3GPP TSG-RAN WG3 #129 R3-25xxxx

Bangalore, India, 25th – 29th , August, 2025

Agenda Item: 12.2

Source: NTTDOCOMO (moderator)

Title: Summary of Offline Discussion on additional topological enhancement

Document for: Approval

# For chair notes

## WAB

**Endorse BLCR 38.300 based on R3-255254.**

**For the definition of WAB-gNB and WAB-MT in BLCR 38.300 add reference to 38.401.**

**Keep the Additional ULI IE in NGAP UE-associated messages.**

**Add Note to BLCR 38.401: using SeGW for authorization is out of scope of this specification.**

**No need to introduce a new “WAB-gNB” indication in the NG SETUP REQUEST message.**

**Single-gNB solution is deprioritized.**

**ng-eNB is not supported for BH-RAN.**

**Change the BH-RAN node to BH-gNB.**

**Resource coordination is not supported in this release. Any previous agreements on resource coordination are obsolete. Update the stage2 spec accordingly.**

**Include a WAB-MT Identifier in the XN SETUP REQUEST, XN SETUP RESPONSE, NG-RAN NODE CONFIGURATION UPDATE and NG-RAN NODE CONFIGURATION UPDATE ACK e.g. for colocation discovery ~~for resource multiplexing~~ or for WAB node indication.**

If time allows, discuss the topics in following order.

1. Xn connection management
2. notification of UE’s CN of NTN backhauling

# Topics for discussion

## WAB

Endorse BLCR 38.300 based on R3-255254.

Align the definition of WAB-gNB and WAB-MT to 38.401.

### whether to keep AULI in NG UE associated procedures

**Keep the *Additional ULI* IE in NGAP UE-associated messages.**

**Proposal 3: The Additional ULI shall include the NID if the WAB-MT is accessing to a SNPN network. Agree the TP in Annex A.**

### Xn connection management

**BH-gNB can provide to the WAB-gNB the TNL information of other gNBs**

**Proposal 2-1: The source BH-gNB can provide to the WAB-gNB the TNL information of the target BH-gNB before the WAB-MT HO.**

**Proposal 2-2: The source BH-gNB can provide to the WAB-gNB the TNL information of its neighbour gNBs.**

**Proposal 1:** **RAN3 to discuss whether to enhance *Neighbour NG-RAN Node* IE with TNL address in the Xn SETUP REQUEST/RESPONSE messages and the NG-RAN NODE CONFIGURATION UPDATE (ACK) messages for support of Xn establishment.**

**Proposal 2-4: If Xn is to be avoided among WAB-gNBs, TNL discovery procedure can be enhanced to avoid Xn establishment as early as possible among WAB-gNBs.**

**Proposal 2a: The neighbour information shared between NG-RAN nodes may include the identification of neighbour WAB cells / WAB-gNBs.**

**Proposal 2b: A new cause value is introduced, to be used by a WAB-gNB in the XN SETUP FAILURE message to reject a Xn setup request for WAB specific reason.**

**Proposal 2c: The XN REMOVAL REQUEST message may include a cause value indicating the reason for requesting the Xn connection removal.**

### WAB indication over Xn

**Proposal1: Revise previous above agreement to “ Introduce one bit WAB node indication in the XN SETUP REQUEST, XN SETUP RESPONSE, NG-RAN NODE CONFIGURATION UPDATE and NG-RAN NODE CONFIGURATION UPDATE ACK e.g. for WAB node indication.”**

**The “WAB-MT ID” sent from the WAB-gNB to the BH-gNB consists of the WAB-MT’s C-RNTI assigned by the BH-gNB and the cell id of BH-gNB´s cell serving the WAB MT.**

**Include a WAB-MT Identifier in the XN SETUP REQUEST, XN SETUP RESPONSE, NG-RAN NODE CONFIGURATION UPDATE and NG-RAN NODE CONFIGURATION UPDATE ACK e.g. for colocation discovery for resource multiplexing or for WAB node indication.**

