**3GPP TSG-CT WG1 Meeting #136-eC1-223850**

**E-meeting, 12th -20th May 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **4419** | **rev** | **-** | **Current version:** | **17.6.1** |  |
|  | | | | | | | | |
| *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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| ***Title:*** | Additional of the Network Slice AS Group | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | vivo | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_Slice-Core | | | | |  | ***Date:*** | | | 2022-04-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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:*** | | According to LS replied from SA2(S2-2203597), SA2 has reached some conclusions for the Network Slice AS Group feature. Some requirements are already agreed in S2-2203618, S2-2203619, and S2-2203620. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The following parts are introduced:  1. How the UE indicates its NSAG capability to the network;  2. How the AMF informs the NSAG information to the UE;  3. How the UE stores the NSAG information;  4. The NSAG information IE format and;  5. The UE delivers the NSAG information to the lower layer, which can be used for network slice based cell reselection and network slice based RACH. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | NSAG feature is not available in the stage 3 specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.2, 4.6.2.2, 4.6.2.x(new), 5.4.4.2, 5.4.4.3, 5.5.1.2.2, 5.5.1.2.4, 5.5.1.3.2, 5.5.1.3.4, 8.2.7.1, 8.2.7.x(new), 8.2.19.1, 8.2.19.x(new), 9.11.3.1, 9.11.3.x(new), C.1, C.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 \* \* \* \*

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

4G-GUTI 4G-Globally Unique Temporary Identifier

5GCN 5G Core Network

5G-GUTI 5G-Globally Unique Temporary Identifier

5GMM 5GS Mobility Management

5G-RG 5G Residential Gateway

5G-BRG 5G Broadband Residential Gateway

5G-CRG 5G Cable Residential Gateway

5GS 5G System

5GSM 5GS Session Management

5G-S-TMSI 5G S-Temporary Mobile Subscription Identifier

5G-TMSI 5G Temporary Mobile Subscription Identifier

5QI 5G QoS Identifier

ACS Auto-Configuration Server

AKA Authentication and Key Agreement

AKMA Authentication and Key Management for Applications

A-KID AKMA Key Identifier

A-TID AKMA Temporary Identifier

AMBR Aggregate Maximum Bit Rate

AMF Access and Mobility Management Function

APN Access Point Name

ATSSS Access Traffic Steering, Switching and Splitting

AUSF Authentication Server Function

CAG Closed access group

CGI Cell Global Identity

CHAP Challenge Handshake Authentication Protocol

DDX Downlink Data Expected

DL Downlink

DN Data Network

DNN Data Network Name

DNS Domain Name System

eDRX Extended DRX cycle

DS-TT Device-Side TSN Translator

EUI Extended Unique Identifier

E-UTRAN Evolved Universal Terrestrial Radio Access Network

EAC Early Admission Control

EAP-AKA' Improved Extensible Authentication Protocol method for 3rd generation Authentication and Key Agreement

EAS Edge Application Server

EASDF Edge Application Server Discovery Function

ECIES Elliptic Curve Integrated Encryption Scheme

ECS Edge Configuration Server

EDC Edge DNS Client

EEC Edge Enabler Client

EPD Extended Protocol Discriminator

EMM EPS Mobility Management

EPC Evolved Packet Core Network

EPS Evolved Packet System

EPS-UPIP User-plane integrity protection in EPS

ESM EPS Session Management

FN-RG Fixed Network RG

FN-BRG Fixed Network Broadband RG

FN-CRG Fixed Network Cable RG

Gbps Gigabits per second

GFBR Guaranteed Flow Bit Rate

GUAMI Globally Unique AMF Identifier

IAB Integrated access and backhaul

IMEI International Mobile station Equipment Identity

IMEISV International Mobile station Equipment Identity and Software Version number

