
高通Lab Test技术期刊 – 201604



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Revision History

Revision	Date	Description
A	Apr 2016	Initial release

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

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Lab Testing: UE Fail to Initiate IMS Registration owing to Incorrect APN Setting

■ Issue Description

- While Testing IMS/VoLTE related case, such as GCF TS34.229-1, CMCC VoLTE NS-IoT cases, it is observed that UE doesn't initiate sip register procedure owing to incorrect APN setting.

■ Log Snippet

//Create profile for IMS

```
18:22:52.736 QpPDNITypeManager.cpp 87 H qpPDNITypeCreateProfile | - Create Profile Input FB Enabled Value[0]
18:22:52.736 QpPDNITypeManager.cpp 89 H qpPDNITypeCreateProfile | - Create Profile This Instance Value[2], PrimaryInUse[0], SecondaryInUse[0]
18:22:52.736 qpDcm.c 2465 H IMS_APP#>>#DPL_M#0#qpDcmCreateProfile: blsHybridPdn[0]
```

//Here seems that PDN profile is not configured

```
18:22:52.736 qpDcm.c 2477 E qpDcmCreateProfile - Invalid RAT[0]|APN[0]
]
```

// APN name is null,

```
18:22:52.736 PDPHandler.cpp 181 H CPDPHandler::CreateProfile - apn/profile name is
18:22:52.736 PDPHandler.cpp 182 H CPDPHandler::CreateProfile PDPID[0] This Instance Value[2]
18:22:52.736 PDPHandler.cpp 190 F CPDPHandler::CreateProfile - Profile creation failed, m_pDcmProfile is NULL
```

// Calling bringup ims apn

```
07:15:00.411,[IMS_DataD] qpdplCnERoutingNotifier.cpp,240,E,| 634 |qpdplSetupCNERoute...calling bringup for apn type 0,,
```

// But CNEService return 0

```
07:15:00.411,[IMS_DataD] qpdplCnERoutingNotifier.cpp,242,E,| 634 |qpdplSetupCNERoute..bringup returned 0,
```

Lab Testing: UE Fail to Initiate IMS Registration owing to Incorrect APN Setting

- Once the above log print is observed, we need to check from below aspects:
 - NV71527 ims_apn_name_db[0].cAPNName should be the same as the apn in EFS Data Profile, and PCO has been set for this profile.
 - In Android M, we should setup an APN on UI named with NV71527 ims_apn_name_db[0].cAPNName, and APN type is ims
 - In Android M release, IMS data daemon would send data call request to CNE/Telephony to make a data call for IMS PDN connection. Telephony would use “mcc/mnc” and “type=ims” to get the APN info and make a data call for IMS PDN connection. So we need to setup an APN for ims on UI.



Lab Testing: UE Fail to Initiate IMS Registration owing to Incorrect APN Setting

- Check whether CNEService.apk is absent
 - If all above settings are correct, then need to check the presence of CNEService.apk.

An example of the apk is absent:

```
C:\>adb shell
root@test:/ # ps | grep CNEService
ps | grep CNEService1|
root@test:/ # getprop | grep cne
getprop | grep cne
[persist.cne.feature]: [1]
root@test:/ # ls -la /system/priv-app/CNEService/
ls Cla /system/priv-app/CNEService/
Cla: No such file or directory
/system/priv-app/CNEService/: No such file or directory
```

An example of the apk is present:

```
C:\>adb shell
root@test:/ # ps | grep CNEService
ps | grep CNEService
system 2078 500 867404 31428 Sys_epoll_ 00f74afc74 S com.quicinc.cne.CNEService
root@test:/ # getprop | grep cne
getprop | grep cne
[persist.cne.feature]: [1]
root@test:/ # ls -la /system/priv-app/CNEService/
ls Cla /system/priv-app/CNEService/
Cla: No such file or directory
CNEService.apk
```

