[97e-16-R18-XR] - Version 0.0.3
RAN

3GPP TSG RAN#97e RP-222576

Electronic Meeting, Sept 12 - 16, 2022

Source: Moderator (Balazs Bertenyi, Nokia)

Title: Moderator's Summary on "[RAN97e-16-R18-XR]"

Document for: Endorsement

1 Initial Phase - now closed

This NWM thread handles the following input document: RP-222476.

This document addresses the workplan and the detailed coordination required with SA2 for XR.

1.1 Overall comments on XR work coordination

The latest XR SA2 status report captures that key issues require coordination with RAN WGs. This section collects overall company comments on the needed coordination from a RAN perspective.

Feedback Form 1: Overall comments on coordination for XR

1 – Nokia Corporation From our perspective there is no need for special RAN guidance, RAN2 should be able to see if they need LS towards SA2 on this or not. In any case RAN raporteur can contact the SA2 raporteur, as well as RAN2 chairman can contact SA2 raporteur to urge the need to get timely input from SA2 side.
2 – VODAFONE Group Plc In our view, we have only 2 meetings left in RAN2 for the study item (October and November) and some coordination is obviously needed. At the same time, I would rather try to avoid writing many LSs as there is not much time to answer them.
3 – MediaTek Inc. Cross-WG dependencies are well documented and understood at WG-level - so it is indeed expected that proper coordination ensues.

4 – Ericsson LM

Agree with Nokia.

5 – CATT

RAN2 could perform the work without any guideline from RAN.

6 – vivo Mobile Communication Co.

In general, we agree with the statement in RP-222476 that several topcis requires (high) coordination between RAN2 and SA2. Considering we have only two meetings left in RAN side for SI, it is better to improve our coordination, e.g. not just only rely on LS exchange, but we could also consider joint discussion, if possible.

7 – Sony Europe B.V.

Agree with Vivo

8 – T-Mobile USA Inc.

It's clear from recent RAN2 discussions that RAN and SA aren't coordinated and that this needs to be addressed. There's clearly a need to extend the RAN XR SID to March 2023.

SA2 is late on concluding XR study item (due to issues with KI understandings and due to lack of F2F meetings expected with original timeline) – If RAN attempts to conclude their study without clear architecture direction from SA2 then we are going to end up with a similar mess that was/is R17 Slicing. RAN2 has already assumed that PDU grouping will occur, however this hasn't been decided in SA2 and won't be finalized until November.

SA KI#4 (PDU Set integrated packet handling) and KI#5 (Differentiated PDU Set Handling) constitute over 50% of the work for the SA2 XR study, it's not going to be possible to narrow down to an effective conclusion with 32 potential solutions contributed to these KI's in one SA2 meeting in October.

SA2 must conclude their work before RAN2 continues working on XR NAS functionality. As such plenary needs to extend the RAN XR SID to March 2023 and wait for SA2 to conclude their work.

9 – Apple GmbH

Dependencies between RAN and SA have been flagged early on. We support progressing on aspects needing inter-WG coordination with an emphasis on XR awareness, and in our view the priorities are understood. We would welcome a joint discussion between RAN2 and SA2 as mentioned by Vodafone under 1.2. In addition, we think that the concerns raised by TMO are reasonable.

10 – Futurewei

We support more active coordination between RAN1/2 and SA2, primarily through LS based on technical discussion/progress occurred at the WGs.

11 – ZTE Corporation

We agree that timely conclusion on overal. SA2 framework would be useful for RAN2 to progress the work (especially regarding XR awareness). However, this is already apprecited by both RAN2 and SA2 and it is unlikely that RAN plenary intervention is essential at this stage. We also agree that there is not much scope for multiple rounds of LS exchanges but SA2 should anyway be aware of the timescales of the RAN WI in this regard. So, we expect the conclusions in SA2 will be made in a timely manner in anycase.

12 – III

Agree with ZTE.

13 – Samsung Electronics Co.

We (indeed) have sympathy on the proposal but believe that we can rely on the WI rapporteurs for the detailed work plan. We think that each WG already recognizes the situation from the discussion last August, so expect that the situation would become better in the next quarter even without having specific RAN guidance.

