

# ***Communication Interoperability: A Daily Problem***

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## Description of the problem

- Public safety requires that emergency responders be able to communicate in real time with all event participants
- Today, U.S. agencies cannot easily share information when responding to
  - routine operations
  - large-scale events, such as acts of terrorism or natural disasters
- Incompatible legacy communications equipment used by more than 60,000 federal, state, local, and tribal agencies
- Cost of new equipment prevents total replacement
- Interoperability essential to achieving full communications

# Solutions in use today

- Quick solutions
  - side-by-side
  - swapping radios
  - sharing frequencies
- Some equipment necessary
  - radio cache
  - bridges and gateways
- Expensive equipment solutions
  - specially equipped vehicles
  - regional replacement of radios
  - Project 25 (P25)
- Voice and data solutions
  - Wi-Fi
  - 4.9 GHz

## Side-by-side

Responders standing next to each other relaying messages between multiple agencies

- ✓ Works for small incidents with few participants
- Ties up responders that were sent to help
- As more agencies arrive, this quickly gets unwieldy



## Swapping radios

Agencies give each other radios compatible with their own

- ✓ Works for small incidents with few participants
- Multiple radios at Incident Command Post becomes confusing
- May require responders assigned to radios again
- Only addresses agencies equipped in advance

## Sharing frequencies

Agencies agree to use common frequency(ies) at incidents

- ✓ Works for small incidents with few participants
- Many responders needing to communicate causes congestion on one frequency
- Only addresses agencies that have agreed and have been equipped in advance

# Some equipment necessary

## Radio cache

Region keeps a cache of radios saved for significant events



- ✓ Some number of responders at the scene can talk to each other
- Does not help day-to-day
- Handing out unfamiliar radios to responders at incident scene
- Cache has to be inventoried and maintained

## Bridges and gateways

Devices connect two or more frequencies

- ✓ Some number of agencies at the scene can talk to each other
- Special training/knowledge required
- Requires preplanning and coordination
- Correct equipment must be on hand/on scene

# Expensive equipment solutions

## Specially equipped vehicles

Multiple radios with gateways mounted in special purpose vehicles

- ✓ When it works, it works well
- Expensive equipment, vehicle, personnel
- May be hours away; if available at all
- Only deployed for significant incidents
- Take time to set up; difficult to maintain

## Regional replacement of radios

Purchase new radios for responders in a region

- ✓ All responders with compatible radios can talk to each other
- Only works within the region
- Expensive infrastructure and equipment



## Project 25 (P25)

Deploying new P25 radios to all responders in a region

- ✓ All responders with new, P25 radios can talk to each other
- Only works within the region
- Expensive infrastructure and equipment
- Currently P25 radios are not all compatible



## Wi-Fi

New devices designed to operate in the 2.4 GHz spectrum

- ✓ All responders with new, compatible devices can talk to each other
- Only works within the region
- Expensive infrastructure

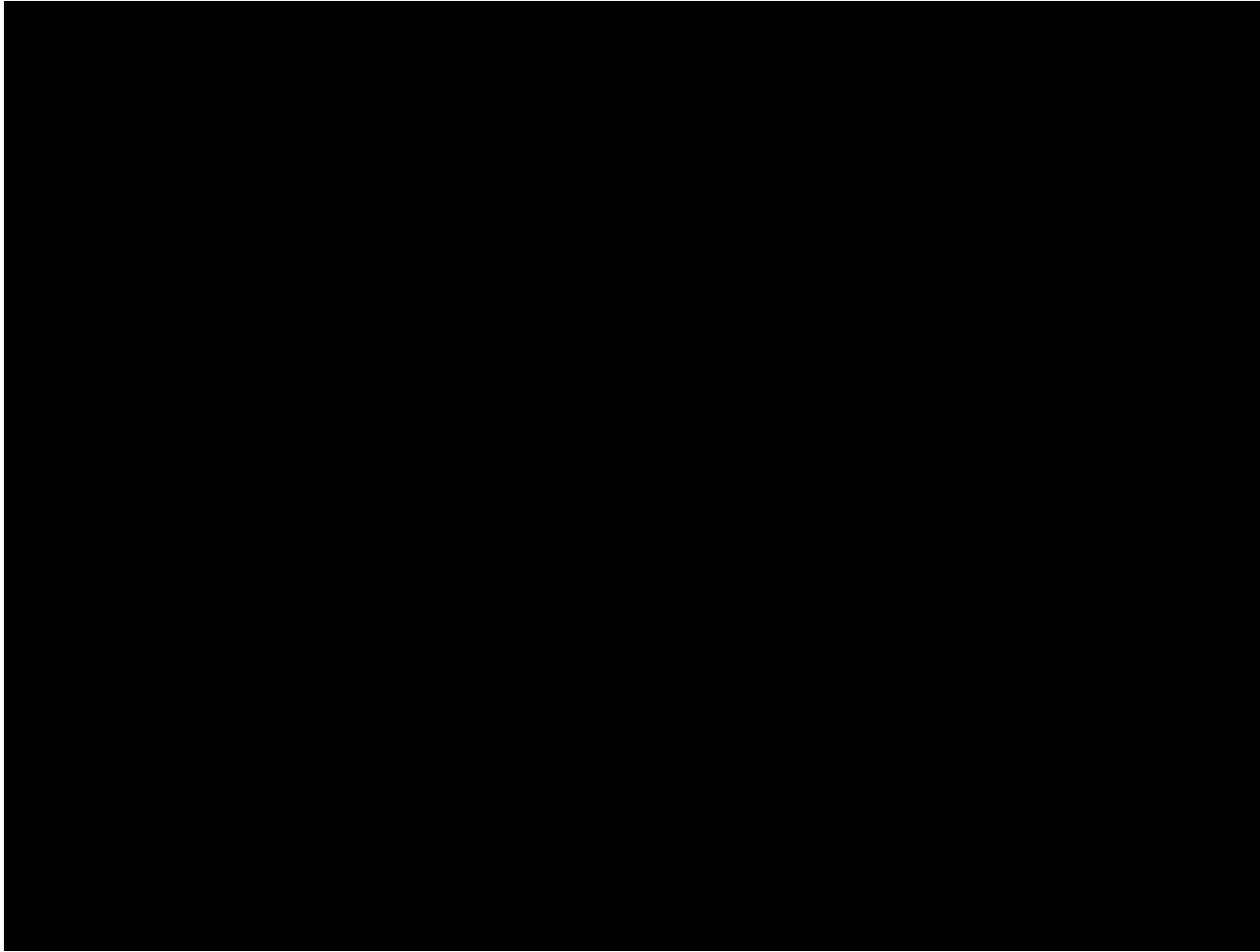
## 4.9 GHz

New devices designed to operate in the 4.9GHz spectrum

- ✓ All responders with new, compatible devices able to talk
- ✓ 4.9 GHz range is reserved for public safety
- Only works within the region
- Expensive infrastructure and equipment

# Does this matter to First Responders?

First responders need to communicate with each other



Lack of communications is unsafe

# DHS is trying to help as well

## SAFECOM Program

- Established the Statement of Requirements (SoR) for public safety communications interoperability
- Interoperability Continuum

## National Baseline Survey

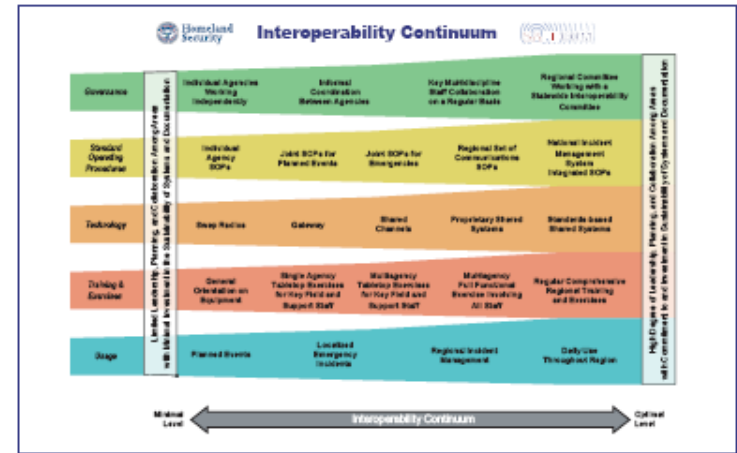
- Defines current situation

## Grant Programs

- New focused on interoperability

## Looking toward the future

- Unified Incident Command and Decision Support (UICDS)
- First Net
- Emphasis on video and voice



# Advanced solution compliant with SAFECOM SoR - First InterComm™ Solution

BAE SYSTEMS

- First Responders use existing, familiar radios
- Useful every day
- Scales to incident size
- No infrastructure required
- Allows responders to follow standard operating procedures
- Connects civil and military radios
- Digital solution compatible with latest (P-25) radios





**We Protect Those Who Protect Us®**

**BAE SYSTEMS**