**3GPP TSG-CT WG1 Meeting #141eC1-232392**

**Online 17– 21 April 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **5282** | **rev** | **-** | **Current version:** | **18.2.1** |  |
|  | | | | | | | | |
| *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 | **x** | Radio Access Network |  | Core Network | **x** |

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| The | | | | | | | | | | |
| ***Title:*** | The partially allowed NSSAI – IE format | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | vivo | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNS\_Ph3 | | | | |  | ***Date:*** | | | 2023-04-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In SA2 agreed CR(S2-2303809), the partially network slice feature is introduced for Rel-18 to address the scenario that a network slice may be supported in one or more TAs in a PLMN/SNPN. The following is the encert from TS 23.501. This paper captures the IE format of the partially allowed NSSAI IE.  “*Partially Allowed NSSAI: Indicating the S-NSSAIs values the UE could use in the Serving PLMN or SNPN in some of the TAs in the current Registration Area. Each S-NSSAI in the Partially Allowed NSSAI is associated with a list of TAs where the S-NSSAI is supported.”*  Considering the associated TAI information for each S-NSSAI has a maximum length of 114 octets and the maximum number of S-NSSAI is 8 as the usual number setting in the NSSAI, the maximum length of partially allowed NSSAI IE may be over 256. Thus, a type 6 IEI is used to indicate this IE, which will be encapsulated in the registration accept type 6 IE container IE of the registration accept message.  The minimum length of this IE is calculated as follows:  One entry = S-NSSAI + TAI list = 2 + 8 = 10(octets)  Minimum length = IEI + length + one entry\*1 = 1 + 2 + 10 = 13(octets)  The maximum length of this IE is calculated as follows:  One entry = S-NSSAI + TAI list = 9 + 113 = 122 (octets)  Maximum length = IEI + length + one entry\*8 = 1 + 2 + 122\*8 = 979(octets) | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introduce the IE format of the partially allowed NSSAI. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The IE format of the partially allowed NSSAI is not stated. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.2.7.54, 8.2.7.54.1, 8.2.7.54.x(new), 8.2.19.1, 8.2.19.x(new), 9.11.3.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:*** | |  | | | | | | | | |

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

#### 8.2.7.54 Registration accept type 6 IE container

##### 8.2.7.54.1 General

This information element may be included only if the network knows that the UE will not treat this IE as unknown 'comprehension required' IE. Otherwise, the network shall not include this IE (see the 'comprehension required' scheme in subclause 11.2.5 of 3GPP TS 24.007 [11]).

In this version of the specification, only the transfer of the information elements specified in table 8.2.7.54.1.1 is supported in the Type 6 IE container information element in the present message. For the handling of an information element with an IEI not listed in table 8.2.7.54.1.1, i.e., with an IEI unknown in the Type 6 IE container information element, see subclause 7.6.4.1.

Table 8.2.7.54.1.1: Information elements and IEIs for the Type 6 IE container

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
| xx | Partially allowed NSSAI | Partially allowed NSSAI  9.11.3.x | O | TLV-E | 13-979 |

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

##### 8.2.7.54.x Partially allowed NSSAI

If the UE supports partial network slice feature, the network may include this IE to assign a partially allowed NSSAI to the UE.

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

#### 8.2.19.1 Message definition

The CONFIGURATION UPDATE COMMAND message is sent by the AMF to the UE. See table 8.2.19.1.1.

