**3GPP TSG-CT WG1 Meeting #138-eC1-22xxxx**

**E-Meeting, 10th – 14th October 2022 (rev of C1-225904)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

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| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
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| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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)* | |
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| ***Reason for change:*** | | Currently, subclause 5.3.5.2, 3GPP access service area restrictions, specifies conditions for the inclusion of the Uplink data status IE in the Registration Request message, but corresponding requirements for the Service Request/Control Plane Service Request message are missing.  As these conditions are also missing for most of the cases in the description of the service request procedure in subclause 5.6.1.2, there is currently no restriction that would prevent the UE from including an Uplink data status IE  - when the UE responds to paging, or  - when the UE responds to a notification received via non-3GPP access.  It is proposed to add the missing requirements in subclause 5.3.5.2 and to add references from subclause 5.6.1.2.1 and 5.6.1.2.2 to the restrictions specified in 5.3.5.2. | | | | | | | | |
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| ***Summary of change:*** | | Addition of requirements in subclause 5.3.5.2, that when the UE is in a non-allowed area or the UE is not in an allowed area, then the UE shall not include the Uplink data status IE in the SERVICE REQUEST message or CONTROL PLANE SERVICE REQUEST message except for emergency services or for high priority access.  Addition of references from the service request procedure to subclause 5.3.5.2. | | | | | | | | |
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| ***Consequences if not approved:*** | | A UE implementation may include the Uplink data status IE in a Service Request when it is in a non-allowed area. There is a risk that a network implementation could reject the service request due to this. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.5.2, 5.6.1.2.1, 5.6.1.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

#### 5.3.5.2 3GPP access service area restrictions

The service area restrictions consist of tracking areas forming either an allowed area, or a non-allowed area. The tracking areas belong to either the registered PLMN or its equivalent PLMNs in the registration area. The allowed area can contain up to 16 tracking areas or include all tracking areas in the registered PLMN and its equivalent PLMN(s) in the registration area. The non-allowed area can contain up to 16 tracking areas. The network conveys the service area restrictions to the UE by including either an allowed area, or a non-allowed area, but not both, in the Service area list IE of a REGISTRATION ACCEPT message or a CONFIGURATION UPDATE COMMAND message.

If the network does not convey the service area restrictions to the UE in the Service area list IE of a REGISTRATION ACCEPT message, the UE shall treat all tracking areas in the registered PLMN and its equivalent PLMN(s) in the registration area as allowed area and delete the stored list of "allowed tracking areas" or the stored list of "non-allowed tracking areas".

When the UE receives a Service area list IE with an allowed area indication during a registration procedure or a generic UE configuration update procedure:

a) if the "Type of list" included in the Service area list IE does not indicate "all TAIs belonging to the PLMNs in the registration area are allowed area", the UE shall delete the old list of "allowed tracking areas" and store the tracking areas in the allowed area as the list of "allowed tracking areas". If the UE has a stored list of "non-allowed tracking areas", the UE shall delete that list; or

b) if the "Type of list" included in the Service area list IE indicates "all TAIs belonging to the PLMNs in the registration area are allowed area", the UE shall treat all tracking areas in the registered PLMN and its equivalent PLMN(s) as allowed area and delete the stored list of "allowed tracking areas" or the stored list of "non-allowed tracking areas".

When the UE receives a Service area list IE with a non-allowed area indication during a registration procedure or a generic UE configuration update procedure, the UE shall delete the old list of "non-allowed tracking areas" and store the tracking areas in the non-allowed area as the list of "non-allowed tracking areas". If the UE has a stored list of "allowed tracking areas", the UE shall delete that list.

