










Public Safety Communications Research  
Winter 2010 Conference  
Session: Testing & Upgrades

Department of Commerce – Boulder Labs

# LTE Test Specifications & Forums

- Standards bodies that have developed LTE test specification documents Include:
  - 3GPP: Third Generation Partnership Project 
  - GSMA: Global System for Mobile Communication Association 
  - OMA: Open Mobile Alliance 
  - Verizon Wireless Open Development 
    - Only service provider test plan openly available
- Forums/Organizations that perform certification testing or provide a venue to perform interoperability testing
  - PTCRB: PCS Type Certification Review Board (Ue) 
  - GCF: Global Certification Forum (Ue) 
  - MSF: Multiservice Forum (EPC) 

# 3GPP LTE Test Specifications

- 3GPP has developed several documents that deal with UE testing and one that deals with eNB testing. Some of the relevant R8 specifications are:
  - TS 36.141 - eNB Rx & Tx Conformance & Performance Tests
  - TS 36.521-X - Ue Rx & Tx Conformance & Performance Specification
  - TS 36.523-X - Ue Conformance Specification

# GSMA LTE Test Specifications

- The GSMA has developed a device field and lab testing guideline document that is now the industry de facto standard for field and lab testing. This document was published in June of 2010.
  - Title: DG11.8.0 – Device Field and Lab Test Guidelines
- GSMA also has created initial LTE roaming guidelines in addition to other various Industry Requirements (IR)
  - Title: IR.88.2.0 – LTE Roaming Guidelines
    - LTE roaming interfaces & IPX implementation
- Documents can be found at:  
[http://gsmworld.com/newsroom/document-library/technical\\_documents.htm](http://gsmworld.com/newsroom/document-library/technical_documents.htm)

# PTCRB

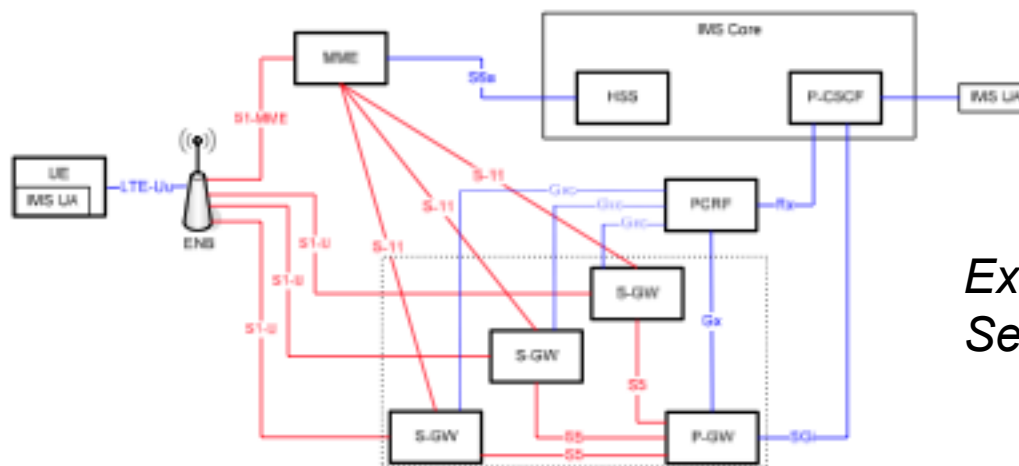
- Provides UE certification services for North American operators. ([www.ptcrb.org](http://www.ptcrb.org))
- PSCR investigated the GCF (Global Certification Forum); however
  - GCF is geared more toward European operators
  - PTCRB certifies labs
- PSCR currently participating in the PTCRB.
- In September 2010 PSCR requested PTCRB establish band class (BC) 14. This leverages all tests currently proposed for BC 13.
- PSCR in the process of trying to determine if any public safety specific modification are necessary or if additional unique PS tests need to be added to BC 14.

# MultiService Forum - MSF

- Based on PSCR's research, there currently are no organizations that perform independent certification of EPCs and their associated interfaces.
  - Typically network operators perform their own IOT testing in their labs and networks with limited multi-vendor interaction (< Public Safety)
  - One of PS's traditional concerns is how can it be determined that a given vendor's product meets the specifications and their needs
- MSF's purpose is to develop implementation agreements, promote worldwide compatibility and interoperability of network elements, and encourage input to appropriate national and international standards bodies.
- The MSF does not perform any kind of certification testing.
- The part of the MSF that is relevant to PSCR is the LTE EPC interoperability testing. PSCR would like to learn from these events and setup similar interoperability tests scenarios in the demonstration network.
  - <http://www.msforum.org/techinfo/approved/MSF-LTE-SCN-002-FINAL.pdf>

# MSF - continued

- The MSF has already hosted an interoperability event that involved multiple vendor's EPCs in March 2010. This event focused on establishing LTE data sessions.
- The MSF is scheduled to host an interoperability event in June 2010 that involves multiple vendor's EPCs. The focus of this event will be on LTE voice sessions using VoLTE.
- PSCR will be an active member of the MSF starting January 1, 2011.



*Ex. MSF S-GW Selection Test*

Q&A

Thank You