CT test: CRs for IPv6 only tethering support on Android M

- Issue Description

- For CT specific test, UE is connected with test PC through Android USB tethering mode. It is observed on **Android M** devices that while running IPv6 only test cases, UE fail to assign IPv6 address to tethered PC after got IPV6 address from network.
- All the IPv6 only related SRLTE/iRAT/eHRPD test cases are impacted, such as TC-IPv6-07001, TC-IPv6-07003, TC-IPv6-07005, TC-IPV6-09009, TC-IPV6-09013, TC-IPV6-09018, TC-INTERRAT-09003, TC-INTERRAT-09004, TC-eHRPD-PCT-01012, etc.

- Solution:

- QC have below CRs for IPv6 only tethering support on Android M:
 - CR946434 -- FR 32542: Add IPv6 only Tethering supporting for WWAN Backhaul
 - CR959359 -- FR 32542: Add IPv6 only Tethering supporting for WWAN Backhaul - AOSP changes
 - CR962032 -- Re-enable tethering after com.qualcomm.qti.tetherservice being killed by LMK if tethering was previously enabled
 - CR962943 -- com.qualcomm.qti.tetherservice crash Post FR 32542

CT test: CRs for IPv6 only tethering support on Android M

- Also, OEM need to make sure below jar/apk/so/xml are present in the system image
 - system/framework/ConnectivityExt.jar
 - system/priv-app/QtiTetherService/QtiTetherService.apk
 - system/vendor/lib/libQtiTether.so
 - system/vendor/lib64/libQtiTether.so
 - system/etc/permissions/ConnectivityExt.xml

CT Bi-directional Throughput Case Failed owing to OEM removed QC Service from build

■ Issue Description

- During recent CT test, it is observed that some OEMs removed QC original service (such as CNE service, tethering service) from their build. As a result, some CT bi-directional throughput case fail to meet CT requirement.

■ Fail log for TC03046 bi-directional FTP stress test:

//No issue observed from LTE AS perspective, but out-of-order TCP packets is observed in DL from wireshark log. By comparing modem DPL log and UE PC wireshark log, we found from server to modem on DL, the packets are received in sequence, but the same packets are received out-of-order on the tethered PC.

58.42.87	192.168.0.70	TCP	66	[TCP Dup ACK 120049#6] 51596 > ftp-data [ACK] Seq=1 Ack=64634141 win=1536000 Len=0
58.42.87	192.168.0.70	TCP	66	[TCP Dup ACK 120049#7] 51596 > ftp-data [ACK] Seq=1 Ack=64634141 win=1536000 Len=0
58.42.87	192.168.0.70	TCP	66	[TCP Dup ACK 120049#8] 51596 > ftp-data [ACK] Seq=1 Ack=64634141 win=1536000 Len=0
58.42.87	192.168.0.70	TCP	66	[TCP Dup ACK 120049#9] 51596 > ftp-data [ACK] Seq=1 Ack=64634141 win=1536000 Len=0
58.0.70	192.168.42.87	FTP-DATA	1474	24140 [TCP Fast Retransmission] FTP Data: 1420 bytes
58.0.70	192.168.42.87	FTP-DATA	1474	24140 [TCP out-of-order] FTP Data: 1420 bytes
58.0.70	192.168.42.87	FTP-DATA	1474	24140 [TCP out-of-order] FTP Data: 1420 bytes
58.0.70	192.168.42.87	FTP-DATA	1474	24140 [TCP out-of-order] FTP Data: 1420 bytes
58.0.70	192.168.42.87	FTP-DATA	1474	24140 [TCP out-of-order] FTP Data: 1420 bytes

//For M8952/8976 plaform, tethering data path change from SW to HW to meet high data Tput request. But from IPA log, S/W path still used here:

// Downlink packets: (packets should be from 6 -> 0, now is 6->5)

