**3GPP TSG-CT3 Meeting #130C3-234224**

**Xiamen, China, 9 - 13 October, 2023 (Revision of C3-23xxxx)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.513** | **CR** | **0497** | **rev** | **-** | **Current version:** | **18.3.0** |  |
|  | | | | | | | | |
| *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 |  | Core Network | **X** |

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| ***Title:*** | Procedure of Awareness of URSP Rule Enforcement | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eUEPO | | | | |  | ***Date:*** | | | 2023-09-20 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The procedure of awareness of URSP rule enforcement is defined in clause 4.16.16 of TS 23.502 and stage 3 procedure needs to be defined. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The procedure of awareness of URSP rule enforcemen is defiend. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incomplete specification | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.8(new), 5.8.1(new), 5.8.2(new), 8.4A | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | The CR doesn’t impact the OpenAPI file. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

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

## 5.8 Awareness of URSP Rule Enforcement

### 5.8.1 General

Clause 5.8 specifies the detailed call flows for awareness of URSP rule enforcement over the Npcf service-based interfaces and their relationship with the flow level signalling in the 5G system.

NOTE: In the Home Routed roaming case, the H-PCF for a UE interacts with the PCF for a PDU session in the HPLMN.

Editor's Note: The description of LBO roaming scenarios is FFS.

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

### 5.8.2 Forwarding of URSP Rule Enforcement Information



Figure 5.8.2-1: Forwarding of URSP Rule Enforcement Information

This procedure concerns both non-roaming and Home Routed roaming scenarios. In the Home Routed roaming case, the H-PCF for the UE interacts with the PCF for a PDU session in the HPLMN.

1. An UE Policy Association is established as described in clause 5.1.1.

2. If the UE indicated the support of URSP rule enforcement, the PCF for the UE may indicate in one or more URSP rule(s) sent to the UE to send reporting of URSP rule enforcement as described in clause 4.2.2.2.3.1 of 3GPP TS 29.525 [31]. For the PDU sessions related to the URSP rule(s) whose enforcement has been requested, the PCF for the UE triggers the discovery of the PCF(s) for the PDU session as described in step 4.

3. The SMF establishes a SM Policy Association as described in clause 5.2.1. If the "URSPEnforcement" feature is supported, the SMF may include the URSP rule enforcement information provided by the UE and additional PDU session information as specified in clause 4.2.2.2 of 3GPP TS 29.512 [9]. The PCF, in the response, may subscribe to URSP rule enforcement changes as specified in clause 5.6.3.6 of 3GPP TS 29.512 [9].

4. The PCF for the UE discovers the PCF(s) for a PDU Session that handle(s) the respective UE traffic as described in clause 8.4a.

5-6. When the PCF for the UE receives the notification about a PDU session that may be handling the traffic of a URSP rule, if the "URSPEnforcement" feature is supported, the PCF for the UE subscribes to the PCF(s) for the PDU Session for notifications about UE reporting of URSP rule enforcement information using the Npcf\_PolicyAuthorization\_Subscribe service operation as described in 3GPP TS 29.514 [10] clause 4.2.6.9.

7-8. If not already provisioned, the PCF for a PDU session provisions the Policy Control Request Trigger to request the SMF to detect "UE reporting of URSP rule enforcement information" as defined in clause 4.2.6.4 of 3GPP TS 29.512 [9].

If the PCF for the PDU session contains URSP rule enforcement information (e.g., it was received during SM Policy Association establishment), the PCF for the PDU session notifies the PCF for the UE as described in steps 13-14.

9. When the PCF for a PDU session receives a UE report of URSP rule enforcement via PDU session modification, the Policy Control Request Trigger is met.

10-11. The SMF notifies the PCF for a PDU session using the Npcf\_SMPolicyControl\_Update service operation as described in clause 4.2.4.2 of 3GPP TS 29.512 [9].

12-13. The PCF for the PDU Session notifies the PCF for the UE about the detected event using the Npcf\_PolicyAuthorization\_Notify service operation by sending an HTTP POST request to the notification URI received in the subscription, and the PCF for the UE responds with "204 No Content", as described in 3GPP TS 29.514 [10] clause 4.2.5.25.

14. The PCF for the UE checks opeartor policies and then may make policy control decisions, e.g. may adjust the URSP rules when needed, based on the notified URSP rule enforcement information.

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

## 8.4A PCF for a PDU session discovery and selection by the PCF for a UE

When the PCF for a UE determines that the AM policy, e.g. service area restriction, depends on PDU session traffic events, e.g. the application start and application stop for an application Id, or makes policy control decisions based on awareness of URSP rule enforcement for an application, the PCF for a UE needs to discover the PCF for a PDU session handling the concerned PDU session(s) to subscribe to the notification of the PDU session traffic related event(s) using the Npcf\_PolicyAuthorization service. The following alternatives are specified for the discovery and selection of the PCF for a PDU session by the PCF for a UE:

1) The PCF for a UE may subscribe with the BSF to the notification of the binding information registration/deregistration of the PCF for a PDU session as defined in 3GPP TS 29.521 [22]; or

2) The PCF for a UE may subscribe with the PCF for the PDU session to the notification of PDU session established/terminated events for certain DNN and S-NSSAI combination(s) as follows:

1. The PCF for a UE provides to the AMF the PCF for a UE callback information (e.g. callback URI information where it listens to notifications of PDU session established/terminated events) and the matching S-NSSAI and DNN combination(s), as specified in 3GPP TS 29.507 [7].

2. The AMF forwards to the SMF, for the PDU session(s) matching the received S-NSSAI and DNN combination(s), the PCF for a UE callback information, as specified in 3GPP TS 29.502 [52].

3. The SMF notifies the PCF for a PDU session of the received PCF for a UE callback information, as specified in 3GPP TS 29.512 [9].

4. When the PCF for a PDU session becomes aware that a SM Policy Association is receiving the callback URI for the PCF for a UE, the PCF for a PDU session sends the Npcf\_PolicyAuthorization\_Notify service operation to the received PCF for a UE callbck URI to notify the PCF for a UE of the PCF for a PDU session address(es) and SBA binding information as specified in clause 4.2.5.22 of 3GPP TS 29.514 [10].

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