**3GPP TSG-CT WG1 Meeting #130-eC1-213259**

**Electronic meeting, 20-28 May 2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **3258** | **rev** | **-** | **Current version:** | **17.2.1** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Update of registration procedure for SNPN case | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | vivo | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eNPN | | | | |  | ***Date:*** | | | 2021-5-6 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | 1) TS 23.501 CR#2562(S2-2102974) was agreed during SA2 #144e April 12 -- April 16 2021 which defines the usage of UE identify in the Registration Request message when the UE is registering with an SNPN.  Quote from S2-2102974:  *If the UE is registering with an SNPN, when the UE is performing an Initial Registration the UE shall indicate its UE identity in the Registration Request message as follows, listed in decreasing order of preference:*  *i) a native 5G-GUTI assigned by the same SNPN to which the UE is attempting to register, if available;*  *ii) a native 5G-GUTI assigned by any other SNPN along with the NID of the SNPN that assigned the 5G-GUTI, if available;*  *iii) Otherwise, the UE shall include its SUCI in the Registration Request as defined in TS 33.501 [15].*  2) In S2-2102974, it is also agreed that if the UE is registering with an SNPN, the UE shall also provide the NID of the SNPN that assigned the 5G-GUTI to network.  Quote from S2-2102974:  *The following are the cleartext IEs, as defined in TS 24.501 [25] that can be sent by the UE in the Registration Request message if the UE has no NAS security context:*  *- Registration type*  *- SUCI or 5G-GUTI or PEI*  *- Security parameters*  *- additional GUTI*  *- 4G Tracking Area Update*  *- the indication that the UE is moving from EPS.*  *- if the UE is registering with an SNPN, the NID of the SNPN that assigned the 5G-GUTI*  *NOTE: The NID is provided when the 5G-GUTI is assigned by another SNPN than the selected SNPN.*  It is proposed to align TS 24.501 with the SA2 requiement. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. It is proposed to define the usage of UE identify in the Registration Request message when the UE is registering with an SNPN to align with SA2; 2. It is proposed to clarify that if the UE is registering with an SNPN, the UE shall also provide the NID of the SNPN that assigned the 5G-GUTI to network to align with SA2. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Stage 3 is not aligned with the stage 2 requirement. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.14.2, 5.5.1.2.2, 8.2.6.1, 8.2.6.X(new), 9.11.3.X(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS/TR 23.502 CR 2641 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\*\*\* start of change \*\*\*\*\*

### 4.14.2 Stand-alone non-public network

If the UE is not SNPN enabled, the UE is always considered to be not operating in SNPN access operation mode. If the UE is SNPN enabled, the UE can operate in SNPN access operation mode. Details of activation and deactivation of SNPN access operation mode at the SNPN enabled UE are up to UE implementation.

The functions and procedures of NAS described in the present document are applicable to an SNPN and an SNPN enabled UE unless indicated otherwise. The key differences brought by the SNPN to the NAS layer are as follows:

a) instead of the PLMN selection process, the SNPN selection process is performed by a UE operating in SNPN access operation mode (see 3GPP TS 23.122 [5] for further details on the SNPN selection);

b) a "permanently forbidden SNPNs" list and a "temporarily forbidden SNPNs" list are managed per access type independently (i.e. 3GPP access or non-3GPP access) by a UE operating in SNPN access operation mode instead of forbidden PLMN lists;

c) inter-system change to and from S1 mode is not supported;

d) emergency services are not supported in SNPN access operation mode;

e) CAG is not supported in SNPN access operation mode;

f) with respect to the 5GMM cause values:

1) 5GMM cause values #74 "Temporarily not authorized for this SNPN" and #75 "Permanently not authorized for this SNPN" are supported whereas these 5GMM cause values cannot be used in a PLMN; and

2) 5GMM cause values #11 "PLMN not allowed", #31 "Redirection to EPC required", #73 "Serving network not authorized", and #76 "Not authorized for this CAG or authorized for CAG cells only" are not supported whereas these 5GMM cause values can be used in a PLMN;

NOTE 1: The network does not send 5GMM cause value #13 to the UE operating in SNPN access operation mode in this release of specification.

