

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CRADLEPOINT, INC., DELL INC., SIERRA WIRELESS, INC.,
THALES DIS AIS DEUTSCHLAND GMBH, ZTE CORPORATION,
and ZTE (USA) INC.,
Petitioner,

v.

SISVEL INTERNATIONAL S.A.,
Patent Owner.

IPR2020-01069
Patent 7,751,803 B2

Before BARBARA A. PARVIS, AMANDA F. WIEKER, and
MONICA S. ULLAGADDI, *Administrative Patent Judges*.

PARVIS, *Administrative Patent Judge*.

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

I. INTRODUCTION

Cradlepoint, Inc., Dell Inc., Sierra Wireless, Inc., Thales DIS AIS Deutschland GmbH, ZTE (USA) Inc., and ZTE Corporation (collectively “Petitioner”) filed a Petition (Paper 6 (“Pet.”)) requesting an *inter partes* review of claims 1–5, 7, 17–19, 21, and 22 of U.S. Patent No. 7,751,803 B2

(Ex. 1001, “the ’803 Patent”) pursuant to 35 U.S.C. §§ 311–319, along with the supporting Declaration of Dr. Paul S. Min (Ex. 1004). Sisvel International S.A. (“Patent Owner”) filed a Preliminary Response. Paper 10 (“Prelim. Resp.”), along with the supporting Declaration of Mr. Stuart Lipoff (Ex. 2001).¹

The standard for institution is set forth in 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented 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.” 35 U.S.C. § 314 (2018); *see also* 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”). Upon consideration of the parties’ contentions and the evidence of record, we conclude Petitioner has not established a reasonable likelihood of prevailing in demonstrating the unpatentability of any challenged claim of the ’803 Patent. Accordingly, we do not grant Petitioner’s request and do not institute an *inter partes* review.

II. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner identifies as the real parties-in-interest the following: Cradlepoint, Inc., Dell Inc., Sierra Wireless, Inc., Thales DIS AIS Deutschland GmbH, ZTE (USA) Inc., ZTE Corporation, Denali Intermediate Inc., Dell Technologies Inc., Dell Products L.P., Dell Marketing L.P., Sierra Wireless America, Inc., and Thales DIS AIS USA,

¹ We do not find it necessary to rely on Mr. Lipoff’s testimony in determining whether Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the challenged claims are unpatentable.

LLC. Pet. viii. Patent Owner names itself as the real party-in-interest.
Paper 7, 1.

B. Related Matters

As required by 37 C.F.R. § 42.8(b)(2), each party identifies a judicial matter that would affect, or be affected by, a decision in this proceeding. In particular, the parties inform us that the '803 Patent is asserted in the following proceedings: *Sisvel International SA v. ZTE (USA), Inc.*, 3-19-cv-01694 (N.D. Tex. filed July 15, 2019); *Sisvel International SA v. Dell Inc.*, 1-19-cv-01247 (D. Del. filed Jul. 01, 2019); *Sisvel International SA v. AnyData Corporation*, 1-19-cv-01140 (D. Del. filed Jun. 20, 2019); *Sisvel International SA v. BLU Products, Inc.*, 1-19-cv-01141 (D. Del. filed Jun. 20, 2019); *Sisvel International SA v. Cradlepoint, Inc.*, 1-19-cv-01142 (D. Del. filed Jun. 20, 2019); *Sisvel International SA v. Honeywell International, Inc.*, 1-19-cv-01143 (D. Del. filed Jun. 20, 2019); *Sisvel International SA v. Verifone Systems, Inc.*, 1-19-cv-01144 (D. Del. Jun. 20, 2019); *Sisvel International SA v. Xirgo Technologies, LLC*, 1-19-cv-01145 (D. Del. filed Jun. 20, 2019); *Sisvel International SA v. Tesla, Inc.*, 1-19-cv-02288 (D. Del. filed Dec. 17, 2019); and *Sisvel International S.A. v. Blu Products, Inc.*, 1-20-cv-20813 (S.D. Fla. transferred Feb. 25, 2020). Pet. viii; Paper 7, 1–2.

C. The '803 Patent

The '803 Patent describes technology for re-establishing a lost radio connection between a mobile terminal and a base station in cellular radio systems. Ex. 1001, 1:9–11. The '803 Patent describes the invention with reference to Universal Mobile Telecommunications System (UMTS) specified in technical specifications produced by the European

Telecommunications Standards Institute (ETSI) 3rd Generation Partnership Project (3GPP). *Id.* at 1:45–48, 1:66–2:5.

The '803 Patent describes, “[a]ccording to the invention there are defined separate timers or some higher layer monitoring arrangements for different categories of radio bearers.” *Id.* at 4:19–21. Exemplary categories of radio bearers include audio, video, and e-mail. *Id.* at 4:26–27. According to the '803 Patent, real time (RT) services are used for time-critical applications like speech and real time video, whereas non-real time (NRT) applications usually convey data like e-mails or downloaded files. *Id.* at 1:51–55.

More detail is provided in Figure 2a, which is reproduced below.

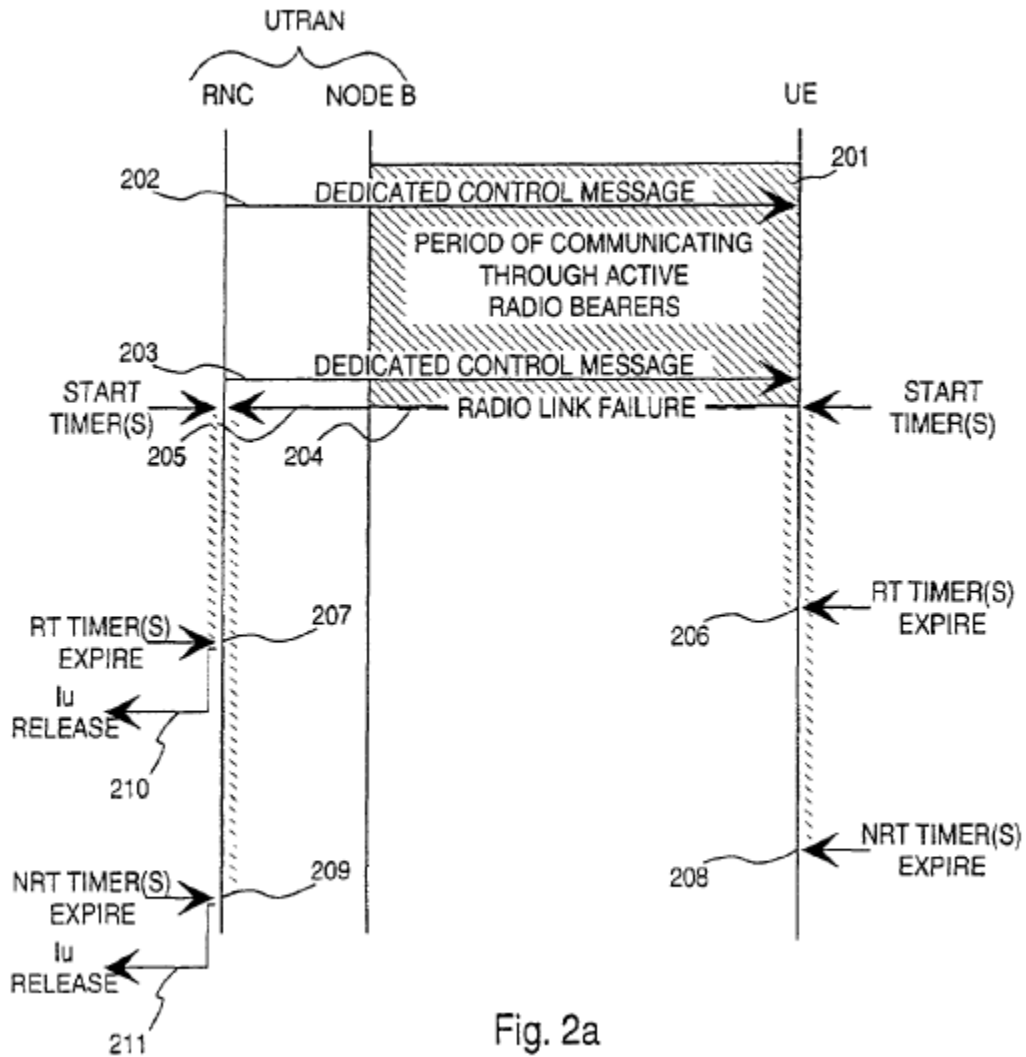


Fig. 2a

Figure 2a, above, illustrates schematically some aspects of communication in a cellular radio system including UMTS Terrestrial Radio Access Network (UTRAN) 102 and user equipment (UE) 103. *Id.* at 7:7–9.

