**3GPP TSG-CT3 Meeting #127e *C3-231099***

**E-Meeting, 17th - 21st April 2023** *(revision of C3-231xyz)*

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **29.513** | **CR** | **0446** | **rev** | **-** | **Current version:** | **18.1.0** |  |
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| *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 |  | Core Network | **X** |

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| ***Title:*** | Clarification to subscription to UMIC and PMIC changes | | | | | | | | | |
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| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | DetNet | | | | |  | ***Date:*** | | | 2023-03-31 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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)* | |
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| ***Reason for change:*** | | TS 23.503 and TS 23.502 clarify that the TSCTSF, in order to retrieve 5GS node interface information:   * First, using the user plane node Id received from the PCF in the initial notification, retrieves UMIC information containing the NW-TT port numbers. * Then, subscribes with the NW-TT for receiving NW-TT port management information changes for the NW-TT ports indicated in the received UMIC. | | | | | | | | |
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| ***Summary of change:*** | | Flow description in clause 5.5.12.2 is updated to reflect the sequential retrieval of UMIC and PMIC information, with the two separate sets of notifications from the PCF to the TSCTSF. | | | | | | | | |
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| ***Consequences if not approved:*** | | Incorrect procedure for the report of 5GS node information. | | | | | | | | |
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| ***Clauses affected:*** | | 5.5.12.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* \* Start of Changes \* \* \* \*

#### 5.5.12.2 5GS DetNet node information reporting

The TSCTSF may provide exposure information to the DetNet controller using information collected from the UPF/NW-TT via parameters in PMIC, and for the device side ports, using parameters provided from the SMF to the TSCTSF via PCF, as described in figure 5.5.12.2-1.



Figure 5.5.12.2-1: 5GS DetNet node information reporting

1. During SM Policy Association establishment, the PCF based on local configuration for the DNN and S-NSSAI determines that the SM Policy Association enables Deterministic Networking and provides to the SMF the "TSN\_BRIDGE\_INFO" policy control request trigger as described in figure 5.2.1-1, step 11.

When the trigger is met, the PCF receives TSC User Plane information (for DetNet it represents 5GS Router information): port number, User Plane node ID and, if available, MTU size for IPv4 and MTU size for IPv6 as described in figure 5.2.2.3-1, step 2. The PCF may also receive NW-TT PMIC (with network side interface configuration information) The PCF invokes the Npcf\_PolicyAuthorization\_Notify service operation to notify to the TSCTSF the received TSC User Plane information, and if available, NW-TT PMIC, as described in figure 5.2.2.3-1, step 5 and includes the UE IP address to identify the PDU session.

2. The TSCTSF then invokes the Npcf\_PolicyAuthorization\_Create request message to the PCF as described in clause 5.2.2.2.2.1 to create an AF-session.

The TSCTSF shall subscribe with the PCF to the "TSN\_BRIDGE\_INFO" event, to get notifications about NW-TT PMIC/UMIC updates as specified in 3GPP TS 29.514 [10] and if the "AdditionalAddresses" feature is supported, to the "ADDITIONAL\_ADDR" event to receive information about the one or more Framed Routes available for the PDU session or about the IPv6 prefixes delegated to the UE by IPv6 Prefix Delegation.

Using the User Plane node Id received in step 1, the TSCTSF may subscribe with the NW-TT to receive UMIC information for the indicated User Plane node Id, if not previously received, by provisioning the concerned UMIC container.

3. If the information is available in the PCF, the PCF returns the event related information in the Npcf\_PolicyAuthorization\_Create response (e.g. TSC User Plane information (5GS Router information), additional addresses, if subscribed and available, and PMIC(s) if available).

The TSCTSF stores the DNN, S-NSSAI and IP address(es) as received from PCF and associates them with the AF-session, as described in 3GPP TS 29.565 [60].

If the TSCTSF determines the interface configuration information for the created AF-session is complete, the TSCTSF may report to the DetNet controller the collected interface(s) information as described in step 10.

4. The PCF subscribes to UMIC changes with the SMF:

4.1 The PCF provides to the SMF the UMIC information received from the TSCTSF as described in clause 5.2.2.2.2.2, and the SMF sends the received UMIC to the NW-TT/UPF.

4.2 When the SMF receives the UMIC reported from the UPF/NW-TT, the SMF provides the received UMIC information to the PCF as described in clause 5.2.2.3.

5. The TSCTSF receives from the PCF the notification of the BRIDGE\_INFO event, as specified in 3GPP TS 29.514 [10], containing the UMIC information with the NW-TT ports of the indicated User Plane node Id. The PCF invokes the Npcf\_PolicyAuthorization\_Notify service operation by sending an HTTP POST request to the callback URI as specified in clause 5.2.2.3.

6. The TSCTSF responds to the PCF with a "204 No Content" status code.

7. The TSCTSF shall request PMIC information from the NW-TT using the User Plane node Id received in step 1 and the port number(s) received in step 5, to read network interface configuration for the indicated ports, as specified in 3GPP TS 23.501 [2]. The TSCTSF interacts with the PCF by triggering a Npcf\_PolicyAuthorization\_Update request message as specified in 3GPP TS 29.514 [10].

8. The PCF responds with a "200 OK" or "204 No Content" status code in response to the Npcf\_PolicyAuthorization request.

9. The PCF subscribes to PMIC changes from the SMF:

9.1. The PCF provides to the SMF the PMIC information received from the TSCTSF as described in clause 5.2.2.2.2.2, which sends the received PMIC to the NW-TT/UPF.

9.2 When the SMF detects PMIC changes for the NW-TT, the SMF provides the received PMIC information to the PCF as described in clause 5.2.2.3.

10. The TSCTSF receives the PMIC information from the NW-TT ports via the PCF with the notification of the BRIDGE\_INFO event, as specified in 3GPP TS 29.514 [10]. The PCF invokes the Npcf\_PolicyAuthorization\_Notify service operation by sending an HTTP POST request to the callback URI as specified in clause 5.2.2.3.

11. The TSCTSF responds to the PCF with a "204 No Content" status code.

12. After the TSCTSF determines that the interface information for the AF session is complete, the TSCTSF may provide the collected network and device side interface configuration to the DetNet controller as defined in 3GPP TS 23.501 [2].

\* \* \* \* End of change \* \* \* \*