Future ready: How can agencies invest wisely in public safety communications with so much change on the horizon?

With constant change in today's communication technologies, how do agencies maximize the value of investments in public safety communications? This presentation will focus on the three pillars of tomorrow's communications solution: LMR, commercial cellular and public safety LTE.

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RF Communications
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Why Not Just LMR for Public Safety?

Expanding Group Communications

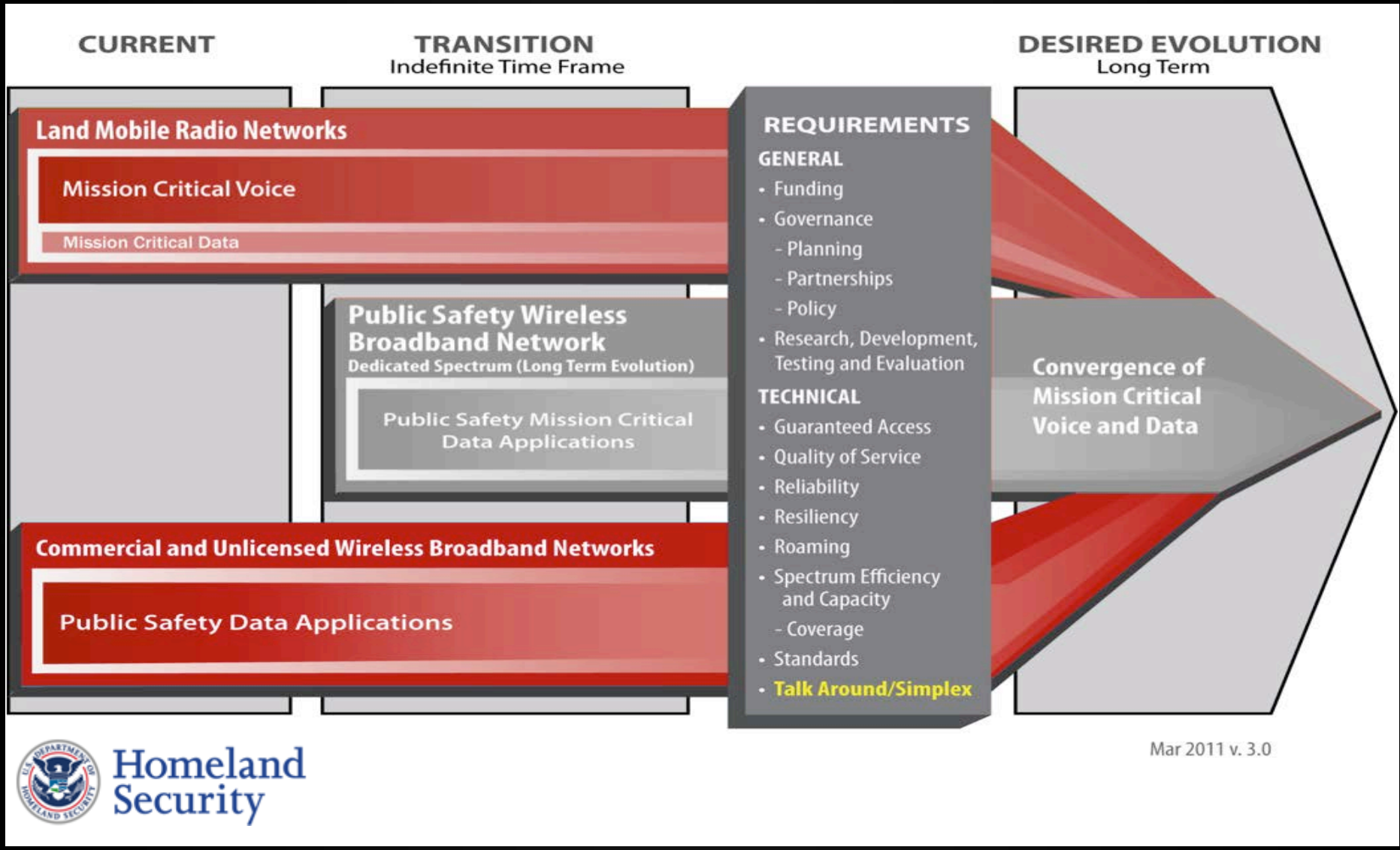
- Was: Voice + Automatic Vehicle Location
- Becoming: Voice + Video + Contextual Data + Situational Awareness

What's New

- Integrated Voice Services across:
  - Narrowband, Commercial Cellular, and Public Safety Broadband
  - Single talkgroup, common services, multiple modes
- Group Video Communications
  - Streaming real-time video services to collections of users
    - Talkgroup -> Video-group
- Portable Based Situational Awareness
  - Moving from the Dispatch Center -> Vehicle -> Handheld

