

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

UNILOC LUXEMBOURG S.A.,
Patent Owner.

Case IPR2018-00456
Patent 6,446,127 B1

Before MIRIAM L. QUINN, CHARLES J. BOUDREAU, and
JOHN F. HORVATH, *Administrative Patent Judges*.

BOUDREAU, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a)

I. INTRODUCTION

We instituted *inter partes* review pursuant to 35 U.S.C. § 314 to review claims 1–5, 8, 15, 21–24, 27, 28, and 30 of U.S. Patent No. 6,446,127 B1 (Ex. 1001, “the ’127 patent”), owned by Uniloc 2017 LLC¹ (“Patent Owner”). Paper 8 (“Dec. on Inst.”). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 15, 21–24, 27, 28, and 30 of the ’127 patent are unpatentable, but Petitioner has not shown by a preponderance of the evidence that claims 1–5 and 8 of the ’127 patent are unpatentable.

II. BACKGROUND

A. *Related Matters*

The parties indicate that the ’127 patent is involved in *Uniloc USA, Inc. v. Apple Inc.*, Case No. 2:17-cv-00535 (E.D. Tex.), which reportedly has been transferred to the Northern District of California as Case No. 3:18-cv-00572. Pet. 1; Paper 10, 2.

¹ Uniloc Luxembourg S.A. was initially identified as the owner of the ’127 patent. *See, e.g.*, Paper 3, 1. In Updated Mandatory Notices filed August 2, 2018, and September 12, 2018, Uniloc 2017 LLC is identified as the owner of the ’127 patent. Papers 7, 10.

B. The '127 Patent

The '127 patent relates to a system and method for interfacing a user-operated portable information device ("PID") with a network device such as a data network telephone to provide user access to voice and data network services. Ex. 1001, [57], 1:16–20, 3:53–57. Applications on the PID, in combination with the network device and network servers, provide for a variety of user services, including configuration of user mobility services. *Id.* at 1:16–20, 3:57–59. In one embodiment, a user having a PID may transfer user attributes from the PID to one of the data network telephones that then transmits a registration request to a registration server to register the user with that telephone. *Id.* at 4:32–37.

Figure 1 of the '127 patent is reproduced below.

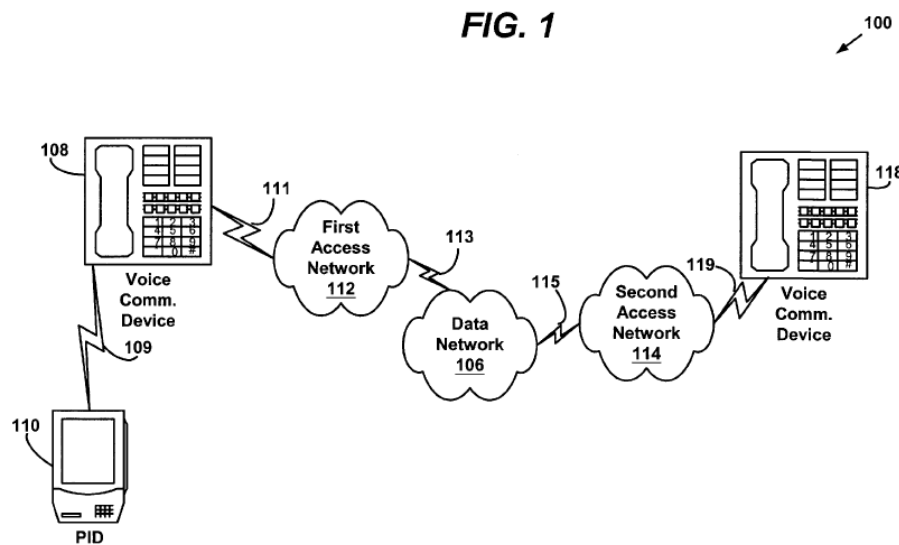


Figure 1 is a block diagram of a network telephony system, 100, according to one embodiment of the '127 patent. *Id.* at 5:9–11. With reference to Figure 1, system 100 includes data network 106; first voice

communication device 108 linked to PID 110 via link 109 and to first access network 112 via connection 111; and second voice communication device 118 linked to second access network 114 through connection 119. *Id.* at 6:31–41, 7:10–11. PID 110 also may enable communications over data network 106 via first access network 112. *Id.* at 7:10–13. The '127 patent explains that first and second communication devices 108 and 118 may communicate over data network 106 by connecting via first and second access networks 112 and 114, respectively, using, for example, an Ethernet local access network (“LAN”), a coaxial cable link, a digital subscriber line (“DSL”), twisted pair cable, fiber optic cable, or wireless links. *Id.* at 6:34–41, 8:1–7. Link 109 is a point-to-point link that may be entirely or partially wireless or may be a hard-wired connection. *Id.* at 7:33–34. Voice communication devices 108 and 118 may each include a handset with a receiver and transmitter, similar or identical to handsets of traditional circuit-switched telephones, or may include any device having voice communications capabilities. *Id.* at 7:44–47, 7:53–55. Moreover, the '127 patent explains, the details relating to operation of voice communication devices 108 and 118 depend on the nature of data network 106 and the nature of access networks 112 and 114 connecting voice communication devices 108 and 118 to each other and to other network entities. *Id.* at 7:60–64.

Figure 2 of the '127 patent is reproduced below.

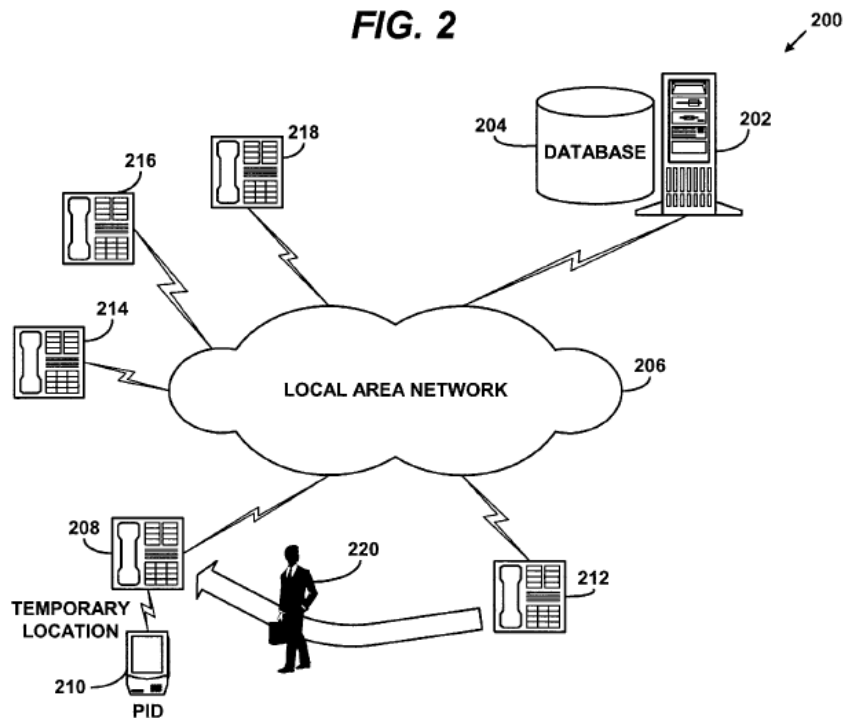


Figure 2 is a block diagram showing a system, 200, for providing user mobility services on a LAN according to an exemplary embodiment of the '127 patent. *Id.* at 5:9–11, 8:49–51. System 200 includes registration server 202 having access to registration database 204 and linked to packet-switched LAN 206, as well as voice communication devices 208, 212, 214, 216, and 218, each preferably able to accept information from PID 210 associated with user 220. *Id.* at 8:51–64. LAN 206, voice communication device 208, and PID 210 correspond respectively to first access network 112, voice communication device 108, and PID 110 shown in Figure 1. *Id.* at 8:66–9:2. In Figure 2, user 220 is shown as being recently relocated from voice communication device 212, which may be, for

example, in user 220's office, to voice communication device 208, which may be in a conference room. *Id.* at 9:52–57. According to the '127 patent, user 220 may have been registered or associated with voice communication device 212 prior to leaving the office, so that calls were routed to that location or were processed according to attributes associated with the user being located in the office, but it would be desirable for the user to be registered with voice communication device 208 instead of voice communication device 212 when the user moves to the conference room. *Id.* at 9:57–65. According to one embodiment of the invention, user 220 is able to register with voice communication device 208 by using PID 210 to transmit user attributes to voice communication device 208, which may then transmit all or some of the user attributes to registration server 202 so that registration database 204 may be updated with the revised user communication-location information. *Id.* at 9:65–10:6. When a call is placed to the user, the registration server may reference the registration database to direct the call to the voice communication device. *Id.* at [57], 24:22–26.

C. Illustrative Claims

Of the challenged claims, claims 1, 15, 21, and 27 are independent. Challenged claims 2–5 and 8 depend directly or indirectly from claim 1; challenged claims 22–24 depend directly or indirectly from claim 21; and challenged claims 28 and 30 depend directly from claim 27. Claims 1 and 15 are illustrative:

1. A system for providing user mobility services on a data network telephony system comprising:
 - a data network to provide data connectivity for a plurality of data communications channels using data transport protocols;
 - a plurality of data network telephones connected to the data network, each data network telephone operable to communicate a voice signal as voice-over-data packets on a voice-over-data channel, the voice over data channel being one of the plurality of data communications channels on the data network, the data network telephones each operable to convert voice-over-data packets communicated on the voice-over-data channel to voice signals; and
 - a portable information device, the portable information device associated with a user and comprising a user interface and a data network telephone interface, the user interface operable to accept PID data from the user, the data network telephone interface operable to communicate PID data to and from a first data network telephone, the PID data including user attributes;wherein the PID data is transmitted by the portable information device to the first data network telephone, the PID data used to register the user with the first data network telephone.
15. A system for providing user mobility services to a user of a portable information device, the portable information device having user attributes stored in a user information database, wherein the user attributes are associated with the user, comprising, in combination:
 - a voice communication device connected to a network, wherein the voice communication device includes a user interface for accepting user inputs and delivering user outputs, and wherein the user attributes are transmitted

from the portable information device to the voice communication device; and

a registration server connected to the network, wherein the registration server registers the user to the voice communication device in a registration database in response to the voice communication device issuing a register request, the register request including the user attributes.

Ex. 1001, 24:54–25:11, 26:9–25.

D. Procedural History

Apple Inc. (“Petitioner”) filed a Petition for *inter partes* review challenging claims 1–5, 8, 15, 21–24, 27, 28, and 30 of the ’127 patent (Paper 1 (“Pet.”)), supported by a declaration of Nathaniel Polish, Ph.D. (Ex. 1003). Patent Owner filed a Preliminary Response (Paper 6 (“Prelim. Resp.”)), supported by a declaration of William C. Easttom II (Ex. 2001). Based on the preliminary record then before us, a majority of the panel determined that Petitioner had shown a reasonable likelihood of prevailing in its challenge to claims 1–5 and 8 of the ’127 patent, and we instituted trial on August 2, 2018, with respect to all challenged claims. Dec. on Inst. 22–35. In separate opinions, one panel member expressed the view that Petitioner also sufficiently demonstrated a reasonable likelihood of prevailing in its challenge to at least independent claims 15, 21, and 27 (*see id.* at 36–41 (Horvath, J., concurring)), while another panel member expressed the view that Petitioner had not demonstrated a reasonable likelihood of prevailing with respect to any challenged claim (*see id.* at 42–47 (Quinn, J., dissenting)).