14 – Telstra Corporation Limited

Would it be feasible for a RAN2/SA2 coordination GTW to be scheduled to replace LS ping-pong? The history of these have been chequered in the past however if the rapporteurs in the respective groups are tasked to produce a targeted agenda focussed on the needs of each group and the call is scheduled at an appropriate time when SA2 have made progress, this could be faster than LS exchanges.

15 – Facebook

agree with vivo.

16 – Guangdong OPPO Mobile Telecom.

We expect more active coordination between RAN and SA2, and LS can be used as basic method for this. However, RAN and SA2 should be aware there is no much time left for RAN XR SI phase and much RAN2 work depends on the SA2 final progress. Thus, SA2 is expected to conclude timely on the key issues for which cross-WG dependency is determined. Also, multiple rounds of LS should be avoided.

17 – LG Electronics Inc.

We think the XR issues are already well coordinated between RAN2 and SA. We are wondering what kind of further coordination is needed than what we have today.

18 – QUALCOMM JAPAN LLC.

We understand that coordination with SA2 is already considered important in RAN2. We think RAN2 will do necessary coordination with SA2 without any further guidance from RAN.

19 – TELECOM ITALIA S.p.A. We share the concern expressed by TMO and support having a joint RAN2/SA2 session as proposed by Telstra. We have a strong reservation to conclude the study in RAN before the conclusion in SA2
20 – CITC We think there is no such RAN level guidance is needed and can be left to WGs for more active coordination between RAN2 and SA2.
21 – Lenovo Information Technology Agree with Nokia. We understand that it can be left to RAN2 whether they need LS to SA2 according to RAN2 and SA2's progress.

1.2 Comments on Proposal 1

This section collects company comments on **Proposal 1** in RP-222476:

"RAN task to RAN2 to prioritize discussions on topics that require coordination with SA2, i.e. XR awareness in RAN, to identify the required inputs from SA2 or to provide feedback from RAN on the solutions identified by SA2."

Feedback Form 2: Comments on Proposal 1

1 – VODAFONE Group Plc In our view, RAN2 should progress on all 3 topics (awareness, batery consumtions and capacity/scheduling) and identify all possible issues which need to be discussed with SA2. In November, it would be desirable to have common meeting to discuss still open issues
2 – MediaTek Inc. While we support the need for coordination between WGs, we do not see there is any special intervention required at RAN plenary given dependencies are understood and documented. It is expected WGs will progress to ensure that these dependencies can be addressed ASAP. As commented above by Vodafone, there is some opportunity for joint discussions in November that should be kept in mind.
3 – CATT We believe that RAN2 had emphasized the important issues of XR awareness during RAN2#119e. Thus, we don't see the need of any guidance from RAN

4 – vivo Mobile Communication Co.

We share the similar view that RAN2 could prioritize the discussions on topics that requires coordination with SA2. For example, RAN2 could firstly identify the issues/requires needing SA2 inputs, which will facilitate our discussion in RAN2, especially for XR awareness. But we also agree that explicit guidance from RAN plenary may not be needed. This could be anyway handled by RAN WG chair.

5 – Sony Europe B.V.

Agree with Vivo

6 – NTT DOCOMO INC.

Agree with Vivo.

7 – T-Mobile USA Inc.

As T-Mobile mentioned in our earlier comment, SA2 won't conclude their work until November, as such there's not much for RAN2 to prioritize. Teh best course of action is to delay any NAS work in RAN2 until SA2 has concluded the SA2 SID. Any LS can be handled in normal manor.

8 – Apple GmbH

We tend to agree that XR awareness is useful to prioritize. While RAN2 is unable to conclude on QoS without SA2 input it can be helpful to identify general design directions in parallel to SA2. However, we cannot go too far without also keeping power and capacity in mind. Hence, discussions should continue to evolve on all three objectives in our view, but with a priority on XR awareness.

9 – Futurewei

Agree with vivo.

10 – Intel Corporation (UK) Ltd

As long as companies/RAN2 leadership are aware that it is important to identify RAN2 inputs (potential questions/feedback) to SA2 on XR awareness topic in RAN2 #119bise meeting, we would be ok to not have explicit guidance from RAN plenary. Dependent on SA2/RAN2 progress during October meeting, we are also open to Vodefone's suggestion to have joint discussion in November meeting.

11 – ZTE Corporation

We agree with Vodafone that all 3 topics of XR should be progressed and the detailed scheduling of how this is managed can be left to RAN2

12 – III

Agree with VODAFONE.

