

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

VOIP-PAL.COM INC.,
Patent Owner.

Case IPR2016-01201
Patent 8,542,815 B2

Before BARBARA A. BENOIT, LYNNE E. PETTIGREW, and
STACY B. MARGOLIES, *Administrative Patent Judges*.

MARGOLIES, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Apple Inc. (“Petitioner”) filed a Petition for *inter partes* review of claims 1, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111 of U.S. Patent No. 8,542,815 B2 (Ex. 1001, “the ’815 patent”). Paper 1 (“Pet.”). Voip-Pal.com, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 5

(“Prelim. Resp.”). Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); *see* 37 C.F.R. § 42.108. Upon consideration of the Petition and the Preliminary Response, we conclude that the information presented shows that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of claims 1, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111 of the ’815 patent.

A. *Related Matters*

The parties identify the following district court proceedings in which the ’815 patent has been asserted: *Voip-Pal.com, Inc. v. Apple, Inc.*, Case No. 2-16-cv-00260 (D. Nev.); and *Voip-Pal.com, Inc. v. Verizon Wireless Services, LLC*, Case No. 2-16-cv-00271 (D. Nev.). *See* Pet. 58; Paper 4, 1.

Petitioner also has filed a petition for *inter partes* review of claims of U.S. Patent No. 9,179,005—a continuation of the ’815 patent—in IPR2016-001198. Another petitioner—Unified Patents Inc.—filed a petition for *inter partes* review of claims of the ’815 patent in IPR2016-01082. We did not institute a trial in that case.

B. *The ’815 Patent*

The ’815 patent is directed to classifying a call as a public network call or a private network call and producing a routing message based on that classification. Ex. 1001, Abstract. Figure 7 of the ’815 patent, shown below, illustrates a routing controller that facilitates communication between callers and callees:

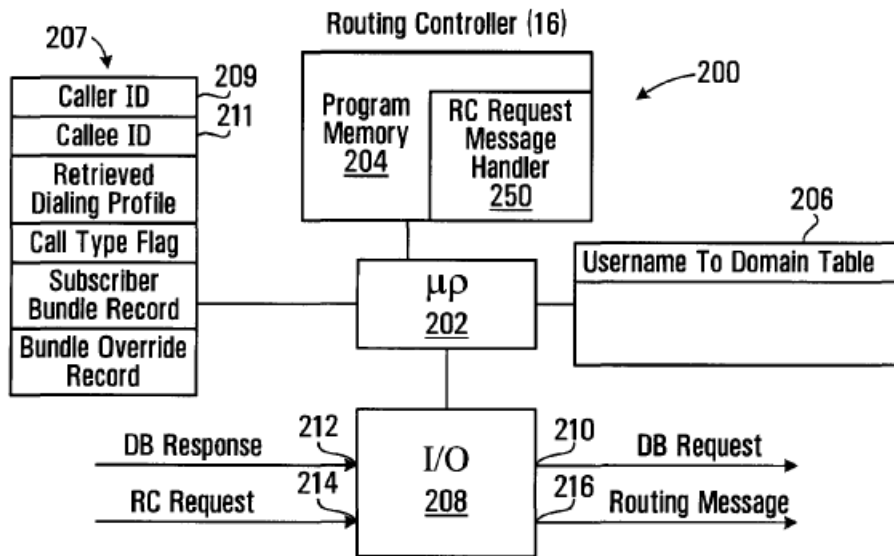


FIG. 7

Id. at Fig. 7, 14:24–25, 17:16–17. As shown in Figure 7, above, routing controller (RC) 16 includes RC processor circuit 200, which in turn includes processor 202, program memory 204, table memory 206, buffer memory 207, and I/O port 208. *Id.* at 17:17–22. Routing controller 16 queries database 18 (shown in Figure 1) to produce a routing message to connect caller and callee. *Id.* at 14:10–17, 14:24–34. Program memory 204 includes blocks of code for directing processor 202 to carry out various functions of the routing controller. *Id.* at 17:38–40. Those blocks of code include RC request message handler 250, which directs the routing controller to produce the routing message. *Id.* at 17:40–44.

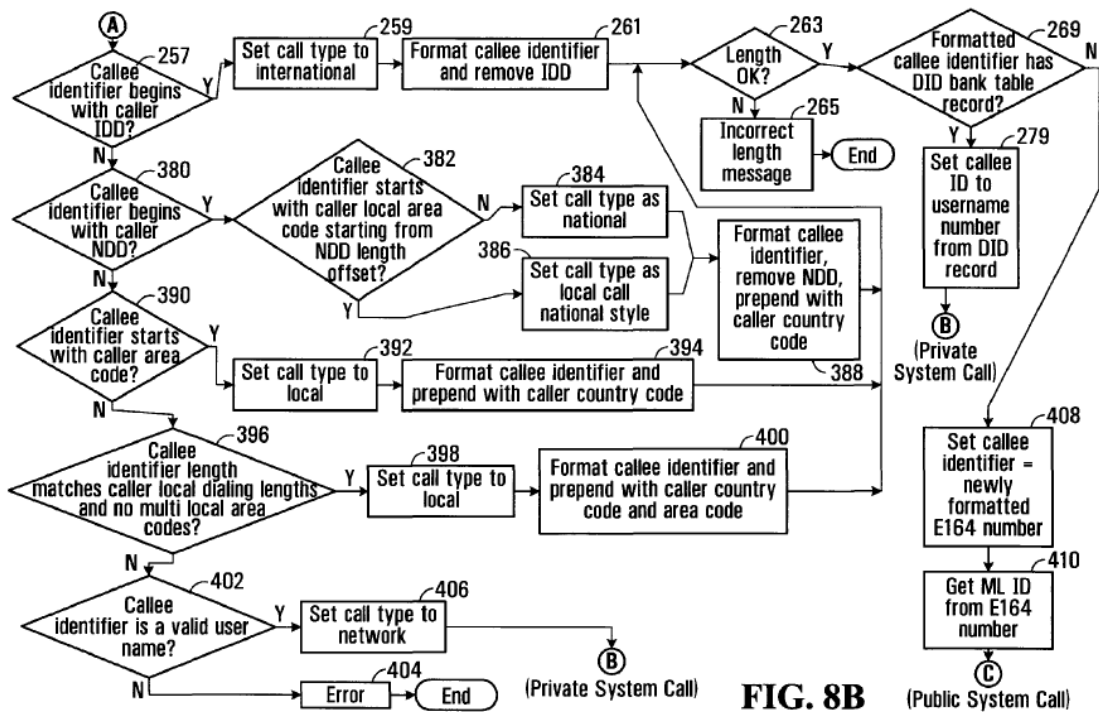
According to the '815 patent, in response to a calling subscriber initiating a call, the routing controller:

receiv[es] a callee identifier from the calling subscriber, us[es] call classification criteria associated with the calling subscriber to classify the call as a public network call or a private network call[,] and produc[es] a routing message identifying an address

on the private network, associated with the callee[,] when the call is classified as a private network call and produc[es] a routing message identifying a gateway to the public network when the call is classified as a public network call.