During trial, Patent Owner filed a Patent Owner Response (Paper 11 (“PO Resp.”))²; Petitioner filed a Reply (Paper 12 (“Reply”)), supported by a Reply Declaration of Dr. Polish (Ex. 1014); and Patent Owner filed a Sur-reply (Paper 13 (“Sur-reply”)). We heard oral argument on April 24, 2019, and a transcript is filed in the record as Paper 18 (“Tr.”).

E. Instituted Grounds of Unpatentability

The following grounds of unpatentability are at issue (Pet. 7–8):

Claim(s)	Basis	Reference(s)
15, 27, and 28	§ 102(e)	Nunokawa ³
21–23	§ 103(a)	Nunokawa
24	§ 103(a)	Nunokawa and Szlam ⁴
30	§ 103(a)	Nunokawa and Lehmus ⁵
1–5 and 8	§ 103(a)	Szlam and Fraser ⁶

² In its Response, Patent Owner expressly states that it does not cite to or rely upon the declaration of Mr. Easttom filed with its Preliminary Response. PO Resp. 8 n.8.

³ Nunokawa et al., U.S. Patent No. 5,982,877, issued November 9, 1999 (Ex. 1005).

⁴ Szlam, U.S. Patent No. 6,359,892 B1, issued March 19, 2002 (Ex. 1009).

⁵ Lehmus et al., PCT Publication WO 98/33343, published July 30, 1998 (Ex. 1006).

⁶ Fraser, U.S. Patent No. 6,487,200 B1, issued November 26, 2002 (Ex. 1010).

III. DISCUSSION

A. *Claim Construction*

Under the rules in effect at the time the Petition was filed, a party could request a district court-type claim construction approach to be applied if the party certified that the involved patent would expire within 18 months from the entry of the Notice of Filing Date Accorded to Petition. 37 C.F.R. § 42.100(b) (2018). As we explained in the Decision on Institution, although no such certification was filed in this case, Petitioner asserted in the Petition that it believed the '127 patent would expire during the pendency of the requested *inter partes* review. Dec. on Inst. 9 (citing Pet. 8). We expressed in our Decision on Institution the expectation that this issue would be clarified during trial (*id.*), and Patent Owner in its Response agreed that the '127 patent would indeed expire during trial and that the *Phillips*⁷ standard for claim construction should apply in this proceeding (PO Resp. 4). We agree. The '127 patent issued from a continuation-in-part of an application filed October 30, 1998, without any patent term extension. See Ex. 1001, [63]. Given the parties' agreement that the patent would expire during the course of this proceeding, and the absence of any dispute that the challenged claims claim priority to the October 30, 1998, filing date of the parent application, we presume for the purposes of this decision that the present application expired no later than October 30, 2018, and that the *Phillips* standard should apply. See 35 U.S.C. § 154(a)(2); see also *In re*

⁷ *Phillips v. AWH Corp.*, 415 F.3d 1301 (Fed. Cir. 2005).

CSB-Sys. Int'l, Inc., 832 F.3d 1335, 1342 (Fed. Cir. 2016) (“[C]onsistent with our prior precedent and customary practice, we reaffirm that once a patent expires, the PTO should apply the *Phillips* standard for claim construction.”).

In the Petition, Petitioner proposed a construction for the term “machine language instructions,” as recited in claims 21–23, as well as for three clauses in claim 21 that each include that term. Pet. 9–12. Patent Owner neither disputed nor conceded those constructions during trial but instead takes the position that “no claim term requires construction apart from its plain and ordinary meaning, in order to conclude the Petitioner has not met its burden of proof.” PO Resp. 4–5 & n.2. Patent Owner further contends, however, that Petitioner “at least implicitly applies certain claim interpretations (not identified in Petitioner’s claim construction section) that warrant resolution here.” *Id.* at 5.

In the Decision on Institution, we explained that our determination to institute did not depend on the construction of the term or clauses identified by Petitioner, and we, therefore, did not construe expressly any terms at that preliminary stage. Dec. on Inst. 10. Nonetheless, we recognized that our final decision would depend on the complete development of the record. *Id.* at 20. In particular, we noted that neither party in its preliminary briefing had proposed a construction for the term “database,” as recited in the phrases “user information database” and “registration database” in independent claims 15, 21, and 27 of the ’127 patent, and that a final determination as to whether Petitioner would be able to show unpatentability of those claims by a preponderance of the evidence necessarily needed to await complete

development of the record. *Id.* Because our final determinations with respect to those claims turn at least in part on the meaning of “database,” we construe that term here.

database

Each of claims 15 and 21 recites a portable information device having user attributes stored in a “user information database.” Ex. 1001, 26:11–12, 26:47. Claims 15, 21, and 27 additionally recite a registration server that registers a user to a voice communication device in a “registration database.” *Id.* at 26:22, 26:58–59, 28:4. Claim 21 further specifies that the registration database is maintained by the registration server and that the user information database is stored in a memory of the portable information device.

Petitioner did not propose any express construction for the recited database terms in its Petition, but asserted, for example, that the “user information database” is disclosed by a prior art teaching of a “personal ID storing section . . . for storing personal identification information (hereinafter referred to as ‘personal ID’),” where, Petitioner alleges, “[s]uch personal ID information is ‘user attributes’ that ‘are associated with the user’ in that they represent the user.” Pet. 17 (emphases omitted) (quoting Ex. 1005, 11:63–66) (citing Ex. 1005, 3:18–20). Petitioner also contends that the recited “registration database” is disclosed by a prior art “personal-ID correlated terminal identification information storing section” of a communications “center apparatus,” which “registers the user to the voice communication device’ by storing . . . various information, including the user’s personal ID information and . . . terminal identification

information, into [the] personal-ID correlated terminal identification information storing section . . . , along with . . . called-party number of the user[], such that they are correlated.” *Id.* at 27 (emphasis omitted) (quoting Ex. 1005, 13:53–64, Figs. 4A, 4B; Ex. 1003, 40–42).

In its Response, Patent Owner also does not propose an express construction for database, but contends, *inter alia*, that Petitioner’s analysis is conclusory and does not establish that the prior art disclosures relied upon are databases (PO Resp. 8, 17–18) and that “[t]he claimed ‘user information database’ must be understood in the context of the requirement that it stores *multiple* ‘user attributes’ as database entries” (*id.* at 9 (citing Ex. 1001, 7:14–16, 10:2–3, claim 15)). Patent Owner further contends that, although it cited certain extrinsic evidence of the meaning of “database” in connection with its Preliminary Response in this proceeding,⁸ it “did not [do so] . . . to advance a particular claim construction outside the context of the claim

⁸ See Ex. 2002, 3 (McGraw-Hill Dictionary of Scientific and Technical Terms, 6th ed. (2003), defining database as “A nonredundant collection of interrelated data items that can be shared and used by several different subsystems”); Ex. 2003, 3 (Webster’s New World Dictionary of Computer Terms, 8th ed. (2000), defining “database” as “A collection of related information about a subject organized in a useful manner that provides a base or foundation for procedures, such as retrieving information, drawing conclusions, and making decisions. Any collection of information that serves these purposes qualifies as a database, even if the information isn’t stored on a computer. . . .”); Ex. 2004, 3 (McGraw-Hill Dictionary of Electrical and Computer Engineering (2004)); Ex. 2005, 3–4 (Barron’s Dictionary of Computer and Internet Terms, 10th ed. (2009)); Ex. 2006, 3–4 (CRC Press Dictionary of Computer Science Engineering and Technology (2000)).

language and the remainder of the intrinsic evidence.” *Id.* at 12. In that regard, Patent Owner contends that “the statement emphasized in the concurring opinion [of the Decision on Institution] that ‘[a]ny collection of information that serves these purposes qualifies as a database, even if the information isn’t stored on a computer’ ([Dec. on Inst.] 37 [(Horvath, J., concurring)]) is clearly untethered, at a minimum, to the explicit recitation ‘the portable information device having user attributes stored in a user information database.’” *Id.* Patent Owner further asserts, “[t]he concurring opinion also focuses on certain extrinsic evidence to suggest a construction *not advanced by either party*—i.e., that the ‘database’ term ‘simply refers to a “collection of related information about a subject organized in a useful manner,” or to a “nonredundant collection of interrelated data items[.]”’” *Id.* at 12–13 (quoting Dec. on Inst. 38 (Horvath, J., concurring)). According to Patent Owner:

Setting aside the deficiency of the Petition with respect to the multiple-entry requirement of the claimed database, the claim language itself proscribes construing “database” as broadly as the concurring opinion suggests. For example, claim 21 recites “... transmit user attributes from a user information database stored in a memory of the portable information device.” The claim language expressly differentiates the “database” and “memory” terms at least in that the former is stored in the latter.

The construction proposed *sua sponte* in the concurring opinion, however, would impermissibly render at least one of the claim terms superfluous in this context. Under the proposed and overbroad definition, for example, an argument for anticipation could be made simply by alleging “user attributes” are themselves a collection of interrelated items and stored in “memory.” This would risk reducing the relevant claim language to “. . . transmit user attributes from . . . memory of the portable

information device.” A construction that renders the “database” term superfluous cannot be correct. *Apple Inc. v. ContentGuard Holdings, Inc.*, IPR2015-00353, Paper No. 9, Decision Denying Institution of Inter Partes Review (P.T.A.B. June 25, 2015) (declining to adopt proposed claim construction that would render claim language superfluous).

The written description of the ’127 patent also does not support construing “database” as broadly as the concurring opinion suggests. The ’127 patent recognized a distinction between digitally storing a collection of information *in general* and, instead, using a dedicated *database* structure for storing specific information. This distinction is revealed, for example, in the statement “the PID may store *and download to the phone* the preferences of the user about the phone operation, such as the ringer volume and tone.” EX1001, 4:8–11. This storage of preferences (in the plural) at the phone is not described as requiring a database.

Elsewhere in the ’127 patent, however, when a dedicated database is required (*e.g.*, for storing, searching, retrieving, modifying, etc., specific data entries), it is so stated. The specification also provides further context by explaining that: “SQL (Structured Query Language) is preferred for implementing and maintaining the database.” EX1001, 21:46–48. The specification also discloses example embodiments that utilize specific types of databases (*e.g.*, “SIP database”). The written description concerning databases is further reflected in the claim language itself. The suggestion in the concurring opinion that “Nunokawa’s description is at least as extensive as the description in the ’127 patent” (Paper 8 at 38) overstates the disclosure in Nunokawa (which makes no mention of databases whatsoever) and overlooks at least these descriptions in the ’127 patent of example structure and function expressly attributed to what the specification identifies as databases.

Other extrinsic evidence confirms that, when the context is properly limited exclusively to computing technology, the term “database” itself connotes structure and function that is

narrower than other definitions that are expressly written to encompass non-computing contexts (*e.g.*, paper index cards). For example, the Microsoft Computer Dictionary (Fifth Edition) defines “database” as “[a] file composed of records, each containing fields together with a set of operations for searching, sorting, recombining, and other functions.”

database *n.* A file composed of records, each containing fields together with a set of operations for searching, sorting, recombining, and other functions. *Acronym:* DB.