**Proposal 2.e: RAN3 to keep the agreements already taken for co-location discovery:**

* **Include a WAB-MT Identifier in the XN SETUP REQUEST, XN SETUP RESPONSE, NG-RAN NODE CONFIGURATION UPDATE and NG-RAN NODE CONFIGURATION UPDATE ACK e.g. for colocation discovery for resource multiplexing or for WAB node indication.**
* **The “WAB-MT ID” sent from the WAB-gNB to the BH-gNB consists of the WAB-MT’s C-RNTI assigned by the BH-gNB and the cell id of BH-gNB´s cell serving the WAB MT.**

**Proposal 2: A WAB-node can reject the Xn Setup Request from another WAB-node, if the XN SETUP REQUEST message contains the** **WAB-MT Identifier.**

### notification of UE’s CN of NTN backhauling

**Proposal 3: Include an indication of wireless backhaul type (terrestrial or non-terrestrial) in:**

* **NGAP interface management signalling, between a WAB-gNB and the UE’s 5GC.**
* **XnAP interface management signalling, between a WAB-gNB and the BH-gNB serving the WAB-MT co-located with the WAB-gNB.**

**Observation 1: When WAB-MT uses NTN with EAS onboard of the satellite, the MT’s gNB, the MT’s UPF used for backhauling and the UE’s UPF need to reside on the satellite.**

**Observation 2: When WAB-MT connects to a gNB with BH via satellite providing onboard EAS, the MT’s UPF used for backhauling and the UE’s UPF need to reside onboard the satellite.**

**Proposal 2: EAS and inter-UE communications using UPF onboard of satellite are not supported for UEs that connect via WAB-gNB.**

**Observation 3: The UE’s AMF can derive the backhaul latency from a non-terrestrial link via legacy QoS monitoring of packet delay defined by TS 23.501 cl. 5.33.3.**

**Observation 4: The UE’s AMF can be configured with a mapping between the TAC of the MT’s served cell and the backhaul satellite type.**

**Proposal 3: The UE’s AMF can use legacy- and implementation-based mechanisms to determine backhaul latency due to a non-terrestrial link. There is no need to introduce new signaling.**

**Proposal 7: The issue of non-terrestrial link used between WAB MT and BH gNB and/or between BH gNB and BH CN can be resolved by the implementation.**

### notification of the target BH-gNB before the WAB-MT HO

**Proposal2: The WAB-gNB need not be notified about the target BH-gNB before the WAB-MT HO.**

### MWAB-gNB authorization

**Proposal 8: Update TS 38.401 BL CR to remove the “SeGW” for MWAB-gNB authorization.**

Note: using SeGW for authorization is out of scope of this specification.

### whether to support Dual connectivity

**Propposal6: Support WAB gNB can act as an MN or SN in DC.**

**Proposal 5: The combination of WAB and dual-connectivity is deprioritized in this release.**

### new “WAB-gNB” indication in the NG SETUP procedure

**No need to introduce a** **new “WAB-gNB” indication in the NG SETUP REQUEST message.**

**Proposal 1a: If the Additional ULI IE is included in the NG SETUP REQUEST message, the AMF shall, if supported, consider that the transmitting NG-RAN node is a WAB-gNB.**

**Proposal 1b: A WAB support information is added to the NG SETUP RESPONSE message.**

### new cause value in NG removal procedure

**Proposal 1d: a WAB-gNB may include in the NG Removal Request message a cause value indicating the reason for requesting the NG connection removal. (**e.g., due to a change of AMF, a change of authorization status, the co-located WAB-MT entering RRC\_IDLE / RRC\_INACTIVE state …)

### WAB-gNB migration

**Proposal 7: In this release, the two logical gNB solution is only supported for UE’s AMF change during WAB-gNB mobility.**

**Single-gNB solution is deprioritized.**

### Whether to support of ng-eNB as BH RAN node

**ng-eNB is not supported for BH-RAN.**

**Change the BH-RAN node to BH-gNB.**

**Proposal 1: RAN3 decides whether the BH-RAN node could be an ng-eNB, i.e. where ng-eNB serves WAB-MT,**

**- Option 1: If RAN3 decides that an ng-eNB could act as the BH-RAN node, an LS is needed to send to SA2 so that SA2 would update the specification accordingly. And it needs to be captured in TS 36.300 that WAB also applies for EUTRA connected to 5GC where ng-eNB is considered as the BH-RAN node.**

