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

**Prague, Czech Republic, 13 – 17 October 2025**

Agenda Item: 9.2.3

Source: ZTE Corporation (moderator)

Title: Summary of Offline Discussion for CB: # 9\_R19WAB

Document for: Discussion

# 1 Introduction

This contribution is to kick off the following CB:

**CB: # 9\_R19WAB**

**- NGAP corrections: check 6806 and 6890**

**- XnAP corrections: check 6951 and 7191**

**- 38.401 corrections: check CRs**

(ZTE -moderator)

# 2 For the Chair Notes

Editor’s Note: For Rel-20 study/work items, please consider that when agreements/FFSes are captured in a TP, additional inclusion in the Chair Notes may be unnecessary (particularly for stage 3 details).

**Propose the following:**

R3-257258 rev in R3-256806 – endorsed

R3-257259 rev in R3-256890 – endorsed

R3-257260 rev in R3-256951 – endorsed

R3-257261 rev in R3-256950 - endorsed

R3-257262 rev in R3-256760 - endorsed

R3-257263 rev in R3-256727 - endorsed

**Propose to capture the following in Chair Notes:**

Agreement: [carefully crafted text]

Agreement: [carefully crafted text]

WA: [carefully crafted text]

No consensus: [carefully crafted text]

To be continued: [carefully crafted text]

**Propose to further discuss the following online:**

[issue 1]

[issue 2]

# 3 Discussion

## 3.1 NGAP corrections

In R3-256806, it stated that

In Rel-19, SA2’s conclusion indicates that the Additional ULI can be used by the AMF as an implicit indication of WAB-gNB. Moreover, RAN3 discussed whether to introduce a explicit WAB indicator in the NGAP messages and agreed that “No need to introduce a new “WAB-gNB” indication in the NG SETUP REQUEST message.” The main reason is that the Additional ULI already added in the NG SETUP REQUEST message. Thus, it is worth to add description that the AMF can recognize the WAB-gNB based on the “Additional ULI” IE contained in the NG Setup Request message.

So it is suggested to add procedure text for the *Additional ULI* IE in NG SETUP REQUEST message, to describe that the AMF can be aware of the WAB-gNB based on such IE.

|  |
| --- |
| If the *Additional ULI* IE is included in the NG SETUP REQUEST message, the AMF shall, if supported, store this information, consider this transmitting NG-RAN node is a WAB-gNB, and take it into account for determining the location of UEs served by the NG-RAN node, as specified in TS 23.501 [9]. |

**Q1: Do companies agree the change in R3-256806?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia | Yes |  |
| Huawei | Yes |  |
| **Ericsson** | No, needs rewording | WAB-gNB is not an NG-RAN node. As of now, WAB-node is an NG-RAN node, and a WAB-gNB is not. WAB-gNB is a function of a WAB-node. Functions cannot talk over interfaces, only network nodes can. |
| ZTE |  | Could the CR author provide SA2’s conclusion (sorry for missing previous discussion if any)? Why such description is needed? We think the original text “the AMF shall store this info and take it into account for...” is enough. |
| **Canon** | Yes |  |
| **Huawei 2** | yes | To ZTE: please check the TS 23.501, clause 5.49.1.1, it contains the following sentence: When the AMF determines the UE is served by a MWAB cell based on e.g. the Additional ULI. So, the additional ULI is a kind of WAB-gNB indication for AMF. |
| **CATT** | Yes, but | It’s better to use WAB-node. |
| **China Telecom** | yes | We support to use WAB-gNB or WAB-node or “supports WAB-gNB functionality”. |
| **Qualcomm** | No. | We agree with ZTE. The original text is good enough. |

**Summary:**

Since SA2 specified “When the AMF determines the UE is served by a MWAB cell based on e.g. the Additional ULI.”, it’s ok to have the change. The updated wording “consider this transmitting NG-RAN node has WAB-gNB functionality,” may address companies comments.

Proposal 1: Agree the change in **R3-256806** by rewording “consider this transmitting NG-RAN node has WAB-gNB functionality,”.

In R3-256890,

|  |
| --- |
| Agreements in RAN3#126 meeting:**For HO, the target WAB-gNB should reject HO preparation including the S-NSSAI used for Backhauling.**Current specificaiton is inconsistent on the HO a WAB-MT to another WAB node. TS 23.501 defines- To prevent handover of a MWAB-UE towards a target MWAB-gNB, the target MWAB-gNB (i.e. **during Xn handover or during N2 HO** after target AMF slice control as described in step 4 in clause 4.9.1.3.2 of TS 23.502 [3]) **fails the handover** as specified in TS 38.401 [42] because the dedicated slices for BH PDU sessions of the MWAB-UE are not supported by the target MWAB-gNB.RAN3 agreed TP for Xn-HO in TS 38.423:If the S-NSSAI dedicated to WAB-MT’s backhaul PDU session(s) is included in the *UE Context Information* IE in the HANDOVER REQUEST message, and the target NG-RAN node does not support serving the WAB-MT, the target NG-RAN node shall send the HANDOVER PREPARATION FAILURE message to the source NG-RAN node. The HANDOVER PREPARATION FAILURE message shall contain the *Cause* IE with an appropriate value.However, it is missing in N2 HO.In clause 8.4.2.3, clarify the HO a WAB-MT to a target WAB-gNB shall fail.If the S-NSSAI dedicated to WAB-MT’s backhaul PDU session(s) is included in the *PDU Session Resource Setup List* IE in the HANDOVER REQUEST message, and the target NG-RAN node does not support serving the WAB-MT, the target NG-RAN node shall send the HANDOVER FAILURE message to the AMF with an appropriate cause value. |

