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BEFORE THE PATENT TRIAL AND APPEAL BOARD

TCL Communication Technology Holdings Limited
TCT Mobile International Limited
TCT Mobile, Inc.
TCT Mobile (US) Inc.
TCT Mobile (US) Holdings Inc.,

Petitioner

v.

Mitsubishi Electric Corporation

Patent Owner

Case No. IPR2023-00957
Patent No. 9,635,656

PETITIONER'S REPLY UNDER 37 C.F.R. §42.23

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TABLE OF AUTHORITIES

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PETITIONER'S EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 9,635,656 (“the ’656 Patent”)
1002	Excerpts of Prosecution history of U.S. Patent No. 9,635,656 (“Prosecution History”)
1003	Declaration of Mark R. Lanning
1004	C.V. of Mark R. Lanning
1005	MELCO Complaint for Case No.: 8:22-cv-1073-CJC-DFM.
1006	Stipulation Not to Assert the Same Grounds in parallel District Court Litigation
1007	Joint Claim Construction and Prehearing Statement, Case No.: 8:22-cv-1073-CJC-DFM.
1008	Plaintiffs Opening Claim Construction Brief, Case No.: 8:22-cv-1073-CJC-DFM.
1009	Defendants’ Opening Claim Construction Brief, Case No.: 8:22-cv-1073-CJC-DFM.
1010	Certified English Translation of Japanese Patent Application JP 2006-33778 (“UMESH”)
1011	3GPP TS 25.309 V6.6.0 (2006-03). FDD Enhanced Uplink; Overall description; Stage 2 (Release 6).
1012	R1-060583. A 3GPP Standard Contribution to TSG-RAN WG1 #44, Denver, CO, USA, February 13-17, 2006 (“R1-060583”).
1013	About the 3GPP webpages saved on 4/25/2021.
1014	3GPP Working Procedures webpages saved on 4/25/2021.
1015	3GPP Delegates Corner webpages saved on 4/25/2021.
1016	3GPP FAQs webpages saved on 4/25/2021.
1017	3GPP TDoc List showing Ex. 1014 LISTSERV - 3GPP_TSG_RAN_WG1 Archives - LIST.ETSI.ORG.
1018	Directory Listing showing Ex. 1012 /ftp/tsg_ran/WG1_RL1/TSGR1_44/Docs.

Exhibit No.	Description
1019	Exhibit B to Plaintiff's Preliminary Infringement Contention
1020	3GPP TS 25.214-670 (2005-09). Physical layer procedures (FDD) (Release 6) ("TS 25.214")
1021	3GPP TS 25.321-660 (2005-09). Medium Access Control (MAC) protocol specification (Release 6) ("TS 25.321").
1022	Approved Report of 3GPP TSG RAN WG1 #44 meeting (R1-061099)
1023	M. Miyake, "A Survey on Progress and Standardization Trends in Wireless Communications", <i>Journal of Communications</i> , vol. 4, no. 7, August 2009.
1024	Japanese version - Japanese Patent Application JP 2006-33778 ("UMESH")
1025	Declaration of Mark R. Lanning ISO Petitioner's Reply Brief
1026	HSDPA_HSUPA For UMTS by Holma in 2006
1027	TR 25.896 V6.0.0 (2004-03) – UMESH NP Lit 1

Petitioners filed a Petition for *Inter Partes* Review of U.S. Patent No. 9,635,656 (the "'656 patent") on June 2, 2023 (Paper No. 2 ("Petition").) The Board instituted the Petition. (Paper No. 7 ("ID").) Patent Owner ("PO"), Mitsubishi Electric Corporation ("MELCO"), submitted a Response on February 5 28, 2024 (Paper No. 11 ("Response").) Through the undersigned Counsel, Petitioner, submits the following Petitioner Rely ("Reply") pursuant to 37 C.F.R. §42.23.

I. INTRODUCTION

Petitioner TCL Communication Technology Holdings Limited, TCT Mobile 10 International Limited, TCT Mobile, Inc., TCT Mobile (US) Inc., TCT Mobile (US) Holdings Inc. (collectively "Petitioner" or "TCL") respectfully submits this Petitioner Reply to the Patent Owner Response dated February 28, 2024 (Paper No. 11) (the "Response") to claim 3 (the "Challenged Claim") of U.S. Patent No. 9,635,656 (the "'656 Patent") submitted by Patent Owner Mitsubishi Electric 15 Corporation ("PO" or "Patent Owner").

