

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SALESFORCE.COM, INC.,
Petitioner,

v.

WSOU INVESTMENTS, LLC d/b/a
BRAZOS LICENSING AND DEVELOPMENT,
Patent Owner.

IPR2022-00154
Patent 8,369,827 B2

Before THU A. DANG, ROBERT J. WEINSCHENK, and
JOHN A. HUDALLA, *Administrative Patent Judges*.

HUDALLA, *Administrative Patent Judge*.

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

Salesforce.com, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–8 and 14–21 (“the challenged claims”) of U.S. Patent No. 8,369,827 B2 (Ex. 1001, “the ’827 patent”). Petitioner filed a Declaration of Dr. Douglas C. Schmidt (Ex. 1003) with its Petition. WSOU Investments, LLC d/b/a/ Brazos Licensing and

Development (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. See 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the petition and the preliminary 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.” For the reasons that follow, we do not institute an *inter partes* review.

I. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner identifies Salesforce.com, Inc., as the real party-in-interest. Pet. 2. Patent Owner identifies WSOU Investments, LLC d/b/a/ Brazos Licensing and Development as the real party-in-interest. Paper 3, 1.

B. *Related Proceeding*

The parties identify the following proceeding related to the ’827 patent (Pet. 2; Paper 2, 2):

WSOU Investments LLC v. Salesforce.com, Inc., No. 6-20-cv-01167 (W.D. Tex. filed Dec. 18, 2020).

C. *The ’827 patent*

The ’827 patent is directed to a subscriber profile repository (SPR) for determining a subscriber associated with a set of subscription identifiers. Ex. 1001, code (57). The ’827 patent references several 3rd Generation Partnership Project (3GPP) technical specifications associated with Long

subscriber database 330, search manager 335, and results manager 340. *Id.* at 5:64–67. Search manager 335 receives a list of subscriber identifiers from Sp interface 305 and determines whether a subscriber record is associated with a subscriber identifier by querying subscriber cache 310, subscriber database 315, and/or network subscriber database 330. *Id.* at 7:1–8.

Figure 4 of the '827 patent is reproduced below.

400

	405	410	415	420	425	430	435
	Record ID	Subscription IDs	IPv4 Address	IPv6 Prefix	Access Point Name	Max UL Bandwidth	Max DL Bandwidth
450	0xA2B1	{a, b, c, d, e}	212.123.1.213	2932:4023:A38B:2930	APN1	1mbps	10mbps
455	0xA2B2	{f, g, h, i}	124.211.9.4	394A:39E4:293B:4932	APN2	2mbps	30mbps
460	0xA2B3	{k, l, m, n, o, p, q}	194.48.28.6	3842:BA39:29D3:8321	APN3	2mbps	10mbps
465	...	...	...	...	...	...	...

FIG. 4

Figure 4, above, illustrates exemplary data arrangement 400 for storing subscriber information. *Id.* at 7:40–41. Data arrangement 400 may include fields for record identifier (ID) 405, subscription IDs 410, IPv4 Address 415, IPv6 Prefix 420, Access Point Name 425, Max UL Bandwidth 430, and Max DL Bandwidth 435. *Id.* at 7:49–52. Subscription IDs 410 may include a International Mobile Subscriber Identification number (IMSI), a Mobile Station International Subscriber Directory Number (MSISDN), a Session Initiation Protocol Uniform Resource Indicator (SIP URI), and/or a Network Access Identifier (NAI). *Id.* at 7:64–8:2. IPv4 Address 415, IPv6 Prefix 420, Access Point Name 425, Max UL Bandwidth 430, and Max DL Bandwidth 435 may be considered subscriber data. *Id.* at 8:10–12.