Time runs from top to bottom in FIG. 2a. *Id.* at 7:9–10. Throughout period 201 UE 103 communicates with UTRAN 102 through a set of radio bearers including one active radio bearer for providing real time services and one active radio bearer for providing non-real time services. *Id.* at 7:10–15.

At time 204, a radio link failure cuts the radio connection between UE 103 and UTRAN 102. *Id.* at 7:19–21. The '803 Patent describes the following:

In the embodiment illustrated in FIG. 2a the UE and the UTRAN both start at least two timers: at least one concerning the reestablishment of the radio connection in respect of the RT-related radio bearers and at least one more concerning the reestablishment of the radio connection in respect of the NRT-related radio bearers. We expect that the UE does not find itself to be on an “in service area,” because such a finding would initiate the transmission of messages that aim at re-establishing the lost connections. The RT timer(s) in the UE expire at a certain later time instant 206, which is not very much after the time instant 204 which meant the failure of the radio link—as we noted in the description of prior art, typical expiry times for RT re-establishment timers is in the order of seconds. Correspondingly, the RT timer(s) in the RNC expire at a time instant 207, which is slightly later than the time instant 206.

Id. at 7:32–47.

D. Illustrative Claims

Petitioner challenges claims 1–5, 7, 17–19, 21, and 22 of the '803 Patent. Pet. 1. Claims 1, 17, and 21 are the independent claims. Claims 2–5 and 7 depend directly from claim 1. Claims 18 and 19 depend directly from claim 17. Claim 22 depends directly from claim 21. Independent claim 1, reproduced below, is illustrative of the claimed subject matter.

1. [Element 1[A]]² A method for determining an expiry time for a period during which a re-establishment of a lost radio connection between a mobile station and a network node of a cellular network is allowable, said radio connection having a

² We use Petitioner's designations of to refer to the claim elements. Pet. 19–20, 27–28.

plurality of active radio bearers belonging to a radio resource control connection, said method comprising:

[Element 1[B]] determining a first expiry time for a period during which the re-establishment of the lost radio connection in respect of said radio bearers that are used to provide a service or services of a first category is allowable,

[Element 1[C]] determining a second expiry time for a period during which the re-establishment of the lost radio, connection in respect of said radio bearers used to provide a service or services of a second category is allowable;

[Element 1[D]] wherein said second category of service is different than said first category of service, and said second expiry time is different than said first expiry time; and

[Element 1[E]] wherein the mobile station and said network node attempt to re-establish the lost radio connection before the first expiry time in respect of a radio bearer used to provide a service or services of the first category or before the second expiry time in respect of a radio bearer used to provide a service or services of the second category.

Ex. 1001, 12:8–30.

E. Evidence

Petitioner relies on the patent document references summarized in Table 1 below.

Name	Patent Document	Exhibit
Rappaport	US 6,477,373 B1	1005
Eriksson	US 6,061,559	1006

Table 1 above summarizes Patent Documents relied on by Petitioner.

Petitioner relies on the non-patent literature references summarized in Table 2 below.

Name	Non-Patent Literature Title	Author	Exhibit
Toh	Wireless ATM and Ad-hoc	C-K Toh	1007

	Networks Protocols and Architectures		
TS 25.331	Universal Mobile Telecommunications System (UMTS); RRC Protocol Specification (3G TS 25.331 version 3.1.0 Release 1999)	ETSI 3GPP	1008

Table 2 above summarizes Non-patent Literature relied on by Petitioner.

Petitioner also relies on description in the Background of the Invention of the '803 Patent, specifically at column 1, line 37 through column 2, line 56 ("Admitted 3G Art").

F. Asserted Grounds

Petitioner asserts that claims 1–5, 7, 17–19, 21, and 22 of the '803 Patent are unpatentable based on the following grounds summarized in Table 3 below:

Claims Challenged	35 U.S.C. §	References/Basis
1–5, 7, 17–19, 21, 22	103(a) ³	Admitted 3G Art, Rappaport
1–5, 7, 17–19, 21, 22	103(a)	Admitted 3G Art, Eriksson
1–5, 7, 17–19, 21, 22	103(a)	Admitted 3G Art, Eriksson, Toh
17–19	103(a)	Admitted 3G Art, Rappaport, TS 25.331
17–19	103(a)	Admitted 3G Art, Eriksson, TS 25.331
17–19	103(a)	Admitted 3G Art, Eriksson, Toh, TS 25.331

Table 3 above summarizes the Grounds Asserted by Petitioner.

³ The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. § 103. Because the '803 Patent has an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA version of 35 U.S.C. § 103.

III. ANALYSIS

A. *Legal Standards*

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness.⁴ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. *Level of Ordinary Skill in the Art*

Petitioner asserts that a person of ordinary skill in the art the time of the invention would have had “a bachelor’s degree in electrical engineering or a similar discipline, with at least 3 years of relevant industry or research experience (or additional education), including experience with cellular telecommunication systems, including experience designing or implementing user equipment or network equipment or signaling protocols therefor.” Pet. 13 (citing Ex. 1004 ¶¶ 24–28). Petitioner also asserts that the person of ordinary skill in the art’s skill set “would have included designing and configuring user and network equipment to enable re-establishment of radio communications therebetween.” *Id.* at 13–14 (citing Ex. 1004 ¶ 27).

⁴ Patent Owner does not present objective evidence of nonobviousness at this stage of the proceeding.

Patent Owner disagrees, arguing instead that a person of ordinary skill in the art would have had “a bachelor’s degree in electrical engineering, computer sciences, or telecommunications, along with three to five or more years of practical experience in the field,” where “[a] combination of more experience in the field and less education or more education and less experience in the field would also suffice.” Prelim. Resp. 7–8. Patent Owner also asserts that the person of ordinary skill in the art “would not have needed to have been a member of a standards organization such as 3GPP.” *Id.* at 8 (citing Ex. 2001 ¶ 20).

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). The level of ordinary skill in the art is also reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Considering the subject matter of the ’803 Patent, the background technical field, and the asserted prior art, we preliminarily agree with Petitioner’s proposed qualifications for an ordinary level of skill. Our view is that a bachelor’s degree in electrical engineering or a similar discipline would have provided sufficient educational background in light of the technology at issue in the ’803 Patent and asserted prior art. Patent Owner does not argue that a person having ordinary skill in the art would have lacked understanding of what would have been considered a discipline “similar” to a bachelor’s degree in electrical engineering. Prelim. Resp. 7–8; Ex. 2001 ¶¶ 18–21.