Public Safety Communications Evolution

HARRIS

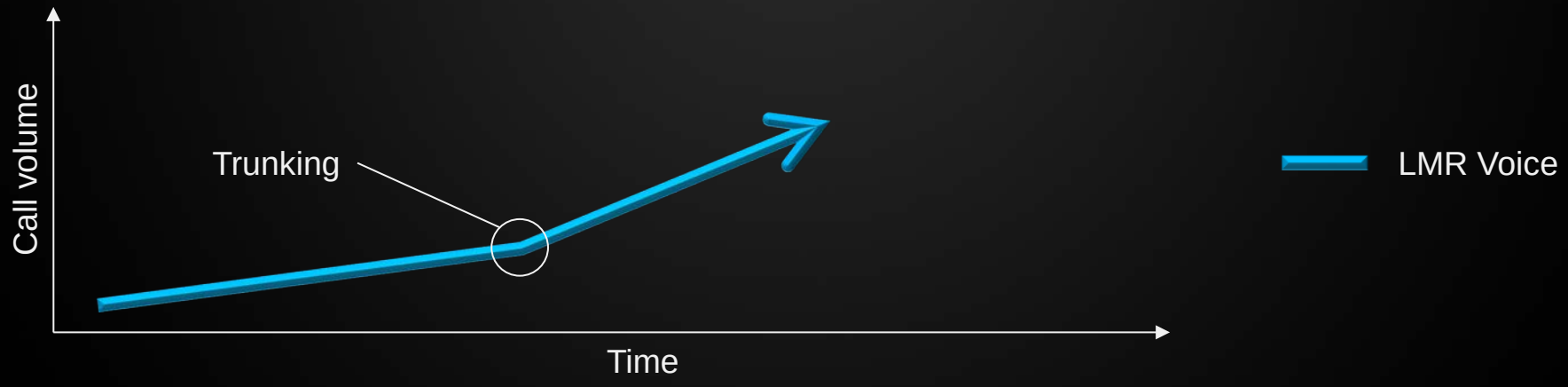


Homeland Security

Where is Public Safety today?

In most cases, public safety today has:

- Operational reliance on mission-critical LMR voice services



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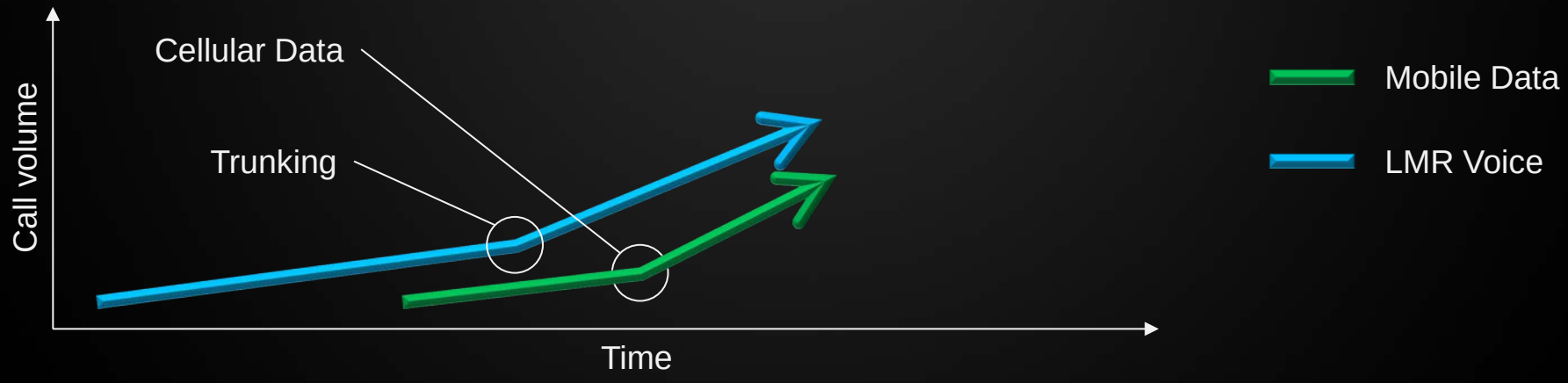
In most cases, public safety today has:

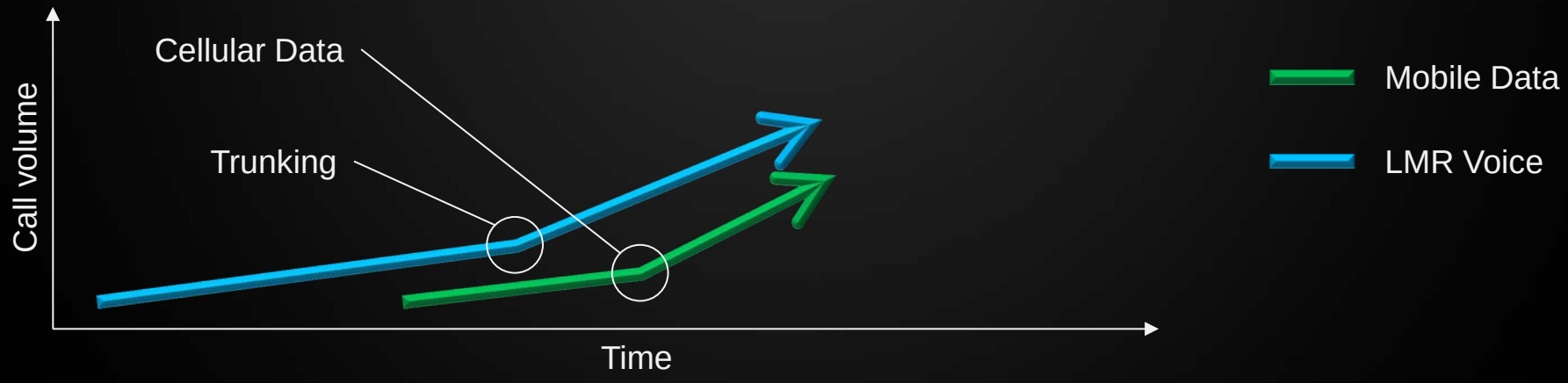
- Operational reliance on mission-critical LMR voice services
- Augmented with:
  - Mobile data, moving from private to commercial cellular data services



Where is Public Safety today?

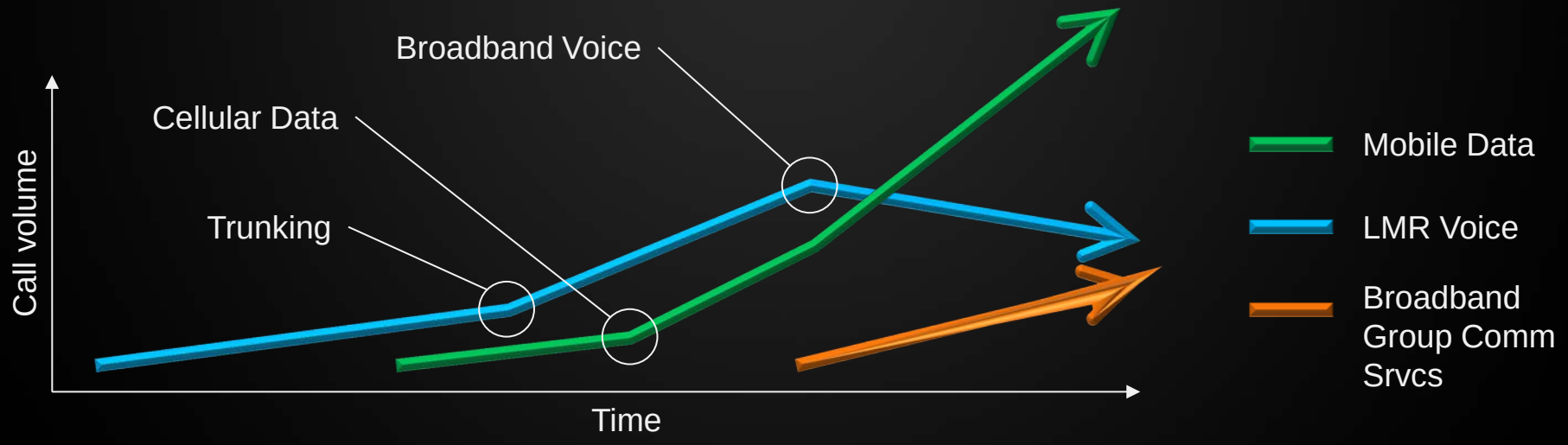
In most cases, public safety today has:

- Operational reliance on mission-critical LMR voice services
- Augmented with:
  - Mobile data, moving from private to commercial cellular data services
  - Back channel cellular telephony and text messaging



The Forecast for Tomorrow?

