

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AT&T MOBILITY LLC, AT&T SERVICES INC., ERICSSON INC.,
NOKIA OF AMERICA CORPORATION, AND T-MOBILE USA, INC.,
Petitioner,

v.

DAINGEAN TECHNOLOGIES LTD.,
Patent Owner.

IPR2024-00510
Patent 10,486,976 B2

Before CHRISTOPHER L. OGDEN, JOHN R. KENNY, and
MARY C. HOFFMAN, *Administrative Patent Judges*.

KENNY, *Administrative Patent Judge*.

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

I. INTRODUCTION

AT&T Mobility LLC, AT&T Services Inc., Ericsson Inc., Nokia of America Corporation, and T-Mobile USA, Inc. (collectively, “Petitioner”) filed a Petition to institute an *inter partes* review of claims 2 and 4 (the “challenged claims”) of U.S. Patent No. 10,484,976 B2 (Ex. 1001, the “’976 patent,” “challenged patent”) pursuant to 35 U.S.C. § 311 *et seq.* Paper 2 (“Pet.”). Daingean Technologies Ltd. (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

The Petition, to justify institution of review, must demonstrate a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim. *See* 35 U.S.C. § 314(a) (2018). After considering the Petition, the Preliminary Response, and the evidence of record, we determine that the Petition has not met this standard. Therefore, we decline to institute an *inter partes* review.

A. Related Matters

The parties identify the following related district court litigations:

Daingean Tech. Ltd. v. AT&T Corp. et al., 2:23-cv-00123-JRG (E.D. Tex. Mar. 24, 2023);

Daingean Tech. Ltd. v. T-Mobile USA, Inc., 2:23-cv-00347-JRG (E.D. Tex. July 24, 2023); and

AT&T Inc. et al., v. Daingean Technologies, Ltd., IPR2024-00402 (PTAB).

Pet. 1; Paper 4, 2.

B. Challenged Patent

The ’976 patent “relates generally to communication systems.” Ex. 1001, 1:18–19. “More specifically, the [patent] relates to new signaling, procedures, user equipment (UE) and base stations for uplink ultra-reliable low latency communications (URLLC).” *Id.* at 1:19–22.

The '976 patent describes “[f]ifth generation (5G) cellular communications.” Ex. 1001, 7:8–10. 5G uses “time/frequency/space resources to allow for enhanced mobile broad band (eMBB) communication and ultra-reliable low latency communication (URLLC) services, as well as massive machine type communication (mMTC) like services.” *Id.* at 7:10–14.

The '976 patent further describes a gNB¹ “configur[ing] a periodicity (e.g., a time resource) by using the RRC [radio resource control] signal.” *See, e.g., id.* 10:54–61. “[T]he granularity of the periodicity for SR [scheduling request] resource (i.e., SR transmission) may be configured as sub frame level, slot level, mini-slot level, and/or symbol level.” *Id.* at 16:67–17:2. Likewise, the base station may similarly configure “numerology (Sub Carrier Spacing (SCS), e.g. 15 kHz, 30 kHz and/or 60 kHz)” via RRC. *Id.* at 18:22–28.

The '976 patent further discloses that the UE may issue a SR to “request[] UL-SCH (Uplink-Shared Channel) resources for new transmission and/or retransmission,” i.e., “UL resources for transmitting UL data.” Ex. 1001, 8:22–26. In response, the base station may send the UE a Downlink Control Information (“DCI”) or URLLC-DCI format for scheduling and activation of transmission on a physical uplink shared channel (“PUSCH”) with numerology and periodicity the base station previously configured. *Id.* at 8:30–35; 8:47–57.

The '976 patent further discloses scrambling cyclic redundancy check parity bits: “[f]or example, DCI format to which CRC (Cyclic Redundancy

¹ “A gNB may also be more generally referred to as a base station device.” Ex. 1001, 7:20–21.

Check) parity bits scrambled by SPS [semi-persistent scheduling²] C-RNTI (Cell-Radio Network Temporary Identifier) are attached may be used for activating and/or deactivating UL data transmission (e.g., activating and/or deactivating (releasing) PUSCH resource for UL data transmission).”).

Ex. 1001, 8:35–41. The ’976 Patent describes the use of C-RNTIs, SPS C-RNTIs, and URLLC C-RNTIs. *Id.* at 8:35–46, 11:8–10.

The ’976 patent further discloses that its “UE 102 may monitor (attempt to decode) PDCCH [physical downlink control channel] in a common search space and/or a UE-specific search space.” Ex. 1001, 8:61–63. “[T]he UE 102 may transmit HARQ-ACK10 [Hybrid Automatic Repeat Request-acknowledgment] (also referred to as confirmation information) based on a detection of the PDCCH indicating activation and/or deactivation (release) of the . . . UL transmission.” *Id.* at 14:52–55.

C. Challenged Claims

Petitioner challenges claims 2 and 4, which are both independent.