2016 Feb 28 06:40:35.388 [D9] 0x1851 Data Modem IPA Packet Status DL

12	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293875976	9595662	0
13	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293869896	9595662	0
14	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293769032	9595662	0
15	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293783560	9595662	0
16	0	0	1946	1464	6	5	1174405121	1	0	6	0	7	0	263	2293782984	9595662	0
17	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293798728	9595662	0
18	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293872520	9595662	0
19	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293843272	9595662	0
20	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293784392	9595662	0
21	0	0	1946	1464	6	5	1174405121	1	0	6	0	7	0	263	2293850952	9595662	0
22	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293874632	9595662	0
23	0	0	922	1464	6	5	1174405121	1	0	6	0	7	0	263	2293891912	9595662	0

CT Bi-directional Throughput Case Failed owing to OEM removed QC Service from build

// Uplink packets: (packets should be from 4 -> 8)

2016 Feb 28 06:40:35.388 [D9] 0x1852 Data Modem IPA Packet Status UL

10	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595666	0	0
11	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595666	0	0
12	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595666	0	0
13	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595666	0	0
14	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595666	0	0
15	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595666	0	0
16	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595666	0	0
17	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595667	0	0
18	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595667	0	0
19	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595667	0	0
20	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595667	0	0
21	0	0	906	52	4	8	671088896	1	0	4	1	4	0	48	12288	9596556	0	0
22	0	0	906	76	4	8	1073742083	1	0	4	1	9	0	72	18432	9598770	0	0
23	0	0	906	72	4	8	1006633216	1	0	4	1	9	0	68	17408	9598770	0	0
24	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595665	0	0
25	0	0	906	52	4	8	671088896	1	0	4	1	9	0	48	12288	9595665	0	0

//From the crash dump, packets are routed to APPS. But seems IPACM is not getting the required events from CNE to install all the needed rules in HW.

stats = (

tx_sw_pkts = 17664,

tx_hw_pkts = 10460,

rx_pkts = 17684,

rx_excp_pkts = (0, 0, 19, 0, 0, 10507, 0, 69),

rx_repl_repost = 0,

tx_pkts_compl = 28124,

//After check with OEM, issue is identified OEM removed below lib from system image. After recovering such file, CT throughput case TC03046 can be passed with no issue.

system/vendor/lib64/libcne.so

system/vendor/lib64/libcneapiclient.so

system/vendor/lib64/libcneconn.so

system/vendor/lib64/libcneqmiutils.so

system/framework/com.quicinc.cne.jar

■ Lesson to Learn:

- OEM should take careful while removing QC service from the build.

Problem Area Selection for Submitting Lab Conformance SRs

Prob Area 1	Prob Area 2	Prob Area 3	Report Issues
Modem Software	GERAN	GCF and ADAPT (GERAN) - Protocol	For GSM protocol cases defined in 3GPP TS51.010-1
Modem Software	GERAN	GCF and ADAPT (GERAN) - RF	For GSM RF cases defined in TS51.010-1 chapter 12/13/14/16/18/21/22
Modem Software	LTE	GCF/PTCRB/AT&T/T-Mob/VZW (Lab Conformance) - GCF/PTCRB	For LTE protocol test cases defined in TS36.523-1
Modem Software	LTE	GCF/PTCRB/AT&T/T-Mob/VZW (Lab Conformance) - RF/RRM	For LTE RF/RRM test cases defined in TS36.521-3
Modem Software	LTE	GCF/PTCRB/AT&T/T-Mob/VZW (Lab Conformance) - RF/TRX	For LTE RF/RRM test cases defined in TS36.521-1
Modem Software	LTE	GCF/PTCRB/AT&T/T-Mob/VZW (Lab Conformance)-Documentation	For LTE PICS/PIXIT etc. document related issues
Modem Software	LTE	GCF/PTCRB/AT&T/T-Mob/VZW (Lab Conformance) - VZW/Sprint/USCC - Protocol	For VZW/Sprint/USCC lab test cases related to LTE
Modem Software	LTE	GCF/PTCRB/AT&T/T-Mob/VZW (Lab Conformance)-ADAPT Protocol	For AT&T lab test cases related to LTE
Modem Software	UMTS	GCF and ADAPT (UMTS) - Protocol	For WCDMA protocol cases defined in TS34.123-1
Modem Software	UMTS	GCF and ADAPT (UMTS) - RF/RRM	For WCDMA RRM cases defined in TS34.121-1 chapter 8
Modem Software	UMTS	GCF and ADAPT (UMTS) - RF/TRX	For WCDMA RF cases defined in TS34.121-1 chapter 5/6/7/9/10
Modem Software	UMTS	GCF and ADAPT (UMTS)-ADAPT	For AT&T lab test cases related to WCDMA and GSM
Modem Software	UMTS	GCF and ADAPT (UMTS)-Documentation	For WCDMA PICS/PXIT etc. document related issues
Modem Software	TD-SCDMA	CMCC/CTA (TD-SCDMA)-Protocol/RRM/RF	For TDSCDMA RF cases defined in TS34.122, TDS protocol and RRM cases
Modem Software	UIM	GCF	For UIM GCF cases defined in TS31.121, TS31.124