All Grounds in the Petition, including Grounds 1 and 2 in which the Initial Determination ("ID") found there was not a reasonable likelihood that Petitioner would prevail, show that the asserted prior art disclosed or suggested the "scheduling request signal" as recited in claim 3 of the '656 Patent. According to 20 claim 3, the "scheduling requests signal" transmitted in the first control process

when the mobile terminal has not been allocated a data transmission radio resource is the same “scheduling request signal” that stops transmission of the “quality notification signal” in the second control process when its transmission coincides with the “quality notification signal.” UMESH teaches the same “scheduling request signal” that stops transmission of the “quality notification signal” in the second control process when its transmission coincides with the “quality notification signal.” Further, the combination of UMESH and R1-060583 teach the same “scheduling request signal” as well.

Moreover, contrary to PO's suggestion, the UMESH reference discloses conditioning stopping of the transmission of a quality notification signal “When a transmission of said quality notification signal coincides with that of said scheduling request signal in said transmitter” as recited in claim 3 of the '656 Patent. The UMESH reference does not teach a controller separate and independent from the mobile terminal.

Finally, as explained herein, Grounds 1 and 2 disclose the “first control process” and the “scheduling request signal” of claim 3 for the reasons described below as well as in the Petition.

The challenged claim is obvious in view of the prior art cited by Petitioners.

II. APPLICABLE LEGAL PRINCIPLES

Petitioners discussed the applicable legal principles in their Petition and discuss relevant case law below. Therefore, Petitioners will not readdress them here.

5 III. CLAIM CONSTRUCTION

The Board has construed the following terms in the following manners:

<u>Term</u>	<u>Petitioner's Position</u>	<u>Patent Owner's Position</u>	<u>Board construction</u>
"Quality Notification Signal"	"Channel Quality Indication (CQI) signal"	No construction necessary	No construction necessary
"when a transmission of said quality notification signal coincides with that of said scheduling request signal in said transmitter"	"when said [quality notification signal] is transmitted by the same transmitter simultaneously with the transmission of the scheduling request signal"	No construction necessary	"when a transmission of said quality notification signal is scheduled to transmit or is transmitting at the same time as that of said scheduling request signal in said transmitter"
"stopping transmitting said quality notification signal during a time interval during which said transmitter"	"stopping the transmission of said [quality notification signal] during a time interval when the transmitter is also"	No construction necessary	No construction necessary – not limited to stopping an active transmission, but also includes stopping a scheduled transmission

<u>Term</u>	<u>Petitioner's Position</u>	<u>Patent Owner's Position</u>	<u>Board construction</u>
transmits said scheduling request signal”	transmitting said scheduling request signal”		

ID at 13-17.

For the purposes of this Reply, Petitioner has adopted the Board's claim constructions.

IV. THE '656 PATENT

5 A. Overview of the '656 Patent

The '656 patent invention allegedly is for a communication system “which complies with LTE” and includes at least one base station and at least one mobile terminal where the mobile terminal: sends positive or negative (Ack/Nack) signal responses to the base station regarding the data packets it receives; (2) sends a
10 downlink quality notification signal (“QNS”) to the base station; (3) sends a scheduling request (SR) signal to the base station when it has data to send; (4) sends the data to the base station after receiving permission (grant); and (5) when the transmission time of the downlink QNS coincides with the time for sending the SP signal, it stops transmitting the quality notification signal and sends the SR
15 signal. Ex. 1003, at ¶54.

Petitioner's submitted multiple grounds in their Petition all against the sole challenged claim, claim 3:

1. Obvious under § 103 by JP 2006033778A (UMESH) (Ex. 1010)
2. Obvious under § 103 by UMESH (Ex. 1010) in view of 3GPP TS
25.309 version 6.6.0 Release 6 (2006-03) (Ex. 1011)
3. Obvious under § 103 by R1-060583 (Ex. 1012) in view of UMESH
(Ex. 1010)

Petitioners' grounds showed that the '656 patent is invalid as obvious to a person of ordinary skill in the art ("POSITA") at the time of the alleged invention. Accordingly, Petitioners respectfully request that the Board cancel the Challenged Claim.

V. ARGUMENT

A. The "scheduling request signal" of the "first control process" and the "second control process" is the *same* "scheduling request signal"

Petitioner agrees that based on the plain language of claim 3 of the '656 Patent that the "scheduling request signal" recited in the "first control process" and the "second control process" refer to the *same* signal. Response at 6.