If the UE is successfully registered to a PLMN and has a stored list of "allowed tracking areas":

a) while the current TAI is in the list of "allowed tracking areas", the UE shall stay in, or enter, the state 5GMM-REGISTERED.NORMAL-SERVICE and is allowed to initiate any 5GMM and 5GSM procedures; and

b) while the UE is camped on a cell which is in the registered PLMN or a PLMN from the list of equivalent PLMNs and the current TAI is not in the list of "allowed tracking areas", the UE shall enter the state 5GMM-REGISTERED.NON-ALLOWED-SERVICE, and:

1) if the UE is in 5GMM-IDLE mode or 5GMM-IDLE mode with suspend indication over 3GPP access, the UE:

i) shall not include the Uplink data status IE in the registration procedure for mobility and periodic registration update except for emergency services or for high priority access;

ii) shall not perform the registration procedure for mobility and periodic registration update with Follow-on request indicator set to "Follow-on request pending", except for:

- emergency services;

- high priority access;

- indicating a change of 3GPP PS data off UE status;

- sending an SOR transparent container;

- sending a UE policy container; or

- sending a UE parameters update transparent container;

iii) shall not initiate a service request procedure or request the lower layers to resume a suspended connection, except for:

- emergency services;

- emergency services fallback;

- high priority access;

- responding to paging;

- responding to notification received over non-3GPP access;

- indicating a change of 3GPP PS data off UE status;

- sending an SOR transparent container;

- sending a UE policy container; or

- sending a UE parameters update transparent container.

The UE shall not include the Uplink data status IE in the SERVICE REQUEST message or CONTROL PLANE SERVICE REQUEST message except for emergency services or for high priority access; and

2) if the UE is in 5GMM-CONNECTED mode or 5GMM-CONNECTED mode with RRC inactive indication over 3GPP access, the UE:

i) shall not perform the registration procedure for mobility and periodic registration update with Uplink data status IE except for emergency services or for high priority access;

ii) shall not initiate a service request procedure except for:

- emergency services;

- emergency services fallback;

- high priority access;

- responding to paging or responding to notification received over non-3GPP access.

The UE shall not include the Uplink data status IE in the SERVICE REQUEST message or CONTROL PLANE SERVICE REQUEST message except for emergency services or for high priority access;

iii) shall not initiate a 5GSM procedure except for:

- emergency services;

- high priority access; or

- indicating a change of 3GPP PS data off UE status; and

iv) shall not perform the NAS transport procedure except for the sending:

- SMS;

- an LPP message;

- a location services message;

- an SOR transparent container;

- a UE policy container;

- a UE parameters update transparent container; or

- a CIoT user data container.

NOTE 1: The contents of CIoT user data container can be data that is not for exception reports, or data that is for exception reports if allowed for the UE (see subclause 6.2.13).

If the UE is successfully registered to a PLMN and has a stored list of "non-allowed tracking areas":

a) while the UE is camped on a cell which is in the registered PLMN or a PLMN from the list of equivalent PLMNs and the current TAI is not in the list of "non-allowed tracking areas", the UE shall stay in, or enter, the state 5GMM-REGISTERED.NORMAL-SERVICE and is allowed to initiate any 5GMM and 5GSM procedures; and

b) while the current TAI is in the list of "non-allowed tracking areas", the UE shall enter the state 5GMM-REGISTERED.NON-ALLOWED-SERVICE, and:

1) if the UE is in 5GMM-IDLE mode or 5GMM-IDLE mode with suspend indication over 3GPP access, the UE:

i) shall not include the Uplink data status IE in the registration procedure for mobility and periodic registration update except for emergency services or for high priority access;

ii) shall not perform the registration procedure for mobility and periodic registration update with Follow-on request indicator set to "Follow-on request pending", except for:

- emergency services;

- high priority access;

- indicating a change of 3GPP PS data off UE status;

- sending an SOR transparent container;

- sending a UE policy container; or

- sending a UE parameters update transparent container; and

iii) shall not initiate a service request procedure or request the lower layers to resume a suspended connection, except for:

- emergency services;

- emergency services fallback;

- high priority access;

- responding to paging;

- responding to notification received over non-3GPP access;

- indicating a change of 3GPP PS data off UE status;

- sending an SOR transparent container;

- sending a UE policy container; or

- sending a UE parameters update transparent container.