Id. at 14:24–34.

Figures 8A through 8D of the '815 patent illustrate a flowchart of an RC request message handler executed by the RC processor circuit. *Id.* at 10:62–63. Figure 8B, shown below, illustrates steps for performing checks on the callee identifier:



Id. at Fig. 8B, 19:45–49. Blocks 257, 380, 390, 396, 402 in Figure 8B above effectively “establish call classification criteria for classifying the call as a public network call or a private network call.” *Id.* at 22:48–51. For example, block 402 “directs the processor 202 of FIG. 7 to classify the call as a private network call when the callee identifier complies with a

predefined format, i.e. is a valid user name and identifies a subscriber to the private network” *Id.* at 22:51–60. Block 269 also classifies the call as public or private, depending on whether the callee is a subscriber to the system. *Id.* at 22:51–23:8, 20:14–24; *see also id.* at 18:55–19:22.

C. Illustrative Claim

Among the challenged claims, claims 1, 27, 28, 54, 74, and 93 are independent. Claim 1 is illustrative and reads:

1. A process for operating a call routing controller to facilitate communication between callers and callees in a system comprising a plurality of nodes with which callers and callees are associated, the process comprising:

in response to initiation of a call by a calling subscriber, receiving a caller identifier and a callee identifier;

locating a caller dialing profile comprising a username associated with the caller and a plurality of calling attributes associated with the caller;

determining a match when at least one of said calling attributes matches at least a portion of said callee identifier;

classifying the call as a public network call when said match meets public network classification criteria and classifying the call as a private network call when said match meets private network classification criteria;

when the call is classified as a private network call, producing a private network routing message for receipt by a call controller, said private network routing message identifying an address, on the private network, associated with the callee;

when the call is classified as a public network call, producing a public network routing message for receipt by the call controller, said public network routing message identifying a gateway to the public network.

Id. at 36:14–38.

D. Asserted Grounds of Unpatentability

Petitioner contends that claims 1, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111 of the '815 patent are unpatentable based on the following specific grounds (Pet. 5, 12–59):

References	Basis	Challenged Claims
Chu '684 ¹ and Chu '366 ²	35 U.S.C. § 103(a)	1, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111
Chu '684 and Chen ³	35 U.S.C. § 103(a)	1, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111

In its analysis, Petitioner relies on the declaration testimony of Dr. Henry H. Houh (Ex. 1006). *See, e.g.*, Pet. 19, 22, 27–30, 32, 36, 40–41, 48–51, 53, 60–61.

II. DISCUSSION

A. Claim Construction

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); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Consistent with the broadest reasonable construction, 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 patent

¹ U.S. Patent No. 7,486,684 B2, filed Sept. 30, 2003 (Ex. 1003, “Chu '684”).

² U.S. Patent No. 8,036,366 B2, filed Aug. 4, 2006 (Ex. 1004, “Chu '366”).

³ U.S. Patent Application Publication No. 2007/0064919 A1, filed Sept. 14, 2005 (Ex. 1005, “Chen”).

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

Petitioner proposes constructions for “username” and various means-plus-function limitations. Pet. 6–11; *see* 37 C.F.R. § 42.104(b)(3) (requiring a petition to set forth, “[w]here the claim to be construed contains a means-plus-function or step-plus-function limitation as permitted under 35 U.S.C. 112(f), . . . the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function”). Patent Owner does not expressly propose any claim constructions. For purposes of this decision, we determine that the means-plus-function limitations require only identification of corresponding structure,⁴ as set forth below, and no other terms require express construction.

1. “receiving means” (claim 28)

Claim 28 recites “receiving means for receiving a caller identifier and a callee identifier, in response to initiation of a call by a calling subscriber.” Petitioner proposes that the corresponding structure is I/O port 208. Pet. 7. Patent Owner does not challenge Petitioner’s contention that this limitation is governed by 35 U.S.C. § 112 ¶ 6 or Petitioner’s identification of corresponding structure.

⁴ A means-plus-function limitation is construed to cover the corresponding structure described in the specification and equivalents thereof. 35 U.S.C. § 112 ¶ 6.

Based on the current record, we determine that this limitation is governed by section 112, paragraph 6. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc) (“[T]he use of the word ‘means’ in a claim element creates a rebuttable presumption that § 112, para. 6 applies.”). We also determine, based on the current record, that the corresponding structure is I/O port 208. *See Ex. 1001*, 17:26–37.

2. “*means for locating*” (claim 28) and
“*means for accessing*” (claim 93)

Claim 28 recites “means for locating a caller dialing profile comprising a username associated with the caller and a plurality of calling attributes associated with the caller.” Claim 93 similarly recites “means for accessing a database of caller dialing profiles wherein each dialing profile associates a plurality of calling attributes with a respective subscriber, to locate a dialing profile associated with the caller, in response to initiation by a calling subscriber.” Petitioner proposes that the corresponding structure for each of these limitations is RC processor circuit 200 programmed to implement the algorithm illustrated in cell 254 of Figure 8A. Pet. 8 (citing Ex. 1001, 19:30–37, Figs. 7, 8A). Patent Owner does not challenge Petitioner’s contention that these limitations are governed by 35 U.S.C. § 112 ¶ 6 or Petitioner’s identification of corresponding structure.

Based on the current record, we determine that the “means for locating” and “means for accessing” limitations are governed by section 112, paragraph 6. *See Williamson*, 792 F.3d at 1348.

In applying section 112, paragraph 6, structure disclosed in the specification “is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function

recited in the claim.” *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). If “the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.” *WMS Gaming v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999).

Based on the current record, we determine that the corresponding structure for each of “means for locating” and “means for accessing” is: RC processor circuit 200 programmed to implement the algorithm illustrated in block 254 of Figure 8A. *See* Ex. 1001, 10:62–63 (“FIGS. 8A-8D is a flowchart of [an] RC request message handler executed by the RC processor circuit shown in FIG. 7.”), 17:52–57, Figs. 7, 8A block 254 (“Use caller field to get dialing profile for caller from database”).