**Q2: Do companies agree the change in R3-256890?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia | Yes | For Qualcomm’s comments that the HO Rejection is only for the target NG-RAN node that knows the dedicated S-NSSAI used for BH PDU Session, please find the update (the update means the target NG-RAN node know the dedicated S-NSSAI)If the target NG-RAN node detects the S-NSSAI dedicated to WAB-MT’s backhaul PDU session(s) is included in the *PDU Session Resource Setup List* IE in the HANDOVER REQUEST message, and the target NG-RAN node does not support serving the WAB-MT, the target NG-RAN node shall send the HANDOVER FAILURE message to the AMF with an appropriate cause value.If this is agreeable, XnAP changs is also needed. |
| Huawei | Yes | We think the sentence in R3-256890 is better, and aligned with XnAP. We do not expect that the WAB-node will connect the RAN as a normal UE. Please note that even for WAB-node’s OAM traffic, it still use the BH PDU session, so the slice for OAM traffic is also dedicated to WAB-MT’s BH PDU session. |
| **Ericsson** | Not for now | We understand the intention, but the update in yellow goes beyond the spirit of normative text in stage3 specs. |
| ZTE | Yes | Agree the intention. |
| Canon | Yes |  |
| Nokia-2 | Yes | After careful reading, I think current text (and the text in XnAP spec) can already address the comments from Qualcomm. Current text is “If the S-NSSAI dedicated to WAB-MT’s backhaul PDU session(s) is included….” This means if the target gNB does **not** know the dedicated S-NSSAI, the “if” check will not return “true” and not fail the HO preparation procedure. So based on current text, this HO rejection behavior is only performed in a target gNB that knows the dedicated S-NSSAIs. A “legacy” gNB will not reject the HO. So we think **R3-256890** text does not require further changes. |
| CATT |  | From our view, there is nothing new for NG-RAN node, thus no need to do any specification in either Xn or NG spec. Because NG-RAN node **does not need to be aware of** whether a specific slice is used for WAB-MT backhauling, it only needs to know whether that slice is supported or not based on OAM configuration.Given all the PDU session(s) are refused by the target gNB, the target gNB will of course fail the handover, which does not conflict with SA2 spec at all. |
| China telecom | yes | We perfer the orginal sentence in R3-256890. |
| QC | We support Nokia’s proposed change above | Nokia’s proposed change is exactly the same text we have in XnAP for HO Request. We should have the same wording for NG as for Xn. |

**Summary:**

The majority of the companies agree the change.

Proposal 2: Agree the change in **R3-256890**.

## 3.2 XnAP corrections

In R3-256951, there are two changes, the second change “In the semantics description of WAB-MT Identifier, remove the “assigned by the WAB-MT’s BH-gNB”.” is the same as the endorsed CATT’s CR R3-256761. The first change is to capture the Xn setup failure case for WAB-gNBs in clause 8.4.1.3 to align with stage 2 specification TS 38.401.

|  |
| --- |
| 8.4.1.3 Unsuccessful OperationIf the *WAB-MT Identifier* IE is included in the XN SETUP REQUEST message, and the NG-RAN node2 is a WAB-gNB, the NG-RAN node2 may reject the Xn setup and send the XN SETUP FAILURE message to the NG-RAN node1 with an appropriate cause value. |

**Q3: Do companies agree the first change in R3-256951 as copied above?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia |  | We understand the purpose, but current text is not appropriate for Section “Unsuccessful Operation” which uses “shall”, i.e. means the procedure “always” fail. But current text means “may” fail.  |
| Huawei | Yes | We support the change, but wording may need some improvement according to Nokia’s comment. |
| **Ericsson** | Not for now | As said, a WAB-gNB is not an NG-RAN node.Then, why should we limit this to WAB-gNBs? We consider a scenario where a static gNB rejects an XN SETUP REQUEST from a WAB-gNB as relevant. Static gNBs may not want to establish Xn with moving nodes. |
| Canon | Yes | Taking into account Nokia’s comment. |
| CATT | Yes, but | The same description is already there in 401 and it’s very clear. We think 423 can just refers to 401 for simple. Suggest to update as below:If the *WAB-MT Identifier* IE is included in the XN SETUP REQUEST message, the NG-RAN node2 shall, if supported, consider the transmitting NG-RAN node is a WAB-node and behave as specified in TS 38.401. |
| China Telecom | Yes | Same view as Nokia. |
| Qualcomm | No | Nokia is right in that there are no MAY statements for Section “Unsuccessful Operation”. SHALL would not be correct since the receiving node MAY reject the Xn setup request but such rejection is not mandated.In summary, this change is not needed. |

**Summary:**

Most companies agree the change with further rewording. Moderator suggest the author to provide updated wording for this change and upload the draftt doc to the CB folder for companies further review.