D. Illustrative Claim

Of the challenged claims of the '827 patent, claims 1 and 14 are independent. Claims 2–8 depend directly or indirectly from claim 1; claims 15–21 depend directly or indirectly from claim 14. Claim 1 is illustrative of the challenged claims and recites:

1. A method performed by a Subscriber Profile Repository (SPR) for determining a unique subscriber record from a set of subscription identifiers, the method comprising:

receiving a message including at least one subscription identifier; for each subscription identifier of the at least one subscription identifier;

determining whether the subscription identifier matches a subscriber record; and

determining that the subscriber record is the unique subscriber record when each subscription identifier that matches the subscriber record matches an identical subscriber record.

Ex. 1001, 11:51–62.

E. Prior Art

Petitioner relies on the following prior art:

3GPP Technical Specification (TS) 29.212 (“Policy and Charging Control over Gx reference point”) version 8.3.0 (2009) (Ex. 1005, “3GPP”);

U.S. Patent No. 7,123,626 B1, PCT filed Aug. 16, 2000, issued Oct. 17, 2006 (Ex. 1006, “Feyerabend”);

U.S. Patent No. 6,810,259 B1, filed Dec. 14, 2000, issued Oct. 26, 2004 (Ex. 1007, “Zhang”); and

U.S. Patent Application Publication No. 2011/0125807 A1, PCT filed July 14, 2008, published May 26, 2011 (Ex. 1008, “Bland”).

F. The Asserted Grounds

Petitioner challenges claims 1–8 and 14–21 of the ’827 patent on the following grounds (Pet. 5):

Claims Challenged	35 U.S.C. §	References
1–4, 6, 8, 14–17, 19, 21	103(a) ¹	Feyerabend, 3GPP
2–5, 15–18	103(a)	Feyerabend, 3GPP, Zhang
7, 20	103(a)	Feyerabend, 3GPP, Bland

II. ANALYSIS

We now consider Petitioner’s asserted grounds and Patent Owner’s arguments in the Preliminary Response to determine whether Petitioner has met the “reasonable likelihood” standard for institution under 35 U.S.C. § 314(a).

A. Legal Standards

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102 and 103. Because the ’827 patent was filed before March 16, 2013 (the effective date of the relevant amendments), the pre-AIA versions of §§ 102 and 103 apply.

differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations.² See *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We also recognize that prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

B. Level of Ordinary Skill in the Art

Citing testimony from Dr. Schmidt, Petitioner contends a person of ordinary skill in the art would have had “a Bachelor of Science degree in electrical engineering or computer science or related field plus at least two to four years of professional experience in the field of relational databases.” Pet. 8 (citing Ex. 1003 ¶ 35). Patent Owner does not dispute Petitioner’s definition of the level of ordinary skill at this time.

For purposes of this Decision, we adopt Petitioner’s definition of the level of ordinary skill in the art. On the present record, we are satisfied that this definition comports with the level of skill necessary to understand and implement the teachings of the ’827 patent and the asserted prior art.

C. Claim Interpretation

In an *inter partes* review, we construe each claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.”

² The present record does not include any evidence of secondary considerations of nonobviousness.

37 C.F.R. § 42.100(b). Accordingly, our claim construction standard is the same as that of a district court. *See id.* Under the standard applied by district courts, claim terms are generally given their plain and ordinary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

We determine that no terms of the challenged claims require explicit construction. *See, e.g., Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Obviousness Ground Based on Feyerabend and 3GPP

Petitioner contends the subject matter of claims 1–4, 6, 8, 14–17, 19, and 21 would have been obvious over the combination of Feyerabend and 3GPP. Pet. 21–41. Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 4–14.

1. *Feyerabend*

Feyerabend is a U.S. patent directed to facilitating data transmission to a receiver that is identified in a communications system by at least two different address types. Ex. 1006, 1:5–9. Figure 6 of Feyerabend is reproduced below.

