**3GPP TSG-RAN WG3 Meeting #127-bisR3-252349**

**Wuhan, P.R. China, April 7th – 11th 2025**

Agenda Item: 12.2

Source: Ericsson

Title: (TP for WAB BL CR for TS 38.401): Functional Aspects of WAB-Nodes

Document for: Agreements

# Introduction

This TP reflects the following agreements from the RAN3#127-bis meeting:

**When access and backhaul links of a WAB node are operated out-of-band, there is no need for WAB resource coordination.**

**RAN3 assumes that WAB deployments use out-of-band operation in case access and backhaul use different PLMNs.**

**In this release, In-band WAB operation is only considered for intra PLMN scenarios where BH gNB is upgraded with WAB-specific enhancements.**

In addition, several editorials are proposed.

# TP for WAB BL CR for TS 38.401

-------------------------------------------Start of changes-------------------------------------------

6 NG-RAN architecture

6.1 Overview

>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<

X Wireless Access Backhaul

X.1 WAB-node integration procedure



**Figure X.1-1 WAB-node integration procedure**

**Phase 1: WAB-MT setup.** The WAB-MT of a WAB-node connects to the network in the same way as a UE by performing RRC connection setup procedure with the BH-RAN-node. The WAB-MT then performs, authorization and authentication with the BH-5GC. After the WAB-MT is authorized, the WAB-MT can establish one or more PDU sessions for backhauling.

**Phase 2: WAB-gNB setup.** This phase includes the following 3 sub-phases:

**Sub-phase 2-1: WAB-gNB initialization.** In this phase, the WAB-gNB is configured by the OAM (e.g., with the information needed to establish NG connections towards one or more AMF(s)) and the WAB-gNB is service-authorized by the SeGW or by the OAM.

**Sub-phase 2-2: NG connection setup.** The WAB-gNB establishes NG connection(s) toward the AMF(s). This step follows legacy procedures. After the NG is set up, the WAB-gNB can start serving UE(s).

**Sub-phase 2-3: Xn connection setup.** If needed, the WAB-gNB can establish Xn connection(s) towards the BH-RAN-node and/or other NG-RAN node(s).

>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<

X.2.3 TAC/RANAC (re-)configuration for a WAB-gNB’s cell

The TAC/RANAC of WAB-gNB’s cell is configured by the OAM. During the mobility of WAB-node, it can be reconfigured by the OAM, or it can remain unchanged as long as the UE’s AMF remains unchanged. The TAC/RANAC of the WAB-gNB’s cell may be the same as, or different than, the TAC/RANAC of the co-located WAB-MT’s serving cell. The TAC/RANAC broadcast by the WAB-gNB’s cell can be changed in order to reflect the WAB-node’s physical location.

>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<

X.5 User Location Information for UEs served by a WAB-gNB

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.

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 UE-associated or non-UE-associated procedures, if required by the core network.

>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<

X.8 Coordination of WAB-gNB and WAB-MT radio resources

Coordination of WAB-gNB and WAB-MT radio resources is needed only if the access and the backhaul link of a WAB-node are operated in the same frequency band (i.e., in-band operation). The coordination procedure is executed between a WAB-gNB and a BH-gNB serving the co-located WAB-MT.

In-band WAB operation is only considered in scenarios where a WAB-gNB and its co-located WAB-MT connect to the same PLMN, and the BH-gNB supports the procedure for coordination of WAB-gNB and WAB-MT radio resources.

If a WAB-gNB and its co-located WAB-MT connect to different PLMNs, it is assumed that the access and the backhaul link of a WAB-node are operated in different frequency bands.

-------------------------------------------End of changes-------------------------------------------