Proposal 3: Rewording the change in R3-256951 for further reviewing.

In [R3-257191](file:///C%3A%5C%5CUsers%5C%5Cq12059%5C%5CDocuments%5C%5C3GPP%20RAN3%5C%5CRAN3%20Meetings%5C%5CRAN3_129b%20%28Oct%202025%2C%20Prague%29%5C%5CDocs%5C%5CR3-257191.zip), there are three changes as below. The second change is the same as the endorsed CATT’s CR R3-256761. As online discussion, the first change is not correct, the “if needed” should be kept. So we only need to focus on the third change.

-Removed the “if needed” from two statements, in clauses 8.4.1.2 and 8.4.2.2.

-Removed the “, assigned by the WAB-MT’s BH-gNB.” from the semantics descriptions of the *WAB-MT ID* IE in clauses 9.1.3.1, 9.1.3.2, 9.1.3.4 and 9.1.3.5.

-Replaced the second occurrence of “NG-RAN node” with “WAB-gNB” in both clauses

|  |
| --- |
| If the *WAB-MT Identifier* IE is included in the XN SETUP REQUEST message or in the XN SETUP RESPONSE message, the receiving NG-RAN node shall, if supported, consider that the transmitting NG-RAN node is a WAB-gNB, and conclude that the WAB-MT identified by the *WAB-MT Identifier* IE is co-located with the transmitting WAB-gNB, if needed. |

Note that the Rapporteur write back the “if needed”.

**Q4: Do companies agree the third change in R3-257191 as copied above (i.e. Replaced the second occurrence of “NG-RAN node” with “WAB-gNB” in clauses 8.4.1.2 and 8.4.2.2)?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia |  | From the perspective of XnAP receiver, the transmitting node is a NG-RAN node.  |
| Huawei |  | Prefer to use transmitting NG-RAN node, to keep consistence with the style of the whole specification.  |
| **Ericsson** | Needs rewording | Even though this is our CR, rewording here is also needed, for the reason stated above. Perhaps we can write (rough draft):“consider that the transmitting NG-RAN node is a WAB-node, and conclude that the *WAB-MT Identifier* IE belongs to the WAB-MT function of the WAB-node.” |
| ZTE |  | No strong view. |
| CATT | Need rewording | We’s better to keep the spec brief. As the detailed performance has already been captured in 401, suggest following update:If the *WAB-MT Identifier* IE is included in the XN SETUP REQUEST message, the NG-RAN node2 shall, if supported, consider the transmitting NG-RAN node is a WAB-node and behave as specified in TS 38.401. |
| Chinas Telecom |  | Fine with the sentence proposed by CATT |
| Qualcomm | Needs reworing. | “…if needed” doesn’t make sense together with “should conclude”. You don’t know if you need the outcome of the conclusion before you have concluded.Support CATT’s rewording.  |

**Summary:**

For the second occurrence of “NG-RAN node”, it is actually the “WAB-gNB”. Most companies agree the change with further rewording. Moderator suggest the author to provide updated wording for this change and upload the draft tdoc to the CB folder for companies further review. The changes in R3-256951 and in R3-257191 will be merged into one XnAP CR.

Proposal 4: Rewording the change in R3-257191 for further reviewing.

## 3.3 Stage 2 (TS 38.401) corrections

### 3.3.1 R3-256714 and R3-256760

In R3-256714 and R3-256760, there are some overlapping changes. For the changes to clause 12.3, there are following two options:

|  |
| --- |
| Option 1: In R3-256760: 12.3 NG connection managementBased on the OAM configuration, the WAB-gNB can set up NG interface with an AMF. When disconnecting from an AMF is required, due to inter-AMF mobility of a WAB-gNB, or when the authorization status of the WAB-node changes from “authorized” to “not authorized”, the WAB-gNB may request the removal of the NG interface by triggering the NG Removal procedure toward the AMF.Option 2: In R3-256714:12.3 NG connection managementBased on the OAM configuration, the WAB-gNB can set up NG interface with an AMF. When disconnecting from an AMF is required, due to inter-AMF mobility of a WAB-gNB, or when the service authorization status of the WAB-gNB changes from “authorized” to “not authorized”, the WAB-gNB may request the removal of the NG interface by triggering the NG Removal procedure towards the AMF. |