3. “means for determining” (claim 28)

Claim 28 recites “means for determining a match when at least one of said calling attributes matches at least a portion of said callee identifier.” Petitioner groups this limitation with the “means for classifying” limitations of claim 28 and proposes that the corresponding structure for all three limitations is processor 202 programmed to implement one or more branches of the algorithm illustrated in Figure 8B. *Pet. 8* (citing Ex. 1001, 19:50–20:25, Figs. 7, 8B). Patent Owner does not challenge Petitioner’s contention that the “means for determining” limitation is governed by 35 U.S.C. § 112 ¶ 6 or Petitioner’s identification of corresponding structure.

Based on the current record, we determine that the “means for determining” limitation is governed by section 112, paragraph 6 and that its corresponding structure is: processor 202 programmed to implement one or

more of the algorithms illustrated in blocks 257, 380, 382, 390, and 396 of Figure 8B. *See* Ex. 1001, 10:62–63, 19:50–55 (“[T]he processor . . . is directed to a first block 257 that causes it to determine whether a digit pattern of the callee identifier . . . includes a pattern that matches the contents of the international dialing digits (IDD) field 264 in the caller profile shown in FIG. 10.”), 21:17–23 (“[B]lock 380 directs the processor (202) to determine whether or not the callee identifier begins with the same national dial digit code as assigned to the caller. To do this, the processor (202) is directed to refer to the retrieved caller dialing profile as shown in FIG. 10.”), 21:27–31 (“Block 382 directs the processor . . . to examine the callee identifier to determine whether or not the digits following the NDD digit identify an area code that is the same as any of the area codes identified in the local area code field 267 of the caller dialing profile 276 shown in FIG. 10.”), 21:46–53 (“ . . . The processor (202) determines whether or not the first few digits of the callee identifier identify an area code corresponding to the local area code field 267 of the retrieved caller dialing profile.”), 21:64–22:4, Figs. 7, 8B.

4. *“means for classifying the call as a private network call” and “means for classifying the call as a public network call” (claim 28)*

Claim 28 recites “means for classifying the call as a public network call when said match meets public network classification criteria” and “means for classifying the call as a private network call when said match meets private network classification criteria.” Petitioner groups these limitations with the “means for determining” limitation of claim 28 and proposes that the corresponding structure for all three limitations is processor 202 programmed to implement one or more branches of the

algorithm illustrated in Figure 8B. Pet. 8 (citing Ex. 1001, 19:50–20:25, Figs. 7, 8B). Patent Owner does not challenge Petitioner’s contention that these limitations are governed by 35 U.S.C. § 112 ¶ 6 or Petitioner’s identification of corresponding structure.

Based on the current record, we determine that the “means for classifying” limitations of claim 28 are governed by section 112, paragraph 6. We also determine that the corresponding structure of “means for classifying the call as a public network call when said match meets public network classification criteria” is processor 202 programmed to implement one or more branches of the algorithm illustrated in Figure 8B that leads to the end of block 410 and that the corresponding structure of “means for classifying the call as a private network call when said match meets private network classification criteria” is processor 202 programmed to implement one or more branches of the algorithm illustrated in Figure 8B that leads to the end of block 406 or block 279. *See* Ex. 1001, 22:48–51 (“Effectively, therefore blocks 257, 380, 390, 396 and 402 establish call classification criteria for classifying the call as a public network call or a private network call.”); 10:62–63, 17:38–44, 19:50–20:25, 21:17–22:60, Figs. 7, 8B.

5. *“means for producing a private network routing message” (claim 28)*

Claim 28 recites “means for producing a private network routing message for receipt by a call controller, when the call is classified as a private network call, said private network routing message identifying an address, on the private network, associated with the callee.” Petitioner states that Figures 8A, 8C, and 8D “detail, among other functions, algorithms which produce network routing messages.” Pet. 9. Petitioner proposes that the corresponding structure for this limitation is processor 202 of RC

processor circuit 200, programmed to implement the algorithm illustrated in cell 350 of Figure 8A or cell 644 of Figure 8C. *Id.* Patent Owner does not challenge Petitioner’s contention that this limitation is governed by 35 U.S.C. § 112 ¶ 6 or Petitioner’s identification of corresponding structure.

Based on the current record, we determine that this limitation is governed by section 112, paragraph 6, and that the corresponding structure is: processor 202 of RC processor circuit 200, programmed to implement the algorithm illustrated in block 350 of Figure 8A or block 644 of Figure 8C. *See* Ex. 1001, 20:27–48, 21:13–16, 26:37–45, Figs. 7, 8A, 8C, 16, 32.

6. “*means for producing a public network routing message*” (claim 28)

Claim 28 recites “means for producing a public network routing message for receipt by the call controller, when the call is classified as a public network call, said public network routing message identifying a gateway to the public network.” Petitioner states that Figures 8A, 8C, and 8D “detail, among other functions, algorithms which produce network routing messages.” Pet. 9. Petitioner adds that “because [Figure] 8D and its corresponding description in the specification do not illustrate the basic process of generating a public network routing message identifying a gateway, Petitioner has identified the claimed function as the corresponding algorithm.” *Id.* Specifically, Petitioner proposes that the corresponding structure for this limitation is processor 202 of RC processor circuit 200, programmed to implement the claimed function of “producing a public network routing message.” *Id.* Patent Owner does not challenge Petitioner’s contention that this limitation is governed by 35 U.S.C. § 112 ¶ 6 or Petitioner’s contention regarding the corresponding structure.

Based on the current record, we determine that this limitation is governed by section 112, paragraph 6 and that the corresponding structure is: processor 202 of RC processor circuit 200, programmed to implement the algorithm illustrated in Figure 8D. *See* Ex. 1001, 23:59–24:3 (“Referring to FIG. 21, a data structure for a supplier list record is shown. . . . [T]he specific route identifier field 546 holds an IP address of a gateway operated by the supplier indicated by the supplier ID field 540.”), 24:54–59 (“[R]eferring to FIG. 25, the routing message buffer holds a routing message identifying a plurality of different suppliers able to provide gateways to the public telephone network (i.e. specific routes) to establish at least part of a communication link through which the caller may contact the callee.”), 24:65–67 (“Referring back to FIG. 8D, block 568 directs the processor 202 of FIG. 7 to send the routing message shown in FIG. 25 to the call controller 14 in FIG. 1.”), 24:43–67, Figs. 8D, 21–24, 25 (showing IP addresses of gateways).

