

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. and
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

EVOLVED WIRELESS LLC,
Patent Owner.

IPR2021-00943
Patent 10,517,120 B2

Before PATRICK M. BOUCHER, TERRENCE W. MCMILLIN, and
JASON M. REPKO, *Administrative Patent Judges*.

REPKO, *Administrative Patent Judge*.

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

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Petitioner”) filed a petition to institute *inter partes* review of claims 1, 5–9, 11, 12, 16–20, and 22 of U.S. Patent No. 10,517,120 B2 (Ex. 1001, “the ’120 Patent”). Paper 2 (“Pet.”). Evolved Wireless, LLC (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

To institute an *inter partes* review, we must determine “that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). For the reasons discussed below, Petitioner has shown a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. And we have not been provided a sufficient reason to exercise our discretion to deny institution. Thus, we institute an *inter partes* review.

A. Related Matters

The parties identify the following as related matters: *Evolved Wireless, LLC v. Samsung Electronics Co. Ltd.*, 2:21-cv-00033 (E.D. Tex.); and *In the Matter of Certain LTE-Compliant Cellular Communication Devices*, Investigation No. 337-TA-1253, (ITC).
Pet. 63; Paper 6, 2.

Patent Owner identifies *Evolved Wireless, LLC v. Motorola Mobility LLC*, 1:21-cv-00567 (N.D. Ill.) as a related matter. Paper 6, 2.

Petitioner further identifies *Evolved Wireless, LLC v. Samsung Electronics Co. Ltd.*, 15-cv-545 (D. Del.) as a related matter involving similar patents, one of which was invalidated in IPR2016-00757. Pet. 63.

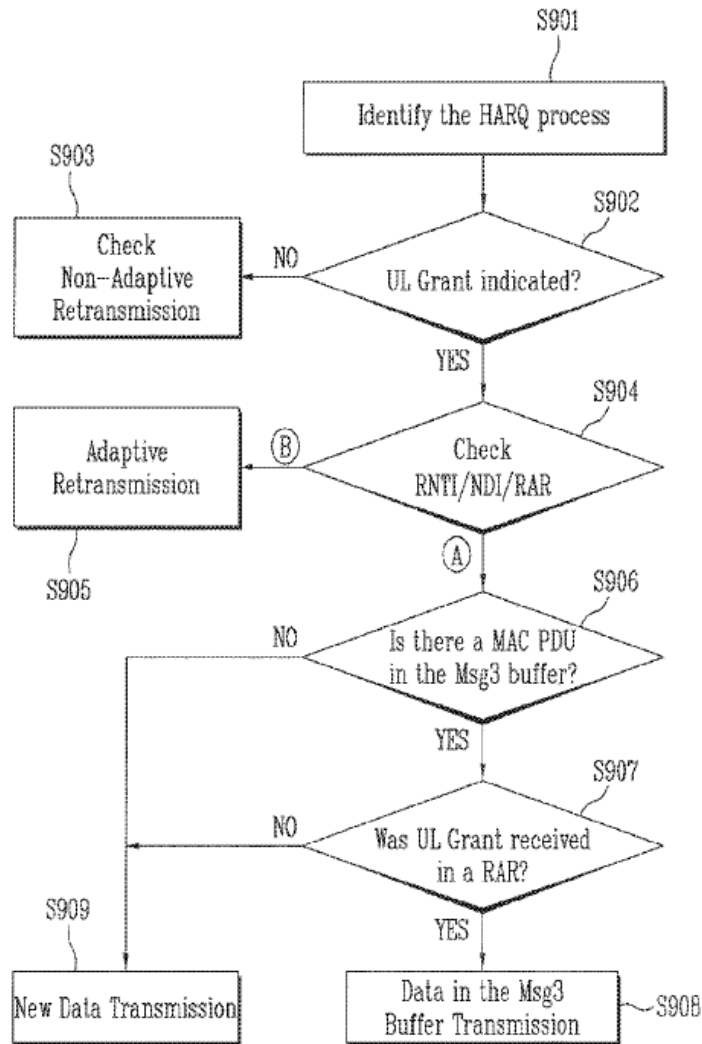
B. The ’120 Patent

The ’120 patent relates to transmitting data stored in a Message 3 (Msg3) buffer in accordance with the Long Term Evolution (LTE) mobile-

communication standard. Ex. 1001, 1:26–29. The '120 Patent describes a random-access procedure in which user equipment (UE) stores data for transmission via a third message in the Msg3 buffer and transmits the data when an Uplink (UL) Grant signal is received. *Id.* at 1:47, 4:33–37. The patent discloses that, under the LTE standard at the time, if the UL Grant signal was received while the data was stored in the Msg3 buffer, the data would be transmitted regardless of a reception mode for the UL Grant signal. *Id.* at 4:41–45. According to the '120 Patent, this may create problems. *Id.* at 4:45–48.

