4; Ex. 1002 ¶¶ 41–52, 270–82). Petitioner, also contends that it would have been obvious to

combine Archer's system, web-enabled server processor 128, with Chang's teachings of coupling such a processor (e.g., secure access platform 25 and its web server 525) at a tandem switch 11_T shown within the conventional PSTN that uses standardized SS7 signaling. *Id.* at 60–39 (citing *e.g.*, Ex. 1005, 7:43–8:24, 18:66–19:12, Figs. 1, 2, 5; Ex. 1002 ¶¶ 283–90).

Patent Owner counters that Archer does not disclose “the call processing system coupled to at least one of the switching facilities,” because Archer's converters are edge devices, not “switching facilities,” and are not coupled to a switching facility. '1254 PO Resp. 57–62; '1254 Ex. 2022 ¶¶ 98–105.

Patent Owner's arguments and Mr. Bates' supporting testimony are premised on Patent Owner's proposed narrow interpretation of “switching facility” and “call processing system.” *Id.* As discussed above, we decline to construe “switching facility” to exclude an edge switch, and decline to require a *direct connection* between the call processing system and a tandem switch. *See supra* § II.A. Accordingly, we are not persuaded by Patent Owner's arguments and its expert's testimony, as they are not commensurate with the claim's scope, improperly importing limitations from the preferred embodiment. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (noting that it is well established that limitations not appearing in the claims cannot be relied upon for patentability).

Rather, we determine that Petitioner's showing is sufficient. As Petitioner notes (Pet. 52–53), the PSTN that is coupled to Archer's server processor 128 contains switching facilities. Ex. 1004, 5:4–32, 10:53–55, Fig. 2; Ex. 1002 ¶¶ 249–56. Consistent with Petitioner's contentions (*id.*), Archer teaches “public switched telephone network (PSTN) is the preferred

circuit-switched communication network 118” (Ex. 1004, 5:23–24) and illustrates PSTN 136 in Figure 6 (*id.* at Fig. 6). Also consistent with Petitioner’s contentions (*see, e.g.*, Pet. 6, 23–24), the PSTN was known in the art at the time of the invention to be a network that consists of a plurality of edge switches connected to telephones on one side and to a network of tandem switches on the other, and the tandem switch network allows connectivity between all of the edge switches. Ex. 1001, 1:42–55 (describing the PSTN); Ex. 1002 ¶¶ 38–40, 117–21; Ex. 1005, 7:25–8:47, Fig. 1. Patent Owner does not dispute Petitioner’s contentions that the PSTN comprised a hierarchical arrangement of equipment including edge switches and other switches and, indeed, Patent Owner admits (PO Resp. 4–7) and Mr. Bates testifies that the PSTN comprises the five-level hierarchy. *See, e.g.*, ’1254 Ex. 2022 ¶¶ 36–38 (illustrating hierarchical arrangement of PSTN equipment including “Tandem Switch” and “Class 5,” which “contain edge switches.”)²⁸

Based on the evidence of record, we are persuaded by Petitioner’s contentions and we credit Mr. Willis’ testimony that Archer’s server processor is coupled to a tandem switch (a switching facility) in the PSTN 118, 136 through converters 126, 132, which are *PSTN-to-IP network gateways*. Ex. 1002 ¶¶ 270–79; Ex. 1004, 5:34–35 (“[c]onverter 126 can also be referred to as a gateway.”), 5:59–60 (“PSTN to IP-network gateway

²⁸ For these same reasons, we are persuaded that the recitations in the preambles of claims 38 and 65 that the circuit-switched network comprises edge switches for routing calls from and to subscribers, within a local geographic area and switching facilities for routing calls to other edge switches or other switching facilities local or into other geographic areas. Ex. 1001, 15:34–38, 17:36–40.

(i.e., converter 126)"). Patent Owner does not identify, nor can we discern, any disparaging statements regarding a *converter or gateway* in the Specification or prosecution history. '1254 PO Resp. 57–62; '1254 Ex. 2022 ¶¶ 98–105. In fact, the Applicants' definition includes a "gateway" as an example of a "switching facility." Ex. 2005, 82, 82 n.1.

Second, Patent Owner argues that PSTN to IP-network gateways 126, 132 do not route calls to edge switches or other switching facilities, as recited in claims 38 and 65, and that circuit switched network 118 is connected to gateways 126, 132 through *analog* lines, and the gateways include *modems* and do not *route calls*. '1254 PO Resp. 57–62; '1254 Ex. 2022 ¶¶ 98–105. Patent Owner's arguments and Mr. Bates' testimony, however, ignore the explicit teachings of Archer. Archer clearly discloses that, at the time of its invention, the heart of most PSTN networks was already *digital*. Ex. 1004, 5:10–31. Archer also discloses that "[i]n general the PSTN to IP-network gateway (i.e., converter 126) should be able to support the translation of PCM to multiple encoding schemes to interwork with software from various vendors." *Id.* at 5:59–62. Indeed, Mr. Bates, in his cross-examination testimony, confirms that pulse coded modulation (PCM) is a *digital* protocol that is used by a tandem switch. Ex. 1048, 22:23–23:8, 26:7–15, 229:23–24 (explaining that "[w]e use PCM to create the digital voice stream").

Moreover, as shown in Figure 3 of Archer, gateway 136 includes *router* 74 and *control circuitry* 72. Ex. 1004, 5:47–58, Fig. 3. Archer further describes that the operation of its invention includes *routing* a phone call from telephone 114 to server processor 128 through PSTN network 118, converter/gateway 126, and packet switched network 130, and then *routing*

the voice packets to the destination device 120 through packet-switched network 130 converter/gateway 132, and PSTN network 136. *Id.* at 8:43–9:61, Fig. 5.

Third, Patent Owner argues that it would not have been obvious to couple Archer’s converters to switching facilities in the PSTN. ’1254 PO Resp. 60. We, however, are persuaded by Petitioner’s contentions and credit Mr. Willis’ testimony that it would have been obvious to couple Archer’s server processor 128 (a call processing system) to tandem switches. *Id.* at 57–60 (citing *e.g.*, Ex. 1004, 5:23–45, 6:51–56, 8:18–35, 8:50–9:16, Figs. 2, 4; Ex. 1002 ¶¶ 41–52, 270–82). Patent Owner contends that Archer’s converters “could not simply be connected” to PSTN switching facilities because SS7 signaling used in the PSTN does not pass beyond an edge switch to an edge device, like Archer’s converters. *Id.* Patent Owner’s contentions are not commensurate with the scope of claims 38 and 65, which do not require SS7 signaling. Ex. 1001, 15:30–62, 17:31–62. Patent Owner relies on the testimony of Mr. Bates (’1254 PO Resp. 60) that one having ordinary skill in the art would not have believed that Archer’s system simply could be unplugged and reconnected using SS7 signaling at a tandem. ’1254 Ex. 2022 ¶ 103. An obviousness inquiry, however, is not limited to whether a skilled artisan would have had to do no more than simply unplug and reconnect a processor. *See KSR*, 550 U.S. at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”)²⁹

²⁹ Indeed, Patent Owner’s declarant testified that it was well known to interconnect an IP carrier network and the PSTN *at a tandem switch*. Ex. 1059, 201:22–202:11, 205:15–206:16, 211:21–213:14.

Rather, we credit Mr. Willis' testimony that one of ordinary skill in the art would have had a reason to couple Archer's server processor 128 to tandem switches in the PSTN, for example, so that server processor 128 can receive calls from and place calls to devices connected in the PSTN, as his testimony is consistent with the evidence cited therein. Ex. 1002 ¶¶ 280–82. For instance, Archer teaches expressly “[t]he public switched telephone network (PSTN) is the preferred circuit-switched communication network.” Ex. 1004, 5:23–25, 8:27–35. Mr. Willis testifies regarding the well-known architecture of networks, including the PSTN, and we credit his testimony as it is consistent with the evidence of record including the evidence cited therein. See, e.g., Ex. 1002 ¶¶ 38–52. Indeed, as discussed above, Petitioner's contentions regarding the well-known PSTN are not disputed by Patent Owner. Mr. Willis' testimony that one of ordinary skill in the art would have had reason to couple Archer's server processor 128 to a switching facility and/or a tandem switch in the PSTN so as to route calls to and from devices connected to edge devices served by that tandem switch is consistent with Archer's teaching of server processor routing calls to communication devices, such as telephones 120 via PSTN 136. See, e.g., Ex. 1004, 9:9–37, Fig. 2.

Fourth, Patent Owner argues that Chang does not remedy Archer's deficiencies. '1254 PO Resp. 61–62. As discussed above we are not persuaded regarding the alleged deficiencies, but as an independent reason, Patent Owner's contentions do not take into account Chang's express teachings, relied upon by Petitioner ('1254 Pet. 60–64), of interconnecting a web enabled processor (e.g., web server 525) at a tandem switch 11_T shown within the conventional PSTN that uses standardized SS7 signaling and

includes conventional PSTN infrastructure, such as service control points (SCPs). Ex. 1005, 7:43–8:24, 8:64–9:37, 11:30–41, 16:27–63, 18:66–19:12, Figs 1, 2, 5; Ex. 1002 ¶¶ 283–90. Patent Owner’s arguments are premised on whether Chang alone discloses all elements recited in claims 38 and 65. ’1254 PO Resp. 61–62. We are not persuaded by Patent Owner’s attacks on each of Archer and Chang individually rather than the combination of teachings of Archer and Chang relied upon by Petitioner. *Cf. In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986); *In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (explaining that one cannot show non-obviousness by attacking references individually when obviousness is based on combinations of prior art references).

Furthermore, Patent Owner’s contentions that Chang’s secure access platform 25 is nothing more than a web server that does not receive call data and is not involved in processing calls across the networks does not take into account Chang’s teachings in their entirety. PO Resp. 61–62. For instance, Chang teaches receiving call data, e.g., digit collection and transporting communication traffic and signaling via connections between Intelligent Peripherals (IPs) 23 and central office 11. Ex. 1005, 9:38–58. Additionally, Chang describes employing standardized PSTN infrastructure and SS7 signaling. Ex. 1005, 2:7–53 (describing the Advanced Intelligent Network developed by Bell Operating Companies that includes, for example, SS7 Service Control Points (SCPs). SS7 signaling is the same method described in the ’113 Patent Specification. Ex. 1001, 7:60–65 (explaining that SS7 is “a global standard for telecommunications and defines the procedures and protocol by which network elements in the PSTN exchange information”).

