**3GPP TSG-CT WG4 Meeting #111-eC4-224xxx**

**E-Meeting, 18th – 26th August 2022** *Revision of C4-224178*

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **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 |  | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Disaster Roaming service indication |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | CT4 |
|  |  |
| ***Work item code:*** | MINT |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | F |  | ***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 canbe 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:*** | Stage 2 specifies that the AMF may provide a Disaster Roaming service indication to the SMF if the UE is registered for Disaster Roaming service.See CR 23.501 #3580 and CR 23.502 #3147. |
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| ***Summary of change:*** | A new disasterRoamingInd attribute is defined in Create SM Context Request, Create Request and in SmContext. |
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| ***Consequences if not approved:*** | Stage 2 requirements cannot be implemented. Missing information for operator to distinguish disaster roaming service from normal services (e.g. missing information in charging data, event logging) and carry out further operations, e.g., policy and charging differenciation. |
|  |  |
| ***Clauses affected:*** | 5.2.2.2.1, 5.2.2.7.1, 6.1.6.2.2, 6.1.6.2.9, 6.1.6.2.39, A.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 introduces backward compatible corrections to the SMF PDUSession API. |
|  |  |
| ***This CR's revision history:*** | Rev. 1: the disaster roaming indication may be set in Create (SM Context) request during the PDU session establishment, when the UE is registered for disaster roaming. |

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

#### 5.2.2.2 Create SM Context service operation

##### 5.2.2.2.1 General

The Create SM Context service operation shall be used to create an individual SM context, for a given PDU session, in the SMF, in the V-SMF for HR roaming scenarios, or in the I-SMF for a PDU session with an I-SMF.

It is used in the following procedures:

- UE requested PDU Session Establishment (see clauses 4.3.2 and 4.23.5.1 of 3GPP TS 23.502 [3]);

- EPS to 5GS Idle mode mobility, EPS to 5GS Idle mode mobility with data forwarding or handover using N26 interface (see clauses 4.11.1, 4.23.12.3, 4.23.12.5 and 4.23.12.7 of 3GPP TS 23.502 [3]);

- EPS to 5GS mobility without N26 interface (see clause 4.11.2.3 3GPP TS 23.502 [3]);

- Handover of a PDU session between 3GPP access and non-3GPP access, when the target AMF does not know the SMF resource identifier of the SM context used by the source AMF, e.g. when the target AMF is not in the PLMN of the N3IWF (see clause 4.9.2.3.2 of 3GPP TS 23.502 [3]), or when the UE is roaming and the selected N3IWF is in the HPLMN (see clause 4.9.2.4.2 of 3GPP TS 23.502 [3]);

- Handover from EPS to 5GC-N3IWF (see clause 4.11.3.1 of 3GPP TS 23.502 [3]);

- Handover from EPC/ePDG to 5GS (see clause 4.11.4.1 of 3GPP TS 23.502 [3]);

- Xn based or N2 based handover with I-SMF or V-SMF insertion and change (see clauses 4.23.7.3, 4.23.11 and 4.23.12 of 3GPP TS 23.502 [3]);

- UE Triggered Service Request with I-SMF insertion/change/removal or V-SMF change (see clause 4.23.4.3 of 3GPP TS 23.502 [3]);

- Registration procedure for a UE with a PDU session with I-SMF or V-SMF insertion, change and removal (see clause 4.23.3 of 3GPP TS 23.502 [3]);

- Handover from EPC/ePDG to 5GS with I-SMF insertion (see clause 4.23 of 3GPP TS 23.502 [3]);

- Handover from non-3GPP to 3GPP access with I-SMF insertion or V-SMF change, and Handover from 3GPP to non-3GPP access with I-SMF removal (see clause 4.23.16 of 3GPP TS 23.502 [3]);

- SMF Context Transfer procedure, LBO or no Roaming, no I-SMF (see clause 4.26.5.3 of 3GPP TS 23.502 [3]);

- I-SMF Context Transfer procedure (see clause 4.26.5.2 of 3GPP TS 23.502 [3]);

- 5G-RG requested PDU Session Establishment via W-5GAN (see clause 7.3.1 of 3GPP TS 23.316 [36]);

- FN-RG related PDU Session Establishment via W-5GAN (see clause 7.3.4 of 3GPP TS 23.316 [36]);

- Non-5G capable device behind 5G-CRG and FN-CRG requested PDU Session Establishment via W-5GAN (see clause 4.10a of 3GPP TS 23.316 [36]);

- Handover from 3GPP access/EPS to W-5GAN/5GC (see clause 7.6.4.1 of 3GPP TS 23.316 [36]);

- SMF triggered I-SMF selection or removal (see clause 4.23.5.4 of 3GPP TS 23.502 [3]).

There shall be only one individual SM context per PDU session.

The NF Service Consumer (e.g. AMF) shall create an SM context by using the HTTP POST method as shown in Figure 5.2.2.2.1-1.



Figure 5.2.2.2.1-1: SM context creation

1. The NF Service Consumer shall send a POST request to the resource representing the SM contexts collection resource of the SMF. The payload body of the POST request shall contain:

- a representation of the individual SM context resource to be created;

- the requestType IE, if the Request type IE is received from the UE for a single access PDU session and if the request refers to an existing PDU session or an existing Emergency PDU session; the requestType IE shall not be included for a MA-PDU session establishment request; it may be included otherwise;

- the Old PDU Session ID, if it is received from the UE (i.e. for a PDU session establishment for the SSC mode 3 operation);

- the indication that the UE is inside or outside of the LADN (Local Area Data Network) service area, if the DNN corresponds to a LADN;

- the indication that a MA-PDU session is requested if a MA-PDU session is requested to be established by the UE, or the indication that the PDU session is allowed to be upgraded to a MA-PDU session if so indicated by the UE;

- the indication that the same PCF is required for the requested DNN and S-NSSAI, if it is received by the AMF from UE Subscription data in the UDM, together with the PCF ID selected by the AMF;

- the anType;

- the additionalAnType, if the UE is registered over both 3GPP and Non-3GPP accesses;

- the cpCiotEnabled IE with the value "True", if the NF service consumer (e.g. the AMF) has verified that the CIOT feature is supported by the SMF (and for a home-routed session, that it is also supported by the H-SMF), and Control Plane CIoT 5GS Optimisation is enabled for this PDU session;

- the cpOnlyInd IE with the value "True", if the PDU session shall only use Control Plane CIoT 5GS Optimisation;

- the Invoke NEF indication with the value "True" for a home-routed PDU session, if the cpCiotEnabled IE is set to "True" and data delivery via NEF is selected for the PDU session;

- a subscription for SM context status notification;

- the servingNfId identifying the serving AMF;

- trace control and configuration parameters, if trace is to be activated (see 3GPP TS 32.422 [22]);

- identifiers (i.e. FQDN or IP address) of N3 terminations at the W-AGF, TNGF or TWIF, if available;

- a subscription for DDN failure notification, if the Availability after DDN failure event is subscribed by the UDM;

- the upipSupported IE set to "true", if the UE supports User Plane Integrity Protection with EPS and if the AMF supports the related functionality.

For the UE requested PDU Session Establishment procedure in home routed roaming scenario (see clause 4.3.2.2.2 of 3GPP TS 23.502 [3]), the NF Service Consumer shall provide the URI of the Nsmf\_PDUSession service of the H-SMF in the hSmfUri IE and optionally the corresponding SMF ID, and may provide the URI of the Nsmf\_PDUSession service of additional H-SMF(s) with the corresponding SMF ID(s). The V-SMF shall try to create the PDU session using the hSmfUri IE. If due to communication failure on the N16 interface the V-SMF does not receive any response from the H-SMF, then:

- depending on operator policy, the V-SMF may try reaching the hSmfUri via an alternate path; or

- if additional H-SMF URI is provided, the V-SMF may try to create the PDU session on one of the additional H-SMF(s) provided.

For a PDU session establishment with an I-SMF (see clause 4.23.5.1 of of 3GPP TS 23.502 [3]), the NF Service Consumer shall provide the URI of the Nsmf\_PDUSession service of the SMF in the smfUri IE and optionally the corresponding SMF ID, and may provide the URI of the Nsmf\_PDUSession service of additional SMF(s) with the corresponding SMF ID(s). The I-SMF shall try to create the PDU session using the smfUri IE. If due to communication failure on the N16a interface the I-SMF does not receive any response from the SMF, then:

- depending on operator policy, the I-SMF may try reaching the smfUri via an alternate path; or

- if additional SMF URI is provided, the I-SMF may try to create the PDU session on one of the additional SMF(s) provided.

For the UE requested PDU Session Establishment procedure, if the AMF determines that the RAT type is NB-IoT and the UE has already 2 PDU Sessions with user plane resources activated, the AMF may continue with the PDU Session establishment and include the cpCiotEnabled IE or cpOnlyInd IE with the value "True" to the SMF as specified in clause 4.3.2.2.1 of 3GPP TS 23.502 [3].

The payload body of the POST request may further contain:

- the name of the AMF service to which SM context status notification are to be sent (see clause 6.5.2.2 of 3GPP TS 29.500 [4]), encoded in the serviceName attribute;

- the remote provisioning server information, if both the AMF and SMF support the Remote Provisioning of UEs in Onboarding Network procedures and the AMF received the information from AUSF for remote provisioning of the UE via user plane;

- the Onboarding Indication, if the UE is registered for onboarding in an SNPN;

- the indication of Notification for SM Policy Association events with the value "true" and the callback information of the PCF for the UE (i.e. the PCF for AM Policy and possibly UE Policy) to receive the notification, if both NF service consumer and the SMF support the "SPAE" feature and if the SM Policy Association Establishment and Termination events should be reported for the PDU session by the PCF for SM Policy to the PCF for the UE. See clause 4.3.2.2.1 of 3GPP TS 23.502 [3];

- the satelliteBackhaulCat IE indicating the category of the satellite backhaul used towards the 5G AN serving the UE, if the AMF is aware of that a satellite backhaul is used towards the 5G AN;

- the disasterRoamingInd IE set to true during the PDU session establishment if the UE is registered for Disaster Roaming service.

2a. On success, "201 Created" shall be returned, the payload body of the POST response shall contain the representation describing the status of the request and the "Location" header shall be present and shall contain the URI of the created resource. The authority and/or deployment-specific string of the apiRoot of the created resource URI may differ from the authority and/or deployment-specific string of the apiRoot of the request URI received in the POST request.

If the requestType IE was received in the request and set to EXISTING\_PDU\_SESSION or EXISTING\_EMERGENCY\_PDU\_SESSION (i.e. indicating that this is a UE request for an existing PDU session or an existing emergency PDU session), the SMF shall identify the existing PDU session or emergency PDU session based on the PDU Session ID; in this case, the SMF shall not create a new SM context but instead update the existing SM context and provide the representation of the updated SM context in the "201 Created" response to the NF Service Consumer.

The POST request shall be considered as colliding with an existing SM context if:

- it includes the same SUPI, or PEI for an emergency registered UE without a UICC or without an authenticated SUPI, and the same PDU Session ID as for an existing SM context; and

- this is a request to establish a new PDU session, i.e.:

- the RequestType IE is present in the request and set to INITIAL\_REQUEST or INITIAL\_EMERGENCY\_REQUEST (e.g. single access PDU session establishment request);

- the RequestType IE and the maRequestInd IE are both absent in the request (e.g. EPS to 5GS mobility); or

- the maRequestInd IE is present in the request (i.e. MA-PDU session establishment request) and the access type indicated in the request corresponds to the access type of the existing SM context.

 A POST request that collides with an existing SM context shall be treated as a request for a new SM context. Before creating the new SM context, the SMF should delete the existing SM context locally and any associated resources in the UPF and PCF. See also clause 5.2.3.3.1 for the handling of requests which collide with an existing SM context. If the smContextStatusUri of the existing SM context differs from the smContextStatusUri received in the POST request, the SMF shall also send an SM context status notification (see clause 5.2.2.5) targeting the smContextStatusUri of the existing SM context to notify the release of the existing SM context. For a HR PDU session, if the H-SMF URI in the request is different from the H-SMF URI of the existing PDU session, the V-SMF should also delete the existing PDU session in the H-SMF by invoking the Release service operation (see clause 5.2.2.9). For a PDU session with an I-SMF, if the SMF URI in the request is different from the SMF URI of the existing PDU session, the I-SMF should also delete the existing PDU session in the SMF by invoking the Release service operation (see clause 5.2.2.9).

If the requestType IE was received in the request and indicates this is a request for a new PDU session (i.e. INITIAL\_REQUEST) and if the Old PDU Session ID was also included in the request, the SMF shall identify the existing PDU session to release and to which the new PDU session establishment relates, based on the Old PDU Session ID.

 If no GPSI IE is provided in the request, e.g. for a PDU session moved from another access or another system, and the SMF knows that a GPSI is already associated with the PDU session (or a GPSI is received from h-SMF for a HR PDU session), the SMF shall include the GPSI in the response.

 If the indication of Notification for SM Policy Association events was received with the value "true" together with the callback information of the PCF for the UE in the request and SM Policy Association is to be established for the PDU session, the SMF shall provide the callback information of the PCF for the UE to the PCF for SM Policy during SM Policy Association Establishment.

2b. If the request does not include the "UE presence in LADN service area" indication and the SMF determines that the DNN corresponds to a LADN, then the SMF shall consider that the UE is outside of the LADN service area. The SMF shall reject the request if the UE is outside of the LADN service area.