- LMR Voice will continue to be relevant for Mission Critical Communications
- Increasing reliance on data for routine communications
  - Mobile CAD -> NG 9-1-1
- Widespread deployment of broadband-based Group Communication Services will reduce LMR traffic



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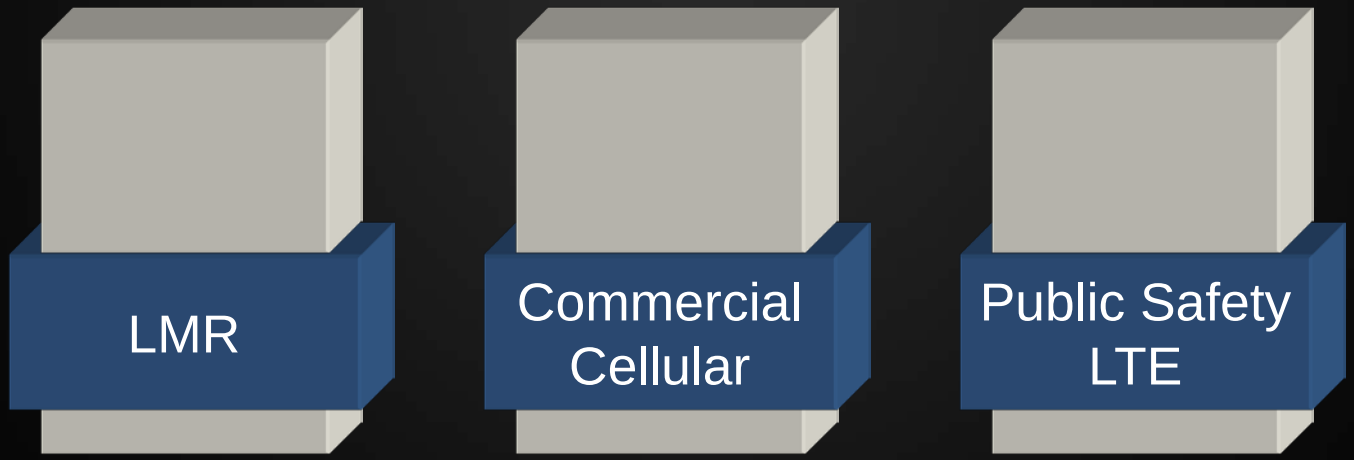
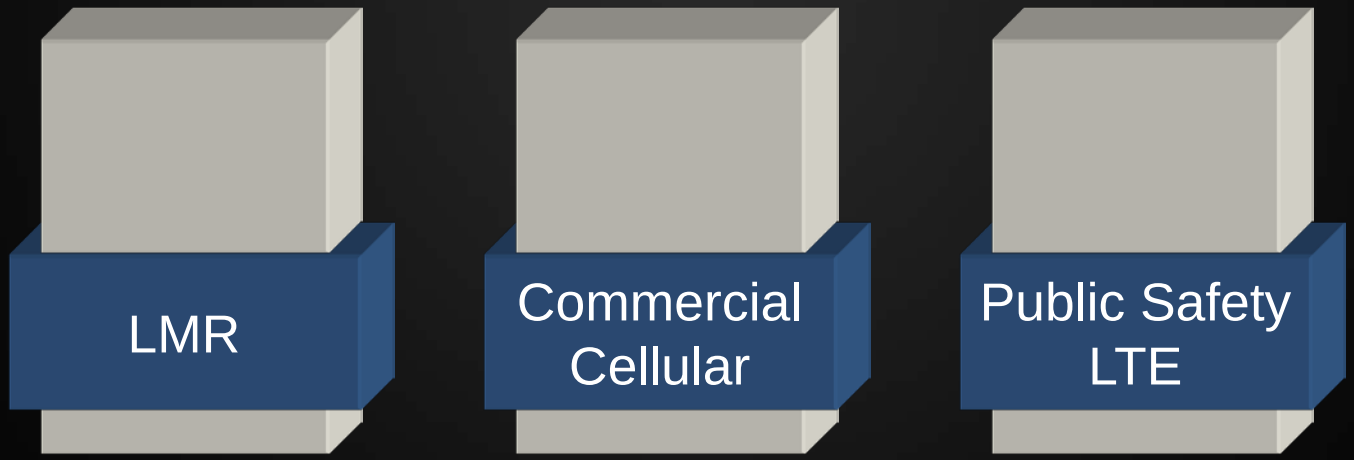


Public Safety communications will rely on all three pillars

Why Not a Single Solution?