7. *“means for producing a private network routing message” (claim 93)*

Claim 93 recites “means for producing a private network routing message for receipt by a call controller, said private network routing message identifying an address, on a private network, through which the call is to be routed, when at least one of said calling attributes and at least a portion of a callee identifier associated with the callee match and when the match meets a private network classification criterion, the address being associated with the callee.” Petitioner notes that this limitation of claim 93 combines functions recited in the means for determining, means for classifying, and means for producing of claim 28, and proposes that the corresponding structure for this limitation is the structure identified in

connection with those claim 28 limitations. Pet. 10. Patent Owner does not challenge Petitioner's contention that the "means for producing a private network routing message" limitation of claim 93 is governed by 35 U.S.C. § 112 ¶ 6 or Petitioner's identification of corresponding structure.

Based on the current record, we determine that this limitation is governed by section 112, paragraph 6, and that the corresponding structure is: processor 202 programmed to (i) implement one or more branches of the algorithm illustrated Figure 8B that leads to the end of block 406 or block 279, and (ii) implement the algorithm illustrated in block 350 of Figure 8A or block 644 of Figure 8C. *See* Ex. 1001, 10:62–63, 17:38–44, 19:50–20:48, 21:13–22:60, 26:37–45, Figs. 7, 8A, 8B, 8C, 16, 32.

8. *"means for producing a public network routing message" (claim 93)*

Claim 93 recites "means for producing a public network routing message for receipt by a call controller, said public network routing message identifying a gateway to a public network when at least one of said calling attributes and said at least said portion of said callee identifier associated with the callee match and when the match meets a public network classification criterion." Petitioner notes that this limitation of claim 93 combines functions recited in the means for determining, means for classifying, and means for producing of claim 28, and proposes that the corresponding structure for this limitation is the structure identified in connection with those claim 28 limitations. Pet. 10. Patent Owner does not challenge Petitioner's contention that the "means for producing a public network routing message" limitation of claim 93 is governed by 35 U.S.C. § 112 ¶ 6 or Petitioner's identification of corresponding structure.

Based on the current record, we determine that this limitation is governed by section 112, paragraph 6, and that the corresponding structure is: processor 202 programmed to (i) implement one or more branches of the algorithm illustrated Figure 8B that leads to the end of block 410, and (ii) implement the algorithm illustrated in Figure 8D. *See* Ex. 1001, 10:62–63, 17:38–44, 19:50–20:25, 21:17–22:60, 23:59–24:3, 24:43–67, Figs. 7, 8B, 8D, 21–25.

9. *“formatting means” (claim 34)*

Claim 34 recites “formatting means for formatting said callee identifier into a pre-defined digit format to produce a re-formatted callee identifier.” Petitioner proposes that the corresponding structure for this limitation is processor 202 of RC processor circuit 200 programmed to implement one or more branches of the algorithm illustrated in Figure 8B. Pet. 10. Patent Owner does not challenge Petitioner’s contention that this limitation is governed by 35 U.S.C. § 112 ¶ 6 or Petitioner’s identification of corresponding structure.

Based on the current record, we determine that this limitation is governed by section 112, paragraph 6, and that the corresponding structure is: processor 202 of RC processor circuit 200 programmed to implement the algorithm illustrated in block 261, block 388, block 394, or block 400 of Figure 8B. *See* Ex. 1001, 19:55–63, 21:33–43, 21:54–61, 22:4–13, Figs. 7, 8B.

10. *“means for causing” (claim 111)*

Claim 111 recites “means for causing the private network routing message or the public network routing message to be communicated to a call controller to effect routing of the call.” Petitioner proposes that the

corresponding structure for this limitation is processor 202 of RC processor circuit 200, programmed to perform the algorithm illustrated in cell 381 of Figure 8A, cell 646 of Figure 8C, and cell 568 of Figure 8D. Pet. 11. Patent Owner does not challenge Petitioner's contention that this limitation is governed by 35 U.S.C. § 112 ¶ 6 or Petitioner's identification of corresponding structure.

Based on the current record, we determine that this limitation is governed by section 112, paragraph 6, and that the corresponding structure is: processor 202 of RC processor circuit 200, programmed to perform the algorithm illustrated in block 381 of Figure 8A, block 646 of Figure 8C, and block 568 of Figure 8D. *See* Ex. 1001, 20:27–48, 24:43–67, 26:40–41, Figs. 7, 8A, 8C, 8D.

B. Asserted Obviousness Over Chu '684 and Chu '366

Petitioner contends that claims 1, 2, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111 of the '815 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chu '366. Pet. 5, 12–36. Relying in part on the testimony of Dr. Henry H. Houh, Petitioner explains how the references allegedly teach or suggest the claim limitations and provides purported reasoning for combining the teachings of the references. *Id.* at 12–36.

1. Summary of Chu '684

Chu '684 discloses a communications system for managing calls in an Internet Protocol (IP) Virtual Private Network (VPN) and calls to the public switched telephone network (PSTN). Ex. 1003, Title, Abstract, 2:51–3:3, 4:13–14. Figure 2 of Chu '684, shown below, depicts a portion of the communications system:

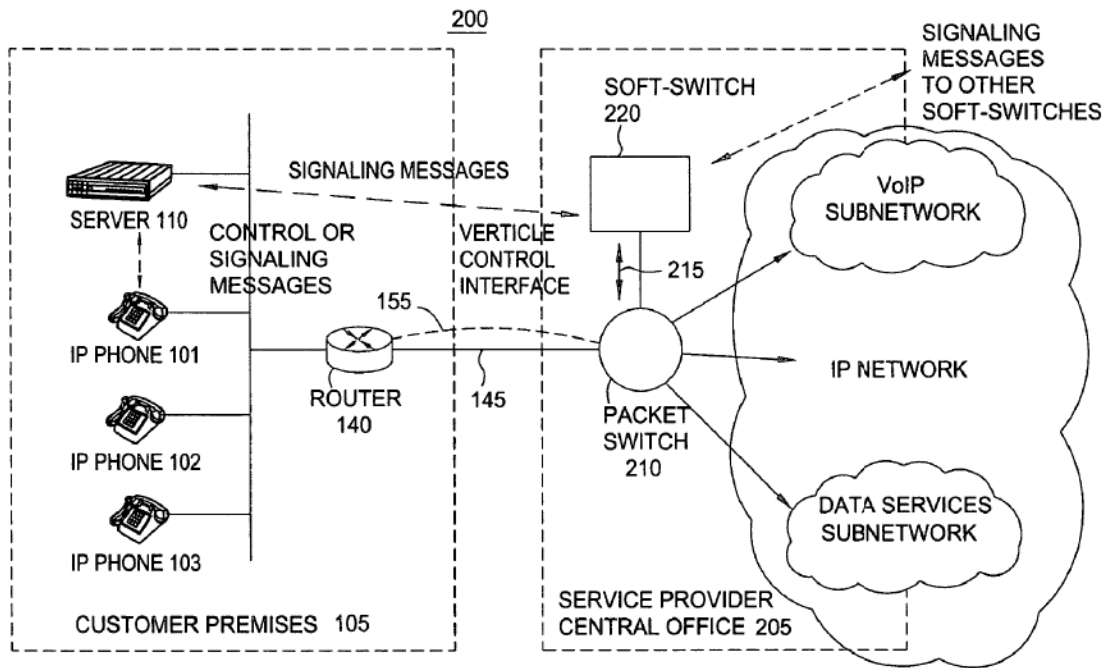


FIG. 2

Id. at 3:14–15. As shown above in Figure 2, communications system 200 includes customer premises 105 having IP phones 101, 102, and 103 and server 110 connected to a voice over IP (VoIP)-VPN Service Provider (SP) at SP central office 205. *Id.* at 4:24–28. Connection 145 between customer premises 205 and SP central office 205 is made via one or more routers 140. *Id.* at 4:28–30. Server 110 communicates with soft-switch 220 with an agreed-upon signaling protocol such as Session Invitation Protocol (SIP). *Id.* at 4:49–52. Soft-switch 220 sends appropriate commands to packet switch 210. Packet switch 210 is a special media gateway that accepts voice packets from an incoming interface and switches these packets to an outgoing interface. *Id.* at 4:36–39. Soft-switch 220 “is the intelligence of the system For example, it keeps track of the VPN that a location belongs to, the dial plans of the subscribers, . . . and the like.” *Id.* at 4:59–63.

Chu '684's VoIP network carries both on-net (within the same VoIP VPN) and off-net (to PSTN) calls. *Id.* at 5:17–19. Chu '684 discloses that an “On-Net Call” sequence begins when a user picks up the handset at IP phone 101. *Id.* at 8:39–40, 8:55–56. According to Chu '684, IP phone 101 collects dialed digits from the user and sends them to server 110. *Id.* at 8:62–64. Chu '684 discloses that “after receiving all the dialed digits from the phone 101, server 110 consults its dial plan to determine whether the call is local, to another on-net phone, or to a phone that is on the PSTN.” *Id.* at 8:65–9:1. In this on-net example, the call is another on-net phone in another location. According to Chu '684, server 110 sends an SIP invite message to soft-switch 220 at central office 205. *Id.* at 9:2–4. Chu '684 discloses that soft-switch 220 “consults the dial plan for this subscriber” based on the ID of server 110. *Id.* at 9:30–33. From the database associated with the dial plan, soft-switch 220 determines, among other things, the IP address of the egress packet switch. *Id.* at 9:34–38. Chu '684 discloses that soft-switch 220 sends an SIP invite message to the next soft-switch, the SIP message including information such as that “the call is an on-net call for a particular VPN.” *Id.* at 9:50–58.

Figure 13 of Chu '684 illustrates a configuration for establishing IP-VPN service to the PSTN. *Id.* at 13:1–3. According to Chu '684, for an outgoing call from IP phone 101, the operation is very similar to that of an intra-net call. *Id.* at 13:13–15. Chu '684 states: “From the dialed digits (of a destination phone that is being called, PSTN phone 1301), ingress soft-switch 220[] determines that this call is for the PSTN.” *Id.* at 13:15–18. From the same dialed digits, the soft-switch also determines egress PSTN gateway 1302 and its controlling soft-switch 1304. *Id.* at 13:18–20.

2. *Summary of Chu '366*

Chu '366 discloses a system for intelligent formatting of VoIP telephone numbers. Ex. 1004, Abstract. By way of background, Chu '366 explains that the International Telecommunication Union's E.164 protocol provides a uniform means for identifying any telephone number in the world to any telephony user in the world. *Id.* at 1:18–20. Chu '366 states that an E.164-formatted number has at most 15 digits, and contains an E.164 prefix (typically a + sign), a country code, and a subscriber telephone number. *Id.* at 1:29–31. Chu '366 explains that when making calls via a traditional PSTN, a subscriber is able to enter abbreviated numbers for local and national telephone calls. *Id.* at 1:35–37. For example, for a local call in the United States, a user may simply enter the seven digit telephone number without an E.164 prefix, the country code or the area code. *Id.* at 1:37–40. By contrast, Chu '366 states, “there is no such concept of local, long distance or national calls when making a call via Internet telephony” because even for a call between two local points, that call may be routed by servers located across the globe. *Id.* at 1:44–49.

According to Chu '366, then-existing global VoIP service providers required users to enter fully formatted E.164 telephone numbers. *Id.* at 1:49–51. Chu '366 describes a system that allows users to enter a phone number that is not E.164-compliant, and transforms that number into one that is E.164-compliant using, for example, information from a call origin location profile. *Id.* at 1:67–2:4, 2:16–67.

3. *Analysis*

Petitioner generally contends that Chu '684 teaches call set up procedures in which a call processor analyzes attributes of the caller (e.g.,

the caller's dial plan) and information identifying the callee (e.g., dialed digits) to determine whether the call should be routed to a destination on the private packet network or the public PSTN, and that Chu '366 teaches using caller attributes such as country code and area code to reformat the dialed digits into a standard format before determining whether the call is public or private. Pet. 13–16. Petitioner contends that it would have been obvious to a skilled artisan to modify the system described in Chu '684 with the specific dialed digit reformatting teachings of Chu '366 and that a skilled artisan would have recognized that allowing users to place calls as if they were dialing from a standard PSTN phone would be desirable, creating a system capable of supporting a more intuitive and user friendly interface. Pet. 18–19 (citing Ex. 1006 (Houh Decl.) ¶¶ 35–39).

As to the limitations of claim 1, Petitioner contends that Chu '684 teaches servers and soft-switches that receive a caller identifier (subscriber information such as IP address and ID of IP phone connection to server) and callee identifier (dialed digits of the called party) when a caller initiates a call. Pet. 20–21. Petitioner also contends that Chu '684 teaches the “locating a caller dialing profile” limitation of claim 1 by teaching “locating a subscriber's dial plan that includes a unique subscriber identifier (e.g., E.164 telephone number) (“username”) and calling attributes of the subscriber.” *Id.* at 21. For this same limitation, Petitioner also argues that Chu '366 teaches call origin profiles “that include calling attributes such as geographic location, country code, and area code.” *Id.* at 22.