IMSI International Mobile Subscriber Identity

IP-CAN IP-Connectivity Access Network

KSI Key Set Identifier

LADN Local Area Data Network

LCS LoCation Services

LMF Location Management Function

LPP LTE Positioning Protocol

MAC Message Authentication Code

MA PDU Multi-Access PDU

MBS Multicast/Broadcast Services

Mbps Megabits per second

MCS Mission Critical Service

MFBR Maximum Flow Bit Rate

MICO Mobile Initiated Connection Only

MINT Minimization of Service Interruption

MPS Multimedia Priority Service

MSK MBS Service Key

MTK MBS Traffic Key

MUSIM Multi-USIM

N3IWF Non-3GPP Inter-Working Function

N5CW Non-5G-Capable over WLAN

N5GC Non-5G Capable

NAI Network Access Identifier

NITZ Network Identity and Time Zone

ngKSI Key Set Identifier for Next Generation Radio Access Network

NPN Non-public network

NR New Radio

NSAC Network Slice Admission Control

NSACF Network Slice Admission Control Function

NSAG Network Slice Access Stratum Group

NSSAA Network slice-specific authentication and authorization

NSSAAF Network Slice-Specific and SNPN authentication and authorization Function

NSSAI Network Slice Selection Assistance Information

NSSRG Network Slice Simultaneous Registration Group

NSWO Non-Seamless WLAN Offload

ON-SNPN Onboarding Standalone Non-Public Network

OS Operating System

OS Id OS Identity

PAP Password Authentication Protocol

PCO Protocol Configuration Option

PEI Permanent Equipment Identifier

PEIPS Paging Early Indication with Paging Subgrouping

PNI-NPN Public Network Integrated Non-Public Network

ProSe Proximity based Services

ProSeP 5G ProSe policy

PTI Procedure Transaction Identity

PVS Provisioning Server

QFI QoS Flow Identifier

QoS Quality of Service

QRI QoS Rule Identifier

RACS Radio Capability Signalling Optimisation

(R)AN (Radio) Access Network

RFSP RAT Frequency Selection Priority

RG Residential Gateway

RPLMN Registered PLMN

RQA Reflective QoS Attribute

RQI Reflective QoS Indication

RSN Redundancy Sequence Number

RSNPN Registered SNPN

S-NSSAI Single NSSAI

SA Security Association

SDF Service Data Flow

SMF Session Management Function

SGC Service Gap Control

SNN Serving Network Name

SNPN Stand-alone Non-Public Network

SOR Steering of Roaming

SOR-CMCI Steering of Roaming Connected Mode Control Information

SUCI Subscription Concealed Identifier

SUPI Subscription Permanent Identifier

TA Tracking Area

TAC Tracking Area Code

TAI Tracking Area Identity

Tbps Terabits per second

TMGI Temporary Mobile Group Identity

TNGF Trusted Non-3GPP Gateway Function

TSC Time Sensitive Communication

TSCTSF Time Sensitive Communication and Time Synchronization Function

TWIF Trusted WLAN Interworking Function

TSN Time-Sensitive Networking

UAS Uncrewed Aerial System

UAV Uncrewed Aerial Vehicle

UDM Unified Data Management

UL Uplink

UPDS UE policy delivery service

UPF User Plane Function

UPSC UE Policy Section Code

UPSI UE Policy Section Identifier

URN Uniform Resource Name

URSP UE Route Selection Policy

USS UAS Service Supplier

UUAA USS UAV Authorization/Authentication

V2X Vehicle-to-Everything

V2XP V2X policy

W-AGF Wireline Access Gateway Function

WLAN Wireless Local Area Network

WUS Wake-up signal

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

#### 4.6.2.2 NSSAI storage

If available, the configured NSSAI(s) shall be stored in a non-volatile memory in the ME as specified in annex C. For a configured NSSAI, if there is associated NSSRG information or NSAG information or both, the NSSRG information or the NSAG information or both shall also be stored in a non-volatile memory in the ME as specified in annex C. The support for NSSRG information or NSAG information or both by a UE or an AMF is optional.

The allowed NSSAI(s) should be stored in a non-volatile memory in the ME as specified in annex C.

Each of the configured NSSAI stored in the UE is a set composed of at most 16 S-NSSAIs. Each of the allowed NSSAI stored in the UE is a set composed of at most 8 S-NSSAIs and is associated with a PLMN identity or SNPN identity, an access type and, if the UE supports access to an SNPN using credentials from a credentials holder, the selected entry of the "list of subscriber data" or the selected PLMN subscription. Each of the configured NSSAI except the default configured NSSAI, and the rejected NSSAI is associated with a PLMN identity or SNPN identity and, if the UE supports access to an SNPN using credentials from a credentials holder, the selected entry of the "list of subscriber data" or the selected PLMN subscription. Each of the pending NSSAI stored in the UE is a set composed of at most 16 S-NSSAIs and is associated with a PLMN identity or SNPN identity and, if the UE supports access to an SNPN using credentials from a credentials holder, the selected entry of the "list of subscriber data" or the selected PLMN subscription. The S-NSSAI(s) in the rejected NSSAI for the current registration area are further associated with one or more tracking areas where the rejected S-NSSAI(s) is not available. The S-NSSAI(s) in the rejected NSSAI for the current PLMN or SNPN shall be considered rejected for the current PLMN or SNPN regardless of the access type. The S-NSSAI(s) in the rejected NSSAI for the failed or revoked NSSAA shall be considered rejected for the current PLMN regardless of the access type. The S-NSSAI(s) in the rejected NSSAI for the maximum number of UEs reached are further associated with the access type over which the rejected NSSAI was received. There shall be no duplicated PLMN identities or SNPN identities associated with each of the list of configured NSSAI(s), pending NSSAI(s), rejected NSSAI(s) for the current PLMN or SNPN, rejected NSSAI(s) for the current registration area, rejected NSSAI(s) for the failed or revoked NSSAA, and rejected NSSAI for the maximum number of UEs reached.

The UE stores NSSAIs as follows:

a) The configured NSSAI shall be stored until a new configured NSSAI is received for a given PLMN or SNPN. The network may provide to the UE the mapped S-NSSAI(s) for the new configured NSSAI which shall also be stored in the UE. When the UE is provisioned with a new configured NSSAI for a PLMN or SNPN, the UE shall:

1) replace any stored configured NSSAI for this PLMN or SNPN with the new configured NSSAI for this PLMN or SNPN;

2) delete any stored mapped S-NSSAI(s) for the configured NSSAI and, if available, store the mapped S-NSSAI(s) for the new configured NSSAI;

3) delete any stored allowed NSSAI for this PLMN or SNPN and, if available, the stored mapped S-NSSAI(s) for the allowed NSSAI, if the UE received the new configured NSSAI for this PLMN or SNPN and the Configuration update indication IE with the Registration requested bit set to "registration requested", in the same CONFIGURATION UPDATE COMMAND message but without any new allowed NSSAI for this PLMN or SNPN included;

4) delete any stored rejected NSSAI;

4A) remove from the stored mapped S-NSSAI(s) for the rejected NSSAI for the current PLMN or SNPN and the stored mapped S-NSSAI(s) for the rejected NSSAI for the current registration area and the stored rejected NSSAI for the maximum number of UEs reached, the S-NSSAI(s), if any, included in the mapped S-NSSAI(s) for the new configured NSSAI for the current PLMN or SNPN (if the UE is roaming); and

5) delete any S-NSSAI(s) stored in the pending NSSAI that are not included in the new configured NSSAI for the current PLMN or SNPN or any mapped S-NSSAI(s), if any, stored in the pending NSSAI that are not included in the mapped S-NSSAI(s) for the configured NSSAI (if the UE is roaming);

If the UE receives an S-NSSAI associated with a PLMN ID from the network during the PDN connection establishment procedure in EPS as specified in 3GPP TS 24.301 [15] or via ePDG as specified in 3GPP TS 24.302 [16], the UE may store the received S-NSSAI in the configured NSSAI for the PLMN identified by the PLMN ID associated with the S-NSSAI, if not already included in the configured NSSAI;

The UE may continue storing a received configured NSSAI for a PLMN and associated mapped S-NSSAI(s), if available, when the UE registers in another PLMN.