FIG. 6

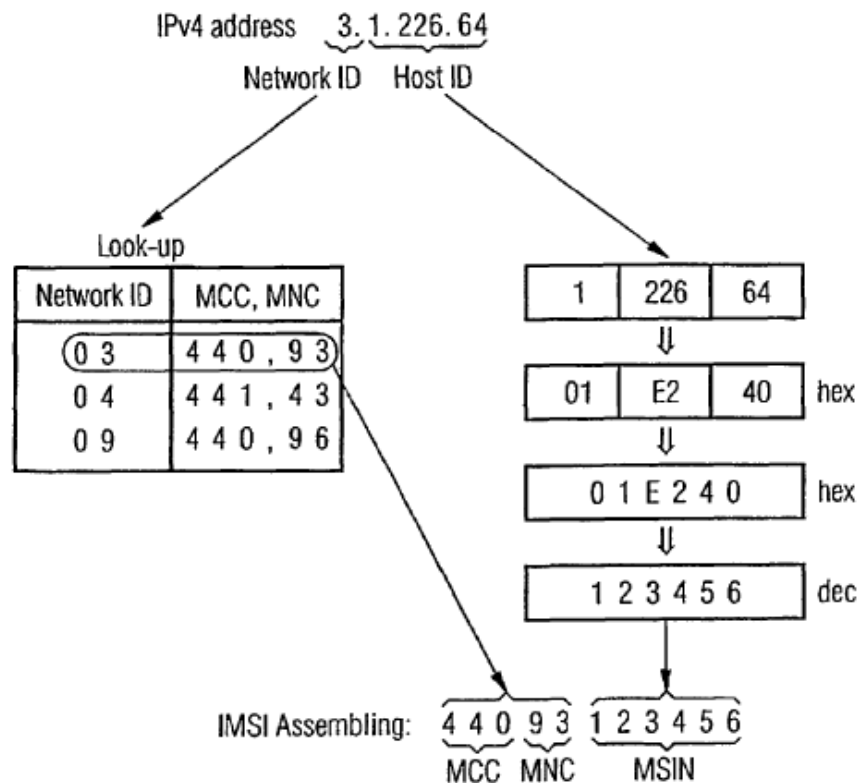


Figure 6, above, depicts the determination of an IMSI from a given address in IPv4 format. *Id.* at 6:23–24; 11:23–24. The first byte (3 in this example) represents the network identifier, which is used to look up the mobile country code (MCC) and mobile network code (MNC) values (440 and 93, respectively, in this example) from a look-up table. *Id.* at 11:32–34, 11:38–40. The remaining three bytes of the IPv4 address (1, 226, and 64 in this example) represent the host identifier. *Id.* at 11:34–36. These three bytes

are used to calculate the mobile station identification number (MSIN) (123456 in this example). *Id.* at 11:56–12:2. The MCC, MNC, and MSIN are then assembled into an IMSI (44093123456 in this example). *Id.* at 12:2–3.

2. 3GPP

3GPP is a technical specification from the 3rd Generation Partnership Project titled “Policy and Charging Control over Gx reference point.”

Ex. 1005, 1. Figure 4.1 of 3GPP is reproduced below.