Claim 2 reads:

2. [2pre]³A base station apparatus that communicates with a user equipment (UE), comprising:

[2a] transmitting circuitry configured to transmit a radio resource control (RRC) message comprising first information used for configuring a periodicity;

[2b] the transmitting circuitry configured to transmit a RRC message comprising second information used for configuring a numerology;

² Ex. 1001, 10:42–43.

³ For ease of reference, we include the Petition’s bracketed designations provided for the preamble recitations and limitations of claims 2 and 4. Pet. vi–viii.

[2c] the transmitting circuitry configured to transmit in a common search space of a physical downlink control channel, a downlink control information (DCI) format with cyclic redundancy check (CRC) scrambled by a first radio network identifier (RNTI), the first RNTI being different from a Cell-RNTI (C-RNTI) and a semi-persistent scheduling C-RNTI, the first RNTI being used for indicating an activation and a deactivation for an uplink data transmission on a physical uplink shared channel (PUSCH) based on the periodicity and the numerology; and

[2d] receiving circuitry configured to receive confirmation information Medium Access Control (MAC) Control Element (CE) in a case that third information used for indicating the activation for the uplink data transmission on the PUSCH is comprised in the DCI format with the CRC scrambled by the first RNTI;

[2e] the receiving circuitry configured to receive, based on a transmission of the DCI format comprising the third information, the uplink data transmission on the PUSCH based on the periodicity and the numerology,

wherein [2f] the receiving circuitry is configured to receive confirmation information MAC CE in a case that fourth information used for indicating the deactivation for the uplink data transmission on the PUSCH is comprised in the DCI format with the CRC scrambled by the first RNTI, and

[2g] the confirmation information MAC CE for the DCI format comprising the third information is identified by a MAC protocol data unit (MAC PDU) subheader with a logical channel identifier (LCID), [2h] the confirmation information MAC CE for the DCI format comprising the fourth information is identified by the MAC PDU subheader with the LCID, and

[2i] the same index of the LCID is used for the confirmation information MAC CE for the DCI format comprising the third information and the confirmation information MAC CE for the DCI format comprising the fourth information.

Claim 4 reads:

[4pre] A communication method of a base station apparatus that communicates with a user equipment (UE), comprising:

[4a] transmitting a radio resource control (RRC) message comprising first information used for configuring a periodicity;

[4b] transmitting a RRC message comprising second information used for configuring a numerology;

[4c] transmitting in a common search space of a physical downlink control channel, a downlink control information (DCI) format with cyclic redundancy check (CRC) scrambled by a first radio network identifier (RNTI), the first RNTI being different from a Cell-RNTI (C-RNTI) and a semi-persistent scheduling C-RNTI, the first RNTI being used for indicating an activation and a deactivation for the uplink data transmission on a physical uplink shared channel (PUSCH) based on the periodicity and the numerology;

[4d] receiving confirmation information Medium Access Control (MAC) Control Element (CE) in a case that third information used for indicating the activation for the uplink data transmission on the PUSCH is comprised in the DCI format with the CRC scrambled by the first RNTI;

[4e] receiving, based on a transmission of the DCI format comprising the third information, the uplink data transmission on the PUSCH based on the periodicity and the numerology;

[4f] receiving confirmation information MAC CE in a case that fourth information used for indicating the deactivation for the uplink data transmission on the PUSCH is comprised in the DCI format with the CRC scrambled by the first RNTI, wherein

[4g] the confirmation information MAC CE for the DCI format comprising the third information is identified by a MAC protocol data unit (MAC PDU) subheader with a logical channel identifier (LCID),

[4h] the confirmation information MAC CE for the DCI format comprising the fourth information is identified by the MAC PDU subheader with the LCID, and

[4i] the same index of the LCID is used for the confirmation information MAC CE for the DCI format comprising the third information and the confirmation information MAC CE for the DCI format comprising the fourth information.

Ex. 1001, 39:13–60, 40:38–41:14; *see also* Pet. vi–viii.

D. Asserted Challenges to Patentability and Prior Art

Petitioner challenges claims 2 and 4 based on the grounds in the table below:

Ground	Claim(s) Challenged	35 U.S.C. § ⁴	Reference(s)
1	2, 4	103	Babaei, ⁵ Fwu ⁶
2	2, 4	103	Babaei, Fwu, Lee ⁷
3	2, 4	103	Babaei, Fwu, Agiwal ⁸

Pet. 5.

Petitioner submits a declaration with proffered expert testimony from Dr. Mark Mahon (Ex. 1004). Patent Owner submits proffered expert testimony from Dr. Karthikeyan Sundaresan (Ex. 2002).

II. LEVEL OF SKILL AND CLAIM CONSTRUCTION

A. Level of Skill in the Art

Factors pertinent to determining the level of ordinary skill in the art include (1) the educational level of the inventor; (2) the type of problems encountered in the art; (3) prior-art solutions to those problems; (4) the

⁴ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103, effective March 16, 2013. Because the applications to which the ’976 patent makes claims of priority were filed after that date, we refer to the AIA version of § 103.