The UE shall not include the Uplink data status IE in the SERVICE REQUEST message or CONTROL PLANE SERVICE REQUEST message except for emergency services or for high priority access; and

2) if the UE is in 5GMM-CONNECTED mode or 5GMM-CONNECTED mode with RRC inactive indication over 3GPP access, the UE:

i) shall not perform the registration procedure for mobility and registration update with the Uplink data status IE except for emergency services or for high priority access;

ii) shall not initiate a service request procedure or request the lower layers to resume a suspended connection, except for:

- emergency services;

- emergency services fallback;

- high priority access; or

- responding to paging or responding to notification received over non-3GPP access.

The UE shall not include the Uplink data status IE in the SERVICE REQUEST message or CONTROL PLANE SERVICE REQUEST message except for emergency services or for high priority access;

iii) shall not initiate a 5GSM procedure except for:

- emergency services;

- high priority access; or

- indicating a change of 3GPP PS data off UE status; and

iv) shall not perform the NAS transport procedure except for the sending:

- SMS;

- an LPP message;

- a location services message;

- an SOR transparent container;

- a UE policy container;

- a UE parameters update transparent container; or

- a CIoT user data container.

NOTE 2: The contents of CIoT user data container can be data that is not for exception reports, or data that is for exception reports if allowed for the UE (see subclause 6.2.13).

The list of "allowed tracking areas", as well as the list of "non-allowed tracking areas" shall be erased when:

a) the UE is switched off; and

b) the UICC containing the USIM is removed or an entry of the "list of subscriber data" with the SNPN identity of the SNPN is updated.

When a tracking area is added to the list of "5GS forbidden tracking areas for roaming" or to the list of "5GS forbidden tracking areas for regional provision of service" as specified in the subclauses 5.5.1.2.5 or 5.5.1.3.5, the tracking area shall be removed from the list of "allowed tracking areas" if the tracking area is already present in the list of "allowed tracking areas" and from the list of "non-allowed tracking areas" if the tracking area is already present in the list of "non-allowed tracking areas".

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#### \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* NEXT MODIFIED SECTION \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 5.6.1.2.1 UE is not using 5GS services with control plane CIoT 5GS optimization

The UE initiates the service request procedure by sending a SERVICE REQUEST message to the AMF. The UE shall start timer T3517 and enter the state 5GMM-SERVICE-REQUEST-INITIATED.

If the UE is sending the SERVICE REQUEST message from 5GMM-IDLE mode and the UE needs to send non-cleartext IEs, the UE shall send the SERVICE REQUEST message including the NAS message container IE as described in subclause 4.4.6.

For cases a), b), and g) in subclause 5.6.1.1, the service type IE in the SERVICE REQUEST message shall be set to "mobile terminated services".

For cases c), d), e), f), i), j), l) m) and n) in subclause 5.6.1.1, if the UE is a UE configured for high priority access in selected PLMN, the service type IE in the SERVICE REQUEST message shall be set to "high priority access".

For case a) in subclause 5.6.1.1:

a) if the paging request includes an indication for non-3GPP access type, the Allowed PDU session status IE shall be included in the SERVICE REQUEST message. If the UE has established the PDU session(s) over the non-3GPP access for which the associated S-NSSAI(s) are included in the allowed NSSAI for 3GPP access, the UE shall indicate the PDU session(s) for which the UE allows the user-plane resources to be re-established over 3GPP access in the Allowed PDU session status IE. Otherwise, the UE shall not indicate any PDU session(s) in the Allowed PDU session status IE; and

b) if the UE has uplink user data pending to be sent over 3GPP access, the Uplink data status IE shall be included in the SERVICE REQUEST message to indicate the PDU session(s) for which the UE has pending user data to be sent. Otherwise, the Uplink data status IE shall not be included in the SERVICE REQUEST message.

