

## [95e-17-5GiMerger] - Version 0.0.3

### RAN

3GPP TSG RAN Meeting #95-e RP-220877

Electronic Meeting, March 17 - 23, 2022

**Agenda Item:**9.4.6

**Source:** Moderator (Qualcomm)

**Title:** Moderator's summary of discussion [95e-17-5GiMerger]

**Document for:** Report

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## 1 Introduction

3GPP discussed the merger of 5Gi and 3GPP in RAN#94e. The WF in [1] was endorsed in RAN#94e, the CRs in [2] and [3] were technically agreed with final approval awaiting an LS from TSDSI which has been received in [4].

As part of the WF, the SID of the Rel-17 RAN4-led SI on *Optimisations of Pi/2 BPSK UL Power in NR* was revised in [5] and an LS to RAN4 amending a WF for the same SI was approved in [6].

The body of the LS in [4] is pasted here for easy reference:

**Table 1:**

TSDSI invites the kind attention of TSG RAN#95e regarding the way forward and further actions for merger of 5Gi and 3GPP 5G as deliberated during TSG RAN#94e. Following were the outcomes of the RAN#94e meeting:

The agreement was reached with the condition that TSDSI will submit a commitment regarding merger of 5Gi into 5G (via LS to RAN, PCG, TEC, and ITU-R) with a committed roadmap for pursuing the 3GPP 5G specifications in India with no further 5Gi updates in ITU-R. Further, final approval of the Rel-17 CRs at the RAN Plenary where such communication is received, ideally by RAN#95e and no later than RAN#96/RAN#96e, 3GPP at this time, is expected to communicate the merger to ITU-R as part of periodic update.

In pursuance to the above agreement, TSDSI confirms the sending of corresponding LSs to PCG, TEC and ITU-R which are attached, for your reference.

**TSDSI requests RAN#95e to make note of the above and approve the endorsed technical CRs in RP-213533 and RP-213534 for inclusion into the Rel-17 specifications.**

As a result of this LS, the technically agreed CRs can be approved in RAN#95e. Those CRs have been re-submitted in RAN#95e against the latest versions of the corresponding specifications in [7] for 38.211 and in [8] for 38.306. A number of companies reached out to add their support as co-sourcing companies for these

CRs as compared to the list of supporting companies in RAN#94e.

This NWM intends to answer any questions or clarifications on this topic, in general, or specifically on the CRs [7][8].

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## 2 Initial Round

Please, include here any questions or clarifications you may have on this topic, including whether you'd like your company to be added as supporting company for the CRs [7][8].

Company inputs:

### Feedback Form 1: Companies' inputs on general topic and CRs

#### 1 – NTT DOCOMO INC.

Thank you very much for the moderator and companies leading this topic!

We are supporting 38.306 CR [8], and we are of course happy to support 38.211 CR [7] as well.

#### 2 – Huawei Tech.(UK) Co.. Ltd

As supporting company of RP-200133 and RP-220130, Huawei support approving these 2 CRs at RAN#95e, and we suggest informing TSDSI (cc PCG) with a reply LS.

#### 3 – VODAFONE Group Plc

Thanks for everyone's work on this topic and for agreeing the way forward. We are happy for the CRs in [7] and [8] to be agreed.

#### 4 – T-Mobile USA Inc.

In RP-213534, powerBoosting-pi2BPSK is listed as "mandatory with capability signaling." Since power boosting is currently only defined for PC3, it can only be mandatory for PC3 for now. Therefore, the CR should be modified as follows (the new text "for power class 3" is only bold to highlight the change):

##### ***powerBoosting-pi2BPSK***

Indicates whether UE supports power boosting for pi/2 BPSK, when applicable as defined in 6.2 of TS 38.101-1 [2] v16.9.0. It is mandatory with capability signalling **for power class 3**. This capability is not applicable to IAB-MT.

#### 5 – TELECOM ITALIA S.p.A.

We support the proposal from Huawei to inform PCG.

The point raised by T-Mobile USA needs to be addressed.

Stated that we are supporting the two CRs (with any required modification - see comment from T-Mobile USA)

#### **6 – T-Mobile USA Inc.**

We need to update our comments, because power boosting also currently only applies to TDD bands n40, n41, n77, n78, and n79. Therefore, the CR should be modified as follows (the new text "for power class 3 for TDD bands n40, n41, n77, n78, and n79" is only bold to highlight the change):

#### ***powerBoosting-pi2BPSK***

Indicates whether UE supports power boosting for pi/2 BPSK, when applicable as defined in 6.2 of TS 38.101-1 [2] v16.9.0. It is mandatory with capability signalling **for power class 3 for TDD bands n40, n41, n77, n78, and n79**. This capability is not applicable to IAB-MT.

