[95e-21-LS-IAB-Sat] - Version 0.0.3
RAN

3GPP TSG RAN#95e RP-22xxxx

Agenda Item: 8.3.3.3

Source: Qualcomm (Moderator)

Title: Moderator's summary for discussion [95e-21-LS-IAB-Sat]

Document for: Discussion

1 Introduction

SA2 sent an LS to TSG RAN in RP-220034 [1] with the following content:

————————————BEGIN————————————-

1. Overall Description:

SA2 would like to inform RAN and RAN WG3 that a Rel-18 study item for Vehicle Mounted Relays (FS_VMR: SP-211636) was started in SA2. SA2 also noticed that RAN had approved a related WID for Rel-18 led by RAN3 on Mobile IAB (NR_mobile_IAB: RP-213601).

In Rel17, IAB is not applicable to NR satellite access as specified in TS 23.501. SA2 also noticed that in Rel18 NR_mobile_IAB, satellite access is also not in the scope of the WID.

So, SA2's understanding is that satellite access is not supported for mobile IAB as the backhaul (between IAB-donor and IAB-node) in Rel-18.

Therefore, SA2 would like to confirm with RAN and RAN3 whether the SA2's understanding is correct.

2. Actions:

To: RAN

ACTION: *SA2 kindly asks RAN to provide feedback on whether the above SA2's understanding is correct.*

————————————END————————————-

A draft Reply LS was submitted to RAN#95e by Qualcomm in RP-220178 [2]. A discussion paper was submitted to RAN#95e by ZTE in RP-220662 [3]. The latter contribution includes a draft Reply LS in the Annex.

This offline discussion has the goal to converge on a reply LS to SA2.

2 Initial Round

Both contributions agree with SA2's understanding that satellite access is not supported for mobile IAB as the backhaul (between IAB-donor and IAB-node) in Rel-18.

Feedback Form 1: Q1: Do you agree with SA2's understanding that satellite access is not supported for mobile IAB as the backhaul (between IAB-donor and IAB-node) in Rel-18?

1 – OPPO Yes. We agree.
2 – CATT Agree with SA2 understanding.
3 – MediaTek Inc. We agree with SA2 understanding.
4 – Ericsson LM Yes. There should be no mention of it in the specifications.
5 – Nokia Italy Agree with SA2 understanding.
6 – Beijing Xiaomi Mobile Software yes
7 – Verizon UK Ltd yes, agree with SA2 understanding
8 – NTT DOCOMO INC. Yes, we agree.
9 – vivo Mobile Communication Co. Yes, We agree.
10 – Intel Technology India Pvt Ltd Yes, we agree
11 – Huawei Technologies France yes, not supported.

12 – LG Electronics Inc. Yes, agree with SA2 understanding
13 – Kyocera Corporation We agree with SA2's understanding. On the other hand, from RAN's perspective, we wonder if the satellite access as backhauling for mobile IAB is not prohibited, in case some deployments want to use it. But even in this case, we don't think the mobile IAB WI considers anything special for supporting the backhauling via satellite access.
14 – Apple R&D Yes, we agree with SA2 understanding.
15 – Samsung Electronics Nordic AB Yes.
16 – ZTE Corporation Yes, we agree.
17 – NEC Europe Ltd Yes, we agree.

The draft LS in RP-220178 [2] further includes:

1. TSG RAN confirms that a Rel-18 work item on Mobile Integrated Access and Backhaul for NR was approved at TSG RAN Meeting #94e with a WID in RP-213601.

2. TSG RAN confirms SA2's observation that Rel-17 IAB does not consider NR satellite access.

3. TSG RAN discussed whether to include the use of satellite access for the IAB backhaul link in the Rel-18 scope on Mobile IAB and eventually decided to not include this objective into the Rel-18 WID.

Feedback Form 2: Q2: Do you agree that it would be useful to include (some of) this information in the Reply LS? What other information should be included if any?

1 – OPPO In our understanding, the draft LS in RP-220178 covers both of following types of NW-UE overall links: – [IAB/fix node <->] *Satellite <-> MobileIABnode <-> UE* – *IABdonor <-> IABnode <-> Satellite <-> UE* On the other hand, it is not quite clear to us whether SA2 LS only asks RAN feedback for the first type ("Satellite as backhaul" seems to read so). Therefore, we prefer to add 1/2/3 points given in RP-220178 to the reply LS, in order to give SA2 a full picture of RAN status.

2 – CATT

We think the points listed by the moderator are fine.

3 – MediaTek Inc.

Points 1, 2 and 3 above are ok.

4 – Ericsson LM

The proposed text in 0178 is OK as it is - no other information needs to be added.

5 – Nokia Italy

We are fine with the additional information listed.

6 – Beijing Xiaomi Mobile Software

Our understanding is that the points 1, 2, 3 from the moderator accurately address the concerns raised by SA2

7 – Verizon UK Ltd

We are fine with the info listed in points 1, 2 an 3.

8 – NTT DOCOMO INC.

We are fine to include all 3 points.

9 – vivo Mobile Communication Co.

We are fine to have these 3 points.

10 – Intel Technology India Pvt Ltd

Yes, we agree they would be useful, but no strong view.

11 – Huawei Technologies France

we are fine with the bullets listed by moderator, no other info needed. Anyway, it was not discussed in 17, and also not part of R18 objective.

12 – LG Electronics Inc.

Fine to include additional information, but the bullet 2 and 3 may be sufficient for the Reply LS.

13 – Kyocera Corporation

We agree with the moderator about the three points.

14 – Apple R&D

The three points listed are helpful.