For case b) in subclause 5.6.1.1:

a) the Allowed PDU session status IE shall be included in the SERVICE REQUEST message. If the UE has the PDU session(s) over the non-3GPP access for which the associated S-NSSAI(s) are included in the allowed NSSAI for 3GPP access, the UE shall indicate the PDU session(s) for which the UE allows the user-plane resources to be re-established over 3GPP access in the Allowed PDU session status IE. Otherwise, the UE shall not indicate any PDU session(s) in the Allowed PDU session status IE; and

b) if the UE has uplink user data pending to be sent over 3GPP access, the Uplink data status IE shall be included in the SERVICE REQUEST message to indicate the PDU session(s) for which the UE has pending user data to be sent. Otherwise, the Uplink data status IE shall not be included in the SERVICE REQUEST message.

When the Allowed PDU session status IE is included in the SERVICE REQUEST message, the UE shall indicate that a PDU session is not allowed to be transferred to the 3GPP access if the 3GPP PS data off UE status is "activated" for the corresponding PDU session and the UE is not using the PDU session to send uplink IP packets for any of the 3GPP PS data off exempt services (see subclause 6.2.10).

For case c) in subclause 5.6.1.1, the Uplink data status IE shall not be included in the SERVICE REQUEST message except if the UE has one or more active always-on PDU sessions associated with the access type over which the SERVICE REQUEST message is sent. If the UE is not a UE configured for high priority access in selected PLMN and:

a) if the SERVICE REQUEST message is triggered by a request for emergency services from the upper layer, the UE shall set the service type IE in the SERVICE REQUEST message to "emergency services"; or

b) otherwise, the UE shall set the service type IE to "signalling".

When the UE is in a non-allowed area or is not in an allowed area as specified in subclause 5.3.5 and:

a) if the uplink signalling pending is to indicate a change of 3GPP PS data off UE status for a PDU session, the UE shall set the service type IE in the SERVICE REQUEST message to "elevated signalling", and shall not include the Uplink data status IE in the SERVICE REQUEST message even if the UE has one or more active always-on PDU sessions associated with the access type over which the SERVICE REQUEST message is sent; or

b) otherwise, the UE shall not initiate service request procedure except for emergency services, high priority access or responding to paging or notification.

For cases d) and e) in subclause 5.6.1.1, the Uplink data status IE shall be included in the SERVICE REQUEST message to indicate the PDU session(s) the UE has pending user data to be sent. If the UE is not a UE configured for high priority access in selected PLMN:

a) if there exists an emergency PDU session which is indicated in the Uplink data status IE the service type IE in the SERVICE REQUEST message shall be set to "emergency services"; or

b) otherwise, the service type IE in the SERVICE REQUEST message shall be set to "data".

NOTE 1: For a UE in NB-N1 mode, the Uplink data status IE cannot be used to request the establishment of user-plane resources such that there will be user-plane resources established for a number of PDU sessions that exceeds the UE's maximum number of supported user-plane resources.

For case f) in subclause 5.6.1.1:

a) if the UE has uplink user data pending to be sent, the Uplink data status IE shall be included in the SERVICE REQUEST message to indicate the PDU session(s) the UE has pending user data to be sent. If the UE is not a UE configured for high priority access in selected PLMN, the service type IE in the SERVICE REQUEST message shall be set to "data";

b) otherwise, if the UE is not a UE configured for high priority access in selected PLMN, the service type IE in the SERVICE REQUEST message shall be set to "signalling".

For case g) in subclause 5.6.1.1, if the UE has uplink user data pending to be sent, the Uplink data status IE shall be included in the SERVICE REQUEST message to indicate the PDU session(s) the UE has pending user data to be sent.

For case h) in subclause 5.6.1.1, the UE shall send a SERVICE REQUEST message with service type set to "emergency services fallback" and without an Uplink data status IE.

For case i) in subclause 5.6.1.1, if the UE is not configured for high priority access in selected PLMN, the UE shall set the Service type IE in the SERVICE REQUEST message as follows:

a) if the pending message is an UL NAS TRANSPORT message with the Request type IE set to "initial emergency request" or "existing emergency PDU session", the UE shall set the Service type IE in the SERVICE REQUEST message to "emergency services"; or

b) otherwise, the UE shall set the Service type IE in the SERVICE REQUEST message to "signalling".

