3GPP TSG-RAN WG3 Meeting #125 R3-244746

**Maastricht, NL, 19 - 23 August, 2024**

Agenda Item: 12.2

Source: Huawei

Title: (TP for TR 38.799): WAB mobility

Document for: Discussion

# 1 Introduction

This is to provide TP for WAB mobility according to the following agreements and CB:

**The single gNB solution including the options below shall be captured in the TR:**

* **Single gNB single cell using registration update due to TAC change**
* **Single gNB two cells with different TAC using NG HO**
* **Single gNB single cell without TAC change**

**CB: # WAB**

* **Draft reply LS to SA2 (QC)**
* **Draft TPs capturing agreements taken**
* **Draft TPs on any other agreements possibly reached offline**
* **Derive TR conclusions based on agreements taken (online and offline)**

(Moderator – Ericsson)

Summary of offline discussions R3-244737

#  Annex——TP for TR 38.799 v1.0.0

*Start of Change*

##### 4.3.4.2.2 WAB-gNB mobility with change of UE’s AMF(s)

Due to WAB-node movement, the change of UE’s AMF(s) may be needed, based on, e.g., WAB-node’s current location and/or additional criteria. The NG connection handling and WAB-gNB configuration update may affect the served UEs.

------------------unchanged parts are skipped----------------

###### 4.3.4.2.2.2 Solution with single logical WAB-gNB

It may be possible to support the change of UE’s AMF(s) with a single logical WAB-gNB on the WAB-node. The following options may be considered, and their feasibility needs to be confirmed with SA2.

**Option 1**: Single WAB-gNB with a single cell using mobility registration update due to TAC change

In this option, the WAB-gNB establishes a new NG connection towards the new AMF and concurrently maintains NG connections to both AMFs. The WAB-gNB reports a new TAC only to the new AMF. The WAB-gNB initiates the change of the UE’s AMF by updating the SI with the new TAC. When the UE detects the new TAC in the SI broadcast, it intitates the Mobility Registration Update procedure as defined in TS 23.502 [y] Clause 4.2.2.2.3. After some time, the NG connection between the WAB-gNB and the initial AMF(s) can be removed.

**Option 2**: Single WAB-gNB with two cells with different TACs, using NG-based HO

In this option, the procedures defined in clause 4.3.4.2.2.1 can be reused with the difference that the new cell(s) and the old cell(s)are served by the same WAB-gNB, i.e., no new logical WAB-gNB needs to be instantiated. And the gNB-ID of the new cell is the same as or different with that of the old cell. The WAB-gNB further has to report the new TAC only to the new AMF as described in Option 1. This ensures that AMF reallocation can be achieved via the NG-based handover for RRC-connected UEs and via MRU for RRC-idle/inactive UEs.

**Option 3**: Single gNB single cell without TAC change

In this option, upon AMF change, the WAB-gNB retains its TAC. When the WAB-gNB establishes an NG connection to the new AMF, the WAB-gNB indicates the TAC to the new AMF, and removes the TAC from the supported TAC list at the initial AMF. After this, the UE context transfer between the old and the new AMF is triggered, which may require enhancements in the core network (e.g., either the initial AMF or the new AMF can trigger UE context transfer for both RRC-connected and RRC-idle UEs, for example based on the GUAMI of the new or initial AMF, respectively).

It is worth noting that this option 3 is not align with SA2’s conclusion “when MWAB-gNB changes the AMF it connects due to mobility, the TAC(s) and Cell ID(s) it announces also change”.

*End of Change*