NOTE 1: The maximum number of configured NSSAIs and associated mapped S-NSSAIs for PLMNs other than the HPLMN that need to be stored in the UE, and how to handle the stored entries, are up to UE implementation.

b) The allowed NSSAI shall be stored until:

1) a new allowed NSSAI is received for a given PLMN or SNPN;

2) the CONFIGURATION UPDATE COMMAND message with the Registration requested bit of the Configuration update indication IE set to "registration requested" is received and contains no other parameters (see subclauses 5.4.4.2 and 5.4.4.3); or

3) the REGISTRATION ACCEPT message is received with the "NSSAA to be performed" indicator of the 5GS registration result IE set to "Network slice-specific authentication and authorization is to be performed", and the REGISTRATION ACCEPT message contains a pending NSSAI and no new allowed NSSAI as described in subclause 5.5.1.2.4 and subclause 5.5.1.3.4.

The network may provide to the UE the mapped S-NSSAI(s) for the new allowed NSSAI (see subclauses 5.5.1.2 and 5.5.1.3) which shall also be stored in the UE. When a new allowed NSSAI for a PLMN or SNPN is received, the UE shall:

1) replace any stored allowed NSSAI for this PLMN or SNPN and its equivalent PLMN(s) with the new allowed NSSAI for this PLMN or SNPN;

2) delete any stored mapped S-NSSAI(s) for the allowed NSSAI for this PLMN or SNPN and its equivalent PLMN(s) and, if available, store the mapped S-NSSAI(s) for the new allowed NSSAI;

3) remove from the stored rejected NSSAI for the current PLMN or SNPN, the rejected NSSAI for the current registration area and rejected NSSAI for the maximum number of UEs reached, the S-NSSAI(s), if any, included in the new allowed NSSAI for the current PLMN or SNPN, unless the S-NSSAI in the rejected NSSAI is associated with one or more S-NSSAI(s) in the stored mapped rejected NSSAI and these mapped S-NSSAI(s) are not included in the mapped S-NSSAI(s) for the new allowed NSSAI;

4) remove from the stored rejected NSSAI for the failed or revoked NSSAA, the S-NSSAI(s), if any, included in the new allowed NSSAI for the current PLMN or SNPN (if the UE is not roaming) or the mapped S-NSSAI(s) for the new allowed NSSAI for the current PLMN or SNPN (if the UE is roaming);

5) remove from the stored mapped S-NSSAI(s) for the rejected NSSAI for the current PLMN or SNPN, the stored mapped S-NSSAI(s) for the rejected NSSAI for the current registration area and rejected NSSAI for the maximum number of UEs reached, the S-NSSAI(s), if any, included in the mapped S-NSSAI(s) for the new allowed NSSAI for the current PLMN or SNPN (if the UE is roaming); and

6) remove from the stored pending NSSAI for this PLMN or SNPN and its equivalent PLMN(s), one or more S-NSSAIs, if any, included in the new allowed NSSAI for the current PLMN or SNPN and its equivalent PLMN(s) (if the UE is not roaming) or the mapped S-NSSAI(s) for the new allowed NSSAI for the current PLMN or SNPN and its equivalent PLMN(s) (if the UE is roaming).

If the UE receives the CONFIGURATION UPDATE COMMAND message with the Registration requested bit of the Configuration update indication IE set to "registration requested" and contains no other parameters (see subclauses 5.4.4.2 and 5.4.4.3), the UE shall delete any stored allowed NSSAI for this PLMN or SNPN, and delete any stored mapped S-NSSAI(s) for the allowed NSSAI, if available;

NOTE 2: Whether the UE stores the allowed NSSAI and the mapped S-NSSAI(s) for the allowed NSSAI also when the UE is switched off is implementation specific.

c) When the UE receives the S-NSSAI(s) included in the rejected NSSAI in the REGISTRATION ACCEPT message, the REGISTRATION REJECT message, the DEREGISTRATION REQUEST message or in the CONFIGURATION UPDATE COMMAND message, the UE shall:

1) store the S-NSSAI(s) into the rejected NSSAI and the mapped S-NSSAI(s) for the rejected NSSAI based on the associated rejection cause(s);

2) if the UE receives the S-NSSAI(s) included in the Rejected NSSAI IE, or if the UE receives the S-NSSAI(s) included in the Extended rejected NSSAI IE in non-roaming case, remove from the stored allowed NSSAI for the current PLMN or SNPN and its equivalent PLMN(s), the S-NSSAI(s), if any, included in the:

i) rejected NSSAI for the current PLMN or SNPN, for each and every access type;

ii) rejected NSSAI for the current registration area, associated with the same access type; or

iii) rejected NSSAI for the maximum number of UEs reached, associated with the same access type;

