

Release 13 Emergency PDN support

Release 13 emergency PDN Support enables UE to make emergency calls when LTE network is not available. This feature is implemented as defined in 3GPP.

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Feature Description

Release 13 Emergency PDN Support features

- ePDG will take incoming call as emergency based on presence of "EMERGENCY" in IDr payload in IKE_AUTH_REQUEST message
- ePDG supports Emergency NAI on SWu interface as defined in 3GPP. i.e presence of SOS instead of nai keyword, though whether call is emergency or not is decided by presence of IDr "emergency"
- ePDG blocks all other procedures those are not applicable to emergency sessions
- ePDG provides configuration option for Emergency data of APN name, PGW identity (address/FQDN), default QoS and APN-AMBR
- UE deletes previous IKE sessions when an emergency call is setup and ePDG ensures that no other PDN connections from UE are present when emergency call is setup
- Service Selection AVP will be absent if the UE indicates the establishment of an emergency session during the IKEv2 tunnel establishment

Emergency-Indication AVP in DER and DEA

ePDG which supports emergency services will include Emergency-Indication AVP information element if the UE indicated the establishment of an emergency session during the IKEv2 tunnel establishment.

The 3GPP AAA Server interprets the receipt of the Emergency-Indication AVP as an indication that the UE requests to access the EPC for emergency services.

Introduction of new DPD timer explicit to Emergency Calls

New DPD timer controlled by CLI for emergency calls is introduced. UE may send non-emergency call after emergency call without sending delete for emergency call. With this feature new timer will clear emergency call, post which new non-emergency call will be handled.

With this timer, emergency call gets deleted after sometime if the response is not received. Ideally this timer will be kept low to identify stale session as early as possible. Normal call will be rejected when emergency call is still there.

Assumptions and Limitations

- Ideally UE initiating emergency session deletes the current IKE session
- ePDG will delete previous IKE sessions if any present when emergency call is setup
- The ePDG does not consider HSS provided information to setup a connection, rather uses locally configured PGW and APN information to setup the PDN connection.

Configuring Release 13 Based Emergency APN Support

Use the following configuration to configure Release 13 Based Emergency APN Support:

```
config
   context context_name
         crypto template  crypto_templet_name ikev2-dynamic
            ikev2-ikesa emergency keepalive interval   keepalive_interval
timeout timeout num-retry
          end
```

This feature requires the below existing CLI for configuring Release 13 Based Emergency APN Support:

- lte-policy - lte-emergency-profile *profile_name*
  - ambr
  - apn
  - pgw
  - qos qci
- epdg-service - associate lte-emergency-profile *profile_name*

Performance Indicator Changes

Below are the show commands outputs added as part of Release 13 Emergency PDN Support:

show epdg-service *service_name*

LTE Emergency Profile: <name>/None

- Timeout Idle

show epdg-service statistics

Emergency Sessions:

UICC Sessions:	**Non UICC Sessions:**
Active:	Active:
Setup:	Setup:
Attempts:	Attempts: