
高通Lab Test技术期刊 – 201602



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Qualcomm Technologies, Inc. 5775 Morehouse Drive San Diego, CA 92121 U.S.A.

高通技术股份有限公司，美国加利福尼亚州圣地亚哥市莫豪斯路 5775 号，邮编 92121

Revision History

Revision	Date	Description
A	Feb 2016	Initial release

Note: There is no Rev. I, O, Q, S, X, or Z per Mil. standards.

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How to Test CGI Identification Related LTE RRM Cases

■ Background

- According to the latest CMCC test plan, some CGI(Cell Global Identifier) identification related cases(e.g. 36.521-3 TC8.2.3) are required.
- ANR(Automatic Neighbor Relation) is one feature of SON(Self-Organizing Network). It relieves the network operator from the burden of managing the relationships between neighboring cells.
- ANR is implemented within the eNB, which has a Neighbor Relation Table (NRT) that contains all information about neighboring cells, such as the ECGI, RAT type, carrier frequency, and related parameters. eNB relies on UE to collect and report CGI information.
- Intra-frequency/Inter-frequency/Inter-RAT SON ANR is supported by QC.
- ANR works as follows:
 - UE includes PCI in measurement report, upon seeing unrecognized cell, eNB sends RRC Reconfiguration message and asks UE to send CGI of the reported PCI.
 - UE acquires the target PCI briefly and collects CGI information from SIB 1, then returns to the serving cell and sends measurement report with CGI information and measured RSRP/RSRQ of the target cell.
 - For inter-frequency scenario, UE uses CDRX periods to do CGI acquisition.
 - eNB may grant handover (HO) with the RRC Reconfig message.

How to Test CGI Identification Related LTE RRM Cases

- Related test cases (3GPP TS36.521-3):
 - 8.1.5 E-UTRAN FDD - FDD Intra-frequency identification of a new CGI of E-UTRA cell using autonomous gaps
 - 8.1.6 E-UTRAN FDD - FDD Intra-frequency identification of a new CGI of E-UTRA cell using autonomous gaps with DRX
 - 8.2.3 E-UTRAN TDD - TDD Intra-frequency identification of a new CGI of E-UTRA cell using autonomous gaps
 - 8.2.4 E-UTRAN TDD - TDD Intra-frequency identification of a new CGI of E-UTRA cell using autonomous gaps with DRX
 - 8.3.4 E-UTRAN FDD - FDD Inter-frequency identification of a new CGI of E-UTRA cell using autonomous gaps
 - 8.3.5 E-UTRAN FDD - FDD Inter-frequency identification of a new CGI of E-UTRA cell using autonomous gaps with DRX
 - 8.4.4 E-UTRAN TDD - TDD Inter-frequency identification of a new CGI of E-UTRA cell using autonomous gaps
 - 8.4.5 E-UTRAN TDD - TDD Inter-frequency identification of a new CGI of E-UTRA cell using autonomous gaps with DRX
 - 8.14.3 E-UTRAN TDD - FDD Inter-frequency identification of a new CGI of E-UTRA cell using autonomous gaps
 - 8.15.3 E-UTRAN FDD - TDD Inter-frequency identification of a new CGI of E-UTRA cell using autonomous gaps

How to Test CGI Identification Related LTE RRM Cases

- Test applicability
 - According to spec, those test cases requires UE supports intra-frequency/ inter-frequency **SI acquisition for HO**.
 - IE NeighCellSI-AcquisitionParameters-r9 in UECapabilityInformation message should set as follows:

```
neighCellSI-AcquisitionParameters-r9
{
    intraFreqSI-AcquisitionForHO-r9 supported,
    interFreqSI-AcquisitionForHO-r9 supported,
    utran-SI-AcquisitionForHO-r9 supported
},
```

- Solution:
 - We have EFS /nv/item_files/modem/lte/rrc/cap/**neigh_cell_si_acq_feature** to configure intra-frequency, inter-frequency and UTRAN SI acquisition for handover by using autonomous gaps.
 - This EFS only works when **CR564422** and **CR586938** are present.
 - This EFS have 3 byte values (in HEX) defined as below:

Bit position	Feature	Possible Values	Definition
1 - 8	intraFreqSI-AcquisitionForHO-r9	0,1,2,3	<div>0 - Disabled (default) 1 - Enable for FDD only 2 - Enable for TDD only 3 - Enable for both FDD and TDD</div>
9 - 16	interFreqSI-AcquisitionForHO-r9	0,1,2,3	
17 - 24	utranSI-AcquisitionForHO-r9	0,1,2,3	

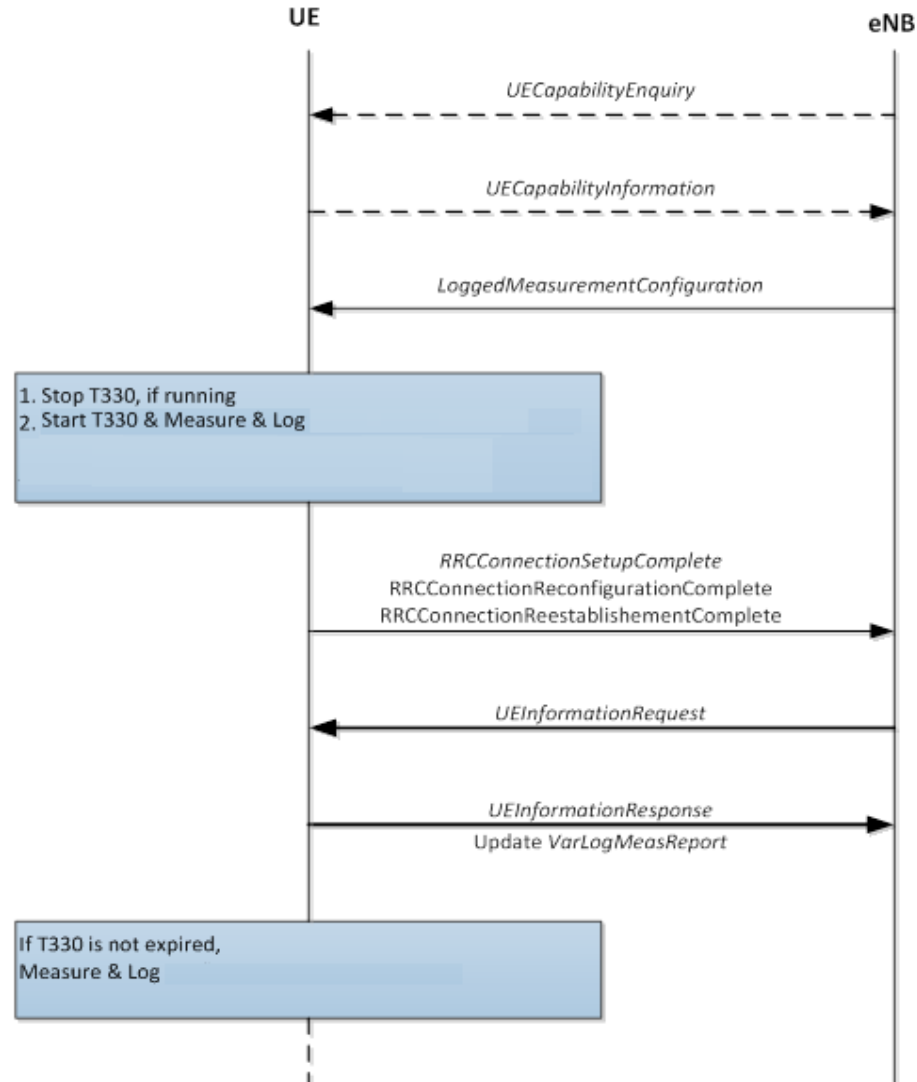
MDT(Minimization of Drive Tests) Introduction and GCF Test Guidance