Excerpt of Microsoft Computer Dictionary, Microsoft Press, (5th ed. 2002) (filed as Exhibit 2007); *see also* corresponding declaration filed as Exhibit 2008. Nothing in Nunokawa’s terse description of its “personal ID” stored on “personal ID storing section 11” remotely resembles, much less anticipates, such structural and functional aspects of a database, as defined in the Microsoft Computer Dictionary using a definition limited to the computing context only. *Id.*

PO Resp. 13–16 (footnote omitted); *see also id.* at 18–20 (raising similar arguments with respect to the concurring opinion’s discussion of the “registration database” limitation).

In its Reply, Petitioner argues that “[t]he intrinsic and extrinsic evidence confirm that, in the context of the ’127 Patent, the proper construction of ‘database’ is the one recognized by the concurrence: ‘[T]he term “database” is a broad term, and simply refers to a “collection of related information about a subject organized in a useful manner,” or to a “nonredundant collection of interrelated data items”.’” Reply 2. Citing Dr. Polish’s Reply Declaration, Petitioner contends that Dr. Polish agrees (*id.* (citing Ex. 1014 ¶¶ 7–8)), and further contends the ’127 patent uses the

term “database” consistently with this construction (*id.*). In contrast, Petitioner argues, Patent Owner’s argument that this construction would impermissibly render either “database” or “memory” superfluous should be rejected, because the proper construction of database makes clear that it is directed to “data items” or “information,” whereas a “memory” is an example of a medium in which the data or information making up a database is stored. *Id.* at 2–3. Petitioner points out that, consistent with that distinction, “inserting the proper construction in claim 21 results in . . . a ‘collection of related information about a subject organized in a useful manner stored in a memory’ or a ‘nonredundant collection of interrelated data items stored in a memory.’” *Id.* at 3. Petitioner further contends that Patent Owner’s argument based on the Microsoft Computer Dictionary should likewise be rejected, as it is not endorsed by any expert and indeed differs substantially from the definitions that the experts have offered. *Id.* at 3. Further, Petitioner contends, Patent Owner’s justification for using this definition as being “properly limited exclusively to computing technology” is based only on attorney argument, and, in any event, the dictionary definitions Dr. Polish and the concurrence rely on are also “limited to . . . computing technology.” *Id.* at 3–4 (citing Ex. 2003; Ex. 2004).

Petitioner further argues that, whereas the majority opinion of the Decision on Institution “seemed to agree with Patent Owner’s argument [in its Preliminary Response] that certain items—i.e., ‘(1) a list, or (2) a simple comma-delimited or space-delimited flat file, or (3) an array of single-entry files, as so on and so forth’—are not ‘databases,’” “[t]hat view should be rejected because there is no reliable evidence on record to support it,” “the

'127 Patent provides no requirements regarding how information is stored in a database, or the particular data structure used to store the information,” and the exclusion of such items from being a “database” does not find support in any extrinsic evidence in this proceeding. *Id.* at 4 (citing Dec. on Inst. 18–19). Indeed, Petitioner contends, “Dr. Polish testifies that any of a list, flat file, or array of single-entry files can be a ‘database’ so long as it meets the necessary requirements,” and “Patent Owner’s argument to exclude certain items from being a ‘database’ attempts to conflate a general ‘database’ with a specialized form of database known as a ‘relational database.’” *Id.* at 4–5 (citing Ex. 1004 ¶¶ 17–19). Although “the ’127 specification discloses an SQL database, an example of a relational database,” Petitioner argues, “the challenged claims themselves do not require a ‘relational database.’” *Id.* at 5 (citing Ex. 1001, 21:39–48; Ex. 1014 ¶¶ 20–21).

In its Sur-reply, Patent Owner repeats its argument that the construction in the concurring opinion “would impermissibly render at least one of the claim terms superfluous,” because, Patent Owner alleges, an argument could be made for anticipation under the proposed definition “simply by alleging ‘user attributes’ are themselves the required ‘user information database’ and stored in ‘memory,’” and, thus, “the claim term ‘user attributes’ would render ‘database’ superfluous.” Sur-reply 9–10. Patent Owner further contends that “[t]he written description of the ’127 patent also does not support construing ‘database’ as broadly as the concurring opinion suggests,” because the patent “recognized a distinction between digitally storing a collection of information *in general* and, instead, using a dedicated *database* structure for storing specific information.” *Id.*

at 10. This distinction is revealed, Patent Owner contends, by comparing “the statement ‘the PID may store and download to the phone the preferences of the user about the phone operation, such as the ringer volume and tone,’” which, Patent Owner argues, is not described as requiring a database, with other statements in the ’127 patent such as “SQL (Structured Query Language) is preferred for implementing and maintaining the database.” *Id.* (emphasis omitted) (quoting Ex. 1001, 4:8–11, 21:46–48); *see also id.* at 11 (“[T]he ’127 Patent itself makes express distinction between a variety of data structures that are databases (such as SQL and SIP) and [a] variety of other data that are not databases (such as a list, flat files, comma-delimited files, etc.).”).

Having considered the parties’ respective positions and the totality of the record, we are persuaded by Petitioner’s contentions and agree that the dictionary definitions of “database” originally proffered by Patent Owner and its erstwhile expert Mr. Easttom, referenced in the concurring opinion, and later adopted by Petitioner and its expert Dr. Polish are consistent both with the plain and ordinary meaning of the term “database” in general and with the use of that term more specifically in the context of the ’127 patent and its claims. *See, e.g.*, Ex. 1001, 21:39–48. Tellingly, Patent Owner’s counsel at oral hearing in this proceeding was unable to articulate why the earlier-presented definitions should not be adopted. *See generally* Tr. 37:26–54:22. Of those two definitions, we find that the definition in Webster’s New World Dictionary of Computer Terms (Ex. 2003) is the more narrowly focused, apart from its omission of the term “nonredundant” having no determinative impact in this proceeding. Accordingly, we

construe “database” in the context of the ’127 patent as a “collection of related information about a subject, organized in a useful manner.” We also disagree with Patent Owner’s contention that this construction would render any claim terms superfluous. PO Resp. 13–14; Sur-reply 9. In that regard, we understand the “user attributes” recited in claims 15, 21, and 27 to be members of the “collection of related information . . . ,” not the collection itself.

B. Level of Ordinary Skill in the Art

The patentability analysis under 35 U.S.C. § 103 includes consideration of the level of ordinary skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Petitioner contends that a person of ordinary skill in the art (“POSITA”) in the field of the ’127 patent as of its filing date would have been “someone knowledgeable and familiar with computers, telephones, and the ways they may interact or interoperate,” and that such a person

would have (i) a Bachelor’s degree in Electrical Engineering, Computer Engineering, Computer Science, or equivalent training, as well as at least three years of technical experience in the field of computer systems, telecommunications, and/or networking; or (ii) in the alternative, . . . a Master’s degree in Electrical Engineering, Computer Engineering, Computer Science, or equivalent training.

Pet. 6. Contending that Petitioner fails to meet its burden of proof even under Petitioner’s definition, Patent Owner expressly declines to offer a competing definition. PO Resp. 4. For purposes of this decision, we adopt Petitioner’s definition.

C. Overview of the Asserted Prior Art

1. Nunokawa

Nunokawa is directed to personal communications service in which a personal telecommunication number is allocated to an individual, rather than to an apparatus, providing, for example, for the forwarding of a call to a communications apparatus that an individual is using at a given time.

Ex. 1005, 1:7–14. By using an external portable recording medium that stores a personal ID, a communications apparatus can automatically transmit the personal ID and its own terminal identification information to a center apparatus that manages the personal ID and the terminal identification information so that they are correlated with each other. *Id.* at [57].

Figure 3 of Nunokawa is reproduced below.

FIG.3

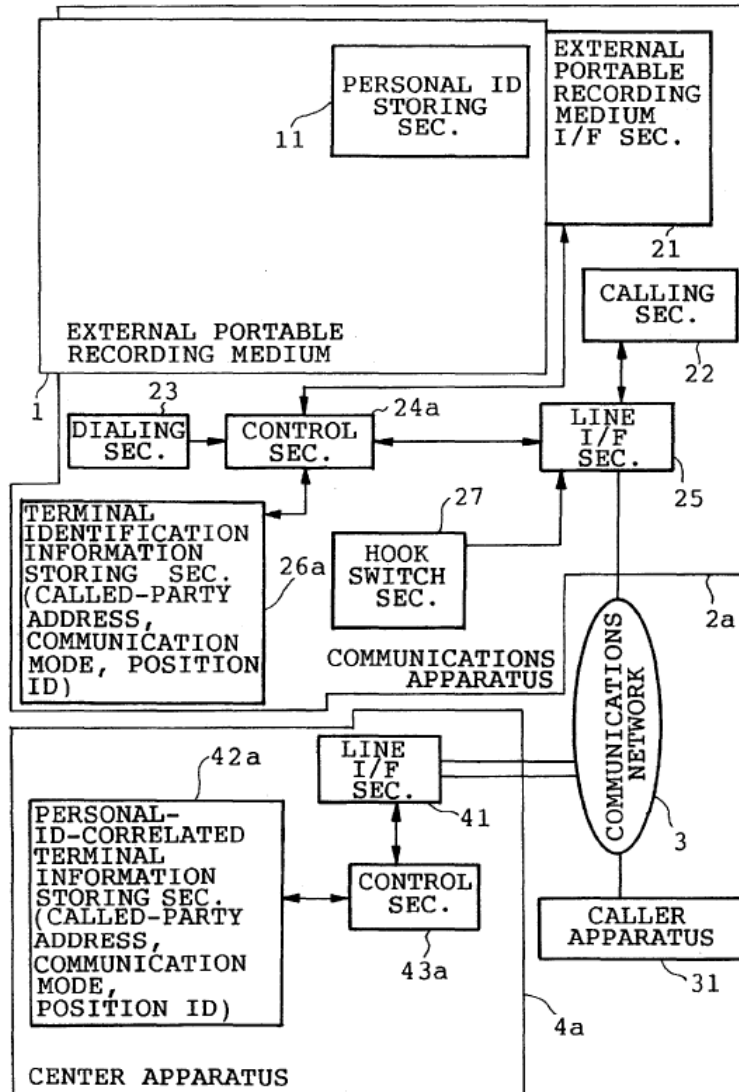


Figure 3, above, is a block diagram showing the configuration of a communications system according to one embodiment of Nunokawa's invention. *Id.* at 10:33–35. With reference to Figure 3, external portable reading medium 1 “has a personal ID storing section 11 for storing personal identification information” of the user and is inserted into communication

apparatus 2a. *Id.* at 6:1, 11:63–66, 13:17–19. Upon insertion of portable recording medium 1, communication apparatus 2a reads the personal ID information from portable recording medium 1 and the terminal identification information from terminal identification information storing section 26a. *Id.* at 13:37–43. Communication apparatus 2a then transmits the personal ID and the terminal identification information through communications network 3 to register the personal ID and terminal identification information at center apparatus 4a. *Id.* at 13:46–53. Center apparatus 4a stores the apparatus type and one or more of the called-party address, the communication mode, and the position ID of communication apparatus 2a in personal-ID-correlated terminal identification information storing section 42a, which stores a universal personal telecommunication (“UPT”) number of the user (e.g., called-party number), such that they are correlated with the user’s personal ID. *Id.* at 13:53–64, 14:36–42. Thereafter, when a call from caller apparatus 31 is received by center apparatus 4a with the UPT number of the user, control section 43a searches personal-ID-correlated terminal identification information storing section 42a for the personal ID corresponding to the called-party UPT number, the apparatus type of the call transfer destination, the called-party address, the communication mode, and the position ID. *Id.* at 14:1–8. Center apparatus 4a uses this information to forward the call to communication apparatus 2a in which portable recording medium 1 is inserted. *Id.* at 13:15–19.

