[94e-24-R18-IAB] - Version 0.0.4
RAN

3GPP TSG RAN#94e RP-21xxxx

Agenda Item: 8.6.3

Source: Qualcomm (Moderator)

Title: Moderator's summary for discussion [94e-24-R18-IAB]

Document for: Discussion

1 Introduction

This document summarizes the email discussion [94e-24-R18-IAB].

The baseline draft WID for this discussion can be found under **drafts/[94e-24-R18-IAB]** in:

Rev1 of RP-212718 New WID on Mobile IAB -v00

This draft WID is based on RP-212718, i.e., the draft WID from the October email discussion, and it includes the changes proposed in RP-213469 by the RAN chairman.

The following discussion aims to consider further improvements of this draft WID. The moderator expects that these improvements will be small in nature and mainly provide some fine tuning.

2 Initial Round

2.1 Title of Project

The moderator proposes to name the project "Mobile IAB". This name would be used in the title line of the WID.

Feedback Form 1: Q1: Please provide comments on project title "Mobile IAB".

1 – Beijing Xiaomi Mobile Software considering the alignment with SA2 SI on VMR it may be appropriate to add this to the title
2 – Huawei Technologies France we agree with moderator's suggestion, since VMR is just one scenario, while this WI is further enhancements to IAB on top of R17 conclusions, it would be strange that we put one type of scenario in the WI title, so we think we should remove VMR.

3 – Samsung Electronics Nordic AB

We are fine to use title of “mobile IAB”. This gives a clear guidance for our Rel-18 work, i.e., the relay architecture is still based on Rel-16/17 IAB; in other words, we will not consider other new architecture to support the relay.

4 – ZTE Corporation

We are fine with the title of “Mobile IAB”.

5 – Intel Deutschland GmbH

we are ok with the proposal by moderator.

6 – Qualcomm Incorporated

We are fine with Mobile IAB.

7 – Apple R&D

We are OK with Mobile IAB.

8 – Nokia Italy

Fine with proposed project title.

9 – Deutsche Telekom AG

We are fine with ”Mobile IAB” as this clearly describes the content of the WID.

10 – ROBERT BOSCH GmbH

If we agree that ”Mobile IAB” covers VMR, then it is fine.

11 – Ericsson LM

No. We prefer the tile “*Further Enhancements to Integrated Access and Backhaul for NR*”. In the past releases we did not name the WI after the main feature, and this is not something that is usually done.

12 – Motorola Mobility France S.A.S

Fine with the title.

13 – Futurewei Technologies

The moderator’s proposal is OK

14 – InterDigital

We are fine with the proposed title.

15 – VODAFONE Group Plc

Showing linkage to SA2 work would be useful

2.2 Justification section

The justification text in the draft WID presently is:

The support for Mobile Integrated Access and Backhaul (IAB) builds on the architecture and protocols derived in the Rel-17 WI NR_IAB_enh, which provided IAB improvements improve on various aspects such as robustness, degree of load-balancing, spectral efficiency, multi-hop latency and end-to-end performance.

The work on Mobile IAB in Rel18 should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/capacity enhancement to onboard and/or surrounding UEs.

(Note that requirements are discussed in subsection 2.3).

Feedback Form 2: Q2: Please provide comments on this justification text.

1 – Samsung Electronics Nordic AB

We have some concerns in following aspects:

1) Editorial correction, "… *provided IAB improvements ~~improve~~ on* …"

2) "degree of load-balancing" is unclear to us. We understand Rel-17 work on partial migration/inter-topology redundancy has the purpose of achieving the load balancing. If the intention is to indicate that the load balance has been addressed in Rel-17, we suggest to use a simple wording, i.e., "…, *~~degree of~~ load-balancing,*…"

3) "multi-hop latency" seems to not be addressed in Rel-17 since this has been deprioritized. So, we suggest to remove it, i.e., "…, *~~multi-hop latency~~ and*…."

2 – THALES

In general OK.

However, we suggest to add the following note after the sentence ending with "The work on Mobile IAB in Rel18 should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/-capacity enhancement to onboard and/or surrounding UEs."

"**Note: These mobile IAB nodes may support backhaul connectivity based on 3GPP terrestrial and/or satellite NG-RAN.**" so to refer to TS 22. 261, clause 6.42.2 requirements.

3 – Intel Deutschland GmbH

We are ok with the justification. Regarding the mention of 'surrounding UEs', we are ok to leave this in the justification as long as objective 2 is agreed including "No optimization to target serving surrounding UEs".

4 – Qualcomm Incorporated

We are fine with this text after including Samsung's changes.

5 – Apple R&D

In general we are fine with the justification text.

6 – Nokia Italy

Fine with proposed justification text, and Samsung's revisions.

7 – Ericsson LM

We propose the following rewording of the 1st paragraph:

"*The further enhancements ~~support~~ for ~~Mobile~~ Integrated Access and Backhaul (IAB) include mobility aspects and build~~s~~ on the architecture and protocols…*"

In the 1st paragraph, we also propose to remove "*improvements ~~improve~~*" (pure editorial)

We propose the following rewording of the 2nd paragraph:

- "*The work on ~~Mobile~~ IAB in Rel18 should focus on the scenario of mobile-IAB-nodes mounted…*" – the reason is that mobility is explained in the sentence as included in Rel-18 aspect.
- "*…providing 5G coverage/capacity enhancement to onboard ~~and/or surrounding UEs and/or surrounding~~ UEs*", no optimization to target serving surrounding UEs

We propose to remove "*~~degree of~~ load-balancing*" – it is unclear what "*degree of*" means.

8 – Deutsche Telekom AG

We are generally fine with the justification except of the topic on inclusion of "surrounding UEs" which we don't see as necessary. Focus should be on on-board UEs. As compromise we share Intel's view with respect to combination with objective 2.

9 – Motorola Mobility France S.A.S

Agree to reuse the architecture and protocols of NR_IAB as much as possible.

Both onboard and surrounding UEs are to be covered, hence we suggest the following change:

[…] providing 5G coverage/capacity enhancement to onboard and~~/or~~ surrounding UEs

10 – T-Mobile USA Inc.

We are fine with the justification as is, but we do not agree with the change proposed by Thales. Our understanding is that the use of satellite links for backhaul has been proposed in SA and should be studied there first. Aspects of satellite links including latencies links could significantly add to the workload in RAN and should not be included as part of this WID.

11 – Futurewei Technologies

We are fine with the justification text after inclusion of editorial corrections proposed by Samsung

12 – InterDigital

We agree with the modifications to the text proposed by Samsung

2.3 Requirements

The requirements in the draft WID presently are:

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

- *In-band and out-of-band backhauling.*
- *Solutions should be focused on a single hop backhauling, i.e., one hop between UE and the mobile IAB-node (i.e. no descendant node).*
- *Solutions should support UE HO and DC.*

The moderator believes that the requirement on single-hop backhauling should be reworded in the following manner for more clarity:

- *The mobile IAB-node should have no descendent IAB-nodes, i.e., there is only one hop between the UE and the mobile IAB-node.*

RP-213469 includes the following FFS: *It is FFS whether to reference to use cases in TS22.261*

RP-212718 and RP-213407 propose to include a reference to TS 22.261, section 6.42.

RP-213371 further proposes to include NTN-based IAB into Rel-18 Scope. RP-213122 proposes to not consider NTN use cases in Rel-18.

Feedback Form 3: Q3: Please provide comments on (1) these requirements, (2) the moderator's proposed rewording for single-hop backhauling, (3) the addition of a reference to TS 22. 261, and (4) inclusion of NTN-based IAB as a requirement.

1 – OPPO

For (2) on moderator's proposed rewording, we support the clarification that "*The mobile IAB-node should have no descendent IAB-nodes*"; however, we are not sure whether the 2nd part of "*there is only one hop between the UE and the mobile IAB-node*" makes thing clearer or more confused, because not everyone would categorize IAB-to-UE link as one hop (meaning they would only think IAB-IAB link as one hop, which makes the statement of (2) resulting in different understanding). So maybe it is better to say:

– *The mobile IAB-node should have no descendent IAB-nodes, i.e., there is ~~only one hop~~ no additional network-node related hopping between the UE and the mobile IAB-node.*

For (4), we do NOT support including the NTN related issue in mobile IAB discussion, because:

– If NTN site is considered as a mobile IAB node and the gNB connecting to NTN side is a fixed gNB node, this seems no much different from the existing NTN scenario.

– If NTN site is considered as a normal NTN node and the gNB connecting to NTN site is a mobile IAB node, it will be conflict to what (2) says for UE directly connecting to mobile-IAB node.

With this in mind, for (3), we prefer NOT to include reference to TS 22.261 section 6.42, which touches "mobile base station relays using 3GPP satellite NG-RAN (NR satellite access)". In case the group finally decides to include this reference, we would prefer to have a clarification somewhere (e.g. a note in objective section) to exclude NTN-related IAB (if NTN is finally not a part of this WID).

2 – AT&T

We believe the proposed update to the single-hop requirement from the moderator is too strong and prefer

the original wording. Furthermore, the objective should ensure that multi-hop mobile IAB is not be precluded when feasible (e.g. platoon-like/aligned trajectory scenarios), and if not optimized for in Rel-18, forward compatibility should be explicitly considered:

Solutions should be focused on a single hop backhauling, i.e., one hop between UE and the mobile IAB-node (i.e. no descendant node), ***with forward compatibility for multi-hop mobile IAB support in a future release.***

3 – vivo Mobile Communication Co.

2) we agree with OPPO that the clarification may bring further confusion. It is sufficient to have the sentence ”The mobile IAB-node should have no descendant IAB-nodes”. We also tend to agree with AT&T that the forward compatibility of multiple-hops should also be concerned when specifying the one-hop solution in Rel-18.

4 – LG Electronics Inc.

We are fine with the moderator’s proposed rewording for single-hop backhauling. However, we have concerns on addition of a reference to TS 22.261 and inclusion of NTN-based IAB.

For (4), We think that general scenarios should be prioritized in Rel-18 IAB and defining general procedures for migration/topology adaptation to enable IAB-node mobility should be finished first in Rel-18, which can be also used for NTN. Of course, given that NTN has very much different characteristics, e.g., long propagation, NTN-specific enhancement would be considered for IAB, but this should be considered in the next release or NTN WI, not Rel-18 IAB. In addition, considering that inter-donor full migration is included in Rel-18 IAB, it would be good to avoid mixing up discussion between general scenario and NTN scenario simultaneously.

For (3), Rel-18 IAB is not for all use cases in TS 22.261 and the current wording, i.e., “*The work on Mobile IAB in Rel18 should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/capacity enhancement to onboard and/or surrounding UEs.*”, seems quite sufficient to cover all necessary use cases for Rel-18 IAB. We see no need to include a reference to TS 22.261, section 6.42 because this section has ”mobile base station relays using 3GPP satellite NG-RAN (NR satellite access)”.

Thus, we prefer NOT to add a reference to TS 22.261 and NOT to include NTN-based IAB into Rel-18 Scope.

5 – Beijing Xiaomi Mobile Software

(2) we think all the proposed rewordings are more complicated than needs be. If there is a need to further clarify then can we simply state. We can live with the original wording though.

The mobile IAB-node should have no descendent IAB-nodes, i.e. the mobile IAB-node connects directly to the UE.

(3) we also proposed in RP-213109 to include reference to 22.261 section 6.42 so are supportive of its inclusion. We think these requirements in general cover the majority of scenarios we are interested in and as required from a service point of view. To exclude them all simply due to the inclusion of some less desired requirement for some we feel is the wrong way to go about capturing requirements. If the some (and only NTN seems to be under consideration) cases are excluded then a clarification note stating this would be the way to address this.

(4) We are generally okay to include the NTN/satellite requirements from 6.42. We think this may be necessary in some first responder scenarios. However if there is a concern regarding additional complexity to support high mobility IAB-nodes with this connectivity then we could consider down scoping mobility

optimizations to support satellite connectivity options in favour of keeping lower mobility/nomadic status in scope.

6 – CATT

For 2),we share the simialr view with Oppo on that the second part of the sentence bring some confusion and prefer to keep it as it is.

For 4),we do understand that NTN is an important scenario for IAB.However.we would like to go step by step,i.e. maybe we could consider the requirement of NTN in the next release and only focus the TN scenario in Rel-18

7 – Samsung Electronics Nordic AB

1) Except the listed requirement, we think it is better to include another requirement, i.e., solutions should support DC for mobile IAB node, which has been addressed in Rel-16/17 as well.

2) We are fine with the rewording from moderator

3) We have concerns to put the reference of TS22.261 in the requirement part. TS22.261 defines the requirement for the "mobile base station relays" while not limiting IAB architecture to support it. Since we have decided to study Rel-18 based on Rel-16/17 IAB architecture, it is not suitable to mention this TS in requirement part. If our understanding is correct, the intention of including TS22.261 is to indicate the reference scenario for mobile IAB. If there is strong request to include, we suggest to add reference to the justification part, e.g., "*The work on Mobile IAB in Rel18 should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/capacity enhancement to onboard and/or surrounding UEs, and some example scenarios can be referred to TS22.261 Section 6.42, and TR22.839.*"

4) No need to include NTN-based IAB. It should be discussed in NTN related topics.