On failure, or redirection during a UE requested PDU Session Establishment, one of the HTTP status code listed in Table 6.1.3.2.3.1-3 shall be returned. For a 4xx/5xx response, the message body shall contain an SmContextCreateError structure, including:

- a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.1.3.2.3.1-3;

- N1 SM information (PDU Session Reject), if the request included N1 SM information, except if the error prevents the SMF from generating a response to the UE (e.g. invalid request format).

For the UE requested PDU Session Establishment, the SMF shall reject the request with "EXCEEDED\_SLICE\_DATA\_RATE" application error if the SMF receives from the PCF that the maximum bit rate per S-NSSAI is exceeded, or with "EXCEEDED\_UE\_SLICE\_DATA\_RATE" application error if the SMF receives from the PCF that the maximum bit rate per S-NSSAI per UE is exceeded.

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

#### 5.2.2.7 Create service operation

##### 5.2.2.7.1 General

The Create service operation shall be used to create an individual PDU session in the H-SMF for HR roaming scenarios, or in the SMF for PDU sessions involving an I-SMF.

It is used in the following procedures:

- UE requested PDU Session Establishment with or without an I-SMF insertion (see clauses 4.3.2.2.2 and 4.23.5.1 of 3GPP TS 23.502 [3]);

- when an I-SMF is inserted during the Registration, Service Request, Inter NG-RAN node N2 based handover, Xn based handover, Handover from EPC/ePDG to 5GS and Handover from non-3GPP to 3GPP access procedures (see clauses 4.23.3, 4.23.4, 4.23.7.3, 4.23.11.2 and 4.23.16 of 3GPP TS 23.502 [3]);

- EPS to 5GS Idle mode mobility or handover using N26 interface (see clauses 4.11, 4.23.12.3, 4.23.12.5 and 4.23.12.7 of 3GPP TS 23.502 [3]);

- EPS to 5GS mobility without N26 interface (see clause 4.11.2.3 of 3GPP TS 23.502 [3]);

- Handover of a PDU session between 3GPP access and non-3GPP access, when the target AMF does not know the SMF resource identifier of the SM context used by the source AMF, e.g. when the target AMF is not in the PLMN of the N3IWF (see clause 4.9.2.3.2 of 3GPP TS 23.502 [3]);

- Handover from EPS to 5GC-N3IWF (see clause 4.11.3.1 of 3GPP TS 23.502 [3]);

- Handover from EPC/ePDG to 5GS (see clause 4.11.4.1 of 3GPP TS 23.502 [3]).

The NF Service Consumer (e.g. V-SMF or I-SMF) shall create a PDU session in the SMF (i.e. H-SMF for a HR PDU session, or SMF for a PDU session involving an I-SMF) by using the HTTP POST method as shown in Figure 5.2.2.7.1-1.



Figure 5.2.2.7.1-1: PDU session creation

1. The NF Service Consumer shall send a POST request to the resource representing the PDU sessions collection resource of the SMF. The payload body of the POST request shall contain:

- a representation of the individual PDU session resource to be created;

- the requestType IE, if the Request type IE is received from the UE for a single access PDU session and if the request refers to an existing PDU session or an existing Emergency PDU session; the requestType IE shall not be included for a MA-PDU session establishment request; it may be included otherwise;

- the indication that a MA-PDU session is requested if a MA-PDU session is requested to be established by the UE, or the indication that the PDU session is allowed to be upgraded to a MA PDU session if the UE indicated so;

- the vsmfId IE or ismfId IE identifying the V-SMF or I-SMF respectively;

- the cpCiotEnabled IE with the value "True", if Control Plane CIoT 5GS Optimisation is enabled for this PDU session;

- the cpOnlyInd IE with the value "True", if the PDU session shall only use Control Plane CIoT 5GS Optimisation;

- the Invoke NEF indication with the value "True", if the cpCiotEnabled IE is set to "True" and data delivery via NEF is selected for the PDU session;

- the vcnTunnelInfo IE or icnTunnelInfo IE with the N9 tunnel information of the UPF controlled by the V-SMF or I-SMF respectively, except for EPS to 5GS handover using N26 interface and when Control Plane CIoT 5GS Optimisation is enabled and data delivery via NEF is selected for this PDU session;

- the additionalCnTunnelInfo IE with additional N9 tunnel information, if a MA PDU session is requested or if the PDU session is allowed to be upgraded to a MA PDU session, and if the UE is registered over both 3GPP and Non-3GPP accesses;

- the anType IE, indicating the access network type (3GPP or non-3GPP access) associated to the PDU session;

- the additionalAnType IE indicating an additional access network type associated to the PDU session, for a MA PDU session, if the UE is registered over both 3GPP and Non-3GPP accesses;

- the n9ForwardingTunnelInfo IE indicating the allocated N9 tunnel endpoints information for receiving the buffered downlink data packets, when downlink data packets are buffered at I-UPF controlled by the SMF during I-SMF insertion;

- a callback URI ({vsmfPduSessionUri} or {ismfPduSessionUri}) representing the PDU session resource in the V-SMF or I-SMF. The SMF shall construct the callback URIs based on the received {vsmfPduSessionUri} or {ismfPduSessionUri} as defined in clause 6.1, e.g. the callback URI "{vsmfPduSessionUri}/modify" to modify a PDU session in the V-SMF;

- the list of DNAIs supported by the I-SMF, for a PDU session with an I-SMF;

- the QoS constraints from the VPLMN for the QoS Flow associated with the default QoS rule and/or for the Session-AMBR if any, for the HR PDU session, if the VQOS feature is supported by the V-SMF;

- the upipSupported IE set to "true", if the UE supports User Plane Integrity Protection with EPS and if the AMF supports the related functionality.

The payload body of the POST request may further contain:

- the satelliteBackhaulCat IE indicating the category of the satellite backhaul used towards the 5G AN serving the UE, if the V-SMF/I-SMF received this information from the AMF;

- the disasterRoamingInd IE set to true during the PDU session establishment if the UE is registered for Disaster Roaming service.

As specified in clause 4.3.2.2.2 of 3GPP TS 23.502 [3], the NF Service Consumer shall be able to receive an Update request before receiving the Create Response, e.g. for EPS bearer ID allocation (see clause 4.11.1.4.1 of 3GPP TS 23.502 [3]) or Secondary authorization/authentication (see clause 4.3.2.3 of 3GPP TS 23.502 [3]).

NOTE: If the H-SMF supports the VQOS feature, when QoS constraints are received from the VPLMN and PCF is deployed, the H-SMF provides the QoS constraints from the VPLMN to the PCF; otherwise, in case dynamic PCC is not deployed, the SMF takes them into account when generating the default QoS rule.

2a. On success, "201 Created" shall be returned, the payload body of the POST response shall contain:

- the representation describing the status of the request;

- the QoS flow(s) to establish for the PDU session, except when Control Plane CIoT 5GS Optimisation is enabled for this PDU session;

- the epsPdnCnxInfo IE and, for each EPS bearer, an epsBearerInfo IE, if the PDU session is associated to (or handed over to) the 3GPP access type and may be moved to EPS during its lifetime;

- a MA PDU Session Accepted indication, if a MA PDU session is established;

- the smallDataRateControlEnabled indication set to "true" if small data rate control is applicable on the PDU session;

- the "Location" header containing the URI of the created resource.

The payload body of the POST response may also contain the upSecurity, maxIntegrityProtectedDataRateUl and maxIntegrityProtectedDataRateDl IEs, if the PDU session is associated to (or handed over to) the 3GPP access type.

The SMF may provide alternative QoS profiles for each GBR QoS flow with Notification control enabled, to allow the NG-RAN to accept the setup of the QoS flow if the requested QoS parameters or at least one of the alternative QoS parameters sets can be fulfilled at the time of setup.

The authority and/or deployment-specific string of the apiRoot of the created resource URI may differ from the authority and/or deployment-specific string of the apiRoot of the request URI received in the POST request.

If an Update Request was sent to the NF Service Consumer before the Create Response, the URI in the "Location" header and in the hsmfPduSessionUri IE (carrying the PDU session resource URI of a HR PDU session or a PDU session with an I-SMF) of the SMF initiated Update Request shall be the same. If the requestType IE was received in the request and set to EXISTING\_PDU\_SESSION or EXISTING\_EMERGENCY\_PDU\_SESSION (i.e. indicating that this is a UE request for an existing PDU session or an existing emergency PDU session), the SMF shall identify the existing PDU session or emergency PDU session based on the PDU Session ID; in this case, the SMF shall not create a new PDU session or emergency PDU session but instead update the existing PDU session or emergency PDU session and provide the representation of the updated PDU session or emergency PDU session in the response to the NF Service Consumer.

The POST request shall be considered as colliding with an existing PDU session context if:

- it includes the same SUPI, or PEI for an emergency registered UE without a UICC or without an authenticated SUPI, and the same PDU Session ID as for an existing PDU session context; and

- this is a request to establish a new PDU session, i.e.:

- the RequestType IE is present in the request and set to INITIAL\_REQUEST or INITIAL\_EMERGENCY\_REQUEST (e.g. single access PDU session establishment request);

- the RequestType IE and the maRequestInd IE are both absent in the request (e.g. EPS to 5GS mobility); or

- the maRequestInd IE is present in the request (i.e. MA-PDU session establishment request) and the access type indicated in the request corresponds to the access type of the existing PDU session context.

 A POST request that collides with an existing PDU session context shall be treated as a request for a new PDU session context. The SMF shall assign a new PDU session reference, i.e. {pduSessionRef} (see clause 6.1.3.6.2), which is different from the existing PDU session context. Before creating the new PDU session context, the SMF should delete the existing PDU session context locally and any associated resources in the UPF and PCF. See also clause 5.2.3.3.1 for the handling of requests which collide with an existing PDU session context. If the vsmfPduSessionUri or ismfPduSessionUri of the existing PDU session context differs from the vsmfPduSessionUri or ismfPduSessionUri received in the POST request, the SMF shall also send a status notification (see clause 5.2.2.10) targeting the vsmfPduSessionUri or ismfPduSessionUri of the existing PDU session context to notify the release of the existing PDU session context. The SMF should include a cause IE with value "REL\_DUE\_TO\_DUPLICATE\_SESSION\_ID" in such a status notification. Upon receipt of such a status notification, the V-SMF or I-SMF shall not send SM context status notification to the AMF.

If the requestType IE was received in the request and indicates this is a request for a new PDU session (i.e. INITIAL\_REQUEST) and if the Old PDU Session ID was also included in the request, the SMF shall identify the existing PDU session to be released and to which the new PDU session establishment relates, based on the Old PDU Session ID.

The NF Service Consumer shall store any epsPdnCnxInfo and EPS bearer information received from the SMF.

If the response received from the SMF contains the alwaysOnGranted attribute set to true, the NF Service Consumer shall check and determine whether the PDU session can be established as an always-on PDU session based on local policy.

 If no GPSI IE is provided in the request, e.g. for a PDU session moved from another access or another system, and the SMF knows that a GPSI is already associated with the PDU session, the SMF shall include the GPSI in the response.

If one or more requested QoS flow(s) fail to be established, the V-SMF or I-SMF shall send an Update Request including the qosFlowsRelNotifyList attribute to report the failure to the H-SMF or SMF (see clause 5.2.2.8.2.2), or a Release Request to release the PDU session if no QoS flow can be established (see clause 5.2.2.9).

For UE mobility with I-SMF/V-SMF insertion procedure, if a requested functionality is not supported for a PDU session with an I-SMF/V-SMF, the SMF shall accept the POST request and release the PDU Session after the mobility procedure, as specified in clause 4.23.1 of 3GPP TS 23.502 [3].

2b. On failure, or redirection during a UE requested PDU Session Establishment, one of the HTTP status code listed in Table 6.1.3.5.3.1-3 shall be returned. For a 4xx/5xx response, the message body shall contain a PduSessionCreateError structure, including:

- a ProblemDetails structure with the "cause" attribute set to one of the application error listed in Table 6.1.3.5.3.1-3. The application error shall be set to "NOT\_SUPPORTED\_WITH\_ISMF" during a UE requested PDU Session Establishment, if a requested functionality is not supported for a PDU session with an I-SMF/V-SMF.

- the n1SmCause IE with the 5GSM cause that the SMF proposes the NF Service Consumer to return to the UE, if the request included n1SmInfoFromUe;

- n1SmInfoToUe with any information to be sent to the UE (in the PDU Session Establishment Reject).