3) if the UE receives the S-NSSAI(s) included in the Extended rejected NSSAI IE in roaming case, remove from the stored allowed NSSAI for the current PLMN or SNPN and its equivalent PLMN(s), the S-NSSAI(s), if any, included in the:

i) rejected NSSAI for the current PLMN or SNPN, for each and every access type; or

ii) rejected NSSAI for the current registration area, associated with the same access type; and

iii) rejected NSSAI for the maximum number of UEs reached, associated with the same access type;

if the mapped S-NSSAI(s) for the S-NSSAI in the stored allowed NSSAI for the current PLMN or SNPN are stored in the UE, and the all of the mapped S-NSSAI are included in the Extended rejected NSSAI IE;

4) remove from the stored allowed NSSAI for the current PLMN or SNPN and its equivalent PLMN(s) (if the UE is not roaming) or the stored mapped S-NSSAI(s) for the allowed NSSAI (if available and if the UE is roaming), the S-NSSAI(s), if any, included in the:

i) rejected NSSAI for the failed or revoked NSSAA, for each and every access type;

ii) mapped S-NSSAI(s) for the rejected NSSAI for the current PLMN, for each and every access type; or

iii) mapped S-NSSAI(s) for the rejected NSSAI for the current registration area, associated with the same access type; and

iv) mapped S-NSSAI(s) for the rejected NSSAI for the maximum number of UEs reached, associated with the same access type;

5) if the UE receives the S-NSSAI(s) included in the Rejected NSSAI IE, or if the UE receives the S-NSSAI(s) included in the Extended rejected NSSAI IE in non-roaming case, remove from the stored pending NSSAI for the current PLMN or SNPN and its equivalent PLMN(s), the S-NSSAI(s), if any, included in the:

i) rejected NSSAI for the current PLMN or SNPN, for each and every access type;

ii) rejected NSSAI for the current registration area, associated with the same access type; or

iii) rejected NSSAI for the maximum number of UEs reached, associated with the same access type;

6) if the UE receives the S-NSSAI(s) included in the Extended rejected NSSAI IE, remove from the stored pending NSSAI for the current PLMN or SNPN and its equivalent PLMN(s), the S-NSSAI(s), if any, included in the:

i) rejected NSSAI for the current PLMN or SNPN, for each and every access type; or

ii) rejected NSSAI for the current registration area, associated with the same access type,

if the mapped S-NSSAI(s) for the S-NSSAI in the stored pending NSSAI are stored in the UE, and the all of the mapped S-NSSAI(s) are included in the Extended rejected NSSAI IE; and

7) remove from the stored pending NSSAI for the current PLMN and its equivalent PLMN(s) or SNPN (if the UE is not roaming) or the stored mapped S-NSSAI(s) for the pending NSSAI, the S-NSSAI(s) (if available and if the UE is roaming) included in the:

i) rejected NSSAI for the failed or revoked NSSAA, for each and every access type;

ii) mapped S-NSSAI(s) for the rejected NSSAI for the current PLMN, for each and every access type; or

iii) mapped S-NSSAI(s) for the rejected NSSAI for the current registration area, associated with the same access type.

8) If the UE receives the CONFIGURATION UPDATE COMMAND message with the Registration requested bit of the Configuration update indication IE set to "registration requested" and contains no other parameters (see subclauses 5.4.4.2 and 5.4.4.3), the UE shall delete any stored rejected NSSAI.

When the UE:

1) enters state 5GMM-DEREGISTERED following an unsuccessful registration for 5GMM causes other than #62 "No network slices available" for the current PLMN;

2) successfully registers with a new PLMN;

3) enters state 5GMM-DEREGISTERED following an unsuccessful registration with a new PLMN; or

4) performs inter-system change from N1 mode to S1 mode and the UE successfully completes tracking area update procedure;

and the UE is not registered with the current PLMN over another access, the rejected NSSAI for the current PLMN or SNPN and the rejected NSSAI for the failed or revoked NSSAA shall be deleted.

When the UE receive ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message provided with S-NSSAI and the PLMN ID in the protocol configuration options IE or extended protocol configuration options IE (see subclause 6.2.2 of 3GPP TS 24.301 [15]), the UE shall remove the S-NSSAI from the rejected NSSAI for the current PLMN. When the UE receive ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message provided with S-NSSAI and the PLMN ID in the protocol configuration options IE or extended protocol configuration options IE (see subclause 6.2.2 of 3GPP TS 24.301 [15]), the UE may remove the S-NSSAI from the rejected NSSAI for the maximum number of UEs reached for each and every access type, if any, and stop the timer T3526 associated with the S-NSSAI if running.

When the UE:

1) deregisters over an access type;

2) successfully registers in a new registration area over an access type;

3) enters state 5GMM-DEREGISTERED or 5GMM-REGISTERED following an unsuccessful registration in a new registration area over an access type; or

4) performs inter-system change from N1 mode to S1 mode and the UE successfully completes tracking area update procedure;

the rejected NSSAI for the current registration area corresponding to the access type shall be deleted;

d) When the UE receives the pending NSSAI in the REGISTRATION ACCEPT message, the UE shall replace any stored pending NSSAI for this PLMN or SNPN with the new pending NSSAI received in the REGISTRATION ACCEPT message for this PLMN or SNPN. If the UE does not receive the pending NSSAI in the REGISTRATION ACCEPT message and the "NSSAA to be performed" indicator is not set to "Network slice-specific authentication and authorization is to be performed" in the 5GS registration result IE of the REGISTRATION ACCEPT message, the UE shall delete the stored pending NSSAI, if any, for this PLMN or SNPN and its equivalent PLMN(s).