**- Option 2: If RAN3 decides that an ng-eNB could not act as the BH-RAN node, the definition of BH-RAN node needs to be removed from TS 38.401, and the term“BH-RAN node” needs to be replaced with “BH-gNB”.**

### WAB architecture using a tunnel

**Proposal 4: RAN3 to capture that a tunnel may be used to transfer the WAB-gNB’s traffic in TS 38.401. Agree the TP in Annex B.**

### Resource coordination

**Proposal 1: RAN3 can try best to complete resource coordination for WAB in Rel-19, otherwise it is done within R19 TEI.**

**Proposal 2: If RAN3 decide to support resource coordination in Rel-19, RAN3 send LS to RAN1 as early as possible.**

**Proposal 3: The LS at least includes following contents:**

* **The decision to support resource coordination for WAB in Rel-19**
* **Describe the difference between IAB and WAB (e.g., the same priority between WAB-gNB and BH-gNB)**
* **WAB-gNB and BH-gNB can send H/NA resource indication to each other**
* **The decision of not supporting S resource indication**
* **Ask RAN1 whether time/frequency domain coordination is supported**

Proposal 3: OAM configures the inband/outband mode to WAB-node.

**Proposal 4: The BH-gNB should broadcast whether it supports resource multiplexing coordination for WAB.**

**Proposal 5: WAB-MT (re-)selects a proper BH-gNB** **based on the configuration from OAM and the knowledge about BH-gNB.**

1. The WAB-gNB sends the multiplexing capabilities and the resource configuration information of its served cells to the BH-gNB via XnAP signalling, the content of the signalling can be same as the *IAB Cell Information* IE, but the *RACH Config Common IAB* IE and the *NA cell resource configuration List* IE in 9.2.2.25 of TS 38.423 should be excluded.
2. The WAB-node get the resource configuration of BH-gNB’s cell using legacy signalling over backhaul Uu interface.
3. BH-gNB cannot configure the resource of the WAB-gNB cells.
4. It is not recommended to purse that the WAB-node should be aware of the neighbour nodes’ cell resource configuration in Rel-19.
5. For WAB-node mobility, the resource multiplexing coordination between target BH-gNB and the WAB-gNB can be conducted before the completion of WAB-MT’s handover.
6. To complete the WI, the following options can be discussed for resource multiplexing coordination:

Option 1: RAN3 decides to reuse the whole IAB resource multiplexing coordination mechanism in XnAP, only except some inappropriate IEs (e.g., *RACH Config Common IAB* IE and the *NA cell resource configuration List* IE), and send LS to RAN1 and RAN2 for coordination.

Option 2: RAN3 sends LS to RAN1 to discuss and decide which part of the IAB resource multiplexing coordination mechanism can be reused for WAB.

Option 3: If RAN3 is not able to specify any solutions on the resource multiplexing coordination, the related objective can be removed from the WID.

**Proposal 1: Adopt the following principles for WAB resource coordination:**

**- Introduce new class-1 procedures for WAB resource coordination.**

**- All resource multiplexing features introduced for IAB are applied to WAB unless not applicable.**

**- Support both F1 and Xn for WAB resource coordination.**

Xn signaling between WAB-gNB and BH-gNB

**Proposal 2-1: The BH-gNB configures semi-static cell resource configuration for a WAB-gNB.**

**Proposal 2-2: Soft attribute is also supported for WAB, and WAB-node can determine the availability implicitly on its own.**

**Proposal 2-3: Whether it is supported that the BH-gNB configures the availability of soft resources of WAB-gNB can be left to RAN1/2 decision. An LS is sent to RAN1/2 to trigger the discussion in RAN1/2.**

**Proposal 2-4:WAB-gNB sends its cell specific signaling/channel configuration to BH-gNB via Xn. And BH-gNB regards the cell specific signaling/channel configuration of WAB-gNB as hard resources.**