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

##### 6.1.6.2.2 Type: SmContextCreateData

Table 6.1.6.2.2-1: Definition of type SmContextCreateData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| supi | Supi | C | 0..1 | This IE shall be present, except if the UE is emergency registered and UICCless.When present, it shall contain the subscriber permanent identify.  |  |
| unauthenticatedSupi | boolean | C | 0..1 | This IE shall be present if the SUPI is present in the message but is not authenticated and is for an emergency registered UE.When present, it shall be set as follows:- true: unauthenticated SUPI;- false (default): authenticated SUPI. |  |
| pei | Pei | C | 0..1 | This IE shall be present if the UE is emergency registered and it is either UIClless or the SUPI is not authenticated.For all other cases, this IE shall be present if it is available.When present, it shall contain the permanent equipment identifier. |  |
| gpsi | Gpsi | C | 0..1 | This IE shall be present if it is available. When present, it shall contain the user's GPSI.  |  |
| pduSessionId | PduSessionId | C | 0..1 | This IE shall be present, except during an EPS to 5GS Idle mode mobility or handover using the N26 interface.When present, it shall contain the PDU Session ID. |  |
| dnn | Dnn | C | 0..1 | This IE shall be present, except during an EPS to 5GS Idle mode mobility or handover using the N26 interface.When present, it shall contain the requested DNN; the DNN shall be the full DNN (i.e. with both the Network Identifier and Operator Identifier) for a HR PDU session, and it should be the full DNN in LBO and non-roaming scenarios. If the Operator Identifier is absent, the serving core network operator shall be assumed.  |  |
| selectedDnn | Dnn | C | 0..1 | This IE shall be present, if another DNN other than the UE requested DNN is selected for this PDU session.When present, it shall contain the selected DNN. The DNN shall be the full DNN (i.e. with both the Network Identifier and Operator Identifier) for a HR PDU session, and it should be the full DNN in LBO and non-roaming scenarios. If the Operator Identifier is absent, the serving core network operator shall be assumed. |  |
| sNssai | Snssai | C | 0..1 | This IE shall be present during the PDU session establishment procedure. In this case, it shall contain the requested S-NSSAI for the serving PLMN. This corresponds to an S-NSSAI from the allowed NSSAI.This IE shall also be present during an EPS to 5GS idle mode mobility or handover with I-SMF/V-SMF involved using the N26 interface. In this case, it shall contain the S-NSSAI configured in the AMF for EPS interworking. |  |
| hplmnSnssai | Snssai | C | 0..1 | This IE shall be present for a roaming PDU session, except during an EPS to 5GS idle mode mobility or handover using the N26 interface.When present, it shall contain the requested S-NSSAI for the HPLMN. This corresponds to an S-NSSAI from the Mapping Of Allowed NSSAI corresponding to the SNSSAI value included in the sNssai IE. |  |
| servingNfId | NfInstanceId | M | 1 | This IE shall contain the identifier of the serving NF (e.g. serving AMF). |  |
| guami | Guami | C | 0..1 | This IE shall contain the serving AMF's GUAMI.It shall be included if the NF service consumer is an AMF. |  |
| serviceName | ServiceName | O | 0..1 | When present, this IE shall contain the name of the AMF service to which SM context status notifications are to be sent (see clause 6.5.2.2 of 3GPP TS 29.500 [4]). This IE may be included if the NF service consumer is an AMF. |  |
| servingNetwork | PlmnIdNid | M | 1 | This IE shall contain the serving core network operator PLMN ID and, for an SNPN, the NID that together with the PLMN ID identifies the SNPN.  |  |
| requestType | RequestType | C | 0..1 | This IE shall be present if the Request type IE is received from the UE for a single access PDU session and if the request refers to an existing PDU session or an existing emergency PDU session. The requestType IE shall not be included for a MA-PDU session establishment request. It may be present otherwise.When present, it shall indicate whether the request refers to a new PDU session or emergency PDU session, or to an existing PDU session or emergency PDU session.For request sent from UE, this IE shall be set based on the Request type IE received (see clause 9.11.3.47 of 3GPP TS 24.501 [7]). |  |
| n1SmMsg | RefToBinaryData | C | 0..1 | This IE shall be present and reference the N1 SM Message binary data (see clause 6.1.6.4.2), except during an EPS to 5GS Idle mode mobility or handover using N26. |  |
| anType | AccessType | M | 1 | This IE shall indicate the Access Network Type to which the PDU session is to be associated. |  |
| additionalAnType | AccessType | C | 0..1 | This IE shall indicate the additional Access Network Type to which the PDU session is to be associated.This IE shall be present if a MA-PDU session is requested and the UE is registered over both 3GPP access and Non-3GPP access. | MAPDU |
| ratType | RatType | C | 0..1 | This IE shall be present and indicate the RAT Type used by the UE, if available. |  |
| presenceInLadn | PresenceState | C | 0..1 | This IE shall be present if the DNN corresponds to a LADN. When present, it shall be set to "IN" or "OUT" to indicate that the UE is in or out of the LADN service area. |  |
| ueLocation | UserLocation | C | 0..1 | This IE shall contain the UE location information (see clause 5.2.3.4), if it is available. (NOTE 1). |  |
| ueTimeZone | TimeZone | C | 0..1 | This IE shall contain the UE Time Zone, if it is available. |  |
| addUeLocation | UserLocation | O | 0..1 | Additional UE location.This IE may be present, if anType indicates a non-3GPP access and valid 3GPP access user location information is available.When present, it shall contain:- the last known 3GPP access user location (see clause 5.2.3.4); and- the timestamp, if available, indicating the UTC time when the addUeLocation information was acquired.(NOTE 1) |  |
| smContextStatusUri | Uri | M | 1 | This IE shall include the callback URI to receive notification of SM context status. |  |
| hSmfUri | Uri | C | 0..1 | This IE shall be present in HR roaming scenarios, including Indirect Communication with Delegated Discovery, if the AMF and V-SMF do not support the ACSCR feature.This IE shall be present in HR roaming scenarios during a PDU session establishment procedure, if the AMF and V-SMF support the ACSCR feature. When present, it shall contain the API URI of the Nsmf\_PDUSession service of the selected H-SMF. The API URI shall be formatted as specified in clause 6.1.1.(NOTE 8) |  |
| hSmfId | NfInstanceId | O | 0..1 | This IE may be present when hSmfUri is present.If present, this IE shall carry the NF instance ID of the selected H-SMF. (NOTE 2) |  |
| smfUri | Uri | C | 0..1 | This IE shall be present for a PDU session with an I-SMF, including Indirect Communication with Delegated Discovery, if the AMF and I-SMF do not support the ACSCR feature.This IE shall be present for a PDU session with an I-SMF during a PDU session establishment procedure, if the AMF and I-SMF support the ACSCR feature.When present, it shall contain the API URI of the Nsmf\_PDUSession service of the selected SMF. The API URI shall be formatted as specified in clause 6.1.1.(NOTE 8) | DTSSA |
| smfId | NfInstanceId | O | 0..1 | This IE may be present when smfUri is present.If present, this IE shall carry the NF instance ID of the selected SMF. (NOTE 2) | DTSSA |
| oldPduSessionId | PduSessionId | C | 0..1 | This IE shall be present if this information is received from the UE.When present, it shall contain the old PDU Session ID received from the UE. See clauses 4.3.2.2.1 and 4.3.5.2 of 3GPP TS 23.502 [3].  |  |
| pduSessionsActivateList | array(PduSessionId) | C | 1..N | This IE shall be present, during an EPS to 5GS Idle mode mobility using the N26 interface, if the UE indicated PDU session(s) to be activated in the Registration Request.When present, it shall indicate all the PDU session(s) requested to be re-activated by the UE.  |  |
| ueEpsPdnConnection | EpsPdnCnxContainer | C | 0..1 | This IE shall be present, during an EPS to 5GS Idle mode mobility or handover using the N26 interface.When present, it shall contain an MME/SGSN UE EPS PDN connection including the EPS bearer context(s). |  |
| hoState | HoState | C | 0..1 | This IE shall be present during an EPS to 5GS handover using N26 interface, to request the preparation of a handover of the PDU session.When present, it shall be set as specified in clause 5.2.2.2.3. |  |
| additionalHsmfUri | array(Uri) | O | 1..N | This IE may be present in HR roaming scenarios. When present, it shall contain an array of API URI of the Nsmf\_PDUSession service of the additional H-SMFs discovered by the AMF for the given DNN, hplmnSnssai and for this PDU session. If provided, the V-SMF shall use these additional H-SMF(s) if the V-SMF is not able to receive any response from the H-SMF identified by hSmfUri.The API URI shall be formatted as specified in clause 6.1.1. |  |
| additionalHsmfId | array(NfInstanceId) | O | 1..N | This IE may be present when additionalHsmfUri is present.If present, this IE shall carry the NF instance ID(s) of H-SMF(s) as stated in additionalHsmfUri IE, in exactly the same order. (NOTE 2) |  |
| additionalSmfUri | array(Uri) | O | 1..N | This IE may be present for a PDU session with an I-SMF. When present, it shall contain an array of API URI of the Nsmf\_PDUSession service of the additional SMFs discovered by the AMF for the given DNN, Snssai and for this PDU session. If provided, the I-SMF shall use these additional SMF(s) if the I-SMF is not able to receive any response from the SMF identified by smfUri.The API URI shall be formatted as specified in clause 6.1.1. | DTSSA |
| additionalSmfId | array(NfInstanceId) | O | 1..N | This IE may be present when additionalSmfUri is present.If present, this IE shall carry the NF instance ID(s) of SMF(s) as stated in additionalSmfUri IE, in exactly the same order. (NOTE 2) | DTSSA |
| pcfId | NfInstanceId | O | 0..1 | When present, this IE shall contain the identifier of:- the H-PCF selected by the AMF (for UE Policy), for a HR PDU session; or- the V-PCF selected by the AMF (for Access and Mobility Policy), for a PDU session in LBO roaming scenarios; or- the PCF selected by the AMF (for Access and Mobility Policy and/or UE Policy), for a PDU session in non-roaming scenarios. |  |
| pcfGroupId | NfGroupId | O | 0..1 | This IE may be present in non-roaming and HR roaming scenarios.When present, this IE shall contain the identity of the (home) PCF group serving the UE for Access and Mobility Policy and/or UE Policy.  |  |
| pcfSetId | NfSetId | O | 0..1 | This IE may be present if pcfId IE is present.When present, this IE shall contain the NF Set ID of the PCF indicated by the pcfId IE. |  |
| nrfUri | Uri | O | 0..1 | This IE may be present to indicate the NRF to use for PCF selection within the same network slice instance. When present, the SMF shall use the NRF URI to select the PCF. |  |
| supportedFeatures | SupportedFeatures | C | 0..1 | This IE shall be present if at least one optional feature defined in clause 6.1.8 is supported.  |  |
| selMode | DnnSelectionMode | C | 0..1 | This IE shall be present if it is available. When present, it shall be set to:- "VERIFIED", if the requested DNN provided by UE or the selected DNN provided by the network corresponds to an explicitly subscribed DNN; or- "UE\_DNN\_NOT\_VERIFIED", if the requested DNN provided by UE corresponds to the usage of a wildcard subscription; or- "NW\_DNN\_NOT\_VERIFIED", if the selected DNN provided by the network corresponds to the usage of a wildcard subscription.If both the requested DNN (i.e. dnn IE) and selected DNN (i.e. selected Dnn IE) are present, the selMode shall be related to the selected DNN. |  |
| backupAmfInfo | array(BackupAmfInfo) | C | 1..N | This IE shall be included if the NF service consumer is an AMF and the AMF supports the AMF management without UDSF for the following cases:- First interaction with SMF.- Modification of the BackupAmfInfo. |  |
| traceData | TraceData | C | 0..1 | This IE shall be included if trace is required to be activated (see 3GPP TS 32.422 [22]).  |  |
| udmGroupId | NfGroupId | O | 0..1 | When present, it shall indicate the identity of the UDM group serving the UE. |  |
| routingIndicator | string | O | 0..1 | When present, it shall indicate the Routing Indicator of the UE. |  |
| hNwPubKeyId | integer | O | 0..1 | When present, it shall indicate the Home Network Public Key Identifier of the UE. (NOTE 3) |  |
| epsInterworkingInd | EpsInterworkingIndication | O | 0..1 | The AMF may provide the indication when a PGW-C+SMF is selected to serve the PDU Session.When present, this IE shall indicate whether the PDU session may possibly be moved to EPS and whether N26 interface to be used during EPS interworking procedures.The AMF may derive the value of the indication from different sources, like UE 5GMM capabilities (e.g. "S1 mode supported"), UE subscription data (e.g. "Core Network Type Restriction to EPC" and "Interworking with EPS Indication" for the DNN) and configurations. |  |
| indirectForwardingFlag | boolean | C | 0..1 | The AMF shall include this indication during N26 based Handover procedure from EPS to 5GS (see 3GPP TS 23.502 [3], clause 4.11.1.2.2), to inform the SMF of the applicability or non-applicability of indirect data forwarding.When present, it shall be set as follows:- True: indirect data forwarding is applicable- False: indirect data forwarding is not applicable |  |
| directForwardingFlag | boolean | C | 0..1 | The AMF shall include this indication during N26 based Handover procedure from EPS to 5GS (see 3GPP TS 23.502 [3], clause 4.11.1.2.2), to inform the SMF of the applicability or non-applicability of direct data forwarding.When present, it shall be set as follows:- True: direct data forwarding is applicable- False: direct data forwarding is not applicable |  |
| targetId | NgRanTargetId | C | 0..1 | This IE shall be present in the following cases:- during an EPS to 5GS handover preparation using the N26 interface, when the hoState IE is set to the value "PREPARING";- during N2 based handover procedure with I-SMF or V-SMF insertion/change/removal, when hostate IE is set to the value "PREPARING".When present, it shall contain the Target ID identifying the target RAN Node ID and TAI. In case of EPS to 5GS handover, the TAI is received in the Forward Relocation Request from the Source MME. |  |
| epsBearerCtxStatus | EpsBearerContextStatus | C | 0..1 | This IE shall be present during an EPS to 5GS idle mode mobility using the N26 interface, if received in the Registration Request from the UE.When present, it shall be set to the value received from the UE.  |  |
| cpCiotEnabled | boolean | C | 0..1 | This IE shall be present with the value "True", if- the NF service consumer (e.g. the AMF) has verified that the CIOT feature is supported by the SMF (and for a home-routed session, that it is also supported by the H-SMF); and- Control Plane CIoT 5GS Optimisation is enabled for the PDU session(see 3GPP TS 23.502 [3], clauses 4.3.2.2.1 and 4.3.2.2.2).When present, it shall be set as follows:- True: Control Plane CIoT 5GS Optimisation is enabled.- False (default): Control Plane CIoT 5GS Optimisation is not enabled. | CIOT |
| cpOnlyInd | boolean | C | 0..1 | This IE shall be present with the value "True", if the PDU session shall only use Control Plane CIoT 5GS Optimisation (see clause 5.31.4.1 of 3GPP TS 23.501 [2]).When present, it shall be set as follows:- True: the PDU session shall only use Control Plane CIoT 5GS Optimisation- False (default): the PDU session is not constrained to only use Control Plane CIoT 5GS Optimisation. | CIOT |
| invokeNef | boolean | C | 0..1 | This IE shall be present with the value "True", if Control Plane CIoT 5GS Optimisation is enabled and data delivery via NEF is selected for the PDU session (see 3GPP TS 23.502 [3], clause 4.3.2.2.2).When present, it shall be set as follows:- True: Data delivery via NEF is selected.- False (default): Data delivery via NEF is not selected. | CIOT |