Figure 9, below, shows a flowchart for transmitting uplink data by a UE according to the invention. *Id.* at 7:12–14.

FIG. 9



In step S902, the UE's HARQ¹ entity checks whether a UL Grant signal has been received from a base station ("eNode B"). *Id.* at 14:7–10. Later, in step S906, the UE determines whether there is data in the Msg3 buffer. *Id.* at 14:33–34. If there is data in the Msg3 buffer when receiving the UL Grant

¹ Hybrid Automatic Repeat Request. Ex. 1001, 5:51–52.

signal and the UL Grant signal has been received via a random access response message, the UE transmits the Msg3 buffer data in step S908. *Id.* at 14:37–41. If there is no data in the Msg3 buffer when the UL Grant signal is received or the UL Grant signal is not received via a random access response message, the UE determines that the eNodeB is requesting the transmission of new data, not the transmission of the Msg3 buffer data. *Id.* at 14:41–47.

C. Claims

Claims 1 and 12, below, are independent.

1. A method to transmit data by a user equipment through an uplink channel in a mobile communication system, the method comprising:

receiving an uplink grant (UL Grant) at the user equipment from a base station on a specific message; and

determining to not perform a retransmission ; and

further comprising:

transmitting, by the user equipment to the base station in accordance with the UL Grant received on the specific message, Message 3 (Msg3) buffer data when at least the UL Grant is received on the specific message, the specific message is the random access response message and there is data stored in a Msg3 buffer of the user equipment,

transmitting, by the user equipment to the base station, new data when at least the UL Grant is received on the specific message, the specific message is other than the random access response message and there is data stored in the Msg3 buffer of the user equipment,

transmitting, by the user equipment to the base station, new data when at least the UL Grant is received on the specific message, the specific message is other than the random access response message and there is no data stored in the Msg3 buffer of the user equipment, and

transmitting, by the user equipment to the base station, new data when at least the UL Grant is received on the specific message,² the specific message is the random access response message and there is no data stored in the Msg3 buffer of the user equipment.

Ex. 1001, 17:20–48.

12. A system configured to transmit data by a user equipment through an uplink channel in a mobile communication environment comprising:

the user equipment receiving an uplink grant (UL Grant) from a base station on a specific message, the user equipment further determining to not perform a retransmission; and

further comprising:

the user equipment transmitting to the base station in accordance with the UL Grant received on the specific message, Message 3 (Msg3) buffer data when at least the UL Grant is received on the specific message, the specific message is the random access response message and there is data stored in a Msg3 buffer of the user equipment,

the user equipment transmitting to the base station new data when at least the UL Grant is received on the specific message, the specific message is other than the random access response message and there is data stored in the Msg3 buffer of the user equipment,

the user equipment transmitting to the base station new data when at least the UL Grant is received on the specific message, the specific message is other than the random access response message and there is no data stored in the Msg3 buffer of the user equipment, and

the user equipment transmitting to the base station new data when at least the UL Grant is received on the specific message,³ the specific message is the random

² A certificate of correction dated December 24, 2019 deleted “random access response message” and inserted “specific message” in claim 1 at column 17, line 46.

³ A certificate of correction dated December 24, 2019 deleted “random access response message” and inserted “specific message” in claim 12 at column 17, line 46.

access response message and there is no data stored in the Msg3 buffer of the user equipment.

Id. at 18:22–52.

D. Evidence

Name	Reference	Exhibit No.
300 reference	3GPP TS 36.300 v8.4.0 (2008-03), 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (EUTRAN); Overall description; Stage 2 (Release 8)	1002
321 reference	3GPP TS 36.321 v8.2.0 (2008-05), 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA) Medium Access Control (MAC) Protocol Specification (Release 8)	1003
Ericsson	US 9,204,468 B2, issued Dec. 1, 2015	1004

E. Asserted Ground

Claims Challenged	Pre-AIA⁴ 35 U.S.C. §	Reference(s)/Basis
1, 5–9, 11, 12, 16–20, 22	103(a)	300 reference, 321 reference, Ericsson

⁴ Congress amended § 103 when it passed the Leahy-Smith America Invents Act (AIA). Pub. L. No. 112–29, § 3(c), 125 Stat. 284, 287 (2011). Here, the previous version of § 103 applies.

II. ANALYSIS

A. Discretionary Denial Under 35 U.S.C. § 325(d)

Section 325(d) provides that the Director⁵ may “reject the petition” on the basis that “the same or substantially the same prior art or arguments previously were presented to the Office.” In determining whether to exercise that discretion, the Board applies a two-part framework:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6, 8 (PTAB Feb. 13, 2020) (precedential).

