**3GPP TSG-CT WG4 Meeting #105-eC4-214xyz**

**E-Meeting, 17th – 27th August 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.003** | **CR** | **0abc** | **rev** | **-** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Slice "SD ranges" | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, AT&T | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | SBIProtoc17 | | | | |  | ***Date:*** | | | 2021-08-23 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | When a Network Function (e.g. an AMF) registers in NRF the list of slices it supports, it may do so by indicating a list of distinct S-NSSAI values, and also by indicating a set of slices, in which the set is identified by a common SST plus a range of SD values.  It should be noted that this concept of "SD range", used in NRF to represent a set of S-NSSAIs, is not a system-wide concept, and it was introduced just in stage-3. This has lead other Working Groups to discuss how this "SD range" concept should be interpreted.  Currently, the specification is not clear if a Network Funciton is always expected to handle its slicing policies as individual policies for each distinct {SST, SD} value or if, instead, an AMF could optionally apply a common slicing policy for a same {SST + SD range} included in its registered NFProfile.  An example of a slicing policy can be for an AMF to assign a given DNN to all UE's accessing a certain slice, or set of slices (note that in 5GC, unlike in EPC, the default DNN is optional in the UE subscription profile and, if absence of such default DNN, the AMF may assign a locally configured DNN to be used with a given S-NSSAI). | | | | | | | | |
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| ***Summary of change:*** | | - Introduce a new clause describing the "SD ranges" format used by some APIs in the 5G Core Network  - Clarify that, when an NF indicates support for a range of SDs, or wildcard, (for a given SST) in the list of supported slices, then it may optionally apply a common slicing policy for such range. | | | | | | | | |
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| ***Consequences if not approved:*** | | It is not clear the implications for an NF of declaring support for ranges of SDs or wildcard, in relation to the handling of the corresponding slicing policies. | | | | | | | | |
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| ***Clauses affected:*** | | 28.4.2, 28.4.x (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* For Information \* \* \* \*

## 28.4 Information for Network Slicing

### 28.4.1 General

In order to identify a Network Slice end to end, the 5GS uses information called S-NSSAI (Single Network Slice Selection Assistance Information). See clause 5.15.2 of 3GPP TS 23.501 [119].

An S-NSSAI is comprised of:

- A Slice/Service type (SST),

- A Slice Differentiator (SD), which is optional information that complements the Slice/Service type(s) to differentiate amongst multiple Network Slices.

\* \* \* First Change \* \* \* \*

### 28.4.2 Format of the S-NSSAI

The structure of the S-NSSAI is depicted in Figure 28.4.2-1



Figure 28.4.2-1: Structure of S-NSSAI

The S-NSSAI may include both the SST and SD fields (in which case the S-NSSAI length is 32 bits in total), or the S-NSSAI may just include the SST field (in which case the S-NSSAI length is 8 bits only).

The SST field may have standardized and non-standardized values. Values 0 to 127 belong to the standardized SST range and they are defined in 3GPP TS 23.501 [119]. Values 128 to 255 belong to the Operator-specific range.

The SD field has a reserved value "no SD value associated with the SST" defined as hexadecimal FFFFFF. In certain protocols, the SD field is not included to indicate that no SD value is associated with the SST.

\* \* \* Next Change \* \* \* \*

### 28.4.x Ranges of S-NSSAIs

In the 5G Core Network, an NF Instance may indicate (e.g., while registering its NF profile in the NRF) support for several S-NSSAIs having a common SST value and different SDs, by including such SST value and adding, either a list of ranges of SDs, or a "wildcard" flag representing all SD values for the common SST (see 3GPP TS 29.571 [129], clause 5.4.5.1).

For an NF registering a list of supported S-NSSAIs in terms of ranges of SDs, or wildcard, the NF may associate a common network slicing policy (such as, e.g., for an AMF to assign a specific DNN to be used with a certain slice) to all S-NSSAIs derived from that SD range.

NOTE: The usage of SD ranges to define sets of S-NSSAIs is restricted to be used only by certain protocols/APIs in the 5G Core Network (e.g., NRF, NSSF, AMF…).

\* \* \* End of Changes \* \* \* \*