**Q5: For the changes to clause 12.3, do companies think the change is needed and which option do you support if yes?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia |  | For the 1st change, it is not needed. The NG Removal procedure is related to WAB-gNB. Strictly speaking, it is related to WAB-gNB’s authorization status.For the 2nd change, it is not needed. Better to align with SA2.  |
| Huawei | Option 2 or no change | There is no authorization of WAB-node, the authorization of WAB-MT and WAB-gNB is separately specified. |
| **Ericsson** |  | Question to Nokia: as defined in 38.401, the authorization of the WAB-gNB is a service authorization. During the WI, Nokia insisted that in 38.401 we can only speak about the authorization of the WAB-gNB. So, why is the second change not OK? And how to align with SA2? |
| ZTE | Option 2 In R3-256714 is preferred.  | As Nokia’s comments, it is related to WAB-gNB’s authorization status. For WAB-gNB, it is service authorization. While WAB-node includes WAB-gNB’s service authorization and WAB-MT’s authorization. |
| CATT | Option 1 | Option 2 is not critical change, thus it’s not needed.According to TS 23.501 for WAB-MT authorization, when the WAB-MT is de-authorized, the WAB-gNB will release or handover all serving UEs, then there is no reason to keep the NG interface. Consider HW’s comment, Option 1 can be enhanced as below: *when the authorization status of the WAB-gNB or the authorization status of the co-located WAB-MT changes from “authorized” to “not authorized”,...* |
| China Telecom | Option2 or no change |  |
| Qualcomm | Option 1: NoOption 2: Not needed | On Option 1:Agree with Huawei.Further, this text refers to the de-authorization of the WAB-gNB. The de-authorization of the WAB-MT implies that the BH is removed and in this case, the WAB-gNB cannot initated the NG removal procedure anymore. While the implementation should make sure that both WAB-MT- and WAB-gNB authorizations are somewhat synchronized, the WAB-MT should still remain authorized unilt the WAB-gNB has successfully removed NG.On Option 2: Fine, but not really needed. |

For the changes to clause 12.4,

|  |
| --- |
| Option 1: In R3-256760: If the WAB-MT’s authorization status changes from “authorized” to “not authorized”, it is expected that WAB-MT’s PLMN/SNPN ensures that backhaul PDU sessions of the WAB-MT are maintained long enough for the WAB-gNB to perform UE handover/release and the removal of NG and Xn connections, as specified in TS 23.501 [3].Option 2: In R3-256714:Upon WAB-node service authorization status change from “authorized” to “not authorized”, the WAB-MT’s PLMN/SNPN should ensure that backhaul PDU sessions of the WAB-MT are maintained long enough for the WAB-gNB to perform UE handover/release and the removal of NG and Xn connections, as specified in TS 23.501 [3]. |

**Q6: For the changes to clause 12.4, do companies think the change is needed and which option do you support if yes?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia |  | No big difference between the two options. Either one is fine.  |
| Huawei | Option 2 or no change | We may not need the change; this paragraph is part of the procedure to describe the WAB-gNB's authorization status changed from authorized to not authorized. |
| **Ericsson** |  | Either is OK. |
| **ZTE** |  | Either is OK. |
| CATT | Option 1 | In section 5.49.3.3 of TS 23.51, a note describes the impact of WAB-MT authorization to the operation of WAB-gNB:NOTE 1: When the MWAB-UE can no longer use S-NSSAI(s) dedicated to MWAB operation,, e.g. the dedicated S-NSSAIs and DNNs for MWAB operation are removed from the subscription (i.e. the MWAB becomes unauthorized) and a UE subscription update (including a UE configuration update) step happens, or the MWAB-UE moves to an area where the S-NSSAI is not available, if the AMF is configured to do so for the dedicated S-NSSAI and DNN for MWAB operation, the AMF delays the corresponding PDU session release based on an operator configuration (e.g. a local configured timer to allow time for the MWAB-gNB to handover the UE(s) it serves to other cells).So, we think it makes sense to capture the mechanism in 401.If we don’t have this change, the scenario is not clear, i.e., it’s not clear why WAB-gNB releases/handover UEs. |
| China telecom | Option2 |  |
| **Qualcomm** | Neither of the two | Huawei is actually right (I don’t know why they propose Option 2). No change is needed. It is absolutely clear from the context that this sentence refers to the change from authorized to de-authorized. |

There are two additional changes in R3-256760,

- In 12.1, clarify that WAB-gNB is configured by OAM after it is authorized.

- In 12.8, change “may reject” to “rejects”.

|  |
| --- |
| In clause 12.1:**Phase 2-1: WAB-gNB initialization.** In this phase, the WAB-gNB is service-authorized by the SeGW or by the OAM, after which the WAB-gNB is configured by the OAM (e.g., with the information needed to establish NG connections towards one or more AMF(s)). In clause 12.8:Establishment of Xn connections between two WAB-gNBs can be avoided. To achieve this, the WAB-gNB rejects the Xn setup initiated by another WAB-gNB, e.g., based on the presence of the WAB-MT ID received in the XN SETUP REQUEST message. |

**Q7: Do companies agree the remaining changes (in clause 12.1 and 12.8) in R3-256760?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia |  | For the 1st change, another simple option is just to add a “then”, i.e.  …. and the WAB-gNB is then service authorized ….For the 2nd change, ok |
| Huawei | Yes  |  |
| **Ericsson** |  | 1st change is OK2nd change is also OK, but maybe we should reformulate the whole paragraph, e.g.:If “If the avoidance of Xn establishment between WAB-gNBs is configured, the WAB-gNB rejects…. ” |
| **ZTE** |  | 1st change is OK.Comment to Nokia on the 2nd change: if change “may reject” to “rejects”, if the receiving node is a WAB-gNB, it shall always reject the Xn setup initiated by another WAB-gNB?Comment to Ericsson on the 2nd change: how to understand “If the avoidance of Xn establishment between WAB-gNBs is configured,” ? |
| **CATT** | Yes | Our understanding is that Xn connections between two WAB-gNBs can/may be avoided, and the WAB-gNB shall reject the Xn setup from another WAB-gNB when the avoidance is needed.  |
| **China Telecom** | yes |  |
| **Qualcomm** | First change: FineSecnd change: No | The first change is okay.The second change is absolutely optional and should therefore contain “MAY”. |

There are some additional changes in R3-256714. Rapporteur think some changes can be agreeable, companies can review the CR after it available in the CB folder.