Further, we preliminarily agree that having three years of relevant industry or research experience (or additional education), including experience with cellular telecommunication systems, including experience designing or implementing user equipment or network equipment or signaling protocols and designing and configuring user and network equipment to enable re-establishment of radio communications is commensurate with the scope of the patent at issue and the asserted prior art. Patent Owner's proposal asserts merely that the skilled artisan would have had "practical experience in the field," but "would not have needed to have been a member of a standards organization such as 3GPP." Prelim. Resp. 7–8 (citing Ex. 2001 ¶ 20). Patent Owner's proposal does not set forth sufficient details as to what constitutes "practical experience" and Patent Owner's statement regarding that lack of a requirement for membership does not reflect that the skilled artisan would have had knowledge regarding certain 3GPP standards, as described in the background of the '803 Patent. Ex. 1001, 1:45–48, 1:66–2:5. Regarding Petitioner's proposal, however, we do not adopt "at least" three years of relevant industry or research experience because "at least" is vague.

Regarding Patent Owner's assertion that the person of ordinary skill in the art "would not have needed to have been a member of a standards organization such as 3GPP" (Prelim. Resp. 8 (citing Ex. 2001 ¶ 20)), Petitioner does not assert that membership would have been required. Pet. 13–14; Ex. 1004 ¶¶ 24–28. Nonetheless, based on the record before us, we determine that membership in a standards organization would not have been necessary.

With that, based on the current record, we preliminarily adopt Petitioner's proposal that a person of ordinary skill in the art would have had

a bachelor's degree in electrical engineering or a similar discipline, with three years of relevant industry or research experience (or additional education), including experience with cellular telecommunication systems, including experience designing or implementing user equipment or network equipment or signaling protocols and the person of ordinary skill in the art's skill set would have included designing and configuring user and network equipment to enable re-establishment of radio communications. Pet. 13–14 (citing Ex. 1004 ¶¶ 24–28).⁵

C. Claim Construction

For cases like this one, where the petition for *inter partes* review was filed after November 13, 2018, we interpret claim terms in accordance with the standard used in federal district court in a civil action involving the validity or infringement of a patent. *See* 37 C.F.R. § 42.100(b) (2019). As required by 37 C.F.R. § 42.104(b)(3), Petitioner provides claim construction contentions that identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function for the means-plus-function terms recited in claims 17–19. Pet. 14–18. Petitioner states “[a]ll claim terms not specifically addressed below are construed according to their ordinary and customary meaning.” *Id.* at 14.

Patent Owner responds “[o]ther than the term ‘means for detecting a failure in a radio connection,’ discussed below, Patent Owner takes no position regarding Petitioners’ proposed constructions.” Prelim. Resp. 9. For the term “means for detecting a failure in a radio connection,” Patent Owner states that it agrees that the claimed function is “detecting a failure in a radio connection.” *Id.* at 10. Patent Owner, however, argues that “Petitioner[']s

⁵ Our conclusions herein do not turn on which definition is selected.

construction of the structure is overly narrow and inconsistent with the specification and prosecution history.” *Id.*

Claims that include the language “means” or “means for” are presumed to invoke 35 U.S.C. § 112, ¶ 6. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348–49 (Fed. Cir. 2015) (en banc in relevant part) (“[U]se of the word ‘means’ creates a presumption that § 112, ¶ 6 applies.”).⁶ Because the issues before us turn on elements of the claim other than the disputed structural element for the term “means for detecting a failure in a radio connection,” we need not make a determination regarding that term. For the other means-plus-function terms recited in claim 17, we use Petitioner’s constructions (Pet. 15–16), which are not disputed by Patent Owner (Prelim. Resp. 8–9).

In view of the issues we address below, we determine that it is not necessary to provide an express interpretation of any other claim term. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

D. Obviousness over the Admitted 3G Art and Rappaport

Petitioner asserts that claims 1–5, 7, 17–19, 21, and 22 are unpatentable as obvious over the combination of the Admitted 3G Art and Rappaport. Pet. 12. In our discussion below, we first provide a brief overview of the asserted prior art, and then we address the parties’ contentions in turn.

⁶ The ’803 Patent’s filing date is before the effective date set for the AIA’s changes to § 112. AIA § 4(e).

1. Admitted 3G Art

The '803 Patent describes as background re-establishment procedures defined in the 3GPP “specification numbers TS25.331, TS25.302, TS25.321 and TS25.322.” Ex. 1001, 1:66–2:3. More, specifically, the '803 Patent describes the following:

According to said prior art document, when a mobile terminal (or a UE: user equipment) loses the radio connection due to e.g. radio link failure while it is in a so-called CELL_DCH state, the mobile terminal may initiate a new cell selection by transiting into a so-called CELL_FACH state and requesting re-establishment of an RRC connection. The acronyms DCH and FACH come from Dedicated CHannel and Forward Access CHannel and said states are characterized by that the mobile terminal uses primarily these channels. After having detected the loss of a radio connection the mobile terminal starts a timer which in said prior art document is referred to as the timer T314, or the re-establishment timer. If the mobile terminal finds itself to be within an “in service area”, where connection re-establishment is possible, it stops the timer T314 and transmits a message known as the RRC CONNECTION RE_ESTABLISHMENT REQUEST on the uplink CCCH or Common Control CHannel. However, if the timer T314 makes it to expiry before the mobile terminal finds itself to be within an “in service area”, the mobile terminal must enter an RRC-idle mode where active communication with base stations is not possible.

The value of the timer T314 may be anything between 0 and 4095 seconds.

Id. at 2:7–29.⁷

⁷ Because Petitioner fails to satisfy its institution burden for other reasons, we need not consider whether the Petition comports with the guidance reflected in the August 18, 2020, Memorandum regarding the Treatment of Statements of the Applicant in the Challenged Patent in *Inter Partes* Reviews under § 311. *Available at*

2. *Rappaport*

Rappaport describes a system and method for controlling admission to a mobile communications system that maintains mobile user connectivity between mobile platforms and the communication network by automatically and transparently attempting to reconnect disrupted links. Ex. 1005, 1:20–27. More specifically, Rappaport describes that when the physical connection between a mobile terminal and the network fails, the session is suspended and the mobile terminal will attempt to reconnect by successive reconnection requests made at random time intervals. *Id.* at 6:65–7:1. If a reconnection has not been secured after maximum number of reconnection attempts, N, is reached, the session fails and the call is cleared from the system. *Id.* at 7:1–7.

Rappaport further describes that upon the suspension of a session, a timer is also set in the supporting network. *Id.* at 7:10–11. If communication is not resumed before the expiration of the timer, the network resources reserved for the session will be released for use by other call sessions. *Id.* at 7:11–14.

3. *Independent Claim 1*

The parties’ dispute pertains to the second expiry time and Petitioner’s asserted reasoning to combine the Admitted 3G Art and Rappaport. Prelim. Resp. 20–23. The term “second expiry time” is recited in Element 1[C] and is further defined in Element 1[D], which are reproduced below.

[Element 1[C]:] determining *a second expiry time* for a period during which the re-establishment of the lost radio,

https://www.uspto.gov/sites/default/files/documents/signed_aapa_guidance_memo.pdf.

connection in respect of said radio bearers used to provide a service or services of a second category is allowable;

[Element 1[D]:] *wherein said second category of service is different than said first category of service, and said second expiry time is different than said first expiry time;*

Ex. 1001, 12:18–24 (emphases added).

Petitioner acknowledges “[t]he Admitted 3G Art does not explicitly provide a second value for a second timer to determine a different expiry time for re-establishment of a radio bearer for non-real-time services.”

Pet. 20. Petitioner relies on Rappaport for this teaching. *Id.* at 20–27. We discuss the parties’ contentions below.