In applying this framework, the Board considers the following non-exclusive factors:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

⁵ The Board institutes trial on behalf of the Director. 37 C.F.R. § 42.4(a).

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8, 17–18 (Dec. 15, 2017) (precedential as to § III.C.5, first paragraph).

Here, the challenged patent is part of a chain of continuations that includes four other patents. Ex. 1001, code (59). The patent that issued from the earliest-filed application is U.S. Patent No. 7,881,236 B2 (“the ’236 Patent”). *Id.* The ’236 Patent was challenged in IPR2016-00757 and IPR2016-01345. In those cases, which were consolidated, the Board found all claims of the ’236 Patent unpatentable before the Examiner issued the Notice of Allowability in the application that led to the issuance of challenged patent.⁶ According to Patent Owner, “The examiner’s consideration of the prior art and arguments against the ’236 Patent when allowing the claims of the ’120 Patent also weighs in favor of denial of Samsung’s Petition.” Prelim. Resp. 31 (citing 35 U.S.C. § 325(d)). Patent Owner does not provide additional substantive analysis explaining why the Board should exercise its discretion to deny the Petition for this reason. *See id.* at 1–40.

1. Part One of the Advanced Bionics Framework

Under part one, the Board determines whether the same or substantially the same art or arguments were previously presented to the Office by reviewing factors (a), (b), and (d) from *Becton, Dickinson*.

⁶ The Board issued its Final Written Decision on November 30, 2017. *ZTE (USA) Inc. v. Evolved Wireless LLC*, IPR2016-00757, Paper 42 (PTAB Nov. 30, 2017) (Final Written Decision). The Federal Circuit affirmed under Federal Circuit Rule 36 on October 4, 2019. *Evolved Wireless LLC v. ZTE (USA) Inc.*, 778 F. App’x 967 (Fed. Cir. 2019). The Examiner issued the Notice of Allowability on November 18, 2019. Ex. 1026.

Advanced Bionics, Paper 6 at 10. Factor (d) relates to similar arguments presented to the Office. *Becton, Dickinson*, Paper 8, 17–18. Factors (a) and (b) are relevant to the issues in this case: “the similarities and material differences between the asserted art and the prior art involved during examination” and “the cumulative nature of the asserted art and the prior art evaluated during examination.” *Id.* at 17. Thus, we begin by reviewing the prior art cited during examination and in the Petition.

The ’120 Patent issued from application 15/664,686 (the ’686 application), which was filed on July 31, 2017. Ex. 1001, codes (21), (22). The applicant submitted an Information Disclosure Statement (IDS) that listed hundreds of references, including the references cited in the Petition: the 300 reference, the 321 reference, and Ericsson. *See* Ex. 1006, 108 (Ericsson), 116 (300 Reference, 321 Reference). The Examiner signed and initialed the IDS. *Id.*

Patent Owner has not identified any similar arguments that were previously presented to the Examiner.

Under *Becton, Dickinson* factors (a) and (b), the prior art in the Petition is not materially different from the prior art presented to the Examiner because the basis for the sole challenge in the Petition is a combination of references listed in the IDS. Pet. 3–4. Thus, we determine that the Petition uses “the same or substantially the same” art compared to what was previously presented to the Office, which satisfies part one of the framework. *See Advanced Bionics*, Paper 6 at 8.

2. *Part Two of the Advanced Bionics Framework*

Under part two, we must determine “whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.” *Id.* at 8. For the reasons discussed in this section,

Petitioner has demonstrated a material error by the Office. In arriving at this conclusion, we consider *Becton, Dickinson* factors (c), (e), and (f).

Becton, Dickinson factor (c) is “the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection.” *Becton, Dickinson*, Paper 8, 17–18. For example, “if the record of the Office’s previous consideration of the art is not well developed or silent, then a petitioner may show the Office erred by overlooking something persuasive under factors (e) and (f).” *Id.* at 10.

Here, the references were not used in a rejection or discussed by the Examiner in any Office Action. *See* Ex. 1047, 1048, 1049 (file history of the ’686 application). Rather, the Examiner rejected original claims 21–22 and 24 under 35 U.S.C. § 112, as indefinite and lacking written description, and rejected original claims 10–16 and 21–27 under the doctrine of non-statutory double patenting as unpatentable over claims 1–7 of U.S. Patent No. 9,775,177 B2. Ex. 1024, 7–10 (Office Action, dated June 11, 2019). Applicant then amended the claims to overcome the indefiniteness and written-description rejections and filed a terminal disclaimer. Ex. 1025, 7. In response, the Examiner issued a Notice of Allowability. Ex. 1026 (Notice of Allowability dated Nov. 18, 2019). Thus, the record of the Office’s previous consideration of the art is not well developed or silent.