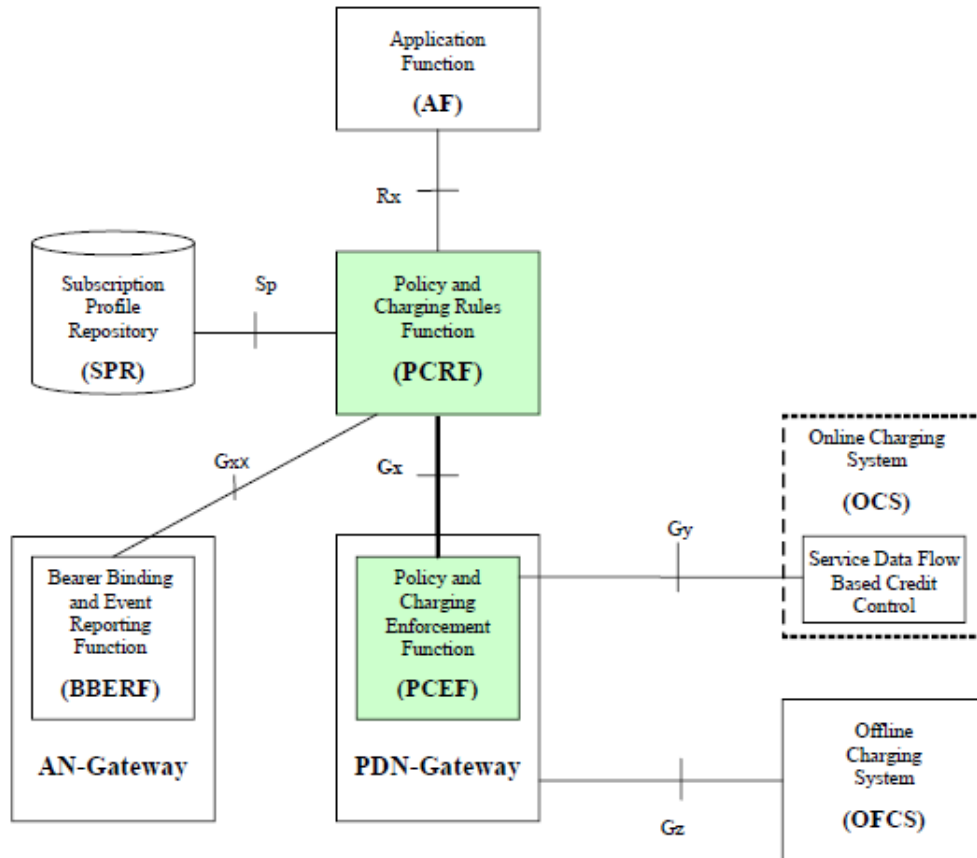


Figure 4.1: Gx reference point at the Policy and Charging Control (PCC) architecture

Figure 4.1, above, depicts 3GPP’s Policy and Charging Control (PCC) architecture. *Id.* at 10. The architecture includes an SPR, which stores subscriber and service-related data. *Id.* at 10, 12.

3. *Claim 1*

Claim 1 recites “[a] method performed by a Subscriber Profile Repository (SPR) for determining a unique subscriber record from a set of subscription identifiers.” Ex. 1001, 11:51–53. Petitioner cites 3GPP’s teaching of a subscriber profile repository, which provides information regarding subscriber and service-related data. Pet. 24 (citing Ex. 1005, 12,³ Fig. 4.1). Petitioner further cites Feyerabend for teaching “the functional components of a Subscriber Profile Repository” including “the use of a ‘subscriber profile database’ in conjunction with an ‘address conversion node’ to identify subscribers.” *Id.* at 25.

According to Petitioner, “Feyerabend uses [an] IP address to identify subscribers by mapping the subcomponents of the IP address to various industry standard subscription identifiers, creating a Mapped IP Address.” Pet. 25 (citing Ex. 1006, 11:23–12:19). In particular, Petitioner cites Feyerabend’s teaching that the network identifier and host identifier of an IP address can be mapped to an IMSI. *Id.* at 26 (citing Ex. 1006, 10:60–11:3). Petitioner notes that an IMSI has three distinct parts: MCC, MNC, and MSIN. *Id.* As such, Petitioner explains that “[t]he network identifier of an IP address maps to an MCC and MNC, identifying the country and home public land mobile network of a mobile station, and the host identifier maps to an MSIN[,] uniquely identifying a mobile station within a public land mobile network.” *Id.* (citing Ex. 1006, 11:44–55). In light of Feyerabend’s teachings, Petitioner contends that “each of the IP address, the Network ID, Host ID, MCC, MNC, MSIN, and IMSI can act as a subscription identifier”

³ Petitioner mistakenly cites to page 14, but the context makes clear that Petitioner intended to cite page 12.

and that an ordinarily skilled artisan would have recognized that Feyerabend's "Mapped IP Address acts as a set subscription identifier and a single subscription identifier itself." *Id.* (citing Ex. 1003 ¶ 63).