**Proposal 2-5: WAB-gNB reports its multiplexing info in the *Served Cell Information NR* IE via XN SETUP REQUEST, NG-RAN NODE CONFIGURATION UPDATE and NG-RAN NODE CONFIGURATION UPDATE ACKNOWLEDGE messages.**

**Proposal 2-6: Cell resource configuration of WAB-gNB could be exchanged between WAB-gNB and BH-gNB via *Served Cell Information NR* IE in XnAP messages.**

**Proposal 2-7: BH-gNB could inform WAB-gNB the NA resource configuration of the co-located WAB-MT’s serving BH-gNB cell.**

F1 signaling between BH-gNB-CU and BH-gNB-DU

**Proposal 3-1: The BH-gNB-CU configures semi-static cell resource configuration for a BH-gNB-DU.**

**Proposal 3-2: BH-gNB-DU sends its WAB STC configuration to BH-gNB-CU if configured by OAM via *Served Cell Information IE* in F1AP message.**

**Proposal 3-3: BH-gNB-CU can reconfigure WAB STC configuration for the BH-gNB-DU via F1 signaling if needed.**

**Proposal 3-4: BH-gNB-CU sends WAB-node information to BH-gNB-DU via F1AP signaling, which includes cell resource configuration, cell specific signaling/channel configuration and multiplexing info of WAB-node.**

**Proposal 3-5: BH-gNB-CU sends cell resource configuration of neighbouring WAB-nodes/BH-gNB-DU to BH-gNB-DU via F1AP signaling.**

**Proposal 3-6: BH-gNB-CU informs the BH-gNB-DU the NA resource configuration of the BH-gNB-DU cell serving the WAB-MT.**

**Proposal 4: RAN3 to agree the draft TP to TS 38.423 and TS 38.473 in Annex A and B separately.**

**Proposal 5: RAN3 to agree the draft LS to RAN1 and RAN2 on the resource coordination for WAB in Annex C.**

### Multi-hop prevention

**Proposal 4: If solution 1 is adopted, and for compliance with the WID objectives, the OTA parameters used for multiple hop prevention shall be added to the specifications.**

**Proposal 8: For multi-hop avoidance during WAB-MT initial access, RAN3 to agree that the WAB-gNB-cells broadcast a new indicator in SIB to bar WAB-MT, and send LS to RAN2 for coordination.**

**Proposal 9: RAN3 to agree that “MWAB-UE accessing MWAB-gNB belonging to same MWAB” is not an issue to be solved because this can be avoided by proper setting/implementation, and send reply LS to SA2.**

## 5G Femto

### Femto awareness at CN

**Observation 1: If the NR femto node connects to AMF directly, the AMF should know the node type is NR femto node, to perform special security related verification on some parameters provided by the NR femto node.**

**Observation 2: If the NR femto node connects to the NR femto GW, the GW can directly know the node type is NR femto node.**

**Proposal 1: If the NR femto node connects to AMF directly, it includes a Femto indication in the NG SETUP REQUEST message.**

### Security issue

**Proposal 4**: send a specific Femto indication in the Initial UE message of TS 38.413 from NR Femto to enable control of sending *Allowed PNI NPN List* or not.

**Observation 1: Current NR Femto security architecture is understood to address and resolve previously discovered vulnerabilities of femto nodes.**

**Observation 2: A properly implemented 5G Femto can be expected to be trusted, unlike 3G or 4G femtos.**

**Observation 3: The solution agreed by SA3, when implemented, ensures that NR Femtos can be trusted even in less trusted environments.**

**Observation 4: Controlling the sending of Allowed PNI-NPN list based on an indication from the NR Femto seems contradictory, may have security and practical issues, and would deviate from current PNI-NPN functionality.**

**Proposal 1: No need to send a specific “Femto node” indication in INITIAL UE MESSAGE message, to control the sending of Allowed PNI-NPN List from AMF to NR Femto.**

### IP version selection in the NR Femto GW

**Proposal 3**: no need of IP version selection in the NR Femto GW.

1. When NR Femto GW is deployed, the Femto GW may perform IP version selection for NG-U transport by implementation. No stage 3 impact.
2. Agree the TP that the Femto GW may perform IP version selection by implementation.