We discuss *supra* Section III.C.7.b.iv why we are persuaded by Petitioner's reasons to combine Archer and Chang.

After considering the entirety of the record, including the parties' contentions and supporting evidence, we determine that Petitioner has demonstrated by a preponderance of the evidence that Archer alone, with the knowledge of one of ordinary skill in the art, or Chang teaches or suggests "a web enabled processing system including one or more web servers" "coupled to a call processing system serving as an intelligent interconnection" between a packet network and the PSTN and the call or web-enabled "processing system coupled to at least one switching facility of the circuit-switched network," recited in claims 38 and 65.

ii. *"establishing the voice communication...after the call [has been or is] completed"*

We now turn to Petitioner's showing for "establishing the voice communication between the calling party and the called party" "after" the call is completed, across both the circuit-switched network and the packet network, recited in claim 38, and the "capability within the web-enabled processing system" for the same feature, recited in claim 65. Ex. 1001, 15:53–56, 17:58–62. This is the last of the recitations in each of claims 38 and 65. For the reasons set forth *supra* Section III.C.7.b.i and *infra* Section III.C.7.b.iii, we determine Petitioner has shown sufficiently that Archer teaches the other recitations of claims 38 and 65.

Petitioner asserts that Archer teaches the "establishing" limitation because Archer teaches after the call is connected across both packet switched network 130 and circuit-switched network 118, 136, establishing a communication and commencing a "conversation." Pet. 66 (citing Ex. 1004,

3:4–10, 7:14–21, 9:31–37, 9:50–67, 11:28–43, Figs. 4–5). As support, Mr. Willis testifies that server processor 128 routes voice packets to complete the call across packet-based network 130 and circuit-switched network/PSTN 118, 136 thereby establishing a communication and commencing a conversation. Ex. 1002 ¶¶ 296–98 (citing Ex. 1004, 3:4–10, 5:38–39, 5:52–6:20, 7:14–21, 9:30–67, 11:28–43, Figs 4–5). We agree with Petitioner and we credit Mr. Willis’ testimony (*id.*) as both are consistent, for example, with Archer’s teaching that after the call is completed “[u]pon receipt of a pickup notification,” server processor 128 routes voice packets across circuit-switched network 136 to the destination completing the call to each of receiving devices 120, 134. Ex. 1004, 9:30–55, Figs. 2, 5.³⁰ After the call is completed to telephone 120 and/or computer 134, “conversation commences.” *Id.* at 9:51–59, Fig. 5.

Patent Owner opposes and advances several arguments. ’1254 PO Resp. 44–48. First, Patent Owner argues that the cited portions of Archer are silent as to what device establishes the voice communication and, therefore, Archer fails to disclose that the claimed processing system is the element that performs the “establishing” step. *Id.*

However, Petitioner and Mr. Willis’ testimony (’1254 Pet. 66–67; Ex. 1002 ¶¶ 296–98) clearly point out Figure 4, which is a flowchart of the software that executes on server processor 128 (Ex. 1004, 6:47–48) of

³⁰ For this reason, and because we agree with Petitioner’s contentions and Mr. Willis’ testimony (’1254 Pet. 64; Ex. 1002 ¶¶ 291–95) as discussed further below, we are persuaded Petitioner has shown sufficiently “processing the call across the circuit-switched network and the packet network to complete the call to the called party,” as recited in claim 38, and as commensurately recited in claim 65.

Archer and the pertinent description of that figure to support Petitioner’s contention that Archer’s server processor 128 performs the “establishing,” as required by claims 38 and 65. Ex. 1004, Fig. 4 (68, “Establish communication”), 7:14–21). Similarly, Petitioner and Mr. Willis’ testimony (’1254 Pet. 66–67; Ex. 1002 ¶¶ 296–98) direct our attention to Figure 5 and related disclosure describing server processor 128 notifying each of receiving devices 120, 134 of the call and further explaining that the first destination to answer initiates voice digitization at server processor 128. Ex. 1004, Fig. 5, 9:30–61. Archer’s disclosure relating to Figure 5 describes details regarding routing packets to establish this end-to-end communication concluding with “[a]t this point, the call is completed and conversation commences.” *Id.* at 9:50–57, Fig. 5.

Petitioner specifically directs our attention to step 68 “Establish communication” in Figure 4 of Archer and step 109 “Commence communication” of Figure 5 of Archer. Pet. 40 (citing Ex. 1004, Figs 4–5). Figures 4 and 5 of Archer are reproduced below with red markings added to highlight the steps or tasks relied upon by Petitioner.

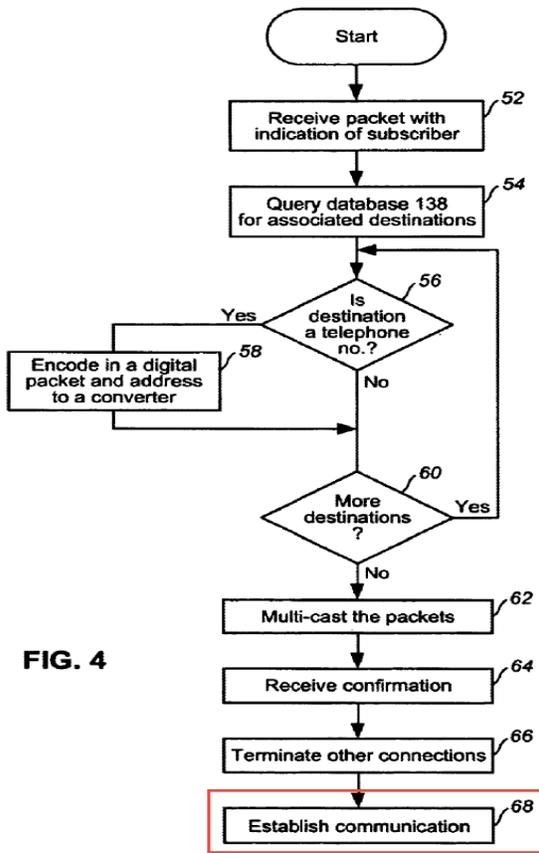


FIG. 4

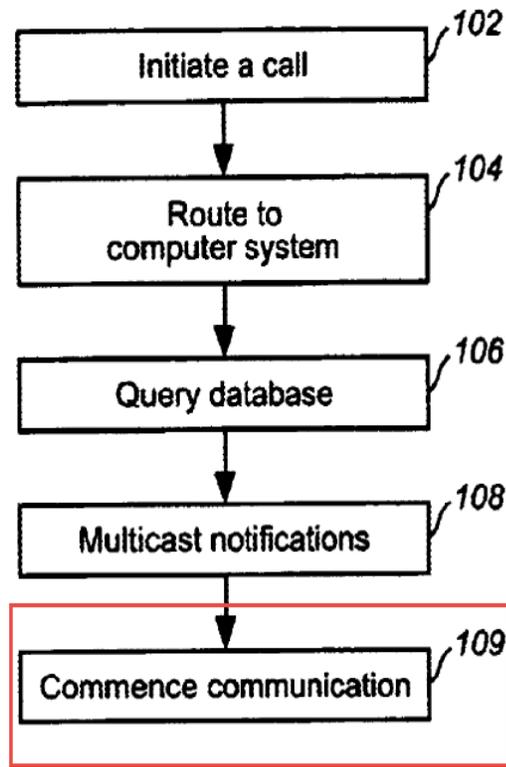


FIG. 5

Figure 4 of Archer “is a flowchart of the *software* which will *execute on server processor 128.*” Ex. 1004, 6:48–49 (emphases added). Figure 5 of Archer “is a flow chart of a preferred embodiment *method of the present invention.*” *Id.* at 3:38–40 (emphasis added). As Archer explains, “[s]erver processor 128 is a computer system coupled to packet-switched network 130 and *executes server software to perform the tasks required by the present invention.*” *Id.* at 6:31–32 (emphasis added). One of ordinary skill in the art, reading the corresponding descriptions with the figures, would have understood that Archer’s server processor 128, executing the disclosed software, performs the steps or tasks shown in Figures 4 and 5, including “establish communication” step 68 (highlighted with a red box) in Figure 4

“commence communication” step 109 (highlighted with a red box) in Figure 5. *Id.* at 6:48–9:61.

Patent Owner’s argument fails to recognize that “[w]hat a prior art reference discloses or teaches is determined from the perspective of one of ordinary skill in the art.” *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1361 n.3 (Fed. Cir. 2008). A prior art reference must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994); *see also*; *DeGeorge v. Bernier*, 768 F.2d 1318, 1323 (Fed. Cir. 1985) (holding that a reference “need not, however, explain every detail since [it] is speaking to those skilled in the art”); *In re Preda*, 401 F.2d 825, 826 (CCPA 1968) (explaining that “in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom”).

