**3GPP TSG-SA5 Meeting #138-e *S5-214337***

**e-meeting, 23 - 31 August 2021** Revision of S5-20xxxx

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.291** | **CR** | **0334** | **rev** | **-** | **Current version:** | **16.8.1** |  |
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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:*** | Support of stateless CHFs | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | SA5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2021-08-30 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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)* | |
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| ***Reason for change:*** | | In the previous CT4 meeting it was agreed that redirect responses shall contain a response body with a media type of "application/json", and to accordingly update corresponding 5G SBI TSs.  Furthermore, in TS 29.571 a new data type was specified: "RedirectResponse" to be used as the JSON object to be included in redirect responses (see C4-212531). | | | | | | | | |
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| ***Summary of change:*** | | Support "RedirectResponse" data type. | | | | | | | | |
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| ***Consequences if not approved:*** | | redirectiont to alternative CHF not possible | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.2.2, 5.2.2.3, 5.2.2.4, 5.2.2.5 | | | | | | | | |
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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:*** | |  | | | | | | | | |

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| **First change** |

#### 5.2.2.2 Nchf\_ConvergedCharging\_Create Operation

The Nchf\_ConvergedCharging\_Create service operation provides means for NF (CTF) to request quotas for service delivery or initial report of service usage.

The following procedures using the Nchf\_ConvergedCharging\_Create service operation are supported:

- No existing charging data resource.



Figure 5.2.2.2-1: Nchf\_ ConvergedCharging\_Create Service Operation

1. NF (CTF) sends a Nchf\_ConvergedCharging\_Create request to the CHF to create resource for charging. Requested quota and notification URI for Nchf\_ConvergedCharging\_Notify service operation are included in the request body.

2a. At successful operation, "201 Created" response is returned. In the "201 Created" response, the CHF includes a Location header field and the allocated quota in the body. The Location header field shall contain the URI of the created resource. The NF (CTF) shall use the URI received in the Location header in subsequent requests to the CHF for the same PDU session.

2b. On failure or redirection, one of the HTTP status code listed in Table 6.1.3.2.3.1-3 shall be returned. For a 4xx/5xx response, the message body shall contain a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.1.7.3-1. If the received HTTP POST request needs to be redirected, a HTTP 3xx response shall be sent.

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| **Next change** |

#### 5.2.2.3 Nchf\_ConvergedCharging\_Update Operation

The Nchf\_ConvergedCharging\_Update service operation provides means for NF (CTF) to update the charging data.

The following procedures using the Nchf\_ConvergedCharging\_Update service operation are supported:

- the granted service units for one rating group are spent

- expiry of granted service units' validity time

- charging events occur, which might affect the rating of the current service

- receiving re-authorization notification from CHF



Figure 5.2.2.3-1: Nchf\_ConvergedCharging\_Update Service Operation

1. NF (CTF) sends a Nchf\_ConvergedCharging\_Update request to the CHF. The {ChargingDataRef } in the URI identifies the "Charging Data" to be updated. The requested service unit and previous used service unit is included in the request body.

2a. At successful operation, "200 OK" response is returned. The CHF includes the granted service unit in the "200 OK" response.

2b. On failure or redirection, one of the HTTP status code listed in Table 6.1.3.3.4.2.2-2 shall be returned. For a 4xx/5xx response, the message body shall contain a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.1.7.3-1. If the received HTTP POST request needs to be redirected, a HTTP 3xx response shall be sent.

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| **Next change** |

#### 5.2.2.4 Nchf\_ConvergedCharging\_Release Operation

The Nchf\_ConvergedCharging\_Release service operation provides means for NF (CTF) to terminate charging Session.

The following procedures using the Nchf\_ConvergedCharging\_Release service operation are supported:

- Expiry of unit count inactivity timer in NF Consumer.

- Abort notification is received from CHF.

- Service termination in NF Consumer.



Figure 5.2.2.4-1: Nchf\_ConvergedCharging\_Release Service Operation

1. NF(CTF) sends a Nchf\_ConvergedCharging\_Release request to the CHF. The {ChargingDataRef } in the URI identifies the "Charging Data" to be updated and then released. The final used service unit is included in the request body.

2a. At successful operation, "204 No Content" response is returned.

2b. On failure or redirection, one of the HTTP status code listed in Table 6.1.3.3.4.3.2-2 shall be returned. For a 4xx/5xx response, the message body shall contain a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.1.7.3-1. If the received HTTP POST request needs to be redirected, a HTTP 3xx response shall be sent.

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| **Next change** |

#### 5.2.2.5 Nchf\_ConvergedCharging\_Notify Operation

The Nchf\_ConvergedCharging\_Notify service operation provides means for CHF to notify the NF(CTF) to update or terminate charging of the PDU Session.

The following procedures using the Nchf\_ConvergedCharging\_Notify service operation are supported:

- CHF determines re-authorization.

- CHF determines abort of charging.



Figure 5.2.2.5-1: Nchf\_ConvergedCharging\_Notify Service Operation

1. The CHF sends a Nchf\_ConvergedCharging\_Notify request to the NF (CTF). The {notifyUri} identifies the notification URI which is sent in the Nchf\_ConvergedCharging\_Create request. The notification type is included in the request body.

2a. At successful operation, "204 No Content" response is returned.

2b. On failure , one of the HTTP status code listed in Table 6.1.5.2.3.1-2 shall be returned. For a 4xx/5xx response, the message body shall contain a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.1.7.3-1. If the received HTTP POST request needs to be redirected, a HTTP 3xx response shall be sent.

After successful operation, when the NF Service Consumer receives a Charging Notify Request while not waiting for any Charging Data Response from the CHF, CTF can send a new Charging Data Request.

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| **End of Change** |