- MDT Introduction
 - Some MDT(Minimization of Drive Tests) related cases(3GPP TS36.523-1 TC8.6.x.x) are introduced in CMCC latest test plan.
 - MDT is a feature introduced in Rel 10 to reduce operator costs for the network coverage optimization. This feature automates the driving tests by activating and configuring the subscribers' User Equipment (UE) in the field to perform and report needed measurements .
 - Logged MDT is MDT functionality involving measurement logging by the UE in Idle mode for reporting to eNodeB (eNB) at a later point in time. UE support of logged MDT is optional.
 - If logged MDT is supported by UE, within UE-EUTRA-Capability, the UE-BasedNetwPerfMeasParameters-r10 field in UE-EUTRA-Capability-v1020-IEs shall be set to 1, and the loggedMeasurementsIdle-r10 (1 bit) in UE-BasedNetwPerfMeasParameters-r10 shall be set to 1.
 - Standalone GNSS location for immediate MDT is also present in UE-BasedNetwPerfMeasParameters-r10, as below:

```
ue-BasedNetwPerfMeasParameters-r10
{
    loggedMeasurementsIdle-r10 supported,
    standaloneGNSS-Location-r10 supported
},
```


MDT(Minimization of Drive Tests) Introduction and GCF Test Guidance

- Call flow for logged MDT:



MDT(Minimization of Drive Tests) Introduction and GCF Test Guidance

- The Logged Measurement Configuration message is sent from E-UTRAN to a logged MDT-capable UE in RRC_CONNECTED mode. It contains 6 mandatory fields and one optional field. Below is an example:

```
2015 Jan 1 00:29:37.452 [CD] 0xB0C0 LTE RRC OTA Packet -- DL_DCCH / LoggedMeasurementConfiguration-r10
Pkt Version = 8
RRC Release Number.Major.minor = 10.7.2
Radio Bearer ID = 1, Physical Cell ID = 0
Freq = 39150
SysFrameNum = N/A, SubFrameNum = 4
PDU Number = DL_DCCH Message,      Msg Length = 17
SIB Mask in SI = 0x00

Interpreted PDU:

value DL-DCCH-Message ::=
{
  message c1 : loggedMeasurementConfiguration-r10 :
  {
    criticalExtensions c1 : loggedMeasurementConfiguration-r10 :
    {
      traceReference-r10
      {
        plmn-Identity-r10
        {
          mcc
          {
            0,
            0,
            1
          },
          mnc
          {
            0,
            1
          }
        },
        traceId-r10 '0000EF'H
      },
      traceRecordingSessionRef-r10 '001A'H,
      tce-Id-r10 '05'H,
      absoluteTimeInfo-r10 '01100001 00010000 01010000 00010001 01010001 01010010'B,
      loggingDuration-r10 min120,
      loggingInterval-r10 ms2560
    }
  }
}
```

MDT(Minimization of Drive Tests) Introduction and GCF Test Guidance

- The UE shall perform measurements and log the available measurements according to the Logged Measurement Configuration message.
- The measurement reports for neighboring cells consist of:
 - Physical cell identity of the logged cell
 - Carrier frequency
 - RSRP and RSRQ for E-UTRA
 - RSCP and Ec/No for UTRA
 - P-CCPCH RSCP for UTRA 1.28 TDD
 - Rxlev for GERAN
 - Pilot Pn phase and pilot strength for cdma2000
- If the UE has logged measurements available for E-UTRA and the plmn-Identity value, the UE indicates the availability of logged MDT measurements by means of an indicator, in the RRC Connection Setup Complete, RRC Connection Reconfiguration Complete, or RRC Connection Reestablishment Complete message.
- Logged MDT measurements are reported to the network by request from E-UTRAN using the UE information procedure. eNB sends a UE Information Request message to the UE to retrieve the measurements logged by the UE. In response, the UE sends the UE Information Response message with the requested measurements to eNB.

MDT(Minimization of Drive Tests) Introduction and GCF Test Guidance

- Tips for MDT related cases (TS36.523-1 TC8.6.x.x)
 - Below cases requires UE supports Standalone GNSS location and set `pc_standaloneGNSS_Location` to TRUE:
 - 8.6.2.9 Logged MDT / Location information
 - 8.6.4.7 Radio Link Failure logging / Location information
 - 8.6.6.4 Handover Failure logging / Location information
 - We have two FRs for Location information related MDT cases:
 - FR 20293: “Location Info” support as part of Rel-10 MDT
 - FR 20294: eMDT Support - Enhanced location information and Event triggers for Immediate MDT
 - The two FRs are applicable for BO 2.0 and later PLs. For older PLs such as DPM, please mark related as not support.
 - We have Below EFS to disable MDT feature:

Location	Filename	File size (bytes)	Value to be written
/nv/item_files/modem/lte/rrc/cap	mdt_r10_feature_disable	1	0x01

CMCC VoLTE NS-IoT Test - IMS UT Authentication Failure

- Issue Description:
 - While test IMS supplementary service (such as call forwarding, call barring, etc.) related test cases, failure observed owing to IMS UT authentication failure.
 - The root cause of authentication failure during supplementary service is owing to authentication key has been expired, by comparing UE's with Ut server's time.
- Affected test cases (CMCC VoLTE NS-IoT test spec):
 - TC6.2.5 Communication Forwarding, Specify a period
 - TC6.3.2 Barring of all incoming call when roaming
- Log snippet:

//TC6.2.5: UE successfully registers to IMS. Activation of Communication Forwarding for a certain period is triggered on UE side

```
08:52:55.847 cmsds.c 5266 M =CM= Domsel:IMS registration is success
08:53:31.891 qcril_reqlist.c 270 M RIL[0][event] qcril_reqlist_find: [RID 0] Found ReqList entry :
QCRIL_EVT_IMS_SOCKET_REQ_SET_CALL_FORWARD_STATUS(851991), token id -2147483631
08:53:31.893 qcril_qmi_ims_flow_control.c 511 H RIL[0][event] qcril_qmi_ims_flow_control_event_queue:
Queued IMS event QCRIL_EVT_IMS_SOCKET_REQ_SET_CALL_FORWARD_STATUS(851991)

08:53:31.914 imsserviceconfig.cpp 406 M IMSServiceConfig::NotifyHttpResponse
08:53:31.914 imsserviceconfig.cpp 423 M IMSServiceConfig::NotifyHttpResponse
m_bUbAuthInProgress = 1, m_bUaAuthInProgress = 0, m_eGBAUbMode = 2
08:53:31.914 imsserviceconfig.cpp 450 M IMSServiceConfig::HandleGBAResponse
```

CMCC VoLTE NS-IoT Test - IMS UT Authentication Failure

//Modem receives/processes call forwarding message

2015 Feb 15 08:53:31.937 [4F] 0x138E QMI Link 1 RX PDU

```
...
MsgType = QMI_VOICE_GET_CALL_FORWARDING
MsgLength = 8
Service_Voc_V2 {
  Tlvs[0] {
    Type = 1
    Length = 1
    Reason {
      Reason = FWDREASON_UNCONDITIONAL
    }
  }
  Tlvs[1] {
    Type = 16
    Length = 1
    ServiceClass {
      ServiceCalss = CLASS_VOICE
    }
  }
}
```

08:53:31.951	qmi_voice_cmd_list.c	778	M	Update cmd list entry : CM IF GET CALL FORWARDING ,
				handle -1032923472, state QMI_VOICE_CMD_AWAITIN

//Authentication, the value of KsLifeTime is before UE's time, the auth key Ks has been expired, and which will lead B-TID is invalid. UE auth failure.

08:53:32.396	qpIMSServConfigGBA	1572	H	IMSServConfigGBAAuth::ParseHttpContent BTIDValue
Value 1XcMbTY+MMNkpAePG/jtOg==@gba.test.3gpp.com				
08:53:32.396	qpIMSServConfigGBA	1589	H	IMSServConfigGBAAuth::ParseHttpContent KsLifeTime
Value 2016-01-28T18:54:16Z				
08:53:32.396	imsserviceconfig.cpp	2182	M	IMSServiceConfig::IsBTIDValid Entered
08:53:32.396	imsserviceconfig.cpp	2187	M	IMSServiceConfig::IsBTIDValid UTC Time Year 2025
Month 2				

CMCC VoLTE NS-IoT Test - IMS UT Authentication Failure

08:53:32.396	imsserviceconfig.cpp	2188	M	IMSServiceConfig::IsBTIDValid UTC Day 19 hour 8
08:53:32.396	imsserviceconfig.cpp	2189	M	IMSServiceConfig::IsBTIDValid UTC Minute 53 sec 32
08:53:32.396	imsserviceconfig.cpp	2265	M	IMSServiceConfig::IsBTIDValid Year 2016 2025
08:53:32.396	imsserviceconfig.cpp	831	H	IMSServiceConfig::ProcessUb2XXResponse BTIDValue is invalid, No point Continuing Further
08:53:32.396	qpIMSServConfigGBAAuth.cpp	1351	M	IMSServConfigGBAAuth::ResetPreviousAuthParams Entered
08:53:32.396	qpIMSServConfigGBAAuth.cpp	1871	M	IMSServConfigGBAAuth::ResetTMPI