In this case, Petitioner may show the Office erred by overlooking something persuasive under factors (e) and (f). *See Becton, Dickinson*, 10. *Becton, Dickinson* factors (e) and (f) are “whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art” and “the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.” *Id.* at 17–18.

For the reasons discussed below, we determine on the current record that Petitioner establishes a reasonable likelihood of prevailing in demonstrating that the claims would have been obvious based on the 300 reference, the 321 reference, and Ericsson. *Infra* § II.D. We also find that Petitioner’s showing is sufficient to establish that the Examiner erred because Petitioner has shown that the Examiner overlooked the particular combination of the 300 reference, the 321 reference, and Ericsson, which were among the hundreds of references listed on the IDS. The additional facts and testimony about this particular combination of references warrants reconsideration of the prior art in this case. In this way, Petitioner has demonstrated that the Examiner erred in a manner material to the patentability of the challenged claims. Thus, we decline to exercise our discretion to deny institution under 35 U.S.C. § 325(d).

B. Level of Ordinary Skill in the Art

Petitioner argues that “[t]he POSITA of the subject matter of the ’120 Patent would have had a master’s degree in electrical engineering with 2-3 years of experience in cellular communication systems, and would have been aware of the efforts of 3GPP and its various groups” or “[a]lternatively, that person would have had a Ph.D. in electrical engineering with the same familiarity with the work of 3GPP and its various groups.” Pet. 12 (citing Min Decl. ¶ 34).

Patent Owner “disputes Samsung’s recitation of the level of ordinary skill in the art and believes that it is overstated.” Prelim. Resp. 35.

According to Patent Owner,

A POSITA would have had a master’s level understanding of mobile cellular communication systems, which would typically be obtained via a degree in electrical engineering, computer engineering, computer science, or a similar technical discipline

with course and/or research work in mobile cellular communication systems and/or sufficient industry experience in mobile cellular communication systems. For example, this level of skill may be obtained via a master's degree program with relevant course and/or research work or via a bachelor's program with 4–5 years of related industry experience. Additionally, a POSITA would have been aware of the 3GPP and its work, which likely would come from industry experience.

Id. In Patent Owner's view, "its definition is better than [Petitioner's], which is based on a rigid formula that does not credit significant industry experience, which may substitute for formal academic work." *Id.* at 35–36. Patent Owner asserts that Petitioner's "proposed definition does not reference other degrees (besides electrical engineering) that may qualify one as a POSITA or specify the types of coursework that would be relevant to an understanding of a POSITA in the relevant field." *Id.*

Yet Patent Owner does not provide a basis for its definition. By contrast, Petitioner's definition is supported by the Min declaration. *See* Pet. 12 (citing Min Decl. ¶ 34).

Also, Patent Owner does not specifically explain how its proposed definition affects Petitioner's obviousness analysis. *See* Prelim. Resp. 36. Rather, Patent Owner argues "even under Samsung's proposal, the level of ordinary skill in the art does not comport with Samsung's assertion of obviousness." *Id.*

Considering the types of problems and solutions described in the '120 Patent and the cited prior art, we preliminarily agree with Petitioner's proposed definition of the level of ordinary skill in the art. Pet. 12. During trial, however, the parties are encouraged to explain how the differences between Patent Owner's proposed definition and Petitioner's affect the obviousness analysis.

C. Claim Construction

We need only construe terms that are in controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Claim 12 recites:

transmitting, by the user equipment to the base station in accordance with the UL Grant received on the specific message, Message 3 (Msg3) buffer data when at least the UL Grant is received on the specific message, the specific message is the random access response message and there is data stored in a Msg3 buffer of the user equipment

Ex. 1001, 18:27–33. Petitioner argues that claim 1 includes a similar limitation. Pet. 12. Petitioner asserts:

The Board should construe these two related terms such that this “transmitting” feature requires transmitting the Msg3 data *only* when the three claimed conditions are met: (1) the UL Grant is received on the specific message, (2) the specific message is the random access response message, and (3) there is data stored in a Msg3 buffer of the user equipment.

Id. 12–13 (citing Ex. 1016 ¶¶ 56–57). In Petitioner’s view, the claim’s plain language supports the “only when” construction because “the only time after the UL Grant is received on the specific message that the user equipment transmits Msg3 buffer data is only when the specific message is the random access response message and there is data stored in a Msg3 buffer of the user equipment.” *Id.* at 13.

