**3GPP TSG-SA5 Meeting #155 *S5-243042***

Jeju, South Korea, 27 - 31 May 2024 Revision of S5-25xxxx

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.255** | **CR** | **0530** | **rev** | **1** | **Current version:** | **18.3.0** |  |
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| *For* [***HELP***](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:*** | Rel-18 CR 32.255 Correction on architecture reference | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI18 | | | | |  | ***Date:*** | | | 2024-05-30 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | The High-level 5G System architecture keeps updating in SA2. To keep aligned with SA2, it is recommended to:  1. have a specific reference to the figure number.  2. update the figure based on the corresponding release if the figure have a copy in the charging specification. | | | | | | | | |
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| ***Summary of change:*** | | 1. Add the figure number for figures that is adopted from other specifications.  2. Update the figure based on the latest verion in this release, i.e. TS 23.501 version 18.5.0. | | | | | | | | |
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| ***Consequences if not approved:*** | | The High-level 5G System architecture in the charging specification is incorrect. | | | | | | | | |
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| ***Clauses affected:*** | | 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.1.7, 4.1.8, 4.1.9 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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** |

### 4.1.1 Non-roaming reference architecture

Figure 4.1.1.1 shows the 5G System high level architecture as defined in Figure 4.2.3-1 TS 23.501 [200] for 5G data connectivity, in the service-based representation for Control Plane (CP) Network Functions.



**Figure 4.1.1.1: Non-Roaming 5G System architecture**

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| **Next 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 Figure 4.2.4-3 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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| **Next change** |

### 4.1.3 Interworking with EPC architecture

Figure 4.1.3.1 shows the non-roaming architecture for interworking between 5GS and EPC/E-UTRAN as defined in Figure 4.3.1-1 TS 23.501 [200] for 5G data connectivity.



Figure 4.1.3.1: Non-roaming architecture for interworking between 5GS and EPC/E-UTRAN

NOTE: N26 interface is an inter-CN interface between the MME and 5GS AMF in order to enable interworking between EPC and the NG core. Support of N26 interface in the network is optional for interworking.

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| **Next change** |

### 4.1.4 Architecture reference for Non-3GPP Accesses

Figure 4.1.4.1 shows the non-roaming architecture for 5G Core Network with untrusted non-3GPP access as defined in Figure 4.2.8.2.1-1 TS 23.501 [200] for 5G data connectivity.

Figure 4.1.4.1: Non-roaming architecture for Untrusted Non-3GPP Accesses

This reference architecture supports service based interfaces for AMF, SMF and other NFs not represented in the figure Figure 4.1.4.1.

Figure 4.1.4.2 shows the non-roaming architecture for 5G Core Network with trusted non-3GPP access as defined in Figure 4.2.8.2.1-2 TS 23.501 [200] for 5G data connectivity.



Figure 4.1.4.2: Non-roaming architecture for 5G Core Network with trusted non-3GPP access

The UE is connected to the 5G Core Network over non-3GPP access. This reference architecture supports service based interfaces for AMF, SMF and other NFs not represented in the figure 4.1.4.2.

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| **Next change** |

### 4.1.5 Architecture for deployments topologies with specific SMF Service Areas

#### 4.1.5.1 Non-roaming architecture with an I-SMF insertion without ULCL/BP

Figure 4.1.5.1 shows the 5G System high level non-roaming architecture, as defined in Figure 5.34.2.2-1 TS 23.501 [200], with an I-SMF insertion to the PDU Session without UL-CL/BP, using reference point representation.



Figure 4.1.5.1: Non-roaming architecture with I-SMF insertion to the PDU Session in reference point representation, with no UL-CL/BP

#### 4.1.5.2 Non-roaming architecture with an I-SMF insertion with ULCL/BP

Figure 4.1.5.2 shows the 5G System high level non-roaming architecture, as defined in Figure 5.34.2.2-2 TS 23.501 [200], for an I-SMF insertion to the PDU Session with UL-CL/BP, using reference point representation.



Figure 4.1.5.2: Non-roaming architecture with I-SMF insertion to the PDU Session in reference point representation, with UL-CL/BP

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| **Next change** |

### 4.1.7 Architecture reference for Wireline Access network

Figure 4.1.7.1 shows the non- roaming architecture for 5G Core Network for 5G-RG with Wireline 5G Access network and NG RAN as defined in Figure 4.2.8.4-1 TS 23.501 [200] for 5G data connectivity.



Figure 4.1.7.1: Non- roaming architecture for 5G Core Network for 5G-RG with Wireline 5G Access network and NG RAN

The 5G-RG can be connected to 5GC via W-5GAN, NG RAN or via both accesses. The reference architecture in Figure 4.1.7.1 shows service based interfaces for AMF, SMF and other NFs are not represented in this figure.

Non- roaming architecture for 5G Core Network for FN-RG with Wireline 5G Access network is specified in TS 23.501 [200].

A 5G-RG connecting via W-5GAN or NG-RAN access towards 5GC can provide connectivity for a UE behind the 5G-RG to access an N3IWF or TNGF.

Non-roaming architecture for UE behind 5G-RG using trusted N3GPP access is specified in Figure 4.10-1 of TS 23.316 [203].

Architecture for UE behind 5G-RG using untrusted N3GPP access is specified in Figure 4.10-2 of TS 23.316 [203].

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| **Next change** |

### 4.1.8 Roaming Local Breakout reference architecture

Figure 4.1.8.1 shows the 5G System high level Roaming Local Breakout architecture as defined in Figure 4.2.4-1 TS 23.501 [200] for 5G data connectivity, in the service-based representation for Control Plane (CP) Network Functions.



Figure 4.1.8.1: Roaming 5G System architecture- local breakout scenario in service-based interface representation

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| **Next change** |

### 4.1.9 Architecture reference for 5MBS

Figure 4.1.9.1 shows the non-roaming architecture for 5G Multicast and Broadcast Service as defined in Figure 5.1-2 TS 23.247 [204] for 5G data connectivity.



Figure 4.1.9.1: Non-roaming architecture for 5G Multicast and Broadcast Service in reference point representation

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| **End of change** |