MOCN Special Handling of CRA and CNR

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Revision History

Note Revision history details are not provided for features introduced before release 21.24.

Revision Details	Release
First introduced	Pre 21.24

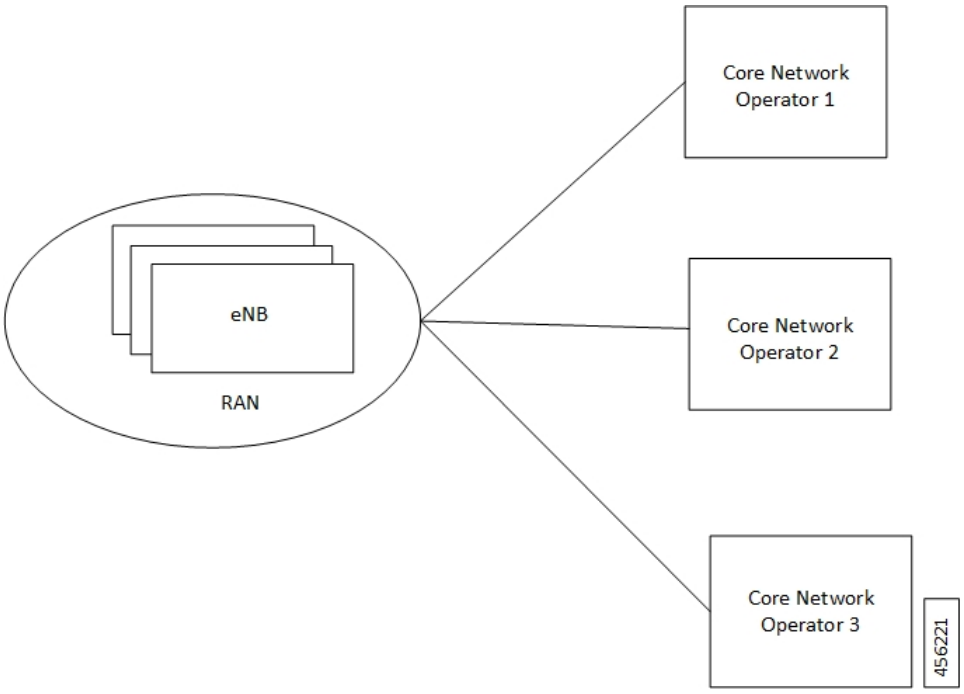
Feature Description

This feature describes the SAE-GW support to enable/disable the Multi Operator Core Network (MOCN). The feature also explains about the handling of Tracking Areas Identity (TAI) change event as requested by PCRF when MOCN is enabled.

The SAE-GW indicates the MME to Start/Stop reporting TAI change event as requested by PCRF. On receiving a TAI change from MME, the SAE-GW reports:

- The TAI change event to PCRF
- The location update to OCS

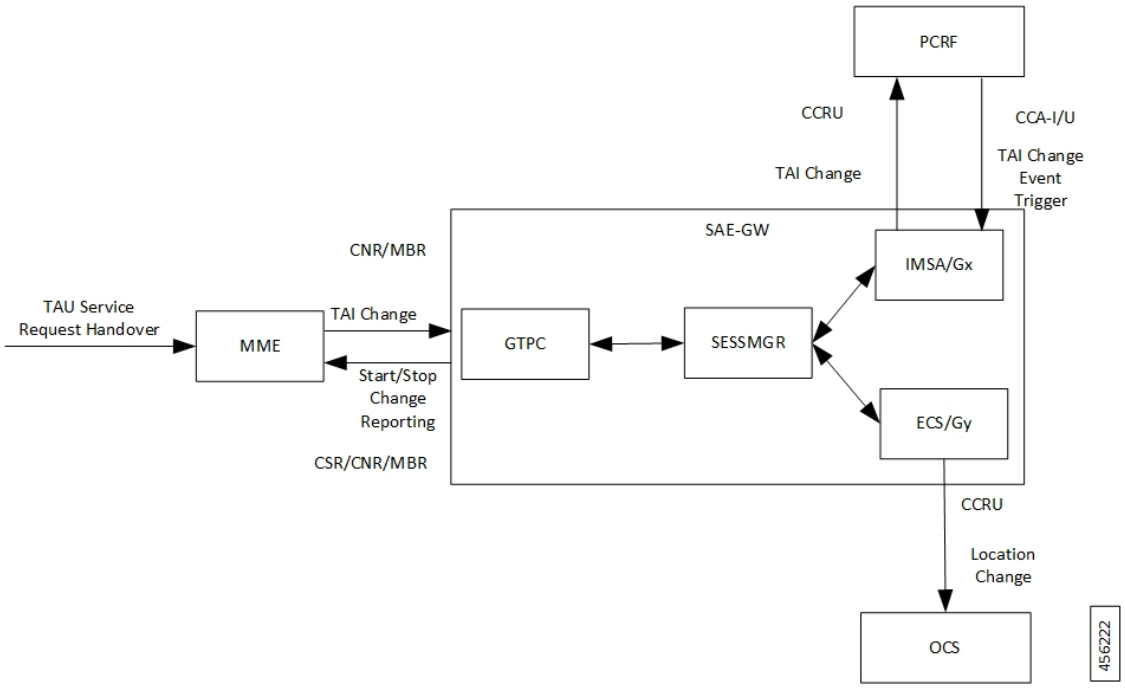
The following figure describes about the MOCN feature that allows different core network operators to connect to a shared radio access network.