- a) *Elements 1[C] and [1D]—“second expiry time . . . in respect of said radio bearers used to provide a service or services of a second category” and “wherein said second category of service is different than said first category of service”*

Petitioner asserts that Rappaport teaches “[a] first call (session) type” that “may be a ‘real-time voice’ call that includes ‘time-sensitive stream traffic.’” Pet. 21 (citing, *e.g.*, Ex. 1005, 2:44–58, 4:66–5:16, 6:33–6:63; Ex. 1004 ¶ 169). Petitioner also asserts that Rappaport teaches “[a] second [call (session) type] may be a ‘data session’ that includes ‘time-insensitive data calls’ such as ‘[m]obile computing sessions and delay-insensitive data communications.’” *Id.* (citing, *e.g.*, Ex. 1005, 2:44–58, 4:66–5:16, 6:33–6:63; Ex. 1004 ¶ 169).

Even assuming Petitioner’s assertion (*id.* at 21–22) is correct that Rappaport teaches two call types and Rappaport’s real-time voice services and data sessions correspond to the Admitted 3G Art’s real-time services and non-real-time services, respectively, Rappaport’s description is no more than that of the Admitted 3G Art. Ex. 1001, 1:49–56. Indeed, the ’803 Patent describes the problem it solves as follows: “[t]he problem with the prior art

arrangement is its inflexibility regarding different service types, e.g., real time vs. non-real time services.” *Id.* at 2:39–42.

Petitioner also points to Rappaport’s teachings of maintaining connectivity by reconnecting suspended sessions due to wireless link failure. Pet. 22–23 (citing, e.g., Ex. 1005, 5:8–9, 6:33–7:24, 8:47–52, 8:58–60, 11:22–60, 26:57–59, 27:37–52, 28:4–19, 29:1–30:12, 36:40–41, 37:8–28, Figs. 2, 6, 8; Ex. 1004 ¶¶ 170–171). For instance, Petitioner points to Rappaport’s teaching that “[t]he number of reconnection attempts is set by the network and may be set to any desired value.” *Id.* at 23 (citing, e.g., Ex. 1005, 6:33–7:24, 11:22–60, 27:37–52, 29:1–30:12, 37:8–28, Figs. 6, 8; Ex. 1004 ¶ 172). Also, relying on the testimony of Dr. Min, Petitioner asserts that a person having ordinary skill in the art “would have understood from Rappaport that the maximum number of reconnection attempts for a data call could and would be set higher than the maximum number of reconnection attempts for a voice call.” Pet. 23 (citing Ex. 1004 ¶ 173).

Dr. Min testifies as follows:

Rappaport recognizes that disconnected voice calls are immediately perceptible to a user while disconnected data calls are not, for example, based on the different nature of the exchange of information for voice calls and data calls, and thus teaches treating time-sensitive real-time calls differently than time-insensitive non-real-time calls for purposes of reconnecting following a failed connection. Ex. 1005 at 1:59–63, 2:44–58, 4:66–5:16, 6:33–63, 29:20–24, 30:1–2, 37:17–28; Ex. 1011 at 7:1–31, 11:2–19, 40:5–8, 41:26–27, 48:25–28. It is my opinion that a PHOSITA would have understood from Rappaport that the maximum number of reconnection attempts for a data call could and would be set higher than the maximum number of reconnection attempts for a voice call, since link interruptions to data calls can be transparent to a user. *Id.* Indeed, in one embodiment, Rappaport explicitly expresses the desirability of

allowing multiple reconnection attempts for disconnected data calls while preferably not allowing any reconnection attempts for disconnected voice calls. Ex. 1005 at 6:64–7:14, 7:44–67, 29:1–30:12, Fig. 1; Ex. 1011 at 40:1–41:32, Fig. 1A.

Ex. 1004 ¶ 173.

We agree with Petitioner that Rappaport teaches that the maximum allowable reconnection attempts need not be the same in every network. *See, e.g.*, Ex. 1005, 27:37–40 (“The other important parameter is the number, N, of maximum allowable of reconnection attempts. As this parameter is increased, a session is less likely to be terminated.”). Contrary to Petitioner’s assertions and Dr. Min’s testimony, however, Rappaport’s reconnection procedures involve only a single expiry time or a single maximum number of reconnection attempts. *See, e.g.*, Ex. 1005, 7:1–9 (“A maximum number of reconnection attempts, N, is allowed”), 7:9–11 (“In another embodiment of the present invention, upon the suspension of a session, a timer is also set in the supporting network”), 29:30–36 (“Preemptive priority is used to guarantee transparency for voice sessions” and “[d]ata calls that are preempted or disconnected during the hand-off process, are allowed a fixed number of reconnection attempts”), Fig. 1 (describing admitting a call and only one “Maximum Number of Reconnection Attempts”), Fig. 2 (describing only “N” as the number used for comparison to force termination).

Importantly, Rappaport further teaches *not allowing* reconnection of voice sessions. In particular, Rappaport states “[s]ince voice sessions must be transmitted or received on a real time basis, *reconnection attempts for voice sessions are preferably not allowed.*” Ex. 1005, 7:49–53 (emphasis added); *see also id.* at 30:1–2 (“Since voice sessions must be transmitted or received on a real time basis, reconnection attempts are not allowed.”).

Additionally, certain of Rappaport's teachings relied upon by Petitioner relate to admission control procedures for setting up voice or data communication. For instance, Rappaport states, "[i]n a network that employs an admission control protocol according to the present invention, voice calls, for example (or other time-sensitive stream traffic) may preempt resources of time-insensitive data calls, which result in suspended sessions that do not result in session failures." *Id.* at 2:44–58. Rappaport's teachings in that regard, however, are consistent with Rappaport's teachings that reconnection attempts for voice sessions are not allowed.

Dr. Min's testimony that a person having ordinary skill in the art would have understood from Rappaport that the maximum number of reconnection attempts for a data call could and would be set higher than the maximum number of reconnection attempts for a voice is not supported sufficiently by the evidence of record. We, therefore, accord that testimony little to no weight. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.").

Petitioner's contentions for Element 1[D] reference back and rely entirely on Petitioner's contentions and evidence for Element 1[C]. Pet. 27–28. Petitioner's contentions for Element 1[D], therefore, do not remedy the aforementioned deficiencies.

Accordingly, we have reviewed the record and determine that Petitioner has not provided sufficient evidence that Rappaport teaches Element 1[C] or Element 1[D].

b) Reasoning to Combine

Relying on the testimony of Dr. Min, Petitioner asserts the following:

A PHOSITA would have understood that increasing the maximum number of reconnection attempts for data (non-real-time) sessions increases the period of time during which reconnection is possible (*e.g.*, based on the average time between attempts and a total number of allowable attempts). Ex. 1005, 8:47–52, 26:57–59, 28:4–19, 36:40–41; Ex. 1011, 34:21–22, 43:36–39, 47:30–31; Ex. 1004, ¶ 174. Further, a PHOSITA would have understood that Rappaport’s beneficial increase in time for reconnection of non-real-time calls as opposed to real-time calls could and would have been equivalently implemented in the Admitted 3G Art simply by setting a corresponding timer value for a timer paired to the specific call type, rather than dictating a certain number of reconnection attempts. Ex. 1004, ¶ 174. A PHOSITA would have therefore applied Rappaport’s teaching — treating real-time and non-real-time calls differently with respect to number of reconnection attempts and therefore amount of time allowed — to the Admitted 3G Art by determining a first timer value setting a first period of time during which reconnection of a suspended voice session is allowable (already taught by the Admitted 3G Art) and determining a second timer value setting a second period of time during which reconnection of a suspended data session is allowable. *Id.*

Pet. 24–25.

Patent Owner asserts “[c]ontrary to Petitioners’ hindsight arguments, Rappaport actually teaches away from the ’803 patent by disclosing that voice calls should not be subject to reconnection procedures at all, thus obviating the need for two separate timers.” Prelim. Resp. 22 (citing Ex. 1005 at 7:52–53). We agree with Patent Owner that Rappaport discloses that voice calls should not be subject to reconnection procedures and, therefore, Petitioner’s reasoning is deficient.