Ex. 1001, codes (60) and (63).

⁵ US 10,959,218 B2 (Ex. 1006).

⁶ WO 2016/130175 A1 (Ex. 1008).

⁷ US 10,869,331 B2 (Ex. 1011).

⁸ US 2018/0035332 A1 (Ex. 1009).

rapidity with which innovations are made; (5) the sophistication of the technology; and (6) the educational level of workers active in the field. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–97 (Fed. Cir. 1983). Not all factors may exist in every case, and one or more of these or other factors may predominate in a particular case. *Id.* These factors are not exhaustive, but merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). Moreover, the prior art itself may reflect an appropriate skill level. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Petitioner asserts that an ordinarily skilled artisan would have had a B.S. in Electrical Engineering or a related field with at least three years of experience designing, developing, and/or testing telecommunication systems. Pet. 5 (citing Ex. 1004 ¶¶ 34–39). Petitioner further asserts that an ordinarily skilled artisan would also have had familiarity with the wireless standards and protocols related to data transmission and network management. *Id.* (citing Ex. 1004 ¶¶ 37–38). Further, Petitioner argues that additional education may supplement practical experience and vice versa. *Id.* (citing Ex. 1004 ¶¶ 37–38).

Patent Owner generally concurs with Petitioner’s description, but proposes that an ordinarily skilled artisan would only have needed two years of experience, and argues that the appropriate field is communication systems, specifically new signaling, procedures, user equipment (UE) and base stations for uplink ultrareliable low latency communications (URLLC).” Prelim. Resp. 29–30 (citing Ex. 1001, 1:18–22). “Patent Owner does not believe any difference between Patent Owner’s view and Petitioners’ affects the unpatentability analysis.” *Id.* at 30.

We agree with Patent Owner that the difference between Petitioner’s and Patent Owner’s formulations would not affect our analysis of patentability. We adopt Petitioner’s formulation.

B. Claim Construction

Neither party requests that we expressly construe any claim term. Pet. 4–5; Prelim. Resp. 30. For purposes of this Decision, however, we find it necessary to construe the phrase “the first RNTI being different from . . . a semi-persistent scheduling C-RNTI,” which is recited in limitation 2c of claim 2 and limitation 4c of claim 4 (“first RNTI phrase”). Ex. 1001, 39:25–27, 40:49–50. Further, we find it necessary to partially construe the terms “third information” and “fourth information,” which are recited in limitations 2d–2i of claim 2 and limitations 4d–4i of claim 4. *Id.* at 39:32–60, 40:55–41:14.

1. First RNTI Phrase

Neither party provides an express construction for the first RNTI phrase. The parties, however, offer implicit constructions. Petitioner implicitly construes this phrase as merely requiring that the first RNTI be different from any semi-persistent scheduling C-RNTI, so the recited first RNTI could be a semi-persistent scheduling C-RNTI as long as it has some difference from another semi-persistent scheduling C-RNTI. Pet. 36 (“The SPS RNTI for the first SPS configuration (voice) is therefore ‘different from’ the SPS RNTI for the second SPS configuration (V2X) as required by limitation 2c of the Challenged Claims.”). Patent Owner implicitly construes the first RNTI phrase as excluding semi-persistent scheduling C-RNTIs. Prelim. Resp. 31 (“Babaei contemplates the use of two semi-persistent scheduling C-RNTIs, so neither is ‘different from . . . a semi-persistent scheduling C-RNTI.’” (emphasis omitted)).

The specification of the '976 patent ("Specification") does not expressly define the first RNTI phrase, but it provides some support for Patent Owner's implicit construction. *See, e.g.*, Ex. 1001, 8:41–46 ("URLLC C-RNTI (i.e., different RNTI from SPS C-RNTI)"). The prosecution history for the '976 patent does not provide evidence regarding how the first RNTI phrase should be construed. *See* Ex. 1002. Ordinary usage, however, favors Patent Owner's implicit construction. For example, the term "object" in the phrase "an object different from a ball" would generally exclude a ball. As an illustration, in ordinary usage, a tennis ball would generally not be considered to be an object different from a ball merely because baseballs also exist. Similarly, a red ball would not be considered to be different from a ball merely because green balls exist. Instead, in ordinary usage, an object different from a ball would be limited to objects that are not balls, such as a tennis racket and a baseball bat. Further, Petitioner has not given us any reason to adopt its proposed implicit construction even though it could have anticipated that its implicit claim construction would be at issue based on Patent Owner's reasonably expected arguments. Pet. 4–5, 32–37; *see also id.* at 36 ("If Patent Owner argues that the SPS RNTIs of Babaei are semi-persistent scheduling C-RNTIs, Babaei still satisfies the requirement that the 'first RNTI' be 'different from ... a semi-persistent scheduling C-RNTI' ...").

After reviewing the record, we construe the first RNTI phrase as requiring that the recited first RNTI is not a semi-persistent scheduling C-RNTI.