Document for GCF Annex “F.3.2 Standards and other references applied by the terminal under certification”

- GCF requires a declaration of the 3GPP standards and certain other documentation used in the design of the terminal under certification. So OEM is required to fill in doc “**F.3.2 Standards and other references applied by the terminal under certification**” for GCF certification.
- Below is the doc number for each platform:
 - 80-VC278-1 is for the old PLs (6K, 7K etc)
 - 80-VC278-2 is for NikeL modems
 - 80-VC278-3 is for Dime modems
 - 80-VC278-4 is for Triton modems
 - 80-VC278-5 is for Bolt modems (e.g. M8992/8994)
 - 80-VC278-6 is for DPM (DimePlusMinus) modems (e.g. M8916/8939)
 - 80-VC278-7 is for JO modems (e.g. M8909)
 - 80-VC278-8 is for TH modems (e.g. M8996)
 - 80-VC278-9 is for TA modems (e.g. M8952/8976)
- OEM can also refer to this doc to check the standard version supported by QC for each chipset.

CMCC新增测试（请各手机厂商关注并开始自测）

- 为确保支持VoLTE视频业务的终端用户体验，自16年4月5日起，VoLTE视频互通测试将正式纳入终端入库的测试要求，请各合作伙伴知悉，并提前做好互通测试准备。如有任何疑问，请联系品质部孙科（sunke@cmdc.chinamobile.com）。
- 具体请见后附用例，测试方法和标准如下：
 1. 参考样机选取M623C、海信E51、三星G9208、华为X100，展讯9830A、MTK6797（其中展讯9830A、MTK6797待有商用机后，将更新替换）。
 2. 每款测试终端与同款终端进行视频互通测试
 3. 每款测试终端与标准机分别进行视频互通测试
 4. 每次互通主被叫各拨打20次，每次通话30秒
 5. 通过条件：
 - a) 单次呼叫接通率大于95%，即每个20次拨打中允许1次失败。
 - b) 视频通话过程中无其它严重影响用户体验的问题，如死机、重启、花屏、延迟等严重影响用户体验的问题。

