**3GPP TSG-SA WG6 Meeting #48-e** **S6-220859**

**e-meeting, 05th – 14th April 2022 (revision of S6-220618)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0095** | **rev** | **1** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | Minor corrections on network resource management for 5G TSC | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eSEAL | | | | |  | ***Date:*** | | | 2022-03-30 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Clarification of the reference point ID between the NRM Server and the 3GPP network system. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * The Reference point ID between the NRM Server and the 3GPP network system is modified from Nxx to N5 in 14.2.2.3 and in 14.3.7.3, including Figure 14.2.2.3-1. * “TSC Assistance Information” is changed to “TSC Assistance Container” in 14.3.7.3 and reference is added. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Inaccurate reference point ID will be kept in the specs between the NRM Server and the 3GPP network system. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 14.2.2.3, v | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

#### 14.2.2.3 On-network functional model for network resource management for 5G TSC

5G TSC refers to time sensitive communication service offered within the 5G system (i.e., without integration with a TSN system) by the 5GS for the UEs connected to the 5GS. The architecture for the 5G TSC is depicted in Figure 14.2.2.3-1. The SEAL NRM server acts as an AF towards the 5G Core Network and performs coordination of QoS flows to fulfill the end-to-end QoS requirements for the UEs involved in the TSC communication. It combines the roles of TSCTSF and TSC CNC (similar to the TSN CNC in the TSN integration case), which means that it controls the allocation of resources of TSC communication within the boundaries of the 5G domain.

Upon request from a VAL server via the NRM-S reference point it configures the TSC end-to-end QoS flows in the 5GS. In line with other SEAL service enablers the SEAL NRM server provides a RESTful interface on the NRM-S reference point. As a TSCTSF the SEAL NRM server interacts with the 5GS PCF over the N5 reference point to configure the 5G QoS and TSCAI parameters in the 5GS.



Figure 14.2.2.3-1: On-network functional model for network resource management for 5G TSC

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

#### 14.3.7.3 TSC stream creation procedure

This procedure allows the VAL server to create a TSC stream. The TSC stream creation procedure enables the VAL server to establish TSC connectivity with the required QoS between the UEs connected to the 5GS after the stream discovery procedure.

Pre-conditions:

1. Each UE has an established Ethernet PDU session for its DS-TT port MAC address.

2. Connectivity between the DS-TTs has been validated by the TSC stream availability discovery procedure.

3. NRM server maintains mapping from the traffic class to TSC QoS.



Figure 14.3.7.3-1: TSC stream creation procedure

1. NRM server receives a TSC stream creation request from a VAL server to create a TSC stream identified by a VAL Stream ID, between DS-TT ports in the stream specification and for the traffic class in the traffic specification.

2. NRM server calculates the schedule for the VAL Stream ID based on the information collected earlier from the 5GS via N5. It provides per-stream filtering and policing parameters (e.g. as defined in IEEE 802.1Q [IEEE8021Q]) used to derive the TSC QoS information and related flow information. NRM server also provides the forwarding rule (e.g. as defined in IEEE 802.1Q [IEEE8021Q]) used to identify the DS-TT MAC address of the corresponding PDU session. Based on the 5GS bridge delay information it determines the TSC QoS information and TSC Assistance information for the stream.

3. As a TSCTSF, the NRM server triggers via N5 the Npcf\_policy\_Authorization\_Create service operation as described in 3GPP TS 23.502 [2] for the TSC stream for both UL QoS flow (sender UE to UPF/bridge) and DL QoS flow (UPF/bridge to receiver UE). The AF request includes the DS-TT port MAC address, TSC QoS information, TSC Assistance Container- (3GPP TS 23.501 [1], cl.5.27.2.3), flow bit rate, priority, Service Data Flow Filter containing flow description including Ethernet Packet Filters. The QoS flow will be assigned for the PDU session for the source MAC address for the UL direction and for the PDU session for the destination MAC address for the DL direction. This information is delivered to the DS-TT by the 5GS.

Editor's note: Using gate control parameters for hold and forward buffering is FFS.

4. NRM server sends TSC stream creation response to the VAL server with the result of TSC stream creation for the VAL Stream ID.

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