**3GPP TSG-SA5 Meeting #132e *S5-204235rev4***

**e-meeting 17th 28th August 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **32.255** | **CR** | **0246** | **rev** | **1** | **Current version:** | **16.5.0** |  |
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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:***  | architecture figures and description about CHF selection. |
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| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | S5 |
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| ***Work item code:*** | TEI16, 5GS\_Ph1-DCH |  | ***Date:*** | 2020-8-26 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | Rel-16 |
|  | *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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | 1. In TS 32.255 clause 4.1.1 and 4.1.2, it shows the 5G System high level architecture and the 5G System high level Roaming Home Routed architecture, which refer to TS 23.501 clause 4.2.3 and 4.2.4. The architectures have been updated in TS 23.501 version 16.5.0. So it’s needed to update the architectures figures in TS 32.255 to keep consistency.
2. In Release 16, the SCP and indirect communicaiton have been introduced and it’s mentioned that the CHF selection functionality can be in NF consumer or in SCP in TS 23.501 clause 6.3.11. So it’s needed to add description about that the CHF selection functionality can be in NF consumer or in SCP in TS 32.255 to keep consistency.
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| ***Summary of change:*** | 1. Update the architecture figures in TS 32.255 clause 4.1.1 and 4.1.2, to keep consistency with TS 23.501.
2. Add description about that the CHF selection functionality can be in SCP in TS 32.255 to keep consistency with TS 23.501.
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| ***Consequences if not approved:*** | Can not align with other specifications. |
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| ***Clauses affected:*** | 3.3, 4.1.1, 4.1.2 and 5.1.8 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  |  |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  |  |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  |  |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| **First change** |

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [100] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [100].

5GC 5G Core Network

5GS 5G System

ABMF Account Balance Management Function

AF Application Function

AMF Access and Mobility Management Function

ATSSS Access Traffic Steering, Switching, Splitting

AUSF Authentication Server Function

BD Billing Domain

CCS Converged Charging System

CDF Charging Data Function

CGF Charging Gateway Function

CHF Charging Function

CP Control Plane

CTF Charging Trigger Function

DNN Data Network Name

FBC Flow Based Charging

GPSI Generic Public Subscription Identifier

GUAMI Globally Unique AMF Identifier

MA Multi-Access

MPTCP Multi-Path TCP Protocol

N3IWF Non-3GPP InterWorking Function

NE Network Element

NEF Network Exposure Function

NF Network Function

NRF Network Repository Function

NSSF Network Slice Selection Function

OCF Online Charging Function

OCS Online Charging System

PCC Policy and Charging Control

PCF Policy Control Function

PEI Permanent Equipment Identifier

QBC QoS flow Based Charging

QFI QoS Flow Identifier

SCP Service Communication Proxy

SDF Service Data Flow

SMF Session Management Function

SSC Session and Service Continuity

SUPI Subscription Permanent Identifier

TNAN Trusted Non-3GPP Access Network

TNAP Trusted Non-3GPP Access Point

UDM Unified Data Management

UDR Unified Data Repository

UPF User Plane Function

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| **Second change** |

### 4.1.1 Non-roaming reference architecture

Figure 4.1.1.1 shows the 5G System high level architecture as defined in TS 23.501 [200] for 5G data connectivity, in the service-based representation for Control Plane (CP) Network Functions.



**Figure 4.1.1.1: 5G System architecture**

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| **Third change** |

### 4.1.2 Roaming Home Routed reference architecture

Figure 4.1.2.1 shows the 5G System high level Roaming Home Routed architecture as defined in TS 23.501 [200] for 5G data connectivity, in the service-based representation for Control Plane (CP) Network Functions.



Figure 4.1.2.1: Roaming 5G System architecture - home routed scenario in service-based interface representation

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| **Forth Change** |

### 5.1.8 CHF selection

The CHF selection, i.e. CHF address determination, by the SMF is done at the PDU session establishment, this selection shall be based on the following and with this priority order (highest to lowest):

- CHF address(es) provided by the PCF for the PDU session.

- UDM provided charging characteristics.

- NRF based discovery.

- SMF locally provisioned charging characteristics.

This means that if there are PCF provided CHF address(es) these shall be used, otherwise if the UDM provides charging characteristics these shall be used. If neither of these results in CHF address(es) the NRF can be used to discover CHF instance(s), and as a last resource the SMF locally provisioned charging characteristics shall be used.

When NRF is used for the CHF selection, and the PDU session charging method indicates "offline only" for the PDU session, CHF instance(s) supporting "offline only" charging service instances may be selected.

Regarding NRF is used for the CHF selection, the SMF can use NRF to select the CHF instance directly, or it can delegate CHF discovery and selection to the SCP in indirect communication model D. Delegated discovery and selection in SCP is specified in clause 6.3.11 of TS 23.501 [200].

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| **End of Change** |