| maRequestInd | boolean | C | 0..1 | This IE shall be present if a MA-PDU session is requested to be established.When present, it shall be set as follows:- True: a MA-PDU session is requested- False (default): a MA-PDU session is not requested | MAPDU |
| maNwUpgradeInd | boolean | C | 0..1 | This IE shall only be present if the PDU session is allowed to be upgraded to MA PDU session (see clause 4.22.3 of 3GPP TS 23.502 [3]).When present, it shall be set as follows:- True: the PDU session is allowed to be upgraded to MA PDU session- False (default): the PDU session is not allowed to be upgraded to MA PDU sessionWhen maRequestInd is present and set to "true", this IE shall not be present. | MAPDU |
| n2SmInfo | RefToBinaryData | C | 0..1 | This IE shall be present if N2 SM Information needs to be sent to the I-SMF.  | DTSSA |
| n2SmInfoType | N2SmInfoType | C | 0..1 | This IE shall be present if "n2SmInfo" attribute is present.When present, this IE shall indicate the NG AP IE type for the NG AP SMF related IE container carried in "n2SmInfo" attribute. | DTSSA |
| n2SmInfoExt1 | RefToBinaryData | C | 0..1 | This IE shall be present if more than one N2 SM Information has been received from the AN.When present, this IE shall reference the N2 SM Information binary data (see clause 6.1.6.4.3). | DTSSA |
| n2SmInfoTypeExt1 | N2SmInfoType | C | 0..1 | This IE shall be present if "n2SmInfoExt1" attribute is present.When present, this IE shall indicate the NG AP IE type for the NG AP SMF related IE container carried in "n2SmInfoExt1" attribute. | DTSSA |
| smContextRef | Uri | C | 0..1 | This IE shall be present during an I-SMF or V-SMF insertion if available and during an I-SMF or V-SMF change or removal.When present, this IE shall contain the URI of the SM Context resource in the SMF or of the SM context resource in the source I-SMF or V-SMF during an I-SMF or V-SMF insertion or during an I-SMF or V-SMF change/removal respectively. The URI shall be an absolute URI, including apiRoot (see clause 6.1.3.3.2).(NOTE 6) | DTSSA |
| smContextSmfPlmnId | PlmnIdNid | C | 0..1 | This IE shall be present during an inter-PLMN mobility procedure if the smContextRef IE is present. It may be present otherwise, if the smContextRef IE is present.When present, this IE shall carry the PLMN ID of the SMF which hosts the SM Context resource identified by smContextRef IE. For an SNPN, the NID together with the PLMN ID shall identify the SNPN.(NOTE 7) | DTSSA |
| smContextSmfId | NfInstanceId | O | 0..1 | This IE may be present if smContextRef is present.When present, this IE shall carry the NF instance ID of the SMF which hosts the SM Context resource identified by smContextRef IE. (NOTE 2) | DTSSA |
| smContextSmfSetId | NfSetId | C | 0..1 | This IE shall be present, if available.When present, this IE shall contain the NF Set ID of the old V-SMF or the old I-SMF or the SMF as identified by the smContextSmfId. | DTSSA |
| smContextSmfServiceSetId | NfServiceSetId | C | 0..1 | This IE shall be present, if available.When present, this IE shall contain the NF Service Set ID of the PDUSession service instance (for this SmContext) in the old V-SMF or the old I-SMF or the SMF. | DTSSA |
| smContextSmfBinding | SbiBindingLevel | C | 0..1 | This IE shall be present, if available.When present, this IE shall contain the SBI binding level of the SM context resource. | DTSSA |
| upCnxState | UpCnxState | C | 0..1 | This IE shall be present to request the activation of the user plane connection of the PDU session, in the following cases:- during Service Request procedure with an I-SMF insertion / change / removal, or with a V-SMF change (see clause 5.2.2.2.6);- during Registration procedure with an I-SMF insertion / change / removal, or with a V-SMF insertion / change / removal (see clause 5.2.2.2.7), if this PDU session is requested to be activated by the UE.  | DTSSA |
| smallDataRateStatus | SmallDataRateStatus | C | 0..1 | This IE shall be present if the small data rate control status is available in AMF, see clause 5.31.14.3 of 3GPP TS 23.501 [2] and clause 4.3.2.2.1 of 3GPP TS 23.502 [3]. | CIOT |
| apnRateStatus | ApnRateStatus | C | 0..1 | This IE shall be present if the APN rate control status is available in AMF, see clause 4.7.7.3 in 3GPP TS 23.401 [33] and clause 5.2.8.2.5 in 3GPP TS 23.502 [3]. | CIOT |
| extendedNasSmTimerInd | boolean | C | 0..1 | This IE shall be present with the value "True" if the UE supports CE mode B and use of CE mode B is not restricted according to the Enhanced Coverage Restriction information in the UE context in the AMF.When present, it shall indicate whether extended NAS SM timers shall be used for the UE as specified in 3GPP TS 24.501 [7], as follows:- True: extended NAS SM timers shall be used- False (default): normal NAS SM timers shall be used. | CIOT |
| dlDataWaitingInd | boolean | C | 0..1 | This IE shall be present during an EPS to 5GS Idle mode mobility using N26 interface with data forwarding (see clause 4.11.1.3.3A of 3GPP TS 23.502 [3]), if the same indication is received from the MME in the Context Response message.When present, it shall be set as follows:- true: DL data needs to be sent to the UE;- false (default): no DL data needs to be sent to the UE. | CIOT |
| ddnFailureSubs | DdnFailureSubs | C | 0..1 | This IE shall be present to subscribe the notification of the DDN Failure if the Availability after DDN failure event is subscribed by the UDM, see clause 4.15.3.2.7 of 3GPP TS 23.502 [3]. | CIOT |
| smfTransferInd | boolean | C | 0..1 | This IE shall be present during an SMF Context Transfer procedure, LBO or no Roaming, no I-SMF.When present, it shall be set as follows:- True: SMF Context Transfer- False (default): Not an SMF Context Transfer | CTXTR |
| oldSmfId | NfInstanceId | C | 0..1 | This IE shall be present if smfTransferInd is set to true.When present, it shall indicate old SMF instance identifier. | CTXTR |
| oldSmContextRef | Uri | C | 0..1 | This IE shall be present if smfTransferInd is set to true.When present, this IE shall contain the identifier of the SM Context resource in the old SMF.This IE shall also be present, without smfTransferInd set, if this information was received earlier in Notify SM Context Status, see clause 4.3.5.2 of 3GPP TS 23.502 [3]. | CTXTREnEDGE |
| wAgfInfo | WAgfInfo | C | 0..1 | This IE shall be present, if received from the W-AGF. When present, it shall contain information about the N3 terminations of the W-AGF. The SMF may use this information when selecting the UPF.  |  |
| tngfInfo | tngfInfo | C | 0..1 | This IE shall be present, if received from the TNGF. When present, it shall contain information about the N3 terminations of the TNGF. The SMF may use this information when selecting the UPF.  |  |
| twifInfo | twifInfo | C | 0..1 | This IE shall be present, if received from the TWIF. When present, it shall contain information about the N3 terminations of the TWIF. The SMF may use this information when selecting the UPF.  |  |
| ranUnchangedInd | boolean | C | 0..1 | This IE shall be present if the NG-RAN is not changed in case of I-SMF/V-SMF change or insertion during CM-CONNECTED registration procedure after EPS to 5GS handover (see clause 5.2.2.2.7) or I-SMF selection per DNAI (see clause 5.2.2.2.12).When present, it shall be set as follows:- true: NG-RAN is not changed;- false: NG-RAN is changed. | DTSSA |
| samePcfSelectionInd | boolean | C | 0..1 | This IE shall be present, if the AMF received the PCF Selection Assistance info from the UDM indicating that the same PCF is required. (NOTE 4)When present, it shall be set as follows:- True: the SMF is indicated to select the same PCF instance for the PDU session.- False (default): the SMF is not indicated to select the same PCF instance for the PDU session. |  |
| targetDnai | Dnai | C | 0..1 | This IE shall be present, if this information was received earlier in Notify SM Context Status. I-SMF or SMF shall use this information for I-UPF / L-PSA / PSA selection, see clauses 4.3.5.1, 4.3.5.2 or 4.23.5.4 of 3GPP TS 23.502 [3]. | EnEDGE |
| nrfManagementUri | Uri | C | 0..1 | If included, this IE shall contain the API URI of the NFManagement Service (see clause 6.1.1 of 3GPP TS 29.510 [19]) of the NRF or hNRF.It shall be present during the PDU session establishment procedure with an I-SMF/V-SMF or mobility procedure with I-SMF/V-SMF insertion/change, if it is returned from the NSSF or hNSSF (see clause 6.1.6.2.7 of 3GPP TS 29.531 [40]). |  |
| nrfDiscoveryUri | Uri | C | 0..1 | If included, this IE shall contain the API URI of the NFDiscovery Service (see clause 6.2.1 of 3GPP TS 29.510 [19]) of the NRF or hNRF.It shall be present during the PDU session establishment procedure with an I-SMF/V-SMF or mobility procedure with I-SMF/V-SMF insertion/change, if it is returned from the NSSF or hNSSF (see clause 6.1.6.2.7 of 3GPP TS 29.531 [40]). |  |
| nrfAccessTokenUri | Uri | C | 0..1 | If included, this IE shall contain the API URI of the Access Token Service (see clause 6.3.2 of 3GPP TS 29.510 [19]) of the NRF or hNRF.It shall be present during the PDU session establishment procedure with an I-SMF/V-SMF or mobility procedure with I-SMF/V-SMF insertion/change, if it is returned from the NSSF or hNSSF (see clause 6.1.6.2.7 of 3GPP TS 29.531 [40]). |  |
| nrfOauth2Required | map(boolean) | C | 1..N | This IE should be present if the nrfUri IE, nrfManagementUri IE or nrfDiscoveryUri IE is present and if the information is available.When present, this IE shall indicate whether the NRF requires Oauth2-based authorization for accessing its services. The key of the map shall be the name of an NRF service, e.g. "nnrf-nfm" or "nnrf-disc".The value of each entry of the map shall be encoded as follows:- true: OAuth2 based authorization is required.- false: OAuth2 based authorization is not required.The absence of this IE means that no indication is available about the usage of Oauth2 for authorization of NRF services. |  |
| smfBindingInfo | string | C | 0..1 | This IE shall be present, if available.When present, this IE shall contain the Binding indications of the SM context resource and shall be set to the value of the 3gpp-Sbi-Binding header defined in clause 5.2.3.2.6 of 3GPP TS 29.500 [4], without the header name. | DTSSA |
| pvsInfo | array(ServerAddressingInfo) | C | 1..N | This IE shall be present, if the AMF received this information from AUSF during User Plane Remote Provisioning of UEs procedure (see clause 5.30.2.10.4 of 3GPP TS 23.501 [40]).When present, this IE shall contain the remote Provisioning Server(s) information. | ENPN |
| onboardingInd | boolean | C | 0..1 | This IE shall be present, if the UE is registered for onboarding in an SNPN (see clause 5.30.2.10.4 in 3GPP TS 23.501 [40] and clause 4.2.2.2.4 in 3GPP TS 23.502 [3]).- false (default): The UE is not registered in an SNPN for the purpose of onboarding;- true: The UE has registered in the SNPN for the purpose of onboarding. | ENPN |
| oldPduSessionRef | Uri | C | 0..1 | This IE shall be present if this information was received earlier in Notify SM Context Status, see clause 4.3.5.2 of 3GPP TS 23.502 [3].When present, this IE shall contain the URI of the PDU session resource in the old SMF. The URI shall be an absolute URI, including apiRoot (see clause 6.1.3.6.2). | EnEDGE |
| smPolicyNotifyInd | boolean | O | 0..1 | When present, this IE shall indicate whether the SM Policy Association Establishment and Termination events shall be reported for the PDU session by the PCF for the SM Policy to the PCF for the UE:- true: SM Policy Association Establishment and Termination events shall be reported- false (default): SM Policy Association Establishment and Termination events is not required(NOTE 5) | SPAE |
| pcfUeCallbackInfo | PcfUeCallbackInfo | C | 0..1 | This IE shall be present when the smPolicyNotifyInd IE is present with value true.When present, this IE shall contain the callback information of the PCF for the UE to receive SM Policy Association Establishment and Termination events notification from the PCF for the SM Policy. (NOTE 5) | SPAE |
| satelliteBackhaulCat | SatelliteBackhaulCategory | O | 0..1 | This IE may be present if the AMF supports the 5GSAT feature and the AMF is aware that there is a satellite backhaul towards the 5G AN serving the UE.When present, this IE shall indicate the category of the satellite backhaul used towards the 5G AN serving the UE. | 5GSAT |
| upipSupported | boolean | C | 0..1 | This IE shall be present during the PDU session establishment procedure, if the UE supports User Plane Integrity Protection with EPS and if the AMF supports the related functionality. It may be present otherwise. When present, this IE shall be set as follows:- true: User Plane Integrity Protection with EPS is supported;- false (default): User Plane Integrity Protection with EPS is not supported. | UPIPE |
| uavAuthenticated | boolean | C | 0..1 | This IE shall be present during the PDU session establishment procedure, if the UAV has been authenticated by the USS for the requested DNN subject to aerial services. It may be present otherwise. When present, this IE shall be set as follows:- true: UAV has been authenticated by the USS;- false: UAV has not been authenticated by the USS.If both the requested DNN (i.e. dnn IE) and selected DNN (i.e. selected Dnn IE) are present, the uavAuthenticated shall be related to the selected DNN. |  |
| disasterRoamingInd | boolean | O | 0..1 | This IE may be set during the PDU session establishment. When present, this IE shall be set as follows:- true: the UE is registered for Disaster Roaming service- false (default): the UE is not registered for Disaster Roaming service |  |
| NOTE 1: In shared networks, when the message is sent from the VPLMN to the HPLMN, the PLMN ID that is communicated in this IE shall be that of the selected Core Network Operator. In shared networks, when the AMF and SMF pertain to the same PLMN, the Primary PLMN ID shall be communicated in the ECGI or NCGI to the SMF. The Core Network Operator PLMN ID shall be communicated in the TAI and the Serving Network.NOTE 2: If the SMF is aware that Oauth is enabled for the indicated next hop SMF, e.g. received a "401 Unauthorized" response code from next hop SMF, the SMF shall use the NF instance Identifier to acquire the access token for the Nsmf\_PduSession service on the indicated SMF.NOTE 3: If present, this attribute shall be used together with routingIndicator. This attribute is only used by the HPLMN in roaming scenarios.NOTE 4: If present, this attribute shall be used together with the PCF ID received from the AMF for selecting the same PCF instance for the PDU session.NOTE 5: If the AMF has received the callback information of the PCF for the UE together with the information of the PDU sessions (i.e. Slice and DNN combination) that are applicable for notification of SM Policy Association events, the AMF shall identify whether the non-roaming or local breakout PDU session to be created is applicable for SM Policy Association events, i.e, whether the slice and DNN combination of the PDU session is listed in the received PDU session information from the PCF for the UE. If the PDU session is applicable for notification of SM Policy Association events, the AMF shall include the smPolicyNotifyInd IE with the value "true" and the callback information of the PCF for the UE in the request. The SMF shall forward the callback information of the PCF for the UE to the PCF for SM Policy during SM Policy Association Establishment. See clause 4.3.2.2.1 of 3GPP TS 23.502 [3].NOTE 6: See NOTE 2 of Table 6.1.6.2.3-1.NOTE 7: If the PLMN ID of the SMF holding the SM context received in smContextSmfPlmnId attribute is different from the PLMN ID of the target V-SMF/I-SMF/anchor SMF, the target V-SMF/I-SMF/anchor SMF shall retrieve the SM Context from the SMF via the SEPP. In this case, the smContextSmfPlmnId attribute may also be used for the discovery and selection of the local SEPP.NOTE 8: The smfUri and hSmfUri attributes need not be included in Create SM Context request in procedures other than PDU session establishment procedure if the NF Service Consumer (e.g. AMF) and I-SMF/V-SMF support the "ACSCR" feature. See clause 6.1.8. |