TAI Change Event Handling

The following figure describes the high-level overview of the architecture of TAI change event handling.

Figure 1: TAI Change Event Handling - Process Flow



When you enable the MOCN feature on SAE-GW and it receives a TAI change trigger from PCRF in event trigger AVP of Credit Control Answer-Initial/Update (CCA-I/U), the SAE-GW sends a start reporting TAI indication to MME in Change Reporting Action (CRA) of Create Session Response/Modify Bearer Request/Change Notification Response.

The MME sends the TAI change in User Location Information of Change Notification Request/Modify Bearer Request to SAE-GW in the event of TAI change during various procedures like Tracking Area Update (TAU), Service Request and S1AP/X2 handover.

In turn, the SAE-GW indicates the TAI change to the PCRF in Event Trigger AVP and the value in 3GPP-User-Location-Info AVP of Credit Control Request-Update (CCR-U) to receive any location-dependent policies.

The SAE-GW also indicates the Location change to OCS in Trigger Type AVP and User Location Info in PS-Information AVP and Multiple Services Credit Control (MSCC) to enable location-dependent charging related procedures.

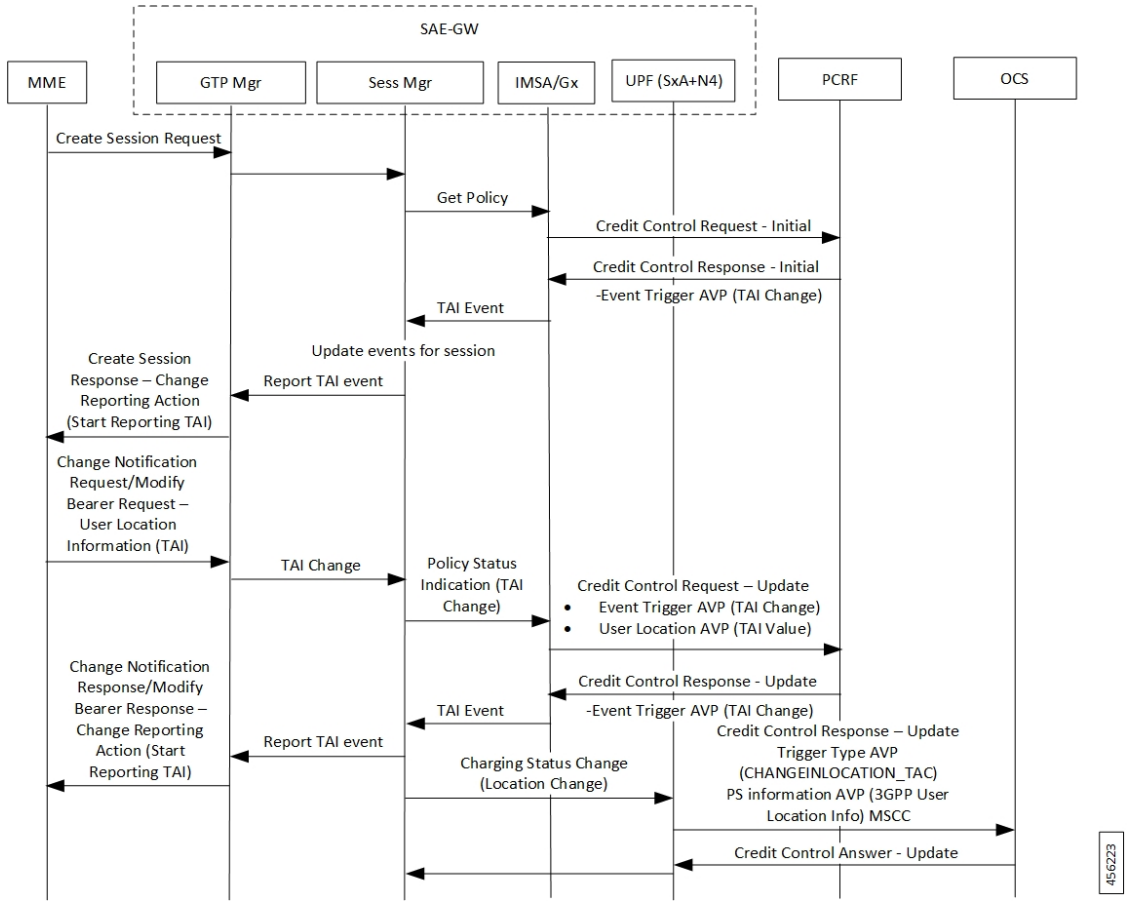
When you enable the MOCN feature on SAE-GW and it receives a No Event Trigger from PCRF in event trigger AVP of Credit Control Answer-Initial/Update (CCA-I/U), the SAE-GW sends a Stop Reporting TAI indication to MME in Change Reporting Action (CRA) of Create Session Response/Modify Bearer Request/Change Notification Response.