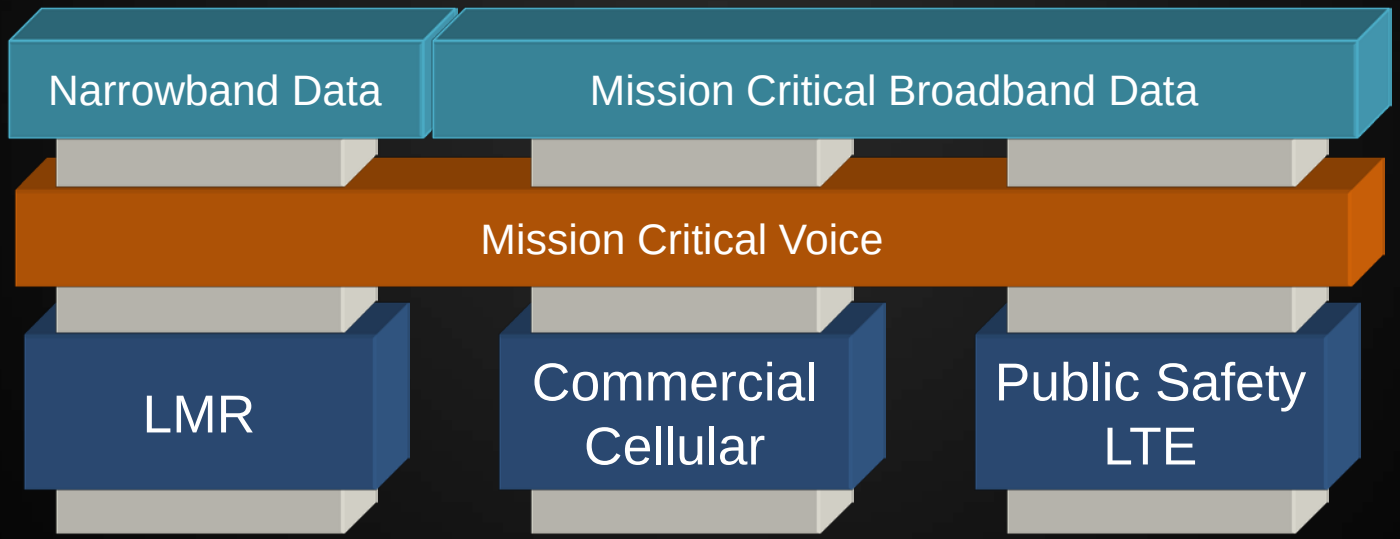
- LMR provides nearly ubiquitous coverage across the US
- Commercial Cellular cost effectively covers nearly the entire population of the US
- Public Safety LTE will provide capacity, priority and access controls for emergency responses



Public Safety communications will rely on all three pillars

Bridging All Three Solutions

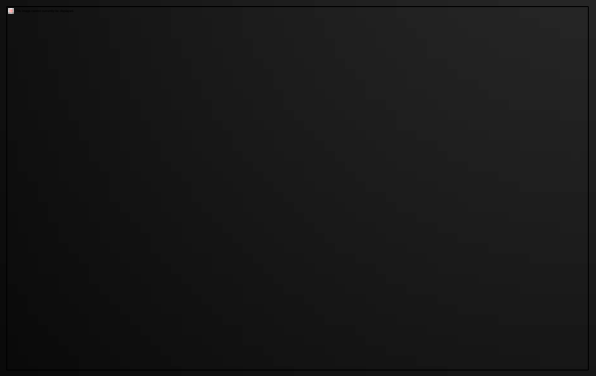
- Group Communication Services:
  - PTT Voice
  - Group Text Messaging
  - Situational Awareness
  - One-to-Many Video
    - Broadcast Video, Push-to-Video, NG 9-1-1 video streaming