Patent Owner argues that Petitioner “suggests that the word ‘only’ should be inserted into the claim language because of positions Evolved took during the IPRs involving the ’236 Patent.” Prelim. Resp. 27. According to

Patent Owner, “the claims of the ’120 Patent are written outside the context of a retransmission—unlike the claims of the ’236 Patent.” *Id.* at 30–31.

But the previous IPR is not the only basis for Petitioner’s construction. Rather, Petitioner discusses the Board’s previous decision only after providing its own analysis supported by the Min Declaration. *See* Pet. 14–15. Thus, even assuming—without deciding—that Patent Owner is correct about the differences between the claims, we disagree that this alone is a basis for rejecting Petitioner’s construction.

Patent Owner also argues that Petitioner’s “construction would suggest that the scenario described in the claim element is the only time that Msg3 buffer data may ever be sent from the user equipment to a base station. But that construction is inconsistent with the claim itself, which limits its applicability to the situation where a retransmission is not to occur.” Prelim. Resp. at 30–31. Patent Owner argues that Petitioner’s “proposed construction raises ambiguity about whether Msg3 buffer data sent as part of a retransmission (i.e., where the Uplink Grant may properly arrive on PDCCH rather than in a random access response message) would violate the ‘only’ aspect of the claim language.” *Id.*

Patent Owner, however, does not explain how this purported “ambiguity” affects whether the claims would have been obvious over the 300 reference, the 321 reference, and Ericsson. Thus, at this stage and on this record, we see insufficient reason to reject Petitioner’s construction.

Rather, Petitioner’s “only when” construction is adequately supported on this record. Pet. 12–13. Specifically, we preliminarily agree that the first “transmitting” step appears to be independent of the later three “transmitting” steps. *Id.* at 13. The later three steps cover the potential scenarios other than the first transmitting step in which the UL Grant is

received on the specific message. So we preliminarily agree with Petitioner that the claimed user equipment must transmit one of the Msg3 buffer data or new data—not both. *See id.* In this way, the claim language adequately supports Petitioner’s assertion that the “when” clause in the first transmitting step introduces a necessary condition, at this stage and on this record. *See id.* at 13–14. Thus, we adopt Petitioner’s “only when” construction for the purpose of determining whether to institute. *See id.*

Although Petitioner presents other constructions, we need not assess those constructions at this time because it would not affect our decision on institution.

D. Obviousness over the 300 reference, the 321 reference, and Ericsson

Petitioner asserts that claims 1, 5–9, 11, 12, 16–20, and 22 are unpatentable as obvious over the 300 reference, the 321 reference, and Ericsson.

Patent Owner argues that Petitioner’s “entire argument” is based on the false premise that “the claims of the ’120 Patent are identical to the claims of the ’236 Patent and/or that [the 321 reference] already disclosed the solution to an identified problem despite the acknowledgement by the drafters of the standard that the problem existed and required a solution.” Prelim. Resp. 4.

We disagree with Patent Owner’s characterization. *Id.* Although Petitioner asserts that the Board previously considered “substantially similar” limitations, this similarity is not the entire basis for the unpatentability arguments in the Petition. *See* Pet. 23–45. Rather, Petitioner makes these assertions in addition to providing its own analysis of the prior art. *See, .e.g., id.* at 24 (“*In addition*, prior limitations of the ’236 Patent claiming the same subject matter as this limitation were already found by the

PTAB to be disclosed based on the same combination of prior art.”) (emphasis added). Thus, to the extent that Patent Owner identifies any differences between the claims (*see* Prelim. Resp. 26–32), those differences do not affect our decision to institute here because Petitioner’s own analysis is an independent basis for unpatentability. That analysis alone establishes a reasonable likelihood that Petitioner would prevail. Our reasoning follows.

1. Claim 12

Claim 12 recites, in part, “the user equipment transmitting to the base station in accordance with the UL Grant received on the specific message, Message 3 (Msg3) buffer data when at least the UL Grant is received on the specific message, the specific message is the random access response message and there is data stored in a Msg3 buffer of the user equipment.” The parties refer to this limitation as 12 d. Pet. 28; Prelim. Resp. 18.

Petitioner asserts that the combination of the 300 reference, the 321 reference, and Ericsson teaches or suggests this limitation. Pet. 28–41 (citing Ex. 1002, App’x A, § 10.1.5.1; Ex. 1003, App’x A, §§ 5.4, 6.2.3; Ex. 1004, Fig. 6; Ex. 1016 ¶¶ 83–119). In particular, Petitioner explains that this feature would have been obvious under the different interpretations of the “when” clause: Under the narrower “only when” interpretation, Petitioner explains that the 321 reference by itself or in combination with the 300 reference taught the transmitting feature. *Id.* at 30–39. Under a broader interpretation, Petitioner asserts that the 321 reference alone teaches the limitation. *Id.* at 39–41. For the reasons that follow, Petitioner has sufficiently shown, at this stage, that the prior art teaches or suggests the claimed subject matter under the narrower “only when” interpretation. Thus, we need not consider the broader interpretation for the purposes of determining whether to institute this proceeding.