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

##### 6.1.6.2.9 Type: PduSessionCreateData

Table 6.1.6.2.9-1: Definition of type PduSessionCreateData

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| supi | Supi | C | 0..1 | This IE shall be present, except if the UE is emergency registered and UICCless.When present, it shall contain the subscriber permanent identify.  |  |
| unauthenticatedSupi | boolean | C | 0..1 | This IE shall be present if the SUPI is present in the message but is not authenticated and is for an emergency registered UE.When present, it shall be set as follows:- true: unauthenticated SUPI;- false (default): authenticated SUPI. |  |
| pei | Pei | C | 0..1 | This IE shall be present if the UE is emergency registered and it is either UIClless or the SUPI is not authenticated.For all other cases, this IE shall be present if it is available.When present, it shall contain the permanent equipment identifier. |  |
| pduSessionId | PduSessionId | C | 0..1 | This IE shall contain the PDU Session ID, except during an EPS to 5GS Idle mode mobility or handover using the N26 interface. |  |
| dnn | Dnn | M | 1 | This IE shall contain the requested DNN. The DNN shall be the full DNN (i.e. with both the Network Identifier and Operator Identifier) for a HR PDU session, and it should be the full DNN in LBO and non-roaming scenarios. If the Operator Identifier is absent, the serving core network operator shall be assumed. |  |
| selectedDnn | Dnn | C | 0..1 | This IE shall be present, if another DNN other than the UE requested DNN is selected for this PDU session.When present, it shall contain the selected DNN. The DNN shall be the full DNN (i.e. with both the Network Identifier and Operator Identifier) for a HR PDU session, and it should be the full DNN in LBO and non-roaming scenarios. If the Operator Identifier is absent, the serving core network operator shall be assumed. |  |
| sNssai | Snssai | C | 0..1 | This IE shall be present, except during an EPS to 5GS idle mode mobility or handover using the N26 interface.When present, it shall contain:- the HPLMN S-NSSAI for a HR PDU session, which is mapped from the requested S-NSSAI by the VPLMN; or- the requested S-NSSAI in the serving PLMN for a PDU session with an I-SMF. |  |
| hplmnSnssai | Snssai | C | 0..1 | This IE shall be present for an LBO PDU session with an I-SMF, except during an EPS to 5GS idle mode mobility or handover using the N26 interface.When present, it shall contain the HPLMN S-NSSAI of the LBO PDU session, which is mapped from the requested S-NSSAI by the VPLMN. | DTSSA |
| vsmfId | NfInstanceId | C | 0..1 | This IE shall be present for a HR PDU session. When present, it shall contain the identifier of the V-SMF. |  |
| ismfId | NfInstanceId | C | 0..1 | This IE shall be present for a PDU session with an I-SMF. When present, it shall contain the identifier of the I-SMF. | DTSSA |
| servingNetwork | PlmnIdNid | M | 1 | This IE shall contain the serving core network operator PLMN ID and, for an SNPN, the NID that together with the PLMN ID identifies the SNPN.  |  |
| requestType | RequestType | C | 0..1 | This IE shall be present if the Request type IE is received from the UE for a single access PDU session and if the request refers to an existing PDU session or an existing emergency PDU session. The requestType IE shall not be included for a MA-PDU session establishment request. It may be present otherwise.When present, it shall indicate whether the request refers to a new PDU session or emergency PDU session, or to an existing PDU session or emergency PDU session.For request sent from AMF, this IE shall be set based on the requestType received. |  |
| epsBearerId | array(EpsBearerId) | C | 1..N | This IE shall be present during an EPS to 5GS Idle mode mobility or handover preparation using the N26 interface.When present, it shall contain the list of EPS bearer Id(s) received from the MME. |  |
| pgwS8cFteid | Bytes | C | 0..1 | This IE shall be present during an EPS to 5GS Idle mode mobility or handover preparation using the N26 interface.When present, it shall contain Base64-encoded characters, encoding the PGW S8 F-TEID for Control Plane as specified in Figure 8.22-1 of 3GPP TS 29.274 [16] (starting from octet 1), received from the MME. |  |
| vsmfPduSessionUri | Uri | C | 0..1 | This IE shall be present for a HR PDU session. When present, it shall include the callback URI representing the PDU session in the V-SMF. |  |
| ismfPduSessionUri | Uri | C | 0..1 | This IE shall be present for a PDU session with an I-SMF. When present, it shall include the callback URI representing the PDU session in the I-SMF. | DTSSA |
| vcnTunnelInfo | TunnelInfo | C | 0..1 | This IE shall be present for a HR PDU session, except for EPS to 5GS handover using N26 interface and when Control Plane CIoT 5GS Optimisation is enabled and data delivery via NEF is selected for this PDU session.When present, this IE shall contain the N9 tunnel information of the visited CN side, i.e. V-UPF. |  |
| icnTunnelInfo | TunnelInfo | C | 0..1 | This IE shall be present for a PDU session involving an I-SMF, except when Control Plane CIoT 5GS Optimisation is enabled and data delivery via NEF is selected for this PDU session.When present, this IE shall contain the N9 tunnel information of the I-UPF controlled by the I-SMF. | DTSSA |
| n9ForwardingTunnelInfo | TunnelInfo | C | 0..1 | This IE shall be present during Service Request procedures with I-SMF insertion, if buffered DL data is available at the I-UPF that is controlled by the SMF (see clause 4.23.4 in 3GPP TS 23.502 [3]).When present, this IE shall contain the N9 tunnel information of the I-UPF controlled by the I-SMF. | DTSSA |
| additionalCnTunnelInfo | TunnelInfo | C | 0..1 | This IE shall be present if a MA PDU session is requested or if the PDU session is allowed to be upgraded to a MA PDU session, and the UE is registered over both 3GPP access and Non-3GPP access.When present, it shall contain additional N9 tunnel information of the UPF controlled by the V-SMF or I-SMF.  | MAPDU |
| anType | AccessType | M | 1 | This IE shall indicate the Access Network Type to which the PDU session is to be associated. |  |
| additionalAnType | AccessType | C | 0..1 | This IE shall indicate the additional Access Network Type to which the PDU session is to be associated.This IE shall be present if a MA-PDU session is requested and the UE is registered over both 3GPP access and Non-3GPP access.  | MAPDU |
| ratType | RatType | C | 0..1 | This IE shall be present and indicate the RAT Type used by the UE, if available. |  |
| ueLocation | UserLocation | C | 0..1 | This IE shall contain the UE location information (see clause 5.2.3.4), if it is available. (NOTE 1) |  |
| ueTimeZone | TimeZone | C | 0..1 | This IE shall contain the UE Time Zone, if it is available. |  |
| addUeLocation | UserLocation | O | 0..1 | Additional UE location.This IE may be present, if anType indicates a non-3GPP access and a valid 3GPP access user location information is available.When present, it shall contain:- the last known 3GPP access user location (see clause 5.2.3.4); and- the timestamp, if available, indicating the UTC time when the addUeLocation information was acquired.(NOTE 1) |  |
| gpsi | Gpsi | C | 0..1 | This IE shall be present if it is available. When present, it shall contain the user's GPSI.  |  |
| n1SmInfoFromUe | RefToBinaryData | C | 0..1 | This IE shall be present if the V-SMF or I-SMF has received known N1 SM information from the UE that does not need to be interpreted by the V-SMF or I-SMF. When present, this IE shall reference the n1SmInfoFromUe binary data (see clause 6.1.6.4.4).  |  |
| unknownN1SmInfo | RefToBinaryData | C | 0..1 | This IE shall be present if the V-SMF or I-SMF has received unknown N1 SM information from the UE. When present, this IE shall reference the unknownN1SmInfo binary data (see clause 6.1.6.4.4).  |  |
| supportedFeatures | SupportedFeatures | C | 0..1 | This IE shall be present if at least one optional feature defined in clause 6.1.8 is supported.  |  |
| hPcfId | NfInstanceId | O | 0..1 | This IE may be used by V-SMF to indicate the home PCF selected by the AMF for the UE to the H-SMF, for a HR PDU session.When present, this IE shall contain the identifier of the H-PCF selected by the AMF for the UE (for UE Policy Control).  |  |
| pcfId | NfInstanceId | O | 0..1 | This IE may be used by I-SMF to indicate the (V-)PCF selected by the AMF for the UE to the SMF, for a PDU session with an I-SMF.When present, this IE shall contain the identifier of the PCF (for Access and Mobility Policy Control and/or UE Policy Control) in non-roaming scenarios, or the V-PCF (for Access and Mobility Policy Control) in LBO roaming scenarios.  | DTSSA |
| pcfGroupId | NfGroupId | O | 0..1 | This IE may be present in non-roaming and HR roaming scenarios.When present, this IE shall contain the identity of the (home) PCF group serving the UE for Access and Mobility Policy and/or UE Policy.  |  |
| pcfSetId | NfSetId | O | 0..1 | When present, it shall contain the NF Set ID of the H-PCF indicated by the hPcfId IE or the (V-)PCF indicated by the pcfId IE.  |  |
| hoPreparationIndication | boolean | C | 0..1 | This IE shall be present during an EPS to 5GS handover preparation using the N26 interface or during N2 handover preparation with I-SMF insertion.When present, it shall be set as follows:- true: an EPS to 5GS handover preparation or N2 handover preparation with I-SMF is in progress; the PGW-C/SMF shall not switch the DL user plane of the PDU session yet.- false: there is no on-going EPS to 5GS handover preparation or N2 handover preparation with I-SMF in progress. If a handover preparation was in progress, the handover has been completed. The PGW-C/SMF shall switch the DL user plane of the PDU session using the N9 tunnel information that has been received in the vcnTunnelInfo or icnTunnelInfo.It shall be set to "true" during an EPS to 5GS handover preparation using the N26 interface or during N2 handover preparation with I-SMF insertion. |  |
| selMode | DnnSelectionMode | C | 0..1 | This IE shall be present if it is available. When present, it shall be set to:- "VERIFIED", if the requested DNN provided by UE or the selected DNN provided by the network corresponds to an explicitly subscribed DNN; or- "UE\_DNN\_NOT\_VERIFIED", if the requested DNN provided by UE corresponds to the usage of a wildcard subscription; or- "NW\_DNN\_NOT\_VERIFIED", if the selected DNN provided by the network corresponds to the usage of a wildcard subscription.If both the requested DNN (i.e. dnn IE) and selected DNN (i.e. selected Dnn IE) are present, the selMode shall be related to the selected DNN. |  |
| alwaysOnRequested | boolean | C | 0..1 | This IE shall be present and set to true if the UE requests to setup an always-on PDU session and this is allowed by local policy in the V-SMF or I-SMF.When present, it shall be set as follows:- true: request for an always-on PDU session- false (default): not a request for an always-on PDU session |  |