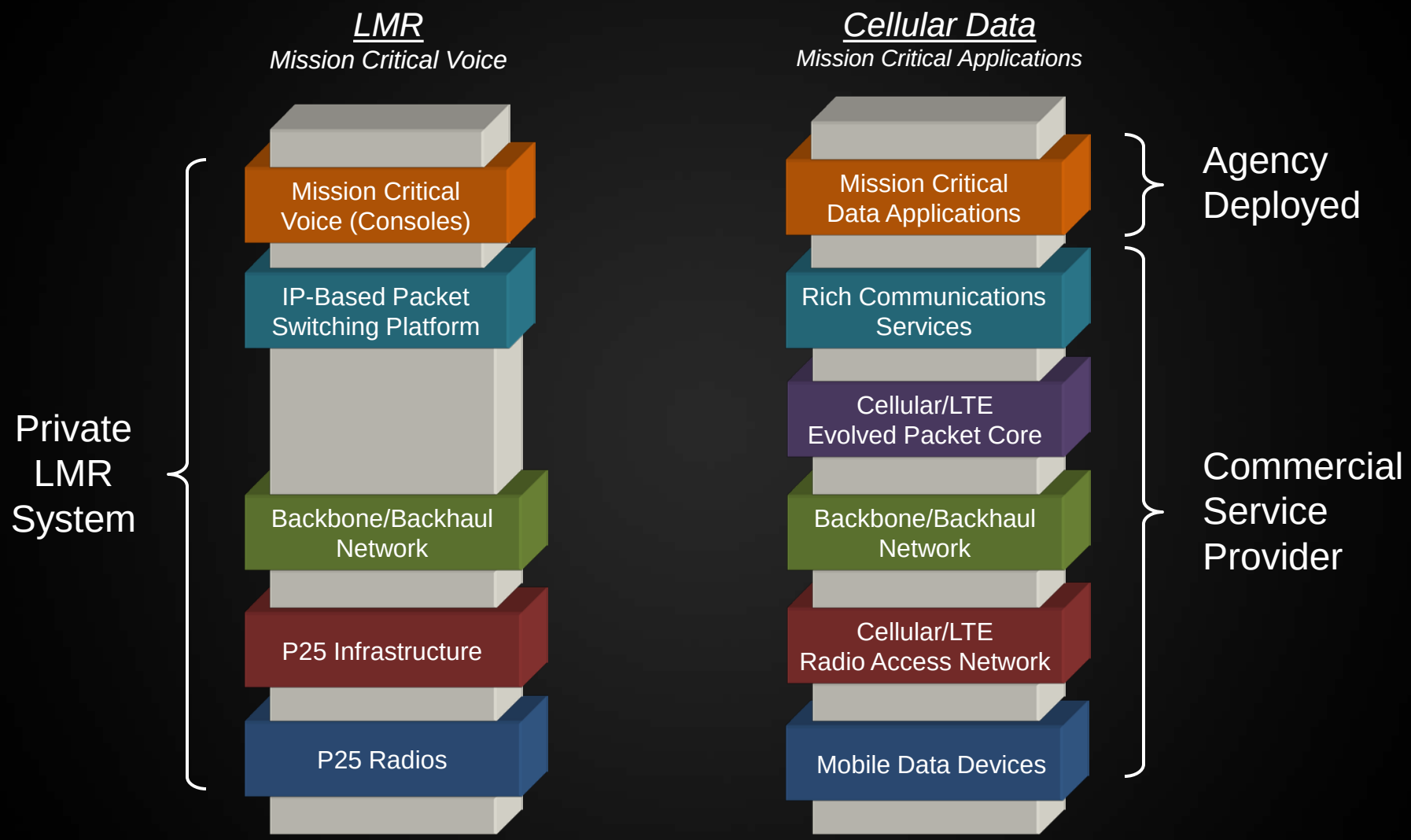
Group Communication Services allow Network Convergence

Future-proof Communications Investment

- Convergence will happen in three places:
  - Networks
  - Devices
  - Applications
- Converged Networks will support Group Communication Services
- Converged Devices will support multiple technologies
- Converged Applications will run on multiple platforms