For the reasons set forth above, we are persuaded by Petitioner’s evidence, including, for example, Figures 4 and 5 of Archer and the relevant descriptions of those figures, and we find Patent Owner’s argument and Mr. Bates’ testimony (’1254 PO Resp. 44–48; ’1254 Ex. 2022 ¶¶ 77–82) that Archer is silent as to what device establishes the communication unavailing. After considering the entirety of the full trial record, including the parties’ contentions and supporting evidence, we determine that Petitioner has demonstrated by a preponderance of the evidence that Archer alone, with the knowledge of one of ordinary skill in the art, or Chang teaches or suggests the claimed processing system that performs the step of “establishing the voice communication between the calling party and the called party after the

call is completed, across both the circuit-switched network and the packet network,” as required in claim 38 and “a capability within the web-enabled processing system from establishing the voice communication between the calling party and the called party after the call is completed, across both the packet network and the circuit-switched network,” recited in claim 65.

iii. Remaining elements recited in Claims 38 and 65

Patent Owner does not submit separate, specific arguments for other elements recited in claims 38 and 65. *See generally* PO Resp. For each asserted ground, i.e., that the challenged claims are unpatentable, under 35 U.S.C. § 103, as obvious over (1) Archer in combination with the knowledge of a person of ordinary skill in the art; and (2) Archer in combination with Chang, Petitioner explains how the combination describes all of the claim limitations and articulates a reason to combine the prior art teachings, citing to Mr. Willis’ testimony for support. ’1254 Pet. 48–67 (citing Ex. 1002). After reviewing Petitioner’s explanation and supporting evidence, we determine that Petitioner provides sufficient evidence, including Mr. Willis’ testimony, to show that the combined teachings of the asserted prior art teaches those other claim elements. *Id.*³¹

For instance, we are persuaded that Archer teaches “receiving call data which is associated with a call originated by the calling party via the circuit-switched network, at the call processing system, the calling party using a communication device to originate the call for the purpose of initiating voice communication,” recited in claim 38, and similarly recited in

³¹ Petitioner’s analysis for remainder of the preamble overlaps that discussed above with respect to the preamble and the “establishing” step, as well as the discussion in this section, and we are persuaded for the reasons given.

claim 65. We agree with Petitioner and Mr. Willis' testimony ('1254 Pet. 55–57; Ex. 1002 ¶¶ 261–69), for example, that Archer teaches server processor 128 receiving call data because it teaches receiving a telephone number (encoded in IP packets), and Archer teaches the calling party using a communications device because it teaches a calling party using a telephone (e.g. telephone 114) or a computer. *See, e.g.*, Ex. 1004, 4:31–42, 4:58–65, 6:31–57, 8:50–63, Figs. 2, 4–6.

Additionally, we are persuaded that Archer teaches “processing the call across the circuit-switched network and the packet network to complete the call to the called party,” recited in claim 38, and similarly recited in claim 65.³² We agree with Petitioner and we credit Mr. Willis' testimony ('1254 Pet. 64–66; Ex. 1002 ¶¶ 291–94) as both are consistent, for example, with Archer's teaching that server processor 128 receives telephone numbers encoded in packets, queries database 138, and issues call notifications to telephones 120a, 120b, and/or computer 134. Ex. 1004, 3:46–58 (describing “present invention” with reference to “follow-me,” “find-me”, and conferencing services) 6:47–67 (describing receipt by server processor 128 of packets including an indication of the called party, extracting by server processor 128 subscriber identification information from the packet and querying database 138, receiving by server processor 128 returned destinations, and creating by server processor 128 IP packets for returned destinations), 7:3-21 (describing server processor 128 multicasting packets

³² Claim 65 is directed to a system and recites “a call processing capability within the web-enabled processing system for processing the call” For the reasons given, we are persuaded that Petitioner has shown sufficiently that server processor 128 performs the “processing” step.

to each of the destinations), 9:10–23 (describing server processor 128 issuing call notifications to receiving communication devices 120, 134), 9:34–35, 9:51–61, Figs. 2, 4, 5. Additionally, Archer teaches after the call is completed “[u]pon receipt of a pickup notification,” server processor 128 routes voice packets across circuit-switched network 136 to the destination completing the call to each of receiving devices 120, 134. Ex. 1004, 9:30–55, Figs. 2, 5.

Upon consideration of the arguments and evidence in the entire trial record, including the arguments and evidence in Patent Owner’s Response, for the reasons set forth above, we are persuaded by and adopt as our own Petitioner’s showing that all limitations of claims 38 and 65 are taught or suggested by the asserted prior art combinations of (1) Archer in combination with the knowledge of a person of ordinary skill in the art; and (2) Archer in combination with Chang.

iv. Reasons to Combine

Petitioner provides how and articulates reasoning why one of ordinary skill in the art would have combined (1) the prior art teachings of Archer with the knowledge of one of ordinary skill in the art in the manner recited in claims 38 and 65; and (2) the prior art teachings of Archer and Chang in the manner recited in claims 38 and 65. ’1254 Pet. 48–67.

For example, for the reasons given *supra* Section III.C.7.b.i, we are persuaded by Petitioner’s contentions and we credit Mr. Willis’ testimony that one of ordinary skill in the art would have had a reason to couple Archer’s server processor 128 to tandem switches in the PSTN, for example, so that server processor 128 can receive calls from and place calls to devices connected in the PSTN, as his testimony is consistent with the evidence cited

therein. Ex. 1002 ¶¶ 280–82. As previously explained, Mr. Willis’ testimony that one of ordinary skill in the art would have had reason to couple Archer’s server processor 128 to a switching facility and/or a tandem switch in the PSTN so as to route calls to and from devices connected to edge devices served by that tandem switch is consistent with Archer’s teaching of server processor routing calls to communication devices, such as telephones 120 via PSTN 136. *See, e.g.*, Ex. 1004, 9:9–37, Fig. 2. Additionally, Archer teaches expressly “[t]he public switched telephone network (PSTN) is the preferred circuit-switched communication network.” Ex. 1004, 5:23–25, 8:27–35.

Furthermore, we are persuaded that Petitioner sufficiently provides how and articulates reasoning why one of ordinary skill in the art would have combined the prior art teachings of Archer and Chang in the manner recited in claims 38 and 65. For instance, Petitioner contends that “[t]he combination of Archer’s web-enabled processing system and call processing system with Chang’s coupling to a switching facility is nothing more than the combination of known prior art techniques in conventional ways, achieving predictable results to a system ready for improvement.” ’1254 Pet. at 63–64; Ex. 1002 ¶ 287–90. Petitioner’s contentions and Mr. Willis’ testimony are consistent with the evidence of record. For example, Petitioner provides annotations to Figure 1 of Chang showing that Chang’s coupling to a switching facility, e.g., each of tandem switches (11_T).

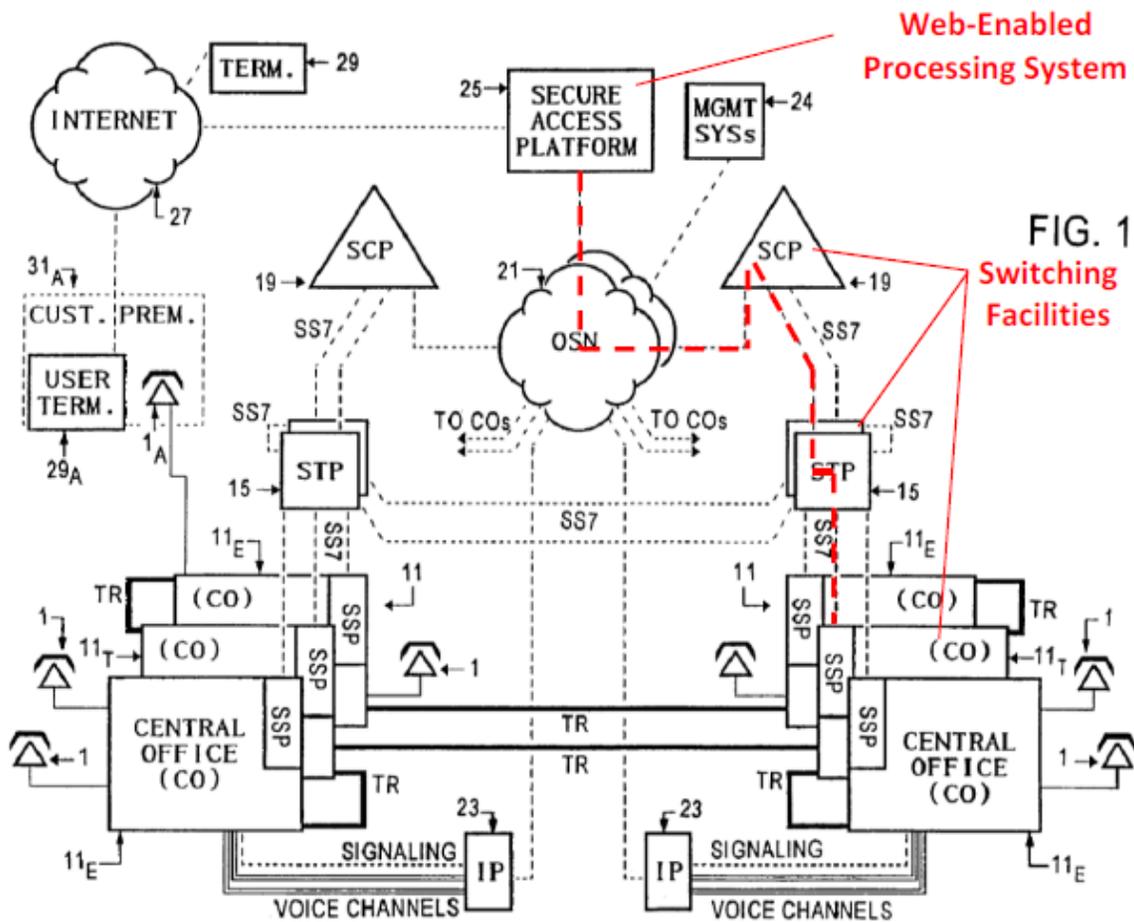


Figure 1 of Chang with Annotations showing Secure Access Platform 25 connections to Central Offices (COs)

As highlighted in red by Petitioner’s annotations to Figure 1 of Chang above, secure access platform 25 is connected to Tandem Switches 11_T in the Central Offices. ’1254 Pet. 62 (citing Ex. 1005, Fig. 1). More specifically, Figure 1 of Chang illustrates a web enabled processor, i.e., Secure Access Platform 25 that is connected to Tandem Switches 11_T shown within the conventional PSTN that uses standardized SS7 signaling and includes conventional PSTN infrastructure, including Service Control Point (SCP) 19 and Signaling Transfer Point (STP) 15. *Id.* Indeed, Chang provides more detail regarding the PSTN and standardized SS7 signaling than the ’113 Patent Specification, which, instead, relies on external sources.

Compare id. at Fig. 1 with Ex. 1001, Figs. 1, 2, 7, 8; *see also id.* at 4:49–54 (referring to external publications for details of the operation of the existing phone network including SS7 signaling), 7:60–63 (describing SS7 signaling as “global standard for telecommunications,” but omitting description of SS7 signaling or operation); Ex. 1002 ¶¶ 43–51 (describing operation of standardized SS7 signaling and intelligent networking).