For case j) in subclause 5.6.1.1:

a) the UE shall include the Uplink data status IE in the SERVICE REQUEST message indicating the PDU session(s) for which user-plane resources were active prior to receiving the fallback indication, if any; and

b) if the UE is not a UE configured for high priority access in selected PLMN, the UE shall set the Service type IE in the SERVICE REQUEST message as follows:

1) if there is an emergency PDU session which is indicated in the Uplink data status IE, the UE shall set the Service type IE in the SERVICE REQUEST message to "emergency services"; or

2) if there is no emergency PDU session which is indicated in the Uplink data status IE, the UE shall set the Service type IE in the SERVICE REQUEST message to "data".

For case l) and n) in subclause 5.6.1.1, if the UE is not a UE configured for high priority access in selected PLMN:

a) if there exists an emergency PDU session which is indicated in the Uplink data status IE the service type IE in the SERVICE REQUEST message shall be set to "emergency services"; or

b) otherwise, the service type IE in the SERVICE REQUEST message shall be set to "signalling".

For case m) in subclause 5.6.1.1, the UE shall not include the Paging restriction IE in the SERVICE REQUEST message and set Service type to "signalling". The UE may include the UE request type IE and set Request type to "NAS signalling connection release" to remove the paging restriction and request the release of the NAS signalling connection at the same time. If the UE requests the release of the NAS signalling connection, the UE shall not include the Uplink data status IE in the SERVICE REQUEST message.

For cases o and p in subclause 5.6.1.1, the UE shall not include the Uplink data status IE and the Allowed PDU session status IE in the SERVICE REQUEST message. Further,

- for case o in subclause 5.6.1.1, the UE shall set Request type to "NAS signalling connection release" in the UE request type IE and Service type to "signalling";

- for case p in subclause 5.6.1.1, the UE shall set Request type to "Rejection of paging" in the UE request type IE and Service type to "mobile terminated services"; and

may include its paging restriction preference in the Paging restriction IE in the SERVICE REQUEST message.

The UE shall include a valid 5G-S-TMSI in the 5G-S-TMSI IE of the SERVICE REQUEST message.

For all cases except cases o) and p) in subclause 5.6.1.1, if the UE has one or more active always-on PDU sessions associated with the access type over which the SERVICE REQUEST message is sent and the user-plane resources for these PDU sessions are not established, the UE shall include the Uplink data status IE in the SERVICE REQUEST message and indicate that the UE has pending user data to be sent for those PDU sessions.

If the UE has one or more active PDU sessions which are not accepted by the network as always-on PDU sessions and no uplink user data pending to be sent for those PDU sessions, the UE shall not include those PDU sessions in the Uplink data status IE in the SERVICE REQUEST message.

The Uplink data status IE may be included in the SERVICE REQUEST message to indicate which PDU session(s) associated with the access type the SERVICE REQUEST message is sent over have pending user data to be sent.

If the UE is in a non-allowed area or the UE is not in an allowed area, the UE shall apply the restrictions for the inclusion of the Uplink data status IE specified in subclause 5.3.5.2.

The PDU session status information element may be included in the SERVICE REQUEST message to indicate:

- the single access PDU session(s) not in 5GSM state PDU SESSION INACTIVE in the UE associated with the access type the SERVICE REQUEST message is sent over; and

- the MA PDU session(s) not in 5GSM state PDU SESSION INACTIVE and having user plane resources established in the UE on the access the SERVICE REQUEST message is sent over.

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

If the UE has an emergency PDU session over the non-current access, it shall not initiate the SERVICE REQUEST message with the service type IE set to "emergency services" over the current access, unless the SERVICE REQUEST message has to be initiated to perform handover of an existing emergency PDU session from the non-current access to the current access.

NOTE 2: 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.

