3GPP TSG RAN#97e RP-222584

Agenda Item: 9.3.3.3

Title: Moderator's summary for discussion [97e-24-R18-MobileIAB]

Source: Qualcomm (Moderator)

Document for: Discussion

1   Introduction

This email thread discusses RP-222448. RP-222448 addresses two aspects of the WID:

Aspect 1: Mobile IAB-node connectivity to an intermediate stationary IAB-node vs. IAB-donor.

Aspect 2: Mobility of a dual-connected IAB-nodes.

2   Initial Round Discussion

2.1   Mobile-IAB-node connectivity to intermediate node vs. IAB-donor

In RP#96, a **NOTE** was added to the WID in RP#96, which states:

Note: At the beginning of the work period, RAN3, RAN2 should discuss the potential complexity of a scenario where a mobile IAB node connects to a stationary (intermediate) IAB node, with respect to the scenario where a mobile IAB node connects directly to an IAB-donor.

RAN2 and RAN3 discussed this matter in the August WG meetings and agreed the following:

RAN2 agreement:

- *R2 assumes that Mobile IAB connecting to a stationary (intermediate) IAB node is/can be supported. R2 assumes this can be supported with no (or limited) impact.*

RAN3 agreement:

- *Rel-16/17 IAB can support mobile IAB-node connectivity to a stationary intermediate node.*

- *Enhancements/optimizations that are specific to the scenario where the mobile IAB-node connects to a stationary (intermediate) IAB-node are deprioritized.*

- *Optimizations/enhancements that are specific to the scenario where the mobile IAB-node connects directly to a donor-DU are deprioritized.*

Based on these agreements, RP-222448 proposes to remove the above NOTE from the WID, and to capture in the WID that (1) the mobile IAB-node connecting to a stationary (intermediate) IAB node is supported in Rel-18 mobile IAB, and (2) that the optimization specific to the scenarios, where the mobile IAB-node connects to a stationary (intermediate) IAB-node or where it directly to a donor-DU are de-prioritized.

Feedback Form 1: Q1: Do you agree on the removal of the above Note from the WID and to add a clarification that reflects the above RAN2/3 agreements?

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1 – Intel Technology India Pvt Ltd

We agree the analysis/intent but no strong view (probably not essential to update now as already agreed in WG-level). But we are fine if the majority prefers to update/capture in the WID.

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2 – Nokia

The proposal seems to accurately reflect the common understanding / agreements in the WGs, but it seems unnecessary to update the WID since such progress is already captured in WG meeting minutes and WI status reports. However, if there is solid support for such a WID update, then we are fine with it.

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3 – ZTE Corporation

We are fine to remove the note and capture the RAN2/3 agreement in the WID. Actually, the note became out-of-date since RAN2/3 has already discussed this scenario and reached agreements. So at least the note should be removed.

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4 – Apple

Same view as Intel and Nokia. We are fine to remove the Note if majority support.

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5 – LG Electronics Inc.

We are ok with the removal of the Note from the WID, but not sure whether further clarification in the WID is needed to reflect RAN2/3 agreements. Just removal of the Note may be sufficient.

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6 – Kyocera Corporation

Yes, we should respect RAN3 and RAN2 agreements.

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7 – Beijing Xiaomi Mobile Software

To the note, it is clear that RAN3 and RAN2 have followed the directions of this part of the objective and that the resulting agreements are clearly captured within the respective groups. Generally as the objective

is a direction for work there seems little need to delete the note, as we do not generally remove objectives just because they have been completed.

This said, where the complexity analysis has led to an identification of priorities of work and is captured within the agreements of RAN3, we would be open to the capturing these deprioritized parts in order to clarify any concerns on the remaining scope of work. On this we dont have a strong preference and are okay to go with the majority since the agreements are captured.

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8 – Samsung R&D Institute UK

We're fine with removing the note.

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9 – Huawei Technologies France

Similar view as Intel, it is clear the task has been completed, and the WG is on the same page, whether to keep or remove the note would do no harm.

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10 – Ericsson LM

We are OK to remove the Note from the WID. We do not think there is a strong need to update the WID to confirm the Rel-16/17 IAB capabilities (if that was the intention from the moderator).