g) a list of "5GS forbidden tracking areas for roaming" and a list of "5GS forbidden tracking areas for regional provision of service" are managed per SNPN (see 3GPP TS 23.122 [5]);

h) when accessing SNPN services via a PLMN using 3GPP access, access to 5GCN of the SNPN is performed using 5GMM procedures for non-3GPP access, 5GMM parameters for non-3GPP access, the UE is performing access to SNPN over non-3GPP access and the UE is not operating in SNPN access mode over 3GPP access. When accessing PLMN services via a SNPN using 3GPP access, access to 5GCN of the PLMN is performed using 5GMM procedures for non-3GPP access, 5GMM parameters for non-3GPP access, the UE is not performing access to SNPN over non-3GPP access, and the UE is operating in SNPN access mode over 3GPP access. From the UE's NAS perspective, accessing PLMN services via an SNPN and accessing SNPN services via a PLMN are treated as untrusted non-3GPP access. If the UE is accessing the PLMN using non-3GPP access, the access to 5GCN of the SNPN via PLMN is not specified in this release of the specification;

NOTE 2: The term "non-3GPP access" in an SNPN refers to the case where the UE is accessing SNPN services via a PLMN.

i) when registered to an SNPN, the UE shall use only the UE policies provided by the registered SNPN;

j) equivalent SNPN is not supported;

k) neither the default configured NSSAI nor the network slicing indication is supported in SNPNs;

l) roaming is not supported in SNPN access operation mode;

m) handover between SNPNs and handover between an SNPN and a PLMN are not supported;

n) CIoT 5GS optimizations are not supported;

o) accessing SNPN services using non-3GPP access is not supported, except when accessing SNPN services via a PLMN using 3GPP access as specified in item h;

p) when registering or registered to an SNPN, the UE shall consider the UE identify as described in subclause 5.5.1.2.2. and

q) when registering or registered to an SNPN, the UE shall only consider a last visited registered TAI visited in the same SNPN as an available last visited registered TAI.

\*\*\*\*\* next of changes \*\*\*\*\*

##### 5.5.1.2.2 Initial registration initiation

The UE in state 5GMM-DEREGISTERED shall initiate the registration procedure for initial registration by sending a REGISTRATION REQUEST message to the AMF,

a) when the UE performs initial registration for 5GS services;

b) when the UE performs initial registration for emergency services;

c) when the UE performs initial registration for SMS over NAS; and

d) when the UE moves from GERAN to NG-RAN coverage or the UE moves from a UTRAN to NG-RAN coverage and the following applies:

1) the UE initiated a GPRS attach or routing area updating procedure while in A/Gb mode or Iu mode; or

2) the UE has performed 5G-SRVCC from NG-RAN to UTRAN as specified in 3GPP TS 23.216 [6A],

and since then the UE did not perform a successful EPS attach or tracking area updating procedure in S1 mode or registration procedure in N1 mode,

with the following clarifications to initial registration for emergency services:

a) the UE shall not initiate an initial registration for emergency services over the current access, if the UE is already registered for emergency services over the non-current access, unless the initial registration has to be initiated to perform handover of an existing emergency PDU session from the non-current access to the current access; and

NOTE 1: Transfer of an existing emergency PDU session between 3GPP access and non-3GPP access is needed e.g. if the UE determines that the current access is no longer available.

b) the UE can only initiate an initial registration for emergency services over non-3GPP access if it cannot register for emergency services over 3GPP access.

The UE initiates the registration procedure for initial registration by sending a REGISTRATION REQUEST message to the AMF, starting timer T3510. If timer T3502 is currently running, the UE shall stop timer T3502. If timer T3511 is currently running, the UE shall stop timer T3511.

During initial registration to a PLMN, the UE handles the 5GS mobile identity IE in the following order:

a) if:

1) the UE:

i) was previously registered in S1 mode before entering state EMM-DEREGISTERED; and

ii) has received an "interworking without N26 interface not supported" indication from the network; and

2) EPS security context and a valid 4G-GUTI are available;

then the UE shall create a 5G-GUTI mapped from the valid 4G-GUTI and indicate the mapped 5G-GUTI in the 5GS mobile identity IE. The UE shall include the UE status IE with the EMM registration status set to "UE is not in EMM-REGISTERED state" and shall include an ATTACH REQUEST message as specified in 3GPP TS 24.301 [15] in the EPS NAS message container IE.