CMCC新增测试（请各手机厂商关注并开始自测）

volte视频互通性能测试用例

编号	项目名称	测试目的	测试工具	循环次数	预置条件	执行步骤	循环部分	检查点	备注
1.1.1	volte 视频互通性能-测试机主叫	测试不同终端视频互通成功率	康凯特 IDE	20	1.网络正常 2.终端注册Volte网络	1.打开测试机拨号盘界面。 2.测试机向标准机发起视频通话。 3.标准机以视频模式接听，双方建立视频通话，并保持30秒。 4.测试机挂断通话。 5.退回dial界面。	1.测试机向标准机发起视频通话。 2.标准机以视频模式接听，双方建立视频通话，并保持30秒。 3.测试机挂断通话。	1.视频电话拨通成功或失败的结果。 2.被较端接听5秒内出现对方视频成功或失败的结果。 3.主叫端出现对方视频成功或失败的结果。 4.接通30秒后，被叫端存在对方视频成功或失败的结果。 5.挂断后返回主界面成功或失败的结果。	1.app值为0.2。 2.device1为主叫端，device0为被叫端。 3.分别计算与各标准机互通的成功率成功率不低于95%。 4.若有一款终端组合成功率低于95%或测试机出现一次强制关闭，死机，重启，冻屏等严重问题，则测试不通过。 5.标准机共6款。
1.1.2	volte 视频互通性能-测试机被叫	测试不同终端视频互通成功率	康凯特 IDE	20	1.网络正常 2.终端注册Volte网络	1.打开标准机拨号盘界面。 2.标准机向测试机发起视频通话。 3.测试机以视频模式接听，双方建立视频通话，并保持30秒。 4.标准机挂断通话。 5.退回dial界面。	2.主叫端向被叫端发起视频通话。 3.被叫端以视频模式接听，双方建立视频通话，并保持30秒。 4.主叫端挂断通话。	1.视频电话拨通成功或失败的结果。 2.被较端接听5秒内出现对方视频成功或失败的结果。 3.主叫端出现对方视频成功或失败的结果。 4.接通30秒后，被叫端存在对方视频成功或失败的结果。 5.挂断后返回主界面成功或失败的结果。	1.app值为0.2。 2.device0为主叫端，device1为被叫端。 3.分别计算与各标准机互通的成功率成功率不低于95%。 4.若有一款终端组合成功率低于95%或测试机出现一次强制关闭，死机，重启，冻屏等严重问题，则测试不通过。 5.标准机共6款。
2.1.1	volte 视频同款互通性能	测试同款终端视频互通成功率	康凯特 IDE	20	1.网络正常 2.终端注册Volte网络	1.打开主叫端拨号盘界面。 2.主叫端向被叫端发起视频通话。 3.被叫端以视频模式接听，双方建立视频通话，并保持30秒。 4.主叫端挂断通话。 5.退回dial界面。	2.主叫端向被叫端发起视频通话。 3.被叫端以视频模式接听，双方建立视频通话，并保持30秒。 4.主叫端挂断通话。	1.视频电话拨通成功或失败的结果。 2.被较端接听5秒内出现对方视频成功或失败的结果。 3.主叫端出现对方视频成功或失败的结果。 4.接通30秒后，被叫端存在对方视频成功或失败的结果。 5.挂断后返回主界面成功或失败的结果。	1.app值为0.2。 2.device1为主叫端，device0为被叫端。 3.成功率低于95%或出现一次强制关闭，死机，重启，冻屏等严重问题，则测试不通过。

CMCC测试需求更新（ 请各手机厂商加以关注 ）

- 为便于产品版本管理，自3月1日起首轮送测双卡产品（含定制和非定制）两张卡需上报两个不同的IMEI号，待终端营销系统完成改造后，需在系统中上报两个IMEI号之间的关联关系。建议旧品版本升级时同步修改。请各位合作伙伴知悉。
- 根据上述需求，双卡手机显示IMEI号的要求不再是之前的要求显示一个IMEI号或两个相同的IMEI号，而是要求显示不同的IMEI号。

References

Documents	
Qualcomm Technologies, Inc.	
Title	DCN
Lab Conformance Test Configuration and Execution Guide	80-P5399-1 A
高通Lab Test技术期刊--201509	/
高通Lab Test技术期刊--201510	/
高通Lab Test技术期刊--201511	/
高通Lab Test技术期刊--201512	/
高通Lab Test技术期刊--201601	/
高通Lab Test技术期刊--201602	/
高通Lab Test技术期刊--201603	/

Questions?

<https://support.cdmatech.com>

