



Public Safety Communications Research
(PSCR)

Public Safety Requirements Refresher Part 1

Department of Commerce – Boulder Labs

Public Safety Requirements Refresher Part 1

Andrew Thiessen

Purpose

- Ensure the basic set of applications and services is complete
- Review current status of voice for LTE
- Discuss requirements for specific applications such as voice
- Review current status of security for LTE
- Review security concerns/needs

Applications and Services

- Voice
- Generic file transfer
- E-Mail
- Web browsing
- Cellular voice
- Push to talk voice
- Indoor video
- Outdoor video
- Location services
- Database transactions
- Messaging
- Operations data
- Dispatch data (CAD)
- Telemetry
- VPN traffic
- What is missing?

LTE Voice

- 3GPP Release 8 “LTE” does not currently support voice or SMS (text messaging) like current cellular systems
 - VoLTE – Voice over LTE initiative launched by major vendors & carriers to create a larger ecosystem, guarantee roaming and interoperability (sound familiar to this project)
 - Uses IMS for SIP based voice and SMS
 - Telephony, full duplex voice solution
 - No plans for Push-to-Talk (PTT)

PS Voice

- What is mission critical voice for LMR?
 - Push-To-Talk (PTT – half duplex)
 - Talk Group Capability - multicast
 - 1-to-many – Broadcast capability
 - Direct Mode/Talk Around
 - Low Latency
 - Secure
- What is mission critical voice for broadband?
 - What LMR mission critical voice components are relevant?
 - In what timeframe?
 - Quality expectations?
 - Example use case?

Demo

- Demo project will work to evaluate 3GPP based voice and SMS
 - Need to understand requirements work for Mission Critical based voice
 - May be able to demonstrate application based PTT solution using QoS

LTE Release 8 Security

- Confidentiality
 - None (Null)
 - SNOW 3G
 - 128 bit AES
- Integrity
 - SNOW 3G
 - 128 bit AES
- Authentication
 - Authentication parameters are specific to the serving network
- User plane confidentiality via IPSEC
- Reference 3GPP TS 33.401

Security

- Authorization
 - Who has access to what when? What kind of granularity will you need when assigning resources to a user?
- Authentication
 - User? Device? Both? What current kinds of authentication are used in your agency?
- Encryption
 - What level? Multiple levels? What do you use today?
- Other important components?

Review of Purpose

- Ensure the basic set of applications and services is complete
- Review current status of voice for LTE
- Discuss requirements for specific applications such as voice
- Review security concerns/needs