Additionally, if the UE holds a valid 5G‑GUTI, the UE shall include the 5G-GUTI in the Additional GUTI IE in the REGISTRATION REQUEST message in the following order:

1) a valid 5G-GUTI that was previously assigned by the same PLMN with which the UE is performing the registration, if available;

2) a valid 5G-GUTI that was previously assigned by an equivalent PLMN, if available; and

3) a valid 5G-GUTI that was previously assigned by any other PLMN, if available;

b) if the UE holds a valid 5G-GUTI that was previously assigned, over 3GPP access or non-3GPP access, by the same PLMN with which the UE is performing the registration, the UE shall indicate the 5G-GUTI in the 5GS mobile identity IE;

c) if the UE holds a valid 5G-GUTI that was previously assigned, over 3GPP access or non-3GPP access, by an equivalent PLMN, the UE shall indicate the 5G-GUTI in the 5GS mobile identity IE;

d) if the UE holds a valid 5G-GUTI that was previously assigned, over 3GPP access or non-3GPP, by any other PLMN, the UE shall indicate the 5G-GUTI in the 5GS mobile identity IE;

e) if a SUCI is available the UE shall include the SUCI in the 5GS mobile identity IE; and

f) if the UE does not hold a valid 5G-GUTI or SUCI, and is initiating the registration procedure for emergency services, the PEI shall be included in the 5GS mobile identity IE.

During initial registration to an SNPN, the UE handles the 5GS mobile identity IE in the following order:

a) if the UE holds a valid 5G-GUTI that was previously assigned by the same SNPN with which the UE is performing the registration, the UE shall indicate the 5G-GUTI in the 5GS mobile identity IE;

b) if the UE holds a valid 5G-GUTI that was previously assigned by any other SNPN, the UE shall indicate the 5G-GUTI in the 5GS mobile identity IE; In addition, the UE shall also provide to the network the NID of the SNPN that assigned the 5G-GUTI;

c) if a SUCI is available the UE shall include the SUCI in the 5GS mobile identity IE; and

d) if the UE does not hold a valid 5G-GUTI or SUCI, and is initiating the registration procedure for emergency services, the PEI shall be included in the 5GS mobile identity IE.

If the SUCI is included in the 5GS mobile identity IE and the timer T3519 is not running, the UE shall start timer T3519 and store the value of the SUCI sent in the REGISTRATION REQUEST message. The UE shall include the stored SUCI in the REGISTRATION REQUEST message while timer T3519 is running.

If the UE is operating in the dual-registration mode and it is in EMM state EMM-REGISTERED, the UE shall include the UE status IE with the EMM registration status set to "UE is in EMM-REGISTERED state".

NOTE 2: Inclusion of the UE status IE with this setting corresponds to the indication that the UE is "moving from EPC" as specified in 3GPP TS 23.502 [9].

NOTE 3: The value of the 5GMM registration status included by the UE in the UE status IE is not used by the AMF.

If the last visited registered TAI is available, the UE shall include the last visited registered TAI in the REGISTRATION REQUEST message.

If the UE requests the use of SMS over NAS, the UE shall include the 5GS update type IE in the REGISTRATION REQUEST message with the SMS requested bit set to "SMS over NAS supported". When the 5GS update type IE is included in the REGISTRATION REQUEST for reasons other than requesting the use of SMS over NAS, and the UE does not need to register for SMS over NAS, the UE shall set the SMS requested bit of the 5GS update type IE to "SMS over NAS not supported" in the REGISTRATION REQUEST message.

If the UE supports MICO mode and requests the use of MICO mode, then the UE shall include the MICO indication IE in the REGISTRATION REQUEST message. If the UE requests to use an active time value, it shall include the active time value in the T3324 IE in the REGISTRATION REQUEST message. Additionally, if the UE supports strictly periodic registration timer, the UE shall set the Strictly Periodic Registration Timer Indication bit of the MICO indication IE in the REGISTRATION REQUEST message to "strictly periodic registration timer supported".

