Description and Terms of Reference for 2008

1. Background

1.1 The MCC TF160 was setup in Jun 00 and is currently under the responsibility of 3GPP TSG-RAN WG5 (RAN5) for the development, maintenance and deliveries of TTCN test cases. Following a decision at PCG#17 MCC TF160 became the 3GPP TTCN expertise pool for both TSG RAN and TSG GERAN. The task force (TF) consists of the skilled protocol / TTCN experts coming from various companies of the 3GPP partners. More than 570 TTCN test cases in FDD and 100 test cases in LCR TDD have been verified and approved for the UE conformance testing and certification.

1.2 The funding of an expert team as a task force at the MCC has proved to be the most efficient and cost-effective way to develop the test specifications found in TS 34.123-3, 34.229-3 and 51.010-5. In order to stabilise and to maintain all the currently available TTCN Abstract Test Suites (ATS) and to continue developing new TTCN test cases for the different 3GPP Releases, MCC TF160 has been resourced, in part, by the PCG/OP. 58 man months (mm) are being allocated at OP#18 to cover the related tasks for 2008. Voluntary funding for 2008 will also be sought from various external organisations as well as individual companies, in the form of both manpower and cash. Responsibility for ensuring that the TF is resourced to meet the test development requirements rests jointly with RAN and GERAN.

1.3 MCC TF160 continues to work in accordance with the priorities identified by the Global Certification Forum (GCF) but increasingly it is fulfilling requirements set by the TD-SCDMA Industry Alliance (TDIA), TD-SCDMA Certification Group (TCG) and the PCS Testing Certification Review Board (PTCRB).

1.4 To meet the UMTS market demand for a number of Rel-6 and Rel-7 features, MBMS, IMS, VCC and MIMO, CPC, enhanced Layer 2 etc. among others, have been introduced. The conformance tests for these have been or are being specified in the prose, and it is necessary to implement these in TTCN, as the reference test specification, for UE conformance certification purposes.

1.5 The target and schedule of the LTE conformance test is quite demanded. MCC TF160 has already been asked to shorten the period between the LTE/SAE core specs ready to the corresponding conformance test cases in TTCN3 and provide the LTE/SAE TTCN3 test cases for the certification of the evolved UE.

1.6 With the introduction of LTE/SAE, a seamless inter system HO of the evolved UE between GERAN - evolved UTRAN is needed. MCC TF160 has been tasked by GERAN to develop the corresponding ATS.

2. Consequences if not resourced

All test cases produced by MCC TF160 are used to prepare UE and evolved UE for worldwide roaming and interoperability within 3GPP networks. Without such tests the UE and evolved UE interoperability cannot be guaranteed. Should MCC TF160 be discontinued, then the cohesive and unified approach to develop common TTCN

modules will be lost. The system simulator manufacturers will inevitably deliver test platforms with different interpretations of the core specifications which will, in turn, lead to variable results and general confusion as to what constitutes a conformant handset. Furthermore the broader implementation of R99, Rel-5, Rel-6 and Rel-7, Rel-8 networks could be delayed as potential issues, such as interoperability of handsets, may not resolved.

3.   Detailed description

3.1   **Subject title:** 3GPP TTCN specifications for UE and evolved UE of different Releases

3.2   **Reference Technical Body:** 3GPP TSG RAN WG5, TSG GERAN WG3

3.3   **Other interested Technical Bodies:** 3GPP TSG RAN WG 2, TSG CT WG 1, TSG GERAN WG 2

3.4   **Target dates for the start of work:** Jan 08

3.5   **Target dates for the conclusion of the work:** Dec 08

3.6   Resource requirement

3.6.1 Estimated man month requirement in 2008

It was estimated that the resource requirement, in terms of TTCN experts, for 2008 will be 95 man months (RAN: 93mm, GERAN: 2mm). The estimated resource requirement for 2009 is likely to be similar to 2008. A review of the funding required for 2009 will be undertaken in Sep 08.

3.6.2 Additional tasks requiring resources

In addition to the TTCN development ETSI needs to host MCC TF160, as well as provide the task force's overall leadership, management, logistical and IT support.

3.6.3 Qualification required, mix of skills

The experts should have deep 3GPP protocol knowledge at the Uu, LTE-Uu, Um or Gm reference points and good skills for writing TTCN test cases to cover FDD, LCR & HCR TDD as appropriate.

3.7   Release and Configuration Manager (RCM)

In Jan 04, the RCM was appointed with specific duties to control the release of TTCN ATS (in TTCN2 or TTCN3) as well as coordinate the verification activity between the test industry (verification teams) and MCC TF160. The continuation of the RCM in 2008 is to provide great benefits to the test industry and now the RCM is an integral part of MCC TF160. Furthermore, LCR TDD verification has been started. The RCM task is shared by FDD and TDD test industries.

3.8   Scope of Terms of Reference

3.8.1 The technical areas of MCC TF160 cover the conformance test specifications for UE signalling, protocols and radio access bearer interoperability in FDD and TDD radio technologies. The UE handover and interoperability from 3G to 2G also belongs to the area.