Therefore, it is also true that according to the "first control process" in claim 3, the controller in the mobile terminal is configured to transmit the "scheduling request signal" to the base station "when the mobile terminal has not been allocated a radio resource for transmitting said transmission data." Response at 9. This is also the same ""scheduling request signal" that stops the transmitting of the

“quality notification signal” during a time interval during which said transmitter transmits the scheduling request signal. Response at 9; Ex. 1025, ¶10. PO argues that this cannot be the same “scheduling request signal” taught in UMESH and R1-060583.

5 **B. Ground 1 – UMESH (Ex. 1010) in view of the knowledge of a POSITA**

 Regarding UMESH, Patent Owner has only challenged the evidence in the petition regarding the first control process requirement (“a controller configured to perform a first control process that includes, when the mobile terminal has not
10 been allocated a radio resource for transmitting said transmission data, transmitting said scheduling request signal to said base station”) and second control process requirement (“said mobile terminal includes ... a controller configured to perform ... a second control process that includes, when a transmission of said quality notification signal coincides with that of said scheduling request signal in
15 said transmitter, stopping transmitting said quality notification signal during a time interval during which said transmitter transmits said scheduling request signal.”)

- 20 1. First Control Process Requirement -“a controller configured to perform a first control process that includes, when the mobile terminal has not been allocated a radio resource for transmitting said transmission data, transmitting said scheduling request signal to said base

station,”

Patent Owner has argued that when UMESH transmits said scheduling request signal to said base station, it has already been allocated a radio resource for transmitting. ID at 18. The Board credited Mr. Lanning's statement that the first
5 control process is performed “when it has data to send to the base station and does not have any uplink resources for doing so.” ID at 20. However, the Board ultimately found in favor of Patent Owner and found that “user data is independently transmitted in a dedicated physical data channel DPDCH, and therefore the RR/SI signal is sent when the mobile terminal has already been
10 allocated a radio resource (i.e., DPDCH) for transmitting data. ID at 20 (citing Prelim. Resp. 23-24).

For the reasons stated below, we believe the Board erred in its initial determination.

UMESH teaches a radio control unit in the mobile terminals which, inter
15 alia, controls the transmission of the EULUL control signal, including the RR (rate request)/SI (scheduling information) signal, in the CQI slot of the uplink channel HS-DPCCH 1c. Pet. 32-33 (citing Ex. 1010, Fig. 7, ¶¶55, 57, 75; Ex. 1003, ¶¶96, 139-140). Moreover, one of ordinary skill in the art would have understood that this control signal would have been transmitted to the base station when the mobile
20 terminal had not been allocated a radio resource for data transmission, given the

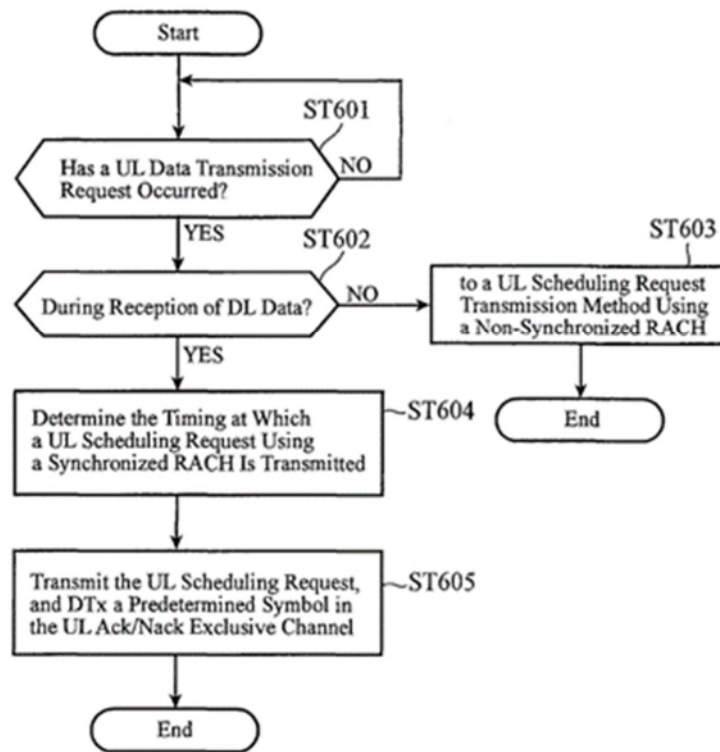
disclosure that RR (rat request)/SI (scheduling information) signal was transmitted for the purpose of the base station deciding uplink resources to assign to the mobile terminal. Pet. at 22-24 (citing Ex. 1010 ¶75; Ex. 1003, ¶¶96, 130, 141).