Claim 1 further recites "receiving a message including at least one subscription identifier." Ex. 1001, 11:54–55. Petitioner cites Feyerabend's teaching of receiving a data packet (i.e., the recited "message") that includes an IP address of a subscriber (i.e., the recited "at least one subscription identifier"). Pet. 27 (citing Ex. 1006, 8:28–32).

Claim 1 further recites "for each subscription identifier of the at least one subscription identifier; determining whether the subscription identifier matches a subscriber record." Ex. 1001, 11:55–58. Petitioner cites Feyerabend's teaching of using an address lookup table to determine whether a "Mapped IP Address" (i.e., the recited "subscription identifier") matches a subscriber record. Pet. 28 (citing Ex. 1006, 3:24–26). According to Petitioner, Feyerabend teaches that "the subscriber identity is determined by a lookup of a first portion of the IP address [i.e., the Network ID] in a lookup table, resulting in a first portion of the subscriber identity" and that "[a] second portion of the subscriber identity is assigned according to a second portion of the IP address [i.e., Host ID]." *Id.* (quoting Ex. 1006, 3:57–61) (citing *id.* at 11:56–12:3) (alterations by Petitioner). In light of these teachings, Petitioner contends that the "Mapped IP address" can then be matched to a subscriber record in Feyerabend's subscriber record database. *See id.* at 29–30 (citing Ex. 1006, 2:66–3:1, 8:43–50, Fig. 6).

Claim 1 further recites "for each subscription identifier of the at least one subscription identifier; . . . determining that the subscriber record is the unique subscriber record when each subscription identifier that matches the

subscriber record matches an identical subscriber record.” Ex. 1001, 11:55–62. Petitioner cites Feyerabend’s teaching of “‘a bijective rule [i.e., a one-to-one correspondence] for the determination of a subscriber identity from a given IP address,’ thereby ensuring each Subscriber Identity (i.e., IMSI) is unique to each IP Address.” Pet. 30 (quoting Ex. 1006, 4:2–4) (alteration by Petitioner). Petitioner further cites Feyerabend’s teaching of the IMSI being “a mobile station identifier **uniquely** identifying a mobile station internationally.” *Id.* at 31 (quoting Ex. 1006, 5:17–18). Thus, Petitioner contends that Feyerabend’s “address lookup table matches each subscription identifier, e.g., the IP Address, MCC, MNC, and MSIN, to the same, identical, Subscriber Identifier.” *Id.* (citing Ex. 1003 ¶ 71).

Patent Owner purports to show inconsistencies in Petitioner’s mapping of various permutations of the recited “subscription identifiers” in claim 1. Patent Owner notes that Petitioner relies on Feyerabend’s gateway 130 receiving the IP address of a subscriber in a data packet for teaching the received subscription identifier in the “receiving” step. Prelim. Resp. 5 (citing Pet. 27). Then, according to Patent Owner, Petitioner shifts to relying on a so-called “Mapped IP Address” or IMSI number for the recited “subscription identifier” in the two “determining” steps. *Id.* at 5–6 (citing Pet. 25, 28). Patent Owner argues the “Mapped IP Address” is different than the received IP address because it is created, rather than being received. *Id.* at 6 (citing Pet. 25, 28–59; Ex. 1006, Fig. 6). Thus, Patent Owner concludes that Petitioner’s obviousness theory is deficient for failing to show that the IMSI number/Mapped IP address is received in the “receiving” step. *Id.* at 7.