In particular, Petitioner asserts that the 321 reference taught that the UE's HARQ entity obtains a MAC PDU from a Msg3 buffer. *Id.* at 30 (citing Min Decl. ¶ 91). Petitioner asserts that this is the "Msg3 buffer data." *Id.* According to Petitioner, the 321 reference also teaches that the UE must determine that the Msg3 buffer has a MAC PDU before obtaining a MAC PDU for transmission. *Id.* at 30–31 (citing Min Decl. ¶ 92).

Petitioner asserts that the 321 reference teaches that a UE must transmit Msg3 when it receives a random access response, but "the 321 reference did not expressly state what must happen in a particular scenario where, during an ongoing random access procedure, a UE receives two uplink grants—one in a random access response, and the other on a PDCCH." *Id.* at 31. Petitioner, though, explains that this feature would have been obvious. *Id.*

As for the obviousness rationale, Petitioner asserts that the 321 reference teaches that, during a random-access procedure, the UE is allowed to discard an erroneous grant. *Id.* at 32 (citing Min Decl. ¶ 98). Here, Petitioner asserts that the correct grant is in the random access response, and the incorrect grant is on a PDCCH. *Id.* According to Petitioner, it would have been obvious to proceed with a correct grant in a random access response instead of an incorrect grant on a PDCCH. *Id.* Under Petitioner's reasoning, Msg3 is transmitted in this scenario only in response to the random access response grant. *Id.*

Patent Owner disagrees. Patent Owner argues that the '120 Patent solves a problem with the standard that existed at that time and Petitioner misrepresents the scope of version 8.2 of the standard. Prelim. Resp. 19–20, 32–34. In Patent Owner's view, the '120 Patent discloses a solution that involves "sending either Msg3 data or new data based on (1) the reception

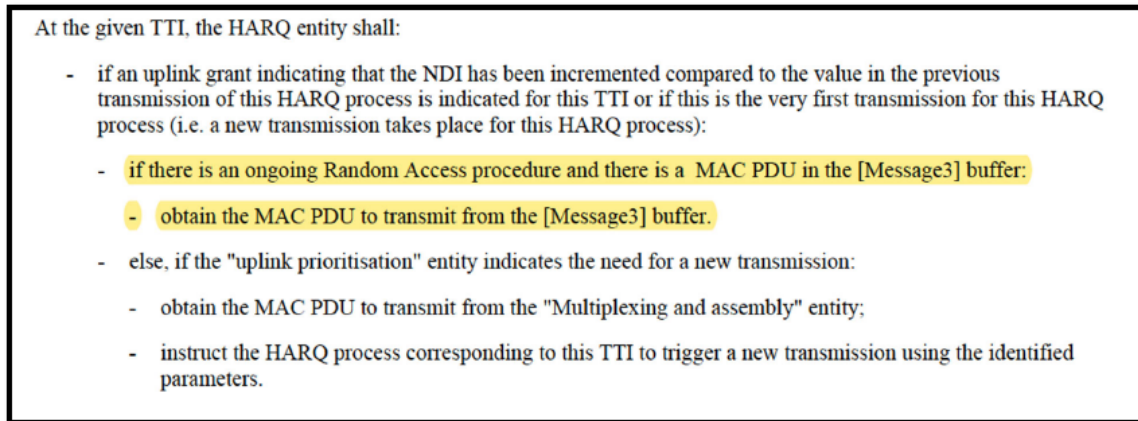
mode of the UL Grant (i.e., whether it was received in a RA Response (Msg2 on PDSCH) or on PDCCH, regardless of whether there is an ongoing RA Procedure), and (2) whether there is data stored in the Msg3 buffer.” *Id.* Patent Owner’s view of how the claim language reflects the four possible scenarios is shown in Patent Owner’s table, reproduced below. *Id.* at 19–20.

How was the UL Grant Received?		
Is there Data in the Msg3 Buffer?	PDCCH	Random Access Response
YES	Send New Data Element [12e]	Send Msg3 Data Element [12d]
NO	Send New Data Element [12f]	Send New Data Element [12g]

In the table above, the rows represent whether there is data in the message buffer (yes or no), and the columns represent how the UL Grant was received (the PDCCH or Random Access Response). *Id.* According to Patent Owner, “this chart is consistent with the handling of Msg3 and new data beginning with Version 8.4 of 3GPP TS 36.321.” *Id.* at 20.