8 – THALES

We recommend to add in the clause "objectives" the following sentences

"**The work item aims at specifying enhancements to enable IAB nodes mobility assuming cellular backhaul connectivity. Implicit compatibility to NTN (non-terrestrial networks) backhaul connectivity is assumed. However NTN specific aspects are not addressed in this WI.**"

9 – ZTE Corporation

For (1) and (2), we basically agree with the intention of moderator's proposed rewording. However, we also think the first half of the sentence is enough. The second half of the sentence may lead to confusion and suggest to remove it.

For (3), we have no strong view on whether to add a reference to TS 22.261. It should be noted that referring to TS 22.261 doesn't mean we should support all the requirements captured in TS 22.261, e.g. NTN.

For (4), we do NOT agree to include NTN-based IAB as a requirements. As captured in the justification part of the draft WID, the work on Mobile IAB in Rel18 should only focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/capacity enhancement to onboard and/or surrounding UEs.

10 – Intel Deutschland GmbH

We suggest to further clarify the understanding of single hop backhauling, that it should also be one hop between the mobile IAB-node and donor CU (i.e., no other non-mobile IAB nodes in between).

For 1), regarding to the DC scenario, is it referring to the UE configuration of DC or DC capability of a mobile IAB? Based on use case scenarios in TS22.839 and requirement in TS22.261, "The 5G system shall be able to support UEs connectivity to RAN using simultaneously, a link without mobile base station relay

and a link via a mobile base station relay, or simultaneous links via different mobile base station relays." There's no requirement to support DC at a mobile IAB-node. However, the need for DC for a UE inside of a vehicle it unclear to us. Will both MN and SN be in the vehicle and be different mobile IAB nodes? If so, what would be the motivation for using DC over CA? If the DC scenario only focus on the surrounding UEs, to align with the spirit of "no optimization for surrounding UEs" in objective 2, we think the same assumption need to be included here for supporting UE DC. We suggest to clarify the third bullet as below:

- *Solutions should support UE HO and UE DC with no optimization to target serving surrounding UEs.*

For 3), we think current wording of requirement is clear enough and sufficient and we don't need the additional reference to TS22.261.

For 4), as we discussed in previous email discussions, we think NTN-based IAB should be deprioritized and the WI should only focus on vehicle mounted relay.

11 – Qualcomm Incorporated

On 1: We are principally fine with these requirements.

On 2: Several companies suggested that the first part (the mobile IAB-node has not descendent nodes) would be sufficient. We agree with this view. Also, we don't want to preclude the scenario where the UE uses a UE-relay to connect to a mobile IAB-node, i.e., is two hops away from the mobile IAB-node.

On 3: We are concerned that the reference to TS 22.261 will add confusion during the WI since this document contains significantly more use cases. This may lead to unnecessary discussions.

On 4: NTN-based backhauling would already apply to Rel-16/17 IAB, i.e., stationary IAB-nodes. It is not specific to IAB-node mobility. For this reason, it should be handled in NTN-related SI/WI rather than in Rel-18 mobile IAB.

12 – Nokia Italy

We support Oppo's proposed revision to item (2).

We also do not support (4), and believe NTN-based IAB should not be treated in Rel-17.

13 – Apple R&D

We think adding NTN would involve a lot of extra efforts and that could easily consume all the TU(s) allocated to IAB topics. Note that NTN in R18 is still only focused on transparent mode and regenerative mode is out of scope. Given that the scope seems very big, maybe it would be more suitable for Rel-19.

14 – Verizon UK Ltd

1) We are fine with the requirements

2) We prefer to keep the original wording with clarification on future forward compatibility for multi-hop IAB in future releases.

3) / (4) No strong view.

15 – ROBERT BOSCH GmbH

For service continuity, we support the inclusion of NTN in this WID.

16 – Ericsson LM

Regarding (1), we propose the following rewording:

In Rel-18, ~~mobile~~ IAB is further enhanced to support mobility with ~~supports~~ the following new functionality~~y~~ies, applicable to FR1 and FR2:

- *In-band and out-of-band backhauling.*
- *Solutions should be focused on a single hop backhauling, i.e., one hop between UE and the mobile IAB-node (i.e. no descendant node).*
- *Solutions should support UE HO and DC.*

Regarding (2), we propose the following rewording on top of the rewording proposed by the moderator: *"The mobile IAB-node should have no descendent IAB-nodes, i.e., it serves only UEs ~~there is only one hop between the UE and the mobile IAB-node~~."*

We also think that the case where the Rel-18 IAB node is one hop away from the donor should be considered as baseline first, meaning that the following bullet should be added to the list above:

- *A Rel-18 IAB-node with enhancements regarding mobility connects directly to an IAB-donor.*

Regarding (3), we think that there is no need for a TS 22.261 reference. The reason is that Rel-18 IAB has already a defined scope "*…should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G…*" (quote from the justification text).

Regarding (4) and having in mind our answer to (3), we think that the NTN scenario is of low priority and should not be considered in Rel-18. In addition, the consequent spec impact may be large.

17 – Motorola Mobility France S.A.S

(1) Fine with the bullet items 1 and 3 in the requirements.

(2) We may also need to limit one hop between mobile IAB node and the donor-DU or adopt this as baseline. If a mobile IAB node connects to the IAB network over multiple hops, the process may get too complicated if an intermediate IAB node performs migration.

(3) Agree to make a reference to TS 22.261.

(4) NTN-based IAB will be fine if time allows.

18 – T-Mobile USA Inc.

We do not support including NTN in this WID.

19 – Futurewei Technologies

We prefer the original text of the requirement compared to the revision proposed by the moderator, as the latter seems too restrictive. We also prefer not to increase the current scope, or add additional requirements to the WID.

20 – Deutsche Telekom AG

(2) We support AT&T's proposal to change the statement with respect to forward compatibility.

(3) No need to add a reference to TS 22.261.

(4) No need to consider NTN-based scenarios for Mobile IAB nodes in Rel-18.

21 – InterDigital

We think it is sufficient and clear to just state "*The mobile IAB-node should have no descendent IAB-nodes.*", ~~*i.e., there is only one hop between the UE and the mobile IAB-node.*~~

We are also supportive of including the support for NTN to be considered with a lower priority.

2.4 Objective 1

The first objective in the draft WID is:

- *Define Procedures for migration/topology adaptation to enable IAB-node mobility [RAN3, RAN2]*

RP-213337 and RP-213168 propose to include inter-donor full migration for mobile IAB since RAN3 has stopped this effort for Rel-17 in the last WG meeting, and since it is a necessary functionality for mobile IAB. RP-213337 proposes to capture this in the above objective in the following manner:

- *Define procedures for migration/topology adaptation to enable IAB-node-mobility including inter-donor full migration [RAN3, RAN2]*

Feedback Form 4: Q4: Please provide comments on (1) this objective, and (2) the explicit inclusion of inter-donor full migration.

1 – AT&T

We agree that inter-donor full migration should be explicitly stated given the current Rel-17 status in RAN3 in order to ensure that work can resume in Rel-18 from this starting point.

2 – vivo Mobile Communication Co.

Agree to have inter-donor full migration explicitly included.

3 – Beijing Xiaomi Mobile Software

we agree with this proposed amendment

4 – LG Electronics Inc.

Either way between original wording and updated wording is fine to us.

5 – Samsung Electronics Nordic AB

1) in general, we are fine with this objective. In addition, we assume topology adaptation contains the topology redundancy and RLF recovery scenarios. If so, it is better to clearly mention it.

2) We are fine to explicit inclusion of inter-donor full migration

6 – Huawei Technologies France

Looks fine. At least "inter-donor" should be added. Maybe we can say "including inter-donor full migration and possible enhancements to inter-donor partial migration".

7 – CATT

No strong view. We think inter-donor full migration should be supported in mobile IAB scenario even if we don't indicate it explicitly.

8 – Orange

We agree that full migration should be included in Rel-18. This is a must have for deployability of mobile IAB, since with mobility of the IAB node, it may be necessary to change the anchor node.

9 – ZTE Corporation

We agree with the explicit inclusion of inter-donor full migration to make it more clear since IAB-DU migration is essential for the mobile IAB use case.

10 – Intel Deutschland GmbH

Mobile IAB should study both scenarios, i.e. intra-donor and inter-donor CU migration. Besides, the terminology of "full migration" is not well-defined and only used when companies discussed solutions in RAN2 and RAN3 in Rel-17. Hence, we suggest to use "including intra-donor CU migration and inter-donor CU migration". For mobile IAB, it is obvious that IAB-DU part of a mobile IAB need to migrate together with IAB-MT part of the mobile IAB during migration if the mIAB is outside of one donor CU's coverage.

11 – Qualcomm Incorporated

We agree that inter-donor full migration should be included since it is a very relevant feature for IAB-node mobility.

12 – Nokia Italy

We are fine with either version, since our understanding is that necessary IAB mobility enhancements, including full node migration, are in scope as per the given the objective.

13 – Apple R&D

We support adding inter-donor full migration.

14 – Deutsche Telekom AG

We support the inclusion of inter-donor full migration.

15 – Verizon UK Ltd

Inter-donor full migration should be included in Rel-18 as this is a critical feature for mobile IAB deployment of mobile IAB.

16 – Ericsson LM We are ok with the existing objective. There is no need to explicitly mentioning full inter-donor migration as it is inherent to IAB-node mobility.
17 – Motorola Mobility France S.A.S (1) Fine with the objective. (2) Is the full migration only for mobile IAB node or could it also be used for fixed IAB node?
18 – Futurewei Technologies **We are fine with the proposed revision to the text of the proposal. This makes the scope clear.**
19 – InterDigital We are fine with this objective

2.5 Objective 2

The second objective in the draft WID presently is:

- *Enhancements for mobility of an IAB-node together with its served UEs. No optimization to target serving surrounding UEs [RAN3, RAN2]*

  Note: Solutions should avoid to touch upon topics where Rel17 discussions already occurred and where the topic was excluded from Rel17.

The moderator proposes to change ”*to touch”* to ”*touching”*.

RP-212718, RP-213337, RP-213371, RP-213407 and RP-213168 emphasize that surrounding UEs can also be served by the mobile IAB-node and this might need more investigation. The moderator emphasizes that the service of surrounding UEs is already included in the justification section. However, it remains to be discussed if optimizations to target serving surrounding UEs should be allowed in this WI.

RP-213168 proposes to discuss group mobility enhancements.

RP-213407 proposes to also consider the UE mobility between mobile IAB nodes, UE mobility between mobile IAB node and macro, as well as mobility of IDLE/inactive UEs in R18 mobile IAB. The moderator emphasizes that UE HO and DC is already captured in the requirements above. However, idle/inactive UEs may not be captured in the requirements section nor in this second objective since idle/inactive UEs are not served by the mobile-IAB-node. The question therefore arises if the objective should include enhancements related to idle/inactive UEs.

RP-213371 proposes to remove the note.

Feedback Form 5: Q5: Please provide comments on (1) allowing optimizations for the mobile IAB-node to target serving surrounding UEs, (2) explicitly including enhancements to group mobility, (3) explicitly including enhancements for idle/inactive UEs, (4) removal of the note, (5) other issues with this objective.

1 – OPPO

For (1), considering limited TU, we prefer not to optimize the mobile IAB to target serving surrounding UEs (BTW, the wording seems to target an optimization that strives to make a surrounding UE as a served UE, which seems not very related to mobile IAB focus).

For (2), we do not have strong preference.

For (3), it is not clear to us whether such enhancements with mobile IAB for idle/inactive UE should be non-transparent to idle/inactive UE (comparing to the idle/inactive UE not moving in the cell served by a network node other than mobile IAB). If yes, the moderator's view is valid regarding to how the idle/inactive UE knows about the potential connection to mobile IAB node. So we prefer NOT to explicitly include enhancements for idle/inactive UEs.

For (4), the note comes from earlier-rounds discussions as a compromise. So we prefer to keep it to avoid new debates.

2 – AT&T

(1),(3) We understand the motivation to focus on support for the already served UEs of the mobile IAB node, however it can be a bit of a blurred line between surrounding and served UEs (including idle/inactive UEs), depending on the stage of the mobility procedure. As a result we support explicitly including these potential enhancements:

Enhancements for mobility of an IAB-node together with its served UEs, ***as well as enhancements targeting serving surrounding UEs (including*** **IDLE/inactive UEs).** *[RAN3, RAN2]*

(2) We are ok to not explicitly capture group mobility under the assumptions that it is not precluded and listing all possible solutions at this stage is not necessary.