##### 5.6.1.2.2 UE is using 5GS services with control plane CIoT 5GS optimization

The UE shall send a CONTROL PLANE SERVICE REQUEST message, start T3517 and enter the state 5GMM-SERVICE-REQUEST-INITIATED.

For case a), and case b) in subclause 5.6.1.1, the Control plane service type of the CONTROL PLANE SERVICE REQUEST message shall indicate "mobile terminating request". If:

a) the UE only has uplink CIoT user data or SMS to be sent, the UE shall:

1) if the data size is not more than 254 octets and there is no other optional IE to be included in the message:

i) for sending CIoT user data, set the Data type field to "control plane user data", include the PDU session ID, data, and Downlink data expected (DDX) (if available), in the CIoT small data container IE; and

ii) for sending SMS, set the Data type field to "SMS", include SMS in the CIoT small data container IE; and

2) otherwise if the data size is more than 254 octets or there are other optional IEs to be included in the message:

i) for sending CIoT user data, set the Payload container type IE to "CIoT user data container", include the PDU session ID in the PDU session ID IE and include data in the Payload container IE as described in subclause 5.4.5.2.2; and

ii) for sending SMS, set the Payload container type IE to "SMS" and include data in the Payload container IE as described in subclause 5.4.5.2.2; and

b) the paging request or the notification includes an indication for non-3GPP access type, the UE has at least one PDU session that is not associated with control plane only indication, the Allowed PDU session status IE shall be included in the CONTROL PLANE SERVICE REQUEST message.

NOTE 1: The term DDX used in the present document corresponds to the term NAS RAI used in 3GPP TS 23.502 [9].

For case c), and case d) if the UE has pending CIoT user data that is to be sent via the control plane in subclause 5.6.1.1, the UE shall set the Control plane service type of the CONTROL PLANE SERVICE REQUEST message to "mobile originating request". If the UE has only uplink CIoT user data, SMS or location services message to be sent, the UE shall:

a) if the data size is not more than 254 octets, there is no other optional IE to be included in the CONTROL PLANE SERVICE REQUEST message, and the data being sent is:

1) CIoT user data, set the Data type field to "control plane user data", include the PDU session ID, data, and Downlink data expected (DDX) (if available), in the CIoT small data container IE;

2) location services message, set the Data type field to "Location services message container" and Downlink data expected (DDX), if available, in the CIoT small data container IE, and:

i) if routing information is provided by upper layers:

A) set the length of additional information field in the CIoT small data container IE to the length of routing information provided by upper layer location services application (see subclause 9.11.3.67), and set the additional information field in the CIoT small data container IE to the routing information provided by upper layer location services application (see subclause 9.11.3.67); or

B) otherwise set the length of additional information field in the CIoT small data container IE to zero. In this case the Additional information field of the CIoT small data container IE shall not be included; and

ii) set the Data contents field of the CIoT small data container IE to the location services message payload; or

3) SMS, set the Data type field to "SMS", include SMS in the CIoT small data container IE; or

b) otherwise if the data size is more than 254 octets or there are other optional IEs to be included in the CONTROL PLANE SERVICE REQUEST message, and the data being sent is:

1) CIoT user data, set the Payload container type IE to "CIoT user data container", include the PDU session ID in the PDU session ID IE and include data in the Payload container IE as described in subclause 5.4.5.2.2;

2) location services message, set the Payload container type IE to "Location services message container", include data in the Payload container IE as described in subclause 5.4.5.2.2. If the upper layer location services application provides the routing information set the Additional information IE to the routing information as described in subclause 5.4.5.2.2; or

3) SMS, set the Payload container type IE to "SMS" and include data in the Payload container IE as described in subclause 5.4.5.2.2.

For case a), and case b) in subclause 5.6.1.1, if the UE has pending user data that is to be sent via the user plane, the UE shall set the Control plane service type of the CONTROL PLANE SERVICE REQUEST message to "mobile terminating request". The UE shall include the Uplink data status IE in the CONTROL PLANE SERVICE REQUEST message to indicate which PDU session(s) have pending user data to be sent via user-plane resources.