As discussed above (*see supra* § III.D.3.a), Rappaport’s reconnection procedures involve only a single expiry time or a single maximum number of reconnection attempts and Rappaport further teaches that reconnection of

voice should not be allowed. In particular, Rappaport states expressly “[s]ince voice sessions must be transmitted or received on a real time basis, *reconnection attempts for voice sessions are preferably not allowed.*” Ex. 1005, 7:51–53 (emphasis added); *see also id.* at 30:1–2 (“Since voice sessions must be transmitted or received on a real time basis, reconnection attempts are not allowed.”). Petitioner’s assertion that Rappaport teaches a “*beneficial increase in time* for reconnection of non-real-time calls as opposed to real-time calls” (Pet. 24 (emphasis added)) is not consistent with Rappaport’s description limiting reconnection to one service type and stating that reconnection attempts for voice should not be allowed. *See* Ex. 1005, 7:51–53, 30:1–2.

Dr. Min’s testimony is substantially the same as Petitioner’s assertion, except Dr. Min additionally testifies that Rappaport teaches use of a timer. *Compare* Ex. 1004 ¶ 174, *with* Pet. 24–25. Dr. Min’s testimony is deficient for the same reasons given for Petitioner’s assertion.

Petitioner also asserts “[a] PHOSITA would have understood that the proposed combination would have improved the Admitted 3G Art’s re-establishment procedures so that the reestablishment of each category of service is tailored specifically to its characteristics.” Pet. 26 (citing Ex. 1004 ¶ 176). However, Rappaport teaches that voice sessions should not be reconnected. As such, we are not persuaded that a person of ordinary skill in the art would have been motivated to “tailor[] specifically” a disfavored reconnection attempt. Also, tailoring voice such that reconnection is not allowed as taught in Rappaport would not have resulted in a combination having a second expiry time, as recited in claim 1. Dr. Min’s testimony is the same as Petitioner’s assertion and is deficient for the same reasons. *Compare* Ex. 1004 ¶ 176, *with* Pet. 26.

Additionally, we determine that Petitioner's rationale to combine the teachings of the Admitted 3G Art and Rappaport appears to be based on impermissible hindsight reconstruction. Claim 1 is directed to a method requiring determining a first expiry time for re-establishment of a service of a first category and determining a second expiry time for re-establishment of a service of a second category. Ex. 1001, 12:8–30. It appears that Petitioner used the aforementioned disclosure in the '803 Patent as a guide to modify the teachings of the Admitted 3G Art's system using disparate teachings in Rappaport and an incorrect characterization of those teachings to arrive at the claimed subject matter. Pet. 20–27. Petitioner relies on Rappaport's disparate teachings relating to (1) experimental results generated for setting a single reconnection parameter for data (*see, e.g.*, Ex. 1005, 26:52–27:41), and (2) a stated goal of having a network support voice and data (*id.* at 2:44–58), and asserts those teachings provide reasoning to combine even though the cited teachings are silent with respect to a second expiry timer. Furthermore, Petitioner incorrectly characterizes Rappaport's teachings as relating to treating voice differently, but Rappaport teaches not allowing reconnection attempts for voice. *See* Ex. 1005, 7:51–53, 30:1–2. Petitioner's reasoning to combine is precisely the type of impermissible hindsight reconstruction that we have been cautioned to avoid. *See Grain Processing Corp. v. Am.-Maize-Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (quoting *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1012 (Fed. Cir. 1983) (“Care must be taken to avoid hindsight reconstruction by using ‘the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.’”)).

Accordingly, based on the record before us, we agree with Patent Owner’s argument that Petitioner does not present a sufficient rationale to combine the teachings of the Admitted 3G Art and Rappaport in the manner required by independent claim 1.

c) Conclusion—Claim 1

For the reasons given, we determine that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claim 1 would have been obvious over the Admitted 3G Art and Rappaport.

4. Independent Claims 17 and 21

Petitioner acknowledges that claims 17 and 21 include substantially the same recitations that were disputed in claim 1. Pet. 36–38, 42–43. For claim 17, Petitioner points to an algorithm in the Asserted 3G Art and asserts “the same algorithm would be performed for both the first and second expiry values.” Pet. 38 (citing Ex. 1004 ¶ 210). Petitioner, however, acknowledges that the Admitted 3G Art “does not explicitly provide a second value for a second timer.” *Id.* at 20. Petitioner’s further assertion regarding the Admitted 3G Art, therefore, does not remedy the deficiencies discussed with respect to claim 1. *See supra* § III.D.3.

Petitioner also asserts that a person having ordinary skill in the art would have understood that the value for the second expiry time would have been stored and read from Rappaport’s memory. Pet. 37 (citing Ex. 1005, 5:53–6:2). Rappaport’s teachings relied upon by Petitioner, however, also do not remedy the aforementioned deficiencies. For instance, Rappaport teaches simply that its system “is preferably implemented as an application comprising program instructions that are tangibly embodied on a program

storage device.” Ex. 1005, 5:56–58. Rappaport also provides exemplary program storage devices and explains its examples are not limiting. *Id.* at 5:53–6:2. Rappaport’s teachings do not discuss the details of the implementation and do not resolve the deficiencies discussed with respect to claim 1. *See supra* § III.D.3.

Petitioner does not supplement further its contentions for claims 17 and 21 in a meaningful way and, instead, relies on the same evidence that we determined is deficient with respect to claim 1. Pet. 36–38, 42–43. For the reasons given, we determine that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claims 17 and 21 would have been obvious over the Admitted 3G Art and Rappaport.

5. Dependent Claims 2–5, 7, 18, 19, and 22

Each of claims 2–5, 7, 18, 19, and 22 depends directly from claim 1, 17, or 21. Petitioner does not present arguments or evidence with respect to those dependent claims that remedy the deficiencies identified above. *See* Pet. 29–34, 39–41, 43.

Accordingly, for the same reasons we discuss above with respect to the independent claims, we determine that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claims 2–5, 7, 18, 19, and 22 would have been obvious over the Admitted 3G Art and Rappaport.

E. Obviousness over (1) the Admitted 3G Art and Eriksson and (2) the Admitted 3G Art, Eriksson, and Toh

Petitioner asserts that claims 1–5, 7, 17–19, 21, and 22 are unpatentable as obvious over (1) the combination of the Admitted 3G Art and Eriksson and (2) the combination of the Admitted 3G Art, Eriksson, and

Toh. Pet. 12. In our discussion below, we first provide a brief overview of the asserted prior art, and then we address the parties' contentions in turn.

1. Eriksson

Eriksson describes a system and method for automatically reconnecting disconnected low priority calls. Ex. 1006, 1:2–10. Eriksson's mobile telecommunications network 200 embodying preemption system 50 operates based on the Global System for Mobile Communications (GSM) specification. *Id.* at 3:11–25. Preemption system 50 includes controller 306 that is used to determine whether or not an available traffic channel was located within a predetermined amount of time. *Id.* at 4:37–45. The particular duration of time is set at a level so that users will hardly notice upon reconnection, if at all, that their low priority call 304 was temporarily disconnected. *Id.* at 5:55–59.

2. Toh

Toh describes wireless Asynchronous Transfer Mode (ATM). Ex. 1007, 1, 5. Toh describes a connectivity-aware mobile application that supports real-time multi-media applications. *Id.* at 22. Toh also describes that with a neighbor-aware mobile application spontaneous networks can be formed and deformed to support nomadic collaborative computing. *Id.*

Toh further describes the following:

Cell delay variation or jitter is defined as the variance of the transmission delay of a connection. A common method to compensate for jitter is to use larger buffers at the receivers. Hence, arriving cells are stored and delayed before sending out again. In this manner, the inter-exit time of ATM cells at the receiver is similar to those at the source [113]. Given the end-to-end delay requirement, it may not always be possible to use receiver buffers to compensate for jitter. Under such circumstances, it may be desirable to discard delayed ATM cells.

