

93e-11-IrregularChBW-SI - Version 0.0.2
RAN

3GPP TSG RAN Meeting #93-e

RP-212551

Electronic Meeting, September 13 - 17, 2021

Agenda Item: 9.2.6

Source: RAN Vice-Chair (AT&T)

Title: Moderator's summary for discussion [93e-11-IrregularChBW-SI]

Document for: Discussion

In this document, we will provide a summary for the email discussion [93e-11-IrregularChBW-SI] at RAN#93-e.

1 Topic #1: FS_NR_eff_BW_util SID Revision

1.1 Proposed Objectives

Topic #1 will capture the outcome of the discussions on the following documents:

- 1) RP-212284 [1] containing proposals to consider NTN irregular channel bandwidths in the ongoing SI on "Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths".
- 2) RP-212287 [2] contains the SID revision corresponding to the proposal in [1].

1.2 Initial Round

1.2.1 Open Issues

The following covers the proposals listed in [1].

Proposal 1: We ask 3GPP to consider NTN irregular channel bandwidths, 8, 16, and 34MHz in the context of the ongoing SI on "Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths".

Proposal 2: New channel bandwidths can be handled with the lower priority and are not anticipated to impact existing functional description of each method.

1.2.2 Collection of company views

Issue 1.2-1: Is proposal 1 from RP-212284 to consider NTN irregular channel bandwidths in the ongoing SI on "Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths" agreeable?

Feedback Form 1: Issue 1.2-1

1 – T-Mobile USA Inc.

Not agreeable.

1) This was discussed in two different Agenda Items during RAN4#100e, and the recommendation was to not add NTN channel BWs to the SI so that the SI can be completed without any additional delays.

2) We were not allowed to add n85 to the SID until it was an official 3GPP band in 38.101-1. Since the NTN L band and S band are not yet 3GPP bands they shouldn't be added to the SID. We shouldn't have different rules for NTN bands and TN bands.

3) The solutions that the SI comes up with will be generic and should work for other bands and bandwidths. There doesn't seem to be anything special about the BWs that are being proposed.

4) The reason it was important for us to get n85 into the SID is because we have a unique situation where there is 6 MHz of n85 that overlaps with 5 MHz of n12 and we wanted to make sure this scenario was supported. Otherwise we wouldn't have added it.

2 – ZTE Wistron Telecom AB

We do not think it is feasible to add new NTN irregular bandwidth into the SI at this stage.

- The target date of the SI is RANP#94e (Dec 2021), which means only one RAN4 WG meeting left, and the overall progress up to this meeting is 50% compared with 40% three months ago, which implies how difficult it is to make progress in this SID, and there are still a few open issues to be resolved in the only left RAN4 meeting in Q4. We do not see the possibility to finish the SID in time if adding new proposed irregular bandwidths.
- Another similar concern as raised by T-Mobile USA: demands for these new NTN irregular channel bandwidths are not coming from 3GPP defined NR bands, and we are not sure whether or not to consider and satisfy such demands under the current 3GPP procedure.

3 – Huawei Technologies Sweden AB

The proposal asks to "consider NTN irregular channel bandwidths", while its implementation of it is not clear enough, i.e. how to consider, when, etc. While technical solutions in IrregularChBW SI are expected to be applicable to all TN, there may be need for additional analyses to investigate if all conclusions are equally applicable to the NTN scenarios as well. Proponents are encouraged to clarify on the priorities of the NTN bands, considering the ongoing RAN4 work. Shall the Irregular ChBW be considered as NTN enhancement in the future release?

4 – Verizon UK Ltd

We do not think it is not feasible to include NTN irregular channel bandwidths into current SI at this time. Primarily, the proposed requirement is brand new to RAN. And, the current context of the ongoing SI is scheduled to be completed by this December. For us, it is too late to consider these new NTN irregular channel bandwidths now, otherwise the existing SI would be delayed.

5 – China Telecommunications

As mentioned by T-Mobile, the SI has already been postponed by 3 quarters, due to the wide scope with different solutions being discussed in parallel. Adding NTN bands will bring a risk to further delay the SI completion.