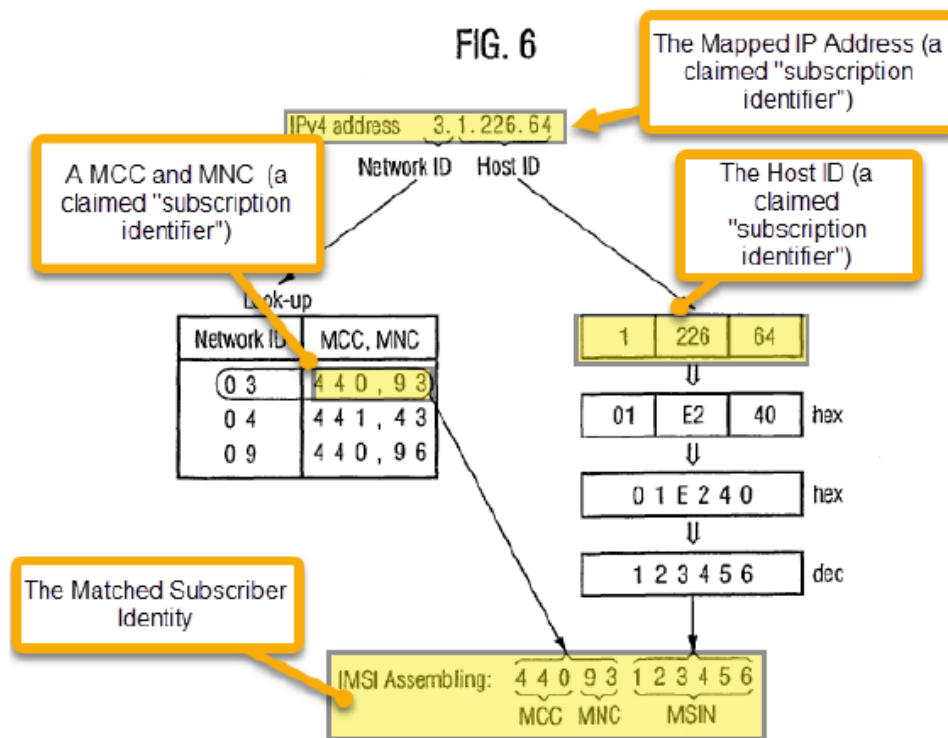
We agree with Patent Owner’s arguments. As noted by Patent Owner (Prelim. Resp. 4), the recited “at least one subscription identifier” introduced in the “receiving” step of claim 1 serves as the antecedent for actions taken on “each subscription identifier of *the* at least one subscription identifier” in the two “determining” steps of claim 1. Yet Petitioner does not consistently analyze the recited “at least one subscription identifier” in the “receiving” and two different “determining” steps of claim 1.

Specifically, Petitioner relies on Feyerabend’s gateway receiving a data packet with an IP address (the recited “at least one subscription identifier”) for teaching the “receiving” step. Pet. 27. Then, in its analysis of the next limitation (i.e., “for each subscription identifier of the at least one subscription identifier; determining whether the subscription identifier matches a subscriber record”), Petitioner relies on Feyerabend’s teaching of using a look-up table to match what Petitioner calls a “Mapped IP Address” to a subscriber record. *Id.* at 28. But the “Mapped IP Address” is really an IMSI (*see id.* at 25–26), which is different than the IP address that Petitioner cites in the “receiving” step. And Petitioner admits that “Feyerabend teaches a multi-step process to convert an IP address into an IMSI number.” Pet. 10. We find Petitioner’s reliance on different elements from Feyerabend for teaching the “at least one subscription identifier” in the “receiving” and “determining” steps of claim 1 to be a fatal flaw in Petitioner’s obviousness contentions.

Although Petitioner contends that a variety of data items from Feyerabend may serve as the recited “subscription identifiers” (*see* Pet. 26), this does not cure the inconsistency in Petitioner’s analysis. If Petitioner contends the IP address is the “at least one subscription identifier” in its

analysis, then Petitioner fails to show how Feyerabend teaches matching this IP address to a subscriber record. *See id.* at 28–30 (showing how the “Mapped IP Address” or IMSI is matched to a record). If, on the other hand, Petitioner contends the IMSI or “Mapped IP Address” is the “at least one subscription identifier” in its analysis, then Petitioner fails to show how Feyerabend teaches receiving a message with the IMSI. *See id.* at 27 (showing how the IP address is received). Merely showing how Feyerabend teaches deriving the IMSI from the IP address (*see id.* at 25–26, 28–29) does not bridge this gap in Petitioner’s obviousness analysis. As such, we do not find persuasive Petitioner’s attempts either to conflate an IP address with an IMSI or to minimize the distinction between the two.