2. Szlam

Szlam describes “a method and an apparatus whereby a user can use the features available on the devices at the user’s office, regardless of where the user is currently located, and regardless of what devices the user has at the present location of the user.” Ex. 1009, 3:43–47. Szlam “also provides a versatile telephone set, where the features and functions are programmable using a computing device, such as a portable communications device, . . . a palm-size (handheld) computer, frequently referred to as a Personal Digital Assistant (PDA), etc.” *Id.* at 3:60–65. Figures 2A and 2B of Szlam are reproduced below.

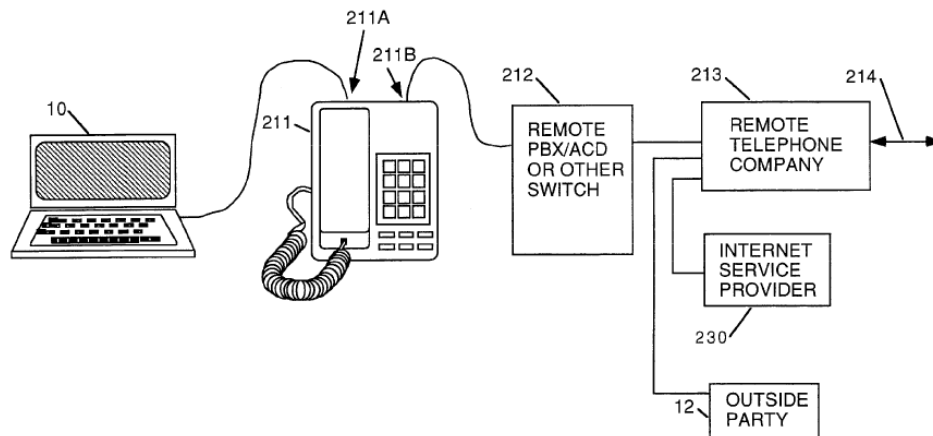


FIG. 2A

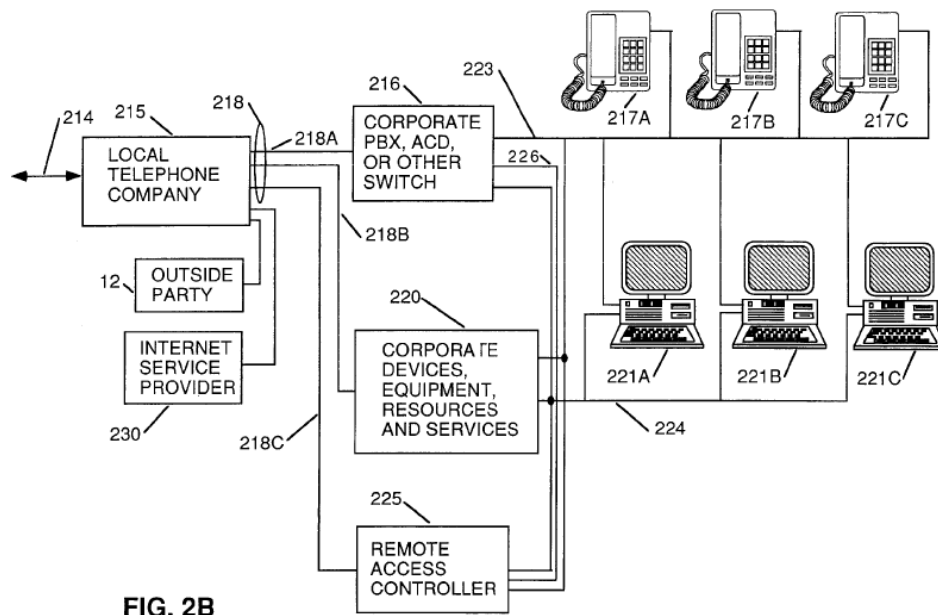


FIG. 2B

Figures 2A and 2B, above, together provide “an illustration of a typical environment for the preferred embodiment” of Szlam’s invention. *Id.* at 6:43–44. With reference to Figures 2A and 2B, telephones 217A–217C, computers 221A–221C, a PBX or ACD or other telephone system or switch 216, and various other devices, equipment, resources, and services 220 may be located in a user’s main office. *Id.* at 7:46–53. Computers 221A–221C “are preferably connected by a LAN, an intranet, and/or a wide area network, shown generally as 224.” *Id.* at 7:59–61. Remote access controller 225 is connected to PBX 216 via lines 223 and also is connected to communications lines 224. *Id.* at 8:56–58.

In an example provided by Szlam, it is assumed that the user is traveling and is in a hotel room having telephone set 211, which is connected to a remote PBX/ACD or other telephone system or switch 212 of the hotel, and preferably has telephone port 211B that connects telephone set 211 to PBX 212, as well as port 211A that allows a computer such as the

user's portable communication device 10 to transfer data over the telephone line via PBX 212. *Id.* at 10:54–67. Hotel PBX 212 is connected to remote telephone company 213. *Id.* at 10:57–58. Via the Internet, controller 225 may connect with, and exchange information, data, and instructions with, portable communication device 10. *Id.* at 9:4–7. Calls destined for the user can be routed by controller 225 to wherever the user specifies, including the user's current location. *Id.* at 20:7–9. The user can store a user profile in controller 225, which the controller 225 inspects whenever an incoming call for the user is received. *Id.* at 20:9–11. When a calling party calls the user's telephone number, controller 225 checks the routing factors to determine how the incoming call should be routed and acts accordingly. *Id.* at 20:19–22. The controller 225 may, for example, route the call to the user's hotel room. *Id.* at 20:11–14.

3. Lehmus

Lehmus, titled “Subscriber Identity Module Mobile Station and Method for Performing a Smart Card Function,” “relates to a subscriber identity module that makes it possible to integrate different smart card functions with the [subscriber identity module (“SIM”)] card used in a mobile station.” Ex. 1006, [54], [57]. Lehmus discloses, *inter alia*, new types of SIMs that make it possible to combine the functions and unify the use of different smart cards used in different systems, as well as allowing information on cards of different systems to be updated in a centralized manner by a mobile station and enabling “new diversified service combinations to be so implemented that they can be utilised via a data

communication device, such as a mobile station.” *Id.* at 3:25–4:10. Lehmus explains that “[a] feature characteristic of these service combinations is that a part of the series of actions is carried out in a system and/or application external to the data communication system and the data communication device.” *Id.* at 4:10–14.

4. Fraser

Fraser is directed to a “packet telephone system [that] employs short packets containing compressed speech.” *See, e.g.*, Ex. 1010, [54], [57].

D. Nunokawa-based Grounds

In the Decision on Institution, the majority opinion concluded that Petitioner had not made an adequate showing, on the preliminary record then before us, that Nunokawa disclosed the “user information database” and “registration database” recited in independent claims 15, 21, and 27, based on our preliminary interpretation of “database.”⁹ Dec. on Inst. 19–21. We also explained, however, that, at that preliminary stage of the proceeding, neither party had proposed a construction for the claim term “database” within the context of the claims, and that “a final determination as to whether Petitioner will be able to show by a preponderance of the evidence that claims 15 and 27 are anticipated by Nunokawa necessarily must await complete development of the record.” *Id.* at 20. With the benefit of the full

⁹ Notably, the concurring opinion in the Decision on Institution disagreed with the majority opinion in this regard, whereas the dissenting opinion agreed with the majority. *See* Dec. on Inst. 36–41 (Horvath, J., concurring), 42–43 (Quinn, J., dissenting).

trial record now before us, we now are persuaded, for the reasons that follow, that Petitioner has established by a preponderance of the evidence that claims 15, 27, and 28 are anticipated by Nunokawa; that claims 21–23 would have been obvious over Nunokawa; that claim 24 would have been obvious over Nunokawa and Szlam; and that claim 30 would have been obvious over Nunokawa and Lehmus.

1. Independent Claims 15 and 27

Petitioner has mapped Nunokawa to each limitation of independent claims 15 and 27. Pet. 16–35. With respect specifically to the preamble of claim 15, Petitioner contends, in part, that “Nunokawa discloses ‘*a portable information device*’ in the form of an ‘**external portable recording medium**’ (e.g., an IC card) that stores information” (*id.* at 16 (citing Ex. 1005, 3:4–9, 11:63–66, 13:17–18, 22:19–24, Fig. 3; Ex. 1003, 26–27)) and that

Nunokawa discloses “*the portable information device having user attributes stored in a user information database, wherein the user attributes are associated with the user.*” For example, Nunokawa describes that its external portable recording medium (“*portable information device*”) “**has a personal ID storing section 11 for storing personal identification information (hereinafter referred to as ‘personal ID’).**” [Ex.] 1005, 11:63–66. Such personal ID information is “*user attributes*” that “*are associated with the user*” in that they represent the user. See e.g., [Ex.] 1005, 3:18–20 (“**a user who is represented by the personal identification information such that they are correlated with each other**”), 6:1–2, 9:59–60; [Ex.] 1003, []26–27. And the personal ID storing section 11 is thus a “*user information database.*” [Ex.] 1003, []27–28.

(*id.* at 17).

With respect to “a registration server . . . , wherein the registration server registers the user to the voice communication device in a registration database . . . ,” as recited in both independent claims 15 and 27, Petitioner maps Nunokawa’s center apparatus 4a to the recited “registration server,” contending that center apparatus 4a “registers various information including, for example, the personal ID information (‘user attributes’).” *Id.* at 24–25 (emphasis omitted) (citing Ex. 1005, 13:48–64, 21:27–33, 26:17–32, 29:13–16, Figs. 3, 4A, 4B; Ex. 1003, 36–38); *see also id.* at 32–33 (citing Ex. 1005, 12:47–53, 13:57–64, 21:27–33, 26:17–32, 29:13–16, Figs. 3, 4A, 4B; Ex. 1003, 51–54). Petitioner points further to disclosure in Nunokawa that center apparatus 4a receives a called-party address registration command, a personal ID, a called party address, a communication mode, and a position ID from a control section of a communications apparatus, and contends that “[t]he ‘called-party address registration command’ . . . is a ‘register request’ in that it serves as a request by the communications apparatus (‘voice communication device’) to the center apparatus (‘registration server’) to register the transmitted information, which includes the personal ID information (‘user attributes’).” *Id.* at 26–27 (emphasis omitted) (citing Ex. 1005, 13:49–53, Fig. 4A; Ex. 1003, 38–40); *see also id.* at 34–35 (citing Ex. 1005, 13:49–53; Ex. 1003, 72). Petitioner then contends:

In response to the registration command, the center apparatus “*registers the user to the voice communication device*” by storing the various information, including the user’s personal ID information and the terminal identification information, into a personal-ID correlated terminal identification information storing section 42, at steps S17 and S18, along with “a UPT number, which is one of personal telecommunication numbers

(in this case, called-party number of the user), such that they are correlated....” See *e.g.*, [Ex.] 1005, 13:53–64, FIGS. 4A and 4B; [Ex.] 1003, [40-42]. The personal-ID correlated terminal identification information storing section of the center apparatus is thus “a registration database.” See *e.g.*, [Ex.] [1005], 12:47–53, 13:53–64, 21:27–33, 26:17–32, 29:13–16; [Ex.] 1003, [40–42].

Id. at 27; see also *id.* at 35.