Considering the handovers of voice traffic, the jitter should not exceed 130ms [113] and this can be removed by buffering. If the additional amount of cell delay as a result of mobile handovers is too large, then the quality of voice services will be affected and jitter compensation using buffers is no longer useful. Hence, the traffic disruption time during a handover affects the cell delay variation directly. On the other hand, delay jitter for data traffic is not a major issue since synchronisation and constant play-out (as in voice) are not required at the receiver. Finally, for video traffic, the jitter requirement can be more stringent, especially for HDTV (High Definition TV) video.

Id. at 34.

3. *Independent Claim 1*

Again, the parties' dispute pertains to whether the asserted art teaches Elements 1[C] and 1[D] and, in particular, a different expiry time for a different service category. Prelim. Resp. 24–29. The parties also dispute whether Petitioner has provided sufficient reasoning to combine the asserted prior art. *Id.* We discuss the parties' contentions below.

- a) *Elements 1[C] and [1D]—“a second expiry time . . . in respect to radio bearers used to provide a service or services of a second category” and “wherein said second category of service is different than said first category of service”*

As discussed with respect to the first ground (*see supra* § III.D.3), Petitioner acknowledges that the Admitted 3G Art does not teach a second expiry time. Pet. 44. Petitioner relies on Eriksson's reconnection of low priority calls in a mobile network. *Id.* at 44–45 (citing, *e.g.*, Ex. 1006, 1:2–10, 2:52–55, 3:11–25, 4:36–67, 5:15–30). Petitioner asserts that the calls in Eriksson's network may be for providing different types of services including data and voice. *Id.* at 45 (citing, *e.g.*, Ex. 1006, 2:1–22, 2:40–47, 5:15–30, 6:66–67).

Patent Owner argues that Eriksson “does not disclose using multiple timers for different service categories during reconnection attempts,” but instead, Eriksson teaches “reconnecting only a single group of ‘low priority’ calls.” Prelim. Resp. 25 (citing, *e.g.*, Ex. 1006, 2:26–29). We agree with Patent Owner.

Eriksson states the following:

The preemption system 50 further includes a controller 306 that interfaces with the queue 302. The controller 306 is used to determine whether or not the available traffic channel was located by the MSC/VLR 230 within a predetermined amount of time. The available channel should be located within the predetermined amount of time so that the users (*e.g.*, subscribers) would not notice or hardly notice that their disconnected low priority call 304 was reconnected in the first place. The predetermined amount of time is generally a predefined parameter which is set at the cell level. Furthermore, there may be *several parameter(s) having different durations associated with each of the disconnected low priority call(s) 304.*

Ex. 1006, 4:36–49 (emphasis added).

Eriksson also states the following:

As mentioned earlier, *the particular duration of the predetermined amount of time may be different for each of the disconnected low priority calls 304.* Generally the particular duration of time is set at a level so that users (*e.g.*, subscribers) upon reconnection will hardly notice, if at all, that their low priority call 304 was temporarily disconnected in the first place.

Id. at 5:54–56 (emphasis added); *see also id.* at 7:5–8, 7:61–64, 8:42–44 (describing an adjustable predetermined amount of time).

Although Eriksson teaches different durations of the predetermined amount of time (*id.* at 4:36–49, 5:54–56), Eriksson does not teach that the different durations are set based on service type. *See generally id.* Instead, Eriksson teaches reconnecting only one group of low priority calls. *See, e.g.*,

id. at 2:26–29 (“The present invention is a method and system used in a mobile telecommunications network for reconnecting at least one of a plurality of low priority calls that have been disconnected due to preemption by high priority call(s).”). Eriksson teaches that the single “low priority” group includes both data transmissions and voice calls. *See, e.g., id.* at 6:66–67. Eriksson, however, does not indicate any preference based on category within that “low priority” group and, instead, explains that its system “includes a queue 302 for arranging the low priority call(s) 304” and that “[t]he disconnected low priority call(s) 304 are typically inserted and removed from the queue 302 in a *first-in-first-out order*.” *Id.* at 4:8–13 (emphasis added). Indeed, rather than setting the duration by category, Eriksson teaches different durations “for *each* of the disconnected low priority calls 304.” *Id.* at 5:54–56 (emphasis added); *see also id.* 4:36–49 (describing that the different durations are “associated with each of the disconnected low priority call(s) 304”).

Petitioner relies on the testimony of Dr. Min. Pet. 44–49 (citing Ex. 1004 ¶¶ 241–249, 254). Dr. Min testifies as follows:

Eriksson also teaches that the low priority calls may be of different types, including data transmission calls and voice calls. Ex. 1006 at 2:1–22, 40–47, 6:19–31, claims 4, 11–13, 21–22. A PHOSITA would have understood that voice calls and data transmission calls within at least the cellular communication context represent different categories of services. Thus, in providing different timers for different low priority calls, a PHOSITA would have appreciated that Eriksson teaches the situation in which a low priority voice call is assigned a different time period for reconnection than a low priority data call. In other words, *Eriksson’s teaching of multiple types of calls in conjunction with its description of different reconnection durations for different calls includes a first predetermined amount of time parameter for a voice call, and a second*

predetermined amount of time parameter for a data transmission call. Eriksson further teaches that data transmission calls should not be terminated if at all possible because of the desire to avoid having to resend data from the beginning in a second call. Ex. 1006 at 2:1–22, 40–47, 6:19–31, claims 5, 16, 25. This suggests having a longer reconnection period for data calls, so as to avoid their termination. Accordingly, the second predetermined amount of time for reconnecting a data transmission call teaches “a second expiry time for a period during which the re-establishment of the lost radio, connection in respect of said radio bearers used to provide a service or services of a second category is allowable.” *Id.*

Ex. 1004 ¶ 245 (emphasis added).

Dr. Min’s testimony that Eriksson teaches multiple types of calls “in conjunction with” different reconnection durations (*id.*) is not supported sufficiently by the evidence of record. Eriksson simply states that different durations may be associated with each of disconnected low priority calls 304, without mentioning “in conjunction with” the multiple call types. Ex. 1006, 4:36–49, 5:54–56. We also determine that Dr. Min’s testimony that a person having ordinary skill in the art would have appreciated that Eriksson teaches that a low priority voice call is assigned a different time period for reconnection than a low priority data call (Ex. 1004 ¶ 245) is not sufficiently supported by cited evidence or explanation. Eriksson simply states that the time is set so that subscribers will hardly notice the temporary disconnection. Ex. 1006, 4:36–49, 5:54–56. We, therefore, accord Dr. Min’s testimony (Ex. 1004 ¶ 245) little to no weight. *See* 37 C.F.R. § 42.65(a).

Petitioner also relies on the combination of Eriksson and Toh for Element 1[C]. Pet. 48–49. In particular, Petitioner asserts “[i]f Patent Owner argues that Eriksson does not explicitly teach different treatment for

different categories of calls, Toh does so.” *Id.* (citing Ex. 1007, 22, 34–36; Ex. 1004 ¶¶ 250–253).

Toh’s teachings, however, pertain to compensating for cell delay variation or jitter by using “larger buffers at the receivers.” Ex. 1007, 34. For instance, Toh teaches “[c]onsidering the handovers of voice traffic, the jitter should not exceed 130ms [] and this can be removed by buffering,” whereas “delay jitter for data traffic is not a major issue since synchronisation and constant play-out (as in voice) are not required at the receiver.” *Id.* Toh also teaches “the types of traffic to be supported also govern the design of the handover protocol.” *Id.* at 36. Toh’s short discussion regarding the design of the handover protocol, however, does not provide sufficient detail regarding the proposed design to teach using first and second expiry times for first and second categories of service, respectively, as recited in claim 1.

