[95e-36-R17-FR1-RF] - Version 0.0.7
RAN

3GPP TSG-RAN Meeting #95-e RP-220896

Electronic Meeting, March 17 – 23, 2022

Agenda item: 9.5.4.7

Source: Moderator (RAN4 Chair)

Title: Moderator's summary of discussion [95e-36-R17-FR1-RF]

Document for: Report

1 Introduction

In this email thread we will discuss how to handle the objective of SCell dropping in WI on Rel-17 RF requirement enhancement for NR FR1. The following contributions will be covered.

Table 1:

TDoc	Title	Source	Type	AI
RP-220671	Consideration on low priority cell dropping	Samsung	Discussion	9.5.4.7
RP-220683	On SCell dropping objective of RF requirements enhancement for NR frequency range 1 (FR1)	Huawei, HiSilicon	Discussion	9.5.4.7
RP-220680	Status report for WI RF requirements enhancement for NR frequency range 1 (FR1); rapporteur: Huawei	RAN4	WI status report	9.5.4.7

RP-220681	Revised WID: RF requirements enhancement for NR frequency range 1 (FR1)	Huawei, HiSilicon	WID revised	9.5.4.7

In this document, we capture comments and conclusions for this email thread.

2 Topic: How to handle issue of SCell dropping

2.1 Initial round

2.1.1 Comments & responses

In both RP-220671 and RP-220683, companies proposed to remove SCell dropping objective from Rel-17 WID.

Topic #1: SCell dropping objective in Rel-17 WID

- **Proposal:** Remove the SCell dropping objective in Rel-17 WID on RF requirement enhancement for NR frequency range 1.

Companies are invited to provide comments in the follow table.

Feedback Form 1:

1 – Samsung Electronics Co. We submitted contribution RP-220671 on Scell dropping. We support Moderator proposal on remive the Scell dropping objective in Rel-17 WID.
2 – Ericsson France S.A.S OK with the proposal, but note that we need to reply to the RAN5 LS in R5-221617 (test procedure for SCell dropping), which may potentially need some RAN4 core requirement relating to test functionality. This would need to be done in maintenance if this WI is closed. Anyhow if a CR is needed it would need to be Rel-16 though.
3 – ZTE Wistron Telecom AB We are fine with the proposal to remove the objective, since it is practically not feasible to conclude it within one extra meeting considering that there are still 3 solutions open and RAN2 signaling support may be required as well.

4 – Apple (UK) Limited We support the moderator's proposal to remove the objective in Rel-17 WID on RF requirement enhancement for NR frequency range 1.
5 – Huawei Technologies France We support the moderator's proposal to remvoe the objective in Rel-17 WID and close the WI. Regarding the reply LS to RAN5 for the measurement issue, as usual, that can be discussed in the maintenance or LS reply agendas.
6 – Intel Corporation (UK) Ltd We support moderator's proposal to remove the objective from the WI scope
7 – Guangdong OPPO Mobile Telecom. ok to remove from objective.
8 – vivo Communication Technology We support the proposal.
9 – China Mobile Com. Corporation We support the moderator proposal
10 – China Telecom Corporation Ltd. ok with the proposal.
11 – Nokia Japan We agree with the proposal.

Topic #2: Can we consider the objective of SCell dropping in future release

- **Option 1:** Further investigate the SCell dropping in Rel-18 with a clarified objective.
- **Option 1a:** SCell dropping solution can be considered in Rel-18 in a late stage depending on the progress of the Rel-18 WI after the Rel-18 non-spectrum WI approved in March RAN plenary meeting.

Companies are invited to provide comments in the follow table.

Feedback Form 2:

1 – Samsung Electronics Co. For timeline of discussion, we respect the RAN chairman guideline on revisiting left-over issues in late stage, e.g, June plenary meeting. Once RAN resume the left-over issue discussion, the objective has to be further clarified. The existing wording the REl-17 WID has to be further clarified especially on the impact to other WG. The current

wording ”preventing low priority cell dropping” is conflicting with current RAN1 specifications. Whether REl-18 objective (if approved) includes other WG spec change shall be clearly specified in the objective. In our understanding, we shall keep other WG spec unchanged for low priority cell dropping. From this perspective, “unnecessary low priority cell dropping” wording shall be considered.

2 – Ericsson France S.A.S

We are OK with option 1a with a slight modification:

Option 1a: SCell dropping solution can be considered in Rel-18 ~~in a late stage~~**later on** depending on the progress of the Rel-18 WI after the Rel-18 non-spectrum WI approved in March RAN plenary meeting.

The current wording implies that additional work could only take place at the end of Rel-18, but in our view RAN could consider (re-) adding SCell dropping at a point in mid Rel-18 if progress in other work would be sufficient.