Patent Owner asserts that the ’120 Patent (1) improves the RA Procedure by ensuring appropriate transmissions are carried out by a UE in response to a UL Grant and (2) improves scheduling and HARQ performance by reducing the erroneous transmissions of Msg3. *Id.* According to Patent Owner, erroneous transmissions can cause the system to lock up, which delays and decreases the rate that the UE and eNB exchange data. *Id.*

Patent Owner argues that Petitioner “misrepresents the scope of Version 8.2 of the standard.” *Id.* at 32–34. To support this argument, Patent Owner highlights the relevant text from 3GPP TS 36.321 V8.2.0, below. *Id.* at 32.



Id. (citing Ex. 1003, 18). Patent Owner disagrees with Petitioner that “the above language is the same (in the context of the draft LTE standard as a whole) as the later versions of the standard, which set forth the transmission result where there is data in the Msg3 buffer but where the UL Grant is received on PDCCH—while there is an ongoing RA Procedure.” *Id.* at 32–33. In Patent Owner’s view, “if this had been the case, LGE and others would not have identified the language as a problem, and no solution would have been proposed and adopted into the LTE standard.” *Id.* at 33.

Patent Owner argues that this indeed was not the case. Specifically, Patent Owner views the Version 8.2 as explicitly stating that the UE indicated a valid uplink grant whether it is received on PDCCH or in a random access response. *Id.* at 33–34. That part of the standard is reproduced below with Patent Owner’s highlighting. *Id.* at 34.

5.4.1 UL Grant reception

When the UE has a C-RNTI, Semi-Persistent Scheduling C-RNTI, or Temporary C-RNTI, the UE shall for each TTI:

- if an uplink grant for this TTI has been received on the PDCCH for the UE's C-RNTI or Temporary C-RNTI; or
- if an uplink grant for this TTI has been received in a Random Access Response:
 - indicate a valid uplink grant and the associated HARQ information to the HARQ entity for this TTI.
- else, if an uplink grant for this TTI has been configured:
 - indicate an uplink grant, valid for new transmission, and the associated HARQ information to the HARQ entity for this TTI.

In view of the above passage, Patent Owner argues that the condition of an ongoing random access procedure does not necessarily mean that the UL Grant was received in a random access response. *Id.*

Patent Owner's argument, though, does not fully address Petitioner's obviousness rationale, which relies on the 321 reference as well as other teachings from several other sources. *See* Pet. at 32–37. At this stage, we preliminarily agree with Petitioner that the 321 reference does not state what happens if a UE receives two uplink grants during an ongoing random access procedure. *Id.* at 31. Petitioner asserts that it would have been obvious to transmit Msg3 only when there was Msg3 data to transmit and the UE had received an uplink grant in a random access response. *Id.* at 33.

To be sure, Patent Owner does address Petitioner's obviousness rationale by arguing that it is based on improper hindsight. Prelim. Resp. 34–37. Patent Owner argues that Petitioner's "suggestion that a POSITA would find the solution to the problem of improper transmission of Msg3 data obvious in view of the then-existing draft of the LTE standard is incorrect." *Id.* at 34. Patent Owner argues that "[b]y claiming that there was no problem to be solved and that the draft LTE standard already addressed the potential for erroneous Msg3 data transmission, [Petitioner] essentially argues that the inventors and the LTE Working Groups did not know how the standard

worked.” *Id.* at 36. Patent Owner views Petitioner’s argument as not credible and based on improper hindsight. *Id.* at 36–37.

At this stage, we determine that Petitioner’s obviousness rationale is adequately supported by the preliminary record: The 321 reference states, “If the UE receives both a grant for its RA-RNTI and a grant for its C-RNTI, the UE may choose to continue with either the grant for its RA-RNTI or the grant for its C-RNTI.” Ex. 1003, § 5.4.1, *quoted in* Pet. 32. The 321 reference calls the RA-RNTI grant an uplink grant in a random access response and calls the C-RNTI grant the uplink grant in a PDCCH. *See, e.g., id.* §§ 3.1 (“UE shall monitor the PDCCH after the uplink message containing the C-RNTI MAC”), 4.5.2 (“RA-RNTI for Random Access Response on DL-SCH”), *cited in* Min Decl. ¶ 99. In at least this way, the 321 reference supports Petitioner’s reasoning. *See* Pet. 32.