15 – Samsung Electronics Nordic AB We are fine with Points 1~3.
16 – ZTE Corporation We are fine with the point 1-3.
17 – NEC Europe Ltd We are ok to include all 3 points

Based on the feedback on Q1 and Q2, a draft reply LS will be discussed in the intermediate round.

2.1 Summary of Initial Round:

All companies agree with SA2's understanding that satellite access is not supported for mobile IAB as the backhaul (between IAB-donor and IAB-node) in Rel-

All companies agree to add the three additional aspects included in the Draft reply LS in RP-220178 [2].

3 Intermediate Round

Based on the outcome of the Initial Round, the moderator proposes the use RP-220178 [2] as the baseline for the Reply LS with the following content:

————————————BEGIN————————————-

1. Overall Description:

TSG RAN would like to thank SA2 for their LS in RP-220034 about the new Rel-18 study item on VMR.

TSG RAN confirms that a Rel-18 work item on Mobile Integrated Access and Backhaul for NR was approved at TSG RAN Meeting #94e with a WID in RP-213601.

TSG RAN confirms SA2's observation that Rel-17 IAB does not consider NR satellite access. TSG RAN discussed whether to include the use of satellite access for the IAB backhaul link in the Rel-18 scope on Mobile IAB and eventually decided to not include this objective into the Rel-18 WID. RAN WGs will therefore not consider satellite access in the Rel-18 work on Mobile IAB.

2. Actions:

To: SA2

ACTION: *TSG RAN kindly asks SA2 to take the above into account.*

————————————END————————————-

A DRAFT Reply LS with this content has been uploaded to Inbox/drafts/[92e-21-LS-IAB-Sat]. The moderator would like to ask TSG RAN to review this DRAFT Reply LS, and provide comments/feedback on content and formal issues.

Feedback Form 3: Q3: Do you have any comments/feedback on the content or formal issues of the DRAFT Reply LS in the drafts folder?

1 – OPPO

After reviewing the SA2 LS and the draft reply LS, we have a feel that the draft reply LS might not fully address SA2's question.

In the incoming SA2 LS, SA2 wants RAN to confirm their understanding based on some observations, where:

– SA2 observations: (1) Rel-17 IAB is not applicable to NR NTN and (2) satellite access is not in scope of Rel-18 mobile-IAB WID.

– SA2 understanding: satellite access is not supported in Rel-18 mobile IAB. (e.g., depending on the meaning of "support", whether it is feasible to implementation-wise combine Rel-18 IAB and Rel-17 NTN).

On the other hand, by saying "RAN WGs will therefore not consider satellite access in the Rel-18 work on Mobile IAB", the draft reply LS has a risk to only confirm SA2's observations, but likely not their understanding.

So maybe a simple tune-up to the reply LS draft without changing 1st-round progress too much is to modify the last sentence to "**RAN WGs will therefore not consider support of satellite access in the Rel-18 work on Mobile IAB**".

2 – Samsung Electronics Nordic AB

We are fine with the draft Reply LS in the draft folder, and the revision from OPPO is also OK to us.

3 – Ericsson LM

The proposed draft looks OK. No strong need for further rewording.

4 – ZTE Corporation

We are fine with the proposed draft.

5 – Beijing Xiaomi Mobile Software

looking at the original LS from SA2 they ask for confirmation of their understanding. "SA2's understanding is that satellite access is not supported for mobile IAB as the backhaul (between IAB-donor and IAB-node) in Rel-18.", we should just answer the question with,

"*RAN ~~WGs~~ confirms SA2 understanding that ~~will therefore not consider~~ satellite access is not supported as backhaul in the Rel-18 work on Mobile IAB"*. This said, if people think leaving "*as backhaul*" in the reply adds to confusion and could be deleted then we are fine with this too.

6 – Huawei Technologies France we are fine with the proposed draft from moderator.
7 – LG Electronics Inc. Fine with the propossed draft.

3.1 Summary of Intermediate Round

There seems to be support for the draft reply LS proposed by the moderator. There were further two rewording proposals for the last phrase.

Oppo proposed:

”*RAN WGs will therefore not consider the support of satellite access in the Rel-18 work on Mobile IAB.”*

There was limited support for this rewording. The moderator does not see a major difference between both versions. If *satellite access* is not considered, then the *support of satellite access* is not considered either.

Xiaomi proposed:

”*RAN ~~WGs~~ confirms SA2 understanding that~~will therefore not consider~~ satellite access is not supported as backhaul in the Rel-18 work on Mobile IAB*”.

While the reworded version closely follows the formulation of SA2’s question, the moderator believes that it does not represent RAN’s understanding of the matter. RAN has never precluded the feasibility of an implementation-based solution to satellite-based backhauling for mobile IAB. However, RAN wants to convey that satellite-based backhauling will not be considered by the Rel-18 Mobile IAB WI. The original version of this last phrase captures this intention much better.

Based on the feedback/comments to the initial and intermediate rounds, we have converged on a draft reply LS, and there are no open issues that need further discussion.

4 Final Summary

The initial and intermediate rounds of the discussion have converged on a draft Reply LS to RP-220034 contained in RP-220947.

5 References

[1] RP-220034, LS by SA2 on IAB support of NR satellite access, SG RAN Meeting 95e, March 2022

[2] RP-220178, [DRAFT] LS on IAB support of NR satellite access, Qualcomm, TSG RAN Meeting 95e, March 2022

[3] RP-220662, Discussion on the LS for IAB support of NR satellite access, ZTE, TSG RAN Meeting 95e,

March 2022