### Slicing information to NR Femto node

**Proposal 1**: clarify the (non)usage of the list of slices when received by the NR Femto connected to GW in TS 38.413.

### Paging issue

NR Femtos will have very limited coverage. This creates special challenges with paging function because even if an end user is paged by an NR Femto near the last serving NR Femto where he made the last call these two new NR Femtos are likely to not be Xn connected unless they are immediate neighbors. Indeed, having Xn interface with neighbors of neighbors would lead to too many Xn connections.

As a result, a typical paging from AMF would first page in last serving NR Femto and because the end user is not there would escalade the paging at TA or RA level to a much bigger areas involving tens to hundreds of cells.

**Observation 1**: upon paging failure to last served NR Femto the paging escalation to TA or RA could lead to paging hundreds of NR Femtos in the area whereas the end user is likely near the last serving NR femto cell.

**Proposal 1**: RAN3 is encouraged to solve the paging issue above in the context of NR Femtos.

**Proposal 2**: RAN3 to discuss possible options above to solve the paging issue. TPs for possible solutions are proposed in annex A.

**Option 1: introduce a second list of recommended gNbs for paging for second paging**

**Option 2: introduce a new NR Femto area ID**

### NG mobility related issue

**Observation 1: For traditional NG-based HO, the source gNB includes the target gNB ID as the routing information in the HANDOVER REQUIRED message to the AMF, while the AMF sends the HANDOVER REQUEST message to the target gNB, including the target cell ID (NCGI) in the** ***Source to Target Transparent Container*.**

**Observation 2: For the NG-based HO to a target NR Femto node, the target NR Femto GW is not able to determine the target Femto node, because the existing HANDOVER REQUEST message contains no suitable ID to identify the target Femto node.**

**Observation 3: Even if the NR Femto GW can read the Target Cell ID in the *Source to Target Transparent Container*, the target NCGI cannot be used to uniquely identify a NR Femto node, considering the gNB ID length is variable.**

**Proposal 1: RAN3 should discuss the NG HO routing issue and clarify how, for NG HO to a target NR Femto under an NR Femto GW, the target NR Femto GW can determine the target NR Femto.**

**Proposal 2: In case the above is acknowledged, for the routing of HANDOVER REQUEST message from target NR Femto GW to correct target Femto node in case of NG-based HO, the AMF includes the information about target gNB (e.g., global gNB ID) in the HANDOVER REQUEST message before sending it to the target NR Femto GW.**

