

[95e-41-RAN4-R17-Spectrum-New] - Version 0.0.4
RAN

3GPP TSG-RAN Meeting # 95e RP-220901

Electronic Meeting, March 17 - 23, 2022

Title: Moderator's summary for discussion [95e-41-RAN4-R17-Spectrum-New]

Agenda item: 10.1.4

Source: Moderator (Apple)

Document for: Report

1 Introduction

This email thread is to discuss WID RP-220380 (New WI: Introduction of LTE TDD band in 1670-1675 MHz).

2 Initial round

It is intended to collect comments on the WID in the initial round.

Feedback Form 1: Comments on the WID

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| <p>1 – Huawei Technologies Sweden AB</p> |
| <p>All affected BS specifications are listed, except for the NR core and conformance specifications, which shall be also added for the co-existence requirements consideration.</p> |
| <p>2 – Qualcomm Korea</p> |
| <p>We wonder if there is truly a need to define 2Rx, 4Rx, UL MIMO for a 5 MHz LTE band? Is there any deployed LTE network that supports UL MIMO in the world? With the migration to 5G NR, is there an expectation that the advanced LTE features will be supported?</p> |
| <p>3 – ZTE Corporation</p> |
| <p>We think the objectives should be to define UE/BS RF requirements to include the information listed in the WID.</p> |
| <p>4 – Intel Corporation (UK) Ltd</p> |
| <p>Thank you for the WID and please see some questions below:</p> <p>1) Is there any specific reason to explicitly include "Category 0 UE" in the WID objectives?</p> |

2) Is the plan to have WI approval in March or June plenary? Our assumption was that R18 spectrum items shall be considered jointly in RAN #96e

5 – MediaTek Inc.

We also wonder if there is truly a need to define 2Rx, 4Rx, UL MIMO for a 5 MHz LTE low band? We prefer to remove wordings of "2RX, 4RX and UL MIMO".

6 – Nokia UK

We agree with Huawei on the need to add NR specifications to the WID to address co-existence requirements.

7 – Ericsson LM

We also agree with Huawei and Nokia to add NR specs for coexistence requirements.

It is spectrum work item so additional aspects like 4Rx, category 0, UL MIMO should not be included.

8 – Ligado Networks

We are looking at using this licensed spectrum for deployment as part of private networks which are expected to have a variety of different UEs ranging from Cat 0 to those supporting UL MIMO and 4Rx. Since there are band specific requirements for Cat 0, 2Rx, 4Rx and UL MIMO, we have included them.

The plan is to have the WI approval in March as per discussion from the last plenary meeting where it was requested that WI be submitted at the March plenary for approval as a Rel-18 WID.

We can revise the WID to incorporate the NR core and conformance specs as well as update the objective as follows to address ZTE comment:

"The objective of the core part of work item is to:

- Specify **UE/BS RF requirements** for a new LTE TDD operating band
 - o BS transmit frequency range: 1670 MHz–1675 MHz, UE transmit frequency range: 1670 MHz–1675 MHz
 - o Channel bandwidths of 1.4, 3, 5 MHz
 - o PC3 UE including Category 0 UE
 - o 2Rx and 4Rx
 - o UL-MIMO
- This new LTE band is expected to be release independent."

2.1 Moderator's summary on Initial Round

In the first round, there are comments on missing specs that are related to the coexistence and also on the wording, which the proponent company agrees to address by revising the WID.

On comments whether the WI is to be approved at this meeting or in June, it is clarified that following the conclusion at the last RAN meeting, the goal is to approve it at this meeting.

Some companies also ask if 4Rx, category 0, UL MIMO should be included in the WID and prefer to remove them. The proponent company responds "We are looking at using this licensed spectrum for deployment as part of private networks which are expected to have a variety of different UEs ranging from Cat 0 to those supporting UL MIMO and 4Rx." This aspect will be further discussed in the intermediate round.

