**3GPP TSG-SA5 Meeting #157 *S5-245917***

Hyderabad, India, 14 - 18 October 2024

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **32.240** | **CR** | **0497** | **rev** | **2** | **Current version:** | **19.1.0** |  |
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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:***  | Rel-19 32.240 Correction on CHF deployment models |
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| ***Source to WG:*** | Huawei, Nokia |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | TEI18 |  | ***Date:*** | 2024-1016 |
|  |  |  |  |  |
| ***Category:*** | **A** |  | ***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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | The architecture figures described in informative Annex F is not clear enough to differentiated the two deployment options. |
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| ***Summary of change:*** | Update the figures to pinpoint the key difference. Clarify the descriptions of the two deployment options.Highlight and visualize different deployment scenarios which can be used by a Service Provider |
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| ***Consequences if not approved:*** | It is hard to understand how CHF can be deployed in different scenarios. |
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| ***Clauses affected:*** | F.1, F.2.1, F.2.2 |
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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 ... |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Revision of S5-245588. |

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| **First change** |

# F.1 General

This annex provides information that the charging functions can be deployed in multiple physical locations.

This annex provides an overview of the distributed deployment options for CHF, which may be based on two deployment models: Centralized Deployment Model and Local/Edge Deployment Model. Either one or a combination of the two deployment models may be used.

It will focus on the possibility of deploying different CHF instances, and respective charging functions in different physical locations. Nevertheless, the current specification only considers when CHF, ABMF, and RF are located together. This annex can be used to support the design of Charging Architecture in 5GS.

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| **Next change** |

## F.2.1 Centralized CHF deployment

The architecture options depicted in Figure F.2.1-1 provides an overview of the deployment architecture where all CCS components are available in the same physical location, i.e. the CHF is located at the central location. On this case, the NF (CTF) generates the charging events towards the CHF either for a converged or offline charging scenario. The message flow and CHF selection method are detailed in the respective middle tier specifications, e.g. in TS 32.255 [15].



Figure F.2.1-1: Converged charging architecture --- central deployment

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| **Next change** |

## F.2.2 Local/Edge CHF deployment

There are other distributed models that can be used, for instance, the availability of local/edge NF(CTF), as depicted in Figure F.2.2-0.

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Figure F.2.2-0: Local/edge deployment option example scenario

There is an option of distributing CCS functions in a distributed way by making available, e.g. in Figure F.2.2-1, a CHF instance and the Edge Enablement Server (EES) is located in the same Service Deployment Cluster. On this case the CHF instance selected may be the one physically closer to the EES. Therefore, the charging events would be generated through the CTF towards the CHF that is available at the Local/Edge, e.g. in TS 32.257 [57].



Figure F.2.2-1: Converged charging architecture --- distributed deployment example scenario

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| **End of change** |