As to the “determining a match” and “classifying” limitations, Petitioner relies on teachings from Chu '366 and Chu '684. *Id.* at 22–23. Petitioner argues that Chu '366 teaches reformatting dialed digits to generate

an E.164-compliant callee identifier “when dialed digits ‘match’ caller attributes, e.g., when the dialed digits equal the national dialing length of the caller’s origin destination.” *Id.* at 22. Petitioner also argues that Chu ’684 teaches determining “whether the call ‘meets public network classification criteria’ or ‘private network classification criteria,’” citing the following passage from Chu ’684:

At step 608, after receiving all the dialed digits from the phone 101, server 110 consults its dial plan to determine whether the call is local, to another on-net phone, or to a phone that is on the PSTN.

Pet. 23 (citing Ex. 1003, 8:65–9:1). Finally, Petitioner relies on Chu ’684 for teaching the two “producing” limitations of claim 1. *Id.* at 23–24.

Having reviewed the record, we determine that Petitioner has shown sufficiently for institution that the combination of Chu ’684 and Chu ’366 teaches the recited limitations of claim 1. *See id.* at 12–36; Ex. 1003, 8:65–9:1, 9:30–49, 4:52–56, 13:12–34; Ex. 1004, 2:38–67, 4:65–5:5, Fig. 6. Petitioner also has articulated sufficient reasoning with rational underpinning for combining the teachings of Chu ’684 and Chu ’366. Pet. 18–19. We address Patent Owner’s arguments made in its Preliminary Response below.

a. Claim 1: classifying the call

Patent Owner argues that Petitioner fails to make a sufficient showing regarding the “classifying” step of claim 1. Prelim. Resp. 18–26. Specifically, Patent Owner argues that Chu ’684’s classifying step is not based on the “match” recited in claim 1. *Id.* at 18–19. Patent Owner explains that, in Chu ’684, server 110 consults the dial plan to classify the call before sending an SIP invite message to soft-switch 220. *Id.* at 19–20

(citing Ex. 1003, 8:65–9:4). Patent Owner relies in part on Figure 6 of Chu '684, shown below:

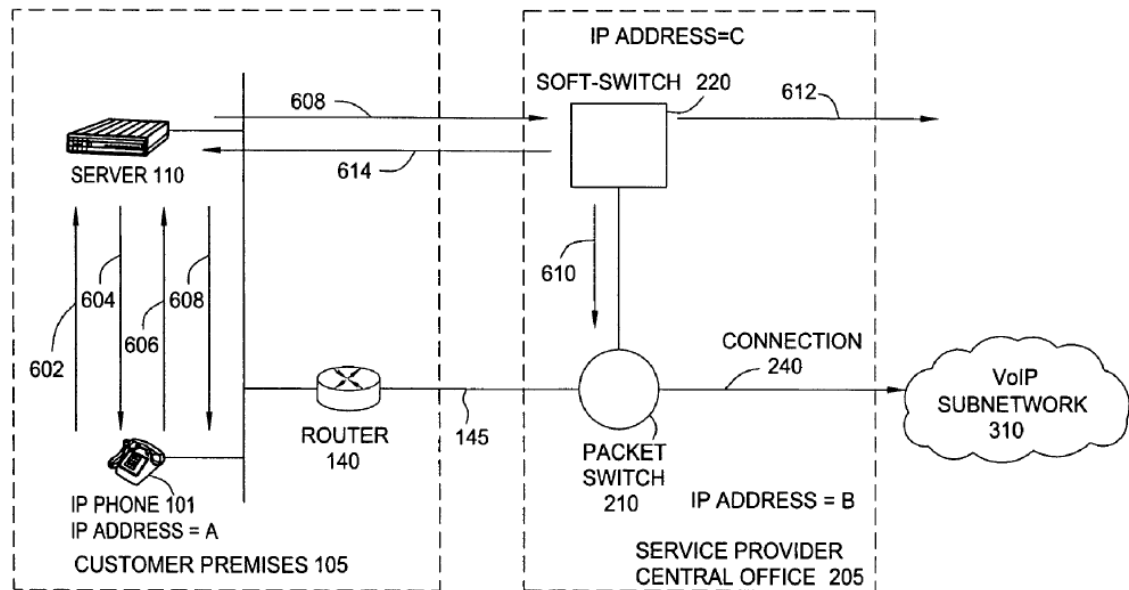


FIG. 6 200

Figure 6, above, depicts a sequence for handling an on-net call. Ex. 1003, 8:39–40. According to Patent Owner, in step 608, server consults a dial plan to classify the call, and in subsequent step 610, soft-switch 220 determines a match between a calling attribute and at least a portion of a callee identifier. Prelim. Resp. 19–21. Patent Owner argues that step 608 therefore is not based on the claimed match. *Id.* at 19.

We determine that Petitioner has made a sufficient showing at this stage. Petitioner does not rely exclusively on Chu '684 for teaching classifying when “said match” meets the public or private network classification criteria. Rather, Petitioner contends that Chu '684’s disclosure of classifying the call based on a dial plan combined with Chu '366’s teaching of reformatting dialed digits based on matching dialed digits to caller attributes teaches classifying when “said match” meets the network

criteria. Pet. 22–23. According to Chu ’684, at step 608, server 110 consults its dial plan to determine whether the call is to another on-net phone or to the PSTN. Ex. 1003, 8:65–9:1. Petitioner sufficiently shows for institution that Chu ’684 discloses the claimed classifying a call as a public network call based on public network classification criteria and classifying the call as a private network call based on private network classification criteria. *See* Pet. 23; Ex. 1003, 8:65–9:4. Petitioner also sufficiently shows for institution that Chu ’366 teaches reformatting dialed digits based on matching dialed digits to caller attributes such as the country code and/or area code for the location from which the caller is placing the call. Pet. 15–16, 22–23; Ex. 1004, 2:38–67, 4:65–5:5, Fig. 6. Petitioner also indicates that Chu’s reformatting is similar to the reformatting illustrated in Figure 8B of the ’815 patent. Pet. 15–16. Patent Owner addresses Chu ’684 and Chu ’366 individually, and does not consider the combined teachings of the references. *See* Prelim. Resp. 18–26; *see also In re Mouttet*, 686 F.3d 1322, 1333 (Fed. Cir. 2012) (citing *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)) (“[T]he test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art.”).

Patent Owner also argues that Chu ’366 does not disclose classifying the call as claimed because all calls in Chu ’366 are assumed to be destined for the PSTN. Prelim. Resp. 22. As explained above, Petitioner relies on the combined teachings of Chu ’684 and Chu ’366 for teaching the classifying claim limitations. Moreover, Petitioner does not rely on Chu ’366 for teaching private or public network classification criteria. Pet. 22–23.