If the registration area contains TAIs belonging to different PLMNs, which are equivalent PLMNs, then for each of the equivalent PLMNs, the UE shall replace any stored pending NSSAI with the pending NSSAI received in the registered PLMN.

When the UE:

1) deregisters with the current PLMN using explicit signalling or enters state 5GMM-DEREGISTERED for the current PLMN;

2) successfully registers with a new PLMN;

3) enters state 5GMM-DEREGISTERED following an unsuccessful registration with a new PLMN; or

4) successfully initiates an attach or tracking area update procedure in S1 mode and the UE is operating in single-registration mode;

and the UE is not registered with the current PLMN over another access, the pending NSSAI for the current PLMN or SNPN and its equivalent PLMN(s) shall be deleted;

e) When the UE receives the Network slicing indication IE with the Network slicing subscription change indication set to "Network slicing subscription changed" in the REGISTRATION ACCEPT message or in the CONFIGURATION UPDATE COMMAND message, the UE shall delete the network slicing information for each of the PLMNs or SNPNs that the UE has slicing information stored for (excluding the current PLMN or SNPN). The UE shall delete any stored rejected NSSAI. The UE shall not delete the default configured NSSAI. Additionally, the UE shall update the network slicing information for the current PLMN or SNPN (if received) as specified above in bullets a), b), c) and d); and

f) When the UE receives the new default configured NSSAI included in the default configured NSSAI update data in the Payload container IE of DL NAS TRANSPORT message, the UE shall replace any stored default configured NSSAI with the new default configured NSSAI. In case of SNPN, the UE shall replace the stored default configured NSSAI associated with the selected entry of the "list of subscriber data" or the PLMN subscription with the new default configured NSSAI.

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

### 4.6.2.X Network slice AS group support

Based on operator policy, a serving PLMN may provide NSAG information to the UE for the network slice based cell reselection or network slice based random access within a tracking area. The NSAG information contains Slice Group ID, S-NSSAI(s), and the priority information for the S-NSSAI(s), which can be used for cell reselection or random access. Based on operator policy, the AMF may provide NSAG information via a REGISTRATION ACCEPT message or a CONFIGURATION UPDATE COMMAND message.

NOTE 1: How the UE uses the priority information in the NSAG information is up to the UE implementation.

Based on operator policy, if the AMF provides the NSAG information, the UE shall store the NSAG information for the registered PLMN as specified in subclause 4.6.2.2. The UE shall consider the stored NSAG information is valid until:

a) the UE receives a new NSAG information in a REGISTRATION ACCEPT message or a CONFIGURATION UPDATE COMMAND message in the current PLMN; or

b) the UE receives a Configured NSSAI without any NSAG information in this PLMN.

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

#### 8.2.7.1 Message definition

The REGISTRATION ACCEPT message is sent by the AMF to the UE. See table 8.2.7.1.1.

Message type: REGISTRATION ACCEPT

Significance: dual

Direction: network to UE

Table 8.2.7.1.1: REGISTRATION ACCEPT 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 |
|  | Registration accept message identity | Message type  9.7 | M | V | 1 |
|  | 5GS registration result | 5GS registration result  9.11.3.6 | M | LV | 2 |
| 77 | 5G-GUTI | 5GS mobile identity  9.11.3.4 | O | TLV-E | 14 |
| 4A | Equivalent PLMNs | PLMN list  9.11.3.45 | O | TLV | 5-47 |
| 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 |
| 11 | Rejected NSSAI | Rejected NSSAI  9.11.3.46 | O | TLV | 4-42 |
| 31 | Configured NSSAI | NSSAI  9.11.3.37 | O | TLV | 4-146 |
| 21 | 5GS network feature support | 5GS network feature support  9.11.3.5 | O | TLV | 3-5 |
| 50 | PDU session status | PDU session status  9.11.3.44 | O | TLV | 4-34 |
| 26 | PDU session reactivation result | PDU session reactivation result  9.11.3.42 | O | TLV | 4-34 |
| 72 | PDU session reactivation result error cause | PDU session reactivation result error cause  9.11.3.43 | O | TLV-E | 5-515 |
| 79 | LADN information | LADN information  9.11.3.30 | O | TLV-E | 12-1715 |
| 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 |
| 27 | Service area list | Service area list  9.11.3.49 | O | TLV | 6-114 |
| 5E | T3512 value | GPRS timer 3  9.11.2.5 | O | TLV | 3 |
| 5D | Non-3GPP de-registration timer value | GPRS timer 2  9.11.2.4 | O | TLV | 3 |
| 16 | T3502 value | GPRS timer 2  9.11.2.4 | O | TLV | 3 |
| 34 | Emergency number list | Emergency number list  9.11.3.23 | O | TLV | 5-50 |
| 7A | Extended emergency number list | Extended emergency number list  9.11.3.26 | O | TLV-E | 7-65538 |
| 73 | SOR transparent container | SOR transparent container  9.11.3.51 | O | TLV-E | 20-n |
| 78 | EAP message | EAP message  9.11.2.2 | O | TLV-E | 7-1503 |
| A- | NSSAI inclusion mode | NSSAI inclusion mode  9.11.3.37A | O | TV | 1 |
| 76 | Operator-defined access category definitions | Operator-defined access category definitions  9.11.3.38 | O | TLV-E | 3-8323 |
| 51 | Negotiated DRX parameters | 5GS DRX parameters  9.11.3.2A | O | TLV | 3 |
| D- | Non-3GPP NW policies | Non-3GPP NW provided policies  9.11.3.36A | O | TV | 1 |
| 60 | EPS bearer context status | EPS bearer context status  9.11.3.23A | O | TLV | 4 |
| 6E | Negotiated extended DRX parameters | Extended DRX parameters  9.11.3.26A | O | TLV | 3 |
| 6C | T3447 value | GPRS timer 3  9.11.2.5 | O | TLV | 3 |
| 6B | T3448 value | GPRS timer 2  9.11.2.4 | O | TLV | 3 |
| 6A | T3324 value | GPRS timer 3  9.11.2.5 | O | TLV | 3 |
| 67 | UE radio capability ID | UE radio capability ID  9.11.3.68 | O | TLV | 3-n |
| E- | UE radio capability ID deletion indication | UE radio capability ID deletion indication  9.11.3.69 | O | TV | 1 |
| 39 | Pending NSSAI | NSSAI  9.11.3.37 | O | TLV | 4-146 |
| 74 | Ciphering key data | Ciphering key data  9.11.3.18C | O | TLV-E | 34-n |
| 75 | CAG information list | CAG information list  9.11.3.18A | O | TLV-E | 3-n |
| 1B | Truncated 5G-S-TMSI configuration | Truncated 5G-S-TMSI configuration  9.11.3.70 | O | TLV | 3 |
| 1C | Negotiated WUS assistance information | WUS assistance information  9.11.3.71 | O | TLV | 3-n |
| 29 | Negotiated NB-N1 mode DRX parameters | NB-N1 mode DRX parameters  9.11.3.73 | O | TLV | 3 |
| 68 | Extended rejected NSSAI | Extended rejected NSSAI  9.11.3.75 | O | TLV | 5-90 |
| 7B | Service-level-AA container | Service-level-AA container  9.11.2.10 | O | TLV-E | 6-n |
| 33 | Negotiated PEIPS assistance information | PEIPS assistance information  9.11.3.80 | O | TLV | 3-n |
| 34 | 5GS additional request result | 5GS additional request result  9.11.3.81 | O | TLV | 3 |
| 70 | NSSRG information | NSSRG information  9.11.3.82 | O | TLV-E | 7-65538 |
| 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 |
| 1D | Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming" | 5GS tracking area identity list  9.11.3.9 | O | TLV | 9-114 |
| 1E | Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service" | 5GS tracking area identity list  9.11.3.9 | O | TLV | 9-114 |
| 71 | Extended CAG information list | Extended CAG information list  9.11.3.86 | O | TLV-E | 3-n |
| XX | NSAG information | NSAG information  9.11.3.X | O | TLV-E | 10-n |