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11 – vivo Mobile Communication Co.

We're fine with removing the note.

Feedback Form 2: Q2: Should the following clarifications be captured in the WID: 1) The mobile IAB node can connect to a stationary (intermediate) IAB node. 2) Optimizations specific to the scenarios, where the mobile IAB-node connects to a stationary (intermediate) IAB-node, or where it directly connects to a donor-DU are de-prioritized.

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1 – Intel Technology India Pvt Ltd

Again, no strong view, but we are fine if the majority prefers to update/capture in the WID.

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2 – Nokia

See response to Q1.

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3 – ZTE Corporation

It would be better to clarify this in the WID.

4 – Apple

Same view as Intel and Nokia. We think the agreements in WG meetings are clear, but it has no harm to capture it in WID.

5 – LG Electronics Inc.

Each WG is already aware of RAN2/3 agreements and they would de-prioritize the related optimizations without updating the WID. If further clarification is needed, we prefer to have a RAN guidance to WG about this issue instead of updating the WID.

6 – Kyocera Corporation

We support the clarification 1); and we're fine with the clarification 2) in general, although we don't think the WID needs to capture every WG agreements.

7 – Beijing Xiaomi Mobile Software

As for Q1, see no need to delete or update the note in regards to the connectivity relating to the stationary node, but open to capturing the de-prioritized optimisations if preferred by the majority.

8 – Samsung R&D Institute UK

We're fine with capturing two clarifications.

9 – Huawei Technologies France

see response to Q1.

10 – Ericsson LM

Aligning to the agreements, we think bullet 1 could be captured as "No enhancement is required for a mobile IAB to connect to a stationary (intermediate) IAB node"

The proposed bullet 2 is fine.

11 – vivo Mobile Communication Co.

Fine with bullet 2.

2.2 Mobility of a dual-connected IAB-node

RAN3 discussed whether to support the mobility of a dual-connected IAB node. One reason for this RAN3 discussion was the following requirement in the WID, which was perceived unclear:

In Rel-18, mobile IAB supports the following functionality, applicable to FR1 and FR2:

   - ***...***
   - ***Solutions should support <u>UE HO and DC</u>.***

In this requirement, it is not clear if "DC" refers to "UE DC" or to "mobile IAB-MT DC". After discussion in August meeting, RAN3 agreed:

> – ***Mobility of dual-connected IAB-nodes is down prioritized in Rel18.***

Based on this agreements, RP-222448 suggests to capture in the WID that the mobility of a dual-connected IAB-node is down prioritized in Rel-18 mobile IAB. The moderator suggests that the reference to "DC" in the WID requirements should be prepended with "UE" for clarification.

Feedback Form 3: Q3: Should the following be captured in the WID: "The mobility of dual-connected IAB-nodes is down-prioritized"?

1 – OPPO We support to capture this sentence in WID.
2 – Intel Technology India Pvt Ltd With respect to capturing down-prioritization of mIAB DC, we have no strong view (probably not essential to update now as already agreed in WG-level). But we are fine if the majority prefers to update/capture in the WID.
3 – Nokia See response to Q1.
4 – ZTE Corporation To make the working scope of Rel-18 mobile IAB clear, it is suggested to capture the relevant agreement in the WID.
5 – Apple We think the agreement in RAN3 is clear, but it has no harm to capture it in WID.
6 – LG Electronics Inc. It may be good to capture this clarification to make the working scope of mobile IAB clear and avoid unnecessary discussion.
7 – Kyocera Corporation We're fine in general, but we wonder if it's clear by the clarification in Q4.
8 – Beijing Xiaomi Mobile Software where ambiguity in the work objectives is perceived then it is good that RAN3 reached clear understanding. Clarification in Q4 may be sufficient since it clears up the ambiguity.

9 – Samsung R&D Institute UK

We support capturing it in the WID.

10 – Huawei Technologies France

As commented to Q1, this should be a common understanding in WG level, then to update the WID seems not that necessary and imminent.

11 – Ericsson LM

Agree

12 – vivo Mobile Communication Co.