Petitioner deepens the confusion surrounding its analysis by including in the Petition an annotated version of Feyerabend’s Figure 6, which we reproduce below.



In Petitioner’s annotated version of Feyerabend’s Figure 6, above, Petitioner indicates its mapping of various claim limitations to Feyerabend’s process for converting an IP address in IPv4 format to an IMSI. Pet. 29; *see also* Ex. 1003 ¶ 67 (Dr. Schmidt including the same annotated figure in his declaration); Ex. 1006, 6:23–24; 11:23–24 (Feyerabend’s description of Figure 6). Notably, Petitioner labels the IPv4 address in this annotated figure as the “Mapped IP Address.” Pet. 29. Yet, as noted by Patent Owner (Prelim. Resp. 8 n.2), “[t]hat label annotation either contains clerical error or it is misleading” because Petitioner elsewhere states that the “Mapped IP Address” is *created* from the IPv4 address via a mapping process—the very mapping process illustrated in Feyerabend’s Figure 6 that results in an assembled IMSI at the bottom of the figure. *See* Pet. 25–26. As such, Petitioner’s annotated figure represents another example of how Petitioner’s obviousness analysis for claim 1 cannot be reconciled.

Thus, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the subject matter of claim 1 would have been obvious over the combination of Feyerabend and 3GPP.

4. *Claims 2–4, 6, 8, 14–17, 19, and 21*

Claims 2–4, 6, and 8 depend directly or indirectly from claim 1, and Petitioner’s analysis for these claims incorporates the same flawed analysis of the recited “at least one subscription identifier” discussed above. *See* Pet. 32–37. Petitioner’s analysis for independent claim 14 and its dependent claims 15–17, 19, and 21 likewise incorporates the same flawed analysis of the recited “at least one subscription identifier” discussed above. *See* Pet. 37–42. Thus, we determine that Petitioner has not established a

reasonable likelihood that it would prevail in showing that the subject matter of claims 2–4, 6, 8, 14–17, 19, and 21 would have been obvious over the combination of Feyerabend and 3GPP.

E. Obviousness Ground Based on Feyerabend, 3GPP, and Zhang

Petitioner contends the subject matter of claims 2–5 and 15–18 would have been obvious over the combination of Feyerabend, 3GPP, and Zhang. Pet. 42–52. All of these claims ultimately depend from either claim 1 or claim 14, and Petitioner’s analysis incorporates the same flawed analysis of the recited “at least one subscription identifier” discussed above. *See id.* Thus, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the subject matter of claims 2–5 and 15–18 would have been obvious over the combination of Feyerabend, 3GPP, and Zhang.

F. Obviousness Ground Based on Feyerabend, 3GPP, and Bland

Petitioner contends the subject matter of claims 7 and 20 would have been obvious over the combination of Feyerabend, 3GPP, and Bland. Pet. 52–56. Claim 7 depends from claim 1, and claim 20 depends from claim 14. Petitioner’s analysis for claims 7 and 20 incorporates the same flawed analysis of the recited “at least one subscription identifier” discussed above. *See id.* Thus, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that the subject matter of claims 7 and 20 would have been obvious over the combination of Feyerabend, 3GPP, and Bland.

III. CONCLUSION

After considering the evidence and arguments presented in the Petition and the Preliminary Response, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Therefore, we do not institute an *inter partes* review on the asserted grounds as to any of the challenged claims.

IV. ORDER

Accordingly, it is

ORDERED that the Petition is *denied* as to all grounds and all challenged claims of the '827 patent.

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