**3GPP TSG RAN WG3#126R3-24xxxx**

Orlando, FL, USA, November 18 – 22, 2024

**Title: [DRAFT]** Reply LS on FS\_VMR\_Ph2 solution impacts to RAN

**Response to:** LS in R3-243021 (S2-2405822) on FS\_VMR\_Ph2 solution impacts to RAN

**Release:** Rel-19

**Study Item:** FS\_VMR\_Ph2

**Source:** Qualcomm **[to be: RAN3]**

**To:** SA2

Cc: RAN2

**Contact person:**

Name: Georg Hampel

Tel. Number:

E-mail Address: ghampel@qti.qualcomm.com

**Send any reply LS to:** 3GPP Liaisons Coordinator,**mailto:3GPPLiaison@etsi.org**

Attachments: None

**1. Overall Description:**

RAN3 would like to thank SA2 for their LS on FS\_VMR\_Ph2 solution impacts to RAN (R3-243021/S2-2405822). RAN3 has further discussed question 3:

*-* ***Question 3****: To support mobility of the MWAB, some solutions assume that the MWAB-gNB can instantiate two cells (with same gNB ID or different gNB ID), and handover connected UEs between the two cells. The different gNB IDs use case is driven by the need to change AMF if the MWAB moves into a geographic area where a different AMF must be chosen to serve UEs. SA2 would like to ask RAN3 to confirm if this can be supported or not.*

RAN3 achieved the following agreement:

“The ‘two logical gNB solution’ can support UE’s AMF change during WAB-gNB mobility.”

RAN3 has discussed the following solutions that allow change of the UE’s AMF with only one single logical WAB-gNB.

**Solution 1: Using single WAB-gNB cell and changing TAC**

* The WAB-gNB establishes a separate NG-C connection with the new AMF.
* It reports TAC1 only to the initial AMF and TAC2 only to the new AMF.
* It updates the SI from TAC1 to TAC2.
* For UE in RRC CONNECTED state:
	+ When receiving the SI update, the UE performs an MRU, which is forwarded by the WAB-gNB to the initial AMF. The initial AMF initiates an AMF reallocation to the new AMF.
* For UE in RRC IDLE/INACTIVE state:
	+ When receiving the SI update, the UE performs an MRU, which is forwarded by the WAB-gNB to the new AMF. The new AMF pulls the UE’s context from the initial AMF.

**Solution 2: Using two WAB-gNB cells with different TACs**

* The WAB-gNB establishes a separate NG-C connection with the new AMF.
* It establishes a second cell whose SI includes only TAC2 while the first cell’s SI only includes TAC1.
* It reports TAC1 only to the initial AMF and TAC2 only to the new AMF.
* For UE in RRC CONNECTED state:
	+ The WAB-gNB initiates an NG handover for the UE. When the initial AMF receives the HO Required message, it will initiate an AMF reallocation. After all UEs have been handed over, the WAB-gNB discontinues operation of the first cell.
* For UE in RRC IDLE/INACTIVE state:
	+ When operation of the first cell is discontinued, the UE reselects the second cell and performs an MRU, which is forwarded by the WAB-gNB to the new AMF. The new AMF pulls the UE’s context from the initial AMF.

**Solution 3: Using single WAB-gNB cell with same TAC**

* The WAB-gNB establishes a separate NG-C connection with the new AMF.
* It reports the same TAC to both AMFs.
* It requests the new AMF to migrate the context of all UEs from the initial AMF. The new AMF then pulls this context from the initial AMF. Alternatively, the WAB-gNB requests the initial AMF to migrate the context of all UEs to the new AMF. The AMF then pushes this context to the new AMF.

RAN3 would like to ask SA2 to provide feedback on whether (any of) these solutions can be supported from SA2’s perspective.

**2. Actions:**

**To RAN2 group.**

**ACTION:** RAN3 would like to ask SA2 to provide feedback on whether (any of) these solutions can be supported from SA2’s perspective.

**3. Date of Next RAN3 Meetings:**

TSG-RAN WG3 Meeting #127, February 17 to 21, 2024 Maastricht, NL

TSG-RAN WG3 Meeting #127bis, April 7 to 11, 2024 China