Consistent with Petitioner’s contentions and annotations (’1254 Pet. 48–67), Chang’s secure access platform 25 connects via Operations Systems Network 21, which uses a generic data interface to connect an Intelligent Peripheral (IP) in the Internet to SCP 19 in the PSTN. Ex. 1005, 9:22–10:3. As is shown above, Chang’s coupling of a web server to a switching facility and, in particular, to Tandem Switches 11_T is nothing more a known prior art technique. Chang teaches secure access platform 25 interfaces to Internet 27 as “a Web server” (*id.* 11:30–32) and, in accordance with one embodiment, computer 520 that interfaces with the Internet includes host software that “runs a web server 525.” *Id.* at 15:1–3; *see also id.* at Fig. 5 (illustrating computer 520 having a “TO/FROM” connection with the Internet as well as a two-way connection with OSN 21).

Like Chang’s secure access platform 25 (*id.* 11:30–32) and “web server 525” (*Id.* at 15:1–3, Fig. 5), for the reasons discussed *supra* Section III.C.7.b.i, we agree with Petitioner’s contentions and Mr. Willis’ testimony that Archer’s server processor 128 and database 138 are web enabled processors. As discussed above, Patent Owner does not dispute that Archer’s server processor 128 and database 138 are web enabled processors. PO Resp. 40–62.

Mr. Willis testifies that one of ordinary skill in the art would have had reason to and been motivated to couple Archer's web enabled processing system, i.e., server processor 128 and database 138 to switching facilities and, in particular, to Tandem Switches 11_T as is taught in Chang to control routing so as to reduce switching traffic in the PSTN. Ex. 1002 ¶¶ 287–90. We credit Mr. Willis' testimony as it is consistent with the evidence cited therein. For instance, Archer teaches that its system "reduces switch traffic for telephone companies" by using intelligent routing. Ex. 1004, 2:63–66. Additionally, Archer teaches its system reduces waiting time, which further reduces traffic and inefficiencies in the switching network. *Id.* at 2:61–63; *see also id.* at 9:10–25 (describing that ringing simultaneously provides an advantage over present sequential dialing).

We, additionally, credit as consistent with the evidence of record Mr. Willis' testimony that combining Archer's teachings of server processor 128 and database 138 with Chang's coupling of web enabled server technology with the existing PSTN, is nothing more than combining known prior art techniques in conventional ways. Ex. 1002 ¶¶ 287–90. For instance, consistent with Mr. Willis' testimony (*id.*), standard intelligent network functional units (e.g., SCPs, IPs, and STPs) and standard SS7 signaling were known. Ex. 1005; Ex. 1014, 1–3, 9–14; Ex. 1015, 8–9, 25, 29–36, 45–48, 57–61, 90–92; Ex. 1002 ¶¶ 42–51. The evidence of record demonstrates that one of ordinary skill in the art would have understood that the proposed combination would allow Archer's system to use existing PSTN switching and SS7 control without modification. Ex. 1002 ¶ 289.

We are persuaded by and adopt as our own Petitioner's analysis and Mr. Willis' supporting testimony showing articulated reasoning for why one

having ordinary skill in the art would have combined Archer with the knowledge of one of ordinary skill in the art or Chang in the manner recited in claims 38 and 65. Upon consideration of the arguments and evidence in the entire trial record, we are persuaded that Petitioner has articulated sufficient reasons to combine (1) the prior art teachings of Archer with the knowledge of one of ordinary skill in the art in the manner recited in claims 38 and 65; and (2) the prior art teachings of Archer and Chang in the manner recited in claims 38 and 65.

c. Conclusion—Claims 38 and 65

Based on the evidence in the entire trial record, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 38 and 65 are unpatentable as obvious over (1) Burger in combination with the knowledge of a person of ordinary skill in the art; (2) Burger in combination with Alexander and the Admitted Prior art (Ex. 1001, 1:42–51); (3) Archer in combination with the knowledge of a person of ordinary skill in the art; and (4) Archer in combination with Chang.

8. *Claims 143 and 163*

We turn to our analysis of independent claims 143 and 163, challenged in IPR2016-01257. Claims 143 and 163 are broader than claims 38 and 65, discussed *supra* Section III.C.7.³³ For claims 143 and 163, we instituted on grounds similar to those discussed above with respect to claims 38 and 65. In particular, we instituted on grounds that claims 143 and 163

³³ Indeed, in related IPR2016-01261 also involving challenges to claims of the '113 Patent, Patent Owner acknowledges “Claim 163 is broader” “in several aspects” than claim 1, which is similar to claims 38 and 65. IPR2016-01261, Paper 30, 47.

are unpatentable, under 35 U.S.C. § 103, as obvious over (1) Burger in combination with the knowledge of a person of ordinary skill in the art³⁴ or Alexander (Burger grounds); and (2) Archer and the knowledge of a person of ordinary skill in the art (Archer grounds). '1257 Dec. on Inst. 28.

For each asserted prior art combination, Petitioner explains how the combination describes all of the claim limitations and articulates a reason to combine the prior art teachings, citing to Mr. Willis' testimony for support. '1257 Pet. 5–13, 16–35, 40–50 (citing Ex. 1102). Petitioner's showing for claims 143 and 163 is similar to that discussed above with respect to claims 38 and 65 and, for claims 143 and 163, Petitioner for the most part relies on the same teachings in Burger, Archer, and Alexander, as well as the knowledge of a person of ordinary skilled in the art that we found persuasive for the reasons discussed above in Section III.C.7 with respect to claims 38 and 65. *Compare* '1257 Pet. 5–13, 16–35, 40–50 (citing Ex. 1102) *with* '1254 Pet. 5–14, 17–67 (citing 1002).

Claim 143 is representative and is directed to a method of “providing an intelligent interconnection between a first communication network and a second communication network,” comprising four steps performed by a “controller.” Ex. 1101, 22:50–63. Claim 163 is directed to a “controller” for use between and first and second communication network that includes

³⁴ In our Decision on Institution, we specified that the knowledge of a person of ordinary skill in the art includes the SS7 Paper and noted that Petitioner provides reasons to combine the asserted prior art (i.e., Burger alone or in combination with Alexander) with that reference. *See, e.g.*, '1257 Dec. on Inst. 18–19, 28 (citing Ex. 1114). Our determination in this Decision is the same with or without the teachings of the SS7 Paper. We note the teachings of the SS7 Paper only as additional, but not necessary evidence supporting our determination.

circuitry or software for performing the same four steps recited in claim 143. *Id.* at 23:45–24:6. We discuss our analysis below with respect to claim 143, but our analysis also applies and addresses fully the recitations in claim 163.

The dispute between the parties’ for claims 143 and 163 centers around whether Burger and Archer teach the “controller” recited in each of these claims. ’1257 PO Resp. 48–53.

a. Burger Grounds

The preamble of claim 143 recites “[a] method of providing an intelligent interconnection between a first communication network and a second communication network.” Ex. 1101, 22:50–52. Petitioner, for example, contends ESP 60 and its processing unit 62 execute “software instructions (274–308) for providing call control and routing functionality that interconnects packet network 24 and the PSTN 22.” ’1257 Pet. 18 (citing Ex. 1103, Abstract, 1:50–2:38, 6:60–8:46, 10:48–14:20, Figs. 1-2, 4, 10–16; Ex. 1102 ¶¶ 107–08, 197). As explained with respect to Figure 1 of Burger in the summary above and *supra* Section III.C.7.a, consistent with Petitioner’s contention, Burger teaches that ESP 60 includes ESP processing unit 62, circuit switched interface 64, and packet interface 68. Ex. 1103, 4:3–5. Burger also teaches that circuit switched interface 64 is connected to circuit switched network 22 and packet interface 68 is connected to packet switched network 24. *Id.* at 4:9–12.

Mr. Willis testifies that ESP 60 is connected to PSTN 22 and packet-based network 24 and provides intelligent interconnection by executing call processing functions and performing call screening and blocking functions. Ex. 1102 ¶¶ 107–08, 197 (citing *e.g.*, Ex. 1103, 1:50–2:38, 3:36–4:23, 6:60–8:46, 10:48–14:20, Figs. 1, 4, 10–16). We agree with Petitioner’s

contentions and Mr. Willis' testimony ('1254 Pet. 18, Ex. 1102 ¶¶ 107–08, 197) because they are consistent with the evidence cited therein. For example, Burger teaches receiving a call from caller 82, identifying the called subscribers public phone number used by caller 82, accessing a database that associates that public phone number with a private URL of the subscriber, retrieving the subscriber's private URL, and accessing the subscriber using that private URL allowing the subscriber "to take the call." Ex. 1103, 6:60–7:60, Fig. 4; *see also id.* at 1:50–2:8 (teaching screening calls from callers using the PSTN, "while the subscriber uses another communications medium" e.g., "a packet network" such as the Internet, by retrieving "a private packet-based address of the particular subscriber on the basis of the particular public telephone number" and accessing the subscriber on the private packet-based address "to establish an audio connection.")

Claim 143 next recites the steps of "receiving at a *controller* call data which is associated with a first call via a first communication network," "accessing control criteria by the *controller* based upon the call data," and "initiating a second call via a second communication network by the *controller* using the call data" (emphasis added). We start with Petitioner's contentions regarding the "controller" recited in each of these steps, as those contentions are disputed by Patent Owner.

Petitioner points to ESP 60 for teaching the controller performing the "receiving," "accessing," and "initiating" steps. '1257 Pet. 18–29 (citing *e.g.*, Ex. 1103, 1:50–2:38, 4:1–18, 4:24–42, 6:60–9:35, 10:48–14:20, Figs. 1, 2, 4, 5, 10–16; Ex. 1102 ¶¶ 107–08, 132–38, 197, 202–14). We agree with Petitioner's contentions and Mr. Willis' testimony ('1257 Pet. 18–29; Ex.

1102 ¶¶ 107–08, 132–38, 197, 202–14) because they are consistent with the evidence cited therein. For example, Burger teaches that ESP 60 performs the steps of “receiving” call data e.g., “the particular public telephone number” of the subscriber (*see, e.g.*, Ex. 1103, 4:24–42, 7:3–12, 7:20–24, Figs. 4, 11), “accessing” the subscriber’s private packet address (URL) and control criteria based on the telephone number, such as designated privacy hours and blocked numbers (*id.* at 1:55–61, 7:20–33, 10:48–65, 11:11–21, Figs. 4, 11), and “initiating” a second call by accessing the subscriber on the private packet-based address “to establish an audio connection.” *See, e.g.*, Ex. 1103, 1:50–2:8, 6:60–8:26, 10:48–65, 11:11–21, Figs. 4, 11.