3 Intermediate round

Feedback Form 2: With the clarification that 4Rx, category 0, UL MIMO are targeted in the deployment, can they be included in the WID?

1 – MediaTek Inc.

Not sure the intention is to encourage specifying detailed implementation wordings for introduction of new band in spectrum work? Regarding BS/UE implementation, we see specific wordings about UL and RX in RedCap WID. Regarding WID for introduction of new band, based on previous WIDs, the wordings of "Specify RF characteristics of the new band" is preferred and sufficient.

Feedback Form 3: Comments on any other aspects of the revised WID

1 – Ligado Networks

Ligado has revised the WID to include the "UE/BS Requirements" and 38.104, 38.141-1 and 38.141-2 as the impacted TSs. Based on offline intimation, Sony has been added as a supporting company as well.

2 – Ligado Networks

The revised WID has been uploaded into the Drafts folder in the Inbox.

3 – MediaTek Inc.

Instead of specifying "4Rx, category 0, UL MIMO", based on previous WIDs about introduction of new bands, the wordings of "Specify RF characteristics of the new band" is preferred and sufficient in spectrum work.

4 – Intel Corporation (UK) Ltd

We would like to clarify the expected start of RAN4 work. Based on prior RAN agreements in RP-212587

“Rel-18 starts ... in 3Q’22 for RAN2/3/4”. Do we correctly understand that the work will start in RAN #104 (Aug 2022)?

5 – Nokia UK

Also 38.101-1 should be added to scope to address UE-to-UE co-existence.

6 – Ericsson LM

Since the WI also includes some generic features (**4Rx, category 0, UL MIMO**) so we agree with previous comments that the WI should start from Q3-2022. The target completion date also need to be shifted to RAN#99.

3.1 Moderator’s summary on Intermediate round

There is one company who still prefers to remove 4Rx, category 0, UL MIMO from the scope. Meanwhile, two companies comment that the work should start in Q3 2022.

There is also a comment that 38.101-1 should be added to scope to address UE-to-UE co-existence.

4 Final round

Moderator would like to propose two options for discussion in the final round:

- Option 1: Take 4Rx, category 0, UL MIMO out of the WI scope and the WI starts in Q2 2022.
- Option 2: Include 4Rx, category 0, UL MIMO in the WI scope and the WI starts in Q3 2022.

Note for Option 1, it is assumed that a pure spectrum WI, i.e., without generic features like 4RX, can start in Q2 2022.

In addition, please revise the WID to include 38.101-1 as an affected specification.

Feedback Form 4: Companies are encouraged to choose one option.

1 – Ligado Networks

Our preference is for Option 1. We will revise the WID to incorporate 38.101-1 and remove 4Rx, category 0 and UL MIMO.

2 – Ligado Networks

Version 2 of the revised WID has been uploaded for review. Thanks.

3 – GLOBALSTAR Inc.

We support Option 1. As a new spectrum WI from an operator, this work should not be delayed.

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| <p>4 – Mavenir</p> <p>We support Option 1 and would like to see this work item completed without delay.</p> |
| <p>5 – MediaTek Inc.</p> <p>To follow the normal process of introduction of new band, our preference is Option 1.</p> |
| <p>6 – Intel Corporation (UK) Ltd</p> <p>We are fine with proposed Option 1.</p> |
| <p>7 – Saankhya Labs</p> <p>SaankhyaLabs supports Option-1. Strongly feel that RAN agreement in RP-212587 is not applicable to spectrum WI from an operator, hence this work should not be delayed any further</p> |
| <p>8 – Nokia UK</p> <p>We are fine with proposed option 1.</p> |

4.1 Moderator’s summary on Final round

All comments indicate Option 1 is agreeable.

5 Conclusion

It is agreeable to revise the WID RP-220380 to take 4Rx, category 0, UL MIMO out of the WI scope. The revised WID is agreeable and the WI starts in Q2 2022.