**3GPP TSG-WG SA2 Meeting #163 *S2-2405926***

**Jeju, Korea, May 27 – May 31, 2024**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  | **23.501** | **CR** | **5398** | **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:***  | Spending Limits for UE Policies in Roaming scenario |
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| ***Source to WG:*** | Oracle, Ericsson, Verizon UK Ltd |
| ***Source to TSG:*** | SA2 |
|  |  |
| ***Work item code:*** | TEI19\_SLUPiR |  | ***Date:*** | 2024-05-02 |
|  |  |  |  |  |
| ***Category:*** | ***B*** |  | ***Release:*** | *Rel-19* |
|  | *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 canbe 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)* |
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| ***Reason for change:*** | This CR addresses aspects of CHF selection. In particular, it defines in the roaming scenario, passing address information of the proper CHF to the AMF and H-SMF respectively. This is to allow proper CHF selection by the AMF and H-SMF respectively. |
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| ***Summary of change:*** | This CR defines in the roaming scenario, passing address information of the proper CHF to the AMF and H-SMF respectively.NOTE: this CR is a clean version of S2-2400444r02 from SA2 #160AH. |
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| ***Consequences if not approved:*** | Not possible to apply UE policies functionality of R18 SLAMUP in a roaming scenario. |
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| ***Clauses affected:*** | 6.3.11 |
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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:*** |  |

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

### 6.3.11 CHF discovery and selection

The CHF discovery and selection function is supported by the SMF, the AMF, the SMSF and the PCF. It is used by the SMF to select a CHF that manages the online charging or offline charging for a PDU Session of a subscriber. It is used by the AMF to select a CHF that manages the online charging or offline charging for 5G connection and mobility of a subscriber. It is used by the SMSF to select a CHF that manages the online charging or offline charging for the SMS over NAS transactions of a subscriber. It is used by the PCF to select a CHF that manages the spending limits for a subscriber and/or a PDU Session of a subscriber.

For the PCF to select the CHF, the address(es) of the CHF, including the Primary CHF address and the Secondary CHF address, may be:

- stored in the UDR as part of the PDU Session policy control subscription information as defined in clause 6.2.1.3 of TS 23.503 [45].

- stored in the UDR as part of the UE context policy control subscription information as defined in clause 6.2.1.3 of TS 23.503 [45].

- stored in the UDR as part of the Access and Mobility policy control subscription information as defined in clause 6.2.1.3 of TS 23.503 [45].

- locally configured in the PCF based on operator policies.

- discovered using NRF as described in in clause 6.1 of TS 32.290 [67].

NOTE 1: The operator can perform the above UDR provisioning or local configuration in a consistent manner such that the same CHF address is used for SM policy, AM policy and UE policy. If NRF discovery is used, it is up to the PCF logic (or SCP logic when working in Delegated Discovery mode) and operator configuration to guarantee the CHF address consistency.

The address(es) of the CHF shall be applicable for all services provided by the CHF.

The CHF address(es) that a stored in the UDR or configured in the PCF may be complemented by the associated CHF instance ID(s) and CHF set ID(s) (see clause 6.3.1.0) stored or configured in the same location.

The CHF address(es) retrieved from the UDR and possible associated CHF instance ID(s) and CHF set ID(s) take precendence over the locally configured CHF address(es) and possible associated CHF instance ID(s) and CHF set ID(s), and over the CHF address(es) discoverred by the NRF. If no CHF address(es) is received from the UDR, the PCF selects, based on operator policies, either the CHF addresse(es) provided by NRF, or the locally configured CHF address(es) and possible associated CHF instance ID(s) and CHF set ID(s).

If the PCF has a CHF set ID but no CHF instance ID associated to the CHF address(es) in the same location, the CHF instance within the CHF set may change. If the PCF is not able to reach the CHF address(es), it should query the NRF for other CHF instances within the CHF set.

If the PCF received a CHF set ID and a CHF instance ID associated to the CHF address(es) in the same location, the CHF service instance within the CHF may change. If an PCF is not able to reach the CHF address(es), it should query the NRF for other CHF service instances within the CHF.

In the non-roaming case it is possible to either:

a) Have the SMF select the same CHF that is selected by the PCF for a PDU Session. In this case, operator policies in the PCF indicate it to provide the selected CHF address(es) and, if available, the associated CHF instance ID(s) and/or CHF set ID(s) in the PDU Session related policy information to the SMF as described in Table 6.4-1 of TS 23.503 [45], and the SMF applies the CHF address and if available, the associated CHF instance ID(s) and/or CHF set ID(s) passed from the PCF as defined in clause 5.1.8 of TS 32.255 [68] or

b) Have the SMF select a CHF based on other criteria as defined in clause 5.1.8 of TS 32.255 [68].

In the Home Routed roaming case, the above text shall apply with the change that SMF is replaced by H-SMF, PCF is replaced by H-PCF, CHF is replaced by H-CHF, and for b) the other criteria is defined in clause 5.1.9.2 of TS 32.255 [68].In the non-roaming case, it is possible to either:

a) Have the AMF select the same CHF that is selected by the PCF for a UE. In this case operator policies in the PCF indicate it to provide the selected CHF address(es) and, if available, the associated CHF instance ID(s) and/or CHF set ID(s) in the Access and mobility related policy information and/or in the UE Policy Association supplementary information to the AMF as described in Table 6.5-1 and Table 6.6.7-1 of TS 23.503 [45] respectively, and the AMF applies the CHF address and if available, the associated CHF instance ID(s) and/or CHF set ID(s) passed from the PCF as defined in clause 5.1.3 of TS 32.256 [114] or

b) Have the AMF select a CHF based on other criteria as defined in clause 5.1.3 of TS 32.256 [114].

In the roaming case, the above text shall apply with the change that PCF is replaced by H-PCF, CHF is replaced by H-CHF, operator policies in the PCF are inter operators SLA and operator policies in the H-PCF, Access and mobility related policy information is not relevant, UE Policy Association supplementary information is beteen the AMF and the V-PCF and for b) the other criteria is defined in clause 5.1.5.2 of TS 32.256 [114].

NOTE 2: As described in clause 5.1.2 of TS 32.256 [114], In roaming scenario, the AMF needs to collect charging information per in-bound roamer UE registration in 5GS, for both V-PLMN and Home PLMN. Meaning, AMF needs to report charging information to both V-CHF and H-CHF. This is regardless of which architecture is selected by the AMF for a roaming UE out of the two architectures described in clause 4.2.2 of TS 32.256 [114].How the CHF is selected by the SMSF is defined in clause 5.4 of TS 32.274 [118].

If the NF consumer performs discovery and selection via NRF, the CHF selection function in NF consumers selects a CHF instance based on the available CHF instances obtained from the NRF.

The CHF selection functionality in NF consumer or in SCP should consider one of the following factors:

1. CHF Group ID of the UE's SUPI.

NOTE 2: The NF Consumer can infer the CHF Group ID the UE's SUPI belongs to, based on the results of CHF discovery procedures with NRF.

2. SUPI; the NF consumer selects a CHF instance based on the SUPI range the UE's SUPI belongs to or based on the results of a discovery procedure with NRF using the UE's SUPI as input for CHF discovery.

In the case of delegated discovery and selection in SCP, the NF consumer shall include all available factors in the request towards SCP.

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