



HARRIS

**Assured Communications™
Anytime. Anywhere.**

- Public Safety Voice Interoperability
- Public Safety Broadband Network
- Future Vision

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Today

- Voice - LMR
 - Mostly Analog
 - Conventional below 512 MHz
 - Trunking at 800 MHz
 - Digital Proprietary Trunking
 - *P25 emerging as dominant standard*
 - Interoperability primarily via mutual aid and shared systems
- Data
 - Demand for applications is exploding
 - *Use of public carrier networks is increasing; use of private data systems is decreasing*
 - Demand for capacity, coverage & reliability is not being met

Future

- Voice
 - P25 will dominate new deployments for several years
 - Increased interoperability through standards, multi-mode networks & multi-band/multi-mode radios
 - *700 MHz Broadband VoIP will emerge as a significant market influence*
 - *Agencies will face difficult narrowband vs. broadband decision*
- Data
 - *A 700 MHz broadband public safety network will emerge*
 - Large metropolitan areas will be covered first
 - A cost effective “4G” solution will be key to nation-wide deployment

Key Spectrum Policies Affecting Public Safety Agencies Today



Spectrum Utilization

2004 – 2014: *Federal-banding (NTIA)* at VHF and UHF to double capacity in Federal Bands

2006 – 2010: *Re-banding* at 800 MHz to address interference from Cellular Systems

2004 – 2013: *Narrow-banding (FCC)* below 512 MHz for spectrum efficiency

2007 – 2016: *Narrow-banding (FCC)* at 700 MHz for spectrum efficiency and accommodate Broadband

2008 – 2018: *Broad-banding* at 4.9 GHz today and 700 MHz in the future

Currently Allocated for Public Safety

Currently Allocated for Public Safety Broadband

Future Allocation for Public Safety

Non-public Safety

VHF Low
(30-50 MHz)

VHF High
(136-174 MHz)

UHF Bands
(380-520 MHz)

700/800 Bands
(762-870 MHz)

Broadband
(4940-4990 MHz)