If the UE needs to use the UE specific DRX parameters, the UE shall include the Requested DRX parameters IE in the REGISTRATION REQUEST message.

If the UE is in NB-N1 mode and if the UE needs to use the UE specific DRX parameters for NB-N1 mode, the UE shall include the Requested NB-N1 mode DRX parameters IE in the REGISTRATION REQUEST message.

If the UE supports eDRX and requests the use of eDRX, the UE shall include the Requested extended DRX parameters IE in the REGISTRATION REQUEST message.

If the UE needs to request LADN information for specific LADN DNN(s) or indicates a request for LADN information as specified in 3GPP TS 23.501 [8], the UE shall include the LADN indication IE in the REGISTRATION REQUEST message and:

- request specific LADN DNNs by including a LADN DNN value in the LADN indication IE for each LADN DNN for which the UE requests LADN information; or

- to indicate a request for LADN information by not including any LADN DNN value in the LADN indication IE.

The UE shall include the requested NSSAI containing the S-NSSAI(s) corresponding to the slice(s) to which the UE intends to register with and shall include the mapped S-NSSAI(s) for the requested NSSAI, if available, in the REGISTRATION REQUEST message. If the UE has allowed NSSAI or configured NSSAI or both for the current PLMN, the requested NSSAI shall be either:

a) the configured NSSAI for the current PLMN, or a subset thereof as described below;

b) the allowed NSSAI for the current PLMN, or a subset thereof as described below; or

c) the allowed NSSAI for the current PLMN, or a subset thereof as described below, plus one or more S-NSSAIs from the configured NSSAI for which no corresponding S-NSSAI is present in the allowed NSSAI and those are neither in the rejected NSSAI for the current PLMN nor in the rejected NSSAI for the current registration area nor in the rejected NSSAI for the failed or revoked NSSAA nor in the pending NSSAI.

If the UE has neither allowed NSSAI for the current PLMN nor configured NSSAI for the current PLMN and has a default configured NSSAI, the UE shall:

a) include the S-NSSAI(s) in the Requested NSSAI IE of the REGISTRATION REQUEST message using the default configured NSSAI; and

b) include the Network slicing indication IE with the Default configured NSSAI indication bit set to "Requested NSSAI created from default configured NSSAI" in the REGISTRATION REQUEST message.

If the UE has no allowed NSSAI for the current PLMN, no configured NSSAI for the current PLMN, and no default configured NSSAI, the UE shall not include a requested NSSAI in the REGISTRATION REQUEST message.

If all the S-NSSAI(s) corresponding to the slice(s) to which the UE intends to register are included in the pending NSSAI, the UE shall not include a requested NSSAI in the REGISTRATION REQUEST message.

The subset of configured NSSAI provided in the requested NSSAI consists of one or more S-NSSAIs in the configured NSSAI applicable to the current PLMN, if the S-NSSAI is neither in the rejected NSSAI for the current PLMN nor in the rejected NSSAI for the current registration area nor in the rejected NSSAI for the failed or revoked NSSAA.

The subset of allowed NSSAI provided in the requested NSSAI consists of one or more S-NSSAIs in the allowed NSSAI for the current PLMN.

NOTE 4: How the UE selects the subset of configured NSSAI or allowed NSSAI to be provided in the requested NSSAI is implementation specific. The UE can take preferences indicated by the upper layers (e.g. policies like URSP, applications) into account.

NOTE 5: The number of S-NSSAI(s) included in the requested NSSAI cannot exceed eight.

If the UE initiates an initial registration for emergency services or needs to prolong the established NAS signalling connection after the completion of the initial registration procedure (e.g. due to uplink signalling pending), the UE shall set the Follow-on request indicator to "Follow-on request pending".

NOTE 6: The UE is not required to set the Follow-on request indicator to "Follow-on request pending", even if the UE has to request resources for V2X communication over PC5 reference point.

