**3GPP TSG-CT WG1 Meeting #130-eC1-21xxxx**

**Electronic meeting, 20-28 May 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.519** | **CR** | **0028** | **rev** | **4** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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 | **x** | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Extension of the scope of the TS | | | | | | | | | |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | IIoT | | | | |  | ***Date:*** | | | 2021-05-21 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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:*** | | S2-2102025 enables terminating PMIC and user plane node MIC to NEF in addition to NEF and hence change in TS 24.519 is required.  In addition, the PMIC can be used for PTP port management as well. | | | | | | | | |
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| ***Summary of change:*** | | The TS is modified to enable terminating PMIC and user plane node MIC to NEF and PTP port management. | | | | | | | | |
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| ***Consequences if not approved:*** | | User plane node MIC and PMIC cannot be delivered to/from NEF. PTP ports cannot be managed. | | | | | | | | |
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| ***Clauses affected:*** | | 1, 4 | | | | | | | | |
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|  | | **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:*** | |  | | | | | | | | |

# 1 Scope

The present document specifies the protocols of communication between:

a) a DS-TT and a TSN AF;

b) a NW-TT and a TSN AF;

c) a DS-TT and an NEF; and

d) a NW-TT and an NEF;

as specified in 3GPP TS 23.501 [2] for:

a) port management regarding Ethernet ports or PTP ports; and

b) user plane node management.

\*\*\*\*\* Next change \*\*\*\*\*

# 4 General

For time sensitive communication (TSC), a 5G system (5GS) can act as a user plane node of an external network or a 5GS can be independently used to enable TSC. The device-side TSN translator (DS-TT) is deployed at the UE-side edge and the network-side TSN translator (NW-TT) is deployed at the network-side edge (see 3GPP TS 23.501 [2]).

When integrated with IEEE TSN network, the TSN application function (TSN AF) is deployed to exchange user plane node information (i.e. TSN bridge information) with the centralized network configuration (CNC) as defined in IEEE Std 802.1Qcc-2018 [9]. The user plane node information includes port management information and user plane node management information. Port management information is related to Ethernet ports located in the DS-TT and NW-TT. User plane node management information is related to the NW-TT.

In order to support user plane node information exchange between TSN AF and CNC, the DS-TT, NW-TT, and TSN AF support procedures for Ethernet port management and user plane node management. Clause 5 describes details of the elementary procedures between TSN AF and DS-TT for Ethernet port management. Clause 6 describes details of the elementary procedures between TSN AF and NW-TT for Ethernet port management (clause 6.2) and user plane node management (clause 6.3).

A 5GS supports AF-requested time synchronization services. For this purpose, an NEF in the 5GS exposes 5GS capabilities to support the services as described in 3GPP TS 23.501 [2], which requires for the NEF to manage the user plane node and ports (either Ethernet ports or PTP ports) in the DS-TT and NW-TT for time synchronization. Therefore, the DS-TT, NW-TT, and NEF support procedures for port management and user plane node management. Clause 5 describes details of the elementary procedures between NEF and DS-TT for port management for time synchronization. Clause 6 describes details of the elementary procedures between NEF and NW-TT for port management (clause 6.2) and user plane node management (clause 6.3) for time synchronization.