# Conclusion

TBD

# References

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| **12. Additional topological enhancements for NR WI (RAN3-led)**WID [NR\_WAB\_5GFemto-Core]: [RP-243009](https://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_106/Docs/RP-243009.zip) (target: RAN #109) [TU: 1.5] |
| 12.1. General*Work plan, BL CRs* |
| [R3-255049](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255049.zip) | (BL CR to 38.305 for WAB) Support of Location Service Involving WAB-Nodes (ZTE Corporation, Nokia, Nokia Shanghai Bell, Ericsson, Qualcomm, Lenovo, CATT, Samsung, Huawei, China Telecom) | draftCR |
| [R3-255050](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255050.zip) | (BL CR to 38.401 for WAB) Support for Wireless Access Backhaul (Ericsson, ZTE, Nokia, Nokia Shanghai Bell, Huawei, Samsung, Lenovo, Qualcomm, Jio Platforms) | CR0439r9, TS 38.401 v18.6.0, Rel-19, Cat. B |
| [R3-255052](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255052.zip) | (BL CR to 38.413 for WAB) Support for Wireless Access Backhaul (Huawei, Ericsson, Nokia, Nokia Shanghai Bell, China Telecom, ZTE, Qualcomm, Samsung, CATT, Jio Platforms (JPL), Lenovo) | CR1263r4, TS 38.413 v18.6.0, Rel-19, Cat. B |
| [R3-255053](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255053.zip) | (BL CR to 38.423 for WAB) Support for Wireless Access Backhaul (Nokia, Nokia Shanghai Bell, Ericsson, ZTE, LG Electronics, Qualcomm, Huawei, China Telecom, Samsung, Lenovo) | CR1487r2, TS 38.423 v18.6.0, Rel-19, Cat. B |
| [R3-255054](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255054.zip) | (BL CR to 38.455 for WAB) Support of Location Service Involving WAB-Nodes (Lenovo, ZTE Corporation, Nokia, Nokia Shanghai Bell, Ericsson, Qualcomm, CATT, Samsung, Huawei, China Telecom, Jio Platforms (JPL)) | CR0189r3, TS 38.455 v18.6.0, Rel-19, Cat. B |
| [R3-255051](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255051.zip) | (BL CR to 38.410 for Femto) Introduction of NR Femto in NGAP list of functions (ZTE Corporation, Nokia, Baicells) | CR0052r5, TS 38.410 v18.3.0, Rel-19, Cat. B |
| [R3-255055](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255055.zip) | (BL CR to 38.300 for Femto) Introduction of NR Femto Architecture and Protocol Aspects (Ericsson, Nokia, TMO US, AT&T, Verizon Wireless, BT, Charter, Huawei, LG Electronics, Samsung, Lenovo, Baicells, ZTE, NEC, CATT, Qualcomm) | draftCR |
| [R3-255056](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255056.zip) | (BL CR to TS 38.413 for Femto) Support of NR Femto architecture with NR Femto Gateway (Nokia, Huawei) | CR1232r5, TS 38.413 v18.6.0, Rel-19, Cat. B |
| **12.2. Wireless Access Backhaul (WAB)** **QUOTA: 2***Specifications for the support of WAB including [RAN3]:** *Support of a WAB-node including a WAB-gNB and a WAB-MT.*
* *Support of backhauling of the WAB-gNB’s NG, Xn and OAM traffic over the WAB-MT’s PDU session(s).*
* *Support of Xn interface(s) by the WAB-gNB with the WAB-MTs serving BH RAN node and with other surrounding gNBs, including how to avoid setting up Xn between WAB-gNBs.*
* *Defining the behaviour of WAB-node in case the authorization status of WAB-MT and/or WAB-gNB changes.*
* *Network integration procedures for WAB nodes.*
* *Handling of WAB-gNB’s traffic (including Xn, NG and OAM traffic) during WAB-node mobility, including the case where the WAB-MT’s BH PDU session changes.*
* *Support the UE’s AMF change for UEs connected to, or camped on, a WAB-gNB.*
* *UE’s ULI that reflect the WAB node’s location.*
* *The handling of:*

*- PCI collision avoidance.**- Reconfiguration of TAC and RANAC on WAB-gNBs.**- Mechanisms to avoid multi-hop WAB topology.**- Radio-resource coordination between access and backhaul links.**- NG connection management.* *NOTE 1: For PCI collision avoidance and reconfiguration of TAC and RANAC on WAB-gNBs, follow the conclusion of mobile IAB.**NOTE 2: NG connection management should take the NTN conclusion into account, avoiding parallel discussions.**NOTE 3: No impact on the UE.**NOTE 4: Coordination with other WGs (e.g. SA2, RAN2) when needed.**NOTE 5: Backhaul link for WAB-MT can be TN or NTN.**NOTE 6: Mobility procedures to be used for the UEs served by a WAB-gNB are legacy UE mobility procedures. Mobility of the WAB-MTs is based on legacy UE mobility procedures.**NOTE 7: The interface between the WAB-MT and the co-located WAB-gNB is out-of-scope for the normative phase.**NOTE 8: Split architecture of the WAB-gNB is out-of-scope for the normative phase.**NOTE 9: RAN2 impact should be identified as early as possible, and should be minimal.* *From RAN3#128:**The “WAB-MT ID” sent from the WAB-gNB to the BH-gNB consists of the WAB-MT’s C-RNTI assigned by the BH-gNB and the cell id of BH-gNB´s cell serving the WAB MT.**It is possible to establish an Xn connection between two WAB-gNBs. It is possible to prevent establishment of such connections.**The WAB-gNB should be notified about the target BH-gNB before the WAB-MT HO.**The BH-gNB can provide the TNL information of neighbour gNBs to the WAB node.**Adopt the following principles for WAB resource coordination:** *The specifications shall not define any priority between the WAB-gNB or the BH-gNB on how to split resources.*
* *It needs to be further discussed if time domain and/or frequency domain coordination is supported*
* *It needs to be further discussed if indication of soft resources (the “S” in HSNA) is supported.*
* *It needs to be further discussed if only the WAB-gNB should be able to indicate the hard/not available resource allocation.*
* *It is FFS whether to send an LS to RAN1/RAN2 on the above “to be continued” points*