2015 Feb 15 08:53:32.399 [66] 0x138F QMI Link 1 TX PDU

```
...
MsgType = QMI_VOICE_GET_CALL_FORWARDING
...
Tlvs[1] {
  Type = 17
  Length = 2
  Failure Cause {
    FailureCause = QMI_FAILURE_CAUSE_NEGATIVE_PWD_CHECK
  }
}
```

■ Solution:

- OEM need to make sure UE's time before Ks lifetime of UT server.
- UT server's time usually depends on the time setting in test PC. UE's time can be changed from UI.

IMS Emergency Call Case TC11.2.4 (36.523-1) Failed on Anite CT37

- Issue Description:
 - While testing IMS emergency call case TC11.2.4 (3GPP TS36.523-1) on Anite, UE fail to establish the 3rd emergency call on LTE. But the same device with identical configuration can pass the case on Anritsu TE.
 - The root cause is TE didn't respond to UE's IPv6 Router Solicitation message. As a result, TCP connection for IMS emergency call didn't setup successfully, and MO detach is triggered by UE.
- Log snippet:

//step 23: emergency call triggered in UE side after T3412 expires

1980 Jan 6 00:45:31.277 [8B] 0x138F QMI Link 1 TX PDU

MsgType = QMI_VOICE_ALL_CALL_STATUS_IND

...

CallState = ORIGINATION

CallType = EMERGENCY

Direction = MO: Mobile Originated Call

Mode = LTE

IsEmpty = FALSE

Als = LINE1(default)

...

//Attach is triggered for MO VoLTE emergency call.

00:45:31.280 sdss.c 8135 H =SD= VOLTE emergency call origination

1980 Jan 6 00:45:31.350 [BA] 0xB0ED LTE NAS EMM Plain OTA Outgoing Message -- Attach request Msg

att_type = 6 (0x6) (EPS emergency attach)

...

msg_type = 208 (0xd0) (PDN connectivity request)

req_type = 4 (0x4) (emergency)

...

IMS Emergency Call Case TC11.2.4 (36.523-1) Failed on Anite CT37

00:45:32.212 EVENT_LTE_EMM_OTA_OUTGOING_MSG

Message ID = ATTACH COMPLETE

//UE sends IPv6 Router Solicitation msg for 3 times (MAX resolve time 12s, interval 4s), but never get the Router Advertisement from Anite

00:45:32.756	ps_ip6_sm.c	1110	M	iface(0xC1C2F060) <-> ip6_sm(0xC1C2FB38)
00:45:32.756	ps_ip6_sm.c	1112	M	ip6_sm(0xC1C2FB38): Posting IP6 SM event 1 in state 1
00:45:32.756	ps_ip6_sm.c	1210	M	ip6_sm(0xC1C2FB38): Processing IP6 SM event 1
00:45:32.756	ps_ip6_sm.c	2413	M	ip6_sm(0xC1C2FB38): IPv6 SM from state 1 to 2
00:45:32.756	ps_ip6_sm.c	2768	M	ip6_sm(0xC1C2FB38) --> iface(0xC1C2F060): Sending RS Message
00:45:32.756	ps_icmp6.c	996	M	ICMP6_OUTPUT: calling ip6_send(ttl = 0)

