**3GPP TSG-CT WG3 Meeting #134C3-242250r1**

**Changsha, Hunan Province, China, 15th Apr 2024 - 19th Apr 2024**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **29.513** | **CR** | **0541** | **rev** |  | **Current version:** | **18.5.0** |  |
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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:*** | URSP rule enforcement reports in roaming | | | | | | | | | |
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| ***Source to WG:*** | Intel | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
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| ***Work item code:*** | eUEPO | | | | |  | ***Date:*** | | | 2024-04-17 |
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| ***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:*** | | To support URSP rule enforcement in roaming scenarios, SA2 has agreed in CR 4752 to TS 23.502 (see S2-2403465) to support non roaming, HR roaming and LBO roaming scenarios.  Accordingly, this CR proposes to update the procedures for Forwarding of URSP Rule Enforcement Information and remove the related EN. | | | | | | | | |
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| ***Summary of change:*** | | Update the procedures for Forwarding of URSP Rule Enforcement Information. | | | | | | | | |
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| ***Consequences if not approved:*** | | Stage 3 not aligned with stage 2. | | | | | | | | |
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| ***Clauses affected:*** | | 5.8.1, 5.8.2, 5.8.3 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | | Rev1   * Add LBO in 5.8.3. | | | | | | | | |

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

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

NOTE 2: In the LBO roaming roaming case, the V-PCF for a UE interacts with the PCF for a PDU session in the VPLMN.

### 5.8.2 Forwarding of URSP Rule Enforcement Information (non-roaming and Home Routed roaming)

Figure 5.8.2-1: Forwarding of URSP Rule Enforcement Information (non-roaming and Home Routed roaming)

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 (H-)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 (H-)PCF for the UE triggers the discovery of the PCF(s) for the PDU session as described in step 4.

3. The (H-)SMF establishes a SM Policy Association as described in clause 5.2.1. If the "URSPEnforcement" feature is supported, the (H-)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 for the PDU session, in the response, may subscribe with the (H-)SMF to the report of URSP rule enforcement by providing the Policy Control Request Trigger "UE reporting of URSP rule enforcement information" as specified in clause 5.6.3.6 of 3GPP TS 29.512 [9].

4. The (H-)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 (H-)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 (H-)PCF for the UE subscribes to the PCF 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 (H-)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 (H-)PCF for the UE as described in steps 12-13.

9. When the (H-)SMF receives a UE report of URSP rule enforcement via PDU session modification, the Policy Control Request Trigger "UE reporting of URSP rule enforcement information" is met.

10-11. The (H-)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 (H-)PCF for the UE about the detected URSP rule enforcement event using the Npcf\_PolicyAuthorization\_Notify service operation by sending an HTTP POST request to the notification URI received in the subscription in step 5, and the (H-)PCF for the UE responds with "204 No Content", as described in 3GPP TS 29.514 [10] clause 4.2.5.25.

14. The (H-)PCF for the UE checks operator 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.

### 5.8.3 Forwarding of URSP Rule Enforcement Information (LBO roaming)



Figure 5.8.3-1: Forwarding of URSP Rule Enforcement Information (LBO roaming)

This procedure concerns LBO roaming scenarios.

1. An UE Policy Association is established as described in clause 5.1.1. The H-PCF for the UE may send the "URSP\_ENF\_INFO" Policy Control Request Trigger to the V-PCF for the UE to request the forwarding of URSP rule enforcement information as specified in clause 4.2.2.2.3 of 3GPP TS 29.525 [31].

2. If the UE indicated the support of URSP rule enforcement, the H-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 V-PCF for the UE triggers the discovery of the PCF(s) for the PDU session as described in step 4.

3. The V-SMF establishes a SM Policy Association as described in clause 5.2.1. If the "URSPEnforcement" feature is supported, the V-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 for the PDU session, in the response, may subscribe with the V-SMF to the report of URSP rule enforcement by providing the Policy Control Request Trigger "UE reporting of URSP rule enforcement information" as specified in clause 5.6.3.6 of 3GPP TS 29.512 [9].

4. The V-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 V-PCF for the UE receives the notification about a PDU session in LBO mode that may be handling the traffic of a URSP rule, if the "URSPEnforcement" feature is supported, the V-PCF for the UE subscribes to the PCF 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 V-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 V-PCF for the UE as described in steps 12-13.

9. When the V-SMF receives a UE report of URSP rule enforcement via PDU session modification, the Policy Control Request Trigger "UE reporting of URSP rule enforcement information" is met.

10-11. The V-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 V-PCF for the UE about the detected URSP rule enforcement event using the Npcf\_PolicyAuthorization\_Notify service operation by sending an HTTP POST request to the notification URI received in the subscription in step 5, and the V-PCF for the UE responds with "204 No Content", as described in 3GPP TS 29.514 [10] clause 4.2.5.25.

14-15. If the V-PCF for the UE has received the request to forward URSP rule enforcement information from the H-PCF in step 1 and the V-PCF for the UE is notified about the detected URSP rule enforcement event in step 12-13, then the V-PCF reports the received information from the PCF for the PDU Session to the H-PCF using the Npcf\_UEPolicyControl\_Update service operation as specified in clause 4.2.3 of 3GPP TS 29.525 [31].

16. The H-PCF for the UE checks operator 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.

\* \* \* End Change \* \* \* \*