3.8.2 The task force is responsible for the development, maintenance and deliveries of NAS, SMS, RRC, MAC, RLC, RAB, PDCP, A-GPS, HSPA /HSPA+, IMS-CC, MTSI, interRAT HO, as well as LTE/SAE ATS in the different Releases according to the relevant 3GPP prose test specifications. For the purposes of enabling GCF/PTCRB and TDIA/TCG certification of handsets, priority is given to the completion and maintenance of the high priority test cases.

3.8.3 The task force is also responsible to implement the prose and TTCN CRs in TTCN, to integrate the verified TTCN test cases into the existing ATS and to deliver the 3GPP formally approved ATS releases and interim working ATS releases.

3.8.4 MCC TF160 consists of three teams; an FDD team, a LCR TDD team and an LTE/SAE team. The FDD team concentrates on the FDD Abstract Test Suite (ATS) for R99, Rel-5, Rel-6 and Rel-7. The LCR TDD team concentrates on the LCR TDD ATS for Rel-5 and Rel-6. The LTE/SAE team contributes to LTE/SAE ATS. The split of ATS according to the access technologies will ensure the independency of the development and maintenance of these ATSs to facilitate deliveries and releases.

3.8.5 MCC task 160 will provide assistance to those parties interested in developing HCR TDD on the condition that there are no resource implications to that approved by PCG.

3.9   Context of the tasks in relation to TS 34.123, TS 34.229, TS 36.523 and TS 51.010

3.9.1 Part One. The first part of TS 34.123, TS 34.229, TS 36.523 and TS 51.010 specifies the test structure, test purposes and give each test case a prose description.

3.9.2 Part Two. The second part specifies necessary ICS questions for UE manufacturers on the UE capabilities and the test case applicability.

3.9.3 TTCN Parts (34.123-3, 34.229-3, 36.523-3 and 51.010-5). These parts contain the ATS' themselves and are considered as 3GPP formal test specifications; they are among the formal deliveries of MCC TF160.

3.10   Related activity in other bodies and necessary co-ordination of schedules

Changes on interRAT test in TS 34.123, TS 36.523 of RAN5 or TS 51.010 of GERAN 3 can have interactive impact. The stability of the relevant core specifications of CT1, RAN2 and GERAN2, especially changes in TS 25.331, TS 24.229 and TS 44.318, will have an impact on the progress of the Task.

3.11   Base documents used

TS 24.008: Mobile radio interface layer 3 specification, Core Network Protocols - Stage 3
TS 24.229: IMS CC protocol based on SIP and SDP - Stage 3
TS 25.321: MAC protocol specification

TS 25.322: RLC protocol specification
TS 25.331: RRC protocol specification
TS 25.346: Introduction of MBMS in the Radio Access Network (RAN)
TS 34.108: Common test environment for UE conformance testing
TS 34.123-1: UE conformance specification, part 1: protocol conformance specification
TS 34.123-2: UE conformance specification, part 2: ICS Proforma specification
TS 51.010-1: Mobile station conformance specification, part 1: protocol conformance specification
TS 51.010-2: Mobile station conformance specification, part 2: ICS Proforma specification
TS 34.229-1: IMS CC UE conformance specification part 1: protocol conformance specification
TS 34.229-2: IMS CC UE conformance specification, part 2: ICS Proforma specification
TS 36.508: Common test environment for evolved UE conformance testing
TS 34.523-1: UE conformance specification, part 1: protocol conformance specification
TS 34.523-2: UE conformance specification, part 2: ICS Proforma specification

3.12 Relevant RAN and GERAN Work items

RAN WIs:

TEI_Test, TEI4_Test, TEI5_Test, TEI6_Test, TEI7_Test, TEI8_Test, LCRTDD-EDCH-UEConTest, RANimp-UEConTest_64QamDownlink, RANimp-UEConTest_L2DataRates, RANimp-UEConTest_16QamUplink, RANimp-UEConTest_CPC, RANimp-UEConTest_EnhancedCellFACHState, MIMO-UEConTest_FDD, LTE-UEConTest_SIG, MTSI-UEConfTest

GERAN WIs: TEI

3.13 Expected Output

TS 34.123-3: UE conformance specification, part 3: Abstract Test Suite (ATS)
TS 51.010-5: Mobile station conformance specification, part 5: Abstract Test Suite (ATS)
TS 34.229-3: IMS CC UE conformance specification, part 3: Abstract Test Suite (ATS)
TS 36.523-3: UE conformance specification, part 3: Abstract Test Suite (ATS)

In addition, the outputs will be in the form of Abstract Test Suites (ATS) and will be delivered in accordance with the RAN5 and GERAN3 approved programme. In essence, MCC TF160 will deliver 4 formal releases (at quarterly intervals) of the ATS containing those test cases that have been verified according to PRD R5-12. In between these releases, MCC TF160 will deliver a series of RAN5 and GERAN3 interim working documents that contain the entire suite of test cases i.e. including those that have yet to be verified. This enables the test industry to verify the outstanding test cases within the framework of the extant working ATS.