No strong view.

Feedback Form 4: Q4: Do you support to change "Solutions should support UE HO and DC" to "Solutions should support UE HO and UE DC"?

1 – OPPO

Yes, we support.

2 – Intel Technology India Pvt Ltd

We think that changing "DC" to "UE DC" seems reasonable.

3 – Nokia

See response to Q1.

4 – ZTE Corporation

We are fine to this change.

5 – Apple

We are fine for the change

6 – LG Electronics Inc.

No. Considering that the related text is in section for justification, not objective, this modification may not be needed and the clarification from Q3 would be enough.

7 – Kyocera Corporation
We're fine to add "UE" for DC, if it simplifies the discussion in RAN3.
8 – Beijing Xiaomi Mobile Software
yes
9 – Samsung R&D Institute UK
We support the change.
10 – Huawei Technologies France
The proposal is inline with the original intention, i.e. should be UE DC, it should also be the common understanding, ok to make it clearer.
11 – Ericsson LM
Agree
12 – vivo Mobile Communication Co.
Agree

3 Intermediate Round Discussion

3.1 Mobile-IAB-node connectivity to intermediate node vs. IAB-donor

Summary on Q1: *Do you agree on the removal of the above NOTE from the WID and to add a clarification that reflects the above RAN2/3 agreements?*

5 out of 11 companies support the removal of the note. The other companies do not consider the removal necessary, but they have no objection having it removed.

The moderator therefore believes that the removal of the NOTE should not be controversial.

Proposal 1: The NOTE in the WID on the complexity of a mobile IAB-node connecting to an intermediate node vs. directly to the donor is removed.

Summary on Q2: *Should the following clarifications be captured in the WID: 1) The mobile IAB node can connect to a stationary (intermediate) IAB node. 2) Optimizations specific to the scenarios, where the mobile IAB-node connects to a stationary (intermediate) IAB-node, or where it directly connects to a donor-DU are de-prioritized.*

5 out of 11 companies support capturing the essence of 1) and 2) in the WID. The other companies do not consider the WID change necessary, but they don't have objections either.

The moderator believes that capturing the essence of 1) and 2) in the WID should not be controversial. The moderator supports Ericsson's rewording.

The moderator proposes to insert this text in a sub-bullet under the first objective on procedures for migration/topology adaptation:

Proposal 2: Include into the WID in a sub-bullet under the first objective on topology adaptation the following text: *"No enhancement is required for a mobile IAB to connect to a stationary (intermediate) IAB node. Optimizations specific to the scenarios, where the mobile IAB-node connects to a stationary (intermediate) IAB-node, or where it directly connects to a donor-DU are de-prioritized.*

Feedback Form 5:   Q11: Do you have any comments on P1 and P2?

1 – Beijing Xiaomi Mobile Software
For P1 not sure the assessment completely matches the comments, specifically in regard to the removal of the Note, it seemed many comments indicated keeping the note unless removal was supported by the majority. Certainly we recognise that the desire to keep isn't strongly motivated, and seemingly neither is the desire to remove it. Still prefer to keep the note as it was a clear objective, but if it turns out that this round clearly supports the removal then we can live with it.
For P2, we support Ericsson's clarification.
2 – Ericsson LM
Agree with P1 and P2.
3 – Lenovo Mobile Com. Technology
Agree with P1 and P2.
4 – vivo Mobile Communication Co.
Agree with P1 and P2.
5 – Samsung R&D Institute UK
Agree with P1 and P2. The note was added in the previous RAN plenary to clarify the scope first, so we think the note is not necessary at this time.
6 – LG Electronics Inc.
Agree with P1 and P2.

7 – Nokia

The first sentence of P2 does not seem aligned with RAN2 agreement which states that Mobile IAB connecting to a stationary (intermediate) IAB node "*is/can be supported*" with "*no (or limited) impact*". So RAN2 has not rule out that there could be (limited) impact. The WID update (if needed) should be aligned with the agreements in both RAN2 and RAN3.