Converging Public Safety Networks



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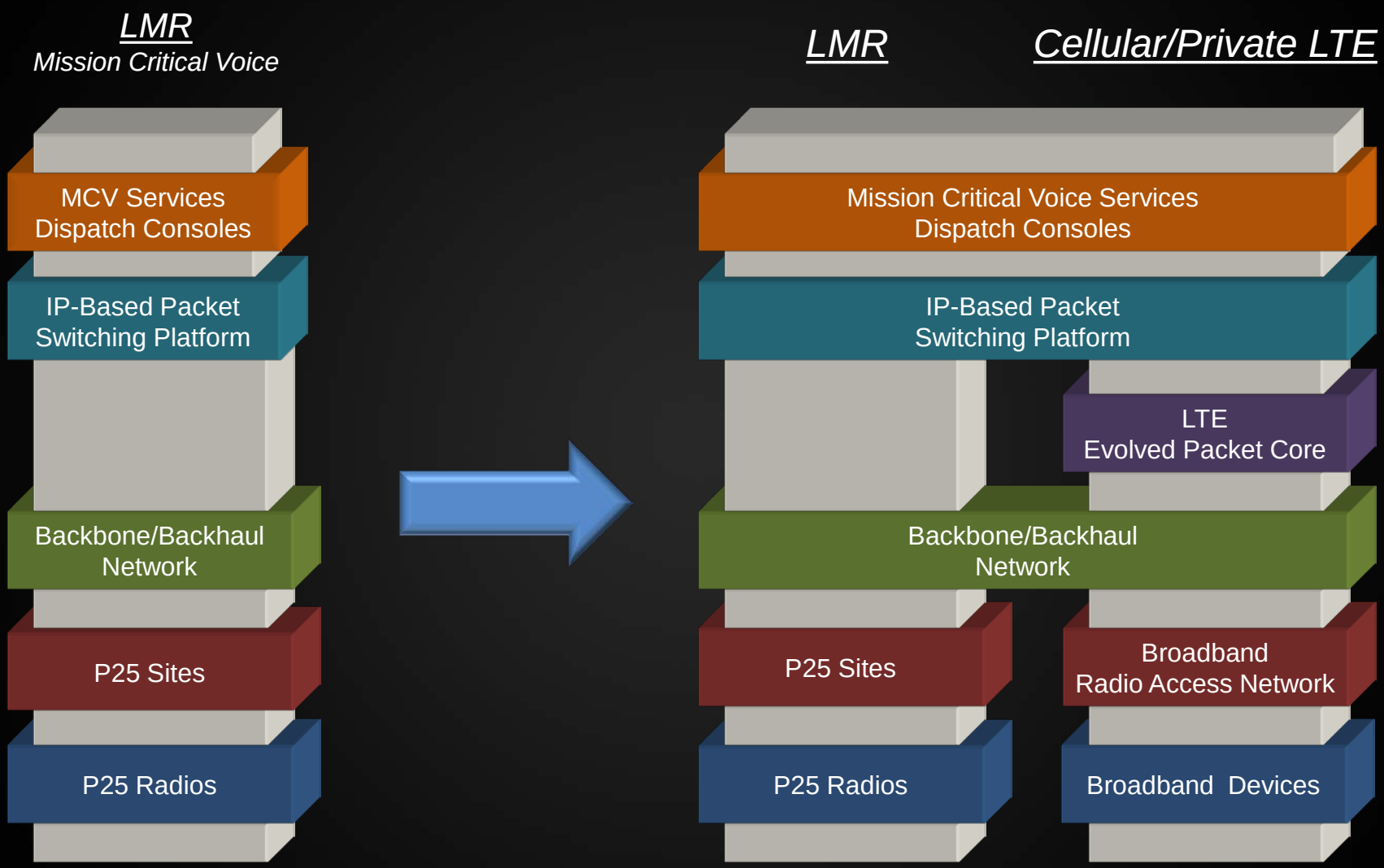
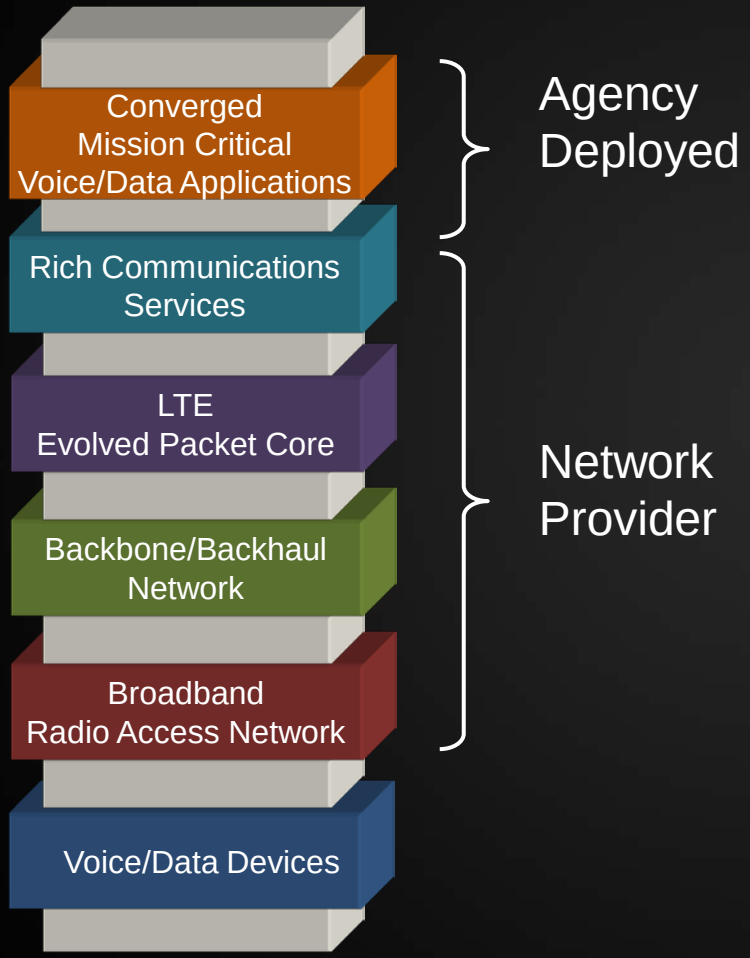


Public Safety Communications – Long Term

Converged Network

Mission Critical Voice & Data Applications



Market Drivers

- Convergence has a long-term economic benefit to Public Safety Agencies
- Convergence brings new capabilities to First Responders
- Convergence enhances interoperability