For case c) in subclause 5.6.1.1, if the UE is in WB-N1 mode and the CONTROL PLANE SERVICE REQUEST message is triggered by a request for emergency services from the upper layer, the UE shall set the Control plane service type of the CONTROL PLANE SERVICE REQUEST message to "emergency services".

For cases d) and k), if the UE has pending user data that is to be sent via the user plane in subclause 5.6.1.1:

a) and if there exists an emergency PDU session which is indicated in the Uplink data status IE, the UE shall set the Control plane service type of the CONTROL PLANE SERVICE REQUEST message to "emergency services"; or

b) otherwise, the UE shall set the Control plane service type to "mobile originating request".

The UE shall include the Uplink data status IE in the CONTROL PLANE SERVICE REQUEST message to indicate which PDU session(s) have pending user data to be sent via user-plane resources.

NOTE 2: For a UE in NB-N1 mode, the Uplink data status IE cannot be used to request the establishment of user-plane resources such that there will be user-plane resources established for a number of PDU sessions that exceeds the UE's maximum number of supported user-plane resources.

For case h) in subclause 5.6.1.1, if the UE is in WB-N1 mode and the UE does not have any PDU session that is associated with control plane only indication, the UE shall send a CONTROL PLANE SERVICE REQUEST message with the Control plane service type set to "emergency services fallback" and without an Uplink data status IE.

For case i) in subclause 5.6.1.1, the Control plane service type of the CONTROL PLANE SERVICE REQUEST message shall indicate "mobile originating request". If the pending message is an UL NAS TRANSPORT message with the Payload container type IE set to:

a) "SMS", "Location services message container", or "CIoT user data container", the UE shall send the CONTROL PLANE SERVICE REQUEST and include the SMS, location services message, or CIoT user data as described in this subclause; or

b) otherwise, the UE shall send the CONTROL PLANE SERVICE REQUEST:

1) without including the CIoT small data container IE and without including the NAS message container IE if the UE has no other optional IE to be sent; or

2) with the NAS message container IE if the UE has an optional IE to be sent as described in this subclause.

For case j) in subclause 5.6.1.1, the Control plane service type of the CONTROL PLANE SERVICE REQUEST message shall indicate "mobile originating request". The UE shall include the Uplink data status IE in the CONTROL PLANE SERVICE REQUEST message indicating the PDU session(s) for which user-plane resources were active prior to receiving the fallback indication, if any.

For cases o) and p) in subclause 5.6.1.1, the UE shall not include the Uplink data status IE and the Allowed PDU session status IE in the CONTROL PLANE SERVICE REQUEST message. Further,

- for case o) in subclause 5.6.1.1, the UE shall set Request type to "NAS signalling connection release" in the UE request type IE and Control plane service type to "mobile originating request";

- for case p) in subclause 5.6.1.1, the UE shall set Request type to "Rejection of paging" in the UE request type IE and Control plane service type to "mobile terminating request"; and

may include its paging restriction preferences in the Paging restriction IE in the CONTROL PLANE SERVICE REQUEST message.

For case m) in clause 5.6.1.1, the Control plane service type of the CONTROL PLANE SERVICE REQUEST message shall indicate "mobile originating request". The UE shall not include the Paging restriction IE in the CONTROL PLANE SERVICE REQUEST message. The UE may include the UE request type IE and set Request type to "NAS signalling connection release" to remove the paging restriction and request the release of the NAS signalling connection at the same time. If the UE requests the release of the NAS signalling connection, the UE shall not include the Uplink data status IE in the SERVICE REQUEST message.

If the UE is in a non-allowed area or the UE is not in an allowed area, the UE shall apply the restrictions for the inclusion of the Uplink data status IE specified in subclause 5.3.5.2.

The UE may include the PDU session status IE in the CONTROL PLANE SERVICE REQUEST message to indicate which PDU session(s) associated with the access type the CONTROL PLANE SERVICE REQUEST message is sent over are active in the UE.