2. Third Information and Fourth Information

Petitioner has not addressed the potential construction of the terms third information and fourth information. *See generally*, Pet. Patent Owner

argues that the ordinals “third” and “fourth” in those terms means that the third information and the fourth information must be distinct. Prelim. Resp. 55.

In general, the use of ordinals, such as third and fourth, in patent claims are used to distinguish or identify various members of a group. *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1373 (Fed. Cir. 2005); *see also 3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365, 1371 (Fed. Cir. 2003) (“use of the terms ‘first’ and ‘second’ is common patent-law convention to distinguish between repeated instances of an element”). No party has cited any intrinsic or extrinsic evidence that suggests that the Specification, the claims, or the prosecution history uses the terms “third” and “fourth” in a manner contrary to the conventional use of ordinals in patent claims. Therefore, in accordance with the common patent-law convention, we construe the recited third information and the recited fourth information to be distinct (i.e., the third information is distinct from the fourth information, and vice versa).

III. ANALYSIS OF ASSERTED GROUNDS

A. Asserted Prior Art References

1. Babaei (Ex. 1006)

Babaei is titled “Semi-Persistent Scheduling Confirmation.” Ex. 1006, code (54). Babaei discloses that “[a] wireless device may receive configuration parameters for a plurality of periodic resource allocations.” *Id.* at code (57). “A downlink control information (DCI) may be received indicating activation or deactivation of a periodic resource allocation in the plurality of periodic resource allocations.” *Id.* Further, “[i]n response to receiving the DCI, a medium access control (MAC) protocol data unit (PDU) may be transmitted.” *Id.* “The MAC PDU may comprise a MAC subheader

and the confirmation MAC CE.” *Id.* “The MAC subheader may comprise a logical channel identifier indicating that the MAC PDU comprises a confirmation MAC control element (MAC CE).” *Id.* “The confirmation MAC CE may comprise a field indicating which one of the plurality of periodic resource allocations the DCI indicates activation or deactivation.” *Id.*

Figure 18 of Babaei is shown below:

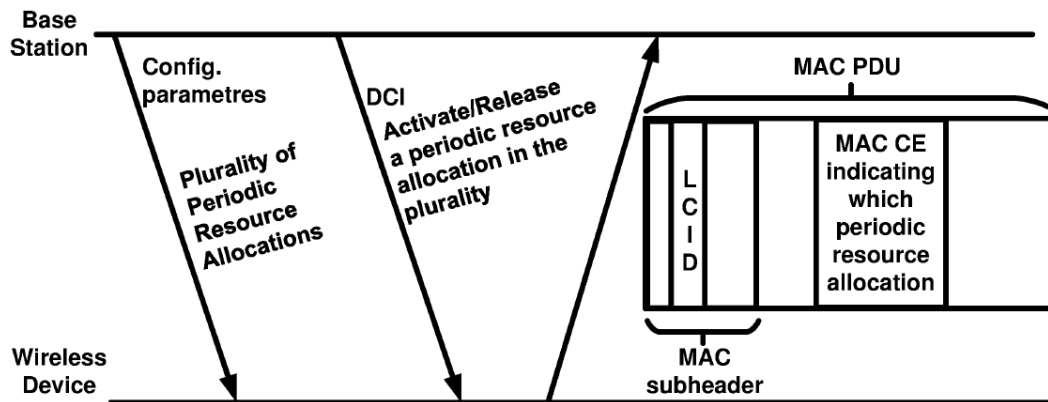


FIG. 18

Figure 18 is an example periodic resource allocation confirmation procedure.
Ex. 1006, 2:1–3.

2. *Fwu (Ex. 1008)*

Fwu relates to radio access networks and a unified communication framework using Radio Access Technologies (RAT) in 5th generation (5G) cellular networks. Ex. 1008 ¶ 2. Figure 3 of Fwu is shown below:

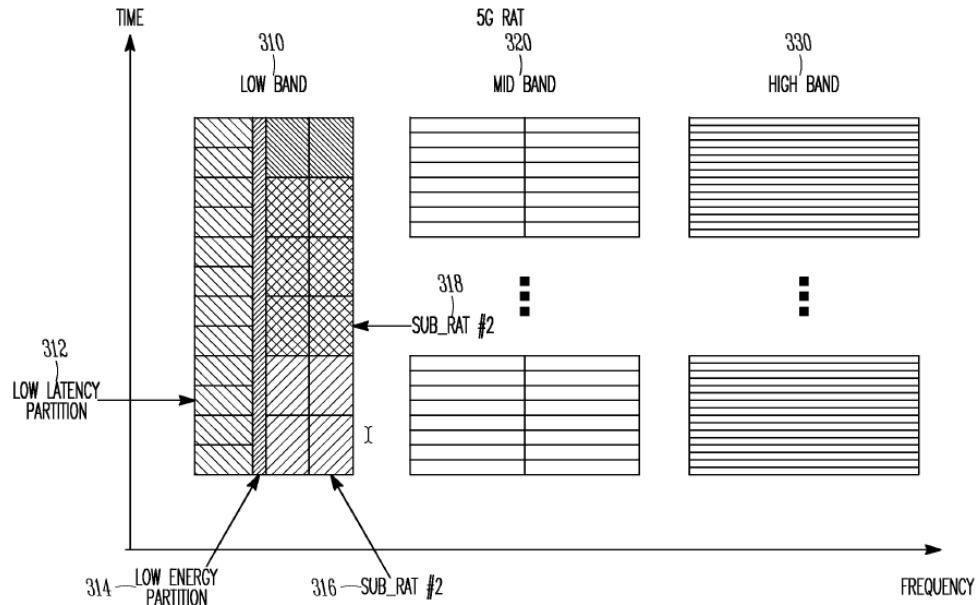


Figure 3 above illustrates an embodiment of a flexible radio access technology (FRAT) of a 5G system. Ex. 1008 ¶ 8.

3. *Lee (Ex. 1011)*

Lee “relates to wireless communication and, most particularly, to a method for transmitting downlink control information for sidelink scheduling in a wireless communication system and a terminal using the same.”

Ex. 1011, 1:26–29. Lee describes device to device communications (DTD).

Id. at 1:50–59. Lee further describes that “D2D communication may be expanded and applied to signal transmission and/or reception between vehicles. Most particularly, vehicle-related communication is referred to as

vehicle-to-everything (V2X) communication.” *Id.* at 2:6–10. Lee further discloses that:

wireless communication system may transmit signals by using semi-persistent scheduling (SPS). Herein, semi-persistent scheduling (SPS) corresponds to a scheduling method that first determines in advance a cycle period for transmitting a signal through a higher layer signal and then transmits a signal by using a modulation and coding scheme (MCS), a resource, and so on, which are indicated by a control channel according to the pre-determined cycle period, while directing (or instructing) activation of SPS through the control channel when announcing (or notifying) a specific resource. The signal transmission according to the above-described SPS may also be used in the V2X communication.

Id. at 2:14–27.

Figure 8 of Lee is shown below:

FIG. 8

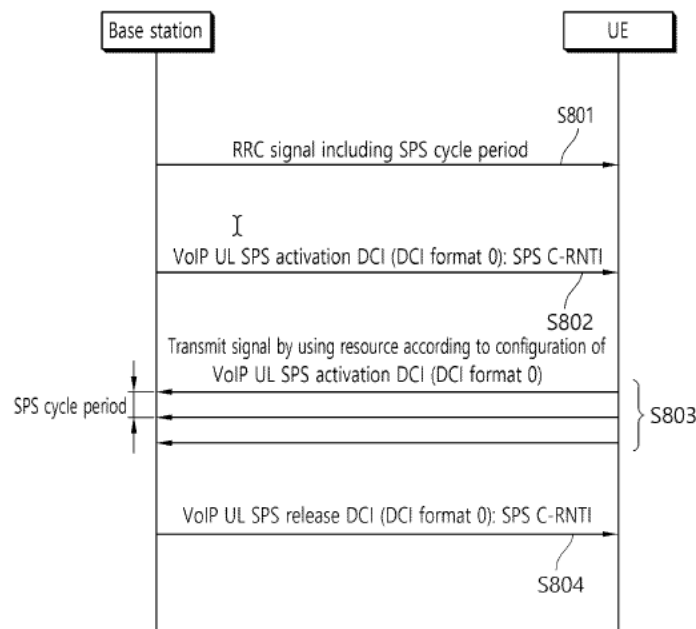


Figure 8 above “shows an example of an existing uplink SPS process.”
Ex. 1011, 3:38–39.

Figure 9 of Lee is shown below.

FIG. 9

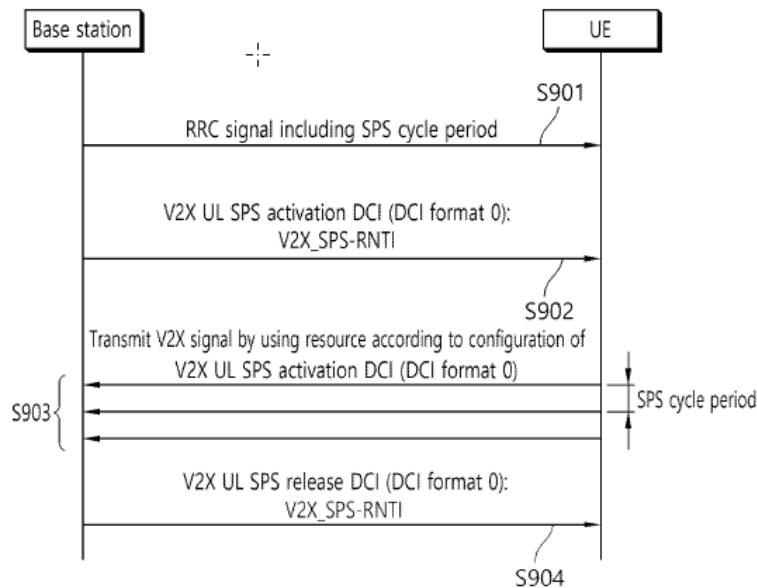


Figure 9 above “shows an example of a case where an uplink SPS process is applied to the V2X.” Ex. 1011, 3:40–41.

