Emergency Call Support

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Feature Summary and Revision History

Summary Data

Table 1: Summary Data

Applicable Product(s) or Functional Area	cnSGW-C
Applicable Platform(s)	SMI
Feature Default Setting	Enabled - Always-on
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	2021.02.0

Feature Description

Emergency services refer to the functionalities provided by the serving network when the network is configured to support emergency services. These are provided to support IMS emergency sessions.

The MME Emergency Configuration Data contains the Emergency APN which is used for deriving a PDN GW. The MME Emergency Configuration Data can also contain the statically configured PDN GW for the Emergency APN.

cnSGW-C considers calls as emergency when:

- Create Session request has IMEI only.
- The Indication flag indicates unauthenticated IMSI and there's a valid IMSI and IMEI in the Create Session Request.

Note With an emergency session setup, cnSGW-C rejects any additional PDN request (Create Session Request) sent by the MME.

Limitations

This feature has the following limitations in 2021.02.0 and later releases:

- IMEI with 15 digits or 16 digits is supported only for the following procedures—show subscriber, clear subscriber, and monitor subscriber.

How it Works

This section describes how this feature works.

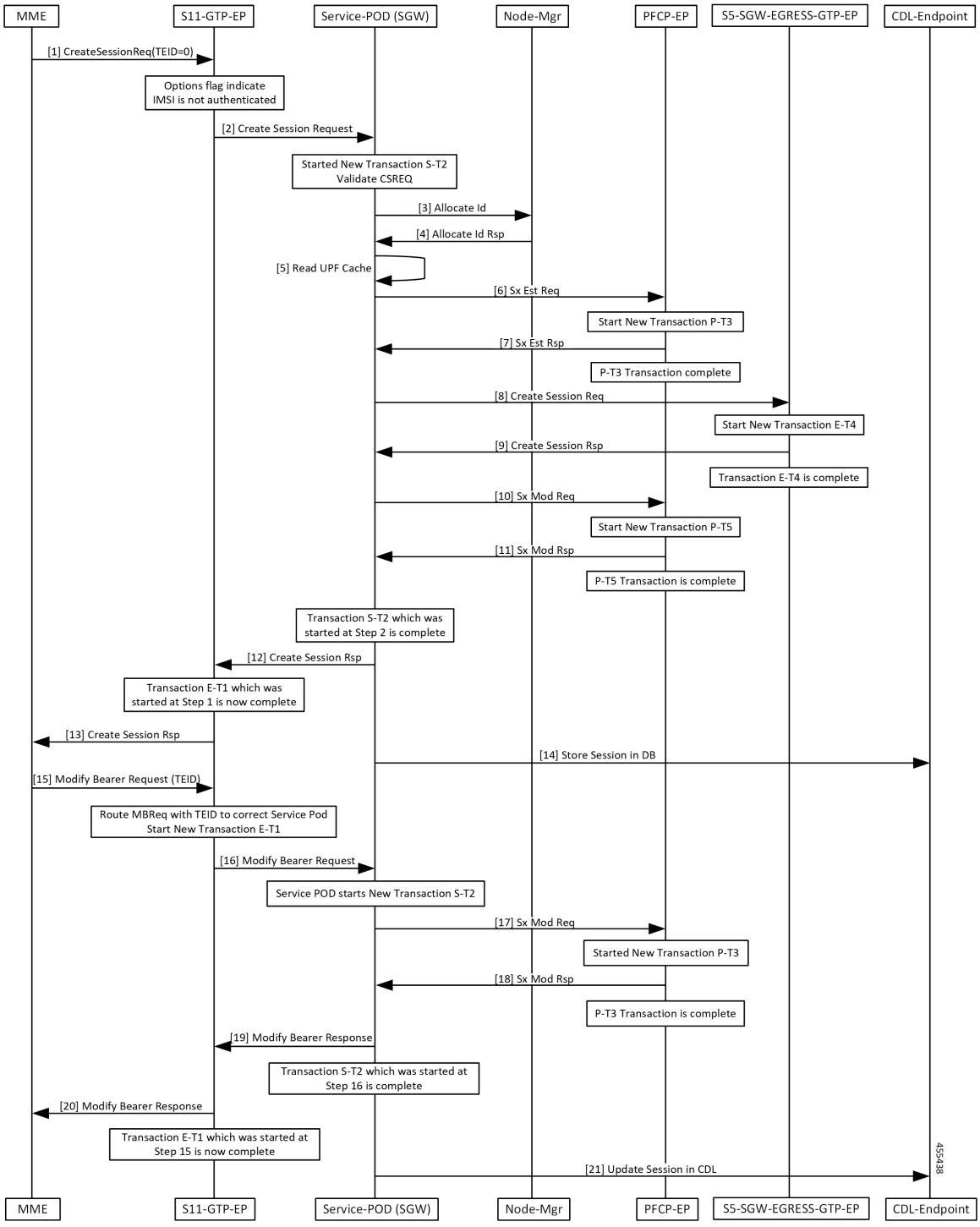
Call Flows

This section describes the key call flows for the feature.

Create Emergency Session Call Flow

This section describes the create emergency session (IMEI, Unauthenticated IMSI) call flow.

Figure 1: Create Emergency Session Call Flow



For an Emergency call, cnSGW-C receives an Initial Attach Request in CSR with an UnAuthenticated IMSI, or with an IMEI only. cnSGW-C allocates TEID and SEID from the Node Manager and sends the Sx Establishment Request with local SEID to the UP to establish the session.