In response to Petitioner’s contentions, Patent Owner argues that the majority opinion of the Decision on Institution was correct in concluding that Petitioner had not established a reasonable likelihood of prevailing in showing that Nunokawa discloses the user information database and registration database limitations of claims 15 and 27, for several reasons. PO Resp. 7–11, 16–18. First, according to Patent Owner, Nunokawa does not mention the term “database” and does not describe its “personal ID storing section 11” as being a database. *Id.* at 8, 17–18. Second, the relevant part of Dr. Polish’s opening Declaration essentially only repeats verbatim Petitioner’s arguments. *Id.* at 8, 18. Third, Patent Owner contends, Petitioner “does not even purport to meet[] the exacting standard for proving anticipation by inherency,” as “[t]here simply is no argument or even suggestion by the Petition that any disclosure of Nunokawa shows the limitation ‘user attributes stored in a user information database’ is necessarily present by mere disclosure of ‘a personal ID’ stored in a ‘personal ID storing section.’” *Id.* at 8–9 (citing *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir 2002)), 18. Fourth, Patent Owner asserts that the Petition “fail[s] to establish, or even argue, that Nunokawa’s ‘personal ID’ (*in the singular*) satisfies the claimed ‘user

attributes’ (*in the plural*).” *Id.* at 9, 18. According to Patent Owner, “[t]he claimed ‘user information database’ must be understood in the context of the requirement that it stores *multiple* ‘user attributes’ as database entries,” whereas, “[b]y way of contrast, Nunokawa repeatedly and consistently refers to its ‘personal ID’ in the singular” and “provides no description of its ‘personal ID’ apart from spelling out that term in an unabbreviated form in the following statement: ‘a personal ID storing section 11 for storing personal identification information (hereinafter referred to as “personal ID”).”” *Id.* at 9–10 (quoting Ex. 1005, 11:64–65) (citing Ex. 1001, 7:14–16, 10:2–3; Ex. 1005, [57], 3:55–56, 4:2–3, 4:6–10, 4:55–56, 6:17–18). Further, according to Patent Owner, “the demonstrable fact that Nunokawa repeatedly and consistently refers to its ‘personal ID’ in the singular would refute any belated attempt by Petitioner to show anticipation by inherency of the plurality requirement for the ‘user attributes’ term.” *Id.* at 10. Finally, Patent Owner contends that the findings of a sufficient *prima facie* case in the concurring opinion of the Decision on Institution with respect to claims 15, 21, and 27 are “predicated on an incorrect claim construction not advanced by any party.” *Id.* at 11–16, 18–20; *see also supra* section III.A.

In its Reply, Petitioner argues that Nunokawa discloses the recited “user information database” and “registration database” under either the construction set forth by the concurring opinion or the construction proposed by Patent Owner’s expert. Reply 7. With respect to the “user information database,” for example, Petitioner contends that Nunokawa discloses that “personal identification information,” including, *inter alia*, a personal telecommunication number, represents a user and is stored in a personal ID

storing section of an IC card. *Id.* at 7–8 (citing Ex. 1005, [57], 3:18–50, 6:1–2, 9:29–30, 9:59–60, 11:63–12:22, 13:17–19, 30:5–7, Figs. 1, 3). Petitioner argues that “Nunokawa’s IC card with personal ID storing section storing personal identification information satisfies both” alternative constructions of “database” as including a “collection of related information about a subject organized in a useful manner” or as a “nonredundant collection of interrelated data items.” *Id.* at 8. For example, according to Petitioner, “Nunokawa makes clear that its personal ID storing section stores more than just a single data item; it stores ‘personal identification **information.**’” *Id.* at 8–9 (citing Ex. 1005, [57], 3:48–50, 9:29–30, 11:63–66). Relying on the McGraw-Hill Dictionary of Scientific and Technical Terms and Dr. Polish’s testimony, Petitioner explains that “[i]nformation’ means ‘data which has been recorded, classified, organized, related, or interpreted within a framework so that meaning emerges,’” and that a person of ordinary skill in the art “would thus understand ‘information’ as used in the context of ‘personal identification information’ in Nunokawa refers to a related collection of more than one data items.” *Id.* at 9 (citing Ex. 1014 ¶¶ 29–34; Ex. 1015, 3). Petitioner cites other references from Nunokawa’s time period that Petitioner alleges confirm Dr. Polish’s opinion as to an ordinarily skilled artisan’s understanding in this regard. *Id.* (citing Ex. 1016, 1:37–39; Ex. 1017, 3:48–60). Further, Petitioner contends, “Nunokawa’s personal identification information stored on the IC card is ‘organized in a useful manner,’ as the very meaning of ‘information’ is ‘data which has been recorded, classified, organized, related, or interpreted within a framework so

that meaning emerges.”” *Id.* at 11–12 (citing Ex. 1014 ¶ 29; Ex. 1015, 3).¹⁰ Petitioner raises similar arguments with respect to the recited “registration database.” *Id.* at 17–18 (citing Ex. 1005, [57], 3:64–4:14, 12:15–14:16, 18:6–41, Figs. 1, 3; Ex. 1014 ¶¶ 42–45)

Responding to Patent Owner’s arguments, Petitioner points out that the fact that Nunokawa does not mention the term “database” is irrelevant because anticipation does not include an *ipsissimis verbis* test and Nunokawa’s IC card with personal storing section storing personal identification information has all the properties required to be a database. *Id.* at 15. Petitioner contends, “[t]his, not the label Nunokawa chooses to attach to that section, is what is relevant.” *Id.* Petitioner further contends that Dr. Polish did not simply render a conclusory opinion that Nunokawa discloses the claimed “user information database,” but instead “disclosed the underlying facts on which his opinion is based, explaining what disclosure in Nunokawa corresponds to the claimed limitations, and how and why it did so.” *Id.* (citing Ex. 1003, 20–31, 66–70). Lastly, Petitioner contends that “Nunokawa makes clear that its personal ID storing section stores more than

¹⁰ Petitioner makes additional arguments in its Reply, directed to the alternative definitions from the McGraw-Hill Dictionaries (Exhibits 2002 and 2004) and the Microsoft Computer Dictionary (Exhibit 2007) also of record. Reply 12–14 (citing Ex. 1005, 1:6–2:64, 3:21–43, 11:56–13:8, 18:6–41, 21:66–22:3; Ex. 1014 ¶¶ 10–11, 34, 36–41), 18–19 (citing Ex. 1005, [57], 3:64–4:14, 12:18–14:16, 18:6–41; Ex. 1014 ¶¶ 46–48). Because we conclude that “database” is properly construed in the context of the claims of the ’127 patent as a “collection of related information about a subject organized in a useful manner” (*see supra* Section III.A), we focus here on Petitioner’s arguments relevant to that construction.

just a ‘personal ID’; it stores “personal identification **information**,” which “is more than just a singular data item,” including “a personal ID and the multiple data items of [a] personal telecommunication number, e.g., country code, area code, central office code, line number, and extension.” *Id.* at 16–17 (citing Ex. 1005, [57], 3:48–50, 9:29–30, 11:63–66; Ex. 1014 ¶ 34). According to Petitioner, “[t]he combination of these items make[s] up the ‘personal ID information’ stored on the IC card,” “each of one [sic], taken separately, is a ‘user attribute,’” and “[a]s such, Nunokawa’s personal ID information stored in the personal ID storing section discloses ‘user attributes stored in a user information database.” *Id.* (citing Ex. 1014 ¶ 34); *see also id.* at 19 (relying on the same arguments for the recited “registration database”).

Patent Owner contends in its Sur-reply that Petitioner improperly relies on new arguments and evidence in its Reply. Sur-reply 1–3. In particular, according to Patent Owner, Petitioner provides no explanation why Exhibits 1015–1019 filed with the Reply could not have been filed with the original Petition, and Patent Owner argues “[r]eplies are not to be used to fill gaps in deficiencies in a Petition.” *Id.* at 1–2 (citing Office Patent Trial Practice Guide, August 2018 Update, 15 (available at <https://go.usa.gov/xU7GP>)). Patent Owner asserts that the Board should strike Exhibits 1015–1019 or disregard Petitioner’s reliance on those references. *Id.* at 2. Moreover, Patent Owner argues, the Petition does not identify or include Exhibits 1016–1019 in any challenge, and Petitioner’s reliance on those references is “further improper and unavailing” for that reason. *Id.* at 2–3. Regarding the substance of Petitioner’s Reply, Patent

Owner essentially repeats its arguments from its Response in its Sur-reply and further contends, “[t]he Reply does not dispute that there is no disclosure in Nunokawa of a database,” but instead “inconsistently argues that the term ‘database’ is on the one-hand, a well-understood structure in the art, but also at the same time, “some undefined structure” that stores the respective information.”” *Id.* at 4–8, 11 (quoting Reply 4) (citing Reply 7). According to Patent Owner, “the Reply has no rebuttal to the fact that the ’127 Patent itself makes express distinction between a variety of data structures that are databases (such as SQL and SIP) and variety of other data that are not databases (such as a list, flat files, comma-delimited files, etc.),” and “[b]ecause the ’127 patent itself confirms storing data does not necessarily require the specific structure of a database, there can be no anticipation within the four corners of Nunokawa.” *Id.*

Having considered the parties’ respective positions and the totality of the record, we are persuaded by Petitioner’s contentions that Nunokawa anticipates independent claims 15 and 27 of the ’127 patent. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987), but “this is not an ‘ipsissimis verbis’ test,” *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990), and “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,” *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). As Petitioner correctly points out in its Reply, although the majority opinion of the Decision on Institution preliminarily

concluded that the Petition did not demonstrate a reasonable likelihood of prevailing on these challenges, that opinion also acknowledged that its decision was based on an incomplete record and explained that “a final determination as to whether Petitioner [would] be able to show by a preponderance of the evidence that claims 15 and 27 are anticipated by Nunokawa necessarily must await complete development of the record.” Reply 1–2; Dec. on Inst. 20. Now that the record is fully developed, we are persuaded, for the reasons articulated in the Petition, that Nunokawa discloses storing user attributes in a “user information database,” wherein the user attributes are associated with the user, as well as a registration server that registers the user to a voice communication device in a “registration database,” as recited in claims 15 and 27 and as those database terms are construed in light of the full record. *See supra* Section III.A; Pet. 17, 24–27, 32–33.

We agree, in particular, that Nunokawa’s “personal ID storing section 11” is a “user information database” and that the personal-ID correlated terminal identification information storing section of Nunokawa’s center apparatus is a “registration database,” as those terms are properly construed in light of Petitioner’s arguments and evidence as to how a person of ordinary skill in the art would have understood Nunokawa, notwithstanding the fact that Nunokawa does not use the specific word “database.” We agree with Petitioner’s argument and evidence that Nunokawa discloses storing “personal ID” (i.e., “user information,” in the parlance of the claims) and that a person of ordinary skill in the art would understand that Nunokawa’s personal ID would include plural items of data.

See, e.g., Reply 16–17 (citing Ex. 1005, [57], 3:48–50, 9:29–30, 11:63–66; Ex. 1014 ¶ 34). Indeed, Nunokawa itself explains that “personal ID” is merely an abbreviation for “personal identification *information*.” Ex. 1005, 3:22–23 (*italics added*).

