PSEC PROJECT OVERVIEW

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Project Background
What is PSEC?

- PSEC is the Public Safety Enterprise Communication Project and was created to develop a new radio system.

- It is a partnership between:
  - Riverside County Sheriff
  - Riverside County Fire (CAL FIRE)
  - Riverside County Information Technology (RCIT)
  - Riverside County Facilities Management
  - Motorola
Why do we need a new radio system?

- Outgrown current system due to increased users because of population growth
- Officer safety issues
- Voice and data share infrastructure
- Radio coverage gaps
- Increased radio usage
  - Voice
  - Data
Evaluation Team

- Integrity was maintained throughout the process
- Nine evaluators were assigned to the PSEC team
  - Riverside County Sheriff’s Department
  - Riverside County Fire Department
  - Riverside County Information Technology
- Relied on subject matter experts to validate details.
Project Specification
PSEC Project Deliverables

- Build a County-wide radio system
  - Restructure talkgroup plan
  - Continuous radio operation training
  - Radio policies and procedures
    - Operation
    - Functionality
    - Interoperability
Requirements

- Improve coverage
  - Increase voice and data capacity by separating into two systems
  - 95% area reliability outdoor portable on hip
    - 3.4 Delivered Audio Quality (DAQ 5.0 is max)
  - 95% geographic area coverage (currently it is approximately 60%)
  - Ensure radio coverage in-building penetration
  - Coverage for high priority buildings
Console Features

- MCC7500 IP Dispatch Consoles
- Graphical User Interface (GUI)
  - Functionality
- Patching
  - Talkgroup Merge
- GPS
- Emergency Activations
- Specialized Radio Keyboard (SRK)
Acceptance Testing

- 48,000 grids
- Six month effort
- 10 teams, or more
- 60 day reliability test
Training

- Training Needs Assessment
- Radio Basics
- Train Subject Matter Experts
- Interactive Training Tool Kit
  - Current
  - Consistent
  - Customizable
  - Ongoing
System Design
System Design

- Expands current voice and data capacity
- Fully trunked P25 Digital Encrypted 700/800MHz and VHF
  - Significant improvement for in-building coverage
  - Expanded geographic coverage
- 700/800 MHz and VHF radio frequency coverage
  - Seamless roaming
  - Aviation
- High Performance Data (HPD) of 34kbs to 96kbs
- Redundant Master Sites
System Design, continued

- Over the air programming (OTAP)
- Over the air rekeying (OTAR)
- 4.9 GHz wireless data network
  - Hot spots in all County Fire and Sheriff Stations
- Integrated GPS locator
Coverage

- Trunking Simulcast Technology at 700/800 MHz and VHF
- Meets 20 dB in-building and 10 dB in-building requirements (signal level)
- High priority buildings (Courthouses, stations, etc)
  - 48 Guaranteed Coverage
- 70 Physical, IP Voice Sites
  - 22 current sites
  - 48 new sites
- 27 High Performance Data (HPD) Sites (co-located with voice)
20 are existing sites and
- 17 require upgrades ranging from a new tower, new shelter, electrical grounding replacement, HVAC, backup generator maintenance, or other maintenance.

The site ownership is:
- 22 sites are on Federal Land
- 17 sites are County owned
- 21 sites are leases
- 10 sites are new purchases
Data Solution Overview

Sheriff CAD
Fire CAD
Other Servers
Middleware Server

Router/Switch

4.9 GHz Network
HPD Network
P25 Data
Public Network (Cellular)

Vehicle Network

4.9 Modem
HPD Modem
P25 Radio
Carrier Modem

- Middleware Client
- CAD Client
- Other Apps

Networks:
- Public Network (Cellular)
- PSEC Network
- 4.9 GHz Network
- HPD Network
- P25 Data

Modems:
- 4.9 GHz
- 800 MHz
- VHF
Interoperability
## Interoperability

<table>
<thead>
<tr>
<th>Level</th>
<th>Method</th>
<th>Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Standards-based Shared systems</td>
<td>Current Best Long-Term Solution (Project 25)</td>
</tr>
<tr>
<td>4</td>
<td>Proprietary Shared Systems</td>
<td>Full featured, wide area, Vendor specific</td>
</tr>
<tr>
<td>3</td>
<td>Mutual Aid Or Shared Channels</td>
<td>Short-Term System Modification&lt;br&gt;Technically Simple&lt;br&gt;Short-term Solutions</td>
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<tr>
<td>2</td>
<td>Gateway (Console patch)</td>
<td>Operationally Inefficient&lt;br&gt;Time consuming</td>
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<tr>
<td>1</td>
<td>Swap Radios</td>
<td></td>
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Interoperability Con’t
Level 5- Standards-based radio system. San Bernardino, Orange, San Diego/Imperial, and Los Angeles radio systems will eventually be connected via a switch. La Paz and Yuma (Arizona) counties will also be connected.

Allowing end users to roam on other agencies’ systems seamlessly

Future connectivity will require engineering and agreements
Future Interoperability

- Submitted grant application for a microwave link between San Diego County and Riverside County, and enhancements to microwave link with San Bernardino County.

- On-going meetings with Orange County, Los Angeles County, local agencies, state agencies, and federal agencies.
Officer Safety

- Addresses officer safety issues
  - Reliability
  - Ease of use
  - Increased coverage
  - Interoperability
  - Continuous Training
  - 4.9 GHz network
    - Opens the door for future applications such as video surveillance
Thank You