**3GPP TSG-WG SA2 Meeting #146E e-meeting  *S2-210xxxx***

**Elbonia, August 16 – 27, 2021 (revision of S2-210xxxx)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.501** | **CR** | **XXXX** | **rev** | **-** | **Current version:** | **17.1.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Alignment of 5G ProSe reference point names | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | SA2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_ProSe | | | | |  | ***Date:*** | | | 2021-08-03 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 5G ProSe added 2 more additional reference points into TS 23.304 and a reference to them was added to TS 23.501.  However they are referenced by Nxx and Npd, which are not suitable names. They should be updated to numbers to follow the existing style. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Rename Nxx to N67, Npd to N68 and add N69. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Incorrect reference point names, leading to confusion. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.2.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* \* First change \* \* \* \*

### 4.2.7 Reference points

The 5G System Architecture contains the following reference points:

**N1:** Reference point between the UE and the AMF.

**N2:** Reference point between the (R)AN and the AMF.

**N3:** Reference point between the (R)AN and the UPF.

**N4:** Reference point between the SMF and the UPF.

**N6:** Reference point between the UPF and a Data Network.

**N9:** Reference point between two UPFs.

The following reference points show the interactions that exist between the NF services in the NFs. These reference points are realized by corresponding NF service-based interfaces and by specifying the identified consumer and producer NF service as well as their interaction in order to realize a particular system procedure.

**N5:** Reference point between the PCF and an AF.

**N7:** Reference point between the SMF and the PCF.

**N8:** Reference point between the UDM and the AMF.

**N10:** Reference point between the UDM and the SMF.

**N11:** Reference point between the AMF and the SMF.

**N12:** Reference point between AMF and AUSF.

**N13:** Reference point between the UDM and Authentication Server function the AUSF.

**N14:** Reference point between two AMFs.

**N15:** Reference point between the PCF and the AMF in the case of non-roaming scenario, PCF in the visited network and AMF in the case of roaming scenario.

**N16:** Reference point between two SMFs, (in roaming case between SMF in the visited network and the SMF in the home network).

**N16a:** Reference point between SMF and I-SMF.

**N17:** Reference point between AMF and 5G-EIR.

**N18:** Reference point between any NF and UDSF.

**N19:** Reference point between two PSA UPFs for 5G LAN-type service.

**N22:** Reference point between AMF and NSSF.

**N23:** Reference point between PCF and NWDAF.

**N24:** Reference point between the PCF in the visited network and the PCF in the home network.

**N27:** Reference point between NRF in the visited network and the NRF in the home network.

**N28:** Reference point between PCF and CHF.

**N29:** Reference point between NEF and SMF.

**N30:** Reference point between PCF and NEF.

NOTE 1: The functionality of N28 and N29 and N30 reference points are defined in TS 23.503 [45].

**N31:** Reference point between the NSSF in the visited network and the NSSF in the home network.

NOTE 2: In some cases, a couple of NFs may need to be associated with each other to serve a UE.

**N32:** Reference point between SEPP in the visited network and the SEPP in the home network.

NOTE 3: The functionality of N32 reference point is defined in TS 33.501 [29].

**N33:** Reference point between NEF and AF.

**N34:** Reference point between NSSF and NWDAF.

**N35:** Reference point between UDM and UDR.

**N36:** Reference point between PCF and UDR.

**N37:** Reference point between NEF and UDR.

**N38:** Reference point between I-SMFs.

**N40:** Reference point between SMF and the CHF.

**N41:** Reference point between AMF and CHF in HPLMN.

**N42:** Reference point between AMF and CHF in VPLMN.

NOTE 4: The functionality of N40, N41 and N42 reference points are defined in TS 32.240 [41].

**N43:** Reference point between PCFs.

NOTE 5: The functionality of N43 reference point is defined in TS 23.503 [45].

NOTE 6: The reference points from N44 up to and including N49 are reserved for allocation and definition in TS 32.240 [41].

**N50:** Reference point between AMF and the CBCF.

**N51:** Reference point between AMF and NEF.

**N52:** Reference point between NEF and UDM.

**N55:** Reference point between AMF and the UCMF.

**N56:** Reference point between NEF and the UCMF.

**N57:** Reference point between AF and the UCMF.

NOTE 7: The Public Warning System functionality of N50 reference point is defined in TS 23.041 [46].

**N58:** Reference point between AMF and the NSSAAF.

**N59:** Reference point between UDM and the NSSAAF.

**N80:** Reference point between AMF and NSACF.

**N81:** Reference point between SMF and NSACF.

**N82:** Reference point between NSACF and NEF.

The reference points to support SMS over NAS are listed in clause 4.4.2.2.

The reference points to support Location Services are listed in TS 23.273 [87].

The reference points to support SBA in IMS (N5, N70 and N71) are described in TS 23.228 [15].

The reference points to support AKMA (N61, N62 and N63) are described in TS 33.535 [124].

The reference points to support ProSe (N64, N65, N66, N67, N68 and N69) are described in TS 23.304 [128].

The reference points to support 5G multicast-broadcast services are described in TS 23.247 [129].

The reference points to Support Uncrewed Aerial Systems (UAS) connectivity, identification and tracking are described in TS 23.256 [136].

\* \* \* \* End of changes \* \* \* \*