For the candidate solutions, we agree they are discussed in a generic way for different TN bands/bandwidths, but the RF aspects may be different and requiring additional discussion for NTN bands.

So, we are not supportive of adding NTN bands for the time being.

6 – Guangdong OPPO Mobile Telecom.

The solution is generic, and should also be applicable to other irregular CBW. There is no need to add NTN CBWs especially they are not officially defined in RAN4.

7 – China Mobile Com. Corporation

The solution for irregular bandwidth should be generic and future proof for all the irregular bandwidths. The bandwidths listed in the SID are just examples. As commented by other companies, currently there is no NTN bands specified yet, so it is not appropriate to add the NTN bandwidths to this SI.

8 – QUALCOMM JAPAN LLC.

We do not think it is a good idea to add more channel bandwidths so late in the SI, especially for non-existing band and requirements. In theory, the solutions developed in this SI will be generic and should be applicable to these channel bandwidths but this cannot be certain. One more thing to note is that as the bandwidth gets larger, the actual relative gains from using these channel bandwidths will be marginal.

9 – Telia Company AB

Not feasible to include NTN irregular channel bandwidths into current SI at this time in Release 17.

10 – CHTTL

We share the same view as T-mobile and above companies

11 – Intel Corporation (UK) Ltd

We expect that the solutions identified in the SI will be generic and applicable to any bands including the ones proposed in the 2284. The bands listed in the SID are just examples. However, with respect to adding specific CBW into the SID we share companies views that we should include the existing NR bands only.

12 – Apple GmbH

The proposal to extend the scope of the SI raises a good question, which RAN4 discussed earlier, but for which no clear conclusion was made. What is the relationship between the bands and irregular channel bandwidths mentioned in the SI scope, generic methods that should be applicable to any channel bandwidth, and exemplary SU tables that we have in the TR? The existing TR captures SU values for the following irregular bandwidths: 6,7, 11, 12, 13MHz. Will there be any difference in our technical discussions if we add "missing" irregular channels, such as 8, 9, and 14MHz? If we assume that the solutions are generic and should be applicable to both TN and NTN bands, then adding 8, 9, and 14MHz into the existing SU tables does not change much in the existing technical discussions and will benefit TN deployments, in case there is a use case for that.

13 – Ericsson France S.A.S

We are also concerned to widen the scope of the Study when it is already delayed and should be completed in the next meeting. As commented by several companies, the solutions are anyhow likely to be usable for other CBW and bands.

14 – Skyworks Solutions Inc.

The solutions for irregular BW >5MHz should be generic and thus apply to new BW/bands/systems at least in multiples of 1MHz as a minimum. we do not see any information added with proposed BW that will change the discussion in this SI

15 – MediaTek Inc.

No strong view. As the discussion in the SI is generic, we believe that the SI outcome can apply to other irregular BWs. Adding additional irregular BWs neither speeds up the NTN work nor delays the SI discussion. The exact bands and BWs can be further discussed in the WI phase.

Issue 1.2-2: Do you agree that the new channel bandwidths for NTN can be handled with lower priority and will not impact the existing functional description of each irregular channel BW method?

Feedback Form 2: Issue 1.2-2

1 – T-Mobile USA Inc.

No, we do not agree. If there is new work required in the SI for these channel BWs, then it might delay the SI even further, and the SI is already 9 months behind schedule. If there is no new work required for these channel BWs then there is no need to add them to the SI.

2 – ZTE Wistron Telecom AB

Not feasible as commented in Issue 1.2-1.

3 – Huawei Technologies Sweden AB

If proponents suggest to treat those NTN specific Irregular ChBW with lower priority, then it may be proposed to shift them to the next release (on NTN spec). Whether or not "will not impact the existing functional description of each irregular channel BW method" requires some technical analyses, which are to be handled by RAN4 (and RAN would need to decide in which WI: NTN rel-17, NTN rel-18, or Irregular ChBW).

4 – Verizon UK Ltd

In only one meeting cycle, it is not feasible!

5 – Guangdong OPPO Mobile Telecom.

No, and not needed.