Message type: CONFIGURATION UPDATE COMMAND

Significance: dual

Direction: network to UE

Table 8.2.19.1.1: CONFIGURATION UPDATE COMMAND message content

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IEI | Information Element | Type/Reference | Presence | Format | Length |
|  | Extended protocol discriminator | Extended protocol discriminator  9.2 | M | V | 1 |
|  | Security header type | Security header type  9.3 | M | V | 1/2 |
|  | Spare half octet | Spare half octet  9.5 | M | V | 1/2 |
|  | Configuration update command message identity | Message type  9.7 | M | V | 1 |
| D- | Configuration update indication | Configuration update indication  9.11.3.18 | O | TV | 1 |
| 77 | 5G-GUTI | 5GS mobile identity  9.11.3.4 | O | TLV-E | 14 |
| 54 | TAI list | 5GS tracking area identity list  9.11.3.9 | O | TLV | 9-114 |
| 15 | Allowed NSSAI | NSSAI  9.11.3.37 | O | TLV | 4-74 |
| 27 | Service area list | Service area list  9.11.3.49 | O | TLV | 6-114 |
| 43 | Full name for network | Network name  9.11.3.35 | O | TLV | 3-n |
| 45 | Short name for network | Network name  9.11.3.35 | O | TLV | 3-n |
| 46 | Local time zone | Time zone  9.11.3.52 | O | TV | 2 |
| 47 | Universal time and local time zone | Time zone and time  9.11.3.53 | O | TV | 8 |
| 49 | Network daylight saving time | Daylight saving time  9.11.3.19 | O | TLV | 3 |
| 79 | LADN information | LADN information  9.11.3.30 | O | TLV-E | 3-1715 |
| B- | MICO indication | MICO indication  9.11.3.31 | O | TV | 1 |
| 9- | Network slicing indication | Network slicing indication  9.11.3.36 | O | TV | 1 |
| 31 | Configured NSSAI | NSSAI  9.11.3.37 | O | TLV | 4-146 |
| 11 | Rejected NSSAI | Rejected NSSAI  9.11.3.46 | O | TLV | 4-42 |
| 76 | Operator-defined access category definitions | Operator-defined access category definitions  9.11.3.38 | O | TLV-E | 3-8323 |
| F- | SMS indication | SMS indication  9.11.3.50A | O | TV | 1 |
| 6C | T3447 value | GPRS timer 3  9.11.2.5 | O | TLV | 3 |
| 75 | CAG information list | CAG information list  9.11.3.18A | O | TLV-E | 3-n |
| 67 | UE radio capability ID | UE radio capability ID  9.11.3.68 | O | TLV | 3-n |
| A- | UE radio capability ID deletion indication | UE radio capability ID deletion indication  9.11.3.69 | O | TV | 1 |
| 44 | 5GS registration result | 5GS registration result  9.11.3.6 | O | TLV | 3 |
| 1B | Truncated 5G-S-TMSI configuration | Truncated 5G-S-TMSI configuration  9.11.3.70 | O | TLV | 3 |
| C- | Additional configuration indication | Additional configuration indication  9.11.3.74 | O | TV | 1 |
| 68 | Extended rejected NSSAI | Extended rejected NSSAI  9.11.3.75 | O | TLV | 5-90 |
| 72 | Service-level-AA container | Service-level-AA container  9.11.2.10 | O | TLV-E | 6-n |
| 70 | NSSRG information | NSSRG information  9.11.3.82 | O | TLV-E | 7-4099 |
| 14 | Disaster roaming wait range | Registration wait range  9.11.3.84 | O | TLV | 4 |
| 2C | Disaster return wait range | Registration wait range  9.11.3.84 | O | TLV | 4 |
| 13 | List of PLMNs to be used in disaster condition | List of PLMNs to be used in disaster condition  9.11.3.83 | O | TLV | 2-n |
| 71 | Extended CAG information list | Extended CAG information list  9.11.3.86 | O | TLV-E | 3-n |
| 1F | Updated PEIPS assistance information | PEIPS assistance information  9.11.3.80 | O | TLV | 3-n |
| 73 | NSAG information | NSAG information  9.11.3.87 | O | TLV-E | 9-3143 |
| E- | Priority indicator | Priority indicator  9.11.3.91 | O | TV | 1 |
| 4B | RAN timing synchronization | RAN timing synchronization  9.11.3.95 | O | TLV | 3 |
| 78 | Extended LADN information | Extended LADN information  9.11.3.96 | O | TLV-E | 3-1787 |
| 4C | Alternative NSSAI | Alternative NSSAI  9.11.3.97 | O | TLV | 7-n |
| xx | Partially allowed NSSAI | Partially allowed NSSAI  9.11.3.x | O | TLV-E | 13-979 |

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

#### 8.2.19.x Partially allowed NSSAI

If the UE supports partial network slice feature, the network may include this IE to assign a partially allowed NSSAI to the UE.

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

#### 9.11.3.x Partially allowed NSSAI

The purpose of the partially allowed NSSAI information element is to provide to the UE the S-NSSAI(s) associated with TAI information indicating the S-NSSAI(s) is supported in some TA(s) but not all TAs of the registration area.

The partially allowed NSSAI information element is coded as shown in figures 9.11.3.x.1, 9.11.3.x.2 and table 9.11.3.x.1.

The partially allowed NSSAI information element can contain a maximum of 8 partially allowed S-NSSAIs entries.

The partially allowed NSSAI is a type 6 information element, with a minimum length of 13 octets and a maximum length of 979 octets.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Partially allowed NSSAI IEI | | | | | | | | octet 1 |
| Length of Partially allowed NSSAI contents | | | | | | | | octet 2  octet 3 |
| Partially allowed S-NSSAI 1 | | | | | | | | octet 4  octet m |
| Partially allowed S-NSSAI 2 | | | | | | | | octet m+1\*  octet n\* |
| … | | | | | | | | octet n+1\*  octet u\* |
| Partially allowed S-NSSAI x | | | | | | | | octet u+1\*  octet v\* |

Figure 9.11.3.x.1: Partially allowed NSSAI information element

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of Partially allowed S-NSSAI | | | | | | | | octet 4 |
| S-NSSAI value | | | | | | | | octet 5  octet j |
| TAI list | | | | | | | | octet j+2\*  octet m\* |

Figure 9.11.3.x.2: Partially allowed S-NSSAI

Table 9.11.3.x.1: Partially allowed NSSAI information element

|  |
| --- |
| value part of the partially allowed NSSAI information element (octet 4 to v)  Each entry of the partially allowed NSSAI information element consists of one partially allowed S-NSSAI, which includes one S-NSSAI value field and one TAI list field. |
|  |
| S-NSSAI value (octet 5 to j)  The S-NSSAI value field is coded as the length and value part of S-NSSAI information element as specified in subclause 9.11.2.8 starting with the second octet. |
| TAI list (octet j+2 to m)  The TAI list field is coded as the length and value part of the 5GS tracking area identity list IE defined in subclause 9.11.3.9 starting with the second octet. |

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