1. PO's arguments regarding UMESH not teaching the First Control Process Requirement are incorrect

PO states that UMESH mentions the RR/SI signal (EULUL control signal) solely in ¶0075. Response at 11. PO further states this UELUL control signal is “an enhanced uplink physical control signal conforming to **enhanced access**.” Response at 11, citing Ex. 1010, ¶0003 (emphasis added). PO further states that UMESH teaches that “enhanced access” is configured to avoid affecting existing physical channels which includes the dedicated physical data channel (DPDCH that *already* provides transmission of transmission data from mobile station 20a to base station 10. Response at 11, citing Ex. 1010, ¶0010; POPR, 23-24; EX 2004, ¶39. PO further states that the DPDCH already is a channel that is allocated as a radio resource for transmitting said transmission data and therefore the E-DPDCH is not a channel allocated before the allocation of radio resources for transmitting said transmission data. Response at 11.

In fact, as will be shown below, UMESH describes a scheduling request signal on an uplink control channel the same as what is described in the '656 patent.

FIG. 6



Ex. 1001, Figs. 6 (showing sending a UL scheduling request on a predetermined UL Ack/Nack Exclusive Channel). *See also* Figs. 13 and 32.

2. UMESH alone teaches the First Control Process Requirement

PO's argument only takes into consideration one embodiment of UMESH and not the whole document itself. For instance, UMESH teaches that for uplink, the mobile stations can use just the uplink E-DPDCH/EULUL control signal 1a. Ex. 1025, ¶25; Ex. 1010 at ¶[0033]. ("The mobile stations 20a to 20c and the base station 10 transmit user data by using dedicated physical channels dedicated to each mobile station. In uplink, the mobile stations 20a to 20c can transmit user

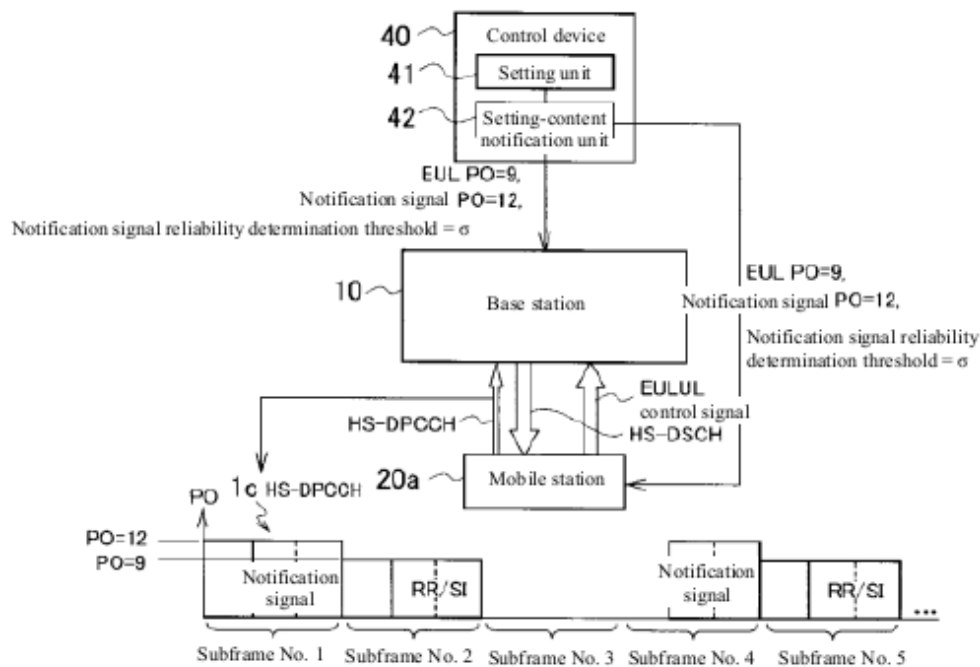
data by using *at least one among* an uplink DPDCH/DPCCH 1b and an *E-DPDCH / EULUL control signal 1a*. The uplink DPDCH/DPCCH 1b, the E-DPDCH / EULUL control signal 1a, and an HS-DPCCH 1c are uplink physical channels.”) (emphasis added).