3.2 Mobility of a dual-connected IAB-node

Summary on Q3: *Should the following be captured in the WID: "The mobility of dual-connected IAB-nodes is downprioritized"?*

5 out of 12 companies support capturing the essence of Q3 in the WID. 2 out of 12 companies believe the clarification of Q4 would be sufficient, but they do not have any objection to add the essence of Q3 to the WID. The remaining 5 companies believe that this addition to the WID is not necessary, but they don't have any objections.

The moderator believes that capturing this agreement in the WID should not be controversial.

The moderator proposes adding this statement in another sub-bullet under the first objective on procedures for migration/topology adaptation.

Proposal 3: Include into the WID in a sub-bullet under the first objective on topology adaptation the following text: *"The mobility of dual-connected IAB-nodes is downprioritized*

Summary on Q4: *Do you support to change "Solutions should support UE HO and DC" to "Solutions should support UE HO and UE DC"?*

11 out of 12 companies support adding the "UE" in front of "DC". One company believes that this is not necessary since the section in question refers to the justification section rather than the objectives.

The moderator believes that adding the clarification is supported by most companies, and it does not do any harm.

Proposal 4: Replace in the WID the following text *Solutions should support UE HO and DC* with *Solutions should support UE HO and UE DC*

> **Feedback Form 6: Q12: Do you have any comments on P3 and P4?**

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1 – Beijing Xiaomi Mobile Software

For P3, we are okay but don't see the need, in that it has some bearing on work direction (although it means do nothing in this direction and is clearly captured in WG agreements).

P4 we support.

2 – Ericsson LM

Agree with P3 and P4

3 – Ericsson LM

Agree with P3 and P4

4 – Lenovo Mobile Com. Technology

Agree with P3 and P4.

5 – vivo Mobile Communication Co.

Agree with P3 and P4.

6 – Samsung R&D Institute UK

Agree with P3 and P4.

7 – LG Electronics Inc.

Agree with P3 and P4.

3.3   Draft WID update

The moderator has copied a draft WID update including the changes of P1 to P4 to the draft folder. Please verify this draft.

Feedback Form 7: Q13: Do you have any comments on the draft WID update apart from those captured in Q11 and Q12?

1 – Beijing Xiaomi Mobile Software

tiny editorial, space missing between "downprioritized"

2 – Ericsson LM

The WID update reflects P1-P4 properly. We have only a minor comment of editorial kind. Where we do changes in the WID, we could use the official terminology IAB-node and IAB-donor-DU: So in the added wording we should change from "mobile IAB" to "mobile IAB-node" and from "donor-DU" to "IAB-donor-DU"

3 – Lenovo Mobile Com. Technology
Share the same view with Ericsson that we should use mobile IAB-node and IAB-donor-DU in the WID.
4 – vivo Mobile Communication Co.
Agree with Ericsson

4 Final Round Discussion

4.1 Mobile-IAB-node connectivity to intermediate node vs. IAB-donor

Summary of prior round:

On "Proposal 1: The NOTE in the WID on the complexity of a mobile IAB-node connecting to an intermediate node vs. directly to the donor is removed."

5 out of 7 companies support P1.

1 out of 7 companies does not comment on P1.

1 out of 7 companies supports this proposal only if there is clear majority supporting it in this round, which is the case.

The moderator concludes that we can go forward with P1.

Proposal 1: The NOTE in the WID on the complexity of a mobile IAB-node connecting to an intermediate node vs. directly to the donor is removed.

On "Proposal 2: Include into the WID in a sub-bullet under the first objective on topology adaptation the following text: "No enhancement is required for a mobile IAB to connect to a stationary (intermediate) IAB node. Optimizations specific to the scenarios, where the mobile IAB-node connects to a stationary (intermediate) IAB-node, or where it directly connects to a donor-DU are de-prioritized.""

6 out of 7 companies support P2.

1 out of 7 companies (Nokia) emphasizes that the first sentence of P2 does not align with RAN2's agreement, which supports IAB connectivity to the intermediate IAB-node, but it does not preclude the need for potential enhancements. The moderator agrees to that observation and recommends changing it back to the original formulation from the initial round (see below).

1 out of 7 companies (Xiaomi) prefers the initial version of P2. However, as pointed out by Nokia, this initial version does not reflect Ran2 agreements.

