**3GPP TSG RAN Meeting #94e RP-21xxxx**

**Electronic Meeting, Dec. 6 - 17, 2021**

**Source: Qualcomm**

**Title: New WID draft Mobile IAB**

**Document for: Approval**

**Agenda Item: 8.6.3**

3GPP™ Work Item Description

For guidance, see [3GPP Working Procedures](http://www.3gpp.org/About/WP.htm), article 39; and [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm).
Comprehensive instructions can be found at <http://www.3gpp.org/Work-Items>

# Title: **Mobile IAB**

## Acronym: xxxx

## Unique identifier: xxxx

NOTE: For new WIs/SIs leave the Unique identifier empty but you may make a proposal for an Acronym.

 If this is a RAN WID including Core and Perf. part, then Title, Acronym and Unique identifier refer to the feature WI.

 Please tick (X) the applicable box(es) in the table below:

 Either:

|  |  |
| --- | --- |
| **This WID includes a Core part** |  |
| **This WID includes a Performance part** |  |

 or:

|  |  |
| --- | --- |
| **This WID includes a Testing part** |  |
| **and it addresses the following 3GPP work area:** | **Radio Access** |  |
| **Core Network** |  |
| **Services** |  |

## 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  | x | x |  |  |
| **No** | X |  |  |  |  |
| **Don't know** |  |  |  | X | X |

## 2 Classification of the Work Item and linked work items

### 2.1 Primary classification

|  |  |
| --- | --- |
|  | Feature |
|  | Building Block |
|  | *Work Task* |
| X | Study Item |

NOTE: Normally, Core/Perf./Testing parts in RAN WIDs are Building Blocks. Only if they are under an SA or CT umbrella, we define them as work tasks. If you are in doubt, please contact MCC.

### 2.2 Parent and child Work Items

|  |
| --- |
| Parent and child Work Items  |
| Unique ID | Title | Nature of relationship |
|  |  |  |

NOTE: RAN agreed some time ago, that it describes the feature WI + Core/Perf. part WI or Testing part WI in one WID. Therefore the table above should just include the feature WI Unique ID and title and Nature of relationship is "parent WID".

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work Items (if any) |
| Unique ID | Title | Nature of relationship |
| 880076 | Study on enhancement for data collection for NR and ENDC | Preceding Study Item |

NOTE: Classical examples: List a preceding SI or a preceding WI (e.g. if you further enhance a topic). Also related or dependent WIs in other TSGs should be indicated.

**Dependency on non-3GPP (draft) specification**:

## 3 Justification

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 on various aspects such as robustness, load-balancing, spectral efficiency, and end-to-end performance.

The work on Mobile IAB in Rel-18 should focus on the scenario of mobile-IAB-nodes mounted on vehicles providing 5G coverage/capacity enhancement to onboard and/or surrounding UEs.

In Rel-18, mobile IAB supports the following 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.

## 4 Objective

### 4.1 Objective of SI or Core part WI or Testing part WI

The detailed objectives of the WI are listed as follows:

* 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]
* Enhancements for mobility of an IAB-node together with its served UEs, including aspects related to group mobility. [RAN3, RAN2]

*Note: Solutions should avoid touching upon topics where Rel-17 discussions already occurred and where the topic was excluded from Rel-17, except for enhancements that are specific to IAB-node mobility.*

* Mitigation of interference due to IAB-node mobility, including the avoidance of reference and

control signal collisions (e.g. PCI, RACH). [RAN3-led, RAN2]

The following principles should be respected:

* Mobile IAB-nodes should be able to serve legacy UEs.
* Solutions providing optimisation for Mobile IAB may entail Rel-18 UE enhancements, provided that
such enhancements are backwards compatible

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***
* ***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***

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

### 4.2 Objective of Performance part WI

NOTE: Leave empty if the WI proposal does not contain a RAN performance part.

### 4.3 RAN time budget request (not applicable to RAN5 WIs/SIs)

NOTE: For all RAN related WIs/SIs which are not led by RAN WG5 the WI/SI rapporteur has to fill out the attached Excel table to request time budgets for corresponding RAN WG meetings.
The Excel table has to be filled out for all affected RAN WGs and up to the target date of the WI/SI.
One time unit (TU) corresponds to ~ 2 hours in the meeting.
If no TU is needed leave the field empty otherwise enter a number in the field.

 For revisions of already approved WI/SI descriptions: Please remove the Excel table from the WID/SID's zip file. The time budgets are already recorded. If you want to modify them, then this has to be done via the status report and not via a revised WID/SID.

 If this WID is covering Core and Performance part, then please fill out one line for each of them in the attached Excel table.

**additional comments to the time budget request in the attached Excel table:**

## 5 Expected Output and Time scale

|  |
| --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* |
| Proposed Spec no. or series | Type (see note 1)  | Title | For info at TSG#  | For approval at TSG# | Remarks |
|  |  |  |  |  |  |

NOTE: If this is a RAN WID including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Remarks for each spec.
By default a new specs can only be new for one of both parts.

|  |
| --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

NOTE: If this is a RAN WID including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Remarks for each spec.
If an existing spec is affected by both (Core part and Perf. part), then it has to be listed twice with appropriate approval dates.

## 6 Work item Rapporteur(s)

## **Georg Hampel,**

## **Qualcomm Incorporated,**

## **ghampel@qti.qualcomm.com**

## 7 Work item leadership

**Responsible RAN WG: RAN3**

## 8 Aspects that involve other WGs

NOTE: For RAN WIDs: Section 8 applies only to WGs outside of TSG RAN because RAN WG aspects have to be covered in section 4.

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

## 9 Supporting Individual Members

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| --- |
| Supporting IM name |
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