(4) We are not convinced the note provides any benefits in its current form as Rel-17 had a different scope (no explicit IAB node mobility support) and so some solutions may be worth revisiting. To avoid a broad and blanket prohibition we suggest to remove the note from the WID.

3 – vivo Mobile Communication Co.

1) Neutral. We think that serving on-board UEs is the main use case of mobile IAB. In some cases, it could be helpful to serve the surrounding UEs. We should ensure that serving on-board UEs is of high priority.

2) No strong view.

3) agree.

4) We prefer to keep the NOTE as a reminder.

4 – Beijing Xiaomi Mobile Software

(1) In RP-213109 we also proposed to include surrounding UEs as being served by the mobile-IAB node.

For us these UEs may have a mostly similar mobility to the mobile-IAB whilst not being considered on-board the vehicle carrying the IAB node. As such we expect that with similar mobility they will experience coverage enhancement and therein user experience. However some companies may feel some uncertainty regarding how to define these surrounding UEs and prefer to confirm scenarios as a first step of the work

item, this could be a compromise approach. It is not completely clear how we strictly define on-board UEs either.

”no optimizations” raises more questions than it solves in our opinion, in regards to the direction of optimizations (for what?) . We support the text proposal from AT&T above as an acceptable alternative.

(2) We preferred previous bullet (RP-212678) that called this out as group mobility, but with the understanding that the current bullet implied this we are not sure now what is the concern?

- From RP-212678 “define group mobility as ”mobility of an IAB-node together with its served UEs””

If there remains any ambiguity then we support to add explicit indication of group mobility, as we are trying to clarify the scope not add work.

(3) We think these IDLE/INACTIVE UEs are an important part of the full ecosystem and as such should be clearly included.

(4) “The moderator proposes to change ”*to touch”* to ”*touching”*” - how about simply deleting all of “*to touch upon*” ?

However, generally we don’t support the note, although we understand the intent to avoid wasting time on “no hope re-discussions”. Proponent being aware of obstacles preventing previous progress/adoption should clearly demonstrate how to make progress, i.e. new/more supporters/ original hurdle(s) demonstrated to have been overcome. Any debate without a clear ability to move on (in the face of reasonable objections) could be handled accordingly by the session chair, i.e. very briefly, if at all.

5 – LG Electronics Inc.

For (1), we agree with the wording from rapporteur, i.e., “*No optimization to target serving surrounding UEs*”. The main goal of Rel-18 IAB is to support mobility of an IAB-node together with its onboard UEs, not its surrounding UEs.

For (2), we think that it is not necessary to mention one of candidate solutions in the objective, so we prefer NOT to explicitly include enhancements to group mobility.

For (3), we agree with the rapporteur’s understanding, i.e., “idle/inactive UEs may not be captured in the requirements section nor in this second objective since idle/inactive UEs are not served by the mobile-IAB-node.”, and prefer NOT to explicitly include enhancements for idle/inactive UEs..

For (4), considering that this note was made as a compromise after long and controversial discussion, so we think that this note is important and should be kept as is.

6 – Samsung Electronics Nordic AB

1) Fine to consider the optimization for surrounding UEs. One unclear point is what does “target serving surrounding UEs” mean? We suggest to remove “target”

2) We are fine to explicitly include enhancements to group mobility

3) We think this can be deprioritized. However, how about idle/inactive relay node? it may be deserved some discussion in Rel-18

4) We are fine to remove the note. This note is unclear to us. The topics discussed in Rel-17 is based on assumption of fixed IAB node. While, in Rel-18, mobile IAB node is considered. It is difficult to say the topics down-prioritized in Rel-17 is not a problem in Rel-18.

7 – Huawei Technologies France

1. for the bullet, as we commented before that surrouding UEs should be considered, i.e. we should avoid the access request from surrouding UEs to a moving IAB node, neither for handover request, we think this

is part of opimization for surrounding UEs. We are also not clear about the ”target” here means, maybe moderator could make it clearer.

2. we are fine to explicitly include enhancements to group mobility

3. for idle/inactive, we are not sure what ”mobility of IDLE/inactive UEs in R18 mobile IAB” exactly means, in our understandings, for IDLE/inactive UEs served by a R18 mobile IAB, if this IAB is moving, the IDLE/inactive UEs just follow the existing mechanism to reselect to another cell, not sure what kind of additional enhancements are needed.

4. no strong opinion whether to remove or keep this note, but we think the intention is to say that we should avoid repeated/redundant discussions, a topic dropped in R17 of cause could be re-opened in R18, e.g. full migration.

8 – CATT

For 1,we prefer to focus on the support of on-board UEs in this release.

For 2,we do not have very strong opinion.

For 3,we understand that idle/inactive UE is an important part of whole system,however,we have some concern whether the current TU could accomadate more new objective.The work load brought by the idle/inactive UE should be evaluated

For 4,we prefer to keep the note since it has been discussed for long time and it seems the best compromise we could achieve.

9 – ZTE Corporation

For (1), actually it is not clear what enhancements are needed for serving surrounding UEs. However, since it is included in the justification section that surrounding UEs could also be served by mobile IAB node, the potential optimization should not be excluded.

For (2), we are fine to include enhancements to group mobility.

For (3), we agree to include enhancements for idle/inactive UEs.

For (4), we prefer to keep the note so that unnecessary discussion could be avoided in R18 IAB.

10 – Intel Deutschland GmbH

For 1), we support not to have optimization for serving surrounding UEs.

For 2), we are ok to add “including group mobility” in the objective.

For 3), we think those details can be discussed during the WI. In the WID, the objective can be updated as “consider mobility of IDLE/INATIVE UEs if found useful”.

For 4), agree to remove the note.

11 – Qualcomm Incorporated

On 1): We support optimization for surrounding UEs. Serving surrounding UEs is explicitly included in the requirements above, so we should also allow for optimizations when serving them.

On 2): The term ”enhancements to group mobility” is a little vague. Some aspects related to ”group mobility”, e.g., the bundling of information on behalf of multiple UEs into a single message, are supported in Rel-16 IAB. We don’t believe it is necessary to explicitly capture group mobility in the WID.

On 3): We do not believe it is necessary to explicitly capture anything for idle/inactive UEs.

On 4): We believe the note should stay to keep the WI well focused. We could add: ”Exceptions can be made for enhancements that are specific to IAB-node mobility”.

12 – Nokia Italy

Regarding (2), specific reference to ”group mobility” should be removed, as this was discussed in Rel-17.

Regarding (3), we do not feel that this needs to be explicitly captured.

Regarding (4), it may be better to clarify the node, since some Rel-17 topics of discussion should not be re-opened in Rel-18. We propose: ”*Solutions should avoid touching upon topics where Rel17 discussions already occurred and where the topic was excluded from Rel17, except topics related to inter-donor full node migration.”*

13 – Philips International B.V.

Regarding (1), we believe that the mobile IAB-nodes should also serve surrounding UEs, and thus, optimizations should be considered.

14 – Apple R&D

On 1: We think the support to on-board UE should be focused.

On 2: No strong views. But we think handling of connected UE(s) should be prioritized than idle/inactive UE(s).

On 3: We would like to de-prioritize idle/inactive UE(s).

On 4: Agree to remove the note.

15 – Verizon UK Ltd

1) We are ok to include optimization of surrounding UEs. The difference between on-board and surrounding UEs can be a blurred line. In general we want mobile-IAB feature to be UE-transparent as far as possible.

2) There is no need to explicitly capture group mobility in the objectives. Our understanding is that such solution is not precluded.

3) No strong view, connected UEs should be prioritized.

4) We prefer to remove the note as Rel-18 scope is different from Rel-17. The note only adds a blanket prohibition on any topics already discussed in R-17 and this may create some issues in R-18 discussions.

16 – Ericsson LM

Regarding (1), the existing text of this objective, stating “*no optimization to target serving surrounding UEs*” should be kept. We assume that surrounding UEs are served by the surrounding static RAN and we see no motivation for any optimizations. Why is this essential for the WI?

Regarding (2) and (3), we are fine to study requirements and the need for group mobility solutions. We prefer not to include the objective about idle/inactive UEs in the WID, we have a similar view as the moderator.

Regarding (4), we prefer to keep the Note as is. What are the topics discussed in Rel-17 that should come back to Rel-18?

17 – Deutsche Telekom AG

(1) The focus should be clearly on on-board UEs. Therefore, we support the proposal to have no optimizations for surrounding UEs.

(2) We would like to support enhancements for group mobility.

(3) Focus should be primarily on connected UEs, No need to explicitly list enhancements for idle/inactive UEs.

(4) We share Qualcomm's view to keep the note.

18 – Motorola Mobility France S.A.S

(1) Optimizations for serving surrounding UEs also need to be studied in Rel-18.

(2) We think "Enhancements for mobility of an IAB-node together with its served UEs" already covers group mobility.

(3) Agree.

(4) Agree to remove the note.

19 – Futurewei Technologies

We are fine with the moderator's proposal to change "to touch" to touching", and also don't have a strong opinion whether to remove this note or keep it.

We are fine to explicitly mention enhancements to group mobility, as this is consistent with explicit inclusion of full migration. We prefer not to include any additional requirements for idle/inactive UEs. It is not clear why such enhancements are needed, and as stated previously we prefer to minimize non-backward compatible UE impacts.

20 – InterDigital

1) We think the terms "surrounding" and "onboard" are a bit confusing, because UEs are likely to be "surrounding UEs" just before they become on board.

2) Group mobility enhancements are even more so important in the mobile IAB scenario and should be considered.

3) We think this could be considered with low priority.

4) We find the note confusing and agree the recommendation to remove it.

2.6 Objective 3:

The third objective in the draft WID is:

- *Mitigation of interference due to IAB-node mobility, including the avoidance of reference and control signal collisions (e.g. PCI, RACH). [If is FFS whether RAN2 or RAN3 should be leading the activity]*

RP-213337 and RP-213407 propose that RAN3 be leading this activity.

Feedback Form 6: Q6: Please provide comments on this objective, and on which of RAN2 or RAN3 should be leading this activity.

1 – AT&T

We support RAN3 as the leading WG with RAN2 as secondary

2 – OPPO

We suppose the avoidance of signal collision needs coordination among nodes. So it is reasonable to have RAN3 to lead the study.

3 – vivo Mobile Communication Co.

We are OK with the objective. RAN3 can be considered as the leading group for this objective since the solutions to tackle the issues are all about how to separate the resources (avoid the collisions) on the basis of RAN node.

4 – LG Electronics Inc.

We think that the avoidance of reference and control signal collisions (e.g. PCI, RACH) can be handled by network implementation and still wondering whether this objective is needed. Thus, our first preference is to remove this objective. Having said that, considering that this objective is for enhancements on inter-gNB coordination/configuration, RAN3 should be the leading group, if this objective is included.

5 – Samsung Electronics Nordic AB

We are fine with this objective, and RAN3 can be the leading group.

6 – CATT

We are fine with the objectives and RAN3 could be the leading group

7 – Huawei Technologies France

Either way is fine. Maybe this depends on the TU in R2 and R3, the group with more TUs is more capable of leading more topics.

8 – ZTE Corporation

Resource multiplexing between child link and parent link was specified in R16/R17 IAB. In addition, enhancements on CLI was specified in R17 IAB. These mechanisms could be reused to mitigate the interference due to IAB-node mobility. On the other hand, some enhancements on inter-gNB coordination may be needed if taking the mobility scenario into account. Thus, if mitigation of interference due to IAB-node mobility is to be included in R18 IAB scope, perhaps RAN3 should be the leading WG of this objective.

9 – Intel Deutschland GmbH

Companies still have different understanding of this objective, whether it refers to CLI management or referring to signaling optimization to avoid collision (e.g. PCI, RACH).

For current objective, we are ok RAN3 to be the leading group and RAN2 as secondary group for the discussion of PCI/RACH optimization.

If this objective of inference mitigation refers to the CLI management (similar as Rel-16), RAN3 should be the leading group, and RAN1 as secondary group, while the objective should be updated to CLI management optimization.

10 – Qualcomm Incorporated As pointed out be ZTE, enhancements on CLI and parent/child-link multiplexing was done in Rel-16/17. In our view, this objective mainly focuses on PCI collision avoidance which is a relevant issue for IAB-node mobility, and it has not been handled in RAN yet. We believe that RAN3 should be the leading WG group. RAN2 should be involved.
11 – Nokia Italy We have no strong view on RAN2 vs. RAN 3 as lead WG; however, RAN1 guidance, particularly related to L1 configuration, may be necessary
12 – Apple R&D This objective is fine. We have no strong views on which WG should be the leading WG.
13 – ROBERT BOSCH GmbH We are Fine if either RAN2 or RAN3 takes the lead. RAN1 should be kept in the loop.
14 – Verizon UK Ltd We are fine with this objective and RAN3 as the lead WG. RAN1/RAN2 should be kept in the loop as needed.
15 – Ericsson LM We propose to rephrase the objective as *"Mitigation of interference due to IAB-node mobility, including the ~~avoidance~~ handling of potential collisions of reference and control signals ~~collisions (e.g. PCI, RACH)~~, if any."* This should be RAN3-led.
16 – Motorola Mobility France S.A.S RAN3 to lead this objective.
17 – Futurewei Technologies **We are fine for RAN3 to be the leading group for this objective.**
18 – InterDigital We are neutral regarding whether RAN2 or RAN3 is the leading WG.