**Q8: Do companies agree the remaining changes (except changes in clause 12.3 and 12.4) in R3-256714? Please indicate which changes are supported or not supported if any.**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Qualcomm | No | There are some issues with some of the changes. Author of R3-256714 may want to upload a draft CR so that we can edit each individual change proposed. |
|  |  |  |

**Summary:**

Revision of R3-256760 (CATT) taking companies comments into account for further reviewing. The remaining changes in R3-256714 will be merged into the moderator’s merged stage 2 CR.

Proposal 5: Revise R3-256760 for further reviewing.

### 3.3.2 R3-256950 and R3-257138

In R3-256950 and R3-257138, there is one overlapping change in clause 12.8:

|  |
| --- |
| Option 1 in R3-256950:12.8 Xn connection managementA WAB-gNB can establish an Xn connection with the BH-gNB serving the WAB-MT co-located with the WAB-gNB, and with the neighbouring gNBs. During the Xn setup or NG-RAN node configuration update, the WAB-gNB can include a WAB-MT identifier, to indicate that it is a WAB-gNB. In case the peer gNB is the WAB-MT’s BH-gNB, the WAB-MT ID makes the BH-gNB aware of the co-location of the WAB-MT and the WAB-gNB. The WAB-MT ID consists of the C-RNTI assigned to the WAB-MT by the BH-gNB, and the cell ID of BH-gNB´s cell serving the WAB-MT.Option 2 in R3-257138:12.8 Xn connection managementA WAB-gNB can establish an Xn connection with the BH-gNB serving the co-located WAB-MT, and with the neighbouring gNBs. During the setup or update of its Xn connections, the WAB-gNB can include an ID of the co-located WAB-MT, to indicate that it is a WAB-gNB. In case the peer gNB is the WAB-MT’s BH-gNB, the WAB-MT ID makes the BH-gNB aware of the co-location of the WAB-MT and the WAB-gNB. The WAB-MT ID consists of the C-RNTI assigned to the WAB-MT by the BH-gNB, and the cell ID of BH-gNB´s cell serving the WAB-MT. |

**Q9: For the above two changes to clause 12.8, do companies think the change is needed and which option do you support if yes?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia |  | Opion 1 is slightly better.  |
| Huawei | Option 2 |  |
| **Ericsson** |  | Option 2 for the overlapping change, Option 1 for its unique change (Xn procedure name rewording) |
| CATT | Option 2 with update | Understand none of them is critical. For Option 2, “ID” can be changed to “identifier” to align with 423 spec. |
| China telecom | Either, option 1 slightly better |  |
| **Qualcomm** | Option 1 | Option 1 fixes various issues not addressed by Option 2  |

There are 3 additional changes in R3-256950:

1. Remove the definition of “BH-AMF”.
2. Modify the Figure 6.1.7-1:

- remove the line between “Neighbour NG-RAN node” and “UE’s 5GC”,

- add a line between “Neighbour NG-RAN node” and “BH-5GC”,

- change the sentence “Backhaul PDU Session(s) for transporting of NG-C/NG-U interface traffic of WAB-gNB” to “Backhaul PDU Session(s) for transporting of NG-C/NG-U/Xn-C/Xn-U interface traffic of WAB-gNB”.

1. In clause 12.5, change the title to “Additional User Location Information”, and capture that the WAB-gNB can indicate the Additional ULI to the core network by NG Setup and RAN Configuration Update procedures.

|  |
| --- |
| 1st change:**BH-5GC:** The 5GC serving the WAB-MT.**BH-gNB:** The gNB serving the WAB-MT. **BH-UPF**: The UPF serving the WAB-MT for backhauling.2nd change:Figure 6.1.7-1 shows the WAB architecture for 5GS.3rd change:12.5 Additional User Location InformationFor UEs served by a WAB-gNB, in addition to the User Location Information (ULI), the WAB-gNB also provides the core network with Additional ULI, which includes a TAI and a NR CGI pertinent to the WAB-gNB’s broadcasted PLMN/SNPN.If the PLMN/SNPN broadcasted by a WAB-gNB is the same as the PLMN/SNPN serving the WAB-MT, and the WAB-MT connects to the BH-gNB by means of a terrestrial link, the Additional ULI for UEs served by the WAB-gNB includes the TAI and the NR CGI of the cell serving the WAB-MT.If the PLMN/SNPN serving the WAB-MT is different from the WAB-gNB’s broadcasted PLMN/SNPN, and the WAB-MT connects to the BH-gNB by means of a terrestrial link, the Additional ULI for UEs served by the WAB-gNB is determined by the WAB-gNB, based on the WAB-node’s geo-location.If the WAB-MT connects to the BH-gNB by means of a non-terrestrial link, the Additional ULI for UEs served by WAB-gNB is determined by the WAB-gNB, based on WAB-node’s geo-location. This applies regardless of whether the PLMN/SNPN serving the WAB-MT is the same as, or different than, the WAB-gNB’s broadcasted PLMN/SNPN.In case Additional ULI for UEs served by a WAB-gNB changes, e.g., due to WAB-node movement, the WAB-gNB derives the new Additional ULI and reports it via legacy procedures, if required by the core network.The WAB-gNB can indicate the Additional ULI to the core network by NG Setup and RAN Configuration Update procedures. |

