

Rethink Possible



How to ensure nationwide interoperability for public safety broadband utilizing LTE 4G Technology

Interoperability Forum: A Discussion on Creating and Implementing the Technical Framework for the Nationwide Interoperable Public Safety Mobile Broadband Network 2011

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March 4, 2011

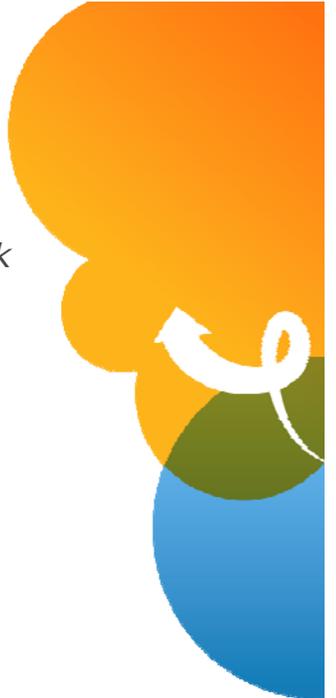


Roaming & Interoperability

- *Roaming is defined in 3GPP as the ability for a user to function in a serving network different from the home network*
 - *The serving network could be a shared network operated by two or more network operators*
 - *Across public safety jurisdictions*
 - *Between public safety & commercial networks*
- *Interoperability is defined as the capability to automatically (roam) onto a visited network and have access and share appropriate information/services as authorized*
 - *IP-enabled services using the IP Multimedia Subsystem (IMS)*
 - *Quality of Service & Policy enablers*
 - *Services can be local (location-based) or National (PLMN based)*
- *Must follow open standards – not proprietary functions, handsets, lower layer enablers*
 - *Application layer is where to differentiate services*
- *Interoperability is a continuous process across devices, radio access, networks*
 - *Not a one-time “testing” or “certification” event*
 - *Network testing, device testing, billing testing*
 - *Standards and equipment evolves □ interoperability testing must be a continual process*

Global Standards Enables Interoperability

It is part of 4G LTE Standards



LTE Ecosystem built on GSM/UMTS

- *25 years of GSM**
- *840 Networks in 192 Countries*
- *Economies of scale*
 - *Interoperability - 2G & 3G through 4 billion connections*
- *Diverse handsets*
- *Common Network interface*
- *Roaming*
- *GSMA IR.88*
 - *Defines interfaces between Home & Visited network*
- *GSMA VoLTE IR.92*
 - *Common UNI (User Network Interface)*
 - *Interconnect Network-Network Interface (i/c NNI) creates end-to-end call connectivity*
- *GSMA BARG, IWG, TADIG, IREG, RiLTE*
- *Security & Fraud*
 - *Near Real Time Data Exchange (NRTDE)*

Process is in place to address Interoperability

ATIS North American Standards and Regional Interest Group of GSMA



Leveraged Services

- *Commercial LTE Networks building out now*
- *Public Safety can leverage these networks through roaming & interoperability*
 - *And still have access to the services they need for their mission*
- *Home routed traffic*
 - *When public safety device roams to commercial network*
 - *Used for non-time sensitive traffic*
 - *Applications that are under operator control (operator hosted VPNs, portals...)*
- *Visited network handles traffic*
 - *Delay-sensitive traffic (e.g., Voice, Emergency Calls)*
 - *Local services*
 - *Requires Visited network functionality to identify traffic to be Optimally Routed (defined in standards)*

Public Safety Broadband is just another LTE network to interoperate with



System Identifiers

- *Recommend one system identifier for the entire 700 MHz public safety network*
 - *In 3GPP networks, system identifiers are called Public Land Mobile Network (PLMN)*
 - *Single PLMN id shared by all public safety networks*
 - *Depletion problem on PLMN IDs if allocated to all networks*
 - *Easier to manage*
 - *Back office OA&M, charging, billing*
 - *Provisioning*
 - *Security/Fraud*
 - *Roaming agreements & settlement*
 - *Multinational jurisdictional management (Canada?)*
 - *Facilitates interoperability and leveraging of commercial networks*
 - *Use Policy architecture as needed to differentiate services across public safety jurisdictional boundaries*



Questions?