2.7 Principles

The draft WID includes the following principles:

The following principles should be respected:

- *Mobile IAB-nodes should be able to serve legacy UEs.*
- *Solutions providing optimization for Mobile IAB may entail Rel18 UE enhancements, provided that such*

enhancements are backwards compatible

Feedback Form 7: Q7: Please provide comments on these principles of the draft WID.

1 – AT&T

We support the listed principles of the draft WID.

2 – OPPO

For the 2nd bullet, our understanding is that the Rel-18 UE enhancement (if any) should be designed to ”provide optimization for mobile IAB operation [on network side]”, instead of targeting to enlarge mobility performance difference between Rel-18 UE and legacy UE. So we encourage the group to consider adding a note under the 2nd bullet saying something like:

– Note: the Rel-18 UE enhancement, if any, is not motivated by enlarging mobility performance difference between Rel-18 UE and legacy UE.

3 – vivo Mobile Communication Co.

Agree.

4 – Beijing Xiaomi Mobile Software

we support the current bullets

5 – LG Electronics Inc.

We are ok with the first bullet. For the second bullet, we have sympathy with Oppo and are ok with adding the note, i.e., “Note: the Rel-18 UE enhancement, if any, is not motivated by enlarging mobility performance difference between Rel-18 UE and legacy UE.”.

6 – Samsung Electronics Nordic AB

We are fine with this

7 – CATT

We are OK with the current bullets

8 – Huawei Technologies France

ok. anyway, whether enhancements are acceptable is pending on the discussions and consensus in groups

9 – ZTE Corporation

We agree with these principles.

10 – Intel Deutschland GmbH

We are ok with above principles.

11 – Qualcomm Incorporated We are fine with the above principles.
12 – Nokia Italy We are fine with the proposed principles.
13 – Apple R&D We are fine with the principles.
14 – ROBERT BOSCH GmbH We support these items.
15 – Deutsche Telekom AG We are fine with the proposed principles.
16 – Verizon UK Ltd We are fine with these two principles
17 – Ericsson LM We support these principles as they stand right now.
18 – Motorola Mobility France S.A.S Agree.
19 – Futurewei Technologies **We are fine with this statement of principles**
20 – InterDigital Agree

2.8 Involvement of RAN4 and RAN1

The draft WID considers the following involvement of RAN4 and RAN1:

The involvement of RAN4 is expected to study impact on e.g. RRM, demodulation and coexistence

The involvement of RAN1 may be needed, depending on work progress.

RP-213168 proposes to include the following objective, which would be in RAN1 scope:

Resource reuse and CLI management of child and parent link.

Feedback Form 8: Q8: Please provide comments on (1) the involvement of RAN1 and RAN4 captured in the draft WID, and (2) adding an explicit objective on resource reuse and CLI management of child and parent link for RAN1.

1 – OPPO

For (1), according to current Rel-18 IAB scoping plan, we do not see a need to have RAN1 (and RAN4 as well) involved. If at a later time the work progress turns out some involvements of RAN1/4 are indeed needed, RAN can always update the WID with clarified/justified objectiveness of RAN1/4 involvement.

For (2), our understanding for RP-213168 is to have RAN1 spec impact to support ”mechanisms to address resource separation between the moving IAB and the static base stations”. In our view, this would be a rather complicated add-on to the WID if the optimization is really desired on this direction. On the other hand, it is not clear to us how to differentiate moving IAB and static IAB from PHY perspective, since even mobile-IAB from RAN2/3 perspective can be static or super-low-speed moving from RAN1 point of view. So by now we are not supportive to add this new scope to WID, especially due to already heavy-load in RAN1.

2 – AT&T

We are Ok with the current description of RAN1 and RAN4 involvement. At this time we don’t see the need to list any specific RAN1-led objectives, but that could be revisited at a later stage depending on RAN3/RAN2 progress.

3 – vivo Mobile Communication Co.

1) Ok to keep the current text.

2) disagree. In our understanding, this issue concerns duplexing enhancements for IAB node in the scope of RAN1. It should be led by RAN1 if it is included. However, RAN1 is not involved in Rel-18 IAB WI from the beginning of the discussion, the addition of the bullet implies that we should have RAN1 TU assigned for mobile IAB.

4 – Beijing Xiaomi Mobile Software

whether RAN1 can adopt work in the future seems extremely questionable if there is work for RAN1 it should be listed now, otherwise delete bullet 2

5 – LG Electronics Inc.

For (1), we don’t see a strong reason to have wording for involvement of RAN1 and RAN4 captured in the draft WID. Anyway RAN1 and RAN4 can be involved in Rel-18 IAB if their work is identified by other WG later without this explicit wording.

For (2), resource multiplexing between child and parent link has been specified in Rel-16/17 IAB. furthermore, enhancements on CLI was specified in Rel-17 IAB. With this observation, considering the proposed objectives for Rel-18 IAB above, we don’t see need of this explicit RAN1 scope.

6 – Samsung Electronics Nordic AB

1) Fine to involve RAN1&RAN4. However, the justification to include RAN1 is a bit odd. It is better to indicate some specific aspects.

2) Fine in general. But, it would be good if it can be more specific.

7 – CATT

We are OK with the first bullet and we do not think RAN1 needs to be involved in at the initial phase of the WI

8 – Huawei Technologies France

we are fine to involve RAN1 and RAN4 if needed, anywaytThe involvement of RAN1 or RAN4 may be needed, pending on work progress. In our understanding, for example, interference mitigation might need RAN1 involvement.

9 – ZTE Corporation

For (1), we agree with the involvement of RAN1 and RAN4 captured in the draft WID.

For (2), resource multiplexing and CLI enhancements are specified in R17 IAB, which should be reused in R18 IAB. Even if enhancements are needed due to the mobility of IAB node, it has been included in objective 3 in the draft WID, i.e. Mitigation of interference due to IAB-node mobility. Thus we don't think adding an explicit objective on resource reuse and CLI management is needed.

10 – Intel Deutschland GmbH

Ok to include RAN1 if objective 3 is CLI management. We are also ok to include RAN4 in the draft WID, the RAN4 scope can be: 1) RRM Core/Perf requirements for mobile IAB; 2) Demodulation requirements for mobile IAB.

11 – Qualcomm Incorporated

On 1) We are fine with the present draft WID.

On 2) Resource coordination between child and parent links has been excessively handled in Rel-16/17. We believe this framework is sufficient for mobile IAB. Also, there is little RAN1 TU time available in Rel-18.

12 – Nokia Italy

We are fine with including RAN1 for guidance on L1 configuration issues as noted in 2.6; however, we do not support adding an objective resource re-use and CLI management as these topics were discussed in Rel-17.

We also feel it is necessary to include RAN4 for coexistence issues requiring UL power limitations and impacts of moving cells, necessary enhancement to UL power control requirements of a moving node, and potential requirements for beam correspondence and spherical coverage. It is essential to ensure that mobile IAB does not significantly degrade performance of existing network deployments.

13 – HuaWei Technologies Co.

RAN4 Chair: the RAN4 objective seems only for study but it is WI. It is better to decide whether RRM, RF, and/or demodulation requirements are needed to facilitate the TU and work arrangement in RAN4. The normative work for RRM and demodulation requirements seem clear to me. But for co-existence, what kind of co-existence is needed and what requirement is needed seems not very clear. If Nokia comment is true, please have a more concrete objective for RAN4.

14 – Apple R&D At this initial stage, we don't see a need to involve RAN1 and RAN4. We can update the WID when RAN1/RAN4 efforts are needed.
15 – ROBERT BOSCH GmbH As commented by Nokia, RAN1 guidance is needed for L1 configurations.
16 – Ericsson LM 1) We support the currently proposed RAN1/RAN4 involvements. 2) We do not support the additional proposal ("*Resource reuse and CLI management of child and parent link.*"), since the assumption of a mobile IAB-node not having a descendent IAB-node also means that there are no child links.
17 – Verizon UK Ltd 1) We are fine with current wording on RAN1/RAN4 involvement. 2) R17 resource multiplexing and CLI enhancements should be reused. No need for an explicit RAN1 objective for now, we can revisit the issue depending on WI progress in RAN3/RAN2
18 – Motorola Mobility France S.A.S Support adding the explicit objective for RAN1.
19 – Futurewei Technologies **The current text seems fine.**

2.9 Interaction with other non-RAN WGs:

RP-213469 includes from the October email discussion:

It is proposed to wait for further progress in other WGs (e.g. SA2) on VMR. If such discussions conclude before the start of Rel18, a WID modification can be pursued to include support for the VMR use case in the WI (if agreeable). If such discussions do not conclude before the start of Rel18, it can be decided whether a SI on VMR needs to be started in RAN WGs.

In November, SA2 has agreed on a study item on VMR (S2-2109325).

RP-213337 proposes to capture the following under section 8 of the WID ("Aspects that involve other WGs"):

Alignment and coordination with Rel-18 SA2 work on VMR should be considered

Feedback Form 9: Q9: Please provide comments on alignment with Rel-18 work by other (non-RAN) WGs. Please provide comments on adding the above text into section 8 of the WID.

1 – AT&T

In our understanding the VMR study in SA2 is indeed aligned and compatible with Rel-18 mobile IAB work in RAN, so capturing the proposed text would be fine with us. Perhaps this aspect can be confirmed jointly by RAN/SA.

2 – vivo Mobile Communication Co.

Agree

3 – Beijing Xiaomi Mobile Software

we have the same understanding and agree with the comments from AT&T.

4 – LG Electronics Inc.

Fine to us.

5 – Samsung Electronics Nordic AB

We think the alignment and coordination with Rel-18 SA2 work on VMR can be considered. However, this does not mean our work should wait for the progress of SA2. The coordination can be occurred when it is needed, which is business as usual

6 – CATT

We are not sure Rel-18 SA2 VMR will be approved at last since SA2 will down-scope Rel-18 WIDs. We'd better not to add this sentence in current stage.

7 – Huawei Technologies France

we share similar understanding with Samsung, SA2 seems also discussing new R18 WID for mobile IAB. If SA2 will have that WID, there might be some coordination, but as Samsung commented, this is business as usual, say, LS exchange.

8 – ZTE Corporation

The new SID on VMR "Study on Architecture Enhancements for Vehicle Mounted Relays" was approved in SA2#148e meeting. According to the SID, the VMR study focuses on the IAB only and any other alternative of base station relay depends on the RAN study output if any. So we agree that alignment and coordination with Rel-18 SA2 work is needed and we are ok to add the above text into section 8 of the WID.

9 – Intel Deutschland GmbH

Agree.

10 – Qualcomm Incorporated

We believe that RAN should certainly consider alignment and coordination with Rel-18 SA2 work on VMR. As stated by Samsung, this should be "business as usual".

11 – Philips International B.V.

Agree that coordination is required is VMR is approved in SA2. This does not mean our work should wait for the approval/progress of SA2.

12 – Nokia Italy We are fine with the proposed text on SA2 alignment and coordination.
13 – ROBERT BOSCH GmbH Agree
14 – Deutsche Telekom AG We expect coordination between SA2 and RAN WGs as both SI/WIs are aligned on the topic of mobile IAB. Therefore, we are fine with the text except that ”Mobile IAB” should be used instead of ”VMR”.
15 – Apple R&D We also noticed that SA is doing down-scoping on Rel-18. It might be better to not explicitly have this sentence. We agree this is business as usual.
16 – Ericsson LM SA2 has agreed on a VMR study focusing on the IAB architecture only (SID in S2-2109325). In the SID, it is also stated that any other alternative of base station relay depends on the RAN group outcomes. From this we cannot recognize any progress in, e.g., SA2, and we therefore do not foresee any conclusion so far made outside RAN that should have effect on RAN work and definition of. If needed, we can coordinate with, e.g., SA2 based on standard procedures, such as exchange of LSs. So, no need to capture *“Alignment and coordination with Rel-18 SA2 work on VMR should be considered”*
17 – Motorola Mobility France S.A.S Agree.
18 – Futurewei Technologies Agree
19 – Verizon UK Ltd Mobile IAB work item should definitely consider alignment with SA2 R-18 VMR study. This coordination can occur as needed from either side and it is ”business as usual.
20 – VODAFONE Group Plc This work seems to be quite dependent upon SA2 work. Hence close co-ordination of work plans of SA and RAN is needed before this work starts.

2.10 Other issues

Feedback Form 10: Q10: Please provide comments on other issues that should be considered in this email discussion.

3 Intermediate Round

3.1 Title of Project

The moderator proposed "Mobile IAB".

