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.

1. The WAB-gNB may obtain the configuration parameters needed to establish the connection to the UE’s new AMF(s).
2. The WAB-gNB establishes NG connection(s) towards one or more new AMF(s). More specifically, the WAB-gNB may initiate a new logical WAB-gNB for the new NG connection.
3. The WAB-gNB may activate one or more new cells, with new cell configuration parameters related to the WAB-gNB’s current location. The new cells may broadcast the radio parameters configured for the new AMF(s), e.g., TAC, etc. The old cell(s) remain(s) active. If the new logical WAB-gNB is initiated, the new cell(s) is(are) served by this new logical gNB.
4. The UEs are handled as follows:
* A UE in RRC\_CONNECTED state is handed over between an old cell and a new cell served by the WAB-gNB via NG-based handover with AMF relocation, as defined in TS 23.502.
* When all UEs in RRC\_CONNECTED state have been handed over, the old cell(s) are removed from service. A UE in RRC\_IDLE or RRC\_INACTIVE state camping on the old cell(s) reselects a new cell, and legacy procedure (e.g., Mobility Registration Update procedure as defined in TS 23.502) is performed.
1. The NG connection(s) between the WAB-gNB and the old AMF(s) are removed.

In addition, it is also possible to support the change of UE’s AMF(s) with only single gNB and single cell. There are two options.

**Option 1**: Single gNB single cell using registration update due to TAC change

In this option, the step 1 and step 2 follow the above description, but there is no need to activate new cells on the WAB-gNB. The WAB-gNB connects to two AMFs simutaneously, and indicates the new TAC only to the new AMF. The WAB-gNB directly change the broadcasted system information (including TAC) to the new value corresponding to the new AMF. Then the WAB-gNB sends short message in PDCCH to UE for the system information change notification, and UE will detect the new TAC value which is out of its RA scope. After that, the UE’s Mobility Registration Update procedure is triggered as defined in TS 23.502, and the old AMF will forward the UE’s Registration Request message and transfer the UE contexts to the new AMF during this procedure. After that, the NG connection(s) between the WAB-gNB and the old AMF(s) will be removed

**Option 2**: 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 old AMF. After this, the UE context transfer between the old and the new AMF is triggered. After the UE contexts have been transferred, the WAB-gNB removes the NG connection with the old AMF.

*End of Change*