13 – HuaWei Technologies Co.

We are in general fine with this proposal. To achieve timely completion, we understand SA2 needs to try completing those key issues which would impact RAN WGs by October and then RAN2 can conclude in November. As some companies already commented, we understand RAN2 leadership can handle this well.

14 – Samsung Electronics Co.

We tend to agree with the proposal in principle, but the detailed agenda can be decided by WG chair.

15 – Facebook

We also tend to agree the proposal in principle. However, we also think the leadership is aware of the situation and would be able to handle the agenda properly with or without further guidelines.

16 – Guangdong OPPO Mobile Telecom.

We share similar view as Vodafone that 3 topics should be progressed. In our understanding, each topic may somehow need the input between SA2 and RAN. Also, we agree with companies that explicit guidance from RAN plenary is not needed, but SA2 should take the RAN timescale into account.

17 – LG Electronics Inc.

We think the XR issues are already well coordinated between RAN2 and SA. We are wondering what kind of further coordination is needed than what we have today.

18 – LG Electronics Inc.

Please ignore our above answer.. it is intended for Q1.1.

We think all three topics, i.e. awareness, power saving, capacity, are important from RAN perspective. But, we understand that the awareness topic requires more coordination with SA2, and maybe RAN2 chair can take this into consideration when discussing XR in RAN2.

19 – QUALCOMM JAPAN LLC.

We understand that coordination with SA2 is already considered important in RAN2. We think RAN2 will do necessary coordination with SA2 without any further guidance from RAN.

20 – CITC

Agree with Vivo

21 – Lenovo Information Technology

We think companies and RAN2 are aware of the importantance of XR awareness. On the other hand we agree with others that power saving and capacity enhancements are important as well. Therefore, we think that an explicit guidance from RAN is not needed.

1.3 Comments on Proposal 2

This section collects company comments on **Proposal 2** in RP-222476:

"RAN coordinate with SA if SA2 can prioritize discussions and conclusion on the topics that require coordination with RAN2, i.e. (KI#3) 5GS information exposure for XR/media Enhancements, (KI#4) PDU Set integrated packet handling, (KI#5) Differentiated PDU Set Handling."

Feedback Form 3: Comments on Proposal 2

1 – VODAFONE Group Plc In general, I think it is useful proposal and we could discuss in November during the common meeting if there are still open points.
2 – MediaTek Inc. Similar to the comment we made above, we're not sure there is a need for plenary intervention, whether at RAN or at SA - Rapporteurs and WGs are doing their work and dependencies are understood and documented. The opportunity to have some joint discussion in November should be explored.
3 – CATT We believe that SA2/SA would handle these issues by themselves without any RAN's request in coordination.
4 – vivo Mobile Communication Co. As commented above, we agree with the intention for this proposal. Considering some RAN2 discussion (e.g. XR awareness) highly depends on SA2 outputs, it will be helpful to let SA2 be aware of such situation. Regarding the detailed action, e.g. how to facilitate the coordination, we could further discuss it.
5 – Sony Europe B.V. We are not sure any plenary involvement is needed. Considering the short time left 2 meeting, this needs to be resolved between SA2 and RAN2 during October and November meetings.
6 – T-Mobile USA Inc. RAN plenary needs to extend the SID to March 2023 and wait for SA2 to conclude the XR SA SID. Prioritizing KI#4 and KI#5 in RAN will only end with different solutions in RAN and SA.
7 – Apple GmbH Similar to our comments made above, we acknowledge the need to prioritize XR awareness. We note that SA2 is currently having email discussions on multiple related key issues. From our perspective, RAN plenary intervention is not a must have, but we are open to explore early exchange of information between WGs or even other ways to resolve it.

8 – Futurewei

The WGs should carry out necessary coordination in due course. But we are open to a joint meeting in November for joint topics that still remain open by then, if any.

9 – Intel Corporation (UK) Ltd

Our motivation is to make sure that RAN2 and SA2 have the same expectation that KI #3,#4,#5 should be concluded in October meeting to be able for RAN2 to finish RAN study. Quick LS from RAN would be helpful.

10 – ZTE Corporation

We think SA2 should be aware of the RAN timeline and can work based on the LSs sent from the RAN WGs to SA2.