- 15 companies participated.
- 11 companies support the title.
- 2 companies would like to include linkage to VMR
- 1 company believes that mobile IAB would be fine as long as it covers VMR. The moderator believes that the discussion on VMR is related to coordination with SA2. This coordination with SA2 is discussed below.
- 1 company proposes "*Further Enhancements to Integrated Access and Backhaul for NR*". The moderator believes that such a title would make Rel-18 IAB an extension of Rel-17 IAB, which is certainly not correct as Rel-17 IAB focuses on stationary IAB-nodes while Rel-18 IAB focuses on mobile IAB-nodes.

Based on this outcome, the moderator proposes to name the effort "Mobile IAB"

Feedback Form 11: Q101: Please provide comments on this title (without repeating the initial round discussion)

1 – vivo Mobile Communication Co. Agree.
2 – AT&T Agree
3 – LG Electronics Inc. Agree
4 – Apple R&D Fine with the title.
5 – CATT We are OK with the title.

6 – Samsung Electronics Nordic AB Fine to us
7 – Huawei Technologies France Fine with the title.
8 – ZTE Corporation Agree
9 – Intel Deutschland GmbH We are fine with “mobile IAB”.
10 – InterDigital Agree
11 – Deutsche Telekom AG Agree
12 – Qualcomm Incorporated Agree
13 – Nokia Italy Fine with the proposed title.
14 – Motorola Mobility France S.A.S Agree with the proposed title.
15 – Futurewei Technologies Agree.
16 – Verizon UK Ltd Agree

3.2 Justification section

12 companies participated.

There were multiple editorial changes, which are captured below.

Other changes proposed, which we will not adopt:

- Changing “The work on Mobile IAB should focus on…” into “The further enhancements for IAB include mobility aspects and builds on the architecture and protocols…”. The moderator believes that

this modification represents a significant departure from the original text, which companies had converged on in the prior Rel-18 email discussions.

- Removal of “and/or surrounding”, of change form “and/or surrounding” to only “and surrounding”. We had these discussions before and finally converged on “and/or surrounding UEs” as a compromise. The moderator believes that there is no benefit to repeat these discussions. Also, no new insights were revealed in the comments.
- One company proposes to include an additional line on support for NTN-based backhaul. Another company does not support such inclusion. This matter will be further discussed in the next question.

The resulting justification is:

The support for Mobile Integrated Access and Backhaul (IAB) builds on the architecture and protocols derived in the Rel-17 WI NR_IAB_enh, which provided IAB improvements ***~~improve~~*** *on various aspects such as robustness****, ~~degree of~~*** *load-balancing, spectral efficiency,* ***~~multi-hop latency~~*** *and end-to-end performance.*

The work on Mobile IAB in Rel18 should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/capacity enhancement to onboard and/or surrounding UEs.

Feedback Form 12: Q102: Please provide feedback on the justification section (without repeating initial discussion)

1 – vivo Mobile Communication Co. Agree. One minor editorial suggestion: ‘Rel18’ to be revised to ‘Rel-18’.
2 – AT&T We are ok with the updated justification.
3 – LG Electronics Inc. Agree with the updated version.
4 – Apple R&D Fine with the update.
5 – CATT We are OK with the updated version
6 – Samsung Electronics Nordic AB Fine to us
7 – Huawei Technologies France we are fine with the updates
8 – ZTE Corporation We agree with the updated justification.

9 – Intel Deutschland GmbH We are fine with the justification.
10 – InterDigital Agree
11 – Deutsche Telekom AG Generally fine with us. Nevertheless, we see a differentiation between support of onboard and surrounding UEs. The latter one should only happen in case of a stopped mobile IAB node or at very low speed, whereas the support of onboard UEs should be the main use case independent of mobile IAB node speed. This difference is currently not emphasized by the text.
12 – Qualcomm Incorporated Agree
13 – Ericsson LM We still disagree with the "*and/or surrounding*" part. Serving surrounding UEs by a mobile IAB node would be possible for only a short time, while the vehicle is stationary, after which the vehicle would depart and the surrounding UEs would have to switch back to the stationary RAN. This only creates additional problems and complexity. If "*surrounding*" is referring to UEs that are permanently in the vicinity of the moving IAB-node, then such UEs are already included by "*onboard*". If we have removed the reference to surrounding UEs from the Objectives part, what is the reason to keep it in the Justification part?
14 – Nokia Italy Fine with the proposed justification.
15 – Motorola Mobility France S.A.S Fine with the justification.
16 – Futurewei Technologies Updates are fine.
17 – Verizon UK Ltd We are fine with these updates to the justification

3.3 Requirements

21 companies participated

On single-hop backhauling:

- There were a lot of different views. Some companies prefer the original version while others prefer the

moderator's rewording. Some companies were concerned about referring the link between UE and mobile-IAB-node as a single hop. Some alternative solutions were proposed. Some companies would like to include future proofness toward multi-hop below the mobile-IAB-node. Two companies were uncertain if the mobile-IAB-node could connect to a stationary IAB-node or only to the donor.

- The moderator proposes to adopt the following rewording proposed by one company, which is clear and in line with the original intention:

  "*The mobile IAB-node should have no descendent IAB-nodes, i.e. it serves only UEs*."

- For clarification: The mobile-IAB-node should be able to connect to a network via stationary IAB.

On reference to TS 22.261

- According to the moderator's count, the opponents of a reference to TS 22.261 outnumbered the proponents by 9 to 2. We will have no reference to TS 22.261.

On NTN:

- According to the moderator's count, the opponents of NTN for backhauling outnumbered the proponents by 14 to 3 (potentially 4).
- The moderator believes that there is benefit in using NTN for backhauling. However, NTN-based backhauling should be first discussed for stationary IAB. Since stationary IAB has been specified in Rel-16/17, NTN-based backhauling would be an NTN-based enhancements which should be covered by the NTN SI/WI.

On DC:

- One company questioned if DC should apply to the mobile IAB-node rather than the UE. The moderator emphasizes that intra-donor and inter-donor DC is already supported for Rel-17 IAB. If there is any value to extend this support to a mobile IAB-node should be discussed in the WI (see objective 1), i.e., not considered as a requirement.

The resulting requirements are:

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

- *In-band and out-of-band backhauling.*
- ~~*Solutions should be focussed on a single hop backhauling, i.e. one hop between UE and the mobile IAB-node (i.e. no descendant node).*~~***The mobile IAB-node should have no descendent IAB-nodes, i.e., it serves only UEs.***
- *Solutions should support UE HO and DC.*

Feedback Form 13: Q103: Please provide comments on these requirements (without repeating the initial discussion).

1 – vivo Mobile Communication Co.

Agree.

2 – AT&T

While we understand that multi-hop mobile IAB is not a focus for Rel-18, we still have strong concerns that the updated wording is explicitly precluding such scenarios even if feasible via implementation based on single-hop solutions or the possibility of forward compatibility as well. So our preference would be to keep the previous wording, but at the very least, a note should be provided which indicates that this requirement is more of a design assumption used to simplify work in the WGs rather than a strict requirement and will not be explicitly captured in any specifications.

3 – Rakuten Mobile

We do not support the explicit statement that Mobile IAB should have no descendent Node and agree with AT&T's comment that a note with reasoning can be added in "Requirments"

Also, we agree that there isn't much support for adding Mobile IAB for NTN scenario, however we still think that this need to be clarified with SA1/2 requirements.

4 – LG Electronics Inc.

Agree

5 – Apple R&D

Agree

6 – CATT

Agree

7 – Samsung Electronics Nordic AB

Fine to us

8 – THALES

Although we recognised that several companies have opposed to this. We do not understand the concern to add the sentence suggested by Samsung:

"*The work on Mobile IAB in Rel18 should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/capacity enhancement to onboard and/or surrounding UEs, and some example scenarios can be referred to TS22.261 Section 6.42, and TR22.839.*"

9 – Huawei Technologies France

we are fine with the requirements, but just a further commetn that if we could put these requirements as Note under the Objectives part, this would make things clearer and straight forward.

10 – ZTE Corporation

We agree with the updated requirements.

11 – Intel Deutschland GmbH

In general we are fine with the requirements. For UE DC configuration, it would be good to clarify that if it implies both MCG leg and SCG leg of the UE are connected to different mobile IAB-nodes? Or either leg could be directly connected to gNB?

12 – Deutsche Telekom AG

We are fine with the requirements as proposed by the moderator.

13 – Qualcomm Incorporated

Agree with these requirements.

14 – Ericsson LM

We agree with the changes proposed by the moderator. Regarding AT&T concerns, solving an issue by implementation is always possible, while the WID focuses on what needs to be ensured as a part of specification work in the WI. Please also note the "should" in the text.

15 – Nokia Italy

Fine with the proposed requirements.

16 – OPPO

We just realize the wording of this requirement may imply something we missed before.

The main sentence says "*mobile IAB supports the following new functionality*", and one of the follow-up bullets says "*Solutions should support UE HO and DC*". So the whole thing reads like "require a new UE HO function and new DC function". The objective part does not seem to guarantee there would be a new HO function or a new DC function, although some enhancements would be there per WG decision. So we suggest to change "*new functionality*" to "~~*new*~~ *functionality*".

17 – T-Mobile USA Inc.

We support the proposed requirements as proposed by the moderator. We do not support the proposal from Thales to add "*, and some example scenarios can be referred to TS22.261 Section 6.42, and TR22.839.*" because those documents refer to satellite and NTN and we don't want to open the door to debate in the working groups if satellite links are included implicitly in the WID. We agree with the moderator's assessment of the situation with NTN.

18 – Futurewei Technologies

The wording is acceptable. We also agree with other companies that it may be more appropriate to capture this text as a note to be clear that it is meant to simply constrain the scope of the work in Rel 18.

Also, Oppo's comment seems reasonable. The WID should not imply that new functionality is necessarily needed to meet every objective.

19 – Motorola Mobility France S.A.S Fine with the proposed requirements.
20 – Verizon UK Ltd We are fine with the updated requirements.

3.4 Objective 1

19 companies participated.

- There was no principal objection to this objective.
- There was no objection to the support of Full Migration.
- 13 companies were in favor to explicitly include it in the objective. 1 company were opposed to explicitly including it. 3 companies were fine either way.

Based on this feedback, the moderator proposes to include a reference to Full Migration.

One company was concerned that the term was too specific to RAN3 and should be made clearer. The moderator took this under consideration (see below).

One company was not certain if Full Migration would also apply to stationary IAB-nodes. The moderator believes that the present objective applies to the mobile IAB-node. If Full Migration can also be used for stationary IAB-nodes should be up to RAN WGs discussions.

One company proposed to include enhancements to inter-donor partial migration. Another company proposed to also include support for topological redundancy and RLF recovery for the mobile IAB-node. The moderator believes that these enhancements are in line with this objective, but that it should be up to the the RAN WGs to discuss on the specific enhancements necessary for mobile IAB.

The resulting objective is:

- *Define procedures for migration/topology adaptation to enable IAB-node mobility**, including inter-donor migration of the entire IAB-node (full migration)** [RAN3, RAN2]*

Feedback Form 14: Q104: Please provide comments on the first objective (without repeating the initial discussion)

1 – vivo Mobile Communication Co. Generally we are ok with this objective, and we wonder if we can be more specific on the description of 'migration of the entire IAB-node', e.g., the migration of both the IAB-MT's RRC connection and IAB-DU's F1-C connection.

2 – AT&T

We are OK with this objective.

3 – LG Electronics Inc.

Ok with the update.

4 – Apple R&D

We agree with the update.

5 – CATT

OK with the update

6 – Samsung Electronics Nordic AB

In this objective, the DC support to mobile IAB node is not explicitly mentioned. So, we are not sure if companies have the common understanding on including this as a discussion point during WI stage. We agree that the DC support cannot be considered as a requirement. However, we feel it is beneficial to include this as a potential study point. With this, we suggest to add a note below this objective to indicate this, i.e.,

− *Define procedures for migration/topology adaptation to enable IAB-node mobility**, including inter-donor migration of the entire IAB-node (full migration)*** *[RAN3, RAN2]*

− *Note: the discussion on DC support to the mobile IAB-node is not precluded*

7 – Huawei Technologies France

we are fine with this objective, just would like to confirm that the full migration is just for one-hop scenario, and the wording could be ", including inter-donor migration of the entire **mobile** IAB-node (full migration)

8 – ZTE Corporation

We agree with the update.

9 – Intel Deutschland GmbH

We are ok with the updated objective. Additionally, we also think that full migration has been discussed in RAN WGs with many controversial open issues when considering fixed IAB-nodes and companies also think it's lack of motivation to support full migration to fixed IAB-nodes. Hence, we share the same view with HW with following updates:

-including inter-donor migration of the entire **mobile** IAB-node (full migration)

10 – InterDigital

Ok with the updated objective

11 – Deutsche Telekom AG

We are fine with the objective as proposed by the moderator.

