**3GPP TSG-SA5 Meeting #146 *S5-226xxx***

**Toulouse, France, 14 – 18 Nov 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **32.277** | **CR** |  **<CR#>** | **rev** | **-** | **Current version:** | **17.3.0** |  |
|  |
| *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-17 CR 32.277 Adding ProSe Converge Charging Architecture in reference point representation |
|  |  |
| ***Source to WG:*** | CATT |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | 5G\_ProSe\_CH |  | ***Date:*** |  |
|  |  |  |  |  |
| ***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 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
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| ***Reason for change:*** | Adding Reference Point representation for 5G ProSe Architecture. |
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| ***Summary of change:*** | Add 5G DDNMF in the Converged Charging architecture in Reference points representation. N48 represents the reference point between the CHF and the 5G DDNMF |
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| ***Consequences if not approved:*** | The ProSe charging services and reference points will be misleading and may cause interoperability issues. |
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| ***Clauses affected:*** | 4.4 |
|  |  |
|  | **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:*** |  |

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| **First change** |

## 4.4 5G ProSe converged charging architecture

The 5G ProSe converged charging architecture in service-based representation can be achieved under the alternatives:

- ProSe converged charging architecture (CTF), depicted in figure 4.4.1.

- ProSe converged charging architecture over PC5 (Distributed CTF), depicted in figure 4.4.2.

- ProSe converged charging architecture (CEF), depicted in figure 4.4.3.

- ProSe converged charging architecture in reference point representation for non-roaming, depicted in figure 4.4.4.

Details on the interfaces and functions can be found in TS 32.240 [1] for the general architecture components. Ga is described in clause 5.4.4 and Bx in clause 5.4.5 of this document, and Nchf is described in TS 32.290 [55].

For the 5G ProSe Direct Discovery and 5G ProSe Direct Communication Service over PC5, the CTF is divided into two functional blocks as described in Annex D of TS 32.240 [1]. The Accounting Metrics Collection (AMC) function block is in the UE. The AMC sends usage information collected to the Accounting Data Forwarding (ADF) function block of the CTF in the 5G DDNMF over the PC3a reference point defined in TS 23.304 [241]. The subset of PC3a specific to usage information collection for charging purposes is denoted as PC3ach in figure 4.2.2.



Figure 4.4.1: ProSe converged charging architecture (CTF)



Figure 4.4.2: ProSe converged charging architecture over PC5 (Distributed CTF)



Figure 4.4.3: ProSe converged charging architecture (CEF)

Editor's Note: The architecture figure should follow up the decision of the common CEF issues.

Editor's Note: The details for charging information transfer in CEF-based charging architecture over PC5 are ffs.

Figure 4.4.4 depicts the 5G ProSe converged charging architecture in reference point representation for non-roaming:



Figure 4.4.4: 5G ProSe converged charging architecture non-roaming reference point representation

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| **End of changes** |