**3GPP T****SG-RAN WG3 Meeting #124 R3-243807**

**Fukuoka, Japan, 20th – 24th May 2024**

**Agenda Item: 16.2**

**Source: Ericsson (Moderator), Huawei**

**Title: [TP for TR 38.769] CB:#AIoT1\_Architecture**

**Document for: Discussions & Approval**

# 1 Introduction

This is the summary of offline discussions on the first comeback for Ambient AIoT during RAN3#124.

The chair’s minutes are as follows:

**CB: # AIoT1\_Architecture**

**- Focus on how to capture the system architecture in TR**

**- Discuss the definition of common reader function and AIoT RAN function**

**- the possibility to send LS to other WGs on security?**

(moderator – E///)

Offline discussions were based on R3-243549 and attempted to produce commonly acceptable content for TR 38.769, as shown below in the “Text Proposal”, containing architecture related Figures and the definition of the terms used in the figure. Items for further study are captured within “Editor’s Notes”.

For chair minutes:

**Text Proposal in R3-243807 agreed**

# 2 Text Proposal

<<<<<<<<<<<<<<<<<<<< First Change >>>>>>>>>>>>>>>>>>>>

## 6.4 RAN architecture aspects

Editor’s note 0: Corresponds to the second RAN3 objective in the SID, to identify RAN architecture aspects, including whether support for split architecture is necessary.

This chapter attempts to identify and describe architectural elements necessary to define a RAN architecture for support of Ambient IoT embedded in the overall 5G system architecture in support of topology 1 and topology 2 (as defined in TR 38.848 [2]).

This chapter also attempts to identify a functional split between RAN and CN.

Figure 6.4-1 depicts the logical system architecture for AIoT common for topology 1 and topology 2.

It consists of the following architectural elements:

**AIoT device**: equipment with characteristics outlined e.g. in TR 38.848 [2].

Editor’s Note 1: Further details FFS, if any.

**AIoT RAN**: hosts certain functions for AIoT as part of the functional split between RAN and CN

Editor’s Note 2: Further details regarding AIoT functions hosted in the AIoT RAN and the respective functional split to be decided by RAN2, RAN3 and SA2.

**AIoT radio**: radio interface between Common reader function and AIoT device.

Editor’s Note 3: Further details on AIoT radio to be discussed by RAN1 and RAN2.

**AIoT CN**: hosts certain functions for AIoT as of the functional split between RAN and CN

Editor’s Note 4: Further details regarding AIoT functions hosted in the AIoT CN and the respective functional split to be decided by RAN2, RAN3 and SA2

**XX interface**: interface between the AIoT RAN and the AIoT CN on which certain AIoT specific functions are performed.

Editor’s Note 5: The functions represented by the XX interfaces are FFS. It is also FFS whether this interface represents a new logical interface or is equal to NG, e.g. for topology 1 it may only represent “XX”, for topology 2 it might represent either 2 interface instances, one for “XX” one for NG, or NG alone.

**Common reader function**: a function that communicates with the AIoT device by means of AIoT radio.

Editor’s Note 6: Further details are FFS

**AIoT RAN node function**: a function residing in AIoT RAN that performs AIoT related functions.

Editor’s Note 7: further details on what functionalities are part of AIoT RAN node function are FFS.



Figure 6.4-1: Logical System Architecture for AIoT common for topology 1 and topology 2.

Figure 6.4-2 depicts a deployment scenario for topology 2, based on Figure 6.4-1, where AIoT RAN functions are deployed within an AIoT-enabled gNB and an AIoT capable UE. The definitions of the 2 additional entities are given below:

**AIoT capable UE**: a UE able to communicate with the AIoT device via the Common reader function.

NOTE: Figure 6.4-2 shows the AIoT capable UE hosting the Common reader function and non-AIoT functions.

Editor’s Note 8: further details are FFS.

**AIoT-enabled gNB**: a gNB able to communicate with the AIoT capable UE.

Editor’s Note 9: further details are FFS.



Figure 6.4-2: Deployment scenario for topology 2 based on the Logical System Architecture in Figure 6.4-1.

<<<<<<<<<<<<<<<<<<<< End of Changes >>>>>>>>>>>>>>>>>>>>