12 – Qualcomm Incorporated We agree with the update.
13 – Orange we support this revision
14 – Ericsson LM One rewording/addition: "*of the entire mobile IAB-node*)"
15 – Nokia Italy Fine with the proposed objective.
16 – Futurewei Technologies We are fine with the wording of the objective. We also agree with Intel and Huawei that adding the word "**mobile"** to the statement of the objective would help clarify its scope.
17 – Motorola Mobility France S.A.S Fine with the rewording.
18 – Verizon UK Ltd We agree with the update.

3.5 Objective 2

20 companies participated

On allowing optimization for the mobile IAB-node to target serving surrounding UEs.

- No: 6. Yes 8.
- This is a close call. The moderator feels that there is some support to target serving surrounding UEs. However, some companies emphasized that it is not clear how to differentiate onboard from surrounding UEs. Other companies have a problem with the wording of this statement.
- The moderator further feels that the WID should capture what is included rather than what is not included. For this reason, we drop the statement on "no optimization …" and leave it to RAN WGs to decide if and how surrounding UEs are differentiated form onboard UEs, and which optimizations is applied to whom.

On explicit inclusion of group mobility

- No 5. Yes 8.
- This is again a close call with a slight majority in favor of inclusion of group mobility. The moderator proposes the following:

Enhancements for mobility of an IAB-node together with its served UEs, ***including aspects related to group mobility.***

On explicit inclusion of enhancements to idle/inactive UEs.

- No 9. Yes 3.
- The opponents outnumber of proponents. Some companies believed that this topic should be considered with lower priority, or they were not certain the TUs would allow for such study. Based on this outcome, the moderator proposes to no include this aspect to the WID.

On the removal of the note

- No 7. Yes 6. Either way 2.
- One company proposed to explicitly exclude inter-donor full migration.
- Another company proposed to add that exceptions can be made for enhancements that explicitly apply to IAB-node mobility.

Since there is no clear majority for keeping or removing the note, the moderator tries to fine a middle ground by narrowing down the note in the following manner:

Note: Solutions should avoid ***~~to touch~~*** ***touching*** *upon topics where Rel17 discussions already occurred and where the topic was excluded from Rel17****, except for enhancements that are specific to IAB-node mobility****.*

The resulting objective therefore is:

- *Enhancements for mobility of an IAB-node together with its served UEs,* ***including aspects related to group mobility.***
- *Note: Solutions should avoid* ***~~to touch~~*** ***touching*** *upon topics where Rel17 discussions already occurred and where the topic was excluded from Rel17****, except for enhancements that are specific to IAB-node mobility****.*

Feedback Form 15: Q105: Please provide comments on the second objective (without repeating the initial discussion)

1 – vivo Mobile Communication Co. Agree.
2 – AT&T We agree with the updated wording for the objective and the note.
3 – LG Electronics Inc. We still have concern on the modification in the Note. As rapporteur mentioned in the initial round of summary, Rel-17 IAB focuses on stationary IAB-nodes

while Rel-18 IAB focuses on mobile IAB-nodes. With this understanding, we have a doubt how many enhancements in Rel-17 IAB are related to IAB-node mobility for Rel-18 IAB.

We think that the topic related to inter-donor full node migration in Rel-17 is the only related issues for mobile IAB node, but the current modification is too broad to express this observation. In addition, considering that "group mobility" would be also included in the topic related to inter-donor full node migration, we suggest to remove the current updated wording in the NOTE, i.e., "except for enhancements that are specific to IAB-node mobility" or change it to "except topics related to inter-donor migration of the entire IAB-node (full migration)".

4 – Apple R&D

We can accept the revised version if there is a strong interest in keeping the note.

5 – CATT

Agree

6 – Samsung Electronics Nordic AB

Fine to us

7 – Huawei Technologies France

as we could see that in the justification part, we have "The work on Mobile IAB in Rel18 should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/capacity enhancement to onboard and/or surrounding UEs.", we think it is bette to add surrounding UEs here in the objective, such as "− Enhancements for mobility of an IAB-node together with its served UEs, including aspects related to group mobility. Note: Surrounding UEs should not be affected."

8 – ZTE Corporation

We agree with the update.

9 – Intel Deutschland GmbH

We are fine with the update, while it would be good to specifically point out it's for mobile IAB-node mobility. Rel-18 should only focus on mobile IAB-node's mobility, Hence, we suggest with following update:

- *Enhancements for mobility of an IAB-node (**mobile IAB)** together with its served UEs, including aspects related to group mobility.*

10 – InterDigital

We still think it is better to remove the note. Some enhancements were excluded in rel-17 due to time limitation. We shouldn't exclude them forever.

11 – Deutsche Telekom AG

We are fine with the updated objective including the note.

Editorial: "Rel17" –> "Rel-17"

12 – Qualcomm Incorporated

We are fine with the objective.

13 – Ericsson LM

Regarding the note, the addition at the end is unnecessary because in Objective 1 we already ensured that full migration is exempt from preclusion of down prioritized Rel17 topics. Is there any other mobility-related enhancement down prioritized in Rel17 that is relevant for Rel-18?

14 – Nokia Italy

Specifically identifying group mobility seems to conflict with the original intention of the note, which was to avoid re-introducing non-essential topics that failed to make progress in Rel-17. It is understood that group mobility solutions are a non-essential optimization, and this topic has been previously discussed in Rel-17 NR, as well as LTE mobile relays with no solution agreed. For these reasons we still feel that group mobility should not be specifically identified, even though mobility enhancements can be discussed in general.

We also prefer the original wording of the Note, since "enhancements specific to IAB-node mobility" is overly broad. Rel-17 leftover should be treated only on an as-needed basis.

15 – Futurewei Technologies

We agree with the spirit of the objective, but also agree with other companies that there may still be some ambiguity regarding the exact scope. The re-wording proposed by Intel seems reasonable to clarify this.

16 – Motorola Mobility France S.A.S

On the main line: Agree to remove the limitation for surrounding UEs. Also fine with explicit inclusion of group mobility.

On the note: It sounds a bit odd, but we are fine with it if there is strong support.

17 – Verizon UK Ltd

The note looks a bit odd especially with the clarified objective. Original wording of the note seems better.

3.6 Objective 3

18 companies participated.

On the objective:

- There was strong support for this objective. One company proposed to replace "avoidance" with "handling" and remove the references to PCI and RACH. The moderator believes that the rewording does not make a big difference. Also, prior email discussions have shown that the examples are beneficial for clarification purposes.

On the leading WG:

– 15 companies are in favor of RAN3 to be the leading WG. Other companies did not have a particular preference.

The resulting objective therefore is:

*Mitigation of interference due to IAB-node mobility, including the avoidance of reference and control signal collisions (e.g., PCI, RACH). [**RAN3-led, RAN2**~~**If is FFS whether RAN2 or RAN3 should be leading the activity**~~]*

Feedback Form 16: Q106: Please provide comments on the third objective (without repeating the initial discussion)

1 – vivo Mobile Communication Co. Agree.
2 – AT&T Agree with the updated wording of the objective.
3 – LG Electronics Inc. Fine
4 – Apple R&D Agree
5 – CATT Agree
6 – Samsung Electronics Nordic AB Fine to us
7 – Huawei Technologies France just a minor editorial, should it be "*[**RAN3**-~~**led**~~**, RAN2]**"
8 – ZTE Corporation We agree with the update.
9 – Intel Deutschland GmbH We are fine with the objective.
10 – InterDigital Agree

11 – Deutsche Telekom AG Agree
12 – Qualcomm Incorporated We are fine with the objective.
13 – Ericsson LM Changes to the text are needed. The collisions may not occur if proper planning is done, so we are talking about the avoidance of a potential problem. So, we need a conditional statement, such as replacing "*avoidance of*" with "*handling of potential*" and adding "*if any*" at the end of the sentence.: o *Mitigation of interference due to IAB-node mobility, including the handling of potential ~~avoidance of~~ reference and control signal collisions (e.g., PCI, RACH), if any*
14 – Nokia Italy Fine with the proposed objective.
15 – Futurewei Technologies We are fine with the objective.
16 – Motorola Mobility France S.A.S Fine.
17 – Verizon UK Ltd We agree with the updated wording of Objective 3.

3.7 Principles

20 companies participated

- All companies seem to support the first bullet.
- All companies are fine with the second bullet.
- Two companies would like to add a note underneath the second bullet for further clarification.

The moderator believes that based on the feedback, no change is needed for these principles.

The principles therefore are as before:

The following principles should be respected:

- *Mobile IAB-nodes should be able to serve legacy UEs.*
- *Solutions providing optimisation for Mobile IAB may entail Rel18 UE enhancements, provided that such enhancements are backwards compatible*

Feedback Form 17: Q107: Please provide comments on these principles (without repeating the initial discussion)

1 – vivo Mobile Communication Co. Agree.
2 – AT&T Agree.
3 – LG Electronics Inc. Fine
4 – Apple R&D Agree
5 – CATT Agree
6 – Samsung Electronics Nordic AB Fine to us
7 – Huawei Technologies France looks fine.
8 – ZTE Corporation Agree
9 – Intel Deutschland GmbH We are fine with the principle.
10 – InterDigital Agree
11 – Deutsche Telekom AG We are fine with the principles. Editorial: ”Rel18” –> ”Rel-18”
12 – Qualcomm Incorporated Fine with principles
13 – Nokia Italy Fine with the proposed principles.

14 – Ericsson LM Agree to keep the principles as they were. A minor editorial suggestion: “Rel18” to be revised to “Rel-18”.
15 – Futurewei Technologies Agree
16 – Motorola Mobility France S.A.S Fine.
17 – Verizon UK Ltd Agree with these 2 principles

3.8 Involvement of RAN4 and RAN1

19 companies participated

On RAN4 involvement:

- Wording in draft WID: Yes 12. No 3.

The moderator sees strong support for the RAN4 involvement captured in the draft WID. Further, the RAN4 chairman’s advice should be addressed:

RAN4 Chair: the RAN4 objective seems only for study but it is WI. It is better to decide whether RRM, RF, and/or demodulation requirements are needed to facilitate the TU and work arrangement in RAN4. The normative work for RRM and demodulation requirements seem clear to me. But for co-existence, what kind of co-existence is needed and what requirement is needed seems not very clear. If Nokia comment is true, please have a more concrete objective for RAN4.

Nokia’s statement was:

We also feel it is necessary to include RAN4 for coexistence issues requiring UL power limitations and impacts of moving cells, necessary enhancement to UL power control requirements of a moving node, and potential requirements for beam correspondence and spherical coverage. It is essential to ensure that mobile IAB does not significantly degrade performance of existing network deployments.

The moderator therefore proposes the following rewording for the RAN4 involvement:

The involvement of RAN4 is expected to study impact on~~, e.g.,~~ RRM, demodulation and coexistence.

- ***The coexistence study should consider the impact of moving cells so that mobile IAB-nodes do not significantly degrade performance of existing network deployments.***

On RAN1 involvement

- Wording in draft WID: Yes 11. No 5.
- 3 companies believe that a specific objective is needed
- 2 companies believe that a specific objective is not needed

Based on the feedback, the moderator proposes to keep the present text. RAN1 may get involved based on LSs by other WGs.

The resulting text on RAN4 and RAN1 involvement therefore is:

The involvement of RAN4 is expected to study impact on~~, e.g.,~~ RRM, demodulation and coexistence.

- ***The coexistence study should consider the impact of moving cells so that mobile IAB-nodes do not significantly degrade performance of existing network deployments.***

The involvement of RAN1 may be needed, depending on work progress.

Feedback Form 18: Q108: Please provide comments on RAN4/RAN1 involvement (without repeating the initial discussion)

1 – vivo Mobile Communication Co. Agree.
2 – AT&T Agree with the updated wording.
3 – Apple R&D Fine with the updated text.
4 – CATT OK with the proposal
5 – Samsung Electronics Nordic AB Fine to us
6 – Huawei Technologies France Looks fine
7 – ZTE Corporation We are fine with the update.

8 – Intel Deutschland GmbH

We are fine with above summary of RAN4 involvement. However, current proposal does not imply any specification impact. Hence, we suggest with following update to the WID description for RAN4 as below:

Core Part

- Define RRM requirements to enable IAB-node mobility

Performance part

- Define RRM performance requirements and test cases if needed

- Define IAB demodulation requirements for mobility propagation conditions.

9 – HuaWei Technologies Co.

RAN4 Chair: Intel wording seems better to me. As commented before, RAN4 need to specify some requirement rather than only doing study. I prefer to say directly, RAN4 specify RRM requirement for xxx, and demodulation requirements for yyy, in addition to "*The involvement of RAN4 is expected to study ...*"

10 – Qualcomm Incorporated

Agree.

11 – Ericsson LM

We suggest a rewording of the RAN4 involvement/objective as below:

Core part:

RAN4 study includes RF co-existence, impact on RF and RRM core requirements.