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

#### 8.2.7.X NSAG information

This IE may be included to provide NSAG information to the UE for network slice based cell reselection or network slice based random access.

\* \* \* 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 | 7-65538 |
| 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 |
| XX | NSAG information | NSAG information  9.11.3.X | O | TLV-E | 10-n |

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

#### 8.2.19.X NSAG information

This IE may be included to provide NSAG information to the UE for network slice based cell reselection or network slice based random access.

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

#### 9.11.3.X NSAG information

The purpose of the NSAG information information element is to provide network slice information to perform network slice based cell reselection and network slice based random access.

The NSAG information information element is coded as shown in figure 9.11.3.X.1, figure 9.11.3.X.2 and table 9.11.3.X.1.

The NSAG information is a type 6 information element with a minimum length of 10.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| NSAG information IEI | | | | | | | | octet 1 |
| Length of NSSRG information contents | | | | | | | | octet 2  octet 3 |
| Network Slice AS Group Value 1 | | | | | | | | octet 4  octet m |
| Network Slice AS Group Value 2 | | | | | | | | octet m+1\*  octet n\* |
| … | | | | | | | | octet n+1\*  octet u\* |
| Network Slice AS Group Value X | | | | | | | | octet u+1\*  octet v\* |

Figure 9.11.3.X.1: NSAG information information element

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |
| Length of Network Slice AS Group Value X | | | | | | | | octet 4 |
| Spare | | | | | | NSAGUI | | octet 5 |
| Slice Group ID X | | | | | | | | octet 6 |
| Priority value for S-NSSAI value 1 | | | | | | | | octet 7 |
| S-NSSAI value 1 | | | | | | | | octet 8  octet w |
| Priority value for S-NSSAI value 2 | | | | | | | | octet w+1\* |
| S-NSSAI value 2 | | | | | | | | octet w+2\*  octet k\* |
| … | | | | | | | | octet k+1\*  octet p\* |
| Priority value for S-NSSAI value n | | | | | | | | octet p+1\* |
| S-NSSAI value n | | | | | | | | octet p+2\*  octet q\* |
| TAI list | | | | | | | | octet q+1\*  octet m\* |

Figure 9.11.3.x.2: Network Slice AS Group Value

Table 9.11.3.X.1: NSAG information information element

|  |  |  |
| --- | --- | --- |
| Value part of the NSAG information information element (octet 4 to v) | | |
| The value part of the NSAG information information element consists of one or more Network Slice AS Group Values. | | |
|  | | |
| Value part of the Network Slice AS Group Value (octet 5 to m) | | |
| The value part of the Network Slice AS Group Value consists of NSAGUI, Slice Group ID and one or more S-NSSAI values. | | |
|  | | |
| NSAG Usage indication (NSAGUI, octet 5, bits 1 and 2) | | |
| Bits | | |
| 2 | 1 |  |
| 0 | 1 | NSAG group can only be used for cell reselection |
| 1 | 0 | NSAG group can only be used for RACH |
| 1 | 1 | NSAG group can be used for cell reselection and RACH |
| All other values are reserved. | | |
|  | | |
| Slice Group ID (octet 6) | | |
| This field contains the 8 bit NSAG group ID value. | | |
|  | | |
| Priority value for S-NSSAI value (octet 7) | | |
| This field contains the 8 bit priority value for the S-NSSAI. | | |
|  | | |
| S-NSSAI value (octet 8 to w) | | |
| S-NSSAI value 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 q+1 to m) | | |
|  | | |
| The TAI list is coded as the length and value part of 5GS tracking area identity list information element as specified in subclause 9.11.3.9 starting with the second octet. | | |