00:45:36.756	pstimer.c	471	M	ps_timeri_client_cmd_cb(): Timer 96 expired - calling callback
00:45:36.756	ps_ip6_sm.c	1110	M	iface(0xC1C2F060) <-> ip6_sm(0xC1C2FB38)
00:45:36.756	ps_ip6_sm.c	1112	M	ip6_sm(0xC1C2FB38): Posting IP6 SM event 1 in state 2
00:45:36.756	ps_ip6_sm.c	1210	M	ip6_sm(0xC1C2FB38): Processing IP6 SM event 1
00:45:36.756	ps_ip6_sm.c	2413	M	ip6_sm(0xC1C2FB38): IPv6 SM from state 2 to 2
00:45:36.756	ps_ip6_sm.c	2768	M	ip6_sm(0xC1C2FB38) --> iface(0xC1C2F060): Sending RS Message
00:45:36.756	ps_icmp6.c	996	M	ICMP6_OUTPUT: calling ip6_send(ttl = 0)

00:45:40.757	pstimer.c	471	M	ps_timeri_client_cmd_cb(): Timer 96 expired - calling callback
00:45:40.757	ps_ip6_sm.c	1110	M	iface(0xC1C2F060) <-> ip6_sm(0xC1C2FB38)
00:45:40.757	ps_ip6_sm.c	1112	M	ip6_sm(0xC1C2FB38): Posting IP6 SM event 1 in state 2
00:45:40.757	ps_ip6_sm.c	1210	M	ip6_sm(0xC1C2FB38): Processing IP6 SM event 1
00:45:40.757	ps_ip6_sm.c	2413	M	ip6_sm(0xC1C2FB38): IPv6 SM from state 2 to 2
00:45:40.757	ps_ip6_sm.c	2768	M	ip6_sm(0xC1C2FB38) --> iface(0xC1C2F060): Sending RS Message
00:45:40.757	ps_icmp6.c	996	M	ICMP6_OUTPUT: calling ip6_send(ttl = 0)

//Waiting RA msg timeout for the 3rd attempts, emergency PDN rejected

00:45:44.757	pstimer.c	471	M	ps_timeri_client_cmd_cb(): Timer 96 expired - calling callback
00:45:44.757	ps_ip6_sm.c	1110	M	iface(0xC1C2F060) <-> ip6_sm(0xC1C2FB38)
00:45:44.757	ps_ip6_sm.c	1112	M	ip6_sm(0xC1C2FB38): Posting IP6 SM event 1 in state 2
00:45:44.757	ps_ip6_sm.c	1210	M	ip6_sm(0xC1C2FB38): Processing IP6 SM event 1
00:45:44.757	dsngen_iface6_hdlr.c	3098	M	Recd IP6 event 0 in DSSNet6 0xc1c2fac8

IMS Emergency Call Case TC11.2.4 (36.523-1) Failed on Anite CT37

```
00:45:44.757 dsgen_iface6_hdlr.c      724      H      Posting event 6 to DSSNet6(0xc1c2fac8) in state 2.
00:45:44.757 dstask.c          1204      M      Putting cmd 208 into DS Cmd buffer - cmd_q cnt 1 free_q cnt 0
00:45:44.757 dstask.c          1119      H      New DS task command:208 module_id:0
00:45:44.757 ps_ip6_sm.c       2413      M      ip6_sm(0xC1C2FB38): IPv6 SM from state 2 to 0
00:45:44.757 dsgen_iface6_hdlr.c      2117      H      NET_DOWN_EV recd for DSSNet6 0xc1c2fac8 in state 2
00:45:44.757 dsgen_iface6_hdlr.c      4496      H      call end reason for dssnet6 0xc1c2fac8 set to 0x90001
00:45:44.757 ds_3gpp_pdn_context.c    19304     M      Recd DSSNET6 event 6, state 2, on ds iface 0xc1c2f058

00:45:44.757 ds_3gpp_pdn_throttle_sm.c 3662      H      Emergency PDN Request rejected with
ps_net_down_reason 589825, no throttling needed
00:45:44.757 ds_3gpp_pdn_context.c    12782     H      iface down cmd hdlr PDN cntx ptr:0xc2869d10

00:45:44.757 dsgen_iface6_hdlr.c      3022      M      Recd ps_iface event 36 for DSSNet6 0xc1c2fac8 in state 5
00:45:44.757 ds_3gpp_pdn_context.c    10327     H      bringing down physlink associated with lface [0x8004:17]
00:45:44.757 ps_phys_link.c         529       M      ps_phys_link_down_cmd(): PS PHYS LINK DOWN CMD
0xC1C21338 in state 4
00:45:44.757 ds_3gpp_bearer_context.c  1466      H      DSUMTSPS PHYS LINK DOWN CMD :Call Inst:0

00:45:44.758 dsgen_iface6_hdlr.c      1098      M      IFACE_FLOW_DELETED_EV: Flows on iface 0xc1c2f060
cleaned up.
```