If the UE supports S1 mode, the UE shall:

- set the S1 mode bit to "S1 mode supported" in the 5GMM capability IE of the REGISTRATION REQUEST message;

- include the S1 UE network capability IE in the REGISTRATION REQUEST message; and

- if the UE supports sending an ATTACH REQUEST message containing a PDN CONNECTIVITY REQUEST message with request type set to "handover" to transfer a PDU session from N1 mode to S1 mode, set the HO attach bit to "attach request message containing PDN connectivity request with request type set to handover to transfer PDU session from N1 mode to S1 mode supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the UE supports the LTE positioning protocol (LPP) in N1 mode as specified in 3GPP TS 36.355 [26], the UE shall set the LPP bit to "LPP in N1 mode supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the UE supports the Location Services (LCS) notification mechanisms in N1 mode as specified in 3GPP TS 23.273 [6B], the UE shall set the 5G-LCS bit to "LCS notification mechanisms supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the UE is in NB-N1 mode, then the UE shall set the Control plane CIoT 5GS optimization bit to "Control plane CIoT 5GS optimization supported" in the 5GMM capability IE of the REGISTRATION REQUEST message. If the UE is capable of NB-S1 mode, then the UE shall set the Control plane CIoT EPS optimization bit to "Control plane CIoT EPS optimization supported" in the S1 UE network capability IE of the REGISTRATION REQUEST message.

If the UE supports N3 data transfer and multiple user-plane resources in NB-N1 mode (see 3GPP TS 36.306 [25D], 3GPP TS 36.331 [25A]), then the UE shall set the Multiple user-plane resources support bit to "Multiple user-plane resources supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the UE supports 5G-SRVCC from NG-RAN to UTRAN as specified in 3GPP TS 23.216 [6A], the UE shall:

- set the 5G-SRVCC from NG-RAN to UTRAN capability bit to "5G-SRVCC from NG-RAN to UTRAN supported" in the 5GMM capability IE of the REGISTRATION REQUEST message; and

- include the Mobile station classmark 2 IE and the Supported codecs IE in the REGISTRATION REQUEST message.

If the UE supports service gap control, then the UE shall set the SGC bit to "service gap control supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the UE supports the restriction on use of enhanced coverage, the UE shall set the RestrictEC bit to "Restriction on use of enhanced coverage supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the UE supports network slice-specific authentication and authorization, the UE shall set the NSSAA bit to "network slice-specific authentication and authorization supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the UE supports CAG feature, the UE shall set the CAG bit to "CAG Supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

When the UE is not in NB-N1 mode, if the UE supports RACS, the UE shall:

a) set the RACS bit to "RACS supported" in the 5GMM capability IE of the REGISTRATION REQUEST message;

b) if the UE has an applicable network-assigned UE radio capability ID for the current UE radio configuration in the selected PLMN or SNPN, include the applicable network-assigned UE radio capability ID in the UE radio capability ID IE of the REGISTRATION REQUEST message; and

c) if the UE:

1) does not have an applicable network-assigned UE radio capability ID for the current UE radio configuration in the selected PLMN or SNPN; and

2) has an applicable manufacturer-assigned UE radio capability ID for the current UE radio configuration,

include the applicable manufacturer-assigned UE radio capability ID in the UE radio capability ID IE of the REGISTRATION REQUEST message.

If the UE has one or more stored UE policy sections identified by a UPSI with the PLMN ID part indicating the HPLMN or the selected PLMN, the UE shall set the Payload container type IE to "UE policy container" and include the UE STATE INDICATION message (see annex D) in the Payload container IE of the REGISTRATION REQUEST message.

NOTE 7: In this version of the protocol, the UE can only include the Payload container IE in the REGISTRATION REQUEST message to carry a payload of type "UE policy container".

If the UE does not have a valid 5G NAS security context, the UE shall send the REGISTRATION REQUEST message without including the NAS message container IE. The UE shall include the entire REGISTRATION REQUEST message (i.e. containing cleartext IEs and non-cleartext IEs, if any) in the NAS message container IE that is sent as part of the SECURITY MODE COMPLETE message as described in subclauses 4.4.6 and 5.4.2.3.