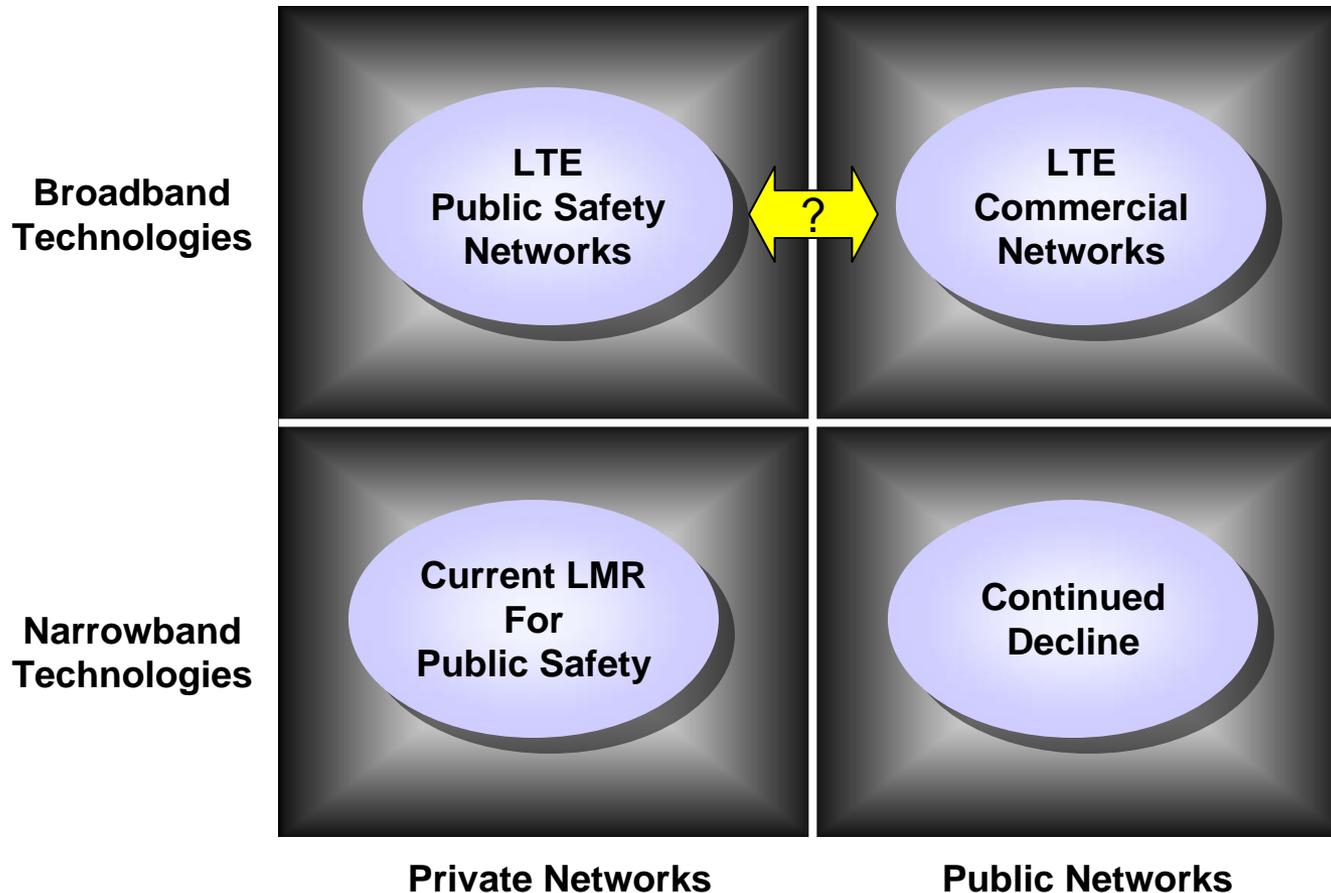
HF

VHF

UHF

Nextel
Re-banding

SHF



Key Questions for the Public Safety Market

Private or Public ownership?

A single national network or multiple regional networks?

When will voice/data convergence occur?

Who will pay for 4G technology?

Public Safety

- Combine D and PS Blocks
- Allow regional build-out
- Allow regional optimization
- Leverage existing RPC's
- Maintain technology neutrality policy
- Require a nation-wide interoperability mode of operation

Rural Broadband

- Allow D+PS spectrum access in underserved areas of the country
- Retain consensus features of D+PS public/private partnership (e.g. public safety priority access)

Utilities

- Facilitate wireless component of the Smart Grid
- Allow D+PS spectrum access
- Collaborate with NTIA for access to 1.8 GHz spectrum



Leverage Common Denominators

Leveraging Common Denominators



Applications
& Users

Core
Network

Wireless
Access



- We support granting of waiver requests with the following conditions:
 - Such systems do not interfere with neighboring narrowband public safety systems
 - The grantee of a waiver has the full responsibility for remedy
 - Such systems are granted Secondary Status
 - Grant Primary Status if and when a system constructed under a waiver complies with the final rule-making for this spectrum

- Protect 700 MHz narrowband from harmful interference
- Aggregate D and Public Safety blocks
- Permit regional licensing of this valuable spectrum
- Maintain technology neutral precedent so as to enable regional optimization
- Require an interoperable mode of operation
- Allow non Public Safety use on the D+PS network on a non-interfering basis for other mission-critical applications and for the rural broadband
- Allow deployment of pilot systems through waiver process and designate such usage as *Secondary*, pending final rule-making
 - Designate *Primary Status* only for systems compliant to the final rule-making

- The National Broadband Plan (NBP) should seek to leverage common denominators between Public Safety, The Rural Broadband Initiative and Utilities
- A key ingredient of the NBP is final rule-making for the D+Public Safety spectrum
- Allow early deployments of 700 MHz public systems under waivers subject to pre-conditions stated previously