**Q10: Do companies agree the above 3 changes in R3-256950? Please indicate which changes are supported or not supported if any.**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia |  | For the update to the figure, we are not sure why the change is needed. The “Xn-C/U…” is dotted line.  |
| Huawei | Ok with the 1st change | We disagree with the **2nd change** on the figure, the original figure is correct, the connection between neighbor NG-RAN node and UE’s 5GC just mean the NG connection between neighboring gNB and CN, it does not mean that the Xn connection is transferred over this connection. In contrast, the dashed line between WAB-gNB and neighbor NG RAN node already stated that “Xn-C/Xn-U over BH PDU sessions”, the dashed line just shows the logical connection. Please note that the original figure is consistence with the SA2’s architecture figure in 23.501.Regarding the **3rd change**, we think the change to the title is not necessary. For the content, we prefer to change the last paragraph to be “In case Additional ULI for UEs served by a WAB-gNB changes, e.g., due to WAB-node movement, the WAB-gNB derives the new Additional ULI and reports it to the core network.” |
| **Ericsson** |  | First two changes are OK.In the third change, the title should contain a reference to WAB. |
| ZTE | Yes | The NG-C/U is also dotted line.There is a line to connect the “Neighbour NG-RAN node” with the “UE’s 5GC”, it causes the misunderstanding that the BH PDU sessions for transporting of Xn-C/Xn-U traffic is routed via UE’s 5GC. This is not correct. Instead, a line is needed to connect the “Neighbour NG-RAN node” with the “BH-5GC”. As shown in the protocol stacks below, for backhauling Xn-C/U traffic, it is not routed by UE’s 5GC. **Figure 6.1.x-3: Protocol stacks for Xn Control plane and Xn User plane transport** |
| CATT | Ok with the 1st and 3rd changes | The figure is better to align with SA2’s, i.e., the 2nd change is not needed. |
| China telecom |  | Ok with the 1st and 3rd changes. For 2nd changes, we thinke the orginal figure is correct,there is no need to change. |
| Qualcomm | Only 1st change. NOT 2nd change. NOT 3rd chagne |  |

There are some additional changes in R3-257138:

* Revise the description of ‘the NG connection(s) between the WAB-node and the old AMF(s)’ as ‘the NG connection(s) between the old logical WAB-gNB and the old AMF(s)’.
* Other minor changes.

|  |
| --- |
| 1st change: // move the sentence “The WAB-MT may connect to a public PLMN or an SNPN.” to a new line/paragraph.In in-band scenarios, backhaul and access of the WAB-node use terrestrial radio links. In out-of-band scenarios, the backhaul can use a terrestrial or a non-terrestrial radio link, while the access uses terrestrial radio link. The WAB-MT may connect to a public PLMN or an SNPN.The WAB-gNB may connect to a public PLMN or an SNPN. 2nd change:After all the UEs in RRC\_CONNECTED state are handed over, the NG connection(s) between the old logical WAB-gNB and the old AMF(s) are removed via NG Removal procedure and the old logical WAB-gNB’s cell(s) are removed from service.3rd change:A WAB-gNB should be configurable with respect to whether it should accept or reject Xn setup requests received from other WAB-gNBs. |

**Q11: Do companies agree the above 3 changes in R3-257138? Please indicate which changes are supported or not supported if any.**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia | Yes |  |
| Huawei | Yes to all |  |
| **Ericsson** | Yes |  |
| **ZTE** | Yes |  |
| CATT | Ok |  |
| China Telecom | yes |  |
| **Qualcomm** | Yes | The changes are fine. **However, there is another thing that needs to be fixed in the above stage-2 text. We do NOT support inband scenarios:**The backhaul can use a terrestrial or a non-terrestrial radio link, while the access uses terrestrial radio link.  |

**Summary:**

Revision of R3-256950 (ZTE), taking it as the moderator’s merged stage 2 CR considering companies comments above and gathering corrections in other stage 2 CRs. The remaining changes in R3-257138 will be merged into the moderator’s merged stage 2 CR.

Proposal 6: Revise R3-256950 for further reviewing, merging agreeable corrections in R3-256714, R3-256889 and R3-257138.