4. Agiwal (Ex. 1009)

Agiwal “relates to a method and an apparatus for handling collisions in next generation communication system.” Ex. 1009 ¶ 2. “More particularly,” Agiwal “relates to a method and an apparatus for channel quality measurement and terminal signal transmission based on coexistence between

different systems based on cellular communication using licensed shared bands.” *Id.* Figure 4 of Agiwal is below.

FIG. 4

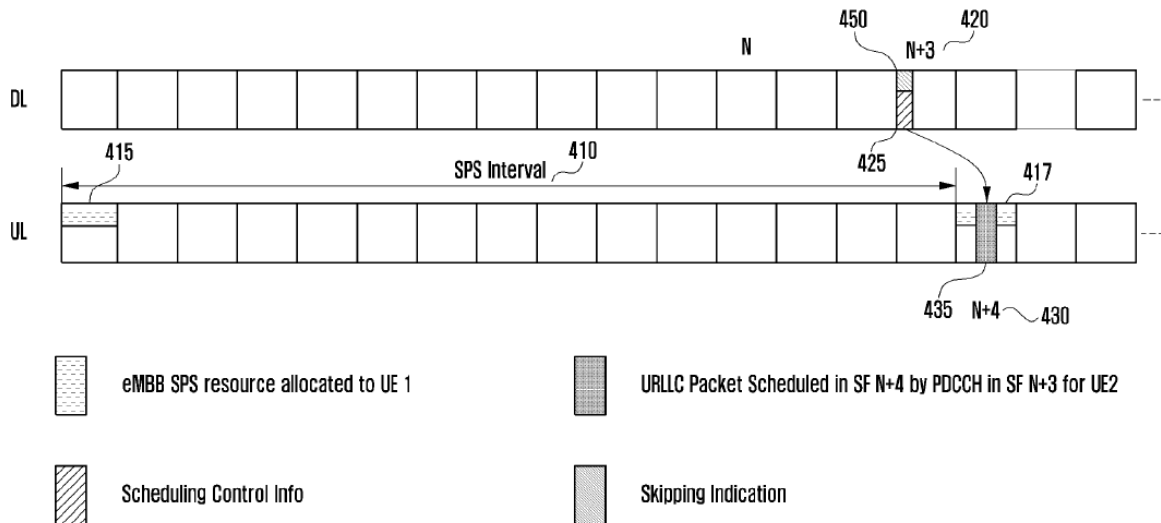


Figure 4 above illustrates an operation of handling a collision. *Id.* ¶ 26. In Figure 4, a UE (user equipment) can be allocated SPS resource 415, 417. *Id.* ¶ 74. The URLLC packet resources 417 allocated to another UE (for example, the UE3) 230 using dynamic scheduling may collide with SPS resource 417. *Id.* In this case, if URLLC packet 435 scheduled in time slot (e.g., a subframe) 'X' (for example, N+4 subframe) 430 overlaps with one or more SPS resource 417 then, the gNB/BS 210 transmits (broadcast or dedicated manner) an indication (for example, skipping indication) 450 to the UE1 220 in time slot 'X-P' (P>0) (for example, N+3 subframe) 420 to skip UL transmission in URLLC symbol(s) in time slot 'X' 430 OR drop UL packet transmission in time slot 'X' 430. *Id.* ¶ 75.

B. Ground 1: Asserted Obviousness over Babaei and Fwu

Petitioner asserts that claims 2 and 4 would have been obvious over the combination of Babaei and Fwu. Pet. 6.

As discussed in Section II.B.1 above, limitation 2c of claim 2 and limitation 4c in claim 4 recite the first RNTI phrase, which we have construed as requiring that the first RNTI is not a semi-persistent C-RNTI. Ex. 1001, 39:25–27, 40:49–50.

Petitioner maps the recited first RNTI to SPS RNTIs in Babaei:

The Challenged Claims require the “first RNTI” used to scramble the CRC of the DCI format to be “different from ... a semi-persistent scheduling RNTI.” EX1001 at limitation 2c. Much of Babaei’s disclosure focuses on different ways to configure *more than one SPS* for a UE, and one of Babaei’s solutions is to use multiple *different RNTIs for each SPS configuration*. EX1006 at 16:64-17:8, EX1004 at ¶ 124. In that example, *an RNTI for a first SPS configuration (VOIP) is the first SPS RNTI and the RNTI for a second SPS configuration (V2X) is the second SPS RNTI*. *Id.* If the disclosed SPS RNTIs of Babaei are “different from” a semipersistent scheduling C-RNTI, the disclosed SPS RNTIs satisfy the claims. Ex. 1004 at ¶ 125.