Additionally, we agree with Petitioner’s contentions and Mr. Willis’ testimony (’1257 Pet. 25–29; Ex. 1102 ¶¶ 107–08, 204–14) because Burger teaches “accessing control criteria” stored in database 282 based on call data, e.g., the called party’s public telephone number and using the retrieved data e.g., the URL to initiate the call. *See, e.g., id.* at 1:50–2:8, 7:4–8:26, 10:48–65, 11:1–21, Figs. 4, 5, 10, 11. Also, consistent with Petitioner’s contentions, Burger teaches that a subscriber record in ESP database 282 includes “the subscriber’s public telephone number 322” and “the subscriber’s public packet address 324.” *Id.* at 9:50–53. Burger further teaches that each of the subscriber’s telephone number and the packet address is used by ESP procedures, e.g., for forwarding a call. *Id.* at 8:66–9:35.

Patent Owner’s dispute centers on the recitation of “controller” in claims 143 and 163. ’1257 PO Resp. 48–51. For instance, Patent Owner contends Burger does not teach a “controller” and “does nothing more than disclose a configuration that has been disclaimed.” *Id.* at 49–50. Patent

Owner, more specifically, contends that ESP 60 “is an edge device that is coupled directly to [an] edge switch.” *Id.* at 50.

Claims 143 and 163 are broader than claims 38 and 65 discussed above. For example, claims 143 and 163 do not recite “switching facility” or “coupled to,” and further do not recite “tandem access controller” or “tandem switch.” Instead, claims 143 and 163 simply recite “controller.” Ex. 1101, 22:50–63, 23:45–24:6. For the reasons discussed in *supra* Section II.F, we decline to adopt Patent Owner proposed construction for “controller” or Patent Owner’s disclaimer.

Instead, we are persuaded by Petitioner’s contentions and we credit Mr. Willis’ testimony (’1257 Pet. 18–29; Ex. 1102 ¶¶ 107–08, 132–38, 197, 202–14) because Burger teaches that ESP 60 is a controller having enhanced services platform processing unit 62 that executes procedures providing intelligent interconnection by performing call processing, call screening, and blocking functions. *See, e.g.*, Ex. 1103, 1:50–2:38, 3:36–4:23, 6:60–8:46, 10:48–14:20, Figs. 1, 4, 5, 10–16. Claims 143 and 163 recite that the intelligent interconnection be provided between “a first communication network and a second communication network.” Ex. 1101, 22:50–52, 23:45–47. Burger teaches ESP 60 connected to PSTN 22 and packet switched network 24 and providing intelligent interconnection between these networks by providing services in which callers using PSTN 22 can access and establish an audio connection to a subscriber on the packet network. *See, e.g.*, Ex. 1103, 1:50–2:38, 3:36–4:23, 6:60–8:46, 10:48–14:20, Figs. 1, 4, 5, 10–16.³⁵

³⁵ Although not necessary for our determination, for the reasons discussed *infra* Section III.C.9 with respect to claims 144 and 164, we are persuaded

We now consider the remaining recitations in representative claim 143, which Patent Owner does not dispute. '1257 PO Resp. 48–51. Claim 143 also recites “enabling communication between the first call and the second call.” Petitioner points Burger’s teachings of placing a second call over the second network and connecting the first and second calls. '1257 Pet. 27–29 (citing 1:50–2:38, 6:60–9:40, 10:48–14:20, Figs. 4, 5, 10–16; Ex. 1102 ¶¶ 210-14). We agree with Petitioner’s contentions and Mr. Willis’ testimony ('1257 Pet. 27–29; Ex. 1102 ¶¶ 210-14), for example, because Burger teaches call control procedures corresponding to the steps of claim 143 including “284 Place call over packet network procedure,” “286 Place call over PSTN procedure,” “288 Receive call from packet network procedure,” “290 Receive call from PSTN procedure,” and “298 Connect calls 2-way procedure.” Ex. 1103, 1:50–2:38, 6:60–9:40, 10:48–14:20, Figs. 4, 5, 10–16. Additionally, Burger teaches “ESP 60 connects the caller 82 and the particular subscriber 86 for two-way communication upon the acceptance of the particular subscriber 86.” *Id.* at 8:21–23; *see also id.* at 2:3–5 (“The ESP connects the caller and the subscriber for two-way communication upon the authorization of the subscriber.”)

Representative claim 143 further recites “wherein at least one of the first and the second communications networks is a voice over IP (VOIP) network.” Petitioner points to Burger and the knowledge of one of ordinary skill in the art. '1257 Pet. 29–32 (citing *e.g.*, Ex. 1103, 1:26–27, 2:6–8, 4:1–12, 4:57–58, 4:66–67, 5:33–40, 9:40–49, 13:55–67, Figs. 1, 5; Ex.

that a person of ordinary skill in the art would have combined the techniques of the SS7 Paper into Burger’s system and would have had a reasonable expectation of success.

1102 ¶¶ 215–26). We are persuaded by Petitioner’s contentions and credit Mr. Willis’ testimony (*id.*) because they are consistent with the evidence cited therein. For example, Burger teaches that “packet-based networks have been used to provide voice services using packet switching and Voice over Internet Protocol (VoIP).” Ex. 1103, 1:24–27. Burger also teaches that subscribers may use “IP phone 194” and may place and receive calls using “the packet-based network 24 such as the internet.” *Id.* at 4:1–12, 4:57–58, 4:66–67, 5:33–40. Burger additionally specifically describes “[i]n a preferred embodiment, the present invention uses the International Telecommunications Union ITU-T Recommendation H.323 multimedia communications standard.” *Id.* at 9:40–49, 13:55–67. Mr. Willis testifies that ITU-T Recommendation H.323 was one of the first VoIP standards, and we credit his testimony because it is consistent with the evidence of record. Ex. 1102 ¶¶ 61–65, 217; Ex. 1103, 9:40–49, 13:55–67; Ex. 1117.

Additionally, we credit Mr. Willis’ testimony regarding reasons one of ordinary skill in the art would have combined the teachings of Burger with other knowledge of a person of ordinary skill in the art because his testimony is consistent with the evidence of record. Ex. 1102 ¶¶ 215–26. For instance, Mr. Willis testifies that one of ordinary skill in the art would have had reason to combine known Voice over IP technology (*see, e.g.*, Ex. Ex. 1103, 1:26–27; Ex. 1117) with Burger’s teachings because Voice over IP technology used bandwidth efficiently, was cheaper, and was readily compatible with the Internet, which was growing in popularity. Ex. 1102 ¶¶ 221–26. We credit Mr. Willis’ testimony because it is consistent with the evidence of record. *Id.* ¶¶ 62–65, 221–26; Ex. 1103, 1:24–26, 1:41–43 (“[B]ecause of the trend to packet-based systems that use VoIP

protocol, there is a need for efficient call screening using packet-based systems.”), 4:66–67.

Petitioner also points to combined teachings of Burger and Alexander for this recitation. ’1257 Pet. 29–33. Consistent with Petitioner’s contentions (*id.*), Alexander teaches “[t]he technology that allows telecommunications to be transmitted over an IP network is typically referred to as Voice over IP.” Ex. 1106, 3:64–66. Alexander further teaches that Voice over IP (VoIP) technology allows an IP network to transmit telecommunications by encapsulating a user’s voice into IP packets so that the voice can be transmitted over LANs 20 and Internet 40. *Id.* at 3:64–4:4.

Petitioner, additionally, provides reasoning to combine the teachings of Burger and Alexander, supported by the testimony of Mr. Willis. ’1257 Pet. 32–33 (citing *e.g.*, Ex. 1102 ¶¶ 227–32; Ex. 1103, 1:24–25, 2:6–8, 4:1–12, 4:57–58, Figs. 1, 5; Ex. 1106, 3:64–4:8, 4:42–50, Fig. 1). We credit Mr. Willis’ testimony that combining the teachings of Burger and Alexander is nothing more than a combination of prior art elements according to known methods because it is consistent with the evidence of record showing the Voice over IP was well-known and standardized. Ex. 1102 ¶¶ 62–65; Ex. 1103, 1:26–27; Ex. 1106, 3:64–66; Ex. 1117. Additionally, we credit Mr. Willis’ testimony that one of ordinary skill in the art would have had reason to combine the teachings of Burger and Alexander because of the known advantages of using Voice over IP (VoIP) technology, discussed above, in addition to Burger’s suggestions. Ex. 1102 ¶¶ 62–65, 221–32; Ex. 1103, 1:24–26, 1:41–43 (“[B]ecause of the trend to packet-based systems that use VoIP protocol, there is a need for efficient call screening using packet-based systems.”), 4:66–67, 9:40–49 (“In a preferred embodiment, the present

invention uses International Telecommunications Union ITU-T Recommendation H.323 multimedia communications standard.”), 13:55–67.

Additionally, in the portions of Mr. Willis’ testimony relied upon by Petitioner, Mr. Willis testifies that he incorporates by reference testimony in his declaration pertaining to claims 38 and 65. *See, e.g.*, ’1257 Pet. 18, 34–35 (citing Ex. 1102 ¶¶ 197, 234). Mr. Willis, for example, testifies that elements [c], [d], and [e] of claims 38 and 65 are inter-related with each other (*see, e.g.*, Ex. 1102 ¶¶ 142, 187, 194), as well as the steps of claim 143 (*see, e.g., id.* ¶¶ 197, 234). We, therefore, treat his incorporated testimony and supporting evidence regarding claims 38 and 65 (*see, e.g.*, Ex. 1102 ¶¶ 151–96) as evidence supporting Petitioner’s challenges to the claims 143 and 163.