3 – ZTE Wistron Telecom AB

Option 1a. One clarification is that this objective is still targeted for the Rel-18 WID on UE FR1 RF enhancement if it is considered in the Rel-18 time window, therefore Option 1a could be revised slightly:

Option 1a: SCell dropping solution can be considered in Rel-18 in a late stage depending on the progress of the Rel-18 WI *on UE FR1 RF enhancements* after the Rel-18 non-spectrum WI approved in March RAN plenary meeting.

4 – Apple (UK) Limited

As SCell dropping is an expected UE behavior based on RAN1 UL CA prioritization rule, it is unclear why RAN4 needs to find a solution to work against the rule.

3GPP is contribution driven, if there would be sufficient justification, companies should be welcome to make proposal in future under the guideline from RAN management team for the release.

5 – Qualcomm Technologies Int

We agree with Samsung and Apple that the objective and justification (motivation) needs to be understood and if then this is RAN4 topic since the problem so far was in RAN5 domain and the UE behavior causing this problem was based on RAN1 requirements.

We are fine to discuss R18 WI.

6 – Huawei Technologies France

We are fine with the modification by Ericssson and ZTE for option 1a. When we come back to the issue afterwards, the exact objective in the WID can be further clarified anyway.

7 – Intel Corporation (UK) Ltd

Given uncertainty on the scope of the objective we think it is premature to give commitments that the objective shall be handled in Rel-18. Agree with Apple that this should be contribution driven and discussed at a later stage.

Also, as discussed in Thursday GTW we think that proper process for Rel-18 WIs scope extension shall be established first and other topics deprioritized in RAN #95e should be considered on an equivalent basis. From our point view further extension can be discussed after RAN #98e or 99e

8 – SoftBank Corp. We support Option 1a. The modification proposed by Ericsson and ZTE is fine with us.
9 – Guangdong OPPO Mobile Telecom. Option 1a is ok, but we agree with comments from SS/Apple/QC, that the necessity of this work needs to be agreed based on the situation that even after a release still this cannot got consensus of why RAN4 need to define requirements against RAN1 power control procedures...
10 – vivo Communication Technology We are generally OK with Option 1a.
11 – China Mobile Com. Corporation We support option 1a and Ericsson's update version is also OK.
12 – China Telecom Corporation Ltd. ok with option 1a with the modification by E/// and ZTE. As Chair clarified in Thursday GTW, there will be a checking point for Rel-18 scope, and new objective for FR1 is still possible.
13 – Nokia Japan We don't agree with both options. This may impact on RAN1 and/or 2 work very much based on RAN4 Rel-17 discussion. Of course, we can discuss it but we should not agree with this can be considered at this moment.

Topic #3: $P_{cmax,CA}$ and PHR_{CA} reporting

- **Proposal:** $P_{cmax,CA}$ and PHR_{CA} reporting if needed can be further considered in Rel-18 afterwards, and it should be considered as a separate issue rather than an issue under the SCell dropping solution.

Companies are invited to provide comments in the follow table.

Feedback Form 3:

1 – Ericsson France S.A.S OK with the proposal
2 – ZTE Wistron Telecom AB What about if Scell dropping is eventually included some time in the Rel-18 time window? In this case, Pcmax,CA and PHR_CA reporting can still be linked to the objective for Scell dropping. The proposal is only applicable when we decide that Scell dropping is not included in Rel-18.
3 – Apple (UK) Limited Pcmax reporting does not seem to be practical, especially for FR2. It is also unclear how Pcmax reporting would benefit in network resource scheduling. PHR_CA on the other hand provides the information on

how much power head room is left for UE so that UL TPC and resource scheduling can be better managed by the network. PHR_CA in principle can be derived based on per-cell PHR.

4 – Huawei Technologies France

We are ok with the proposal. According to the discussion in Rel-17, we feel that the PHR reporting issue may not be fully related to the SCell dropping solution. The MPR imblance between CA and single CC is a valid issue identified, which is worth to be further considered in RAN4. Similar to SCell dropping, when to consider it also depends on the WI progress in Rel-18.

5 – Guangdong OPPO Mobile Telecom.

Ok with proposal. The PHR CA reporting is a useful information for BS to schedule UE Tx power especially when the two CCs are handled by different BS.

6 – China Mobile Com. Corporation

OK with moderator proposal

7 – Nokia Japan

We don't have to discuss and agree with the above at this moment. This is not anymore pure RAN4 topic.

Topic #4: Comments on SR and revised WID

Companies are invited to provide comments on the SR and WID if needed.

Feedback Form 4:

1 – Huawei Technologies France

Once we have conclusion of Topic#1, the SR may need to be revised to align with the WID revision.

