

MO Voice Call and MO Exception Data Support

- Feature Summary and Revision History, on page 1
- Feature Description, on page 2
- How It Works, on page 2
- Configuring MO Voice and MO Exception Data Support, on page 2
- Monitoring and Troubleshooting, on page 3

Feature Summary and Revision History

Summary Data

Applicable Product(s) or Functional Area	MME
Applicable Platform(s)	• ASR 5500 • VPC-DI • VPC-SI
Default Setting	Disabled - Configuration Required
Related Changes in This Release	Not Applicable
Related Documentation	• *Command Line Interface Reference* • *MME Administration Guide* • *Statistics and Counters Reference*

Revision History

Revision Details	Release
First Introduced.	21.16

Feature Description

eNodeB forwards the Attach Request message to MME contained in a S1-MME control message (Initial UE message) together with the Selected Network and an indication of the E-UTRAN Area identity, a globally unique E-UTRAN ID of the cell, RRC establishment cause and GUMMEI ID. MME handles the ASN encoding and decoding of RRC establishment causes for emergency, HighPriorityAccess, mt-Access, mo-Signalling, mo-Data. The ASN encoding and decoding of RRC establishment cause mo-voicecall and mo-exceptiondata is not supported and responds with an error "Transfer Syntax Error". For MME to be in compliant with release 13 handset, it needs to handle both the new cause values, and for mo-exepctiondata MME has to maintain the MO Exception Data Counter for Serving PLMN Rate Control purposes. Mo-exceptiondata arrives for NB-IoT RAT type.

mo-exceptiondata counter: MME allows operator to configure the MO Exception Data counter and threshold value for reporting the counter values to S-GW. On configuring, MME maintains UE specific mo_exceptiondata counter and timestamp in UE subscriber DB and will remains until purge occurs. This data once allocated is retained until the DB associated with the UE is purged. When RRC establishment cause arrives for first time, MME increments the counter by 1 and updates the creation timestamp. On subsequent arrivals, MME will just increment the counter value.

The counter with timestamps is included in create session request message for TAU with MME and SGW change, Modify bearer request for UE triggered service request and Change notification request message when there is a change in the ECGI or TAI. If the counters are already reported, then MME does not send the counters in subsequent modify bearer message of UE Triggered Service Request or Notification of ECGI and/or TAI changes.

How It Works

Limitations

This section describes the known limitations for the MME MO Voice Call and MO Exception Data Support feature:

- MME maintains the UE specific mo-exceptiondata counter values in subscriber DB. The data once allocated will be retained until the DB is associated with the UE. On purge timeout the nonreported counter values are lost as the subscriber DB is flushed. If the operators configure mo-exception-data reporting-threshold-value to 1, on receiving RRC establishment cause mo-exceptiondata then MME reports the counter changes to SGW.

Configuring MO Voice and MO Exception Data Support

This section provides information on the CLI commands to configure exception data reporting.

Configuring MO Exception Data Reporting Threshold Value

Use the following configuration to configure NBIOT RRC Cause MO exception data reporting threshold value.

```
configure
  call-control-profile profile_name
    nb-iot mo-exception-data reporting-threshold-value value
    remove nb-iot mo-exception-data
    end
```

NOTES:

- **remove** : Removes the configuration of NBIOT RRC Cause MO exception data.
- **nb-iot** : Enables configuration for NB-IoT Access Type.
- **mo-exception-data**: Configures NBIOT RRC Cause MO Exception Data counter.
- **reporting-threshold-value** *value* : Specifies reporting threshold value. *value* Must be an integer from 1 to 50.

Monitoring and Troubleshooting

This section provides information regarding show commands available to monitor and troubleshoot the MO Voice and MO Exception Data Support.

Show Commands and Outputs

show call-control-profile full all

The output of this command includes the following fields:

- NBIOT RRC Cause MO Exception Data counter
- NBIOT MO Exception Data counter reporting threshold value