Patent Owner further argues that the proposed combination “would not work.” Prelim Resp. 22. Specifically, Patent Owner argues that “Petitioner’s proposal to insert Chu ’366’s ‘reformatting’ prior to Chu ’684’s ‘classification’ of a call would render Chu ’684’s system unreliable.” *Id.* at 24. Patent Owner argues that Chu ’366’s reformatting is directed only to public telephone numbers, and that Chu ’684’s private numbering plan “is distinct from, and works in parallel with, the ‘public E.164 number plan’ used for placing calls using public telephone numbers.” *Id.* at 23. Patent Owner also makes the unsupported statement at this preliminary stage that “[a] skilled person would understand that the purpose of using a ‘private numbering scheme’ within an organization is precisely to be free from the strictures of PSTN conventions.” *Id.* at 24.

At this preliminary stage, Petitioner has sufficiently shown that combining the teachings of Chu ’684 and Chu ’366 in the manner proposed by Petitioner is simply the combination of familiar elements according to known methods to yield predictable results and would have been obvious to a person of ordinary skill in the art. *See* Pet. 19; Ex. 1006 ¶ 38; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

We thus find based on the current record that Petitioner sufficiently shows for institution that the combination of Chu ’684 and Chu ’366 teaches the claimed classifying step.

b. Claim 1: locating a caller dialing profile

Patent Owner also argues that Chu ’684 fails to disclose “a caller dialing profile comprising a username associated with the caller,” as recited in claim 1 of the ’815 patent. Prelim. Resp. 26. Patent Owner argues that Chu ’684’s dial plan “is not associated with any particular ‘caller’” and that

Petitioner fails to establish that the dial plan includes a username (i.e., an E.164 number). *Id.* at 34–35. Patent Owner also argues that the teachings of Chu '684 and Chu '366 are “incompatible” because “it is unclear how to combine a caller-specific call origin location profile [as taught by Chu '366] with an enterprise’s IP-PBX network-specific ‘dial plan’ [as taught by Chu '684].” *Id.* at 35–36. Patent Owner maintains that the Petition does not explain how Chu '366’s teaching of a user-specific profile could be applied to Chu '684’s network-specific dial plan. *Id.* at 37.

We determine that Petitioner has made a sufficient showing at this stage. Claim 1 broadly recites that the username is “associated with the caller” and that the caller dialing profile has a plurality of calling attributes “associated with the caller.” Petitioner has sufficiently shown at this preliminary stage that the combination of Chu '684 and Chu '366 teaches a caller dialing profile that includes calling attributes and a username “associated with” a caller. *See* Pet. 13, 20–22; Ex. 1004, 4:65–5:5; Ex. 1003, 3:56–64; 9:23–25; Ex. 1006 ¶ 45. In addition, Petitioner sufficiently explains for institution, and with support from its declarant, that a skilled artisan would have combined the teachings of the references by programming the Chu '684 system to analyze the dialed digits and reformat as necessary using caller attributes such as national code and area code. Pet. 19 (citing Ex. 1006 ¶ 38). We thus find that Petitioner sufficiently shows on the current record, and for the purpose of institution, that the combination of Chu '684 and Chu '366 teaches the claimed locating a caller dialing profile step.

c. Motivation to combine

Patent Owner argues that Petitioner's purported reason for combining the teachings of Chu '684 and Chu '366 is conclusory and insufficient. Prelim. Resp. 38–42. Patent Owner also identifies distinctions between the systems of the two references as support for additional reasons why one skilled in the art would not have made the proposed combination. *Id.* at 42–47.

We determine based on the current record for purposes of institution that Petitioner has articulated sufficient reasoning with rational underpinning for combining the teachings of Chu '684 and Chu '366. *See* Pet. 18–19; Ex. 1006 ¶¶ 36–39. For example, Petitioner argues with citations to the references that both Chu '684 and Chu '366 teach telecommunications systems in which VoIP subscribers can place calls to a callee on the PSTN. *See* Pet. 18; Ex. 1003, 8:65–9:1; Ex. 1004, 14:30–33. In addition, Petitioner cites evidence showing that (i) one of ordinary skill in the art would have recognized upon reading Chu '684 that allowing users to place calls as if they were dialing from a standard PSTN phone would have been desirable, creating a system capable of supporting a more intuitive and user-friendly interface; and (ii) the infrastructure of the Chu '684 system would support dialed digit reformatting based on attributes of the caller as taught by Chu '366. *See* Pet. 19; Ex. 1006 ¶¶ 37, 38. A determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements. *Mouttet*, 686 F.3d at 1332. Rather, the relevant inquiry is what the combined teachings of the references would have suggested to one having ordinary skill in the art. *Id.* at 1333.

d. Conclusion

For the foregoing reasons, we determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that claim 1 is unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chu '366. Petitioner and Patent Owner rely on the same evidence and arguments for challenged independent claims 27, 28, 54, 74, and 93 that they rely on for claim 1, and Petitioner presents additional declaration testimony from Dr. Houh regarding the means-plus-function limitations of claims 28 and 93. *See* Pet. 25–36; Ex. 1006 ¶¶ 47–51; Prelim. Resp. 15–47. For the foregoing reasons, and because on the current record we are persuaded by the additional Dr. Houh testimony, we determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that independent claims 27, 28, 54, 74, and 93 are unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chu '366.

We have reviewed the information presented in the Petition and supporting evidence with respect to challenged dependent claims 7, 34, 72, 73, 92, and 111. *See* Pet. 24–25, 29–32, 36; Ex. 1006 ¶¶ 49, 52, 53. Patent Owner does not raise any additional arguments specific to the dependent claims. *See, e.g.*, Prelim. Resp. 2–3. We determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that independent claims 7, 34, 72, 73, 92, and 111 are unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chu '366. *See, e.g.*, Ex. 1004, Fig. 6 (teaching reformatting the callee identifier into a pre-defined digit format); Ex. 1003, 4:52–56 (teaching sending routing messages to a soft-switch to effect routing); Ex. 1006 ¶ 53.

C. Asserted Obviousness over Chu '684 and Chen

Petitioner contends that claims 1, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111 of the '815 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chen. Pet. 5, 37–58. Relying in part on the testimony of Dr. Henry H. Houh, Petitioner explains how the references allegedly teach or suggest the claim limitations and provides purported reasoning for combining the teachings of the references. *Id.* at 37–58.

