**3GPP TSG-RAN3 Meeting #124** **R3-243859**

**Fukuoka, Japan, 20 - 24 May, 2024**

**Agenda item: 12.2**

**Source: Nokia, Nokia Shanghai Bell, Xiaomi, ZTE, CATT, Huawei**

**Title: (TP for TR 38.799) on architecture**

**Document for: Discussion and Decision**

# 1 Introduction

This contribution provides TP to TR 38.799 to capture the architectural related agreements from RAN3#124:

* Update the architecture example to include the support for Xn
* Add the protocol stacks for Xn
* Update the figures with new agreed term.

# Annex – TP for TR 38.799

## 4.2 WAB Architecture

Editor Note: Architecture and protocol stack to support a gNB with MT function providing PDU session backhaul.

Figure 4.2-1 shows an example of WAB architecture for 5GS when the WAB-gNB’s NG/Xn traffic is transported via PDU session backhaul.



Figure 4.2-1: The WAB architecture example for 5GS when the WAB-gNB traffic is transported via PDU session backhaul

The neighbour NG-RAN node can be a BH-RAN-node, or a surrounding NG-RAN node. The WAB-gNB’s OAM traffic can also be transferred over the BH PDU session(s).

Figure 4.2-2 shows an example of WAB architecture for 5GS when the WAB-gNB’s NG traffic is transported via non-3GPP backhaul:



Figure 4.2-2: The WAB architecture example for 5GS when the WAB-gNB traffic is transported via non-3GPP backhaul

Figure 4.2-3 shows protocol stack examples of NG Control plane and User plane transport for a UE connected to the network via a WAB-node.



Figure 4.2-3: Protocol stack examples of NG Control plane and User plane transport for a UE connected via WAB-node

Figure 4.2-x shows protocol stack examples of Xn Control plane and User plane transport for a UE connected to the network via a WAB-node.



Figure 4.2-x: Protocol stack examples of Xn Control plane and User plane transport

Figure 4.2-y shows an example of WAB architecture for using a L2TP tunnel gateway (LNS) for WAB-gNB’s traffic over the BH PDU session(s).



Figure 4.2-y: The WAB architecture example for 5GS using L2TP gateway to convey the WAB-gNB’s traffic over the BH PDU session(s)

Figure 4.2-z shows protocol stack examples for NG Control plane and User plane transport using a L2TP tunnel.



Figure 4.2-z: The protocol stack for NG-U and NG-C transport using L2TP tunnel over BH PDU session(s)

The solutions using L2TP shown in Figures 4.2-y and 4.2-z do not guarantee inter-vendor interoperability since support of L2TP is not mandated for NG and Xn. Therefore, these solutions are out-of-scope of this study.

## 4.3 Operational aspects

Editor Note:

- Impact of WAB mobility within an existing RAN (e.g., inter-gNB neighbour relations).

- Inter-gNB- and gNB-to-CN signalling to address the support of WAB.