If the UE has a valid 5G NAS security context and the UE needs to send non-cleartext IEs, the UE shall send a REGISTRATION REQUEST message including the NAS message container IE as described in subclause 4.4.6. If the UE does not need to send non-cleartext IEs, the UE shall send a REGISTRATION REQUEST message without including the NAS message container IE.

If the UE supports ciphered broadcast assistance data and needs to obtain new ciphering keys, the UE shall include the Additional information requested IE with the CipherKey bit set to "ciphering keys for ciphered broadcast assistance data requested" in the REGISTRATION REQUEST message.

The UE shall set the WUSA bit to "WUS assistance information reception supported" in the 5GMM capability IE if the UE supports WUS assistance information. The UE may include its UE paging probability information in the Requested WUS assistance information IE if the UE has set the WUSA bit to "WUS assistance information reception supported" in the 5GMM capability IE and the UE is not performing the initial registration for emergency services.

If the REGISTRATION REQUEST message includes a NAS message container IE, the AMF shall process the REGISTRATION REQUEST message that is obtained from the NAS message container IE as described in subclause 4.4.6.

If the UE supports V2X as specified in 3GPP TS 24.587 [19B], the UE shall set the V2X bit to "V2X supported" in the 5GMM capability IE of the REGISTRATION REQUEST message. If the UE supports V2X communication over E-UTRA-PC5 as specified in 3GPP TS 24.587 [19B], the UE shall set the V2XCEPC5 bit to "V2X communication over E-UTRA-PC5 supported" in the 5GMM capability IE of the REGISTRATION REQUEST message. If the UE supports V2X communication over NR-PC5 as specified in 3GPP TS 24.587 [19B], the UE shall set the V2XCNPC5 bit to "V2X communication over NR-PC5 supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the UE supports extended rejected NSSAI, then the UE shall set the ER-NSSAI bit to "Extended rejected NSSAI supported" in the 5GMM capability IE of the REGISTRATION REQUEST message.

If the W-AGF acting on behalf of an N5GC device initiates an initial registration as specified in 3GPP TS 23.316 [6D], the W-AGF acting on behalf of the N5GC device shall include the N5GC indication IE with the N5GC device indication bit set to "N5GC device registration is requested" in the REGISTRATION REQUEST message.



Figure 5.5.1.2.2.1: Registration procedure for initial registration

\*\*\*\*\* next of changes \*\*\*\*\*

#### 8.2.6.1 Message definition

The REGISTRATION REQUEST message is sent by the UE to the AMF. See table 8.2.6.1.1.