| udmGroupId | NfGroupId | O | 0..1 | When present, it shall indicate the identity of the UDM group serving the UE. |  |
| routingIndicator | string | O | 0..1 | When present, it shall indicate the Routing Indicator of the UE. |  |
| hNwPubKeyId | integer | O | 0..1 | When present, it shall indicate the Home Network Public Key Identifier of the UE. (NOTE 2) |  |
| epsInterworkingInd | EpsInterworkingIndication | O | 0..1 | This IE may be present if the indication has been received from AMF and is allowed to be forwarded to H-SMF by operator configuration.When present, this IE shall indicate whether the PDU session may possibly be moved to EPS and whether N26 interface to be used during EPS interworking procedures. |  |
| vSmfServiceInstanceId | string | O | 0..1 | When present, this IE shall contain the serviceInstanceId of the V-SMF service instance serving the PDU session.This IE may be used by the H-SMF to identify PDU sessions affected by a failure or restart of the V-SMF service (see clauses 6.2 and 6.3 of 3GPP TS 23.527 [24]). |  |
| iSmfServiceInstanceId | string | O | 0..1 | When present, this IE shall contain the serviceInstanceId of I-SMF service instance serving the PDU session.This IE may be used by the SMF to identify PDU sessions affected by a failure or restart of the I-SMF service (see clauses 6.2 and 6.3 of 3GPP TS 23.527 [24]). | DTSSA |
| recoveryTime | DateTime | O | 0..1 | Timestamp when the V-SMF or I-SMF service instance serving the PDU session was (re)started (see clause 6.3 of 3GPP TS 23.527 [24]). |  |
| roamingChargingProfile | RoamingChargingProfile | O | 0..1 | Roaming Charging Profile applicable in the VPLMN (see clauses 5.1.9.1, 5.2.1.7 and 5.2.2.12.2 of 3GPP TS 32.255 [25]).  |  |
| chargingId | string | O | 0..1 | Charging ID (see clauses 5.1.9.1 of 3GPP TS 32.255 [25]).  |  |
| oldPduSessionId | PduSessionId | C | 0..1 | This IE shall be present if this information is received from the UE and the same SMF is selected for SSC mode 3.When present, it shall contain the old PDU Session ID received from the UE. See clauses 4.3.2.2.1 and 4.3.5.2 of 3GPP TS 23.502 [3].  |  |
| epsBearerCtxStatus | EpsBearerContextStatus | C | 0..1 | This IE shall be present during an EPS to 5GS idle mode mobility using the N26 interface, if received in the Create SM Context request.When present, it shall be set to the value received in the Create SM Context request.  |  |
| amfNfId | NfInstanceId | C | 0..1 | This IE shall be present if it is received in the Create SM Context request, unless the PDU session is related to regulatory prioritized service.When present, it shall contain the identifier of the serving AMF. |  |
| guami | Guami | C | 0..1 | This IE shall be present if the amfNfId is present.When present, it shall contain the serving AMF's GUAMI. |  |
| maxIntegrityProtectedDataRateUl | MaxIntegrityProtectedDataRate | C | 0..1 | This IE shall be present if it is available.When present, it shall indicate the maximum integrity protected data rate supported by the UE for uplink.  |  |
| maxIntegrityProtectedDataRateDl | MaxIntegrityProtectedDataRate | C | 0..1 | This IE shall be present if it is available.When present, it shall indicate the maximum integrity protected data rate supported by the UE for downlink. |  |
| cpCiotEnabled | boolean | C | 0..1 | This IE shall be present with the value "True" if the "5gCiotCpEnabled" attribute is received with "True" value in SM Context Create request, indicating the Control Plane CIoT 5GS Optimisation is enabled for the PDU session (see 3GPP TS 23.502 [3], clause 4.3.2.2.2).When present, it shall be set as follows:- True: Control Plane CIoT 5GS Optimisation is enabled.- False (default): Control Plane CIoT 5GS Optimisation is not enabled. | CIOT |
| cpOnlyInd | boolean | C | 0..1 | This IE shall be present with the value "True", if the PDU session shall only use Control Plane CIoT 5GS Optimisation (see clause 5.31.4.1 of 3GPP TS 23.501 [2]).When present, it shall be set as follows:- True: the PDU session shall only use Control Plane CIoT 5GS Optimisation- False (default): the PDU session is not constrained to only use Control Plane CIoT 5GS Optimisation. | CIOT |
| invokeNef | boolean | C | 0..1 | This IE shall be present with value "True", if Control Plane CIoT 5GS Optimisation is enabled and data delivery via NEF is selected for the PDU session.When present, it shall be set as follows:- True: Data delivery via NEF is selected.- False (default): Data delivery via NEF is not selected. | CIOT |
| maRequestInd | boolean | C | 0..1 | This IE shall be present if a MA-PDU session is requested to be established by the UE.When present, it shall be set as follows:- True: a MA-PDU session is requested- False (default): a MA-PDU session is not requested | MAPDU |
| maNwUpgradeInd | boolean | C | 0..1 | This IE shall only be present if the PDU session is allowed to be upgraded to MA PDU session (see clause 4.22.3 of 3GPP TS 23.502 [3]).When present, it shall be set as follows:- True: the PDU session is allowed to be upgraded to MA PDU session- False (default): the PDU session is not allowed to be upgraded to MA PDU sessionWhen maRequestInd is present and set to "true", this IE shall not be present. | MAPDU |
| dnaiList | array(Dnai) | C | 1..N | This IE shall be present over N16a if an I-SMF is inserted into a PDU session during the following procedures: PDU session establishment, Registration, Service Request, Xn based handover, Inter NG-RAN node N2 based handover (see clause 4.23 of 3GPP TS 23.502 [3]).When present, it shall include the list of DNAIs supported by the I-SMF.  | DTSSA |
| presenceInLadn | PresenceState | C | 0..1 | This IE shall be present during Xn based handover with I-SMF insertion, if the DNN corresponds to a LADN.When present, it shall be set to "IN" or "OUT" to indicate that the UE is in or out of the LADN service area. | DTSSA |
| secondaryRatUsageInfo | array(SecondaryRatUsageInfo) | O | 1..N | This IE may be present to report usage data for a secondary RAT for QoS flows and/or the whole PDU session. | DTSSA |
| smallDataRateStatus | SmallDataRateStatus | C | 0..1 | This IE shall be present if the small data rate control status is received from AMF, see clause 5.31.14.3 of 3GPP TS 23.501 [2] and clause 4.3.2.2.2 of 3GPP TS 23.502 [3]. | CIOT |
| apnRateStatus | ApnRateStatus | C | 0..1 | This IE shall be present, if the APN rate control status (APN rates are shared by all PDN connections of the UE to this APN) is received from the AMF, see clause 4.7.7.3 in 3GPP TS 23.401 [33] and clause 4.11.5.3 in 3GPP TS 23.502 [3]. | CIOT |
| dlServingPlmnRateCtl | integer | C | 0..1 | This IE shall be present if Serving PLMN Rate Control for downlink data packets is enabled in the PLMN and Control Plane CIoT 5GS Optimisation is enabled for the PDU session.When present, this IE shall contain the maximum allowed number of Downlink NAS Data PDUs per deci hour of the serving PLMN, as specified in clause 5.31.14.2 of 3GPP TS 23.501 [2].Minimum: 10 | CIOT |
| upSecurityInfo | UpSecurityInfo | C | 0..1 | This IE shall be present if received from NG-RAN during Xn handover procedure with I-SMF Insertion (see clause 5.2.2.7.5).When present, this IE shall contain the User Plane Security Information associated to the PDU session. See clause 9.3.1.60 of 3GPP TS 38.413 [9]. | DTSSA |
| vplmnQos | VplmnQos | C | 0..1 | This IE shall be present for a HR PDU session, if the V-SMF supports the VQOS feature and if VPLMN QoS constraints are required for the PDU session.When present, this IE shall contain the QoS constraints from the VPLMN. | VQOS |
| oldSmContextRef | Uri | C | 0..1 | This IE shall be present, if it is received in the Create SM Context request.When present, this IE shall contain the identifier of the SM Context resource in the old SMF. | EnEDGE |
| redundantPduSessionInfo | RedundantPduSessionInformation | C | 0..1 | This IE shall be present for a PDU session with an I-SMF, if an RSN and/or PDU Session Pair ID was received from the UE.  | DCE2ER |
| oldPduSessionRef | Uri | C | 0..1 | This IE shall be present, if it is received in the Create SM Context request.When present, this IE shall contain the URI of the PDU session resource in the old SMF. The URI shall be an absolute URI, including apiRoot (see clause 6.1.3.6.2). | EnEDGE |
| smPolicyNotifyInd | boolean | C | 0..1 | This IE shall be included by I-SMF to SMF, if received from AMF.When present, this IE shall indicate whether the SM Policy Association Establishment and Termination events shall be reported for the PDU session by the PCF for the SM Policy to the PCF for the UE:- true: SM Policy Association Establishment and Termination events shall be reported- false (default): SM Policy Association Establishment and Termination events is not required(NOTE 3) | SPAE |
| pcfUeCallbackInfo | PcfUeCallbackInfo | C | 0..1 | This IE shall be present when the smPolicyNotifyInd IE is present with value true.When present, this IE shall contain the callback information of the PCF for the UE to receive SM Policy Association Establishment and Termination events notification from the PCF for the SM Policy. (NOTE 3) | SPAE |
| satelliteBackhaulCat | SatelliteBackhaulCategory | O | 0..1 | This IE may be present if the V-SMF/I-SMF supports the 5GSAT feature and the satelliteBackhaulCat IE has been received from the AMF.When present, this IE shall indicate the value received from the AMF. | 5GSAT |
| upipSupported | boolean | C | 0..1 | This IE shall be present during the PDU session establishment procedure if the UE supports User Plane Integrity Protection with EPS and if the AMF supports the related functionality. It may be present otherwise. When present, this IE shall be set as follows:- true: User Plane Integrity Protection with EPS is supported;- false (default): User Plane Integrity Protection with EPS is not supported. | UPIPE |
| upCnxState | UpCnxState | C | 0..1 | This IE shall be present to indicate that the User Plane resource for the PDU session is going to be established by the I-SMF/V-SMF, during a service request procedure with I-SMF/V-SMF insertion (see clause 4.23.4.3 of 3GPP TS 23.502 [3]).When present, this IE shall be set as specified in clause 5.2.2.7.6. |  |
| disasterRoamingInd | boolean | O | 0..1 | This IE may be set during the PDU session establishment. When present, this IE shall be set as follows:- true: the UE is registered for Disaster Roaming service- false (default): the UE is not registered for Disaster Roaming service |  |
| NOTE 1: In shared networks, the PLMN ID that is communicated in this IE shall be that of the selected Core Network Operator.NOTE 2: If present, this attribute shall be used together with routingIndicator. This attribute is only used by the HPLMN in roaming scenarios.NOTE 3: If the smPolicyNotifyInd IE is received with the value "true", the SMF shall forward the callback information of the PCF for the UE to the PCF for SM Policy during SM Policy Association Establishment. See clause 4.3.2.2.1 of 3GPP TS 23.502 [3]. |