### 3.3.3 [R3-256727](file:///C%3A%5C%5CUsers%5C%5Cq12059%5C%5CDocuments%5C%5C3GPP%20RAN3%5C%5CRAN3%20Meetings%5C%5CRAN3_129b%20%28Oct%202025%2C%20Prague%29%5C%5CDocs%5C%5CR3-256727.zip)

In R3-256727, there are 5 changes:

* Add description for access and backhaul link in clause 6.1.7.
* Add “for WAB” in the title of protocol stack figures in clause 6.1.7.
* Update the description for the report of updated additional ULI to CN in clause 12.5.
* Remove the last sentence in clause 12.7.1.
* Change “should” to be “can” in the last sentence of clause 12.8.

|  |
| --- |
| A WAB-node consists of a WAB-gNB and a WAB-MT. The WAB-gNB is based on the gNB functionality specified in TS 38.300 [2] and serves UEs by means of a terrestrial NR Uu access radio link.The WAB-MT is served by a BH-gNB via backhaul radio link. The WAB-gNB’s traffic, including NG, Xn and OAM traffic is transported via backhaul PDU session(s) of the WAB-MT.Figure 6.1.7-2: Protocol stacks for NG Control plane and NG User plane transport of WABFigure 6.1.7-3: Protocol stacks for Xn Control plane and Xn User plane transport of WABIn case Additional ULI for UEs served by a WAB-gNB changes, e.g., due to WAB-node movement, the WAB-gNB derives the new Additional ULI and reports it to the core network.12.7.1 WAB-MT mobilityThe WAB-MT reuses legacy mobility procedures defined for the UE. During the WAB-node’s movement, when the BH PDU session(s) of WAB-MT are re-established, the co-located WAB-gNB may need to update the IP address(es) used for its traffic. In case IPsec tunnel mode is used to protect the WAB-gNB’s traffic, MOBIKE (IETF RFC 4555 [29]) can be used to avoid the change of inner IP address(es) used for this traffic. Otherwise, following procedures can be used for handling the IP address change of the WAB-gNB’s traffic:- NG-C and Xn-C can be migrated to the new IP address(es) via legacy procedures defined in TS 38.412 [37] and TS 38.422 [38], respectively.- NG-U GTP-U tunnels can be migrated via the legacy NGAP PDU Session Resource Modify Indication procedure.*Next Change*12.8 Xn connection managementA WAB-gNB canbe configurable with respect to whether it should accept or reject Xn setup requests received from WAB-gNBs. |

**Q12: Do companies agree the above changes in R3-256727? Please indicate which changes are supported or not supported if any.**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia |  | Ok except the deletion of “via legacy procedure, …” it is not needed. The previous agreement is this can be done by the legacy procedure and does not require Stage-3 change. So the existing text is correct. |
| Huawei | Yes to all |  |
| **Ericsson** | One addition is needed | OK, but in the ast change we should also refer to static gNBs, because prevention of Xn setup between WAB-gNBs and static gNBs is also a very relevant scenario. |
| **ZTE** |  | There is nothing wrong without the first two changes. It is also OK, but not essential/critical changes.For the 4th change in clause 12.7.1, we prefer to keep as it is. In clause 12.2.1, it is about configuration/parameters update, e.g. The following configurations of the WAB-node may need to be updated as the node moves. In clause 12.7.1, it is more about to ensure the continuity of OAM connection.  |
| **Huawei 2** | Yes  | Answer to ZTE: the 4th change is needed, please note that 12.2.1 already captured “A WAB-node may be provisioned with the parameters pertinent to different potential locations of the WAB- node. Alternatively, the OAM can provision configuration parameters to the WAB-node based on the location of the node. In that case, the continuity of OAM connectivity needs to be ensured as the WAB-node moves.” So the similar sentence in clause 12.7.1 is redundant.  |
| **CATT** |  | The same view with Nokia. No new procedure is introduced for reporting the additional ULI for UE.  |
| **Qualcomm** | See comment | “via backhaul radio link” is not acceptable. There is no “backhaul radio link”. |

**Summary:**

Revision of R3-256727 (Huawei) taking into companies comments into account for further reviewing.

Proposal 7: Revise R3-256727 for further reviewing.

### 3.3.4 [R3-256889](file:///C%3A%5C%5CUsers%5C%5Cq12059%5C%5CDocuments%5C%5C3GPP%20RAN3%5C%5CRAN3%20Meetings%5C%5CRAN3_129b%20%28Oct%202025%2C%20Prague%29%5C%5CDocs%5C%5CR3-256889.zip)

In R3-256889, it states that:

Current TS 38.301 states:

For UEs served by a WAB-gNB, in addition to the User Location Information (ULI), the WAB-gNB also provides the core network with Additional ULI, which includes a TAI and a NR CGI **pertinent to the WAB-gNB’s broadcasted PLMN/SNPN**.

The WAB-gNB has same functionality as the gNB defined in TS 38.300, which can suppprt network sharing. When the WAB-gNB is shared, it can broadcast multiple PLMNs/SNPNs (e.g. PLMN A and B). For a specific UE from PLMN A, it is unclear which PLMN/SNPN is used in AULI.

In case the WAB-gNB sends the AULI related to PLMN B, the UE’s CN (PLMN A) cannot use the AULI since it does not have the information of PLMN B.