Notably, although Patent Owner had the opportunity to rebut those arguments and evidence in its Sur-reply, it did not do so. Rather than presenting persuasive counterargument or evidence refuting Petitioner’s arguments and evidence that an ordinarily skilled artisan would understand personal ID to mean multiple pieces of data, Patent Owner argued essentially only that those arguments and evidence are beyond the scope of the Reply. Sur-reply 1–3. We disagree with Patent Owner. Although we have considered Patent Owner’s contentions, we do not understand Petitioner to have changed its theory of anticipation in its Reply. In the Reply, Petitioner points to the same disclosures in the same references as disclosing the same elements of claims 15 and 27 as it did in the Petition, but adds explanation and supporting evidence with respect to how a person of ordinary skill would have understood the claims and those disclosures, in response to Patent Owner’s arguments in its Response that a database requires that multiple items be stored. Accordingly, we conclude that Petitioner met its burden with respect to these claim limitations.

Petitioner also has shown by a preponderance of the evidence that Nunokawa discloses the remaining limitations of claims 15 and 27. In particular: Petitioner has shown that Nunokawa discloses “[a] system for providing user mobility services to a user of a portable information device,” as claim 15 requires. See Pet. 16–20 (citing Ex. 1005, [57], 3:4–9, 11:63–

66, 13:17–18, 3:21–43, 11:58–63, 12:58–13:8, 13:31–14:24, 21:11–17, 22:19–24, FIG. 3; Ex. 1003, 26–31). Petitioner has shown that Nunokawa discloses “a voice communication device connected to a network, wherein the voice communication device includes a user interface for accepting user inputs and delivering user outputs, and wherein the user attributes are transmitted from the portable information device to the voice communication device,” as claim 15 requires. *See id.* at 20–23 (citing Ex. 1005, 4:20–25, 11:59–60, 11:66–12:5, 12:27–33, 12:37–38, 14:20–24, Fig. 1; Ex. 1003, 31–35). Petitioner has shown that Nunokawa discloses the communications apparatus “issuing a register request, the register request including the user attributes,” as claim 15 requires. *See id.* at 26–27 (citing Ex. 1005, 13:49–53, Fig. 4A; Ex. 1003, 38–40). Petitioner has shown that Nunokawa discloses that the center apparatus “registers the user to the voice communication device” in response to the registration command, as claim 15 requires. *See id.* at 27 (citing Ex. 1005, 12:47–53, 13:53–64, 21:27–33, 26:17–32, 29:13–16, Figs. 4A, 4B; Ex. 1003, 40–42). Petitioner has shown that Nunokawa discloses “[a] method for providing user mobility services at a voice communication device in a network,” as claim 27 requires. *See id.* at 28–29 (citing Ex. 1005, [57], 1:7–13, 3:21–43, 4:20–25, 11:56–63, 12:23–13:8, 13:31–14:24, 21:11–17, Figs. 1–3, 4A, 4B; Ex. 1003, 42–48). Petitioner has shown that Nunokawa discloses “receiving user attributes from a portable information device at the voice communication device, wherein the user attributes are associated with a user of the portable information device,” as claim 27 requires. *See id.* at 30–32 (citing Ex. 1005, 3:4–9, 4:13–14, 11:63–12:5, 12:25–27, 12:44–47, 13:33–43, 22:19–24,

Figs. 4A, 4B; Ex. 1003, 48–51). And Petitioner has shown that Nunokawa discloses “transmitting a registration request from the voice communication device to a registration server,” as claim 27 requires. *See id.* at 32–35 (citing Ex. 1005, 12:47–53, 13:49–53, 13:57–64, 21:27–33, 26:17–32, 29:13–16, Figs. 3, 4A, 4B; Ex. 1003, 51–55, 72). Apart from the arguments addressed above with respect to the “database” limitations of claims 15 and 27, Patent Owner does not contest Petitioner’s assertions in this regard.

2. Dependent Claim 28

Claim 28 depends from claim 27, and further recites the step of “processing a call by referencing the registration database and directing the call to the voice communication device.” Ex. 1001, 28:5–7. Petitioner has shown by a preponderance of the evidence that this additional step is disclosed by Nunokawa. *See* Pet. 35–37 (citing Ex. 1005, 4:6–14, 12:58–13:4, 13:15–19, 13:53–64, 14:1–16, 21:27–33, 26:17–32, 29:13–16, Figs. 3, 4A, 4B; Ex. 1003, 57–61). Apart from its arguments directed to claim 27, Patent Owner does not contest Petitioner’s assertions.

3. Independent Claim 21

Claim 21 recites, in part, “a first set of machine language instructions for causing [a] portable information device to transmit user attributes from a *user information database* stored in a memory of the portable information device to a first voice communication device,” “a second set of machine language instructions for causing the first voice communication device to accept the user attributes from the portable information device and to transmit a register request to a registration server, the register request

including the user attributes,” and “a third set of machine language instructions accessible by the registration server for causing the registration server to accept the register request from the first voice communication device and to update a *registration database* maintained by the registration server to register the user with the first voice communication device.”

Ex. 1001, 26:45–49, 26:55–61 (emphases added). Petitioner contends that Nunokawa discloses all limitations of independent claim 21, with the exception of “machine language instructions” for performing the functions recited in the claim. Pet. 38–51. With respect to such instructions, Petitioner contends that it would have been obvious to a person of ordinary skill in the art that Nunokawa’s communications apparatus would execute or interpret machine language instructions in order to perform those operations. *See, e.g., id.* at 42–43 (citing Ex. 1005, 13:37–39; Ex. 1003, 69–71), 46–47 (citing Ex. 1003, 51–52, 77–78), 50–51 (citing Ex. 1003, 81–83). As in its challenge to claim 15 as anticipated by Nunokawa, Petitioner relies on Nunokawa’s “personal ID storing section” as disclosing the “user information database” and Nunokawa’s “personal-ID correlated terminal identification information storing section” as disclosing the “registration database” of claim 21. *Id.* at 40, 47.

In its Response, Patent Owner contends Petitioner’s challenge to claim 21 is deficient for the same reasons as its challenge to claims 15 and 27. PO Resp. 7–20. As explained in the above discussion of claims 15 and 27, we disagree with Patent Owner’s contentions in this regard. *See supra* Section III.D.1. Further, we are persuaded that Petitioner has shown by a preponderance of the evidence that Nunokawa teaches or suggests each of

the remaining limitations of claim 21. Beyond the arguments addressed above, Patent Owner does not contest Petitioner's assertions in this regard. Accordingly, we conclude that Petitioner has shown by a preponderance of the evidence that claim 21 is unpatentable over Nunokawa.

4. Dependent Claims 22–24 and 30

Claim 22 depends from claim 21 and further recites “wherein the second set of machine language instructions further causes the first voice communication device to place a call to a second communication device responsive to receiving input from the user, the input including a device identifier corresponding to the second communication device.” Ex. 1001, 26:62–67. Petitioner has shown by a preponderance of the evidence that Nunokawa teaches or suggests this additional limitation. *See* Pet. 51–52 (citing Ex. 1005, 17:36–48, 17:64–18:12, 18:34–37, 19:34–36, Figs. 11–14; Ex. 1003, 84–87). Beyond the arguments addressed above with respect to independent claim 21, Patent Owner does not contest Petitioner's assertions with respect to claim 22. *See* PO Resp. 20 (“Because the Petition fails to prove anticipation of independent claims 15, 21, or 27, there can be no anticipation of the challenged claims depending therefrom (i.e., claims 28, 22-24, and 30).”).

Claim 23 depends from claim 22 and further recites “wherein the third set of machine language instructions further cause the registration server to locate the second communication device to which the call is placed.” Ex. 1001, 27:1–4. Petitioner has shown by a preponderance of the evidence that Nunokawa teaches or suggests this additional limitation. *See* Pet. 53

(citing Ex. 1005, 18:3–6, 18:37–39, 19:36–40; Ex. 1003, 88–89). Beyond the arguments addressed above with respect to independent claim 21, Patent Owner does not contest Petitioner’s assertions with respect to claim 23. *See* PO Resp. 20 (“Because the Petition fails to prove anticipation of independent claims 15, 21, or 27, there can be no anticipation of the challenged claims depending therefrom (i.e., claims 28, 22-24, and 30).”).

Claim 24 depends from claim 21 and further recites “wherein the first voice communication device is a personal computer having a microphone and a speaker.” Ex. 1001, 27:5–7. Petitioner has shown by a preponderance of the evidence that Szlam teaches this additional limitation (*see* Pet. 58–59 (citing Ex. 1009, 23:33–38; Ex. 1003, 94)) and has articulated sufficient reasoning with some rational underpinning to support the legal conclusion that the proffered combination of Nunokawa and Szlam would have been obvious to one of ordinary skill in the art (*see id.* at 56–58 (citing Ex. 1003 ¶¶ 61–67; Ex. 1005, 1:14–17, 14:20–24, Figs. 3, 4A, 4B; Ex. 1009, 3:57–59, 7:44–53, 23:33–38, Figs. 2A, 2B)). Beyond the arguments addressed above with respect to independent claim 21, Patent Owner does not contest Petitioner’s assertions with respect to claim 24. *See* PO Resp. 20 (“Because the Petition fails to prove anticipation of independent claims 15, 21, or 27, there can be no anticipation of the challenged claims depending therefrom (i.e., claims 28, 22-24, and 30).”).

Claim 30 depends from claim 28 and further recites “wherein the portable information device is a personal digital assistant, and wherein the step of receiving user attributes from the portable information device at the voice communication device is performed during a synchronization

operation between the portable information device and the voice communication device.” Ex. 1001, 28:13–19. Petitioner has shown by a preponderance of the evidence that Lehmus and Nunokawa, respectively, teach these additional limitations (*see* Pet. 61–62 (citing Ex. 1006, [57], 5:16–24, 8:19–22; Ex. 1005, 30:54–31:30; Ex. 1003, 98–101)) and has articulated sufficient reasoning with some rational underpinning to support the legal conclusion that the proffered combination of Nunokawa and Lehmus would have been obvious to one of ordinary skill in the art (*see id.* at 59–60 (citing Ex. 1003 ¶¶ 72–76; Ex. 1005, 1:14–17, 21:11–17, Figs. 3, 4A, 4B; Ex. 1006, 1–5)). Beyond the arguments addressed above with respect to independent claim 27, Patent Owner does not contest Petitioner’s assertions with respect to claim 30. *See* PO Resp. 20 (“Because the Petition fails to prove anticipation of independent claims 15, 21, or 27, there can be no anticipation of the challenged claims depending therefrom (i.e., claims 28, 22-24, and 30).”).

