3GPP TSG-RAN WG3 Meeting #125 R3-24xxxx

Maastricht, NL, 19th – 23rd Aug 2024

Agenda Item: 16.3

Source: ZTE (moderator)

Title: Summary of Offline Discussion on CB: # AIoT2\_CNRANSignalling

Document for: Approval

# Introduction

**CB: # AIoT2\_CNRANSignalling**

**- Start with** [**R3-244059**](file:///D:\3GPPmeeting\202408%20RAN3%20125\Inbox\R3-244059.zip)**, check the open issues above**

(moderator - ZTE)

Summary of offline disc [R3-244703](file:///D:\3GPPmeeting\202408%20RAN3%20125\Inbox\R3-244703.zip)

# For the Chairman’s Notes

# Discussion-First round

RAN3 starts with inventory-only procedure. Discuss the content in Inventory/Command.

**The AIoT CN to select suitable reader (AIoT enabled gNB or AIoT enabled UE reader) for both topology 1 and topology 2?**

**Assistance information from AIoT CN to AIoT RAN?**

## Overall procedure for inventory-only

RAN3 starts with inventory-only procedure. Discuss the content in Inventory/Command.

#### 6.4.1.3 Content of Communication between involved main AIoT system entities



Figure 6.4.1.3-1: Overall procedure for AIoT

*Editor’s Note: It is assumed that communication between AIoT RAN and AIoT CN can be common for topology 1 and topology 2. FFS on detailled differences.*

1. When the AIoT CN decides to initiate inventory procedure, it sends Inventory request message to the AIoT RAN node.

Step 1 Content: ...

Session id

Reader id

Device id

Periodicity

FFS: association between reader id and device id

**Whether the reader needs to store the device identity?**

**Whether the reader needs to decode the device identiy?**

2. The AIoT RAN node sends Inventory response message to the AIoT CN.

Step 2 Content: ...

Session id

Reader id

*Note： In step 2, if the AIoT RAN node sends Inventory failure message to the AIoT CN, this Inventory procedure ends.*

3. The AIoT RAN node initiates inventory procedure at AIoT radio interface accordingly.

*Editor’s Note 1: This step is defined by RAN2.*

4/4b. After receiving part or full of inventory result from devices, the AIoT RAN node sends a single or multiple Inventory reports to the AIoT CN including the received inventory result.

Step 4 Content: ...

Inventory result:

Reader id

Device id,

FFS: association between reader id and device id

#### 6.4.1.4 Overall procedure



Figure 6.4.1.3-2: Overall procedure for AIoT Topology 1

*Editor’s Note: It is assumed that communication between AIoT RAN and AIoT CN can be common for topology 1 and topology 2. This section tries to identify details on communication between UE based reading device and AIoT enabled gNB, as far as RAN3 is concerned, if any.*

1. When the AIoT CN decides to initiate inventory procedure, it sends Inventory request message to the AIoT RAN node.

2. The AIoT RAN node sends Inventory response message to the AIoT CN.

*Note： In step 2, if the AIoT RAN node sends Inventory failure message to the AIoT CN, this Inventory procedure ends.*

3. The AIoT RAN node initiates inventory procedure at AIoT radio interface accordingly.

*Editor’s Note 1: This step is defined by RAN2.*

4/4b. After receiving part or full of inventory result from devices, the AIoT RAN node sends a single or multiple Inventory reports to the AIoT CN including the received inventory result.



Figure 6.4.1.3-3: Overall procedure for RRC based AIoT Topology 2

*Editor’s Note: It is assumed that communication between AIoT RAN and AIoT CN can be common for topology 1 and topology 2. This section tries to identify details on communication between UE based reading device and AIoT enabled gNB, as far as RAN3 is concerned, if any.*

1. When the AIoT CN decides to initiate inventory procedure, it sends Inventory request message to the AIoT RAN node.

*Note: Before initiating inventory procedure, the AIoT CN selects suitable UE/reader.*

2. The AIoT RAN node sends Inventory response message to the AIoT CN.

Note： In step 2, if the AIoT RAN node sends Inventory failure message to the AIoT CN, this Inventory procedure ends.

3. The gNB initiates inventory procedure at Uu interface and AIoT radio interface accordingly.

*Editor’s Note 2: This step is defined by RAN2.*

4/4b. After receiving part or full of inventory result from UE, the gNB sends a single or multiple Inventory reports to the AIoT CN including the received inventory result.



Figure 6.4.1.3-4: Overall procedure for NAS/PDU session based AIoT Topology 2

*Editor’s Note: It is assumed that communication between AIoT RAN and AIoT CN can be common for topology 1 and topology 2. This section tries to identify details on communication between UE based reading device and AIoT enabled gNB, as far as RAN3 is concerned, if any.*

1. When the AIoT CN decides to initiate inventory procedure, it sends Inventory request message included in NAS PDU/PDU session, to the UE/reader.

*Note: Before initiating inventory procedure, the AIoT CN selects suitable UE/reader.*

2. The UE sends Inventory response message included in NAS PDU/PDU session, to the AIoT CN.

Note： In step 2, if the UE sends Inventory failure message to the AIoT CN, this Inventory procedure ends.

3. The UE initiates inventory procedure at AIoT radio interface accordingly.

*Editor’s Note 3: This step is defined by RAN2.*

4/4b. After receiving part or full of inventory result from UE, the UE sends a single or multiple Inventory reports included in NAS PDU/PDU session, to the AIoT CN.

## Assistance information

Discuss the content in Inventory/Command.

**Assistance information from AIoT CN to AIoT RAN?**

Session id

Reader id

Periodicity

FFS: association between reader id and device id

## Reader selection

**The AIoT CN to select suitable reader (AIoT enabled gNB or AIoT enabled UE reader) for both topology 1 and topology 2?**

## Device context

- the scope (e.g. unique per AIoT RAN node, per AIoT CN node, global, ...)

- the ownership (which node generates)

- which node needs to process the information and triggers a function based on the info, store it e.g. for associating request/response

**Which node to store Device context?**

AIoT CN

RAN as reader

UE as reader

**What content in the device context?**

Association between reader id and device id

# Conclusion, Recommendations

# References

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