- Clarify the PLMN/SNPN in AULI is the UE’s serving PLMN/SNPN.

|  |
| --- |
| 12.5 User Location Information for UEs served by a WAB-gNBFor UEs served by a WAB-gNB, in addition to the User Location Information (ULI), the WAB-gNB also provides the core network with Additional ULI, which includes a TAI and a NR CGI pertinent to the UE’s serving PLMN/SNPN.If the PLMN/SNPN broadcasted by a WAB-gNB is the same as the PLMN/SNPN serving the WAB-MT, and the WAB-MT connects to the BH-gNB by means of a terrestrial link, the Additional ULI for UEs served by the WAB-gNB includes the TAI and the NR CGI of the cell serving the WAB-MT.If the PLMN/SNPN serving the WAB-MT is different from the WAB-gNB’s broadcasted PLMN/SNPN, and the WAB-MT connects to the BH-gNB by means of a terrestrial link, the Additional ULI for UEs served by the WAB-gNB is determined by the WAB-gNB, based on the WAB-node’s geo-location.If the WAB-MT connects to the BH-gNB by means of a non-terrestrial link, the Additional ULI for UEs served by WAB-gNB is determined by the WAB-gNB, based on WAB-node’s geo-location. This applies regardless of whether the PLMN/SNPN serving the WAB-MT is the same as, or different than, the WAB-gNB’s broadcasted PLMN/SNPN.In case Additional ULI for UEs served by a WAB-gNB changes, e.g., due to WAB-node movement, the WAB-gNB derives the new Additional ULI and reports it via legacy procedures, if required by the core network. |

**Q13: Do companies agree the above change in R3-256889?**

|  |  |  |
| --- | --- | --- |
| Company | Yes or No | Comments  |
| Nokia | Yes  | WAB-gNB has the gNB functionality as defined in 38.300, which supports network sharing. The WAB-gNB may broadcast multiple PLMN/SNPN (e.g. PLMN A and B). For a specific UE of PLMN A, the AULI shall only include the UE’s serving PLMN A, rather any other PLMN (e.g. PLMN B) of the WAB-gNB’s broadcasted PLMN/SNPN.  |
| Huawei |  | We understand the issue, but we use the “WAB-gNB’s broadcasted PLMN/SNPN” in many places, whether to replace the “WAB-gNB’s broadcasted PLMN/SNPN” with “UE’s serving PLMN/SNPN” also in other places? |
| **Ericsson** | Yes |  |
| ZTE |  | In the following paragraphs, the “PLMN/SNPN broadcasted by a WAB-gNB” and “WAB-gNB’s broadcasted PLMN/SNPN” should be also replaced by “UE’s serving PLMN/SNPN”. |
| Nokia-2 |  | Agree with ZTE |
| CATT |  | Agree with ZTE |
| China Telecom |  | Agree with ZTE |
| QC | Yes |  |

**Summary:**

The change in R3-256889 will be updated and merged into the moderator’s merged stage 2 CR, taking companies comments into account as above.

# 4 Conclusion

NGAP corrections:

Proposal 1: Revise of R3-256806 by rewording “consider this transmitting NG-RAN node has WAB-gNB functionality,”.

Proposal 2: Agree the change in R3-256890.

XnAP corrections:

Proposal 3: Rewording the change in R3-256951 for further reviewing.

Proposal 4: Rewording the change in R3-257191 for further reviewing.

Revise R3-256951, merging the change in R3-257191.

Stage 2 corrections:

Proposal 5: Revise R3-256760 for further reviewing.

Proposal 6: Revise R3-256950, merging agreeable corrections in R3-256714, R3-256889 and R3-257138.

Proposal 7: Revise R3-256727 for further reviewing.

# 5 References

1. R3-256806 Correction on WAB NG management (Huawei, CANON Research Centre France, Lenovo) CR1340r, TS 38.413 v19.0.0, Rel-19, Cat. F
2. R3-256890 Correction on handover a WAB-MT to a target WAB-gNB (Nokia, Nokia Shanghai Bell) CR1348r, TS 38.413 v19.0.0, Rel-19, Cat. F
3. R3-256951 Corrections for WAB (ZTE Corporation) CR1560r, TS 38.423 v19.0.0, Rel-19, Cat. F
4. R3-257191 Corrections of WAB (Ericsson) CR1600r, TS 38.423 v19.0.0, Rel-19, Cat. F
5. R3-256714 Corrections of WAB (Ericsson, Jio Platforms) CR0486r, TS 38.401 v19.0.0, Rel-19, Cat. F
6. R3-256727 Correction on WAB (Huawei) CR0487r, TS 38.401 v19.0.0, Rel-19, Cat. F
7. R3-256760 Corrections to WAB stage-2 (CATT, Ericsson) CR0489r, TS 38.401 v19.0.0, Rel-19, Cat. F
8. R3-256889 Correction on AULI (Nokia, Nokia Shanghai Bell) CR0491r, TS 38.401 v19.0.0, Rel-19, Cat. F
9. R3-256950 Corrections for WAB (ZTE Corporation) CR0493r, TS 38.401 v19.0.0, Rel-19, Cat. F
10. R3-257138 Correction to TS 38.401 for WAB (Samsung) CR0501r, TS 38.401 v19.0.0, Rel-19, Cat. F