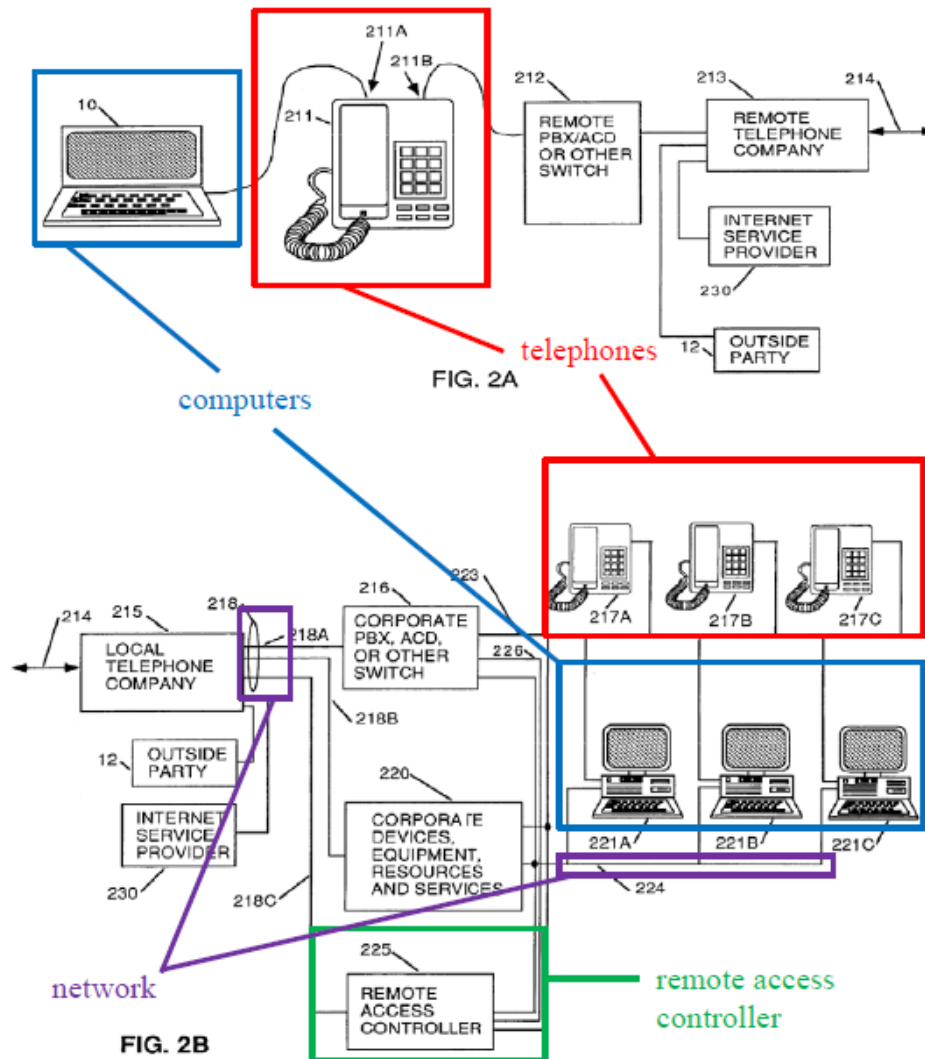
E. Obviousness over Szlam and Fraser

Having considered the arguments and evidence presented during trial, we conclude, for the reasons that follow, that Petitioner has failed to prove by a preponderance of the evidence that claims 1–5 and 8 are unpatentable over the combination of Szlam and Fraser.

1. Independent Claim 1

Petitioner contends that Szlam discloses “[a] system for providing user mobility services on a data network telephony system,” as recited in the preamble of claim 1, referring particularly to Szlam’s disclosure that

“regardless of where the user is located, and regardless of what equipment is actually available at the current location of the user, the user can conduct business using the same devices and features that are available at the user’s office,” and also referring to the arrangement shown in Figures 2A and 2B of Szlam. Pet. 65–67 (emphasis omitted) (quoting Ex. 1009, [57]) (citing Ex. 1009, 1:9–12, 3:42–52, 7:18–43, 23:38–41, 26:39–44, Figs. 1, 2A, 2B, 4, 7A; Ex. 1003, 106–09). An annotated version of Szlam’s Figures 2A and 2B provided by Petitioner is reproduced below.



Petitioner’s annotated version of Figures 2A and 2B, above, identifies telephones 211, 217A–217C; portable communications device 10; computers 221A–221C; communications lines 218, 224; and remote access controller 225 as components of Szlam’s system. *Id.* at 65–66 (citing Ex. 1009, Figs. 2A, 2B; Ex. 1003, 106–07).

With respect to the “data network” limitation of claim 1, Petitioner identifies (highlighted in purple) communication lines 218, 224 shown in

Figure 2B of Szlam, as well as disclosure in Szlam, for example, that “the communications link may be any means of transferring data”; that “[t]he data lines 224 may be, for example, part of a local area network (LAN), a wide area network, intranet, or other company networking scheme, and may be connected to the other parts of such a network by servers, gateways, routers, and switches 220, or by PBX 216”; that “[v]arious protocols are used on these lines, such as, ATM, Frame Relay, ISDN, ADSL, SS7”; that “voice may be transferred . . . digitally, such as by a voice over data protocol, the voice over Internet Protocol, or other protocols”; and that “[e]ach originating device, and each communications link, may use a different protocol.” *Id.* at 67–71 (emphases omitted) (quoting Ex. 1009, 6:32–34, 7:35–38, 8:23–29, 8:40–41, 26:45–47) (citing Ex. 1009, 2:17–18, 7:15–17, 7:59–61, 8:23–43, 10:32–34, 23:64–24:6, 27:15–29, Figs. 1, 2A, 2B; Ex. 1003, 109–13).

Regarding the “plurality of data network telephones” limitation of claim 1, Petitioner identifies (highlighted in red) telephones 211, 217A–217C in its annotated version of Figures 2A and 2B and disclosure in Szlam that the telephones “can be, for example, ‘ISDN, BRI (basic rate interface) digital telephones,’ connected to the communications network.” *Id.* at 71–72 (emphasis omitted) (quoting Ex. 1009, 24:2–4) (citing Ex. 1009, 1:16–19, 10:32–34, 26:1–4, Figs. 1, 2A, 2B; Ex. 1003, 113–15). Petitioner further contends that Szlam discloses that the telephones are “operable to communicate a voice signal as voice-over-data . . . on a voice-over-data channel, the voice over data channel being one of the plurality of data communications channels on the data network,” as recited in claim 1, while

Fraser demonstrates that it was known for voice over data signaling to be communicated as “voice-over-data packets” in communications networks using protocols such as ATM, ISDN, and Internet disclosed by Szlam. *Id.* at 72–74 (citing Ex. 1009, 7:35–38; 22:23–27, 24:3–5, 25:58–62, 26:39–52; Ex. 1010, 4:35–40, 6:32–42, 9:15–19, 19:6–56, Fig. 3; Ex. 1003, 115–18). Petitioner also relies on Fraser as “disclos[ing] that it was a known technique for telephones communicating voice over data to ‘each [be] operable to convert voice-over-data packets communicated on the voice-over-data channel to voice signals,’” as recited in claim 1, pointing to disclosure in Fraser that, for example, “[w]hen the network interface units receive voice packets, they translate the compressed representations [of] voice packets into voice signals for the telephone equipment.” *Id.* at 74 (emphases omitted) (quoting Ex. 1010, 9:10–13) (citing Ex. 1010, 6:32–42; Ex. 1003, 118–19). In this regard, Petitioner further contends that a person of ordinary skill in the art “would have been motivated to employ the technique of sending voice over data in the form of packets and translating between the two, as taught by Fraser, in the communications system of Szlam.” *Id.* at 75. More particularly, Petitioner alleges “[a] POSITA would have looked to other documentation in the same field of endeavor of Szlam,” such as Fraser, to supplement Szlam’s teachings that “voice may be transferred either conventionally, as an analog signal, or digitally, such as by a voice over data protocol, the voice over Internet Protocol, or other protocols.” *Id.* at 63 (emphases omitted) (quoting Ex. 1009, 7:35–38) (citing Ex. 1003 ¶¶ 82–83).

Petitioner maps Szlam’s portable communications device 10 to the recited “portable information device” of claim 1, contending that Szlam

discloses that such device is “associated with a user” and comprises both “a user interface . . . operable to accept PID data from the user” and “a data network telephone interface . . . operable to communicate PID data to and from a first data network telephone,” where “the PID data includ[es] user attributes.” Pet. 75–80 (citing Ex. 1009, [57], 10:64–67, 11:36–53, 12:22–25, 15:20–22, 19:57–62, 20:7–37, 22:38–53, 22:66–23:3, 24:58–25:13, 25:16–31, 25:43–44, Figs. 1, 2A, 3, 4; Ex. 1003, 120–28).

Lastly with respect to claim 1, Petitioner contends Szlam discloses “wherein the PID data is transmitted by the portable information device to the first data network telephone, the PID data used to register the user with the first data network telephone,” as recited in claim 1, “in that its portable communication device . . . transmits, for example, the user profile (or updates to the same) through a telephone to a remote access controller,” where “the user profile contains information that can be used, for example, by [] remote access controller 225 to route calls to the telephone at a particular location where the user is traveling.” *Id.* at 80–82 (citing Ex. 1009, 20:7–28, 24:58–25:13, Fig. 2B; Ex. 1003, 128–30). Petitioner contends that “[b]y storing and maintaining the user profile at remote access controller so that the controller can route calls to the telephone at the user’s current location, ‘the PID data [is] used to register the user with the first data network telephone.’” *Id.* at 82.

In response to Petitioner’s contentions, Patent Owner raises four principal arguments: first, that the Petition “fails to prove the proposed Szlam-Fraser combination renders obvious ‘the data network telephones each [are] operable to convert voice-over-data packets communicated on the

voice-over-data channel to voice signals,” as recited in claim 1; second, that Szlam does not disclose or suggest “the PID data is transmitted by the portable information device to the first data network telephone”; third, that the Petition fails to show that a person of ordinary skill in the art would have been motivated to combine Szlam and Fraser; and fourth, that the Petition fails to show how the combination of Szlam and Fraser would have worked. PO Resp. 21–32.

Regarding the first of these arguments, Patent Owner contends that the reference in claim 1 to “each” of the data network telephones “necessarily includes the claimed ‘first data network telephone’ to which the user must register,” but that the dissenting opinion of the Decision on Institution “correctly observed that *Szlam’s telephone* that the user is purportedly registering to does not convert any voice packets to voice signals.” PO Resp. 22. Rather, Patent Owner contends, quoting the dissenting opinion, “[t]he portable computer performs this task [of conversion], and for good reason: the user does not have to know what telephone equipment is at the remote location.” *Id.* (modification in original) (quoting Dec. on Inst. 44 (Quinn, J., dissenting)). Patent Owner further contends that the dissenting opinion correctly concludes that the telephone to which Szlam’s portable/laptop computer is connected does not convert any voice packets to voice signals, and that the Petition does not attempt to advance an argument that Fraser cures this deficiency of Szlam or otherwise modifies Szlam’s telephone in any way. *Id.* at 23–24 (citing Dec. on Inst. 44 (Quinn, J., dissenting); Pet. 64).

Regarding its second argument, Patent Owner contends that, whereas Petitioner relies on Szlam as disclosing that “the PID data is transmitted by the portable information device to the first data network telephone . . . to register the user with the first network telephone,” as recited in claim 1, Petitioner asserts that Szlam discloses this limitation by transmitting a user profile “*through* a telephone to a remote access controller.” *Id.* at 24 (quoting Pet. 80 (emphasis added)). Patent Owner further contends that “[t]he specification of the ’127 patent reveals that patentee recognized a meaningful difference between the words ‘to’ and ‘through’ in the context of transmissions,” “clearly different[iating] between PID data *transmitted to* a data network telephone and, instead, PID data merely being communicated *through* one device (e.g., a data network telephone) while on its way to another device (e.g., another portable device) located in the system.” *Id.* at 25–26 (citing Ex. 1001, 14:18–28). Patent Owner concludes, “[u]nder a plain and ordinary reading of the claim that requires the PID data to be transmitted to the first data network telephone, and not just through the telephone, the theory set forth in the Petition does not and cannot prove obviousness.” *Id.* at 27.