5 UMESH teaches that this could be accomplished using a system that employs only EUL enhanced access and therefore there would be no existing DPDCH uplink channel available to the UE before the scheduling request. Ex. 1025, ¶¶16-24; Ex. 1010 at ¶¶ [0106]-[0110]; Ex. 1026, pp. 63, 84. Specifically, where the UE has packet data to send after the UE is turned on, but has not already
10 had the need to send voice data. Ex. 1025, ¶¶16-20; Ex. 1026, pp. 63, 84.

Another example is given in Figure 20 which sends the EULUL control signal and scheduling request on the control channel and no DPDCH uplink data channel is being used before the EUL enhanced data uplink is granted. Ex. 1025, ¶¶21-22; Ex. 1010 at ¶[0108]; Fig. 20.

15 The HS-PDCCH is a control channel that is used to send control information and not user transmission data. Ex. 1025, ¶22; Ex. 1010 at ¶[0036].

[FIG. 20]



Ex. 1010, Fig. 20.

Figure 20 also shows that the scheduling request SI is sent on the HS-PPCCH (control channel) to the base station without there being a DPDCH (data channel). Ex. 1025, ¶23. Therefore, UMESH alone teaches the first control process limitation “[a] controller configured to perform a first control process that includes, when the mobile terminal has not been allocated a radio resource for

transmitting said transmission data, transmitting said scheduling request signal to said base station.” Ex. 1025, ¶24.

- 5 3. UMESH alone teaches the Scheduling Request in the First Control Process is the same as the Scheduling Request in the Second Control Process

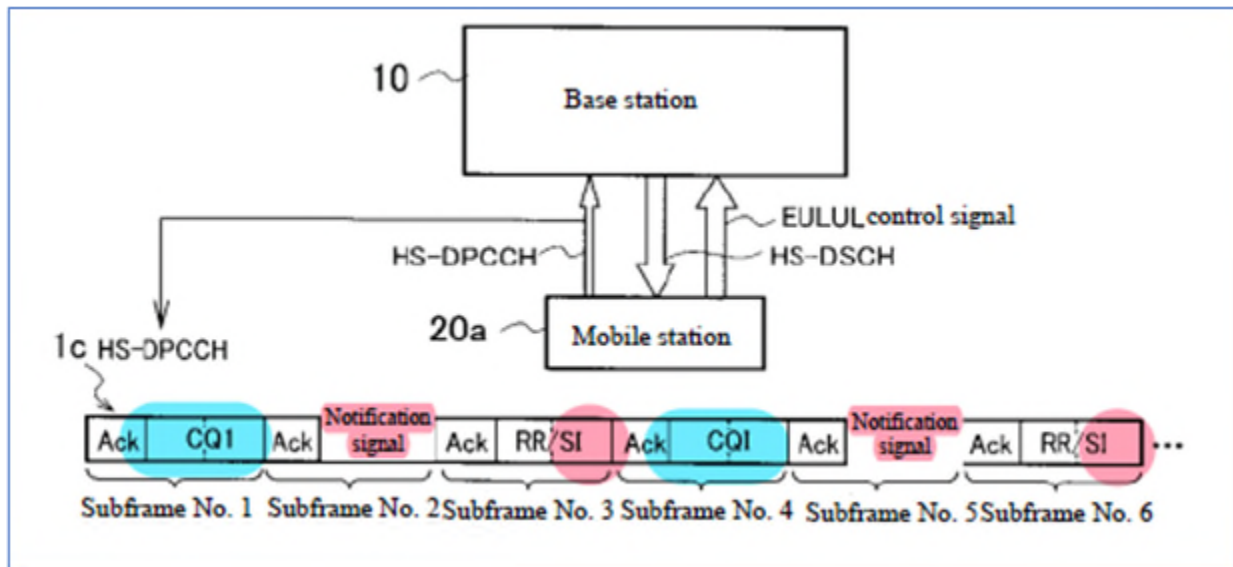
Contrary to PO's assertion, the scheduling request in the First Control Process in UMesh is the same Scheduling Request as in the Second Control Process. Response at 1. As described above, when the DPDCH is not used before the enhanced access is used, the first scheduling request is for the enhanced access. Therefore, the scheduling request described by UMesh is the same scheduling request in the first and second control process claim limitations of claim 1. As shown below, the EULUL scheduling request is sent in place of the CQI signal in UMesh.