*If non-terrestrial link is used between WAB MT and BH gNB and/or between BH gNB and BH CN, the WAB-gNB informs UE’s CN that the BH includes a non-terrestrial link.**FFS how a WAB node know the BH-gNB is using a non-terrestrial link. Possible options include BH-gNB informs WAB-gNB via Xn.*  |
| [R3-255156](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255156.zip) | Functional Aspects of WAB-Nodes (Ericsson, Jio Platforms) | discussion |
| [R3-255157](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255157.zip) | (TP for WAB BL CR for TS 38.401) Functional Aspects of WAB-Nodes (Ericsson, Jio Platforms) | other |
| [R3-255169](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255169.zip) | Remaining aspects for the support of WAB (CANON Research Centre France) | discussion |
| [R3-255202](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255202.zip) | (TP to BL CR of 38.423 on WAB) Discussion on access and reliability for WAB (NEC) | other |
| [R3-255224](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255224.zip) | (TP to 38.423, 38.473) Supporting resource coordination in WAB (ZTE Corporation) | other |
| [R3-255225](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255225.zip) | (TP to 38.401, 38.413) Remaining issues for WAB (ZTE Corporation) | other |
| [R3-255243](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255243.zip) | (TP for to BLCR for TSto 38.401) On remaining issues of WAB (CATT) | other |
| [R3-255244](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255244.zip) | On resource coordination for WAB (CATT) | discussion |
| [R3-255252](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255252.zip) | Remaining issues of WAB (Qualcomm Inc.) | discussion |
| [R3-255253](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255253.zip) | (TP to TS 38.401) WAB resource coordination (Qualcomm Inc.) | other |
| [R3-255254](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255254.zip) | BL draft CR to TS 38.300 on Support of WAB (Qualcomm, Ericsson, CATT, ZTE, Nokia, Nokia Shanghai Bell) | draftCR |
| [R3-255290](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255290.zip) | (TP for TS 38.401) Discussion on NG management and Xn management for WAB (Nokia, Nokia Shanghai Bell) | other |
| [R3-255291](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255291.zip) | (TP to BL CR for TS 38.413 and TS 38.423) Enhancement for WAB (Nokia, Nokia Shanghai Bell) | other |
| [R3-255400](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255400.zip) | (TP to BLCR 38.423) Xn management for WAB-node (Lenovo) | other |
| [R3-255401](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255401.zip) | (TP to BLCR 38.413) Discussion on remaining issues for WAB-node (Lenovo) | other |
| [R3-255411](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255411.zip) | (TPs for WAB BL CRs) Architecture, Access Control and Additional ULI for WAB (Huawei) | other |
| [R3-255412](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255412.zip) | (TP for WAB BL CRs) Radio Resource Multiplexing Coordination for WAB-node (Huawei) | other |
| [R3-255523](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255523.zip) | Way Forward On Multi-hop Prevention for WAB (China Telecom, CATT, Huawei, DoCoMo, Lenovo, Samsung, NEC) | discussion |
| [R3-255591](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255591.zip) | Discussion on remaining issues for WAB (LG Electronics) | discussion |
| [R3-255599](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255599.zip) | (TP to TS 38.401, 38.413 and 38.423) TP for WAB support (LG Electronics) | other |
| [R3-255609](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255609.zip) | Discussion on Wireless Access Backhaul (NTT DOCOMO INC.) | discussion |
| [R3-255631](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255631.zip) | (draft LS) Discussion on the left issues for WAB (Samsung) | discussion |
| [R3-255632](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255632.zip) | (TP to BLCR for TS 38.423) Enhancements for WAB (Samsung) | other |
| [R3-255673](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255673.zip) | [Draft] LS on Multi-hop Topology Avoidance for WAB (CATT, China Telecom, Huawei, NTT Docomo, Lenovo, Samsung, NEC) | LS out To: RAN2 CC: SA2 |
| **12.3. 5G Femto** **QUOTA: 2***The objectives of the 5G Femto work are as follows:* * *Specification to support NR Femto architecture with optional NR Femto GW for NG interface [RAN3].*
* *Specification to support access control for NR Femtos operating in open, hybrid and closed modes reusing existing CAG functionality [RAN3].*