Based on the evidence in the entire trial record, we determine that Petitioner has demonstrated by a preponderance of the evidence that each of claims 143 and 163 is unpatentable as obvious over Burger in combination with the knowledge of a person of ordinary skill in the art, or in combination with Alexander.

b. Archer Grounds

The preamble of claim 143 recites “[a] method of providing an intelligent interconnection between a first communication network and a second communication network” comprises four steps, each of which is performed by a “controller.” Ex. 1101, 22:50–63. As discussed above, claim 163 similarly recites “[a] controller” including circuitry or software for performing the same steps recited in claim 143. *Id.* at 23:45–24:6. Petitioner takes the position that Archer’s server processor 128 and database 138 teaches the “controller” recited in claims 143 and 163. *See, e.g.*, ’1257

Pet. 40–50 (citing *e.g.*, Ex. 1104, 2:9–51, 4:17–4:42, 6:47–7:21, 8:43–9:60, 10:45–11:43, Figs. 2, 4–6; Ex. 1102 ¶¶ 299–330).

The dispute between the parties also is similar to that discussed with respect to the Burger grounds in that it centers on Patent Owner’s disclaimer contentions, although the claims 143 and 163 do not recite any of the terms “switching facility,” “tandem switch,” tandem access controller,” or “coupled to.” Ex. 1001, 22:50–63, 23:45–24:6. Patent Owner contends that Archer “at best discloses a controller at an edge switch or that is itself an edge device.” ’1257 PO Resp. 52. Patent Owner further contends “[i]mplementing call control features in a controller through an edge device and edge switch was disclaimed.” *Id.* at 53. For the reasons discussed in *supra* Section II.F, we decline to adopt Patent Owner proposed construction for “controller” or Patent Owner’s disclaimer.

Instead, we agree with Petitioner’s contentions and Mr. Willis’ testimony that Archer’s server processor 128 and database 138 teaches the claimed controller that is for use between a first communication network and a second communication network. *See, e.g.*, ’1257 Pet. 40–50 (citing *e.g.*, Ex. 1104, 2:9–51, 4:17–4:42, 6:47–7:21, 8:43–9:60, 10:45–11:43, Figs. 2, 4–6; Ex. 1102 ¶¶ 299–330). Mr. Willis, for example, testifies that Archer’s server processor 128 coupled to database 138 executes software to route calls between packet network 130 and the PSTN 118, 136. Ex. 1002 ¶¶ 300–01. We credit Mr. Willis’ testimony (*id.*) as it is consistent with Archer’s teachings of server processor receiving a call from telephone 114 via the PSTN and packet network 130 and processing that call through to the called party on phone 120 or computer 134 across both the PSTN and packet network 130. *See, e.g.*, Ex. 1104, 6:31–7:29, 8:43–9:62, Figs. 2, 4–6.

Additionally, Petitioner's showing and evidence for the "controller" recited in claims 143 and 163 is substantially the same as its showing for the processing systems recited in claims 38 and 65. *Compare* '1257 Pet. 12–13, 40–50 *with* '1254 Pet. 12–13, 48–67. For the further reasons discussed *supra* Section III.C.7.b, we are persuaded by Petitioner's showing.

We turn to the remaining recitations in claims 143 and 163. Patent Owner does not dispute Petitioner's contentions or Mr. Willis' testimony regarding the remaining recitations in claims 143 and 163. PO Resp. 51–53.

Representative claim 143 next recites the steps of "receiving at a controller call data which is associated with a first call via a first communication network," "accessing control criteria by the controller based upon the call data," "initiating a second call via a second communications network by the controller using call data," and "enabling communication between the first call and the second call by the controller." Ex. 1101, 22:50–63. With two exceptions noted below, these steps are similar, but broader than recitations in claim 38 including, for example, "receiving call data," "processing the call . . . to complete the call to the called party," and "establishing the voice communication." Ex. 1101, 15:30–56. Petitioner's showing and evidence for claims 143 and 163 for these recitations is substantially the same as its showing for the corresponding limitations recited in claims 38 and 65. *Compare* '1257 Pet. 12–13, 40–50 *with* '1254 Pet. 12–13, 48–67. For the reasons discussed *supra* Section III.C.7.b, we are persuaded by Petitioner's showing.

Regarding the first of the exceptions, for "accessing control criteria based upon call data," we agree with Petitioner's contentions and Mr. Willis' testimony because they are consistent with the evidence of record. '1257

Pet. 46; Ex. 1102 ¶¶ 309–13. For example, because Archer teaches server processor 128 extracting subscriber information, e.g., “the called party’s telephone number or subscriber number” and querying database 138 to determine the forwarding address,³⁶ which is used to generate IP packets to complete the call. *See, e.g.*, Ex. 1104, 2:45–51, 4:37–47, 5:33–36, 5:42–46, 6:33–62, 8:57–65, 9:9–9:16, Figs. 2, 4, 6. Archer further teaches that database 138 “will also include other subscriber information such as forwarding priorities” and “subscriber billing information and this data is retrieved and used by server processor 128. *Id.* at 7:23–50, 8:57–65, 9:9–9:16, 9:31–50.

Regarding the second of the exceptions, claims 143 and 163 further require that at least one network be “a voice over IP (VoIP) network.” We again agree with Petitioner’s contentions and Mr. Willis’ testimony because they are consistent with the evidence of record. ’1257 Pet. 48–49; Ex. 1102 ¶¶ 61–65, 318–23. For example, Archer teaches that packet network 130 uses Internet Protocol to support voice calls. *See, e.g.*, Ex. 1104, 4:20–30, 6:1–17, Fig. 2. Additionally, we credit Mr. Willis’ testimony that one of ordinary skill in the art would have had a reason to combine Archer’s teachings with the knowledge of one of ordinary skill in the art of Voice over IP technology. Ex. 1102 ¶¶ 322–23. Mr. Willis’ testimony (*id.*) is consistent with the evidence of record that such networks were known as being the option for communicating voice over IP packet networks (Ex. 1104, 9:63–67; Ex. 1110; Ex. 1102 ¶¶ 61–65) and that Archer suggests such

³⁶ Archer teaches “Database 138 stores a series of destinations associated with each subscriber. These destinations are returned to server processor 128.” Ex. 1104, 6:60–62.

an implementation by explaining that its invention improves problems with existing Voice over IP systems (Ex. 1104, 1:48–67).

Based on the evidence in the entire trial record, we determine that Petitioner has demonstrated by a preponderance of the evidence that each of claims 143 and 163 is unpatentable as obvious over Archer in combination with the knowledge of a person of ordinary skill in the art.

9. *Dependent claims 144–147, 149, 150, and 176–178*

We turn now to dependent claims 144–147, 149, 150, and 176–178 challenged in IPR2016-01257. Each of claims 144–147, 149, and 150 depends directly from independent claim 143. Each of claims 176–178 depends directly from independent claim 163. Patent Owner does not argue separately these dependent claims. '1257 PO Resp. 48–53.

Claims 144–146 and claims 176–178 recite further limitations on the call data including that the call data “includes a call request,” “includes a telephone number,” and “includes an IP address,” respectively. Ex. 1101, 22:64–23:4. 24:36–41. We agree with Petitioner’s contentions and Mr. Willis’ testimony because they are consistent with the prior art of record. '1257 Pet. 35–39; Ex. 1102 ¶¶ 35, 43–51, 132–38, 202, 236–46. For instance, the combination of Burger and the knowledge of one of ordinary skill in the art, including the SS7 Paper, teaches a call request, such as a call SETUP message (call request, recited in claims 144 and 176), and Burger teaches that the subscriber’s public telephone number (telephone number, recited in claims 145 and 177) or subscriber’s public packet address (IP address, recited claims 146 and 178) is call data that is received and extracted to determine which subscriber and control criteria are associated with the call. *See, e.g.*, Ex. 1103, 4:24–41 (call placed using “public

telephone number that terminates at the ESP 60”), 7:8–19 (ESP 60 receives “particular public telephone number for the particular subscriber”), 11:1–16 (“caller uses the subscriber’s public packet-based address” and ESP 60 access database using that address), Figs. 2, 4, 11;; Ex. 1114, 10–11 (teaching sending “Set-up” message); Ex. 1117, 51–68 (teaching “Call setup”). Additionally, we credit Mr. Willis’ testimony that one of ordinary skill in the art would have had reason to combine the teachings of Burger will the teachings of call requests in the SS7 Paper and in accordance with the H.323 standard because it would allow Burger’s ESP 60 to operate in predictable ways and avoid “special programming or devices,” and Burger suggests using these protocols. Ex. 1102 ¶ 241–42. Mr. Willis’ testimony regarding SS7 is consistent with Burger, which teaches that “circuit switched network 22 is the PSTN” (Ex. 1103, 3:41–42), the “[t]he interconnection 98 between central office switches 92 and 94 can be formed in many ways” (*id.* at 4:31–32), and that a call “passes through the circuit switched network 22 to the ESP 60” (*id.* at 7:6–8). Mr. Willis’ testimony regarding call setup and transmission of IP address also is consistent with Burger’s teachings. Ex. 1103, 9:40–49 (“In a preferred embodiment, the present invention uses . . . ITU-T Recommendation H.323 multimedia communications standard.”).

Regarding, claims 144, 145, 176, and 177 and the Archer grounds, we agree with Petitioner’s contentions and Mr. Willis’ testimony because they are consistent with the prior art of record. ’1257 Pet. 50–51; Ex. 1102 ¶¶ 309–13, 326–29, 330–31. For instance, Archer teaches that server processor 128 receives packets “which include an indication of the called party” (call request, recited in claims 144 and 176) and the call data that is

received is a telephone number (recited in claims 145 and 177). Ex. 1104, 4:31–42, 6:47–56 (teaching that server processor 128 receives an indication of the called party such as “the called party’s telephone number or subscriber number”), 8:50–60, 11:55–57, Figs. 1, 4, 5.

Claim 147 further recites that the call data includes “a VOIP signaling message.” Ex. 1101, 23:2–3. Petitioner’s contentions for dependent claim 147 overlap those discussed with respect to independent claims 143 and 163 and, for the reasons discussed, we agree with Petitioner’s showing and Mr. Willis’ testimony regarding Voice over IP technology and claims 143, 147, and 163. See *supra* § III.C.8; see also Ex. 1103, 5:30–40 (teaching using IP phone to communicate over packet network), 9:40–49 (“In a preferred embodiment, the present invention uses . . . ITU-T Recommendation H.323 multimedia communications standard,” which “defines the components, procedures and protocols to provide audio and visual communication in packet-switched networks.”); Ex. 1117, 1–4, 11, 51–68 (describing ITU-T Recommendation H.323, including “Call setup”).