Petitioner’s obviousness rationale is further supported by the 300 reference. In particular, Petitioner asserts that the 300 reference teaches that, in “the correct and well-known sequence for a random-access procedure,” the UE receives a random access response before it transmits Msg3. *Id.* at 33–34 (citing Min Decl. ¶ 102). Petitioner relies on a figure from Section 10.1.5.1, reproduced below, to show that the UE receives a random access response before it transmits Msg3. *Id.* at 34 (citing Ex. 1002, 48, § 10.1.5.1)

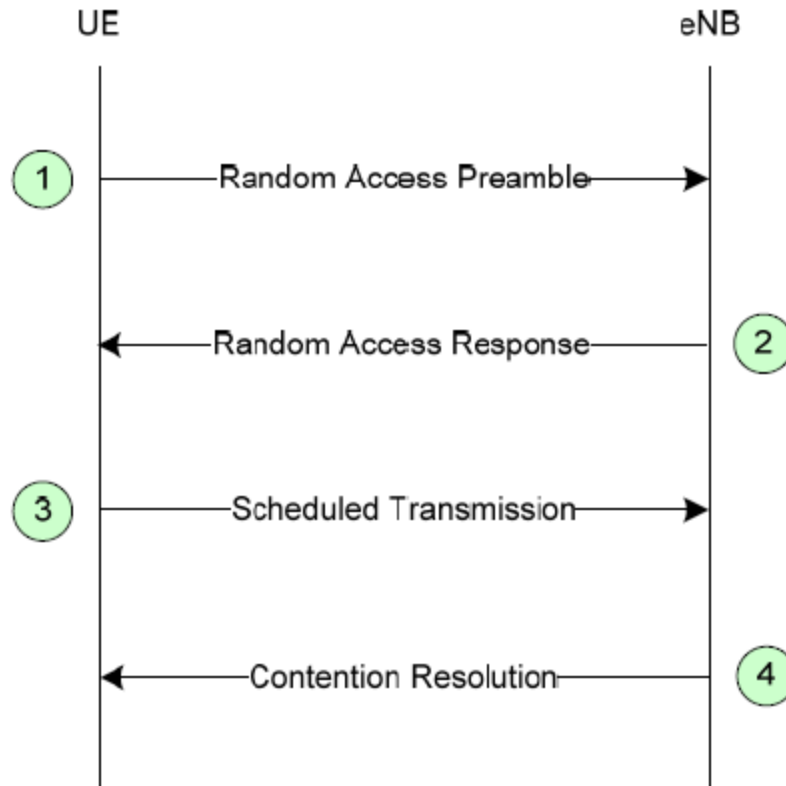


Figure 10.1.5.1-1, above, from the 300 reference, shows the UE and eNB communicating during the four steps of a contention-based random access procedure. Ex. 1002, 48.

In step 2, the figure above shows that the eNodeB sends the random access response to the UE. *Id.* The random access response conveys the initial UL grant. *Id.* at 49. In step 3, the figure above shows that the UE transmits Scheduled Transmission to the eNodeB. *Id.* at 48. According to Petitioner, the diagram above labels Msg3 as “Scheduled Transmission.” Pet. 34. Thus, we preliminarily determine that this diagram and accompanying description in the 300 reference sufficiently supports Petitioner’s assertion that “the eNode B sends the UE a random-access response grant, and the UE responds with a message 3 transmission that depends on the random-access response grant.” *Id.* In this additional way, Petitioner’s obviousness rationale is

adequately supported by the 300 reference, on the preliminary record and for the purpose of institution.

On this record, Petitioner has sufficiently shown that the proposed combination teaches or suggests “the user equipment transmitting to the base station in accordance with the UL Grant received on the specific message, Message 3 (Msg3) buffer data when at least the UL Grant is received on the specific message, the specific message is the random access response message and there is data stored in a Msg3 buffer of the user equipment,” as recited in claim 12.

As for the remaining limitations, we have reviewed the arguments and evidence produced by Petitioner and determined that they are adequately supported for the purposes of institution.

At this stage of the proceeding, we determine that the Petition shows a reasonable likelihood that Petitioner would prevail with respect to claim 12.

2. Remaining Grounds

Because Petitioner has shown a reasonable likelihood of success in showing that claim 12 is unpatentable, we institute on all grounds and all claims challenged in the Petition.

III. CONCLUSION

Petitioner has shown a reasonable likelihood of prevailing as to the unpatentability of at least one of the challenged claims. Thus, we institute an *inter partes* review on all claims challenged in the petition.

IV. ORDER

It is

ORDERED that, under 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 5–9, 11, 12, 16–20, and 22 of the '120 Patent is instituted; and

FURTHER ORDERED that, under 35 U.S.C. § 314(a), *inter partes* review of the '120 Patent is instituted on this Decision's the entry date, and under 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is given of the trial's institution.

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