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

## C.1 Storage of 5GMM information for UEs not operating in SNPN access operation mode

The following 5GMM parameters shall be stored on the USIM if the corresponding file is present:

a) 5G-GUTI;

b) last visited registered TAI;

c) 5GS update status;

d) 5G NAS security context parameters from a full native 5G NAS security context (see 3GPP TS 33.501 [24]);

e) KAUSF and KSEAF (see 3GPP TS 33.501 [24]);

f) SOR counter (see subclause 9.11.3.51); and

g) UE parameter update counter (see subclause 9.11.3.53A);

The UE may support multiple records of NAS security context storage for multiple registration (see 3GPP TS 31.102 [22]). If the UE supports multiple records of NAS security context storage for multiple registration, the first 5G security context of one access shall be stored in record 1 of the 5G NAS Security Context USIM file for that access and the second 5G security context of that access shall be stored in record 2 of the same file. The presence and format of corresponding files on the USIM is specified in 3GPP TS 31.102 [22].

If the corresponding file is not present on the USIM, these 5GMM parameters are stored in a non-volatile memory in the ME together with the SUPI from the USIM. These 5GMM parameters can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory; else the UE shall delete the 5GMM parameters.

The following 5GMM parameters shall be stored in a non-volatile memory in the ME together with the SUPI from the USIM:

- configured NSSAI(s);

- NSSRG information;

- NSAG information;

- NSSAI inclusion mode(s);

- MPS indicator;

- MCS indicator;

- operator-defined access category definitions;

- network-assigned UE radio capability IDs;

- "CAG information list", if the UE supports CAG;

- signalled URSP (see 3GPP TS 24.526 [19]);

- SOR-CMCI;

- one or more lists of type "list of PLMN(s) to be used in disaster condition", if the UE supports MINT;

- disaster roaming wait range, if the UE supports MINT;

- disaster return wait range, if the UE supports MINT;

- indication of whether disaster roaming is enabled in the UE; and

- indication of 'applicability of "lists of PLMN(s) to be used in disaster condition" provided by a VPLMN'.

Each configured NSSAI consists of S-NSSAI(s) stored together with a PLMN identity, if it is associated with a PLMN. The UE shall store the S-NSSAI(s) of the HPLMN. If the UE is in the VPLMN, the UE shall also store the configured NSSAI for the current PLMN and any necessary mapped S-NSSAI(s). The configured NSSAI(s) can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the configured NSSAI(s). A configured NSSAI may be associated with NSSRG information or NSAG information or both.

Each NSSAI inclusion mode is associated with a PLMN identity and access type. The NSSAI inclusion mode(s) can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the NSSAI inclusion mode(s).

The MPS indicator is stored together with a PLMN identity of the PLMN that provided it, and is valid in that RPLMN or equivalent PLMN. The MPS indicator can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME, else the UE shall delete the MPS indicator.

The MCS indicator is stored together with a PLMN identity of the PLMN that provided it, and is valid in that RPLMN or equivalent PLMN. The MCS indicator can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME, else the UE shall delete the MCS indicator.

Operator-defined access category definitions are stored together with a PLMN identity of the PLMN that provided them, and is valid in that PLMN or equivalent PLMN. The operator-defined access category definitions can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME, else the UE shall delete the operator-defined access category definitions. The maximum number of stored operator-defined access category definitions is UE implementation dependent.

Each network-assigned UE radio capability ID is stored together with a PLMN identity of the PLMN that provided it as well as a mapping to the corresponding UE radio configuration, and is valid in that PLMN. A network-assigned UE radio capability ID can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME, else the UE shall delete the network-assigned UE radio capability ID. The UE shall be able to store at least the last 16 received network-assigned UE radio capability IDs. There shall be only one network-assigned UE radio capability ID stored for a given combination of PLMN identity and UE radio configuration and any existing UE radio capability ID shall be deleted when a new UE radio capability ID is added for the same combination of PLMN identity and UE radio configuration. If the UE receives a network-assigned UE radio capability ID with a Version ID value different from the value included in the network-assigned UE radio capability ID(s) stored at the UE for the serving PLMN, the UE may delete these stored network-assigned UE radio capability ID(s).

The allowed NSSAI(s) can be stored in a non-volatile memory in the ME together with the SUPI from the USIM. Allowed NSSAI consists of S-NSSAI(s) stored together with a PLMN identity, if it is associated with a PLMN. If the allowed NSSAI is stored, then the UE shall store the S-NSSAI(s) of the HPLMN. If the UE is in the VPLMN, the UE shall also store the allowed NSSAI for the serving PLMN and any necessary mapping of the allowed NSSAI for the serving PLMN to the S-NSSAI(s) of the HPLMN. The allowed NSSAI(s) can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the allowed NSSAI(s).

If the UE is registered for emergency services, the UE shall not store the 5GMM parameters described in this annex on the USIM or in non-volatile memory. Instead the UE shall temporarily store these parameters locally in the ME and the UE shall delete these parameters when the UE is deregistered.

If the UE is configured for eCall only mode as specified in 3GPP TS 31.102 [22], the UE shall not store the 5GMM parameters described in this annex on the USIM or in non-volatile memory. Instead the UE shall temporarily store these parameters locally in the ME and the UE shall delete these parameters when the UE enters 5GMM-DEREGISTERED.eCALL-INACTIVE state, the UE is switched-off or the USIM is removed.

