**3GPP TSG-RAN WG2 Meeting #110e R2-20xxxxx**

**Online, June 1 – June 12, 2020**

**Agenda item:** 6.1.2

**Source:** Qualcomm Incorporated (Rapporteur)

**Title:** [AT110e][041][IAB] 3800/36300 – Open issues

**Document for:** Discussion

# Introduction

This document handles TS 38300/36300-related open issues as part of offline email discussion:

* [AT110e][041][IAB] Stage-2 (Qualcomm, Huawei)

Scope: Treat papers under 6.1.2, issues, corrections etc, Capture meeting agreements impact to TS. Can take into account LSes etc, Endorsed CRs from last meeting is the baseline for further updates, if any are agreeable,

 Intended outcome: Agreed CRs 38300 36300 (QC), 37340 (Huawei)

 Deadline: June 11, 0700 UTC

There have been several contributions on the support of other Rel-16 features with IAB.

* R2-2005520 proposes that IAB should not support 2-Step RACH, NR-U, IIoT and UE power saving.
* R2-2004782 and R2-2005672 propose that IAB support CHO. R2-2004782 further discusses related specification impact.
* R2-2005628 provides a list of Rel-16 WIs with some recommendations on cross-Rel-16-feature support.

This email discussion aims to converge on the subset of Rel-16 features that can be supported with IAB and to identify the corresponding impact on specification. This discussion follows the feature list provided by R2-2005628.

We need to differentiate, if:

1. A feature is supported for IAB, i.e., it improves IAB performance/functionality
2. A feature is supported for UEs connected to IAB.

Section 2 focuses on feature support for IAB. Section3 focuses on feature support for UEs connected to IAB.

Section 4 aims to identify other open issues related to stage-2.

**Summary:**

…

# 2 Discussion: Features supported for IAB

## 2.1 NR-U support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | No | While beneficial for IAB, more discussion is needed. This can be done in Rel-17. |
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## 2.2 V2X support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | No | Not needed for IAB |
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## 2.3 RACS support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | May be | We have not yet agreed if IAB-MT uses UE capabilities. |
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## 2.4 IIOT support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | No | Not clear which aspect of IIOT would apply to IAB apart from URLLC and NPN, which are captured in separate sub-sections. |
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## 2.5 URLLC support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | No | URLLC may certainly be beneficial for latency reduction on BH. However, this needs more discussion which should be done in Rel-17. |
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## 2.6 Positioning support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | No | IAB-MTs are considered stationary, and therefore, positioning is not needed. |
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## 2.7 Mobility Enhancements support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | Depends… | Fast MCG recovery: already agreed CHO: should be supported; this has implications on stage-2 as discussed in R2-2004782.DAPS: not needed for Rel-16 IAB since the benefits are wiped out by the interruption time due to IPsec setup and F1AP signalling after IAB-MT migration. |
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## 2.8 DCCA support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | Yes | As long as stage-3 specifications can be used off the shelf. |
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## 2.9 Power saving support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | No | Not critical for IAB-node.  |
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## 2.10 SON/MDT support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | Yes | As long as stage-3 specifications can be used off the shelf.  |
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## 2.11 2-step RACH support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | May be | This feature is not critical for IAB, and the benefits can be expected negligible. It could still be used off the shelf, i.e., without specification impact. |
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## 2.12 SRVCC support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | No | Not needed |
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## 2.13 CLI support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | Yes | Important feature for inter-backhaul and inter-access/backhaul interference management. This was discussed during Rel-16 WID. The CLI WI was supposed to support IAB-compliant specifications.  |
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## 2.14 eMIMO support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | Yes | As long as specification is used off the shelf. |
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## 2.15 NPN support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | May be | There is a separate thread on this topic. RAN2 further agreed to not touch this subject before we heard back from RAN3 and CT1 that they would support this features. |
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## 2.16 TEI support for IAB

**Questions:**

* Should this feature be supported for IAB? (YES: (very) beneficial; NO: not (really) needed)
* What is the specification impact? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **Support?****(YES/NO)** | **What is the specification impact? Other comments.** |
| QC | TBD | TBD |
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# 3 Features supported for UE connected to IAB

## 3.1 NR-U support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | No problem as long as BH uses NR. |
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## 3.2 V2X support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

|  |  |  |
| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB |
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## 3.3 RACS support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

|  |  |  |
| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB |
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## 3.4 IIOT support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | No | Not clear which aspects this includes apart from URLLC and NPN which are captured separately. TSN over multi-hop BH is not supported. |
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## 3.5 URLLC support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | No |  Not supported over multi-hop BH. |
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## 3.6 Positioning support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | IAB-DUs are time synchronized as wireline DUs. Not clear if anything else is needed. |
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## 3.7 Mobility Enhancements support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 3.8 DCCA support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 3.9 Power saving support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 3.10 SON/MDT support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 3.11 2-step RACH support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 3.12 SRVCC support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 2.13 CLI support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 3.14 eMIMO support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 3.15 NPN support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

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| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | Yes | Transparent to IAB. |
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## 3.16 TEI support for IAB

**Questions:**

* Is there any problem if this feature is supported for UEs connecting to IAB? (YES: (very) beneficial; NO: not (really) needed)
* What needs to be done to provide UE support of this feature? (please provide specifics, i.e., stage-2 vs. stage-3, ASN.1, protocols affected, etc.)

|  |  |  |
| --- | --- | --- |
| **Company** | **UE-supported?****(YES/NO)** | **What needs to be done to provide UE support? Other comments.** |
| QC | TBD | TBD |
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# 4 Other open issues

**Question:**

* Are there any other open issues related to stage-2 38300/36300?

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| **Company** | **Comments** |
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# 5 Conclusion