*NOTE 10: For NR Femto access control, only stage 2 impact is expected on this objective.**NOTE 11: Coordination with other WGs (e.g. SA2, SA3) when needed.**From RAN3#128:**Agree to capture security aspects confirmed by SA3 in a TP to the BLCR to TS38.300**To be continued: discuss and converge on the text for a TP to the BLCR to TS38.300**To be further discussed: whether to send a specific Femto indication in the NG: Initial UE message, from NR Femto to enable control of sending Allowed PNI NPN List or not.**Agree to adopt the term NR Femto Node and reflect that in a revision of R3-253450.**RAN3 to replace the term “requested S-NSSAI” with “requested NSSAI” in the BL CR to TS 38.413.* |
| [R3-255162](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255162.zip) | [TP for BL CR NR Femto TS 38.413] Completion of open points of NR Femto (Nokia) | other |
| [R3-255163](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255163.zip) | [TP for BL CR NR Femto TS 38.413] Paging issue with NR Femtos (Nokia) | other |
| [R3-255226](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255226.zip) | Discussion on IP version selection at Femto GW (ZTE Corporation, China Telecom, Samsung, Baicells, Pengcheng Laboratory) | discussion |
| [R3-255227](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255227.zip) | (TP to TS 38.300) on support of Femto (ZTE Corporation) | other |
| [R3-255246](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255246.zip) | (TP to BLCR for TS 38.300) Miscellaneous corrections for NR Femto (CATT) | other |
| [R3-255245](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255245.zip) | Discussion on remain issue of NR Femto (CATT) | discussion |
| [R3-255413](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255413.zip) | (TP for Femto BL CR for TS 38.300/38.413) Discussion on NG mobility impact for NR Femto (Huawei, Ericsson, Qualcomm) | other |
| [R3-255380](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255380.zip) | On remaining issues for NR Femto (China Telecom) | discussion |
| [R3-255402](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255402.zip) | Discussion on remaining issues for NR Femto (Lenovo) | discussion |
| [R3-255414](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255414.zip) | (TP for Femto BL CR for TS38.300) Discussion on NR Femto awareness at CN (Huawei) | other |
| [R3-255415](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255415.zip) | (TP for Femto BL CRs for TS 38.413) NR Femto awareness at CN (Huawei) | other |
| [R3-255540](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255540.zip) | NR Femto Indication in NGAP (Ericsson, Qualcomm Incorporated) | discussion |
| [R3-255612](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255612.zip) | Discussion on 5G Femto (NTT DOCOMO INC.) | discussion |
| [R3-255633](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255633.zip) | Discussion on the left issues for NR Femto (Samsung) | discussion |
| [R3-255634](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255634.zip) | (TP to BLCR for TS 38.300) Security verification for NR Femto (Samsung) | other |
| [R3-255744](file:///C%3A%5CUsers%5Cq12059%5CDocuments%5C3GPP%20RAN3%5CRAN3%20Meetings%5CRAN3_129%20%28Aug%202025%2C%20Bangalore%29%5CDocs%5CR3-255744.zip) | (TP to TS 38.413) on support of Femto (ZTE Corporation) | other |