The "CAG information list" can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the "CAG information list".

The handling of the SOR-CMCI stored in the non-volatile memory in the ME is specified in 3GPP TS 23.122 [5].

Each "list of PLMN(s) to be used in disaster condition" is stored together with the PLMN identity of the PLMN that provided it. The stored lists of type "list of PLMN(s) to be used in disaster condition" can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the lists of type "list of PLMN(s) to be used in disaster condition". The UE shall store at least the "list of PLMN(s) to be used in disaster condition" provided by the HPLMN or EHPLMN. The maximum number of stored lists of type "list of PLMN(s) to be used in disaster condition" provided by a PLMN other than the HPLMN or EHPLMN is UE implementation dependent.

The disaster roaming wait range can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the disaster roaming wait range.

The disaster return wait range can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the disaster return wait range.

The indication of whether disaster roaming is enabled in the UE can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the indication of whether disaster roaming is enabled in the UE.

The indication of 'applicability of "lists of PLMN(s) to be used in disaster condition" provided by a VPLMN' can only be used if the SUPI from the USIM matches the SUPI stored in the non-volatile memory of the ME; else the UE shall delete the indication of 'applicability of "lists of PLMN(s) to be used in disaster condition" provided by a VPLMN'.

Editor's note (WI MINT, CR#4066): Whether the ME deletes the indication of "whether disaster roaming is enabled" or the indication of 'applicability of "lists of PLMN(s) to be used in disaster condition" provided by a VPLMN' upon change of country or when the UE is switched-off is FFS. Also for further study are the conditions on how to coordinate and make use of the mentioned indications stored on the USIM and the ME.

## C.2 Storage of 5GMM information for UEs operating in SNPN access operation mode

The 5GMM information for UEs operating in SNPN access operation mode are stored according to the following conditions:

- if the UE does not support access to an SNPN using credentials from a credentials holder, the following 5GMM parameters shall be stored per subscribed SNPN in a non-volatile memory in the ME together with the subscriber identifier associated with the SNPN identity of the SNPN in the "list of subscriber data" configured in the ME (see 3GPP TS 23.122 [5]);and

- if the UE supports access to an SNPN using credentials from a credentials holder, the following 5GMM parameters shall be stored in a non-volatile memory in the ME per:

i) the subscribed SNPN together with the subscriber identifier associated with the selected entry in the "list of subscriber data" configured in the ME (see 3GPP TS 23.122 [5]); or

ii) the PLMN subscription together with the SUPI from the USIM which is associated with the PLMN subscription:

a) 5G-GUTI;

b) last visited registered TAI;

c) 5GS update status;

d) 5G NAS security context parameters from a full native 5G NAS security context (see 3GPP TS 33.501 [24]);

e) KAUSF and KSEAF (see 3GPP TS 33.501 [24]);

f) UE parameter update counter (see subclause 9.11.3.53A);

g) configured NSSAI(s);

g1) NSSRG information;

g2) NSAG information;

h) NSSAI inclusion mode(s);

i) MPS indicator;

j) MCS indicator;

k) operator-defined access category definitions;

l) network-assigned UE radio capability IDs; and

m) signalled URSP (see 3GPP TS 24.526 [19]).

NOTE: Steering of roaming does not apply to an SNPN. Therefore, for a KAUSF which is generated for an SNPN, the UE does not store an associated SOR counter in the non-volatile memory.

If the 5GMM parameters are associated with the PLMN subscription, then the 5GMM parameters can only be used if the SUPI from the USIM which is associated with the selected PLMN subscription matches the SUPI stored in the non-volatile memory; else the UE shall delete the 5GMM parameters.

If the 5GMM parameters are associated with the subscribed SNPN of the entry in the "list of subscriber data", then the 5GMM parameters can only be used if the subscriber identifier of the selected entry of the "list of subscriber data" matches the subscriber identifier stored in the non-volatile memory.

Each configured NSSAI consists of S-NSSAI(s) stored together with an SNPN identity, if it is associated with an SNPN. A configured NSSAI may be associated with NSSRG information or NSAG information or both.

Each NSSAI inclusion mode is associated with an SNPN identity and access type.

The MPS indicator is stored together with an SNPN identity of the SNPN that provided it, and is valid in that registered SNPN.

The MCS indicator is stored together with an SNPN identity of the SNPN that provided it, and is valid in that registered SNPN.

Operator-defined access category definitions are stored together with an SNPN identity of the SNPN that provided them, and are valid in that SNPN. The maximum number of stored operator-defined access category definitions is UE implementation dependent.

Each network-assigned UE radio capability ID is stored together with an SNPN identity of the SNPN that provided it as well as a mapping to the corresponding UE radio configuration, and is valid in that SNPN. The UE shall be able to store at least the last 16 received network-assigned UE radio capability IDs. There shall be only one network-assigned UE radio capability ID stored for a given combination of SNPN identity and UE radio configuration and any existing UE radio capability ID shall be deleted when a new UE radio capability ID is added for the same combination of SNPN identity and UE radio configuration. If the UE receives a network-assigned UE radio capability ID with a Version ID value different from the value included in the network-assigned UE radio capability ID(s) stored at the UE for the serving SNPN, the UE may delete these stored network-assigned UE radio capability ID(s).

The allowed NSSAI(s) can be stored in a non-volatile memory in the ME. Allowed NSSAI consists of S-NSSAI(s) stored together with an SNPN identity, if it is associated with an SNPN.

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