Claim 149 further recites that the control criteria includes a selection of a telephone number. Ex. 1101, 23:7–8. Regarding the Burger grounds, we agree with Petitioner’s contentions and Mr. Willis’ testimony (’1257 Pet. 39; Ex. 1102 ¶¶ 204–09, 247), for example, because Burger teaches control criteria include the subscriber’s private telephone number, telephone numbers to block, privacy hours, and voicemail address. Ex. 1103, 9:50–67, 10:48–65, 11:1–52, Figs. 4, 5, 6 (illustrating ESP database 320 including subscriber’s private telephone number 328, telephone numbers to block 342, privacy hours 330, and voicemail address 332), 11. Regarding the Archer ground, we agree with Petitioner’s contentions and Mr. Willis’ testimony

regarding claim 149 ('1257 Pet. 51; Ex. 1102 ¶¶ 309–13, 331), for example, because Archer teaches server processor 128 querying database 138 for forwarding addresses in the form of telephone numbers. Ex. 1104, 6:53–7:13 (“For telephone number destinations, the number is encoded within the body of the packet.”), 8:61–65 (describing that database 138 stores and retrieves “phone number lists provided by the called party”), 9:9–19.

Claim 150 further recites that the control criteria includes a feature selection. Ex. 1001, 23:9–10. Regarding the Burger grounds, we agree with Petitioner’s contentions and Mr. Willis’ testimony ('1257 Pet. 39–40; Ex. 1102 ¶¶ 204–07, 248), for example, because Burger teaches whether to forward the call to the subscriber and what subscriber to forward the call to. Ex. 1103, 9:50–67, 10:30–65, 11:1–52, Figs. 4–6, 10–12. Regarding the Archer grounds, we agree with Petitioner’s contentions and Mr. Willis’ testimony regarding claim 150 ('1257 Pet. 51–52; Ex. 1102 ¶¶ 309–13, 332), for example, because Archer teaches that users having the ability to program which devices go into which priority group for call forwarding. Ex. 1104, 7:33–42, 9:38–50.

Based on the evidence in the entire trial record, we determine that Petitioner has demonstrated by a preponderance of the evidence that each of claims 144–147, 149, 150, and 176–178 is unpatentable as obvious over Burger in combination with the knowledge of a person of ordinary skill in the art or Alexander. Further, we determine that Petitioner has demonstrated by a preponderance of the evidence that each of claims 144, 145, 149, 150,

176, and 177 is unpatentable as obvious over Archer and the knowledge of a person of ordinary skill in the art.³⁷

D. Patent Owner's Motion to Amend

We have concluded that the challenged claims of the '113 Patent are unpatentable. Therefore, we address Patent Owner's contingent motion to enter proposed substitute claim 184. Mot. 1; Ex. 2062. For the reasons that follow, Patent Owner's motion is *denied*.

We first turn to the United States Court of Appeals for the Federal Circuit's en banc decision in *Aqua Products*. The Federal Circuit remanded the case "for the Board to issue a final decision under § 318(a) assessing the patentability of the proposed substitute claims without placing the burden of persuasion on the patent owner." 872 F.3d at 1296. Judge Reyna's opinion in *Aqua Products* stated "a majority of the court interprets § 316(e) to be ambiguous as to the question who bears the burden of persuasion in a motion to amend claims." *Id.* at 1335. Part III of Judge Reyna's opinion stated that "Part III of this opinion sets forth the judgment of this court on what the Board may and may not do with respect [to] the burden of production on remand in this case," and "[t]here is no disagreement that the patent owner bears a burden of production in accordance 35 U.S.C. § 316(d)." *Id.* at 1340–41; *see also, e.g., id.* at 1305–06 (explaining that "patent owner must satisfy the Board that the statutory criteria in § 316(d)(1)(a)–(b) and

³⁷ For claims 146, 147, and 178, we also instituted on the ground of obviousness over Archer. In light of our unpatentability determination based on Burger, we take no position on whether these same claims are obvious over Archer.

§ 316(d)(3) are met and that any reasonable procedural obligations imposed by the Director are satisfied”).

On November 21, 2017, the Office provided guidance on motions to amend in view of *Aqua Products*. See “Guidance on Motions to Amend in view of *Aqua Products*” (Nov. 21, 2017) (https://www.uspto.gov/sites/default/files/documents/guidance_on_motions_to_amend_11_2017.pdf). As discussed therein, in addition to the requirements of 35 U.S.C. § 316(d), a motion to amend must meet the requirements of 37 C.F.R. § 42.121.

For the reasons explained below, we conclude that Patent Owner’s Motion to Amend does not satisfy the requirements of 37 C.F.R. § 42.121(b)(1) because it does not set forth written description support for proposed substitute claim 184.

Proposed substitute claim 184 is set forth below, with changes shown in redline.

184. A method of providing an intelligent interconnection at a tandem access controller between a first communication network and a second communication network, comprising:

~~receiving at a controller call data which is associated with a first call via a first communication network;~~

receiving at the tandem access controller a first request to establish a first incoming call and call data which is associated with the first request to establish the first incoming call via a first communication network, wherein the first communication network is a PSTN communication network comprising a plurality of edge switches connected to telephones on one side and PSTN tandem switches on the other side, wherein the PSTN tandem switches includes the particular PSTN tandem switch, wherein the PSTN tandem switches are not the edge switches, wherein the PSTN tandem switches are not directly connected to any of the telephones, wherein the tandem access controller is not

any of the edge switches, wherein communications, including the first request to establish the first incoming call, between the tandem access controller and the particular PSTN tandem switch occur without passing through any of the edge switches;

accessing control criteria by the tandem access controller based upon the call data;

initiating a second call request to establish a second call via a second communication network by the tandem access controller, without yet answering the first incoming call, using the call data and the control criteria, wherein ~~at least one of the first and the~~ second communication networks is a voice over IP (VOIP) network; ~~and~~

answering the first incoming call at the tandem access controller when the second call is answered; and

enabling communication between the first call and the second call by the ~~controller~~ tandem access controller when the second call is answered by connecting the first call to the second call.

Ex. 2062.

An amendment may not enlarge the scope of the claims of the patent or introduce new matter. 35 U.S.C. § 316(d)(3). In connection with its motion to amend, a patent owner must set forth “support in the original disclosure of the patent for each claim that is added or amended.” 37 C.F.R. § 42.121(b)(1). We first address whether Patent Owner’s Motion to Amend sets forth how the original application provides written description support for the amended claims. The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to a person of ordinary skill in the art that the inventor had possession at that time of filing of the claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc); *Vas-Cath, Inc. v. Mahurkar*,

935 F.2d 1555, 1563 (Fed. Cir. 1991); *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983). One shows that one is “in possession” of the invention by describing the invention, with all its claimed limitations, not that which makes it obvious. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997); *In re Wertheim*, 541 F.2d 257, 262 (CCPA 1976).

Proposed substitute claim 184 contains the following new limitation “*answering the first incoming call at the tandem access controller when the second call is answered.*” Patent Owner argues that “[s]upport for the Proposed Substitute Claims from the original disclosure of the patent . . . is provided in Ex. 2041” (a claim listing). Mot. 4. Besides referring to two paragraphs in Ex. 2040 (Bates’ Declaration), the motion provides no further explanation. *Id.* at 4. While Patent Owner is correct that we authorized it to file an appendix with a claim listing showing text of the specification alongside corresponding claim elements, Patent Owner was not excused from setting forth how the original disclosure provides written description support for the proposed substitute claim. Paper 24, 3 (“[w]e cautioned that Patent Owner should not include in its appendix any argument or characterizations in support of written description”). In other words, Patent Owner was implicitly instructed to put arguments or characterizations in support of written description not in the appendix, but rather in its motion.

In Exhibit 2041, Patent Owner lists the amended claim in one column, and the alleged support beside the claim language. For the disputed limitation, Patent Owner directs attention to the following paragraph and Figure 5 of the ’965 application with no further explanation.

The PSTN tandem switch 16 directs a first call (from the calling party 20 to the subscriber’s phone 14 using the subscriber’s public phone number) to the TAC 10, which in turn places a

second call, subject to 3rd-party control information, to the subscriber's "private" phone number without yet terminating the first call. The TAC 10 is connected within the subscriber's local service area so calls from TAC 10 to the subscriber do not incur a toll. When the subscriber 12 terminates (or answers) the second call, *the TAC 10 terminates the first call and connects it to the second call*, thereby connecting the calling party 20 to the subscriber 12. Hence, the calling party essentially calls the TAC 10, using the subscriber's public phone number, *and the TAC 10, after processing the call using the selected features, calls the subscriber, as appropriate, using the subscriber's private phone number and connects the two calls. The process is transparent to the parties.*

Ex. 2041, 22–23 (emphasis added).

The above description does not describe that the TAC *answers* the first call when the subscriber answers the second call. Rather, the description states that the "TAC 10 *terminates* the first call and connects it to the second call." Figure 5 of the application does not disclose either the words "answer" or "terminate." Patent Owner, however, provides no explanation for why "terminates" in the context of the TAC provides written description support for "answering the first incoming call at the tandem access controller" as newly claimed in the substitute claims. While *ipsis verbis* support for claim terms is not necessary, it is incumbent upon the Patent Owner to set forth where the original disclosure provides written description support for the proposed substitute claim.

The only use of the word "answers" in the first part of the sentence—"When the *subscriber* 12 terminates (or answers) the second call, the TAC 10 *terminates* the first call and connects it to the second call, thereby connecting the calling party 20 to the subscriber 12"—pertains to an action taken by the subscriber. Ex. 2041, 22–23 (emphasis added). In particular,

the phrase “terminates (or answers)” is with respect to a *subscriber*, not the *TAC*. Also, the description includes “or answers” in a parenthetical, indicating two alternatives. In other words, terminates “or answers” means that there are two actions the subscriber may take. The subscriber may either terminate the call, or may answer the call. Reading the entire sentence, as a whole, when the subscriber takes either action (terminates or answers the second call), the TAC merely *terminates* the first call and connects it to the second call, not answers the first call.