- The coexistence study should consider the impact of moving cells so that mobile IAB-nodes do not significantly degrade performance of existing network deployments.

Performance part:

Define RF, RRM and demodulation performance requirements

12 – Nokia Italy

As the mobile IAB-Node is moving, network planning cannot guarantee the power levels at wanted or other operator UL receivers are well-controlled, given that rel-16/17 requirements allow unlimited output power for some IAB-classes. Therefore, compared to rel-16/17 requirements restrictions to UL output power levels and modifications to power control requirements may be needed.

Network planning also cannot ensure that antennas/beams are pointing into correct direction, and therefore requirements similar to beam correspondence may be needed. We suggest to modify the objective as follows

*The involvement of RAN4 is expected to study impact on**, ~~e.g.,~~** RRM, demodulation and **RF, including** coexistence, **and if found necessary specify related requirements.***

- *The coexistence study should consider the impact of moving cells so that mobile IAB-nodes do not significantly degrade performance of existing network deployments.*

The involvement of RAN1 may be needed, depending on work progress.

13 – Futurewei Technologies

Agree with the updated wording.

14 – Motorola Mobility France S.A.S

We believe RAN1 involvement will be needed/beneficial, but since there is already support for the current version, we are fine with leaving it as a possibility for now.

15 – Verizon UK Ltd

We prefer updated Intel wording for RAN4 involvement.

3.9 Interaction with other non-RAN WGs

20 companies participated.

On adding the note on coordination with SA2 in section 8 of the WID

- On note: Yes 15. No 3. Not clear if support: 2
- One company commented that the note should refer to mobile IAB rather than VMR.

The moderator sees strong support for adding this note. Also, this note does not commit RAN to anything, so it should be fine. For this reason, the note will be kept:

Alignment and coordination with Rel-18 SA2 work on VMR should be considered.

Feedback Form 19: Q109: Please provide comments on the co-ordination with SA2 (without repeating the initial discussion)

1 – vivo Mobile Communication Co.

Agree.

2 – AT&T

Agree.

3 – LG Electronics Inc.

Agree

4 – Apple R&D

We can accept the sentence.

5 – CATT

We are still not sure whether VMR would be finally included in Rel-18 package in SA2.We prefer to not include it now.

6 – Samsung Electronics Nordic AB

Fine to us

7 – Huawei Technologies France

we share similar concern as CATT, whatever SA2 will discuss for VMR, from RAN3 perspective, VMR is just a deployment scenario, all what we will specify in RAN3 R18 is further enhancements to what has specified for IAB. Maybe there is no need to include it for now. anyway, we would see LS from SA2 if SA2 think needed.

8 – ZTE Corporation

Agree

9 – Intel Deutschland GmbH

Agree.

10 – Qualcomm Incorporated

Agree

11 – Nokia Italy

Fine with note on SA2 alignment.

12 – Ericsson LM

Once again, SA2 has thrown the ball into the RAN yard, so it is not certain that coordination will be needed. So, we think that at least "*if needed*" should be added in the end, after "*considered*". If the statement is, as moderator says, not committing RAN to anything, and we have our "business as usual" channel to SA2, why should the sentence be included?

13 – Futurewei Technologies

We are Ok with the principle, but as several companies commented during the first phase of the discussion, this anyway seems like business as usual. Therefore, we are not sure that including this statement really adds any value.

14 – Philips International B.V.

We support adding the proposed note about VMR.

15 – Motorola Mobility France S.A.S

Agree.

16 – Verizon UK Ltd

Agree to keep the note

3.10 Intermediate draft WID

The intermediate draft WID has been uploaded to the draft folder on the server under:

Rev2 of RP-212718 New WID on Mobile IAB -v00

4 Final Round

4.1 Title of Project

16 companies participated. There is consensus to use “Mobile IAB” as the title.

4.2 Justification seciton

17 companies participated.

15 are fine with the present form (apart from some editorial corrections).

1 company is generally fine with the present form. They believe that surrounding UEs should only be served if the mobile-IAB-node stops.

1 company does not want to see surrounding UEs included.

The moderator believes that there is almost consensus to keep the justification as is. On the skeptical views with respect to serving surrounding UEs:

- It was pointed out before that it may not be possible to differentiate between onboard and surrounding UEs. Restricting the requirement to onboard UEs may therefore create a problem in case surrounding UEs cannot be separated.
- There is consensus that the mobile IAB-node can support surrounding UEs at standstill. This implies that the mobile IAB-node can in fact support surrounding UEs.

The moderator believes that there is no need for further discussion on this point.

Editorial change: Rel18 will be changed to Rel-18.

4.3 Requirements

20 companies participated

On single-hop backhauling:

- 18 companies are fine with the present draft.
- 2 companies believe that descendent nodes to the mobile IAB-node should at least be supported by implementation. The moderator believes that such implementation-based solutions are never precluded. The WID, however, defines the scope for the normative work, and the explicit restriction to single-hop is important to get the normative work done within the TUs allocated.

On reference to TS 22.261 and/or support for NTN

- 18 companies are fine that the present draft has no reference to TS 22.261.
- 1 company wants to add such a reference. The moderator believes that there is not enough support for this.
- 1 company believes that this would need clarification with SA1/2 requirements. The moderator believes that there is not enough support for a reference to SA1 requirements as stated above. Interaction with SA2 is handled below

On DC:

- 1 company would like to have clarified if the requirement on support of UE DC has any implication on which of SCG or MCG leg is used for the mobile IAB-node or if they both can use mobile IAB-nodes. The moderator believes that further refinements on UE DC should be handled during the WI. The moderator further believes that this requirement will be fairly easy to meet since it is already supported for Rel-16/17 IAB.
- 1 company pointed out that the wording "*Mobile IAB supports the following **new** functionality*" was not consistent with *"...support UE HO and DC*", which is not new. They recommend removing the word "*new*", which is fine with the moderator.

The new wording is:

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

- *In-band and out-of-band backhauling.*
- *The mobile IAB-node should have no descendent IAB-nodes, i.e., it serves only UEs.*
- *Solutions should support UE HO and DC.*

Two companies propose to move this section as a note under the objectives.

Feedback Form 20: Q201: Should the requirements remain where they currently are (in justification section) or moved as a note into the objection section?

1 – vivo Mobile Communication Co.

It is ok to us to keep the requirements in justification section.

2 – LG Electronics Inc.

No problem to remain in justification section, but it is also acceptable if the majority want to move it into the objective section as a note.

3 – Apple R&D

We don't see any big problem to keep it in justification section.

4 – CATT

It is OK for us to keep it in the justification part.

5 – Beijing Xiaomi Mobile Software

making these a note in the objectives may not be any clearer than keeping them in the justification?

we are okay to keep them in the justification.

6 – Samsung Electronics Nordic AB

It is fine to us to put it in justification section.

7 – Ericsson LM

It is better to move them to the top of the Objectives section because they are more related to the Objectives – they define the scope of the objectives.

8 – ZTE Corporation

We think it can be kept in the justification part.

9 – Huawei Technologies France

This is what we commented, we think it is better to move them to objectives section, as E/// commented, they define the scope of the objectives.

10 – Intel Deutschland GmbH

we are fine to keep the requirements in justification section.

11 – Motorola Mobility France S.A.S

Both options are fine, but requirements seem more related to the objectives as Huawei and Ericsson have pointed out.

12 – OPPO These contents are objective-related, so we prefer to move them to objective section.
13 – Verizon UK Ltd No strong view. Slightly prefer moving to Objectives section as the text under discussion is better suited there as scope clarifications.
14 – Nokia Italy The requirements are fine in the justification section.
15 – Qualcomm Incorporated We'd prefer to keep it in the justification section.
16 – Futurewei Technologies It makes more sense to place this text in the Objective section.

4.4 Objective 1

18 companies participated.

There is consensus on this objective.

A few companies would like to make it more explicit that full migration only applies to the **mobile** IAB-node. The moderator is fine with this change since it does not change the content of the objective but serves clarification.

New wording:

Define procedures for migration/topology adaptation to enable IAB-node mobility including

*inter-donor migration of the entire **mobile** IAB-node (full migration) [RAN3, RAN2]*

One company wonders if further explanation is necessary, i.e., including the interfaces to be migrated (i.e., RRC and F1-C). The moderator believes that the present draft should be sufficiently clear.

Another company would like to see inter-donor DC to be explicitly included in this objective. They propose to add the following Note:

Note: the discussion on DC support to the mobile IAB-node is not precluded

The moderator is wondering why such a note is necessary. Mobile IAB is based on Rel-16/17 IAB, which both support DC for the IAB-node. However, we have one more round and see if there are more companies supporting this idea:

Feedback Form 21: Q202: Do you agree to add: "Note: the discussion on DC support to the mobile IAB-node is not precluded."

1 – vivo Mobile Communication Co.

We agree with the intention but tend to think the note is NOT necessary, the discussion on DC to mobile IAB-node in our understanding, seems naturally included.

2 – LG Electronics Inc.

The current wording is clear enough and we don't see a value of adding this note.

3 – Apple R&D

We agree with moderator that Rel-16/17 already support DC for IAB nodes. Thus, it's not clear to us why we need such a note.

4 – CATT

Since DC for IAB-node was already support in Rel-16/17,it is natural that this sceanro is not precluded in Rel-18.We do not think the note is necessary

5 – Samsung Electronics Nordic AB

Yes, there is no harm to add this note.

Indeed, Rel-18 mobile IAB is based on the Rel-16/17 architecture. However, this WID does not mention anything about the DC support of the mobile IAB node. If our understanding is correct, the moderator believes the DC support for mobile IAB node should be in the discussion scope of Rel-18. We hope this is also the common understanding among companies. Thus, we suggest to add this note.

Please also note that Rel-17 WID also mentions DC support, although it is based on Rel-16 architecture.

6 – Ericsson LM

We see no need for such a note, we do not see how this is precluded with current text.

7 – ZTE Corporation

We think it is not necessary to add this note.

8 – Huawei Technologies France

we also don't see the need to add such a note, discussion related with DC always makes things complicated, and now it was almost done in R17.

9 – Motorola Mobility France S.A.S

The note does not seem needed.

10 – Verizon UK Ltd

The note is not needed as DC is not precluded in current text. However if this is not current understanding, then the note would help clarify.

11 – Nokia Italy We do not support adding a note specifically identifying exceptions to DC enhancements.
12 – Qualcomm Incorporated We don't believe it is necessary to add this note.
13 – Futurewei Technologies We don't see a need to add this note. Similar to Ericsson, the current text does not exclude it.
14 – Beijing Xiaomi Mobile Software dont see the need for the note

4.5 Objective 2

17 companies participated

On the handling of the Note

- 12 companies have no problem with this note (in present form)
- 2 further companies are fine with the note as long as there is strong support (which we have)
- 2 companies believe that the moderator's addition to the note should be removed since there are no Rel-17 deprioritized enhancements outside of full migration (which has already been explicitly included).
- 1 company would like to see the moderator's addition to the note removed since they believe it is too broad.
- 1 company believes the note looks a little odd with respect to the objective.
- The moderator proposed the addition to the note as a compromise in a rather deadlocked discussion between keeping and removing the note. The moderator emphasizes that after this addition, there is strong support for keep things as they are. The moderator does not agree the note makes things too broad. It may be questionable if there are any features that were deprioritized in Rel-17 while applying explicitly to mobile IAB. However, if this is not the case, the note wouldn't hurt.

On surrounding UEs

- One company would like to add surrounding note: "Note: Surrounding UEs should not be affected".
- The moderator does not agree on this note for the following reasons:
    - Since the objective addresses "served UEs", it is not clear if the "surrounding UEs" in such a note would refer to "not onboard UEs" or "not served UEs". In fact, the surrounding UEs could be served by the mobile IAB-node. It would therefore make more sense to refer to "UEs not served by the mobile IAB-node".

    - The moderator does not agree with the note even if it referred to “UEs not served by the mobile IAB-node”. Any additional node will create some degree of interference and therefore affect UEs that are not served by this additional node.
    - We have had endless discussion on inclusion vs. exclusion of surrounding UEs. It would be better to avoid any reference to surrounding UEs at this place.

- Two company would like to add “(mobile IAB)” after “mobility of an IAB-node”. The moderator believes that “mobility of an IAB-node” obviously only refers to mobile IAB since (1) this entire WID is about Mobile IAB and since (2) Rel-16/17 IAB only refers to stationary IAB-nodes.

Group mobility

- 16 companies have no concern about group mobility in this draft
- 1 company does not want to have a group mobility included in this objective.
- The moderator believes that there sufficient support for group mobility.

Editorials: “Rel17” will be changed to “Rel-17”.

4.6 Objective 3

17 companies participated.

16 companies are fine with the objective. One of these companies would like to revise “[RAN3-led, RAN2]”. The moderator doesn’t really see a problem with “RAN3-led”. This type of wording was already used in other WIDs.