6 – Telia Company AB

Not feasible in Release 17 anymore.

7 – Skyworks Solutions Inc.

As discussed, the solution should be generic and thus we do not see that there is any priority for any bandwidths or bands. The current set is enough as examples of what solutions are needed

Issue 1.2-3: Is the proposed revised SID in RP-212287 which adds new channel channel BWs for L-Band and S-Band agreeable?

Feedback Form 3: Issue 1.2-3

<p>1 – T-Mobile USA Inc.</p> <p>Not agreeable. 3GPP needs to be consistent that new bands should not be added to this SI before they are 3GPP bands. As discussed above, adding these bands and bandwidths are unnecessary, the the completion of the SI has already been delayed by 9 months and RAN should not be adding anything new to the SID. Additional reasons why this revised SID is not agreeable are discussed in 1.2-1 and won't be repeated here.</p>
<p>2 – ZTE Wistron Telecom AB</p> <p>Not agreeable as commented in Issue 1.2-1.</p>
<p>3 – Huawei Technologies Sweden AB</p> <p>It shall be noted, that the SI revision updated the Justification section only, with no new objectives added. It may be worth to record such NTN-based request in the SID, with additional clarifications that those were e.g. de-prioritized, or postponed till next release. "lower priority" wording shall be clarified, as it is not clear how it related to the current SI progress, rel-17/18 release timeline, etc.</p>
<p>4 – Verizon UK Ltd</p> <p>In only one meeting cycle, it is not feasible!</p>
<p>5 – Guangdong OPPO Mobile Telecom.</p> <p>No</p>
<p>6 – China Mobile Com. Corporation</p> <p>Not agreeable</p>
<p>7 – QUALCOMM JAPAN LLC.</p> <p>Not agreeable. We can come back in the future once the satelite bands are defined and see if the solutions from the SI are applicable or not.</p>
<p>8 – Telia Company AB</p> <p>Not feasible in Release 17.</p>
<p>9 – Apple GmbH</p> <p>Referring back to our comment above, the major difference is whether we just e.g. 8, 9, and 14MHz into the existing SU tables, without even specifying whether it is TN or NTN, or whether we will start considering NTN specific solutions. We agree with other companies that Rel-17 is indeed late to consider something new specific for NTN. However, if it is just about adding e.g. 8, 9 and 14MHz into the existing SU tables, then we cannot see any issue with that. So, maybe it should be clarified further.</p>

1.2.3 Summary and recommendation for further discussion

In this section, the summary of comments on Topic#1 and the corresponding recommendations are provided.

Issue 1.2-1: There is strong support to not consider NTN irregular channel bandwidths in the ongoing SI on

”Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths.” The existing set of CBWs in the SI is sufficient and the solutions are being developed in a generic way. In addition, the NTN bands are not formally specified in 3GPP yet.

Issue 1.2-2: Companies did not agree that the new channel bandwidths for NTN can be handled with lower priority and will not impact the existing functional description of each irregular channel BW method. There were suggestions to shift the new NTN channel BWs to the next release for the NTN spec and that some technical analysis is needed in RAN4 in a future WI.

Issue 1.2-3: The proposed revised SID in RP-212287 is not agreeable based on company feedback.

Moderator (RAN Vice-Chair, AT&T) Recommendations: There does not seem to be support for the proposals in RP-212284 [1] and the revised SID in RP-212287 [2]. It is recommended that discussion can conclude on this topic and that no further rounds are needed.

1) RP-212284 [1] can be Noted.

2) RP-212287 [2] can be Noted.

1.3 Intermediate Round

Not Required.

1.4 Final Round

Not Required.

1.5 Final comments

Not Required.

2 Final Conclusions

Moderator (RAN Vice-Chair, AT&T) Recommendations:

1) RP-212284 [1] can be Noted.

2) RP-212287 [2] can be Noted.

3 References

[1] RP-212284: NR NTN and Irregular Channel Bandwidths; Globalstar, Inmarsat

[2] RP-212287: Revised SID: Study on Efficient utilization of licensed spectrum that is not aligned with existing NR channel bandwidths; Globalstar