- 15 4. Second Control Process Requirement – “a second control process that includes, when a transmission of said quality notification signal coincides with that of said scheduling request signal in said transmitter, stopping transmitting said quality notification signal during a time interval during which said transmitter transmits said scheduling request signal.”
- 20

The Board has construed “when a transmission of said quality notification signal coincides with that of said scheduling request signal in said transmitter” as “when a transmission of said quality notification signal is scheduled to transmit or is transmitting at the same time as that of said scheduling request signal in said

transmitter.” ID at 21. The Board, based on this construction found that UMESH taught this claim element. ID at 20-23. The Board was correct in this determination.

UMESH Figure 11 teaches that the mobile station “**stops** CQI transmission and transmits the EULUL control signal” (consisting of an RR/SI signal). Ex. 1010, ¶ [0077] (emphasis added); Ex. 1025, ¶27. Therefore, a scheduled CQI is stopped and the scheduling request signal is sent in its place. Ex. 1025, ¶27.



Ex. 1010, Fig. 11 (highlighting added).

These examples expressly teach the second control process of claim 3 of the '656 patent.

- a. UMESH teaches that the RR/SI signal coincides with the CQI signal and stops sending the CQI signal.

PO argues that UMESH fails to disclose the “Second Control Process” of claim 3 because UMESH never schedules transmission of the RR/SI signal at the same time as the CQI signal. Response at 23. However, as discussed above, this is not true. For instance, UMESH teaches the “the radio control unit 23 **sets the**

5 **EULUL control signal in the CQI slot that normally sets the channel quality indicator (CQI)...so the EULUL control signal is transmitted in the CQI slot of HS-DPCCH.”** Ex. 1010 ¶ [0058] (emphasis added); Ex. 1025, ¶33. The claim only requires that “when a transmission of said quality notification signal coincides with that of said scheduling request signal in said transmitter, stopping transmitting
10 said quality notification signal during a time interval during which said transmitter transmits said scheduling request signal.” Ex. 1001, 72:35-40. UMESH teaches that the CQI was set to be sent to be sent in a slot, the system determines that the scheduling request should be sent in its place, the CQI is not sent, and the scheduling request is sent in its place. Ex. 1025, ¶33. This is all the claim
15 requires.

- b.** A Controller in the mobile station schedules transmission of the EULUL control and CQI signals at the same time.

PO next argues that the controller that sets the schedule is not in the UE but
20 in the base station. Response at 24.

The claim only requires a controller that sends a scheduling request when a radio resource has not been allocated, UMESH discloses a mobile terminal that has a transmitter for transmitting multiple control signals, including a scheduling request signal. Petition at 32 (citing Ex. 1003 at ¶139). There is a box numbered 5 23 and labelled “radio control unit” which is the required controller for this limitation. Petition at 32 (citing Ex. 1010 at [0055] (“the mobile station 20a is provided with an antenna 25, a radio unit 21, a baseband signal processing unit 22, **a radio control unit 23**, an interface 24, and a transmission notification unit 26”) (emphasis added); (“the radio control unit 23 **instructs and controls** the radio unit 10 21 so the EULUL control signal is transmitted in the CQI slot of HS-DPCCH”) (emphasis added); Ex. 1003 at ¶139); Ex. 1025, ¶¶29-31. As the Petition states, this includes the radio control unit 23 as the controller sending the scheduling request when such resource has not been provided to it and sending the scheduling request in place of the CQI. Petition at 33, 36 (citing Ex. 1010 ¶[0075]). A 15 POSITA would realize that a scheduling request is only sent when the mobile terminal does not have the required radio resources. Petition at 33 (citing Ex. 1003 at ¶130).

PO seems to be conflating the idea that the base station sets the schedule for when the CQI and scheduling requests are sent, with the actual claim limitation 20 which only requires the controller to “transmit said scheduling request signal to

said base station, and when a transmission of said quality notification signal coincides with that of said scheduling request signal in said transmitter, stopping transmitting said quality notification signal.” Ex. 1001, 72:30-40; Ex. 1025, ¶31.

The claim is silent regarding who or what sets the original schedule for the CQI

5 and scheduling request, so it does not matter if this is done by the base station. Ex. 1025, ¶31. What matters is that UMESH discloses what the claim recites, i.e., the mobile station controller determines it needs UL resources, configures a scheduling request, and sends that in place of the CQI. Ex. 1025, ¶31.

10 c. UMESH teaches as second transmission method that the scheduling request is sent in place of the CQI.