Converged Applications

- Group Communication Services:
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  - Group Text Messaging
  - Situational Awareness
  - One-to-Many Video
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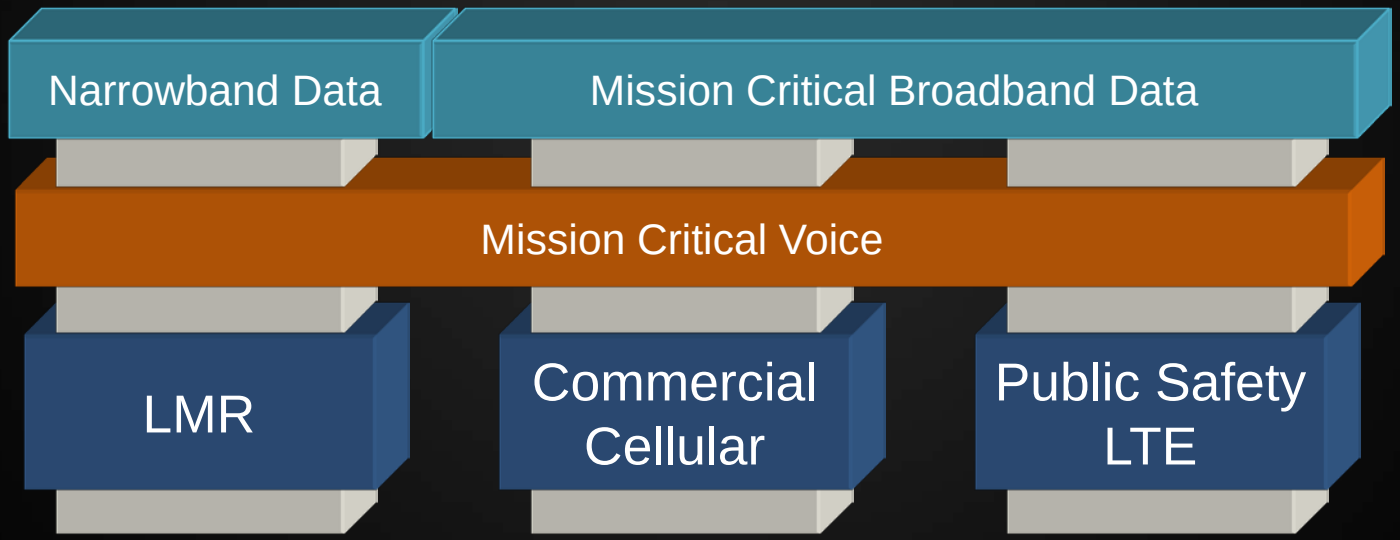


LMR vs. Broadband Voice Services

Today's LMR Voice Services	
Group Call	Individual Call
Emergency	Announcement Group Call
Instant Recall/Call Logging	Talk Group Scanning
Late Call Entry	P25 Confirmed Call
Priority/Preemption Support	Encryption
Console Patch/Simulselect	OTAR Key Management

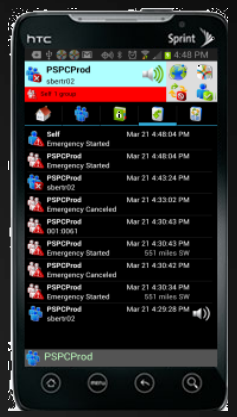
Other LMR Services
Direct Mode / Talk Around
Multi-Band Devices
Failsoft Sites

Today's LTE/Broadband Voice Services	
Group Call	Individual Call
Emergency	Announcement Group Call
Instant Recall/Call Logging	Talk Group Scanning
Late Call Entry	P25 Confirmed Call
Priority/Preemption Support	Encryption
Console Patch/Simulselect	OTAR Key Management

Other LTE/Broadband Services
Mapping / Situational Awareness
Group Messaging
Group Video

Broadband PTT Communications

- Enhanced push-to-talk capabilities
  - User Presence/Status
  - User Location
- Integrated LMR functionality
  - Group Call
  - Individual Call
  - Emergency
  - Encryption
  - Patch/Simulselect
- Public Safety LTE and 3G/4G cellular coverage
- Platform Independence



Converged Devices

- FirstNet-ready devices also support commercial cellular
  - Handhelds
  - Mobile Routers
  - Hardened LTE transceivers
- Supporting Android or PC-based applications
  - Group communications
    - Voice
    - Video
  - CAD/NG-911 data/dispatch clients
- These devices can provide:
  - Roaming between networks
  - Simultaneous operation on multiple networks

The Converged Future

- A single technology is unlikely to serve the diverse needs of all first responders
- Networks, devices, and applications must all support multiple technologies
  - Converged Networks will support Group Communication Services
  - Converged Devices will support multiple technologies
  - Converged Applications will run on multiple platforms