We have reviewed the record and determine that Petitioner has not provided sufficient evidence that Eriksson alone or in combination with Toh teaches Element 1[C] or Element 1[D].

b) Reasoning to Combine the Admitted 3G Art and Eriksson

Relying on the testimony of Dr. Min, Petitioner asserts that a person having ordinary skill in the art would have combined the Admitted 3G Art and Eriksson to improve the user’s experience. Pet. 47–48 (citing Ex. 1001, 1:59–2:27; Ex. 1006, 2:1–22, 2:44–55, 4:7–5:30, 5:55–59, Fig. 4; Ex. 1004 ¶ 249). Dr. Min testifies as follows:

It is further my opinion that a PHOSITA would also have found the above noted combination of the Admitted 3G Art and Eriksson to be obvious as the use of a known technique to improve similar devices in the same way. As an initial matter, the Admitted 3G Art and Eriksson teach similar methods—reconnection procedures for re-establishing disconnected calls in a mobile telecommunications environment—and similar

devices, *i.e.*, cellular mobile terminals with reconnection timers. Ex. 1001 at 1:59–2:27; Ex. 1006 at 4:7–5:30, Fig. 4. Accordingly, a PHOSITA would have applied Eriksson’s known technique of using different reconnection time parameters for different calls to the Admitted 3G Art re-establishment protocols in the same fashion as Eriksson’s automatic reconnection system. Moreover, Eriksson’s reconnection technique furthers Eriksson’s stated goal that “the particular duration of time is set at a level so that users . . . will hardly notice, if at all, that their low priority call 304 was temporarily disconnected in the first place.” Ex. 1006 at 5:55–59, 2:52–55, 4:41–49. As noted above, Eriksson explicitly describes differential reconnection treatment between voice and data calls, suggesting that data calls be allowed additional (*i.e.*, longer amount) time to reconnect to avoid having to reinitiate data transmissions from the beginning. *Id.* at 2:1–22, 44–47. With voice calls, on the other hand, Eriksson expresses a concern that users are inclined to hang up more quickly upon detecting disruption. *Id.* at 5:15–30. This would suggest to a PHOSITA that a reconnection timer for voice calls should be shorter in duration. This is practically the same problem called out by the ’803 patent with respect to the Admitted 3G Art re-establishment protocols. Ex. 1001 at 2:39–55. Accordingly, a PHOSITA would have recognized that using Eriksson’s multiple re-establishment time parameters for different types of calls would have improved the Admitted 3G Art re-establishment procedure’s ability to address the differing needs and priorities of various types of calls, as it did in Eriksson. A PHOSITA would have further understood that the use of Eriksson’s technique would have improved the user experience, given that users are more sensitive to disruption in real-time calls.

Ex. 1004 ¶ 249.

Above, Dr. Min testifies that Eriksson “explicitly describes differential reconnection treatment between voice and data calls.” Ex. 1004 ¶ 249 (citing Ex. 1006, 2:1–22, 2:44–47). Eriksson, however, teaches automatically reconnecting a preemption-initiated disconnect and a data

transmission, but does not teach different treatment for voice and data.
Ex. 1006, 2:1–22, 2:44–47.

Dr. Min also testifies that Eriksson expresses a concern that voice users are inclined to hang up more quickly upon detecting disruption. Ex. 1004 ¶ 249 (citing Ex. 1006, 5:15–30). Eriksson, however, simply states that a user may be informed “to remain on-line and not hang-up.” Ex. 1006, 5:15–30. That statement does not teach treating voice and data differently with respect to reconnection times.

Dr. Min’s testimony (Ex. 1004 ¶ 249) is premised on Eriksson teaching two different expiry times, one for data and one for voice. *Id.* For the reasons given with respect to Element 1[C] and Element 1[D] (*see supra* § III.E.3.a), we determine Petitioner’s contentions and Dr. Min’s testimony are deficient in that regard. Because Dr. Min’s testimony (Ex. 1004 ¶ 249) is not supported sufficiently by the evidence of record, we accord that testimony little to no weight. *See* 37 C.F.R. § 42.65(a).

Accordingly, based on the record before us, we determine that Petitioner does not present a sufficient rationale to combine the teachings of the Admitted 3G Art and Eriksson in the manner required by independent claim 1.

c) Reasoning to Combine the Admitted 3G Art, Eriksson, and Toh

Relying on the testimony of Dr. Min, Petitioner asserts that a person having ordinary skill in the art would have combined the teachings of the Admitted 3G Art, Eriksson, and Toh because the combinations are suggested by the art itself. Pet. 48–49 (citing, *e.g.*, Ex. 1004 ¶ 250–254). Dr. Min testifies as follows:

Given Toh’s teachings of using different protocols for different types of calls, a PHOSITA would have been motivated

to modify the aforementioned combination of the Admitted 3G Art and Eriksson such that each of the multiple timers were associated to a different service type or category of services. Specifically, in the Admitted 3G Art-Eriksson-Toh combination, the multiple reconnection timers would include a real-time service timer having a smaller re-establishment duration, and another timer for non-real-time services with a greater duration. To a PHOSITA, the combination of the Admitted 3G Art, Eriksson and Toh would have been the mere application of a known technique (distinguishing between voice and data services because of the different sensitivities to disruption of each) to a known device (the Admitted 3G Art-Eriksson combination's MS using different reconnect timers for different calls) ready for improvement to yield predictable results (one timer applies to real-time calls, a second applies to non-real-time calls). Ex. 1001 at 1:49–58; Ex. 1007 at 32, 36. To the extent the Admitted 3G Art-Eriksson combination's re-establishment procedure would apply a longer reconnection time to non-real-time calls, it was clearly ready for improvement (Ex. 1001 at 1:49–58, 2:40–56; Ex. 1006 at 5:55–59, 2:52–55, 4:41–49), and, as discussed in Toh, adopting different traffic handling protocols for real-time, non-real-time and voice communications was a known technique to address the varying sensitivities of different types of services to communication delays and breaks. Ex. 1007 at 22, 36.

Ex. 1004 ¶ 252.

Dr. Min's testimony is premised on Toh suggesting modifying Eriksson's multiple timers such that each is associated with a different service type or category of services. *Id.* That testimony is not supported by Toh. First, Toh teaches that "connectivity-aware" applications require "an on-going communication path." Ex. 1007, 22. That teaching is contrary to Dr. Min's testimony that a timer should be set to allow for reconnection of voice communications. Toh also teaches "the types of traffic to be supported also govern the design of the handover protocol." *Id.* at 36. Toh provides no indication that voice traffic should be reconnected and does not teach or

suggest setting two timers. Because Dr. Min's testimony (Ex. 1004 ¶ 252) is not supported sufficiently by the evidence of record, we accord that testimony little to no weight. *See* 37 C.F.R. § 42.65(a).

Dr. Min also testifies as follows:

A PHOSITA would have been further motivated to combine the Admitted 3G Art, Eriksson and Toh to adopt different re-establishment timers for different types of services by simply reading the teachings of the Admitted 3G Art and Eriksson. That is, Eriksson specifically acknowledges the need to “automatically reconnect . . . ***in a manner where each user will hardly notice that there was a disconnection in the first place.***” Ex. 1006 at 2:52–55, 4:41–49 (emphasis added). Eriksson teaches different reconnection time periods for different calls, and also teaches that data calls in particular should not be terminated, which suggests a longer reconnection duration for those calls. *Id.* at 2:1–22, 2:40–47, 6:19–31. The Admitted 3G art teaches that delays in speech calls are immediately noticeable (Ex. 1001 at 1:55–58) as does Eriksson, since it teaches providing a delay notification only for speech calls to avoid hang ups by the user during reconnection. Ex. 1006, 5:26–30. These suggest having a shorter reconnection time for speech calls. Importantly, Eriksson is evidence that the Admitted 3G Art issues noted in the '803 patent were well-known issues in the art before the time of the alleged invention of the '803 patent, and both Eriksson and Toh taught ways to address those issues. Accordingly, a PHOSITA would have found clear motivation from the teachings in the prior art to treat real-time service calls and non-real-time service calls differently in light of the differences in disruption sensitivity, as discussed in Eriksson and explicitly taught in Toh. Ex. 1006 at 2:52–55, 4:41–49; Ex. 1007 at 22, 34–36. A PHOSITA would have found using a different (shorter) re-establishment time period for real-time services, as compared to non-real-time services, as an obvious way to apply more a stringent traffic handling protocol that would result in a better user experience, for both real-time and non-real-time service calls.