2.1.2 Summary

Topic #1: SCell dropping objective in Rel-17 WID

For Topic #1, all the companies are OK with the proposal to remove SCell dropping objective from Rel-17 FR1 enhancement WID. Ericsson commented that the RAN5 LS should be replied and some RAN4 work is still needed. In the moderator's view, companies are welcome to provide contributions in RAN4 and trigger the discussions as the usual business.

So the moderator proposes to endorse the proposal for Topic#1.

- **Proposal #1:** Remove the SCell dropping objective in Rel-17 WID on RF requirement enhancement for NR frequency range 1.

Accordingly the revised WID RP-220681 can be approved.

Topic #2: Can we consider the objective of SCell dropping in future release

Most companies can accept Option 1a with the modficiations from Ericsson and ZTE. Samsung, Apple, Qualcomm, Intel, Oppo and Nokia had comments that the justification for this work is needed, objectives need be clarified and there would be impacts on RAN1 and RAN2. Nokia disagreed with both options but seemed OK to further discuss this topic in future.

The moderator proposed some modifications on option 1 to see if it is acceptable to the group.

- **Proposal #2:** SCell dropping solution can be ~~considered~~disucssed in Rel-18 ~~in a late stage~~later on depending on the progress of the Rel-18 WI on UE FR1 RF enhancements after the Rel-18 non-spectrum WI approved in March RAN plenary meeting.

Topic #3: $P_{cmax,CA}$ and PHR_{CA} reporting

Four companies are OK with the proposal. Three companies are not in favor of it and are not convinced by the proposed solution using the Pcmax and PHR_CA reporting. Some company thought it is still linked to SCell dropping.

In the moderator's view, there was no consensus for this topic. But 3GPP is contribution-driven. Nothing prevents the proponent companies from submitting a contribution in the future. So there is no need to continue discussion on Topic #3 in this meeting.

Topic #4: Comments on SR and revised WID

The rapportuer proposed to revise SR to be aligned with the revised WID.

2.2 Intermediate round

2.2.1 Comments & responses

Based on the summary of initial round, the moderator proposes to check if the proposal #2 for Topic #2 can be endorsed, and would like to ask Huawei to provide revised SR for review.

Topic #2: Can we consider the objective of SCell dropping in future release

- **Proposal #2:** SCell dropping solution can be ~~considered~~disucssed in Rel-18 ~~in a late stage~~later on depending on the progress of the Rel-18 WI

Companies are invited to provide comments in the table below.

Feedback Form 5:

1 – Nokia Japan

We don't agree with the proposal #2. We don't see the justification why SCell drop is prioritised among all the other candidate topics had been discussed for Rel-18, but dropped from Rel-18 RAN4 WI package.

2 – KDDI Corporation

We share the view with Nokia. We also feel that the justification is not enough to prioritize this work over other RAN4 candidates not included in the first RAN4 package.

3 – Samsung Electronics Co.

We are fine with Moderator proposal. For future disucssion, as we commented in the initial round, the objective of Scell dropping shall be better clarified especially on the impact to other WG.

4 – China Telecom Corporation Ltd.

We are ok with moderator proposal. We don't think the proposal implies that Scell dropping is prioritized among all the other candidate topics and it just remind the proponents that there is still a chance to come back to it in Rel-18.

5 – vivo Communication Technology

Given this email thread is for Rel-17 WI discussion, we do not have strong view but are not clear whether this proposal for Rel-18 working scope is needed or not.

6 – Intel Corporation (UK) Ltd

We are ok to further discuss it. We also agree with Nokia comment that this topic should not be given a priority comparing to other topics dropped from Rel-18 RAN4 WI package. Therefore we prefer no agreement on further discussion or revise the proposal

- SCell dropping solution can be discussed in Rel-18 later on depending on the progress of the Rel-18 WI and is subject to RAN decision. The topic does not have higher priority comparing to other topics dropped from Rel-18 RAN4 WI package.

7 – SoftBank Corp.

Considering the previous comments in the intermediate round, we are fine with the proposal from Intel.

8 – Ericsson France S.A.S

We don't understand the moderator proposal as implying that SCell dropping is prioritized. The Intel update is fine.

9 – China Mobile Com. Corporation

We are OK with moderator proposal. We do not see the proposal implies higher prioirty of SCell dropping compared to other Rel-18 candidate obejctives. But to make it clear, we are also OK with Intel's proposal.

10 – Guangdong OPPO Mobile Telecom.

Share similar view with Nokia and other companies, it can be considered but should not be prioritized since the justification of the necessity is even not convincing all the companies.

Intel wording is ok with further changes **below**:

- SCell dropping solution can be **considered ~~discussed~~** in Rel-18 later on **as one of the potential item** depending on the progress of the Rel-18 WI and is subject to RAN decision. The topic does not have higher priority comparing to other topics dropped from Rel-18 RAN4 WI package.

11 – ZTE Wistron Telecom AB

Intel's update is more clear, and can avoid mis-reading.