How It Works

The following call flows describe about the starting and stopping of the TAI change report.

Start Reporting TAI Change

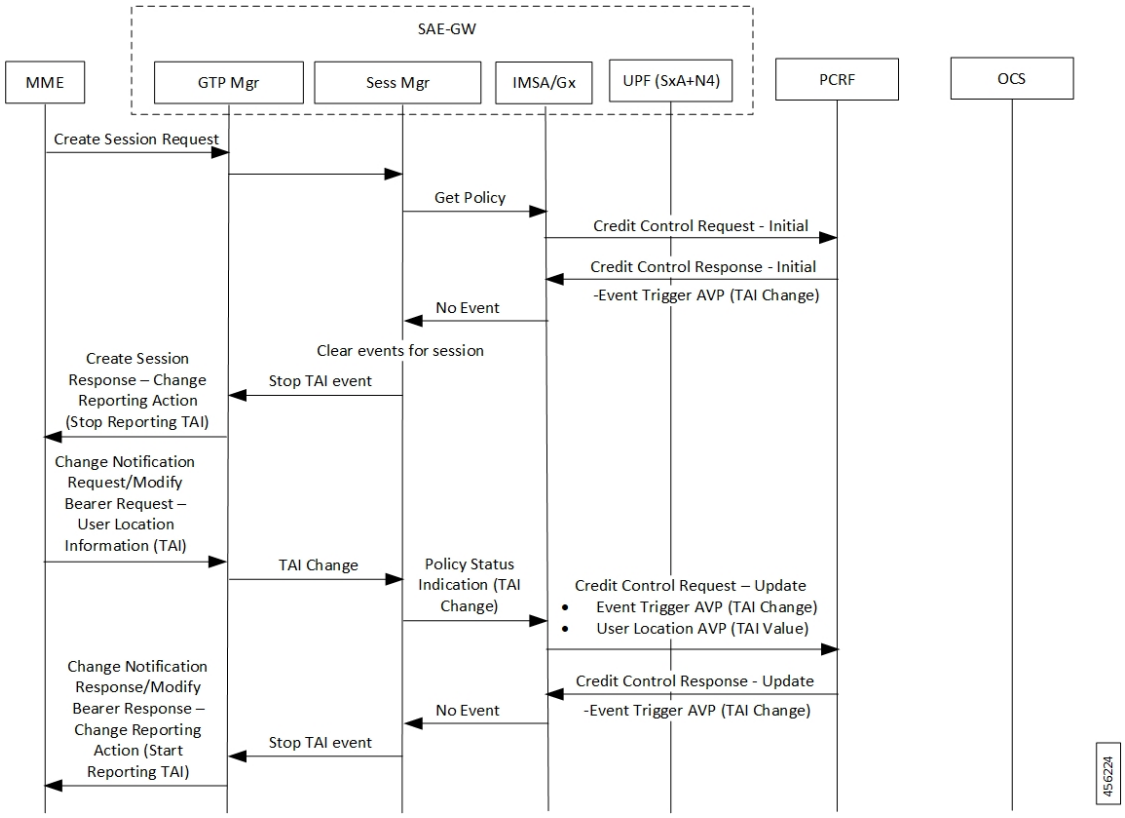
The following call flow describes about the reporting of the TAI change.



Steps	Description
1.	During the session establishment procedure, the SAE-GW sends the Create Session Response to MME with Change Reporting Action (CRA) value set to Start Reporting TAI if the PCRF requests for TAI change reporting by specifying Event Trigger set to TAI_CHANGE (26) in CCA-I to SAE-GW.
2.	The MME on detecting change in UE's TAI sends Change Notification Request or Modify Bearer Request with ULI including new TAI. The SAE-GW includes the Event-Trigger set as TAI_CHANGE (26) in CCR-U sent to PCRF and the value in User Location AVP. If the SAE-GW receives CCA-U with Event-Trigger set to TAI_CHANGE (26) from PCRF, the SAE-GW sends the Change Notification Response or Modify Bearer Response with CRA value set to Start Reporting TAI.
3.	Then the SAE-GW includes the Trigger-Type AVP with CHANGEINLOCATION_TAC (35), PS-Information AVP (3GPP-User-Location: new TAI) and MSCC in CCR-U sent to OCS and receives CCA-U from OCS.

Stop Reporting TAI Change

The following call flow describes about the reporting of the TAI change.



During the session establishment procedure, the SAE-GW sends the Create Session Response to MME with Change Reporting Action (CRA) value set to Stop Reporting TAI if the PCRF requests for no event reporting by specifying Event Trigger set to NO_EVENT_TRIGGERS in CCA-I to SAE-GW.