11 – III

Coordination between WGs is necessary, we are open to a joint discussion.

12 – HuaWei Technologies Co.

See above. We agree in general that, those key issues which require coordination with RAN WGs in SA2 status report, should be prioritized. Perhaps we don't need to list specific issues here, as SA2 is clear which KIs require coordination with RAN WGs, e.g. KI#8 also needs coordination with RAN WGs.

13 – Samsung Electronics Co.

As said above, we tend to agree with the proposal in principle, but the detailed agenda can be decided by WG chair.

14 – Telstra Corporation Limited

As per Telstra comments on Proposal 1 above, this may be facilitated by a cross-WG call to share the needs of RAN2 so that SA2 experts can prioritise accordingly.

15 – Facebook

We also tend to agree the proposal in principle. However, we also think the leadership is aware of the situation and would be able to handle the agenda properly with or without further guidelines.

16 – Guangdong OPPO Mobile Telecom.

In general, we agree that SA2 can prioritize the mentioned KIs. Also, SA2 is expected to conclude timely to help RAN XR work. Not sure whether RAN plenary involvement works, but we are fine to exchange information between WGs if it helps RAN work on XR.

17 – LG Electronics Inc. We think coordination between RAN and SA is not needed. We believe SA2 will consider RAN2 impacts, and will do properly.
18 – QUALCOMM JAPAN LLC. We do not see a need of RAN input to SA. All this can be driven by company contributions. Interested companies should be fully aware by now what it takes to complete the work in terms of SA2-RAN2 joint issues, and contribute accordingly.
19 – VODAFONE Group Plc Vodafone: Even, we feel that the progress is behind the schedule, we think, that the discussion about the extension of the SI has to be done (if needed) during the next plenary as currently it is not very clear what will be still open after November and I thought we focus now on what might be useful to do till November to speed up the progress
20 – CITC Generally we agree that prioritization work should be done relating to coordination KI, details can be handled in WGs.
21 – Lenovo Information Technology In general, we can leave it to SA2 to prioritize discussions and conclusions of the topics based on their own interest. We think a “quick LS from RAN” is not really helpful for their work.

2 Intermediate phase - now closed

2.1 Proposed way forward

Based on the companies’ feedback provided in the Initial Phase the following way forward is proposed:

1) Encourage more active direct coordination between SA2 rapporteur and RAN2 rapporteur how to address the inter-related issues in a timely fashion. The rapporteurs to provide a draft plan in this regard for the next WG meetings.

If seen beneficial/practical, arrange a joint RAN2/SA2 session on XR at the November WG meetings to accelerate progress on inter-related issues. This is left to the discretion of the WG chairs.

2) Potential schedule adjustment for the SI phase to be addressed at the December TSGs.

Feedback Form 4: Comments on Proposed Way Forward

1 – T-Mobile USA Inc.

Add bullet stating: Change SID completion date to RAN#99 (March 2023).

There's no urgent need to complete the SI before June as the normative work will be done in R19. This gives SA2 time to complete their work in October and provides RAN2 with a full understanding of SA2 solution.

2 – CATT

We fully support the coordination between SA2 and RAN2 rapporteurs. We are OK to re-evaluate the progress at RAN#98 in December to see the progress of XR in RAN1/RAN2 at next quarter.

3 – Futurewei

We support the proposed way forward from the moderator. We can revisit the schedule of the SI in December meeting.

4 – Intel Corporation (UK) Ltd

We also support the first point in the proposed way forward from the moderator. Regarding the second point, we don't see a need to explicitly conclude but could accept it given that the official completion of XR study is December, RAN plenary should discuss the completion of the study in December which may include potential schedule adjustments if the study were not completed.

5 – Samsung Electronics Co.

We are fine with the first part of P1, but a bit skeptical on the second part of P1. That is, such joint session would just take some time but not efficient in most cases unless the issues are identified clearly… Anyway it can be left to the WG chairs as the moderator suggested.

Regarding P2, we think it does not have to be captured at the moment, as the schedule would be revisited anyway, based on the progress in the WGs next quarter.

6 – vivo Mobile Communication Co.

We are supportive on the first way forward from the moderator, as we think the coordination between RAN2 and SA2 rapporteurs and WG Chairs will be helpful for the discussion in RAN2 and SA2.