12 – Huawei Technologies France

We are fine with the moderator's proposal. Intel revision is also ok for us, even though we see the there is no indication in the moderator proposal that SCell dropping has high priority compare to other potential topics in Rel-18.

Topic #4: Comments on SR and revised

Please Huawei provide the revised SR for review. The moderator encourages companeis to review it after the revised SR is submitted into inbox.

https://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_95e/Inbox/Drafts/%5B95e-36-R17-FR1-RF%5D

Companeis are invited to provde comments in the table below if needed.

Feedback Form 6:

1 – Huawei Technologies France

The revised SR is uploaded in the inbox folder for R17 UE RF FR1.

https://www.3gpp.org/ftp/tsg*ran/TSG*RAN/TSGR*95e/Inbox/Drafts/%5B95e-36-R17-FR1-RF%5D/REV%20RP-220680%20SR%20on%20NR*RF*FR1*enh.docx

2.2.2 Summary

Topic #2: Can we consider the objective of SCell dropping in future release

2 companeis expressed the concern that the proposal #2 prioritized the potential Scell dropping objective. 1 company thougth the proposal #2 for potential Rel-18 working scope is not needed. Intel and OPPO proposed the modifications to clarify that the intention is not to prioritize the Scell dropping issue in the future, which seems acceptable to most of companies.

There is no intention from the moderator to priortize anything. So the moderator would like to try OPPO and Intel modified version to see if it is agreeable to the group. Otherwise, maybe we do not need to have an agreement. The proponent can bring up the proposal in the future and trigger the further discussion.

So the moderator would like to check if the modified version of proposal #2 is agreeable in the final round.

- **Proposal #2:** SCell dropping solution can be considered ~~discussed~~ in Rel-18 later on as one of the potential item depending on the progress of the Rel-18 WI and is subject to RAN decision. The topic

does not have higher priority comparing to other topics dropped from Rel-18 RAN4 WI package.

Topic #4: Comments on revised SR

Please review the revised SR at

https://www.3gpp.org/ftp/tsgran/TSGRAN/TSGR95e/Inbox/Drafts/%5B95e-36-R17-FR1-RF%5D/REV%20RP-220680%20SR%20on%20NRRFFR1enh.docx

2.3 Final round

2.3.1 Comments & responses

Topic #2: Can we consider the objective of SCell dropping in future release

- **Proposal #2:** SCell dropping solution can be considered ~~discussed~~ in Rel-18 later on as one of the potential item depending on the progress of the Rel-18 WI and is subject to RAN decision. The topic does not have higher priority comparing to other topics dropped from Rel-18 RAN4 WI package.

Companies are invited to provide comments in the table below.

Feedback Form 7:

1 – Intel Corporation (UK) Ltd We are fine with the moderator proposal
2 – SoftBank Corp. We support the moderator's proposal.
3 – Huawei Technologies France We are fine with the moderator's proposal.
4 – KDDI Corporation We are fine with the moderator proposal.
5 – ZTE Wistron Telecom AB Fine with Moderator's proposal.
6 – China Mobile Com. Corporation OK with moderator proposal.
7 – Guangdong OPPO Mobile Telecom. ok with proposal.

8 – China Telecom Corporation Ltd. OK with the moderator proposal.
9 – Ericsson France S.A.S OK with moderator proposal

Topic #4: Comments on revised SR

Companies are invited to provide comments in the table below, if any.

Feedback Form 8:

2.3.2 Summary

Topic #2: Can we consider the objective of SCell dropping in future release

Companies can agree with the proposal #2. So the moderator proposes the endorse the following proposal.

- **Proposal #2:** SCell dropping solution can be considered ~~discussed~~ in Rel-18 later on as one of the potential item depending on the progress of the Rel-18 WI and is subject to RAN decision. The topic does not have higher priority comparing to other topics dropped from Rel-18 RAN4 WI package.

3 Summary of Recommendations

The recommended conclusions are summarized below.

Topic #1: SCell dropping objective in Rel-17 WID (endorsed before starting final round)

- **Proposal #1:** Remove the SCell dropping objective in Rel-17 WID on RF requirement enhancement for NR frequency range 1.
- The revised WID RP-220681 can be approved.

Topic #2: Can we consider the objective of SCell dropping in future release (proposed for endorsement after final round)

- **Proposal #2:** SCell dropping solution can be considered in Rel-18 later on as one of the potential item depending on the progress of the Rel-18 WI and is subject to RAN decision. The topic does not have higher priority comparing to other topics dropped from Rel-18 RAN4 WI package.

Topic #3: $P_{cmax,CA}$ and PHR_{CA} reporting (endorsed before starting final round)

- No consensus.

Topic #4: Comments on revised SR (proposed for endorsement after final round)

- The revision of SR RP-220680 can be noted and complete level is 100% for core part and performance part.