Pet. 35 (emphases added).

Petitioner recognized that Patent Owner might argue that the SPS RNTIs of Babaei are semi-persistent scheduling C-RNTIs. Pet. 36 (“If Patent Owner argues that the SPS RNTIs of Babaei are semi-persistent scheduling C-RNTIs”). Petitioner, however, made no attempt to prove and, in fact, does not argue that the SPS RNTIs of Babaei are not semi-persistent scheduling C-RNTIs. *Id.* Instead, Petitioner relies on its implicit construction for the first RNTI phrase and asserts that, because there are differences between Babaei’s SPS RNTIs, they satisfy the first RNTI phrase (even if both SPS RNTIs are semi-persistent scheduling C-RNTIs). *Id.* As discussed in Section II.B.1

above, we did not adopt that implicit construction. Instead, we construed the first RNTI phrase to require that the first RNTI is not a semi-persistent scheduling C-RNTI, and Petitioner has not shown that what it maps the recited first RNTI to is not a semi-persistent scheduling C-RNTI. *See* Section II.B.1 above. Thus, we determine that Petitioner has not made a sufficient showing for the first RNTI recitation. Accordingly, Petitioner has not demonstrated a reasonable likelihood of proving that claims 2 or 4 would have been obvious over the combination of Babaei and Fwu.

C. Ground 2: Asserted Obviousness over Babaei, Fwu, and Lee

Petitioner asserts that claims 2 and 4 would have been obvious over the combination of Babaei, Fwu, and Lee. Pet. 6.

As mentioned, limitation 2c in claim 2 and limitation 4c in claim 4 recite the first RNTI phrase, which we have construed as requiring that the first RNTI is not a semi-persistent C-RNTI. *See* Section II.B.1 above; Ex. 1001, 39:25–27, 40:49–50.

Petitioner maps the recited first RNTI to Lee’s V2X (vehicle-to-everything)-SPS-RNTI. Pet. 54 (citing Ex. 1004 ¶ 166); Ex. 1011, 2:8–10. Petitioner argues that Lee describes the scrambling of the CRC of the activation and release DCI formats by the V2X-SPS-RNTI, which is differentiated from what Lee terms an “above-described first RNTI.” *Id.* (citing Ex. 1011, 14:22–27; Ex. 1004 ¶ 165). Petitioner contends that the “first RNTI” described in Lee is the SPS-C-RNTI used for VoIP UL SPS. *Id.* (citing Ex. 1011, 13:62–67, Fig. 8; Ex. 1004 ¶ 165). Petitioner argues that both of Lee’s SPS-C-RNTI and V2X-SPS-RNTI are different from the C-RNTI used for dynamic scheduling. *Id.* Petitioner contends that, therefore, Lee discloses an RNTI, the V2X-SPS-RNTI, that is different both from a

SPS-RNTI and a C-RNTI. *Id.* (citing Ex. 1011, 10:35–40; Ex. 1006, 13:7–49; Ex. 1004 ¶ 166).

Petitioner, however, does not address whether the V2X-SPS-RNTI is a semi-persistent scheduling (SPS) C-RNTI. Pet. 53–56. As mentioned, in the Petition, Petitioner interprets the phrase “different from . . . a semi-persistent scheduling C-RNTI” to encompass SPS-C-RNTIs that differ from one another. So Petitioner’s statement that the V2X-SPS-RNTI is different both from a SPS-RNTI and a C-RNTI would not necessarily exclude the V2X-SPS-RNTI from being a SPS-RNTI, a C-RNTI, or a SPS-C-RNTI. Patent Owner, in fact, presents an analysis to show that the V2X-SPS-RNTI is a SPS-C-RNTI. Prelim. Resp. 47–49. And Patent Owner’s analysis is the only analysis on that issue in the record. *Id.*

When Petitioner filed the Petition, Petitioner was aware that Patent Owner likely would raise the issue of whether a SPS-C-RNTI could be the first RNTI because Petitioner expressly addressed that issue for Ground 1. Pet. 36. Therefore, Petitioner should have also addressed the issue for Ground 2.

Further, even if Petitioner’s argument relied on interpreting the first RNTI phrase in accordance with our construction, it is not clear from this record, nor has Petitioner shown, that a V2X-SPS-RNTI being different from a SPS-RNTI and a C-RNTI would mean that it is different from a SPS-C-RNTI. Petitioner’s own statement indicates that a V2X-SPS-RNTI can be different from a SPS-RNTI. Pet. 54. And limitations 2c and 4c indicate that a SPS-C-RNTI is different from a C-RNTI. Otherwise, the limitations’ recitations of the first RNTI being different from a C-RNTI and a SPS-C-RNTI would have the same meaning as different from a C-RNTI, which would mean that the limitations’ recitations of different from a SPS-C-RNTI

would be superfluous, which is not a favored construction for claim language. Ex. 1001, 39:25–27, 40:49–50; *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”); *Elekta Instrument S.A. v. O.U.R. Sci. Int’l, Inc.*, 214 F.3d 1302, 1307 (Fed. Cir. 2000) (construing claim to avoid rendering the 30 degree claim limitation superfluous); *Gen. Am. Transp. Corp. v. Cryo–Trans, Inc.*, 93 F.3d 766, 770 (Fed. Cir. 1996) (rejecting the district court’s claim construction because it rendered superfluous the claim requirement for openings adjacent to the end walls). Therefore, that V2X-SPS-RNTI is different from a SPS-RNTI and a C-RNTI would not necessarily mean that it is different from a SPS-C-RNTI.

