3GPP SA WG2#170 S2-250xxxx

Goteborg, Sweden, 25-29 August, 2025 (Revision of S2-250xxxx)

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.369** | **CR** |  | **rev** | **-** | **Current version:** | **19.0.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Session release procedre and correlation ID | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | OPPO | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | AmbientIoT-ARC | | | | |  | ***Date:*** | | | 2025-08-25 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In the incoming LS from RAN3 (S2-2506146)   * *In case of indirect connectivity, as parallel sessions between gNB and AMF are supported, the AIOTF Identifier and the Correlation Identifier are included outside of the containers in all the Inventory related NGAP messages (in addition to including the Correlation Identifier inside the containers as previously agreed).* * *In case of indirect connectivity, as parallel Command procedures for different devices between gNB and AMF within the same session are supported, the AIOTF Identifier, the Correlation Identifier, and the RAN A-IoT Device NGAP ID are included outside of the containers in all the Command related NGAP messages (in addition to including the Correlation Identifier and the RAN A-IoT Device NGAP ID inside the containers as previously agreed).* * *Introduce a new A-IoT CN triggered Class 1 NGAP A-IoT Session Release procedure.* * *Introduce a new gNB triggered Class 2 NGAP A-IoT Session Release Request procedure.*   Additionally the AIoT session release has also beeen defined in BL CR in R3-253972.  Correlation ID has been used in several clauses, however there is no correlation ID definition. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Correlation ID definition is added.  The AIoT Session Release procedure is added. | | | | | | | | |
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| ***Consequences if not approved:*** | | Unnessary AIoT Session will remain in the NG-RAN and AIOTF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.7.x (new), 6.2.4, 6.2.x (new), 7.2.4, 7.3.2, 7.4.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**\* \* \* \* First Change \* \* \* \***

### 5.7.x Correlation ID

Correlation ID is generated by AIOTF corresponding to an AF service operation request. It is used to uniquely identify an AIoT session which is corresponding to an AF service operation request. Correlation ID shall be unique within an AIOTF.

**\* \* \* \* Next Change \* \* \* \***

### 6.2.4 Procedures between AIOTF and NG-RAN for Indirect Connectivity

An AIOTF and NG-RAN can use an indirect interface via an AMF as described in clause 4.2.2.4. The additional steps used for indirect interface between AIOTF and NG-RAN are shown in Figure 6.2.4-1.



Figure 6.2.4-1: Procedure for AIOTF and NG-RAN for indirect connectivity via an AMF

1. The AIOTF sends Namf\_AIoT\_MessageDelivery message (NGAP AIoT information, NG-RAN ID, AIOTF ID, Message Type for NGAP AIoT information, Correlation ID, [RAN AIoT Device NGAP ID]) to the AMF. The NGAP AIoT information may be Inventory Request Transfer, Command Request Transfer, or Session Release Command Transfer. RAN AIoT Device NGAP ID is included if the NGAP AIoT information is Command Request Transfer.2. The AMF sends an NGAP message (AIOTF ID, NGAP AIoT information, Correlation ID, [RAN AIoT Device NGAP ID]) to the target NG-RAN.

3. The NG-RAN sends an NGAP message (AIOTF ID, NGAP AIoT information, Correlation ID, [RAN AIoT Device NGAP ID]) to an AMF. NGAP AIoT information may be Inventory Response Transfer, Inventory Report Transfer, Inventory Failure Transfer, Command Response Transfer, Command Failure Transfer Session Release Request Transfer, or Session Release Complete Transfer.

4. AMF sends the Namf\_AIoT\_Notify message (NGAP AIoT information) to the AIOTF.

**\* \* \* \* Next Change \* \* \* \***

### 6.2.x AIoT Session Release Procedure

This procedure is used to release the AIoT session between the NG-RAN and the AIOTF.

The initiation of AIoT session release may be due to:

- NG-RAN-initiated with cause; or

- AIOTF-initiated with cause, e.g. Procedure Completed.

Both NG-RAN-initiated and AIOTF-initiated AIoT Session Release procedures are shown in Figure 6.2.x-1.



Figure 6.2.x-1: AIoT Session Release Procedure

1. NG-RAN may decide to initiate the AIoT session release procedure. NG-RAN sends AIoT Session Release request message (Correlation ID, Cause) to the AIOTF directly or as a NGAP AIoT information via an AMF as specified in clause 6.2.4.

2. If the NG-RAN receives the AIoT Session Release request message or the AIOTF decides to terminate all activities related to the AIoT session, the AIOTF sends an AIoT Session Release Command message (Correlation ID, Cause) to the NG-RAN directly or as a NGAP AIoT information via an AMF as specified in clause 6.2.4. The cause indicates either the Cause from NG-RAN in step 1 or the Cause triggered by AIOTF.

3. The NG-RAN confirms the AIoT Session Release by returning an AIoT Session Release Complete message (Correlation ID) to the AIOTF directly or as a NGAP AIoT information via an AMF as specified in clause 6.2.4.

4. The AIOTF may send the Naiotf\_AIoT\_Notify message to inform that the service operation request has been terminated.

5. When receiving the Naiotf\_AIoT\_Notify message from AIOTF, the NEF informs the AF the service operation request has been terminated by sending the Nnef\_AIoT\_Notify message(s).

**\* \* \* \* Next Change \* \* \* \***

### 7.2.4 Naiotf\_AIoT\_Notify service operation

**Service operation name:** Naiotf\_AIoT\_Notify

**Description:** The AIOTF uses this service operation to notify the results or status of the service operation towards the NF consumers. If the NF consumer invokes the Naiotf\_AIoT\_Inventory, or Naiotf\_AIoT\_Command service operation, the NF consumer implicitly subscribes to the results of the requested service operation.

**Inputs, Required:**

1) Common report information: Transaction ID.

**Inputs, Optional:**

1) List of AIoT Device ID or Failure Cause in case of Failure, Release Cause in case of AIoT Session Release.

2) Read command specific report information: Information obtained from each target AIoT Device corresponding to each reported AIoT Device ID.

3) The Last Report Indication, indicating the notify is the last notify for an AIoT service operation.

**Outputs, Required:** Operation execution result indication.

**Outputs, Optional:** None.

**\* \* \* \* Next Change \* \* \* \***

### 7.3.2 Namf\_AIoT\_MessageDelivery service operation

**Service operation name:** Namf\_AIoT\_MessageDelivery

**Description:** The NF consumer requests to send AIoT data towards NG-RAN or AIoT devices.

**Inputs, Required:**

1) NGAP AIoT Information to deliver to NG-RAN.

2) NG-RAN ID.

3) AIoT NGAP Message Type ("Inventory" or "Command").

4) AIOTF Identifier and Correlation Identifier, this is to allow identifying the association between NG-RAN and AMF.

**Inputs, Optional:** RAN AIoT Device NGAP ID.

**Outputs, Required:** Result indication (Success or Failure), Failure Cause in case of Failure.

**\* \* \* \* Next Change \* \* \* \***

### 7.4.4 Nnef\_AIoT\_Notify service operation

**Service operation name:** Nnef\_AIoT\_Notify

**Description:** The consumer receives notification of the status or results of the requested service operation. If the consumer invokes the Nnef\_AIoT\_Inventory, or Nnef\_AIoT\_Command service operation, the consumer implicitly subscribes to the results of the requested service operation.

**Input, Required:**

1) AF Transaction ID.

**Input, Optional:**

1) a list of AIoT Device ID(s), Failure Cause in case of Failure, Release Cause in case of AIoT Session Release.

2) Read command specific report information: Information obtained from each target AIoT Device.

3) The Last Report Indication, indicating the notify is the last notify for an AIoT service operation.

**Output, Required:** Result indication.

**\* \* \* \* End of Changes \* \* \* \***