Ex. 1004 ¶ 253.

Dr. Min's testimony above relies on the following: (1) Eriksson's teaching of automatically reconnecting "in a manner where each user will hardly notice that there was a disconnection in the first place" (*id.* (citing Ex. 1006, 2:52–55, 4:41–49)); (2) Eriksson's teaching that data calls should not be terminated (*id.* (citing Ex. 1006, 2:1–22, 2:40–47, 6:19–31)); (3) the Admitted 3G art's teaching that delays in speech calls are immediately noticeable (*id.* (citing Ex. 1001, 1:55–58)); (4) Eriksson's teaching of providing a delay notification only for speech calls to avoid hang ups by the user during reconnection (*id.* (citing Ex. 1006, 5:26–30)); and (5) Eriksson's and Toh's teachings of treating real-time service calls and non-real-time service calls differently (*id.* (citing Ex. 1006, 2:52–55, 4:41–49; Ex. 1007, 22, 34–36)). Except for the fourth, i.e., Eriksson's delay notification, each of the teachings relied upon by Dr. Min is no better than the Admitted 3G Art in which reconnection was performed for only data transmissions and involved using only a single expiry timer. Eriksson's teaching of providing a delay notification for speech calls to avoid hang ups by the user during reconnection (citing Ex. 1006, 5:26–30) is silent with respect to how reconnection is performed. Because Dr. Min's testimony (Ex. 1004 ¶ 253) is not supported sufficiently by the evidence of record, we accord that testimony little to no weight. *See* 37 C.F.R. § 42.65(a).

Also, Petitioner's rationale to combine the teachings of the Admitted 3G Art, Eriksson, and Toh appears to be based on impermissible hindsight reconstruction. It appears that Petitioner used claim 1 as a guide to modify not only the Admitted 3G Art's system having one re-establishment timer, but also Eriksson's teaching of parameters having different durations such that the modified system resulting from the combination of the asserted art includes more than the references together teach, i.e., determining a second

expiry time for *a second category of service*. Pet. 47–49. Petitioner’s reliance on Toh is misplaced because Toh teaches that “connectivity-aware” applications require “an on-going communication path” (Ex. 1007, 22), which is contrary to Petitioner’s assertion. Pet. 47–49. Petitioner’s proposed modification appears to be based on only impermissible hindsight reconstruction.

Accordingly, based on the record before us, we determine that Petitioner does not present a sufficient rationale to combine the teachings of the Admitted 3G Art, Eriksson, and Toh in the manner required by independent claim 1.

d) Conclusion—Claim 1

For the reasons given, we determine that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claim 1 would have been obvious over (1) the combination of the Admitted 3G Art and Eriksson and (2) the combination of the Admitted 3G Art, Eriksson, and Toh.

4. Independent Claims 17 and 21

Petitioner acknowledges that claims 17 and 21 include substantially the same recitation that was disputed in claim 1. Pet. 55–57, 59–61. Petitioner relies on and references back to its contentions for claim 1 for claims 17 and 21. *Id.* Petitioner also refers back to its contentions for obviousness over the Admitted 3G Art and Rappaport for claims 17 and 21. *Id.* Petitioner does not supplement further its contentions for claims 17 and 21 in a meaningful way.

We discussed the deficiencies in Petitioner’s contentions with respect to claims 1, 17, and 21 and obviousness over the Admitted 3G Art and

Rappaport (*see supra* §§ III.D.3, III.D.4) and Petitioner has not remedied those deficiencies here. We also discussed the deficiencies in Petitioner's contentions with respect to claim 1 and obviousness over (1) the combination of the Admitted 3G Art and Eriksson and (2) the combination of the Admitted 3G Art, Eriksson, and Toh. *See supra* § III.E.3. Petitioner also has not remedied those deficiencies here.

For the reasons given, we determine that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claims 17 and 21 would have been obvious over (1) the combination of the Admitted 3G Art and Eriksson and (2) the combination of the Admitted 3G Art, Eriksson, and Toh.

5. Dependent Claims 2–5, 7, 18, 19, and 22

Each of claims 2–5, 7, 18, 19, and 22 depends directly from claim 1, 17, or 21. Petitioner does not present arguments or evidence with respect to those dependent claims that remedy the deficiencies identified above. *See* Pet. 50–55, 57–59, 61. Accordingly, for the same reasons we discuss above with respect to the independent claims, Petitioner has not shown a reasonable likelihood that it would prevail on its assertions that the subject matter of dependent claims 2–5, 7, 18, 19, and 22 would have been obvious over the asserted art.

For the reasons given, we determine that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claims 2–5, 7, 18, 19, and 22 would have been obvious over (1) the combination of the Admitted 3G Art and Eriksson and (2) the combination of the Admitted 3G Art, Eriksson, and Toh.

F. Claims 17–19 and Grounds Including TS 25.331

Petitioner’s contentions for the grounds of obviousness including TS 25.331 pertain to the algorithm used for the detection means recited in claim 17 (Element 17[B]) and the further recitations in dependent claims 18 and 19. Pet. 61–64. Petitioner does not present arguments or evidence with respect to TS 25.331 (*id.*) that remedy the deficiencies previously discussed. *See supra* §§ III.D, III.E. Indeed, Petitioner acknowledges that TS 25.331 is limited to a single timer. *See* Pet. 62.

For the reasons given, we determine that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the subject matter of claims 17–19 would have been obvious over the grounds including TS 25.331.

IV. CONCLUSION

For the foregoing reasons, we conclude that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail in showing that the challenged claims of the ’803 Patent are unpatentable.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner’s request for an *inter partes* review of claims 1–5, 7, 17–19, 21, and 22 of the ’803 Patent is *denied*.

IPR2020-01069
Patent 7,751,803 B2

FOR PETITIONER:

C. Andy Mu
John R. Hutchins
Wesley W. Jones
Craig W. Kronenthal
Shambhavi Patel
BANNER & WITCOFF, LTD.
amu@bannerwitcoff.com
jhutchins@bannerwitcoff.com
wjones@bannerwitcoff.com
ckronenthal@bannerwitcoff.com
spatel@bannerwitcoff.com

Brian M. Buroker
Paul Torchia
Nathan R. Curtis
GIBSON, DUNN & CRUTCHER LLP
bburoker@gibsondunn.com
ptorchia@gibsondunn.com
ncurtis@gibsondunn.com

Kourtney Mueller Merrill
Amanda Tessar
David St. John-Larkin
PERKINS COIE LLP
kmerrill@perkinscoie.com
tessar-ptab@perkinscoie.com
dlarkin@perkinscoie.com

Meredith Martin Addy
Robert P. Hart
Gregory B. Gulliver
ADDYHART P.C.
meredith@addyhart.com
robert@addyhart.com
gbgulliver@addyhart.com

IPR2020-01069
Patent 7,751,803 B2

FOR PATENT OWNER:

Timothy Devlin
DEVLIN LAW FIRM LLC
td-ptab@devlinlawfirm.com