Message type: REGISTRATION REQUEST

Significance: dual

Direction: UE to network

Table 8.2.6.1.1: REGISTRATION REQUEST 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 request message identity | | Message type  9.7 | | M | | V | | 1 | |
|  | | 5GS registration type | | 5GS registration type  9.11.3.7 | | M | | V | | 1/2 | |
|  | | ngKSI | | NAS key set identifier  9.11.3.32 | | M | | V | | 1/2 | |
|  | | 5GS mobile identity | | 5GS mobile identity  9.11.3.4 | | M | | LV-E | | 6-n | |
| C- | | Non-current native NAS key set identifier | | NAS key set identifier  9.11.3.32 | | O | | TV | | 1 | |
| 10 | | 5GMM capability | | 5GMM capability  9.11.3.1 | | O | | TLV | | 3-15 | |
| 2E | | UE security capability | | UE security capability  9.11.3.54 | | O | | TLV | | 4-10 | |
| 2F | | Requested NSSAI | | NSSAI  9.11.3.37 | | O | | TLV | | 4-74 | |
| 52 | | Last visited registered TAI | | 5GS tracking area identity  9.11.3.8 | | O | | TV | | 7 | |
| 17 | | S1 UE network capability | | S1 UE network capability  9.11.3.48 | | O | | TLV | | 4-15 | |
| 40 | | Uplink data status | | Uplink data status  9.11.3.57 | | O | | TLV | | 4-34 | |
| 50 | | PDU session status | | PDU session status  9.11.3.44 | | O | | TLV | | 4-34 | |
| B- | | MICO indication | | MICO indication  9.11.3.31 | | O | | TV | | 1 | |
| 2B | | UE status | | UE status  9.11.3.56 | | O | | TLV | | 3 | |
| 77 | | Additional GUTI | | 5GS mobile identity  9.11.3.4 | | O | | TLV-E | | 14 | |
| 25 | | Allowed PDU session status | | Allowed PDU session status  9.11.3.13 | | O | | TLV | | 4-34 | |
| 18 | | UE's usage setting | | UE's usage setting  9.11.3.55 | | O | | TLV | | 3 | |
| 51 | | Requested DRX parameters | | 5GS DRX parameters  9.11.3.2A | | O | | TLV | | 3 | |
| 70 | | EPS NAS message container | | EPS NAS message container  9.11.3.24 | | O | | TLV-E | | 4-n | |
| 74 | | LADN indication | | LADN indication  9.11.3.29 | | O | | TLV-E | | 3-811 | |
| 8- | | Payload container type | | Payload container type  9.11.3.40 | | O | | TV | | 1 | |
| 7B | | Payload container | | Payload container  9.11.3.39 | | O | | TLV-E | | 4-65538 | |
| 9- | | Network slicing indication | | Network slicing indication  9.11.3.36 | | O | | TV | | 1 | |
| 53 | | 5GS update type | | 5GS update type  9.11.3.9A | | O | | TLV | | 3 | |
| 41 | | Mobile station classmark 2 | | Mobile station classmark 2  9.11.3.31C | | O | | TLV | | 5 | |
| 42 | | Supported codecs | | Supported codec list  9.11.3.51A | | O | | TLV | | 5-n | |
| 71 | | NAS message container | | NAS message container  9.11.3.33 | | O | | TLV-E | | 4-n | |
| 60 | | EPS bearer context status | | EPS bearer context status  9.11.3.23A | | O | | TLV | | 4 | |
| 6E | | Requested extended DRX parameters | | Extended DRX parameters  9.11.3.26A | | 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 | |
| 35 | | Requested mapped NSSAI | | Mapped NSSAI  9.11.3.31B | | O | | TLV | | 3-42 | |
| 48 | | Additional information requested | | Additional information requested  9.11.3.12A | | O | | TLV | | 3 | |
| 1A | | Requested WUS assistance information | | WUS assistance information  9.11.3.71 | | O | | TLV | | 3-n | |
| A- | | N5GC indication | | N5GC indication  9.11.3.72 | | O | | T | | 1 | |
| 30 | | Requested NB-N1 mode DRX parameters | | NB-N1 mode DRX parameters  9.11.3.73 | | O | | TLV | | 3 | |
| XX | | NID of the SNPN that assigned the 5G-GUTI | | Network identifier  9.11.3.X | | O | | TLV | | 8 | |

\*\*\*\*\* next of changes \*\*\*\*\*

#### 8.2.6.X Network identifier

The UE may include this IE if the UE accesses to an SNPN using credentials from any other SNPN.

\*\*\*\*\* next of changes \*\*\*\*\*

#### 9.11.3.X Network identifier

The purpose of the Network identifier information element is to indicate the Network identifier if the UE accesses to an SNPN using credentials from any other SNPN.

The Network identifier information information element is coded as shown in figure 9.11.3.X.1 and table 9.11.3.X.1.

The Network identifier information is a type 4 information element.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | | 4 | | 3 | | 2 | | 1 | |  | | |
| Network identifier IEI | | | | | | | | | | | | | | | | octet 1 | | |
| Length of Network identifier contents | | | | | | | | | | | | | | | | octet 2 | | |
|  | | | | | | | | | | | | | | | | octet 3 | | |
| Network identifier contents | | | | | | | | | | | | | | | |  | | |
|  | | | | | | | | | | | | | | | | octet 8 | | |

Figure 9.11.3.X.1: Network identifier information element

Table 9.11.3.X.1: Network identifier information element

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Network identifier (octet 3 to octet 7)  This field contains the NID of the SNPN if the UE accesses to an SNPN using credentials from any other SNPN. | | | | |

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