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

##### 6.1.6.2.39 Type: SmContext

Table 6.1.6.2.39-1: Definition of type SmContext

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description |
| pduSessionId | PduSessionId | M | 1 | This IE shall contain the PDU Session ID. |
| dnn | Dnn | M | 1 | This IE shall contain the UE requested DNN of the PDU session.The DNN shall be the full DNN (i.e. with both the Network Identifier and Operator Identifier) for a HR PDU session, and it should be the full DNN in LBO and non-roaming scenarios. If the Operator Identifier is absent, the serving core network operator shall be assumed. |
| selectedDnn | Dnn | C | 0..1 | This IE shall be present, if another DNN other than the UE requested DNN is selected for this PDU session.When present, it shall contain the selected DNN. The DNN shall be the full DNN (i.e. with both the Network Identifier and Operator Identifier) for a HR PDU session, and it should be the full DNN in LBO and non-roaming scenarios. If the Operator Identifier is absent, the serving core network operator shall be assumed. |
| sNssai | Snssai | M | 1 | This IE shall contain the S-NSSAI for the serving PLMN.  |
| hplmnSnssai | Snssai | C | 0..1 | This IE shall be present for a HR PDU session.When present, it shall contain the S-NSSAI for the HPLMN.  |
| pduSessionType | PduSessionType | M | 1 | This IE shall indicate the PDU session type. |
| gpsi | Gpsi | C | 0..1 | This IE shall be present if it is available. When present, it shall contain the user's GPSI.  |
| hSmfUri | Uri | C | 0..1 | This IE shall be present in HR roaming scenarios. When present, it shall contain the API URI of the Nsmf\_PDUSession service of the H-SMF. The API URI shall be formatted as specified in clause 6.1.1. |
| smfUri | Uri | C | 0..1 | This IE shall be present for a PDU session with an I-SMF. When present, it shall contain the API URI of the Nsmf\_PDUSession service of the SMF. The API URI shall be formatted as specified in clause 6.1.1. |
| pduSessionRef | Uri | C | 0..1 | This IE shall be present for a HR PDU session or a PDU session with an I-SMF.When present, this IE shall include the absolute URI of the PDU Session in H-SMF or SMF, including apiRoot (see clause 6.1.3.6.2) |
| interPlmnApiRoot | Uri | C | 0..1 | This IE shall be present, if available.When present, it shall contain the apiRoot of the PDU session context to be used in inter-PLMN signalling request targeting the PDU session context.(NOTE 2) |
| intraPlmnApiRoot | Uri | C | 0..1 | This IE shall be present, if available.When present, it shall contain the apiRoot of the PDU session context to be used in intra-PLMN signalling request targeting the PDU session context.(NOTE 2) |
| pcfId | NfInstanceId | O | 0..1 | When present, this IE shall contain the identifier of:- the H-PCF selected by the AMF (for UE Policy), for a HR PDU session; or- the V-PCF selected by the AMF (for Access and Mobility Policy), for a PDU session in LBO roaming scenarios; or- the PCF selected by the AMF (for Access and Mobility Policy and/or UE Policy), for a PDU session in non-roaming scenarios. |
| pcfGroupId | NfGroupId | O | 0..1 | This IE may be present in non-roaming and HR roaming scenarios.When present, this IE shall contain the identity of the (home) PCF group serving the UE for Access and Mobility Policy and/or UE Policy.  |
| pcfSetId | NfSetId | O | 0..1 | This IE may be present if the pcfId IE is present.When present, it shall contain the NF Set ID of the PCF indicated by the pcfId IE.  |
| selMode | DnnSelectionMode | C | 0..1 | This IE shall be present if it is available. When present, it shall be set to:- "VERIFIED", if the requested DNN provided by UE or the selected DNN provided by the network corresponds to an explicitly subscribed DNN; or- "UE\_DNN\_NOT\_VERIFIED", if the requested DNN provided by UE corresponds to the usage of a wildcard subscription; or- "NW\_DNN\_NOT\_VERIFIED", if the selected DNN provided by network corresponds to the usage of a wildcard subscription.If both the requested DNN (i.e. dnn IE) and selected DNN (i.e. selected Dnn IE) are present, the selMode shall be related to the selected DNN. |
| udmGroupId | NfGroupId | O | 0..1 | When present, it shall indicate the identity of the UDM group serving the UE. |
| routingIndicator | string | O | 0..1 | When present, it shall indicate the Routing Indicator of the UE. |
| hNwPubKeyId | integer | O | 0..1 | When present, it shall indicate the Home Network Public Key Identifier of the UE. (NOTE 1) |
| sessionAmbr | Ambr | M | 1 | This IE shall contain the Session AMBR granted to the PDU session. |
| qosFlowsList | array(QosFlowSetupItem) | M | 1..N | This IE shall contain the set of QoS flow(s) established for the PDU session. It shall contain at least the Qos flow associated to the default Qos rule.The qosRules attribute of each QosFlowSetupItem shall be set to an empty string. |
| hSmfInstanceId | NfInstanceId | C | 0..1 | This IE shall be present for a HR PDU session.When present, it shall contain the identifier of the home SMF. |
| smfInstanceId | NfInstanceId | C | 0..1 | This IE shall be present for a PDU session with an I-SMF.When present, it shall contain the identifier of the SMF. |
| pduSessionSmfSetId | NfSetId | C | 0..1 | This IE shall be present, if available.When present, this IE shall contain the NF Set ID of the home SMF as identified by hSmfInstanceId, or the SMF as identified by the smfInstanceId. |
| pduSessionSmfServiceSetId | NfServiceSetId | C | 0..1 | This IE shall be present, if available.When present, this IE shall contain the NF Service Set ID of the PDUSession service instance (for this PDU session) in the home SMF or the SMF. |
| pduSessionSmfBinding | SbiBindingLevel | C | 0..1 | This IE shall be present, if available.When present, this IE shall contain the SBI binding level of the PDU session resource in the home SMF or the SMF. |
| enablePauseCharging | boolean | C | 0..1 | This IE shall be present for a HR PDU session, if available.When present, it shall indicate whether the use of Pause of Charging is enabled for the PDU session (see clause 4.4.4 of 3GPP TS 23.502 [3]).When present, it shall be set as follows:- true: enable Pause of Charging;- false (default): disable Pause of Charging.  |
| ueIpv4Address | Ipv4Addr | C | 0..1 | This IE shall be present if a UE IPv4 address to the PDU session.  |
| ueIpv6Prefix | Ipv6Prefix | C | 0..1 | This IE shall be present if a UE IPv6 prefix to the PDU session. |
| epsPdnCnxInfo | EpsPdnCnxInfo | C | 0..1 | This IE shall be present if the PDU session may be moved to EPS during its lifetime. |
| epsBearerInfo | array(EpsBearerInfo) | C | 1..N | This IE shall be present if the PDU session may be moved to EPS during its lifetime. |
| maxIntegrityProtectedDataRate | MaxIntegrityProtectedDataRate | C | 0..1 | This IE shall be present if the upSecurity IE is present and indicates that integrity protection is preferred or required.When present, it shall indicate the maximum integrity protected data rate for uplink.If the maxIntegrityProtectedDataRateDl IE is absent, this IE applies to both uplink and downlink. |
| maxIntegrityProtectedDataRateDl | MaxIntegrityProtectedDataRate | C | 0..1 | This IE may be present if the upSecurity IE is present and indicates that integrity protection is preferred or required.When present, it shall indicate the maximum integrity protected data rate for downlink.  |
| alwaysOnGranted | boolean | C | 0..1 | This IE shall be present if available. When present, it shall indicate whether this is an always On PDU session and it shall be set as follows:- true: always-on PDU session granted.- false (default): always-on PDU session not granted. |
| upSecurity | UpSecurity | O | 0..1 | When present, this IE shall indicate the security policy for integrity protection and encryption for the user plane of the PDU session. |
| hSmfServiceInstanceId | string | O | 0..1 | This IE may be present for a HR PDU session.When present, this IE shall contain the serviceInstanceId of the H-SMF service instance serving the PDU session.This IE may be used by the V-SMF to identify PDU sessions affected by a failure or restart of the H-SMF service (see clause 6.2 of 3GPP TS 23.527 [24]). |
| smfServiceInstanceId | string | O | 0..1 | This IE may be present for a PDU session with an I-SMF.When present, this IE shall contain the serviceInstanceId of the SMF service instance serving the PDU session.This IE may be used by the I-SMF to identify PDU sessions affected by a failure or restart of the SMF service (see clause 6.2 of 3GPP TS 23.527 [24]). |
| recoveryTime | DateTime | O | 0..1 | This IE may be present if available.When present, this IE shall indicate the timestamp when the H-SMF or SMF service instance serving the PDU session was (re)started (see clause 6.3 of 3GPP TS 23.527 [24]). |
| forwardingInd | boolean | C | 0..1 | This IE shall be present, when downlink data packets are buffered at I-UPF. The SMF or I-SMF shall use this IE to inform the NF service consumer that a forwarding tunnel is needed for receiving the buffered downlink data packets, as specified in clause 4.23.4 of 3GPP TS 23.502 [3].When present, this IE shall be set as follows:- true: a forwarding tunnel is needed for sending buffered downlink data packets;- false (default): forwarding tunnel is not needed |
| psaTunnelInfo | TunnelInfo | C | 0..1 | This IE shall be present if available.When present, this IE shall contain the N9 tunnel information of PDU Session Anchor UPF controlled by SMF or H-SMF. |
| chargingId | string | C | 0..1 | This IE shall be present for a HR PDU session, in scenarios with a V-SMF insertion/change/removal.When present, it shall contain the Charging ID of the PDU session (see 3GPP TS 32.255 [25]). |
| chargingInfo | ChargingInformation | C | 0..1 | This IE shall be present for a HR PDU session, if available and if the NF Service Consumer requesting the SM Context pertains to the same PLMN (i.e. if the Retrieve SM Context Request does not contain the servingNetwork attribute set to a different PLMN ID).When present, it shall contain the addresses of the V-CHF used for the PDU session. |
| roamingChargingProfile | RoamingChargingProfile | C | 0..1 | This IE shall be present for a HR PDU session, if available and if the NF Service Consumer requesting the SM Context pertains to the same PLMN (i.e. if the Retrieve SM Context Request does not contain the servingNetwork attribute set to a different PLMN ID).When present, it shall contain the Roaming Charging Profile selected by the HPLMN (see clauses 5.1.9.1, 5.2.1.7 and 5.2.2.12.2 of 3GPP TS 32.255 [25]).  |
| nefExtBufSupportInd | boolean | C | 0..1 | This IE shall be present with value "true", if the anchor NEF has indicated support of Extended Buffering for mobile terminated data during SMF-NEF connection establishment.When present, this IE shall be set as following:- true: Extended Buffering supported by NEF- false (default): Extended Buffering not supported by NEF |
| ipv6Index | IpIndex | C | 0..1 | This IE shall be present during I-SMF change scenarios, if IPv6 Index has previously been received by old I-SMF. |
| dnAaaAddress | IpAddress | O | 0..1 | When present, this IE shall contain the address of DN-AAA server for UE IP Address allocation previously received by old I-SMF. |
| redundantPduSessionInfo | RedundantPduSessionInformation | C | 0..1 | This IE shall be present for a PDU session with an I-SMF, if this information has been received previously from the UE, the anchor SMF or the old I-SMF.  |
| ranTunnelInfo | QosFlowTunnel | C | 0..1 | This IE shall be present if the ranUnchangedInd IE is set to "true" in the SM context retrieve request.When present, this IE shall contain the N2 tunnel information of NG-RAN with associated QoS flows (see "DL QoS Flow per TNL Information" in clause 9.3.4.2 of 3GPP 38.413 [9]). |
| addRanTunnelInfo | array(QosFlowTunnel) | C | 1..N | This IE shall be present if the ranUnchangedInd IE is set to "true" in the SM context retrieve request.When present, this IE shall contain the additional N2 tunnel information of NG-RAN together with associated QoS flows for split PDU session (see "Additional DL QoS Flow per TNL Information" in clause 9.3.4.2 of 3GPP 38.413 [9]). |
| redRanTunnelInfo | QosFlowTunnel | C | 0..1 | This IE shall be present if the ranUnchangedInd IE is set to "true" in the SM context retrieve request.When present, this IE shall contain the additional N2 tunnel information of NG-RAN together with associated QoS flows for Redundant QoS Flow(s) (see "Redundant DL QoS Flow per TNL Information" in clause 9.3.4.2 of 3GPP 38.413 [9]). |
| addRedRanTunnelInfo | array(QosFlowTunnel) | C | 1..N | This IE shall be present if the ranUnchangedInd IE is set to "true" in the SM context retrieve request.When present, this IE shall contain the additional N2 tunnel information of NG-RAN together with associated QoS flows for Redundant QoS Flow(s) with split PDU session (see "Additional Redundant DL QoS Flow per TNL Information" in clause 9.3.4.2 of 3GPP 38.413 [9]). |
| nspuSupportInd | boolean | C | 0..1 | This IE shall be present and set to "true" if the enablePauseCharging in the SmContext data type is set to "true" and if the (H-)SMF and PSA UPF support Notify Start Pause of Charging via user plane feature as specified in clause 5.30 of 3GPP TS 29.244 [29].When present, it shall be set as follows:- true: Notify Start Pause of Charging via user plane feature is supported. |
| smfBindingInfo | string | C | 0..1 | This IE shall be present, if available.When present, this IE shall contain the Binding indications of the PDU session resource in the home SMF or the SMF and shall be set to the value of the 3gpp-Sbi-Binding header defined in clause 5.2.3.2.6 of 3GPP TS 29.500 [4], without the header name. |
| satelliteBackhaulCat | SatelliteBackhaulCategory | O | 0..1 | When present, this IE shall indicate the satellite backhaul category information last signalled towards the anchor SMF, if any.  |
| sscMode | string | C | 0..1 | This IE shall be present, if available.When present, this IE shall indicate the SSC mode applicable to the PDU session.When present, it shall be encoded as one character in hexadecimal representation, taking a value of "0" to "7", representing the 3 bits of the SSC mode value of the SSC mode IE specified in clause 9.11.4.16 of 3GPP TS 24.501 [7].Pattern: "^[0-7]$"Example: SSC mode 3 shall be encoded as "3". |
| dlsetSupportInd | boolean | C | 0..1 | This IE shall be present and set to "true" if the (H-)SMF supports the "DLSET" feature as specified in clause 6.1.8.When present, it shall be set as follows:- true: the (H-)SMF supports the "DLSET" feature.- false: the (H-)SMF does not support the "DLSET" feature |
| n9fscSupportInd | boolean | C | 0..1 | This IE shall be present and set to "true" if the SMF supports the "N9FSC" feature as specified in clause 6.1.8.When present, it shall be set as follows:- true: "N9FSC" feature is supported. |
| disasterRoamingInd | boolean | O | 0..1 | When present, this IE shall be set as follows:- true: the UE is registered for Disaster Roaming service- false (default): the UE is not registered for Disaster Roaming service |
| NOTE 1: If present, this attribute shall be used together with routingIndicator. This attribute is only used by the HPLMN in roaming scenarios.NOTE 2: See NOTE 7 of Table 6.1.6.2.10-1. |

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

## A.2 Nsmf\_PDUSession API

openapi: 3.0.0

info:

 version: '1.2.0'

 title: 'Nsmf\_PDUSession'

 description: |

 SMF PDU Session Service.