PO next argues that it is the notification signal that is sent in place of the CQI and not the scheduling request. Response at 26. However, UMESH does indeed teach that the scheduling request signal coincides with the CQI and the
15 scheduling request is sent in place of the CQI. Petition at 35 (citing Ex. 1010 at [0058]; Ex. 1003 at ¶97; Ex. 1025, ¶33. As discussed above, UMESH teaches that a scheduling request signal coincides with a CQI signal and a scheduling request is sent in place of the CQI. Ex. 1010 at [0058]; Ex. 1025, ¶33.

Therefore, UMESH alone in view of the knowledge of a POSITA teaches
20 every claim limitation of claim 3. Ground 1 has been met. Ex. 1025, ¶34.

C. GROUND 2 - UMESH (Ex. 1010) in view of 3GPP TS

25.309 version 6.6.0 Release 6 (2006-03) (Ex. 1011)

Petitioner relies on the disclosures of TS 25.309 of controlled scheduling of signal transmissions between mobile terminals and base stations including CQI signals and Scheduling Requests. Pet. at 22. Petitioner also relies on TS 25.309 to supplement its challenges to claim 3 in regard to the requirements relating to transmission of quality notification and scheduling request signals. Pet. at 38-42.

The Board and PO noted that Petitioner relies on UMESH for the first and second process requirements of claim 3. ID at 25. Therefore, for the same reasons with regard to ground 1, the Board decided not to institute based on this ground.

However, for the reasons stated above regarding why UMESH does disclose the first and second process requirements of claim 3, the UMESH in view of TS 25.309 teaches every claim limitation of claim 3. *See supra* at §V.B.; Ex. 1025, ¶35 Ground 2 has been met.

D. GROUND 3 R1-060583 (Ex. 1012) in view of - UMESH (Ex. 1010)

PO's only arguments regarding claim 3 are that the combination of R1-060583 and UMESH do not teach the first and second control processes of claim 3. PO does not rebut any of the other claim elements as being found in this combination. R1-060583 clearly teaches the first control process limitation. For example, as discussed in the Petition, R1-060583 teaches a control process for "E-

UTRA uplink control signaling,” and transmitting “scheduling requests” when the mobile terminal has not been allocated a radio resource for transmitting transmission data. Petition at 49-50 (citing Ex. 1012, 1 (“scheduling requests are only transmitted when the UE does not have a valid scheduling grant”); Ex. 1003, 5 ¶172).

Petitioner relied on both UMESH and R1-060583 for the first control process of claim 3 and PO has yet to argue that R1-060583 does not teach this limitation. Petitioner relied on UMESH alone to show the second control process of claim 3. Response at 50. As described above, UMESH teaches this claim 10 limitation, and this was confirmed by the Board. ID at 26-27. Now PO is only left with the argument that somehow, even though it cannot say that the combined references do not teach every element of claim 3, the scheduling request taught by both references is somehow different. Importantly, PO never says that both scheduling requests do not act like a typical scheduling request, or that they don't 15 request UL resources. As is clear from the Petition, the scheduling request from UMESH is sent in replacement of the CQI, and the scheduling request from R1-060583 is configured when there is no active UL data resources available to the UE.

1. R1-060583 teaches the same scheduling request signal

used in the same way as the RR/SI signal in UMESH

PO notes that the scheduling request disclosed in R1-060583 is transmitted by the UE to request resources for uplink data transmission **only** when the UE does not yet have such resources. Response at 15 (citing EX1012, 1). As described
5 above, UMESH also teaches a scheduling request signal that is sent when the UE does not yet have such resources.

PO points to what it suggests is a suggestion by R1-060583 that the scheduling request and CQI are sent simultaneously without stopping one for the other. Response at 15. This is irrelevant, Petitioner did not rely on R1-060583 for
10 the second control process of claim 3. Petitioner only relied on UMESH for the claim element. Petition at 50.

PO's argument, in a nutshell, is that the scheduling request in UMESH (which is sent in place of the CQI) and the scheduling request in R1-060583 (which is sent simultaneously with the CQI) cannot therefore be the same
15 scheduling requests. Response at 16-17. This argument is a red herring, UMESH was used in the Petition to show that the scheduling request, which requests uplink data resources, should be sent in place of the CQI, when there is an overlap between when the two should be sent. Petition at 34-36, 50 (citing Ex. 1003, ¶¶
174-175).

