**3GPP TSG-RAN WG2 Meeting #109e-bis R2-20xxxxx**

**Electronic meeting, April 20 – April 30**

**Agenda item:** 6.1.1

**Source:** Qualcomm Incorporated (Rapporteur)

**Title:** [AT109bis-e][018][IAB] IAB terminology + other issues

**Document for:** Discussion

# Introduction

This document handles aspects related to IAB-terminology/notation, use of Rel-16 UE features for IAB-MT, and other issues as part of offline email discussion:

* [AT109bis-e][018][IAB] Stage-2 (Qualcomm, Huawei)

Scope: Treat Stage-2: Issues, corrections and CRs (add CRs to x.300 if needed).

Specifically: [R2-2003014](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003014.zip), [R2-2002728](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2002728.zip), [R2-2003178](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_109bis-e\Docs\R2-2003178.zip)

Part 1: Treat meeting input and comments.

Deadline: April 24 0700 UTC

Part 2: Update of CRs, e.g. to include agreements this meeting

The topics should be addressed during Part 1 of the offline. The deadline therefore is:

Deadline: April 24 0700 UTC

# Discussion

2.1 IAB terminology/notation changes

The discussion is based on R2-2002728. This paper proposes a few modifications to the IAB terminology and notation based on discussions in RAN3 after last meeting. The following captures the modifications on IAB terminology and notation:

* In running CR 38300, the *IAB-donor* is defined as a gNB that provides network access to UEs via a network of backhaul and access links.
  + There is **no** *IAB-donor gNB* or *IAB-donor-gNB*.
  + IAB-donor-DU and IAB-donor-CU are hyphenated in the same manner as the gNB-CU and gNB-DU.
* The IAB-node holds gNB-DU functionality with IAB-specific enhancements, referred to as *IAB-DU*.
  + There is **no** *IAB-node-DU* since this might imply that there would also be an *IAB-node-CU*.
  + The IAB-DU of a specific IAB-node, e.g., IAB-node 1, can be referred to as IAB-node-1’s IAB-DU, or IAB-DU 1.
* The IAB-node holds UE functionality with IAB-specific enhancements, referred to as *IAB-MT*.
  + There is **no** *IAB-node-MT* (since this might imply that there would also be an IAB-node-DU).
  + The IAB-MT of a specific IAB-node, e.g., IAB-node 1, can be referred to as IAB-node-1’s IAB-MT, or IAB-MT 1.
* The parent-node IAB-DU and child-node IAB-MT may be referred to as parent IAB-DU and child IAB-MT, respectively.
* Hyphenation follows commonly known rules.

**Proposal 2-1: RAN2 to agree on the above IAB terminology and notation.**

**Q: Do you agree with this proposal?**

|  |  |  |
| --- | --- | --- |
| Company | Agree with proposal | Comment |
| LG | Yes |  |
| Verizon | Yes | It would be good to include definitions for IAB-donor-DU and IAB-donor-CU in the Definitions section. |
| Huawei | Yes | We’d better formulate the proposal in a formal way, e.g.  **Proposal: IAB specifications will use the terminology and notation: IAB-donor-DU, IAB-donor-CU, IAB-donor, IAB-DU, IAB-MT, Child IAB-MT, Parent IAB-DU, Parent IAB-donor-DU.** |
| Apple | Yes | Would be good to include parent-node and child-node definitions as well into this terminology |
| CATT | Yes |  |
| NEC | Yes |  |
| ZTE | Yes |  |
| KDDI | Yes |  |
| Lenovo | Yes |  |
| vivo | Yes |  |
| AT&T | Yes |  |
| Nokia, Nokia Shanghai Bell | Yes |  |
|  |  |  |

2.2 Use of Rel-16 UE features for IAB-MT

We are spending an increasing amount of time on discussing if individual Rel-16 UE features can be used by the IAB-MT. While a Rel-16 MT feature and capability discussion still has to happen, we could already move things forward via the following proposal:

**Proposal 2-2: All Rel-16 UE features can at least optionally be used by the IAB-MT.**

**Q: Do you agree with this proposal?**

|  |  |  |
| --- | --- | --- |
| Company | Agree with proposal | Comment |
| LG | Yes | We assume that all Rel-16 UE features mean Rel-16 features developed by other Rel-16 WI. For Rel-16 MT feature, this should be discussed separately. |
| Verizon | Yes | Same view as LG above. |
| Huawei | No | There are so many WIs which are unrelated to IAB, e.g. IioT, 2-step RA, NR-U. If we want to discuss this proposal, we need to check and discuss case by case: whether it is beneficial for IAB-MT, **whether it can be supported without additional spec impacts**. One example can be the NPN feature, we already see some difficulty and more standard efforts for IAB supporting in NPN deployment. This is just one of all those 10+ Wis.  **We are not OK to just agree the proposal without any real discussion on each WI features.** In the very late stage, it is difficult to have a comprehensive analyses.  Instead, we can first try to agree if some of those Wis are needed and easily supported by IAB-MT. Some examples can be the CHO, DAPS, etc., which somehow are related to IAB R17 features. It is helpful to have a clear understanding on if the R16 IAB can those or to be discussed in R17. |
| Apple | Yes | Same view as LG above. |
| CATT | Can postpone? | The UE feature discussions for R16 are on-going in WGs and Wis. We’d prefer to postpone a bit this proposal until the whole picture is clear. If for some feature there is urgency to decide we could check case by case. |
| NEC | Yes | Same view as LG above. |
| ZTE | Not for now | It is suggested to have a comprehensive analysis of each Rel-16 UE feature before we draw the conclusion. |
| KDDI | Not for now | Share the view with ZTE. |
| Lenovo | Not for now | We need to check one by one during UE feature discussion. The feature from DCCA and NR mobility can be applied to IAB. We need to check whether the feature of IIoT and NPN should be supported. |
| vivo | Yes, but… | We think this was already agreed at the last meeting:   * For an IAB-MT node:  - The “Basic Procedures” of the BAP layer feature group is mandatory. - IP assignment over RRC is mandatory. - All other Rel-16 features are optional.   The first two features are IAB-specific and therefore are mandatory for IAB-MT, apart from these, all other Rel-16 UE features are optional. |
| AT&T | Yes, but probably not necessary | We agree with the spirit of the proposal (I assume this also applies to all optional Rel-15 features as well?), but it may not be strictly necessary as vendors should never be restricted from implementing optional features, although of course other network nodes may not implement them and the feature itself may not be that useful for IAB. We think the main issue arises if a feature from a different WI is a prerequisite for an IAB feature, in which case detailed analysis of the spec impact would have to be done in the WGs. |
| Nokia, Nokia Shanghai Bell | FFS | By default, we should assume all Rel-16 features are available for IAB. However, we need to check if this would mean some specification impact on a case by case basis. |

# Conclusion

IAB terminology/notation changes based on R2-2002728

12 companies have replied, and all were in support of the proposed changes.

**Proposal 1: Adopt the following IAB terminology:**

* **There is no *IAB-donor gNB* or *IAB-donor-gNB*.**
* **IAB-donor-DU and IAB-donor-CU are hyphenated in the same manner as the gNB-CU and gNB-DU.**
* **The IAB-node holds gNB-DU functionality with IAB-specific enhancements, referred to as *IAB-DU*.**
* **There is no *IAB-node-DU*.**
* **The IAB-DU of a specific IAB-node, e.g., IAB-node 1, can be referred to as IAB-node-1’s IAB-DU, or IAB-DU 1.**
* **The IAB-node holds UE functionality with IAB-specific enhancements, referred to as *IAB-MT*.**
* **There is no *IAB-node-MT*.**
* **The IAB-MT of a specific IAB-node, e.g., IAB-node 1, can be referred to as IAB-node-1’s IAB-MT, or IAB-MT 1.**
* **The parent-node IAB-DU and child-node IAB-MT may be referred to as parent IAB-DU and child IAB-MT, respectively.**
* **Hyphenation follows commonly known rules.**

Use of Rel-16 UE features for IAB-MT

It was discussed if all Rel-16 UE features could at least optionally be used by the IAB-MT. It was pointed out that RAN2 already had an agreement on this, which is:

* For an IAB-MT node:   
  - The “Basic Procedures” of the BAP layer feature group is mandatory.  
  - IP assignment over RRC is mandatory.  
  - All other Rel-16 features are optional.

Therefore, nothing else needs to be done.