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[…]

 SmContextCreateData:

 description: Data within Create SM Context Request

 type: object

 properties:

 supi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

 unauthenticatedSupi:

 type: boolean

 default: false

 pei:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Pei'

 gpsi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

 pduSessionId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

 dnn:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

 selectedDnn:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

 sNssai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 hplmnSnssai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 servingNfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 guami:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Guami'

 serviceName:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/ServiceName'

 servingNetwork:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnIdNid'

 requestType:

 $ref: '#/components/schemas/RequestType'

 n1SmMsg:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RefToBinaryData'

 anType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

 additionalAnType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

 ratType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 presenceInLadn:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceState'

 ueLocation:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 ueTimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 addUeLocation:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 smContextStatusUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 hSmfUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 hSmfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 smfUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 smfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 additionalHsmfUri:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 minItems: 1

 additionalHsmfId:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 minItems: 1

 additionalSmfUri:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 minItems: 1

 additionalSmfId:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 minItems: 1

 oldPduSessionId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

 pduSessionsActivateList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

 minItems: 1

 ueEpsPdnConnection:

 $ref: '#/components/schemas/EpsPdnCnxContainer'

 hoState:

 $ref: '#/components/schemas/HoState'

 pcfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 pcfGroupId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfGroupId'

 pcfSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

 nrfUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 supportedFeatures:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 selMode:

 $ref: '#/components/schemas/DnnSelectionMode'

 backupAmfInfo:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/BackupAmfInfo'

 minItems: 1

 traceData:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TraceData'

 udmGroupId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfGroupId'

 routingIndicator:

 type: string

 hNwPubKeyId:

 type: integer

 epsInterworkingInd:

 $ref: '#/components/schemas/EpsInterworkingIndication'

 indirectForwardingFlag:

 type: boolean

 directForwardingFlag:

 type: boolean

 targetId:

 $ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/NgRanTargetId'

 epsBearerCtxStatus:

 $ref: '#/components/schemas/EpsBearerContextStatus'

 cpCiotEnabled:

 type: boolean

 default: false

 cpOnlyInd:

 type: boolean

 default: false

 invokeNef:

 type: boolean

 default: false

 maRequestInd:

 type: boolean

 default: false

 maNwUpgradeInd:

 type: boolean

 default: false

 n2SmInfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RefToBinaryData'

 n2SmInfoType:

 $ref: '#/components/schemas/N2SmInfoType'

 n2SmInfoExt1:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RefToBinaryData'

 n2SmInfoTypeExt1:

 $ref: '#/components/schemas/N2SmInfoType'

 smContextRef:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 smContextSmfPlmnId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnIdNid'

 smContextSmfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 smContextSmfSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

 smContextSmfServiceSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfServiceSetId'

 smContextSmfBinding:

 $ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/SbiBindingLevel'

 upCnxState:

 $ref: '#/components/schemas/UpCnxState'

 smallDataRateStatus:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SmallDataRateStatus'

 apnRateStatus:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ApnRateStatus'

 extendedNasSmTimerInd:

 type: boolean

 default: false

 dlDataWaitingInd:

 type: boolean

 default: false

 ddnFailureSubs:

 $ref: '#/components/schemas/DdnFailureSubs'

 smfTransferInd:

 type: boolean

 default: false

 oldSmfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 oldSmContextRef:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 wAgfInfo:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/WAgfInfo'

 tngfInfo:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/TngfInfo'

 twifInfo:

 $ref: 'TS29510\_Nnrf\_NFManagement.yaml#/components/schemas/TwifInfo'

 ranUnchangedInd:

 type: boolean

 samePcfSelectionInd:

 type: boolean

 default: false

 targetDnai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnai'

 nrfManagementUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 nrfDiscoveryUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 nrfAccessTokenUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 nrfOauth2Required:

 type: object

 description: 'Map indicating whether the NRF requires Oauth2-based authorization for accessing its services. The key of the map shall be the name of an NRF service, e.g. "nnrf-nfm" or "nnrf-disc"'

 additionalProperties:

 type: boolean

 minProperties: 1

 smfBindingInfo:

 type: string

 pvsInfo:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ServerAddressingInfo'

 minItems: 1

 onboardingInd:

 type: boolean

 default: false

 oldPduSessionRef:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 smPolicyNotifyInd:

 type: boolean

 default: false

 pcfUeCallbackInfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PcfUeCallbackInfo'

 satelliteBackhaulCat:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SatelliteBackhaulCategory'

 upipSupported:

 type: boolean

 default: false

 uavAuthenticated:

 type: boolean

 disasterRoamingInd:

 type: boolean

 default: false

 required:

 - servingNfId

 - servingNetwork

 - anType

 - smContextStatusUri

[…]

 PduSessionCreateData:

 description: Data within Create Request

 type: object

 properties:

 supi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

 unauthenticatedSupi:

 type: boolean

 default: false

 pei:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Pei'

 pduSessionId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

 dnn:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

 selectedDnn:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

 sNssai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 hplmnSnssai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 vsmfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 ismfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 servingNetwork:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnIdNid'

 requestType:

 $ref: '#/components/schemas/RequestType'

 epsBearerId:

 type: array

 items:

 $ref: '#/components/schemas/EpsBearerId'

 minItems: 1

 pgwS8cFteid:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Bytes'

 vsmfPduSessionUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 ismfPduSessionUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 vcnTunnelInfo:

 $ref: '#/components/schemas/TunnelInfo'

 icnTunnelInfo:

 $ref: '#/components/schemas/TunnelInfo'

 n9ForwardingTunnelInfo:

 $ref: '#/components/schemas/TunnelInfo'

 additionalCnTunnelInfo:

 $ref: '#/components/schemas/TunnelInfo'

 anType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

 additionalAnType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/AccessType'

 ratType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 ueLocation:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 ueTimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 addUeLocation:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 gpsi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

 n1SmInfoFromUe:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RefToBinaryData'

 unknownN1SmInfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RefToBinaryData'

 supportedFeatures:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 hPcfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 pcfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 pcfGroupId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfGroupId'

 pcfSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

 hoPreparationIndication:

 type: boolean

 selMode:

 $ref: '#/components/schemas/DnnSelectionMode'

 alwaysOnRequested:

 type: boolean

 default: false

 udmGroupId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfGroupId'

 routingIndicator:

 type: string

 hNwPubKeyId:

 type: integer

 epsInterworkingInd:

 $ref: '#/components/schemas/EpsInterworkingIndication'

 vSmfServiceInstanceId:

 type: string

 iSmfServiceInstanceId:

 type: string

 recoveryTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 roamingChargingProfile:

 $ref: 'TS32291\_Nchf\_ConvergedCharging.yaml#/components/schemas/RoamingChargingProfile'

 chargingId:

 type: string

 oldPduSessionId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

 epsBearerCtxStatus:

 $ref: '#/components/schemas/EpsBearerContextStatus'

 amfNfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 guami:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Guami'

 maxIntegrityProtectedDataRateUl:

 $ref: '#/components/schemas/MaxIntegrityProtectedDataRate'

 maxIntegrityProtectedDataRateDl:

 $ref: '#/components/schemas/MaxIntegrityProtectedDataRate'

 cpCiotEnabled:

 type: boolean

 default: false

 cpOnlyInd:

 type: boolean

 default: false

 invokeNef:

 type: boolean

 default: false

 maRequestInd:

 type: boolean

 default: false

 maNwUpgradeInd:

 type: boolean

 default: false

 dnaiList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnai'

 minItems: 1

 presenceInLadn:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceState'

 secondaryRatUsageInfo:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SecondaryRatUsageInfo'

 minItems: 1

 smallDataRateStatus:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SmallDataRateStatus'

 apnRateStatus:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ApnRateStatus'

 dlServingPlmnRateCtl:

 type: integer

 minimum: 10

 upSecurityInfo:

 $ref: '#/components/schemas/UpSecurityInfo'

 vplmnQos:

 $ref: '#/components/schemas/VplmnQos'

 oldSmContextRef:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 redundantPduSessionInfo:

 $ref: '#/components/schemas/RedundantPduSessionInformation'

 oldPduSessionRef:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 smPolicyNotifyInd:

 type: boolean

 default: false

 pcfUeCallbackInfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PcfUeCallbackInfo'

 satelliteBackhaulCat:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SatelliteBackhaulCategory'

 upipSupported:

 type: boolean

 default: false

 upCnxState:

 $ref: '#/components/schemas/UpCnxState'

 disasterRoamingInd:

 type: boolean

 default: false

 required:

 - dnn

 - servingNetwork

 - anType

 oneOf:

 - required: [ vsmfId, vsmfPduSessionUri ]

 - required: [ ismfId, ismfPduSessionUri ]

[…]

 SmContext:

 description: Complete SM Context

 type: object

 properties:

 pduSessionId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

 dnn:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

 selectedDnn:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

 sNssai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 hplmnSnssai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 pduSessionType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionType'

 gpsi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

 hSmfUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 smfUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 pduSessionRef:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 interPlmnApiRoot:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 intraPlmnApiRoot:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 pcfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 pcfGroupId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfGroupId'

 pcfSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

 selMode:

 $ref: '#/components/schemas/DnnSelectionMode'

 udmGroupId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfGroupId'

 routingIndicator:

 type: string

 hNwPubKeyId:

 type: integer

 sessionAmbr:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ambr'

 qosFlowsList:

 type: array

 items:

 $ref: '#/components/schemas/QosFlowSetupItem'

 minItems: 1

 hSmfInstanceId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 smfInstanceId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 pduSessionSmfSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

 pduSessionSmfServiceSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfServiceSetId'

 pduSessionSmfBinding:

 $ref: 'TS29518\_Namf\_Communication.yaml#/components/schemas/SbiBindingLevel'

 enablePauseCharging:

 type: boolean

 default: false

 ueIpv4Address:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 ueIpv6Prefix:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

 epsPdnCnxInfo:

 $ref: '#/components/schemas/EpsPdnCnxInfo'

 epsBearerInfo:

 type: array

 items:

 $ref: '#/components/schemas/EpsBearerInfo'

 minItems: 1

 maxIntegrityProtectedDataRate:

 $ref: '#/components/schemas/MaxIntegrityProtectedDataRate'

 maxIntegrityProtectedDataRateDl:

 $ref: '#/components/schemas/MaxIntegrityProtectedDataRate'

 alwaysOnGranted:

 type: boolean

 default: false

 upSecurity:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UpSecurity'

 hSmfServiceInstanceId:

 type: string

 smfServiceInstanceId:

 type: string

 recoveryTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 forwardingInd:

 type: boolean

 default: false

 psaTunnelInfo:

 $ref: '#/components/schemas/TunnelInfo'

 chargingId:

 type: string

 chargingInfo:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/ChargingInformation'

 roamingChargingProfile:

 $ref: 'TS32291\_Nchf\_ConvergedCharging.yaml#/components/schemas/RoamingChargingProfile'

 nefExtBufSupportInd:

 type: boolean

 default: false

 ipv6Index:

 $ref: 'TS29519\_Policy\_Data.yaml#/components/schemas/IpIndex'

 dnAaaAddress:

 $ref: '#/components/schemas/IpAddress'

 redundantPduSessionInfo:

 $ref: '#/components/schemas/RedundantPduSessionInformation'

 ranTunnelInfo:

 $ref: '#/components/schemas/QosFlowTunnel'

 addRanTunnelInfo:

 type: array

 items:

 $ref: '#/components/schemas/QosFlowTunnel'

 minItems: 1

 redRanTunnelInfo:

 $ref: '#/components/schemas/QosFlowTunnel'

 addRedRanTunnelInfo:

 type: array

 items:

 $ref: '#/components/schemas/QosFlowTunnel'

 minItems: 1

 nspuSupportInd:

 type: boolean

 smfBindingInfo:

 type: string

 satelliteBackhaulCat:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SatelliteBackhaulCategory'

 sscMode:

 type: string

 pattern: '^[0-7]$'

 dlsetSupportInd:

 type: boolean

 n9fscSupportInd:

 type: boolean

 disasterRoamingInd:

 type: boolean

 default: false

 required:

 - pduSessionId

 - dnn

 - sNssai

 - pduSessionType

 - sessionAmbr

 - qosFlowsList

[…]

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