**3GPP TSG-WG SA2 Meeting #137E e-meeting  *S2-2002245R01***

**Elbonia, February 24 – 27, 2020 (revision of S2-200xxxx)**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **23.501** | **CR** | **2209** | **rev** | **-**  | **Current version:** | **16.3.0** |  |
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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 | **X** | Core Network | **X** |

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| ***Title:***  | Clarification on network instance determination |
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| ***Source to WG:*** | Huawei, HiSilicon, Nokia, Nokia Shanghai Bell |
| ***Source to TSG:*** | SA2 |
|  |  |
| ***Work item code:*** | 5GS\_Ph1 |  | ***Date:*** | 2020-02-17 |
|  |  |  |  |  |
| ***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:*** | The issue how SMF determines the network instaANe of the UPF for N3 forwarding has been discussed in the last meeting. It was agreed that RAN does not need to provide network instance to core network, which means the configuration of network instance on the two side of N3 interface should be identical. It is our undertanding that SMF is configued locally with the mapping of network instance and determination factor like UE location, PLMN ID, S-NSSAI and DNN.It is unclear for a particular interface, which the criteria is for SMF to determine a network instance. |
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| ***Summary of change:*** | 1. Clarify that SMF is configured with locally with the mapping of network instance and determination factor like UE location, PLMN ID, S-NSSAI and DNN.
2. Clarify RAN does not need provide network instance to core network for N3 forwarding.
3. Clarify for a particular user plane interface, the criteria for SMF to determine a network instance.
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| ***Consequences if not approved:*** | Unclear the criteria for SMF to determine a network instance. |
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| ***Clauses affected:*** | 5.6.12 |
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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:*** |  |

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

### 5.6.12 Use of Network Instance

The SMF may provide a Network Instance to the UPF in FAR and/or PDR via N4 Session Establishment or Modification procedures.

NOTE 1: a Network Instance can be defined e.g. to separate IP domains, e.g. when a UPF is connected to 5G-ANs in different IP domains, overlapping UE IP addresses assigned by multiple Data Networks, transport network isolation in the same PLMN, etc.

NOTE 2: The SMF is configured locally with rules to allocate Network Instance based on determination factor like the type of target interface (N3, N6, inter PLMN N9, …) PLMN ID, S-NSSAI and DNN.

NOTE 3: as the SMF can provide over N2 the Network Instance it has selected for N3 CN Tunnel Info, RAN does not need provide Network Instance to core network for N3 forwarding .

The SMF may determine the Network Instance for N3 and N9 interfaces, based on the e.g. UE location, registered PLMN ID of UE, S-NSSAI of the PDU Session,.

The SMF may determine the Network Instance for N6 interface based on S-NSSAI of the PDU Session and or DNN.

The SMF may determine the Network Instance for N19 interface based on the (DNN, S-NNSAI) identifying a 5G VN group.

NOTE 2: As an example, the UPF can use the Network Instance included in the FAR, together with other information such as Outer header creation (IP address part) and Destination interface in the FAR, to determine the interface in UPF (e.g. VPN or Layer 2 technology) for forwarding of the traffic.

\* \* \* \* Second change \* \* \* \*

\* \* \* \* Third change \* \* \* \*

\* \* \* \* Fourth change \* \* \* \*

\* \* \* \* Fifth change \* \* \* \*

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