We end up with a revised P2:

Proposal 2 revised: Include into the WID in a sub-bullet under the first objective on topology

adaptation with the following text: "~~No enhancement is required for a mobile IAB to connect to a stationary (intermediate) IAB node.~~The mobile IAB node can connect to a stationary (intermediate) IAB-node. Optimizations specific to the scenarios, where the mobile IAB-node connects to a stationary (intermediate) IAB-node, or where it directly connects to a IAB-donor-DU are de-prioritized."

4.2 Mobility of a dual-connected IAB-node

On "Proposal 3: Include into the WID in a sub-bullet under the first objective on topology adaptation the following text: "The mobility of dual-connected IAB-nodes is downprioritized"."

6 out of 7 companies support P3.

1 out of 7 companies is okay with P3 but doesn't see the need.

The moderator concludes that we will go forward with the P3.

Proposal 3: Include into the WID in a sub-bullet under the first objective on topology adaptation with the following text: "The mobility of dual-connected IAB-nodes is down-prioritized".

On "Proposal 4: Replace in the WID the following text "Solutions should support UE HO and DC" with "Solutions should support UE HO and UE DC"."

7 out of 7 companies support P3.

The moderator concludes that we will go forward with the P4.

Proposal 4: Replace in the WID the following text "Solutions should support UE HO and DC" with "Solutions should support UE HO and UE DC".

4.3 Draft WID

The following recommendations were made to the draft WID in the intermediate round:

- Editorial fix from "downprioritized" to "down-prioritized".
- The term "mobile IAB" should be replaced with "mobile IAB-node"
- The term "donor-DU" should be replaced with "IAB-donor-DU"

The moderator applied these changes.

The moderator further adopted the revised version of P2 to the draft WID.

Based on the outcome of the initial round, the moderator does not believe that further discussion is needed.

However, since the draft WID was updated, the moderator will give companies the opportunity to provide feedback on this version of the draft WID (**RP-22xxxx_was_221815_Rel-18_mobile_IAB_WID-v2**).

If there are no serious objections in this final round, the draft WID can be forwarded to the chairman for agreement.

Feedback Form 8: Q21: Do you any objections to the updated draft WID?

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1 – Beijing Xiaomi Mobile Software

no objection, just a question for clarification regarding understanding between "de-prioritized" and "down-prioritized".

Is it clear these two phrases mean different handling? e.g. aspects for "Optimizations specific to the scenarios" could potentially be handled if sufficient time/motivation prevails, whereas there is no expectation to handle "mobility of dual-connected IAB-nodes" in this release? or should they be handled the same?

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5 Summary of the discussion

There was no objection to the proposals and the draft WID from the final round.

Xiaomi asked about the difference between "de-prioritize" vs. "down-prioritized". The moderator is not aware of any official definition of these terms. They certainly indicate that the respective topic should not be considered with high priority. Given the time constraints of most efforts, such indication is typically enough to move a topic from the table. Since 3GPP is contribution driven, it will certainly be possible to discuss a topic even if it has been de- or down-prioritized as long as there is sufficient support.

Based on the feedback, the email discussion can be closed with the following proposals:

Proposal 1: The NOTE in the WID on the complexity of a mobile IAB-node connecting to an intermediate node vs. directly to the donor is removed.

Proposal 2 (revised): Include into the WID in a sub-bullet under the first objective on topology adaptation with the following text: "The mobile IAB node can connect to a stationary (intermediate) IAB-node. Optimizations specific to the scenarios, where the mobile IAB-node connects to a stationary (intermediate) IAB-node, or where it directly connects to a IAB-donor-DU are de-prioritized."

Proposal 3: Include into the WID in a sub-bullet under the first objective on topology adaptation with the following text: "The mobility of dual-connected IAB-nodes is down-prioritized".

Proposal 4: Replace in the WID the following text "Solutions should support UE HO and DC" with "Solutions should support UE HO and UE DC".

The additional proposal is to adopt the latest version of the draft WID in RP-222635:

Proposal 5: Approve the revised WID for Rel-18 mobile IAB in RP222635.