1 company believes that control signal collisions can be avoided via planning and proposes a rewording they already proposed the initial round. The moderator believes that one critical issue of IAB-node mobility is that traditional network planning efforts, such as PCI planning, may fail if they rely on the assumption that the network is stationary. The PCI space is further too small to furnish each mobile IAB-nodes with a unique PCI that is not reused anywhere in the stationary network. The WI needs to properly address this issue. The present wording captures just that.

4.7 Principles

17 companies participated. There is consensus with the principles. “Rel18” will be revised to “Rel-18”.

4.8 Involvement of RAN4 and RAN1

15 companies participated. There is strong support for the present draft version. However, the RAN4 chairman is unhappy:

RAN4 Chair: Intel wording seems better to me. As commented before, RAN4 need to specify some requirement rather than only doing study. I prefer to say directly, RAN4 specify RRM requirement for xxx, and demodulation requirements for yyy, in addition to "*The involvement of RAN4 is expected to study ...*"

Intel's rewording is:

Core Part

- *Define RRM requirements to enable IAB-node mobility*

Performance part

- *Define RRM performance requirements and test cases if needed*
- *Define IAB demodulation requirements for mobility propagation conditions.*

Nokia further proposes:

*The involvement of RAN4 is expected to study impact on**, ~~e.g.,~~** RRM, demodulation and **RF, including** coexistence, **and if found necessary specify related requirements.***

- The coexistence study should consider the impact of moving cells so that mobile IAB-nodes do not significantly degrade performance of existing network deployments.

The involvement of RAN1 may be needed, depending on work progress.

The moderator agrees with RAN4 chairman and some companies' comments that the RAN4 section of this WID is still lacking detail. Based on feedback, the moderator proposes the following as a WF:

*The involvement of RAN4 is expected to study impact on RRM, demodulation and coexistence~~**. The coexistence study should consider the impact of moving cells so that mobile IAB-nodes do not significantly degrade performance of existing network deployments.**~~**:***

Core part:

- ***Conduct co-channel and adjacent channel co-existence study to assess the impact of moving cells. Based on the study outcome, specify RF and RRM requirements and mechanisms to enable co-existence***

– ***Specify RRM requirements to enable mobility of the IAB node***

-

Performance part:

– ***Specify RF conformance requirements, if needed***

– ***Specify RRM and demodulation performance requirements for the IAB node by taking into account mobility***

Feedback Form 22: Q203: Do you agree with this modification to the RAN4 involvement? If not, please propose a rewording.

1 – Samsung Electronics Nordic AB

The RRM requriement due to co-existence study somehow redundant with the following bullet on RRM and can be removed at current stage. Furthermore, it's not believed that any delta interference mechanism(such as measurement) with specfication impact can be decided within RAN4 without any RAN1/2/3 update. Hence it's proposed that the RAN4 scope can be updated as below:

The involvement of RAN4 is expected to study impact on **co-existence and** RRM~~**, demodulation and coexistence**~~:

~~***Core part:***~~

- *Conduct co-channel and adjacent channel co-existence study to assess the impact of moving cells. Based on the study outcome* ***together with the research on mechanisms to enable co-existence****, specify RF* ~~***and RRM***~~ *requirements* ~~***and mechanisms to enable co-existence***~~

- *Specify RRM requirements to enable mobility of the IAB node*

-

~~***Performance part:***~~

~~- ***Specify RF conformance requirements, if needed***~~

~~- ***Specify RRM and demodulation performance requirements for the IAB node by taking into account mobility***~~

2 – Ericsson LM

Regarding the RAN4 coexistence study, we prefer to replace the "co-channel and adjacent channel" with "co-existing", which is more general. We are not sure the co-channel co-existence is needed if there will be no RAN1 involvement in Rel-18. We propose the following rewording:

Core part:

Conduct co-existence study to assess the impact of moving cells. Based on the study outcome, specify RF and RRM requirements and mechanisms to enable co-existence

Regarding the surrounding UEs, given that we removed the reference to this issue from the Objectives, (by removing the preclusion of the "surrounding UE" problem from the Objectives), we think that the reference to surrounding UE should also be removed from the Justification section. So, the removal does not preclude it – if we are keeping the discussion open and the WID neutral, then we should be consistent.

3 – ZTE Corporation

At this stage, it is not clear enough if the specification of RRM requirements are really necessary for mobile IAB. It is suggested to add the ”if necessary” modifier to the following description.

Core part:

Conduct co-channel and adjacent channel co-existence study to assess the impact of moving cells. Based on the study outcome, specify RF and RRM requirements and mechanisms to enable co-existence

Specify RRM requirements to enable mobility of the IAB node**, if necessary**

Performance part:

Specify RF conformance requirements, if needed

Specify RRM and demodulation performance requirements for the IAB node by taking into account mobility**, if necessary**

4 – Huawei Technologies France

For surrounding UEs, we would like to be clear that if companies are on the same page that surrounding UEs or UEs not served by this mobile IAB should not be considered during the mobility handling process for this mobile IAB node. Otherwise, we do see the complexity of accepting access request or HO in request during this process, could this be put as part of the requirements?

5 – Intel Deutschland GmbH

For Core part objectives:

- The text “The involvement of RAN4 is expected to study impact on RRM, demodulation and coexistence” is still a bit unclear and we prefer to keep specific objectives and remove it.
- For co-existence studies RAN4 is typically conducting adjacent channel studies and motivation for co-channel studies shall be clarified. We prefer to remove it or keep in brackets.
- Co-existence is not expected to have impact on RRM procedures and this part can be removed.
- The proposed modification is as follows:

~~The involvement of RAN4 is expected to study impact on RRM, demodulation and coexistence:~~

Core part:

- *Conduct ~~co-channel and~~ adjacent channel co-existence study to assess the impact of moving cells. Based on the study outcome, specify RF and RRM requirements and mechanisms to enable co-existence ~~if needed~~*
- *Specify RRM requirements to enable mobility of the IAB node*

Performance part objectives are fine, but shall be moved from WID section 4.1 to 4.2

6 – OPPO

For the modification of RAN4 involvement, we want to ensure all these RAN4 impacts are for IAB-nodes only, but not for UE. The following wording should be more precise:

Core part:

Conduct co-channel and adjacent channel co-existence study to assess the impact of moving cells. Based on the study outcome, specify RF and RRM requirements and mechanisms ***for mobile IAB node*** *to enable co-existence*

Specify RRM requirements ***for mobile IAB node*** *to enable mobility of the IAB node*

Performance part:

Specify RF conformance requirements ***for mobile IAB node****, if needed*

Specify RRM and demodulation performance requirements for the IAB node by taking into account mobility

7 – Nokia Italy

We tend to agree with ZTE's view regarding new RRM requirements, and are fine with making it conditional on whether a need is identified.

Regarding performance requirements, we have some small concern that other performance-related factors such as beam correspondence may be precluded. We would propose to add that other performance factors can be considered.

8 – Futurewei Technologies

We are generally Ok with the proposed rewording of the objective. We also agree with Nokia and ZTE. It may be best to clearly state that new RRM requirements are conditional on their need.

9 – Beijing Xiaomi Mobile Software

regarding comments above to now also remove surrounding UEs from the justification we think this is not acceptable. The compromise text in the objective was discussed for too long and hard fought, we prefer to keep the justification as is

4.9 Interaction with other non-RAN WGs

Interaction with other non-RAN WGs

16 companies participated.

12 companies are in favor of the note, 4 companies are not.

One of the opponents proposes to add "if needed" at the end.

The moderator believes that this note is already rather vague and uncritical. To make some concession to the opponents, the "if needed" can be adopted.

*Alignment and coordination with Rel-18 SA2 work on VMR should be considered****, if needed.***

4.10 Final draft WID

The final draft WID has been uploaded to the draft folder on the server under:

Rev3 of RP-212718 New WID on Mobile IAB -v00

4.11 Other comments

Feedback Form 23: Are there any other comments in this final round?

1 – Samsung Electronics Nordic AB The impacted TS/TR is missing in Section 5
2 – Ericsson LM Regarding the addition of "*potential*" and "*if any*" to the objective on reference signal collisions, the moderator expressed their opinion about the ability of planning-based solution to avoid the collisions. In our view, there is potential in solving the issue by allocating a dedicated PCI(s) for mobile cells. However, we should not have a detailed technical discussion in the WID discussion. So, given that we "agree that we disagree", let us evaluate during the WI if a dedicated solution is indeed needed. The current wording is not good because it mandates specification work on this issue – hence our proposal to make a conditional statement.
3 – Huawei Technologies France small editorial, in section 7, the secondary responsible WG is missing, should be R1/2/4?

5 Summary of Final Round

5.1 Q201: Move requirements to Objective section

16 companies participated.

- Keep requirements where they are: 10
- Move to objectives section: 6

Most companies seemed to be rather tolerant on where the requirements ended up.

The moderator observed that in Rel-16 IAB WID, the requirements were included in the objectives section while in Rel-17 eIAB WID, they were included in the justification section.

This implies that it doesn't matter very much. We can therefore leave them in the justification section (based on majority view).

5.2 Q201: Explicit note on DC not precluded for mobile IAB-node

14 companies participated.

- 13 companies believe that it is not necessary to include a note that DC support for mobile IAB-node is not precluded.

- 1 company is in favor of such a note.

The moderator concludes that there is not sufficient support for such a note.

5.3 Q203: RAN4 involvement

9 companies participated. There were various rewordings suggested for the changes proposed by the moderator in the prior round. The moderator consolidated these comments, which leads to the following RAN4 Core Part:

~~*The involvement of*~~ *RAN4 is expected to study impact on* ***RF and*** *RRM*~~*, demodulation and coexistence*~~ ***requirements****:*

- *Conduct co-channel and adjacent channel co-existence study to assess the impact of moving cells. Based on the study outcome, specify RF and RRM requirements and mechanisms* ***for the mobile IAB-node*** *to enable co-existence****, if needed.***
- *Specify RRM requirements* ***for the mobile IAB-node*** *to enable* ***IAB-node*** *mobility*~~*of the IAB-node*~~***, if needed.***

Based on comments, the Performance part objectives have been moved to the performance part section of the WID and changed to:

- *Specify RF conformance requirements* ***for the mobile IAB-node****, if needed.*
- *Specify RRM and demodulation performance requirements* ***for the mobile IAB-node*** *by taking into account IAB-node mobility****, if needed.***

Note that "for mobile IAB-node" was added at many places to make sure we all know that this applies to the mobile IAB-node.

Further, "if needed" was added everywhere to make sure things are done only if necessary.

One company proposed to remove "co-channel and adjacent-channel" since it was considered too much detail. This view was not shared by other companies. The moderator believes that it doesn't hurt to keep it in.

5.4 Other issues

The following further issues were raised:

- One company pointed out that TS/TR were missing in draft WID: The moderator has added the main specs in the latest revision.

- One company emphasized that in objective 3, collisions in reference signals may *potentially* occur but may not *necessarily* occur. The moderator agrees and added "potential" into the objective. The moderator took the opportunity to also change "RAN3-led" to "RAN3" in compliance with the handling in other WIDs and as suggested by a company in the prior round. The final objective 3 is:

  Mitigation of interference due to IAB-node mobility, including the avoidance of ***potential*** *reference and control signal collisions (e.g. PCI, RACH). [RAN3~~-led~~, ~~If is FFS whether RAN2 or RAN3 should be leading the activity~~]*

- One company pointed out that the secondary RAN WGs were missing. The moderator has added them in the latest revision.

- There were further comments if UEs served by the mobile IAB node can be surrounding UEs and/or onboard UEs. Some companies proposed to remove references to surrounding UEs. Other companies immediately objected to this proposal. The moderator does not believe that any further progress can be made on this topic during this discussion. We converged that mobile IAB node can provide coverage/capacity to "onboard and/or surrounding UEs". We further converged on objective 2 which applies to "the mobile IAB-node together with its served UEs". These two statements are mutual consistent. The moderator believes that further details can be handled during the WI.

The moderator has further made the following additional revisions to the draft WID:

- The template was updated to the most recent version.
- The moderator revised the Acronym ("NR_mobile_IAB"; this is preliminayr), table on inclusion of core/performance part (both), target release (Rel-18), revision of section 1 (impacts), and primary classification (WI). Companies that indicated support for this WID were included in the table.
- The moderator has further created a TU spreadsheet. This spreadsheet includes the Core Part TU allocation to RAN3, RAN2 and RAN4-RD for this WI as recommended in the Rel-18 package approved on Monday. The moderator has added additional TU allocation for Core Part RAN4-RF. It is understood that the TU allocation for the Performance Part needs further discussion.

The revised draft WID from this discussion together the TU spreadsheet have been uploaded. The revised draft WID is: **Rev4 of RP-212718 New WID on Mobile IAB -v00**

The moderator suggests that companies indicate if they want to support the WID, if possible, before Friday's only session.

The moderator will upload the outcome of this discussion and the final proposed WID shortly before Friday's online session.

5.5