**3GPP TSG-SA2 Meeting #161 *S2-2403421***

**26th February – 1st March, 2024 Athens, Greece *S2-2402204***

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.503** | **CR** | **1272** | **rev** | **1** | **Current version:** | **18.4.0** |  |
|  | | | | | | | | |
| *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:*** | Conditions of URSP rule enforcement reporting | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung, SK Telecom | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eUEPO | | | | |  | ***Date:*** | | | 2024-02-16 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 1. When certain conditions are met (for example, UE moves from EPC to 5GC, change of Allowed NSSAI or Configured NSSAI, change of LADN DNN availability, change of PLMN, etc), the UE (re-)evaluates the validities of the URSP in timely manner, based on the current specifications (i.e. 23.503 clause 6.1.3 and 24.526). Due to this URSP re-evaluation, the association of existing applications to the PDU Sessions can be changed. It is unclear whether the UE supporting URSP rule enforcement reporting shall report this when URSP re-evaluation causes the change of the association. 2. Even though URSP over EPS is supported in Rel-18, the URSP reporting is only supported in 5GC. It is unclear whether and when the UE shall report URSP enforcement for the PDN connection/PDU Session. | | | | | | | | |
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| ***Summary of change:*** | | It is proposed to clarify the conditions of triggering URSP rule enforcement reporting for URSP re-evaluation and clarify that the URSP re-evaluation cover the the cases of UE mobility from EPS to 5GS. | | | | | | | | |
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| ***Consequences if not approved:*** | | 1. It is unclear whether the URSP rule enforcement reporting is triggered by the URSP re-evaluation 2. It is unclear whether and when to report the URSP rule enforcement for the URSP rules that have been delivered over EPS. | | | | | | | | |
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| ***Clauses affected:*** | | 6.6.2.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 ... | | |
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| ***Other comments:*** | | The newly proposed text change is aligned with the CR1243R1. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* Start of Change \* \* \*

#### 6.6.2.4 Support of URSP rule enforcement reporting

This clause defines how and under what conditions the UE reports URSP rule enforcement to PCF so that PCF can be made aware when a given UE enforces specific URSP rule(s) and what actions the PCF may trigger upon the reception of such reporting.

In order to determine the URSP rule enforcement, for a UE indicating the capability of reporting URSP rule enforcement to network (see clause 4.2.2.2.2 of TS 23.502 [3]), the PCF may indicate in a URSP rule sent to the UE to send reporting of URSP rule enforcement (see clause 6.6.2.1).

A UE supporting URSP rule enforcement reporting shall report URSP rule enforcement to the SMF if a URSP rule includes an indication for reporting URSP rule enforcement and if Connection Capabilities is in the TD (see clause 6.6.2.1), when:

- the UE associates a newly detected application to a new PDU Session based on URSP evaluation result (see clause 6.6.2.3) for such a URSP rule, the UE shall include in the PDU Session Establishment Request (see clause 4.3.2.2.1 of TS 23.502 [3]) the Connection Capabilities contained in the Traffic descriptor of the associated URSP rule, or

- the UE associates a newly detected application to an existing PDU Session based on URSP evaluation result (see clause 6.6.2.3) for such a URSP rule, the UE shall send a PDU Session Modification Request (see clause 4.3.3.2 of TS 23.502 [3]) including the Connection Capabilities contained in the Traffic descriptor of the associated URSP rule.

- the UE changes its association of applications to PDU Session due to the re-evaluation of the such a URSP rule (as in 6.6.2.3), the UE shall send a PDU Session Establishment/Modification Request (see clause 4.3.3.2 of TS 23.502 [3]) including the URSP rule enforcement report (i.e. all Connection Capabilities contained in the Traffic descriptor of the associated URSP rule).

NOTE 1: The re-evaluation of the URSP rule also applies for the UE mobility from EPS to 5GS. In other words, if the UE has association(s) of applications to a PDN Connection/PDU Session in EPC, for such a URSP rule, the UE sends a PDU Session Establishment Request (for the case without N26, see the step 9 of Figure 4.11.2.3-1) or PDU Session Modification Request (for the case with N26, see clause 4.3.3.2 of TS 23.502 [3]) including the URSP rule enforcement report (i.e. all Connection Capabilities contained in the Traffic descriptor of the associated URSP rule).

NOTE 2: UE reporting of URSP rule enforcement can increase the amount of signalling in the network. Use of this feature is recommended to be restricted to URSP rules for specific application traffic on specific UEs based on the deployment choices of the operator.

If the UE enforces several URSP rules for multiple applications, and these multiple applications' traffic are all associated to the same PDU session, in order to reduce the number of uplink NAS messages, the UE may include more than one URSP rule enforcement report in one PDU Session Modification Request to 5GC (see clause 4.3.3.2 of TS 23.502 [3]).

NOTE 3: A rule with the "match-all" traffic descriptor cannot contain Connection Capabilities in the Traffic descriptor. The format and values of the Traffic descriptor component type identifier are defined in clause 5.2 of TS 24.526 [19].

The PCF receives reporting from URSP rule enforcement for a given UE via Policy Control Request Triggers (see clause 6.1.3.5).

When the PCF serving the PDU session is not the same as the PCF serving the UE, the PCF serving the UE subscribes to the PCF serving the PDU session to receive the reporting of URSP rule enforcement for a given UE via PCF event reporting (see clause 6.1.3.18 and the related procedure in clause 4.16.16 of TS 23.502 [3]).

For LBO roaming session case, the H-PCF for the UE sends the PCRT for the UE reporting of URSP rule enforcement to the V-PCF for the UE during the UE Policy Association Establishment or Modification.

The PCF for the UE may check whether the value of URSP rule enforcement and its PDU Session parameters (e.g. DNN/S-NSSAI) are compliant to the URSP rule of the UE. If the PCF for the UE found an inconsistency, the PCF for the UE may perform appropriate actions (e.g. initiating slice replacement procedure).

Policy control decisions based on awareness of URSP rule enforcement are described in clause 6.1.6.