Regarding the potential joint RAN2/SA2 session on XR at the November WG meetings, we think it is better to identify the specific issues, before the meeting, e.g. QoS flow and DRB mapping, PDU set characteristics, etc. Otherwise, some general joint disucssion will not be much helpful for our study.

Regarding the second way forward, we also think there is no need to capture this as explicit conclusion here, as we will anyway evalute whether this SI is completed in Dec. meeting.

7 – vivo Mobile Communication Co.

We are supportive on the first way forward from the moderator, as we think the coordination between RAN2 and SA2 rapporteurs and WG Chairs will be helpful for the discussion in RAN2 and SA2.

Regarding the potential joint RAN2/SA2 session on XR at the November WG meetings, we think it is better to identify the specific issues, before the meeting, e.g. QoS flow and DRB mapping, PDU set characteristics, etc. Otherwise, some general joint disucssion will not be much helpful for our study.

Regarding the second way forward, we also think there is no need to capture this as explicit conclusion here, as we will anyway evalute whether this SI is completed in Dec. meeting.

8 – LG Electronics Inc.

We are generally fine with the proposed way forward. But, we are not sure whether the joint RAN2/SA2 session is really helpful.

9 – Guangdong OPPO Mobile Telecom.

We support the proposed way forward from the moderator. The potential schedule adjustment can be evaluated in December based on the progress at that time.

10 – QUALCOMM JAPAN LLC.

We are OK to have the rapporteurs and the WG chairs continue taking the lead. We hope that they will take into account companies' view as well. This is actually business as usual.

We are very skeptical about the usefulness of SA2-RAN2 joint session, like any other joint sessions in the past. At one time a joint session was slightly useful, the leading WG prepared questions that can be only answered by "yes" or "no", i.e. not allowing an open ended answer with a lot of conditions and dependencies.

11 – Sony Europe B.V.

We are fine with the moderator proposals, and think up to rapporteurs and WG chairs discretion to what extend joint RAN2-SA2 activities would be needed.

12 – Ericsson LM

It is unclear what "2) Potential schedule adjustment for the SI phase to be addressed at the December TSGs." refers to.

We think that this whole discussion is about how to make sure that topics with SA2-dependency are handled so that they can be concluded, e.g. prioritized. So this is a discussion of which items to prioritize **within** the SI. If this is what is intended by bullet 2 we are OK with it but some clarification would be needed. If something else is intended with bullet 2, we would be happy to get further clarification from the moderator.

13 – HuaWei Technologies Co.

We are fine with 1).

Regarding 2) we think there is still time and there is no need to conclude that schedule adjustment is needed in December plenary right now. Proposal 2 seems not needed.

14 – Beijing Xiaomi Mobile Software

Agree to support the coordination between SA2 and RAN2 rapporteurs.

We are also OK to re-evaluate the progress at RAN#98 for SI schedule adjustment.

Open to have the joint meeting if people think it is real needed.

15 – Apple GmbH

On 1), we are fine with the way forward proposed by the moderator. On 2), it might seem a bit early to conclude on an adjustment of the SI right away while also other scoping discussion are paused by the RAN chairman. On the other hand, we think it is reasonable to capture a note and plan to revisit the SID in the December plenary, considering the progress RAN/SA will have made by then.

16 – Spreadtrum Communications

We are fine with the coordination between SA2 and RAN2 rapporteurs.

If the progress in coordination is not good enough, we support to re-evaluate the progress at RAN#98 in December.

17 – VODAFONE Group Plc

we are fine with Moderator view. We also see joint session useful, but it needs to be prepared to address open points.

18 – CITC

We support the proposed way forward from the moderator.

19 – ZTE Corporation

The first bullet in the WF is reasonable since there are many common issues being discussed in both RAN2 and SA2. However, for the joint RAN2/SA2 session, we are skeptical about the efficiency. We don't think it will benefit the overall progress.

For schedule adjustment of SI completion date, we think it is too early for such a conclusion since RAN2 has discussed XR for only one meeting. This can be revisited in Dec based on the progress of the SI.

20 – MediaTek Inc.

Inter WG coordination via Rapporteurs and Leadership is indeed business as usual.

On a joint session: this should be kept in the backpocket, provided of course a clear agenda is defined i.e. set of clear questions to be answered, else it won't be useful.

21 – Nokia Corporation

Fine with the proposal