1. Summary of Chen

Chen discloses a method for translating between different dial plans “so that a user in any region or country may place phone calls in a familiar manner.” Ex. 1005 ¶¶ 2, 15. Chen explains that E.164 defines an international public telecommunication number plan and requires a format of +country code-area code-subscriber number. *Id.* ¶¶ 6, 11. Chen notes that a different numbering plan such as a regional or countrywide numbering plan defines the dial plan for local and long distance calls. *Id.* ¶ 12. Figures 6 and 7 of Chen disclose algorithms for translating between E.164 and regional numbering plans. *Id.* ¶¶ 35–47. Figure 6 is shown below:

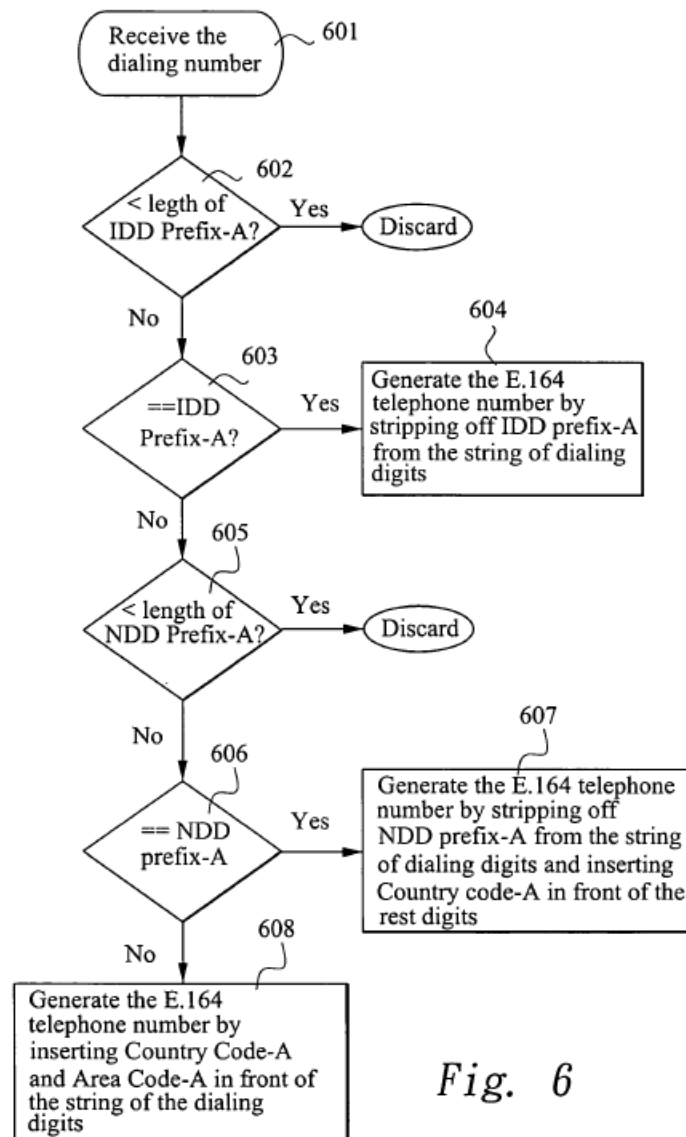


Fig. 6

Id. at Fig. 6. As illustrated in Figure 6 above, Chen discloses determining whether a dialed number has a particular format that contains an International Dialing Digit prefix (“+”) or a National Dialing Digits prefix (e.g., “1” for North America), and generating an E.164-compliant number by inserting the applicable country code and area code. *Id.* ¶¶ 33–40, Fig. 6. Figure 7 illustrates steps for translating an E.164-compliant number to the format of a different dial plan, such as that for a Session Initiation Protocol (SIP) phone. *Id.* ¶¶ 27, 41–48, 52, Fig. 7.

2. Analysis

Petitioner relies on essentially the same analysis to show that the subject matter of the challenged claims would have been obvious in view of Chu '684 and Chen as it does for the combination of Chu '684 and Chu '366. *Compare* Pet. 37–58, *with id.* at 12–36. Patent Owner likewise addresses both grounds essentially identically. *Compare* Prelim. Resp. 47–65, *with id.* at 18–47.

Having reviewed the record, we determine that Petitioner has shown sufficiently for institution that the combination of Chu '684 and Chen teaches the recited limitations of claim 1. *See id.* at 37–58; Ex. 1003, 8:65–9:1, 9:30–49, 4:52–56, 13:12–34; Ex. 1005, ¶¶ 33–40, Fig. 6.

We determine that, based on the current record and for purposes of institution, Petitioner also has articulated sufficient reasoning with rational underpinning for combining the teachings of Chu '684 and Chen. Pet. 39–41.

For the foregoing reasons, we determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that claim 1 is unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chen. Petitioner and Patent Owner rely on the same evidence and arguments for challenged independent claims 27, 28, 54, 74, and 93 that they rely on for claim 1, and Petitioner presents additional declaration testimony from Dr. Houh regarding the means-plus-function claim limitations of claims 28 and 93. *See* Pet. 37–58; Ex. 1006 ¶¶ 47–51; Prelim. Resp. 47–65. For the foregoing reasons, and because on the current record we are persuaded by the additional Dr. Houh testimony, we determine that the information presented establishes a reasonable likelihood that

Petitioner would prevail in showing that independent claims 27, 28, 54, 74, and 93 are unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chen.

We also have reviewed the information presented in the Petition and supporting evidence with respect to challenged dependent claims 7, 34, 72, 73, 92, and 111. *See* Pet. 46, 51, 53, 55, 57–58; Ex. 1006 ¶¶ 49, 52, 53. Patent Owner does not raise any additional arguments specific to the dependent claims. *See, e.g.*, Prelim. Resp. 2–3. We determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that independent claims 7, 34, 72, 73, 92, and 111 are unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chen. *See, e.g.*, Ex. 1005, ¶¶ 33–40, Fig. 6 (teaching reformatting the callee identifier into a pre-defined digit format); Ex. 1003, 4:52–56 (teaching sending routing messages to a soft-switch to effect routing); Ex. 1006 ¶ 53.

III. CONCLUSION

For the above reasons, we determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that claims 1, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111 are (i) unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chu '366, and (ii) unpatentable under 35 U.S.C. § 103(a) as obvious over Chu '684 and Chen. At this preliminary stage, the Board has not made a final determination with respect to the patentability of the challenged claims or any underlying factual and legal issues.

IV. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted as to claims 1, 7, 27, 28, 34, 54, 72–74, 92, 93, and 111 of the '815 patent on the grounds of (i) obviousness over Chu '684 and Chu '366, and (ii) obviousness over Chu '684 and Chen; and

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

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Patent 8,542,815 B2

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