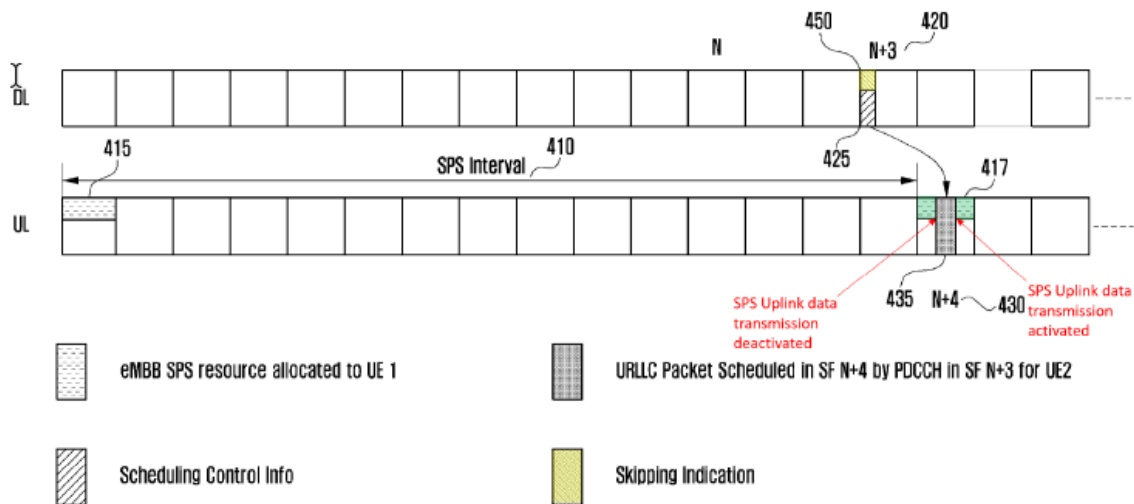
In sum, Petitioner should have demonstrated that the V2X-SPS-RNTI is not a SPS C-RNTI. Because Petitioner has not made this showing, Petitioner has not made a sufficient showing for the first RNTI recitation. Therefore, we determine that Petitioner has not demonstrated a reasonable likelihood of proving that claims 2 and 4 would have been obvious over the combination of Babaei, Fwu, and Lee.

D. Ground 3: Asserted Obviousness over Babaei, Fwu, and Agiwal

Petitioner argues that claims 2 and 4 would have been obvious over the combination of Babaei, Fwu, and Agiwal. Pet. 6.

As mentioned, claims 2 and 4 each recite “third information” and “fourth information.” Petitioner does not identify what it is mapping the recited third information and fourth information to in the combination of Babaei, Fwu, and Agiwal. Pet. 60–61. Patent Owner suggests that Petitioner is mapping the third and fourth information to Agiwal’s skipping indication, which both activates and deactivates uplink data transmission. Prelim.

Resp. 55–56. When addressing limitation 2c,⁹ in fact, Petitioner indicates that Agiwal’s skipping indication activates and deactivates a SPS uplink data transmission. Pet. 60. Petitioner provides the following annotated copy of Figure 4 of Agiwal:



Pet. 60. The above annotated drawing shows “the skipping indication [450] in Agiwal both activates and deactivates the period uplink transmission configured for the SRS UE.” *Id.*; Ex. 1004 ¶ 83. If Petitioner is mapping both the recited third information and fourth information to the skipping indication, that mapping would not satisfy our partial construction for the recited third information and fourth information because, with that mapping, the third information and the fourth information would not be distinct. On the other hand, if Petitioner has a different mapping, Petitioner has not clearly set forth that mapping. Under both scenarios, Petitioner has not made a sufficient showing for the first RNTI recitation. Accordingly, Petitioner has not demonstrated a reasonable likelihood of providing that claims 2 and 4 would have been obvious over Babaei, Fwu, and Agiwal.

⁹ Limitation 2c itself does not recite “third information” or “fourth information.” Ex. 1001, 39:21–31.

IV. CONCLUSION

After considering the Petition, the Preliminary Response, and the evidence of record, and for the reasons discussed above, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in proving the unpatentability of at least one claim challenged in the Petition. Hence, we deny the Petition and do not institute an *inter partes* review.

V. ORDER

It is

ORDERED that the Petition is denied and no trial is instituted.

IPR2024-00510
Patent 10,484,976 B2

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