#### **7 – T-Mobile USA Inc.**

Upon further review, we noticed that the IE definition does say "when applicable as defined in 6.2 of TS 38.101-1 [2] v16.9.0." As we are not in favor of capturing redundant information in the specs, we withdraw both comments above.

#### **8 – Futurewei Technologies**

We support both CRs and will like to be added as supporting company.

#### **9 – vivo Communication Technology**

We support both CRs, also would like to co-source [7] RP-200133, 38.211 CR.

#### **10 – SoftBank Corp.**

We support both CRs and would like to co-source both CRs.

#### **11 – Skyworks Solutions Inc.**

The current spec only covers PC3 so PC2 power boosting is an on-going discussion. We have a question for clarification: the CR makes the power boosting and support of low PAPR DMRS mandatory for UE from rel17. what is unclear though is whether the NW will always configure R17 UEs with low PAPR or not. can this be clarified by the moderator and/or NW vendors. current PC2 RAN4 evaluation assumes that low PAPR are used for power boosting.

#### **12 – Guangdong OPPO Mobile Telecom.**

We support both CRs and would like to co-source both CRs

#### **13 – Spreadtrum Communications**

We support both CRs, and also would like to co-source both CRs.

## 2.1 Results from Initial Round

The Moderator thanks participants of the Initial Round of discussions for their inputs.

In response to Skyworks, the Moderator would like to clarify that the CRs apply to PC3 and both DMRS sequences (R15/regular and R16/low-PAPR) as there is no distinction in 38.101-1 v16.9.0 *Table 6.2.2-1 Maximum power reduction (MPR) for power class 3* in relation to the applicability of NOTE 1. Note that NOTE 1 applies to *Modulation pi/2 BPSK* without restriction of the underlying DMRS with or without pi/2

BPSK.

A number of companies indicated their support of the CRs and the following expressed their desire to co-source them:

- Telecom Italia, Futurewei, SoftBank, OPPO would like to co-source CRs for both 38.211 and 38.306.
- DOCOMO, vivo, Spreadtrum already support CR for 38.306 and would also like to co-source CR for 38.211.

Huawei, supported by Telecom Italia suggested preparing a reply LS to TSDSI and Cc'ing PCG informing them of the approval of the CRs.

As a result, the Moderator suggests the following:

- CRs in [7][8] be revised with the expanded list of co-sourcing companies as indicated above.
- RAN to approve those revised CRs
- Prepare Draft LS reply to TSDSI and Cc'ing PCG informing them of RAN's CRs approval

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## 3 References

[1] RP-213532, "Way forward on merger of 5Gi into 3GPP", Qualcomm, IITH, IITM, CEWiT, Bharti Airtel, Reliance Jio, Vodafone Idea, Tejas Networks, Ericsson, Nokia, NSB, Samsung, Apple, MediaTek, ZTE, Intel, Huawei, HiSilicon.

[2] RP-213533, 38.211 CR "Pi/2-BPSK specification updates for the merger of 5Gi into 3GPP", Ericsson, IITH, IITM, CEWiT, Bharti Airtel, Reliance Jio, Vodafone Idea, Tejas Networks, Nokia, NSB, Samsung, Apple, MediaTek, ZTE, Intel, Huawei, HiSilicon, Qualcomm.

[3] RP-213534, 38.306 CR "Pi/2-BPSK specification updates for the merger of 5Gi into 3GPP", Qualcomm, IITH, IITM, CEWiT, Bharti Airtel, Reliance Jio, Vodafone Idea, Tejas Networks, Ericsson, Nokia, NSB, Samsung, Apple, MediaTek, ZTE, Intel, Huawei, HiSilicon.

[4] RP-220028, "Reply LS to RP-213655 on the merger of TSDSI 5Gi into 3GPP REL-17", TSDSI (Telecommunications Standards Development Society India).

[5] RP-213535, "Revised SID: Study on optimizations of pi/2 BPSK uplink power in NR", Nokia.

[6] RP-213655, "LS on updates to study on optimizations of pi/2 BPSK uplink power in NR (to: RAN4; cc: -; contact: Nokia)".

[7] RP-200133, 38.211 CR "Pi/2-BPSK specification updates for the merger of 5Gi into 3GPP", Ericsson, IITH, IITM, CEWiT, Bharti Airtel, Reliance Jio, Vodafone Idea, Tejas Networks, Nokia, Nokia Shanghai Bell, Samsung, Apple, MediaTek, ZTE, Intel, Huawei, HiSilicon, Qualcomm.

[8] RP-220130, 38.306 CR “Pi/2-BPSK specification updates for the merger of 5Gi into 3GPP”, Qualcomm, IITH, IITM, CEWiT, Bharti Airtel, Reliance Jio, Vodafone Idea, Tejas Networks, Ericsson, Nokia, Nokia Shanghai Bell, Samsung, Apple, MediaTek, ZTE, Intel, Huawei, HiSilicon, Spreadtrum, NTT DOCOMO, vivo.