Although Petitioner did not provide contentions regarding lack of written description in its Opposition (*see generally* Oppn. MTA),³⁸ the requirement that an amendment may not enlarge the scope of the claims of the patent or introduce new matter is statutory. 35 U.S.C. § 316(d)(3). In conclusion, for the reasons discussed above, we determine that Patent Owner’s Motion to Amend does not set forth that the original disclosure provides written description support for the phrase “*answering the first incoming call at the tandem access controller* when the second call is answered by a communication device associated with the specified recipient,” or that the phrase does not introduce new matter. 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii) and (b)(1).

For this reason alone, Patent Owner’s Motion to Amend is *denied*. Because our determination is dispositive, we do not, nor need not, address

³⁸ We considered Patent Owner’s Reply in support of its Motion to Amend, but did not find further explanation or identification of disclosure showing written description support for the amendment.

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the parties' contentions regarding whether proposed substitute claim 184 is unpatentable over the prior art of record.

E. Patent Owner's Listings of Improper Reply Arguments and Evidence

In each proceeding, Patent Owner filed a Listing of Improper Reply Arguments and Evidence. IPR2016-01254, Paper 35 ('1254 PO List); IPR2016-01257, Paper 36 ('1257 PO List). Petitioner filed Responses. IPR2016-01254, Paper 37 ('1254 Pet. Resp. PO List); IPR2016-01257, Paper 38 ('1257 Pet. Resp. PO List). Patent Owner's listing includes Petitioner's reply contentions relating to cross-examination of Patent Owner's declarant and portions of Burger and Archer that teach recitations disputed by Patent Owner. '1254 PO List, 1; '1257 PO List, 1. As set forth above, we have made our determinations regarding the original claims based the arguments and evidence set forth in the Petition. The arguments and evidence in Petitioner's Reply that informed our analysis are properly responsive.

F. Petitioner's Motion to Exclude

In each of IPR2016-01254 and IPR2016-01257, Petitioner filed a Motion to Exclude. '1254 Pet. Mot. to Exclude; '1257 Pet. Mot. to Exclude. Patent Owner filed Oppositions (IPR2016-01254, Paper 44; IPR2016-01257, Paper 47) and Petitioner filed Replies (IPR2016-01254, Paper 48; IPR2016-01257, Paper 50).

In its Motion to Exclude Evidence in IPR2016-01254, Petitioner seeks to exclude Exhibits 2023, 2025, 2028–2030, and 2065, which includes excerpts of expert's testimony from other related proceedings. '1254 Pet. Mot. to Exclude. In its Motion to Exclude Evidence in IPR2016-01257,

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Petitioner seeks to exclude: (1) Exhibit 2070, which is Patent Owner's Declaration of Mr. Bates in support of Patent Owner's Motion to Amend Reply ('1257 Pet. Mot. to Exclude, 1–8); (2) Exhibits 2023, 2025, 2028–2030, and 2065, which includes excerpts of expert's testimony from other related proceedings (*id.* at 8–9); and (3) Patent Owner's Exhibit 2041, which includes Patent Owner's listing of written description support for proposed substitute claim 184 (*id.* at 9–10).

Under the particular circumstances in this case, we need not assess the merits of Petitioner's Motions to Exclude Evidence. As discussed above, even without excluding those Patent Owner's evidence, we have determined that Petitioner has demonstrated by a preponderance of the evidence that the challenged claims are unpatentable and we have denied Patent Owner's Motion to Amend. Accordingly, Petitioner's Motion to Exclude Evidence is *dismissed* as moot.

G. Patent Owner's Motion to Exclude

In each of IPR2016-01254 and IPR2016-01257, Patent Owner filed a Motion to Exclude. '1254 PO Mot. to Exclude; '1257 PO Mot. to Exclude. Petitioner filed Oppositions (IPR2016-01254, Paper 45; IPR2016-01257, Paper 48) and Patent Owner filed Replies (IPR2016-01254, Paper 49; IPR2016-01257, Paper 51).

In its Motions to Exclude Evidence, Patent Owner seeks to exclude: (1) U.S. Patent No. 6,442,169 to Lewis³⁹ ('1254 PO Mot. to Exclude, 3–4; '1257 PO Mot. to Exclude, 3–4); (2) U.S. Patent No. 6,333,931 to LaPier⁴⁰

³⁹ IPR2016-01254, Exhibit 1046; IPR2016-01257, Exhibit 1146.

⁴⁰ IPR2016-01254, Exhibit 1047; IPR2016-01257, Exhibit 1147.

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('1254 PO Mot. to Exclude, 4–6; '1257 PO Mot. to Exclude, 4–6);
(3) transcripts of the depositions of Mr. Bates taken in connection with other proceedings⁴¹ ('1254 PO Mot. to Exclude, 5–6; '1257 PO Mot. to Exclude, 6–7); and (4) portions the transcript of Dr. La Porta's deposition testimony taken in different proceedings⁴² ('1254 PO Mot. to Exclude, 6–7; '1257 PO Mot. to Exclude, 8–9). In IPR2016-01257, Patent Owner also seeks to exclude Exhibit 1156, which is the Declaration of Dr. La Porta submitted in connection with other proceedings. '1257 PO Mot. to Exclude, 7–8. Patent Owner argues that these items are relied upon by Petitioner to support new arguments. '1254 PO Mot. to Exclude, 3–6; '1257 PO Mot. to Exclude, 3–6; IPR2016-01254, Paper 49, 1–3; IPR2016-01257, Paper 51, 1–3. Patent Owner also argues that the deposition transcripts are hearsay because they were taken in different proceedings and the declaration is irrelevant. '1254 PO Mot. to Exclude, 6–7; '1257 PO Mot. to Exclude, 6–9; IPR2016-01254, Paper 49, 4–5; IPR2016-01257, Paper 51, 4–5. We have determined that Petitioner has demonstrated by a preponderance of the evidence that the challenged claims are unpatentable, without considering the transcripts and Declaration of Dr. La Porta (IPR2016-01254, Exhibit 1058; IPR2016-01257, Exhibits 1156, 1161).

We note, however, that Petitioner did not rely on LaPier and Lewis to meet the claim limitations, but rather to rebut Mr. Bates' testimony ('1254 Ex. 2022 ¶ 63; '1257 Ex. 2022 ¶ 67) regarding *the state of the art* at the time of the invention. IPR2016-01254, Paper 45, 2–7; IPR2016-01257, Paper 48,

⁴¹ IPR2016-01254, Exhibits 1048, 1049; IPR2016-01257, Exhibits 1148, 1149.

⁴² IPR2016-01254, Exhibit 1058; IPR2016-01257, Exhibit 1161.

2–7. As our reviewing court noted in *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359 (Fed. Cir. 2015), we are required to consider prior art references cited as “evidence of the background understanding of skilled artisans,” even when such references were cited in a reply to a patent owner response. *Id.* at 1365 (holding that references “can legitimately serve to document the knowledge that skilled artisans would bring to bear in reading the prior art identified as producing obviousness,” and vacating the Board’s decision because it appeared that the Board had declined to consider a reference simply because the reference “had not been identified at the petition stage as one of the pieces of prior art defining a combination for obviousness.”) (citing *Randall Mfg. v. Rea*, 733 F.3d, 1355, 1362–63 (Fed. Cir. 2013)). Therefore, we have considered La Pier and Lewis as they are evidence of “the knowledge that skilled artisans would bring to bear in reading the prior art identified as producing obviousness.” *See id.*

Additionally, regarding the deposition transcripts of Mr. Bates (IPR2016-01254, Exhibits 1048, 1049; IPR2016-01257, Exhibits 1148, 1149) taken in other proceedings, Patent Owner acknowledges that Mr. Bates was not deposed in the instant proceedings. ’1254 PO Mot. to Exclude, 6; ’1257 PO Mot. to Exclude, 6–7. Mr. Bates is Patent Owner’s declarant in the instant proceedings. *See, e.g.*, ’1254 Ex. 2022; ’1257 Ex. 2022. Testimony other than uncompelled, direct testimony must be in the form of a deposition transcript. 37 C.F.R. § 42.53 (a). Cross-examination testimony is routine discovery. 37 C.F.R. § 42.51(b)(1)(ii). Although the cross-examination was not taken in the instant proceedings, because the cross-examination was of Patent Owner’s declarant, Mr. Bates, in the instant proceedings, and the other proceedings involve the same or related

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challenged patents, we determine Petitioner's use of Mr. Bates' deposition testimony in the instant proceedings, submitted in the form of a deposition transcript as required, was proper, particularly in light of that lack of a deposition of Mr. Bates in the instant proceedings.

Accordingly, we *dismiss* Patent Owner's Motion to Exclude.

IV. CONCLUSION

For the foregoing reasons, we determine that Petitioner has established by a preponderance of the evidence that the challenged claims of the '113 Patent are unpatentable based on the following grounds:

Challenged Claims	Basis	Reference(s)
38, 65, 143–147, 149, 150, 163, and 176–178	§ 103	Burger and the knowledge of a person of ordinary skill in the art
38 and 65	§ 103	Burger, Alexander, and Admitted Prior Art (Ex. 1001, 1:42–51)
143–147, 149, 150, 163, and 176–178	§ 103	Burger and Alexander
38, 65, 143–145, 149, 150, 163, 176, and 177	§ 103	Archer and the knowledge of a person of ordinary skill in the art
38 and 65	§ 103	Archer and Chang

Additionally, we determine that Patent Owner has not demonstrated by a preponderance of the evidence that the '119 Patent Application provides written description support for proposed substitute claim 184.

V. ORDER

Accordingly, it is:

ORDERED that claims 38, 65, 143–147, 149, 150, 163, and 176–178 of the '113 patent have been proven to be unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Amend is *denied*;

FURTHER ORDERED that a copy of this Decision be entered into the records of Cases IPR2016-01254 and IPR2016-01257;

FURTHER ORDERED that Petitioner's Motion to Exclude is *dismissed* as moot;

FURTHER ORDERED that Patent Owner's Motion to Exclude is *dismissed*; and

FURTHER ORDERED that because this is a Final Written Decision, 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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