Petitioner has shown why a POSITA would have combined these two references and why a POSITA would have replaced the CQI with the scheduling request signal as disclosed in UMESH. “[O]bviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.” *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Petitioner showed that UMESH and R1-060583 both address control signals for cellular wireless networks. Petition at 44; Ex. 1025, ¶39. Second, both are focused on providing efficient control signals (signaling messages) for at least the mobile terminal functionality of sending downlink channel quality (CQI), scheduling request, and data to the base station (NodeB). Petition at 44; Ex. 1025, ¶39. Both references teach alteration of transmitting the CQI for purpose of reducing overload. Petition at 44; Ex. 1025, ¶39. UMESH also teaches the advantage that transmitting the RR/SI signal “without affecting existing physical channels or increasing a peak-to-average ratio in transmission power of a mobile station.” Ex. 1010, ¶51; Ex. 1025, ¶39.

Petitioner also shows that a “POSITA would readily be able to integrate UMESH’s teaching of stop transmitting CQI while scheduling request signal is transmitted into R1-060583’s alteration of CQI transmission given that both references are to reduce the overload.” Petition at 45-46 (citing Ex. 1003 at ¶ 180); Ex. 1025, ¶39.

Therefore, Petitioner has shown the advantages of using UMESH in place of R1-060583 for the second control limitation and why a POSITA would have “selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.”

- 5 2. Even if the Board decides that UMESH does not teach the first control process limitation, PO has not shown that R1-060583 does not

As discussed above, Petitioner believes that UMESH alone teaches the first and second control process requirements. However, even if the Board finds that
10 UMESH does not teach the first control process requirement, for the reasons stated above, the combination of UMESH and R1-060583 teach both the first and second control process requirements. Ex. 1025, ¶40.

PO does not argue that R1-060583 does not teach the first control process requirement, or that UMESH does not teach the second control process
15 requirement. PO's argument comes down to a convoluted argument that UMESH does not teach the first control process requirement (but that does not matter because they do not argue that R1-060583 does not) and R1-060583 does not teach the second control process requirement (which also does not matter because they do not argue that UMESH does not). What they are trying to do is state that
20 because UMESH allegedly has UL resources when it configures its “scheduling request signal” this scheduling request cannot be the scheduling request in the

second control process requirement, and that since R1-060583 does not teach suspending the CQI when it sends the scheduling request, the scheduling request in R1-060583 can not be the same in both limitations.

However, this belies the fact that the disclosures of the scheduling requests
5 in both references act like normal scheduling requests, and it is the COMBINATION of the scheduling request from R1-060583 (first control process) and the scheduling request from UMESH (second control process) that Petitioners cite to for support of ground 3. Response at 19-20; Ex. 1025, ¶41. Petitioner is trying to combine the two control process limitations into one limitation. Response
10 at 21 (No one reference teaches stopping the CQI when the schedule request signal is sent and when no data transmission radio resources have been allocated). However, this is not proper.

PO's whole argument therefore comes down to an argument that a POSITA would not have been motivated to combine these two references, which, as was
15 shown above, is not true. PO must show that using the scheduling request in a combination of UMESH and R1-060583 would have been "uniquely challenging or difficult for one of ordinary skill in the art." *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007). PO has not. Nor has PO shown that there would have been a reasonable expectation of success in the

combination. *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1364 (Fed. Cir. 2007).

PO has not.

Therefore, for the reasons discussed above with regard to UMESH, UMESH in view of R1-060583 teaches every claim limitation of claim 3. Ex. 1025, ¶41.

5 Ground 3 has been met.

VI. CONCLUSION

The challenged claim of the '656 patent should be determined to be unpatentable.

Dated: May 28, 2024

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CERTIFICATION OF WORD COUNT UNDER 37 C.F.R. §42.24(d)

Pursuant to 37 C.F.R. §42.24(d), the undersigned hereby certifies that the word count for the foregoing *Petition for Inter Partes Review* of U.S. Patent No. 9,635,656 totals 4,561, excluding the parts exempted by 37 C.F.R. §42.24(c). Accordingly, this Reply is under the word count limit of 5,600 words.

This word count was calculated by using the built-in word-count tool in Microsoft Word 2016, the software used to prepare the document.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true copy of the foregoing
PETITIONER’S REPLY UNDER 37 C.F.R. §42.23 and supporting materials
(Exhibits 1001-1027) have been served this 28th day of May, 2024, upon the
following parties via electronic mail: marc.weinstein@XSensus.com;
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