Once cnSGW-C receives the Sx Establishment Response from the UP with the UP SEID and the local GTPU TEID for S5 and S1 GTPU FTEID, cnSGW-C sends the Create Session Request to the PGW using EGTP EP. After receiving response from the PGW for Create Session Response, cnSGW-C sends the Sx Modification Request to connect S5-GTPU tunnel between PGW-U and SGW-U. On successful reception of Sx Modification Response, cnSGW-C sends the Create Session Response to the MME and the session is created in CDL.

With Initial attach procedure, cnSGW-C supports handling of Modify Bearer Request which connects S1 GTPU tunnel between eNodeB and SGW-U. When cnSGW-C receives MBR, it sends Sx Modification Request to connect S1 GTPU tunnel between eNodeB and SGW-U. After receiving Sx Modification Response, cnSGW-C sends Modify Bearer Response to the MME. Session is updated in CDL as the end of transaction.

OAM Support

This section describes operations, administration, and maintenance information for this feature.

Bulk Statistics Support

Emergency Counters

```
sgw_ue_stats{app_name="SMF",cluster="Local",data_center="DC",gr_instance_id="1",
instance_id="0",rat_type="EUTRAN",service_name="sgw-service",status="emergency_release"}
 9
```

```
sgw_ue_stats{app_name="SMF",cluster="Local",data_center="DC",gr_instance_id="1",
instance_id="0",rat_type="EUTRAN",service_name="sgw-service",status="emergency_setup"}
 9
```

Emergency Statistics

```
db_records_total{app_name="datastore-ep",cluster="session",data_center="test",db=
"session",instance_id="3232257055",service_name="datastore-ep",session_type="SGW:
emergency_call:true",sliceName="1",systemId=""} 1
```

```
db_records_total{app_name="datastore-ep",cluster="session",data_center="test",db=
"session",instance_id="3232257055",service_name="datastore-ep",session_type="SGW:
rat_type:EUTRAN",sliceName="1",systemId=""} 3
```

```
db_records_total{app_name="datastore-ep",cluster="session",data_center="test",db=
"session",instance_id="3232257055",service_name="datastore-ep",session_type="SGW:
state:active",sliceName="1",systemId=""} 3
```

```
db_records_total{app_name="datastore-ep",cluster="session",data_center="test",db=
"session",instance_id="3232257055",service_name="datastore-ep",session_type="total",
sliceName="1",systemId="1"} 3
```