In its Reply, Petitioner argues that, contrary to the understanding of the dissenting opinion, “it is exactly Petitioner’s position that Fraser’s teaching would be used to modify the telephone of Szlam.” Reply 21 (citing Dec. on Inst. 45 (Quinn, J., dissenting); Pet. 62–64, 71–75). Petitioner contends Fraser “discloses that it was a known technique for telephones communicating voice over data to ‘each [be] operable to convert voice-over-data packets communicated on the voice-over-data channel to voice

signals’” and “describes network interface units that ‘could be built into a telephone’ and that convert between voice packets and voice signals.” *Id.* (citing Ex. 1010, 6:32–42, 9:10–13, 20:60–63; Pet. 62–64). Regarding the “to” versus “through” distinction, Petitioner contends that “Patent Owner’s argument with respect to this claim limitation relies wholly on a single phrase in the Petition” and that “[t]his argument should be rejected because it improperly narrows the meaning of ‘to.’” *Id.* at 22–23. Citing disclosure in Szlam that “[u]ploading and modification of [a user] profile may be accomplished via the LAN lines 214, 218, 224, or via any communication link 11 which is connecting the device 10 and the controller 225” (Ex. 1009, 25:10–13), Petitioner contends, with reference to Figures 2A and 2B of Szlam, that “[t]o accomplish this, . . . device 10 transmits the user profile to the telephone 211, and the telephone transmits that data to the controller 225.” Reply 24. According to Petitioner, “[t]his is all that was meant by the ‘through’ language in the Petition,” and “[t]he fact that Szlam’s telephone receives data sent to it and then transmits the data onwards does not change the fact that the data were originally sent “to” the telephone, exactly as the challenged claims require.” *Id.* Lastly, Petitioner argues that the majority opinion of the Decision on Institution correctly recognized that “although claim 1 recites that ‘the PID data is transmitted . . . to the first data network telephone’ and also that ‘the PID data [is] used to register the user with the first data network telephone,’” that does not “require[] that the first data network telephone must itself register the user using the PID data, as opposed, for example, to sending the PID data to a remote access controller

that registers the user with a telephone set through which the data has passed.” *Id.* at 25 (citing Dec. on Inst. 33).

In its Sur-reply, Patent Owner responds that, “to the extent the Reply argues a single sentence from the Petitioner regarding Fraser alone allegedly advances an argument to modify Szlam . . . , such a suggestion should be rejected because . . . the Petition is silent as to the required analysis and factual inquiry as to modifying Szlam with a single, untethered and partial quotation from Fraser.” Sur-reply 18. Further, Patent Owner contends, Szlam “expressly discloses that its portable computer uses its fax-modem along with application software to provide voice and data transmission and reception,” and “a POSITA would have found no reason to look to modify Szlam to do something that Szlam itself already performs with no identified shortcomings.” *Id.* (citing Ex. 1009, 7:29–32).

Having considered the full trial record, we conclude that Petitioner has not met its burden to show that claim 1 would have been obvious over the combined teachings of Szlam and Fraser. Although the majority opinion of the Decision on Institution found that Petitioner had established a reasonable likelihood of succeeding on this ground, we agree with Patent Owner that the Petition fails to prove by a preponderance of the evidence either that the proposed combination teaches or suggests that the data network telephones “each” are operable to convert voice-over-data packets to voice signals or that the combination teaches or suggests that PID data is transmitted by the portable information device “to the first data network telephone.” Claim 1 requires each of the data network telephones to be able to perform the conversion function. We find no teaching or suggestion in

Szlam that telephone set 211 (shown in Figure 2A), to which we understand Petitioner maps the “first data network telephone” of claim 1 (Pet. 71–72), has any capability to “convert voice-over-data packets communicated on the voice-over-data channel to voice signals,” as required by claim 1. We understand from Szlam that portable communications device 10 provides the functionality required such that any telephone 211 can serve as a conduit. Szlam explains, for example, that the “present invention allows the user at a remote location, such as a hotel in a different country, to use his portable communication device 10 to access the persons, services, information and devices at any of these points, regardless of where the user is located, and without the user having to know the peculiarities of dialing from the remote location or the telephone equipment at the remote location.” Ex. 1009, 7:18–24. Indeed, Szlam discloses embodiments in which telephone 211 is apparently bypassed altogether, explaining that “a hotel or office may provide a second telephone outlet” or that “portable communications device 10 could . . . connect directly to a port . . . on . . . PBX 212, or via a wireless connection directly to a remote wireless service provider, such as a cellular PCS,” instead of to port 211A on telephone 211. *Id.* at 11:4–13. These embodiments particularly highlight the fact that telephone 211 is not a destination “to” which PID data is transmitted to register the user with itself, as we understand to be required by claim 1’s use of the phrase “transmitted . . . to the first data network telephone,” but is instead used in this regard only for its ports 211A and 211B “through” which device 10 transmits data to other components. See Ex. 1009, 10:61–67.

Although Petitioner also pointed during oral argument to disclosure in Szlam that “voice may be transferred either conventionally, as an analog signal, or digitally, such as by voice-over-data protocol . . . ,” as providing a “hook” for a person of ordinary skill in the art to consider digital transmission (see Tr. 31:18–23 (citing Ex. 1009, 7:35 et seq.)), we do not find any persuasive evidence in the record that a person of ordinary skill in the art would understand telephone 211, even in that embodiment, to be performing any conversion. As Patent Owner points out, Szlam discloses that its portable communication device uses its fax-modem along with application software to provide voice and data transmission and reception, and it is this fax-modem-application in the portable/laptop computer that performs the conversion and transfers the voice “either conventionally, as an analog signal, or digitally, such as by a voice over data protocol, the voice over Internet Protocol, or other protocols.” PO Resp. 22–23 (quoting Ex. 1009, 7:35–38) (citing Ex. 1009, 7:29–32). Although Petitioner identified telephone 211 along with telephones 217A–217C in its annotated version of Figures 2A and 2B (see Pet. 66) as “telephones,” Petitioner did not cite any persuasive evidence that Szlam teaches telephone 211 is a data phone.¹¹ Indeed, we find no mention of telephone 211 in the Petition at all,

¹¹ We also acknowledge that Szlam discloses yet another embodiment, which Petitioner discussed for the first time during oral argument in this proceeding, in which “portable communications device 10 does not have audio equipment so the user must use the telephone set 211.” Ex. 1009, 17:5–7. Although that embodiment evinces a further role for telephone 211, it does not demonstrate that telephone 211 has any capability for voice-over-data use such that it could be modified by Fraser’s teachings to meet the

except in that annotated figure and in a list of “communication . . . devices,” quoted by Petitioner in support of its argument that Szlam and Fraser both are in the same field of endeavor, namely, “communications over various networks.” Pet. 63.

Further, notwithstanding Petitioner’s contention in its Reply that “it is exactly Petitioner’s position that Fraser’s teaching would be used to modify the telephone of Szlam” (Reply 21 (citing Pet. 62–64, 71–75)), we do not find that position articulated *in the Petition*. The cited portions of the Petition instead argue that Szlam itself “describes . . . that in its system ‘voice may be transferred . . . **digitally, such as by a voice over data protocol** . . .’” (Pet. 63); that “[a] POSITA at the time of the ’127 Patent would have found it obvious to employ Fraser’s technique of sending voice information in the form of packets in Szlam’s communications system, which already used “**a voice over data protocol** . . .’” (*id.* at 64); that “Szlam discloses ‘a plurality of data network telephones connected to the data network’” (*id.* at 71); that “Szlam discloses that its digital telephones . . . are ‘operable to communicate a voice signal as voice-over-data . . . on a voice-over-data channel’” (*id.* at 72); that “Fraser discloses that it was a known

claim language. Indeed, Szlam further explains in connection with that embodiment that device 10 and controller 225 lose communication when the user is using telephone 211 to talk to a called party, and it is not until the user is finished using the telephone 211 that “the modems will be re-connected to each other and will then reestablish communication with each other, thereby reconnecting the portable communications device 10 and the controller 225 for supporting further or additional data communications and/or commands.” *Id.* at 17:12–28.

technique . . . for voice over data signaling to be communicated as ‘voice-over-data packets’” (*id.* at 73); that “Fraser further discloses that it was a known technique for telephones communicating voice over data signaling to ‘each [be] operable to convert voice-over-data packets . . . to voice signals’” (*id.* at 74); and that “a person of ordinary skill in the art would have been motivated to employ the technique of sending voice over data in the form of packets and translating between the two, as taught by Fraser, in the communications system of Szlam” (*id.* at 75). In other words, rather than arguing that Fraser’s teaching would be used to modify the telephone of Szlam, the Petition instead assumes that Szlam’s telephones themselves *already* communicate via voice over data signaling and relies on Fraser as evidence that it was “known . . . for voice over data signaling to be communicated as ‘voice over data packets’” and “to convert voice-over-data packets . . . to voice signals.”” *Id.* at 73–74. Regardless of whether Szlam’s telephones, including remote telephone 211, *could* be modified by Fraser, Petitioner did not present that argument in the Petition, and that argument represents a different theory of invalidity not properly considered here. See *Dell Inc. v. Accelaron, LLC*, 884 F.3d 1364 (Fed. Cir. 2018).

In conclusion, for the reasons discussed above, Petitioner has failed to prove by a preponderance of the evidence that claim 1 is unpatentable over the combination of Szlam and Fraser.

2. Dependent Claims 2–5 and 8

Claims 2–5 and 8 depend directly or indirectly from claim 1. For the reasons set forth above with respect to claim 1, we conclude that Petitioner

also has not shown by a preponderance of the evidence that claims 2–5 and 8 are unpatentable over the combination of Szlam and Fraser.

F. Patent Owner’s Constitutional Argument

Patent Owner notes that an argument made in an appeal pending at the U.S. Court of Appeals for the Federal Circuit asserts that “the Board’s appointments of administrative patent judges violate the Appointments Clause of Article II” of the U.S. Constitution. PO Resp. 32. “Patent Owner . . . adopts this constitutional challenge . . . to ensure the issue is preserved pending the appeal.” *Id.*

We decline to consider Patent Owner’s constitutionality argument.

IV. CONCLUSION

Petitioner has shown by a preponderance of the evidence that claims 15, 27, and 28 are anticipated by Nunokawa; that claims 21–23 would have been obvious over Nunokawa; that claim 24 would have been obvious over the combined teachings of Nunokawa and Szlam; and that claim 30 would have been obvious over the combined teachings of Nunokawa and Lehmus. Petitioner has not shown by a preponderance of the evidence that claims 1–5 and 8 would have been obvious over the combined teachings of Szlam and Fraser.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 15, 21–24, 27, 28, and 30 of the '127 patent have been shown to be unpatentable;

FURTHER ORDERED that claims 1–5 and 8 of the '127 patent have not been shown to be unpatentable; and

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

IPR2018-00456
Patent 6,446,127 B1

For PETITIONER:

Andrew S. Ehmke
Aaron Taggart
Philip W. Woo
HAYNES AND BOONE, LLP
andy.ehmke.ipr@haynesboone.com
aaron.taggart.ipr@haynesboone.com
philip.woo.ipr@haynesboone.com

For PATENT OWNER:

Ryan Loveless
Brett Mangrum
James Etheridge
Jeffrey Huang
ETHERIDGE LAW GROUP
ryan@etheridgelaw.com
brett@etheridgelaw.com
jim@etheridgelaw.com
jeff@etheridgelaw.com

Sean D. Burdick
UNILOC USA, INC.
sean.burdick@unilocusa.com