//MO detach triggered by UE

```
00:45:44.758 cmltecall.c      1938      M      =CM= SEND: NAS_ESM_PDN_DISCONNECT_REQ
00:45:44.758 esm_utils.c      2634      H      DS: SUB 1 ESM: ESM sent NAS_EMM_DETACH_CMD
00:45:44.759 emm_update_lib.c    3873      H      DS: SUB 1 =EMM= Start MO normal detach procedure
00:45:44.759 EVENT_LTE_EMM_OTA_OUTGOING_MSG      Message ID = DETACH REQUEST
```

- For TC11.2.4, Anite TE (CT37) has issue on IPv6 RS/RA, need retest on other TE such as Anritsu currently. Anite will fix this issue on new version CT38

CMCC 最新客户端预装方案要求（2016年1月4号版本）：

- **1. RAM <2G, 屏幕<5：**
 - 必须预装MM, 飞信, 和生活, 和彩云, 和视频, 和阅读, 和地图, 咪咕音乐, 和包（如果支持NFC功能）, 百度贴吧, 百度浏览器, 今日头条, 有点意思, 掌阅, 讯飞输入法。
- **2. RAM <2G, 5<=屏幕<5.5, 4核：**
 - 必须预装MM, 飞信, 和生活, 139邮箱, 和阅读, 和游戏, 咪咕音乐, 和包（如果支持NFC功能）, 手机百度, 百度贴吧, 今日头条, 有点意思, 乐视视频, 讯飞输入法。
- **3. RAM <2G, 5<=屏幕<5.5, 8核：**
 - 必须预装MM, 飞信, 和生活, 和彩云, 和视频, 和地图, 和游戏, 和包（如果支持NFC功能）, 百度贴吧, 百度浏览器, 今日头条, 掌阅, 乐视视频, 讯飞输入法。
- **4. RAM <2G, 屏幕>=5.5：**
 - 必须预装MM, 飞信, 和生活, 139邮箱, 和视频, 和阅读, 和地图, 和游戏, 咪咕音乐, 和包（如果支持NFC功能）, 手机百度, 百度贴吧, 今日头条, QQ阅读, 乐视视频, 讯飞输入法。

CMCC 最新客户端预装方案要求（2016年1月4号版本）：

- **5. RAM \geq 2G, 屏幕 $<$ 5.5（分辨率HD及以下）：**
 - 必须预装MM, 飞信, 和生活, 和彩云, 139邮箱, 和视频, 和阅读, 和地图, 和游戏, 咪咕音乐, 和包（如果支持NFC功能）, 手机百度, 百度贴吧, 搜狗浏览器, 今日头条, 微博（4G版）, 讯飞输入法。
- **6. RAM \geq 2G, 屏幕 $<$ 5.5（分辨率HD及以上）：**
 - 必须预装MM, 飞信, 和生活, 和彩云, 139邮箱, 和视频, 和阅读, 和地图, 和游戏, 咪咕音乐, 冲浪导航书签, 和包（如果支持NFC功能）, 手机百度, 360浏览器, 微博（4G版）, 乐视视频, 美团, 讯飞输入法。
- **7. RAM \geq 2G, 屏幕 \geq 5.5：**
 - 必须预装MM, 飞信, 和生活, 139邮箱, 和视频, 和阅读, 和地图, 和游戏, 咪咕音乐, 和包（如果支持NFC功能）, 手机百度, 微博（4G版）, 网易新闻, 乐视视频, 携程旅行, 讯飞输入法。

References

Documents	
Qualcomm Technologies, Inc.	
Title	DCN
高通Lab Test技术期刊--201509	/
高通Lab Test技术期刊--2015010	/
高通Lab Test技术期刊--2015011	/
高通Lab Test技术期刊--2015012	/
高通Lab Test技术期刊--201601	/
LTE SON-ANR Overview and Log Analysis	80-NN197-1

Questions?

<https://support.cdmatech.com>

