



# Cochise – Sierra Vista

Technology Path

# Technology Overview

## **Cochise**

- VHF Analog
  - Simulcast
  - Tait
- Microwave
  - Analog & Digital
  - CM6
- Dispatch
  - Gold Elite – 4 position
- Subscribers
  - Tait

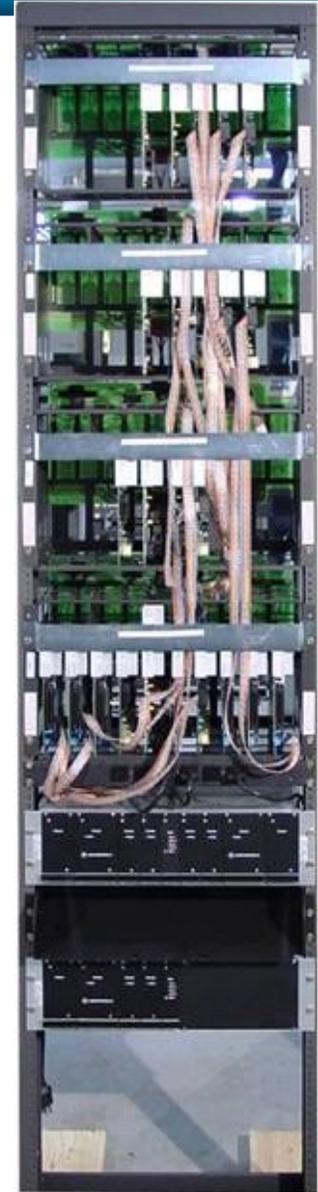
## **Sierra Vista**

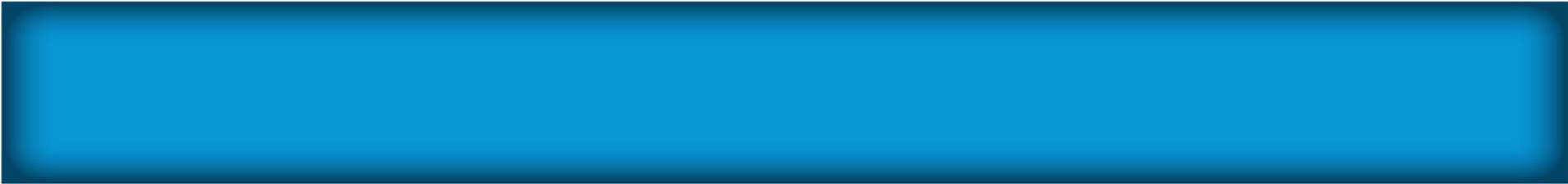
- VHF Analog
  - Single Site Transmitter
  - Quantars (1995)
  - Voted Receivers
  - Analog
- Microwave
  - Digital
  - PTP49600
- Dispatch
  - Gold Elite – 4 position
- Subscribers
  - Motorola CDM1550
  - Motorola HT1550XLS

# Technology Overview

## CentraCom Gold Elite

- CentraCom Gold Elite
  - 1999
- Longest lifecycle of any dispatch console in the industry
- Circuit based
- Discrete components that are getting difficult to source
- Product End of Life Cycle
- No New Systems
- No Expansions or Upgrades





# Where To Go?

Dispatch Consoles are the oldest link

# MCC7500 IP Console

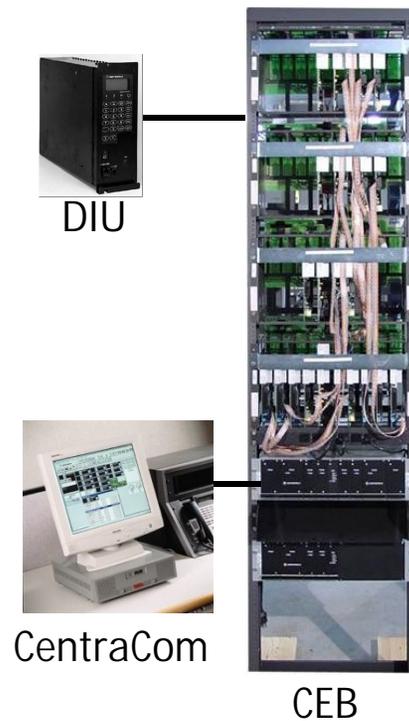
- **Mission Critical High-Tier IP Dispatch Console**
- **Seamlessly Integrated into ASTRO 25 Radio System**
- **Supports P25 Conventional and Trunking Standards**



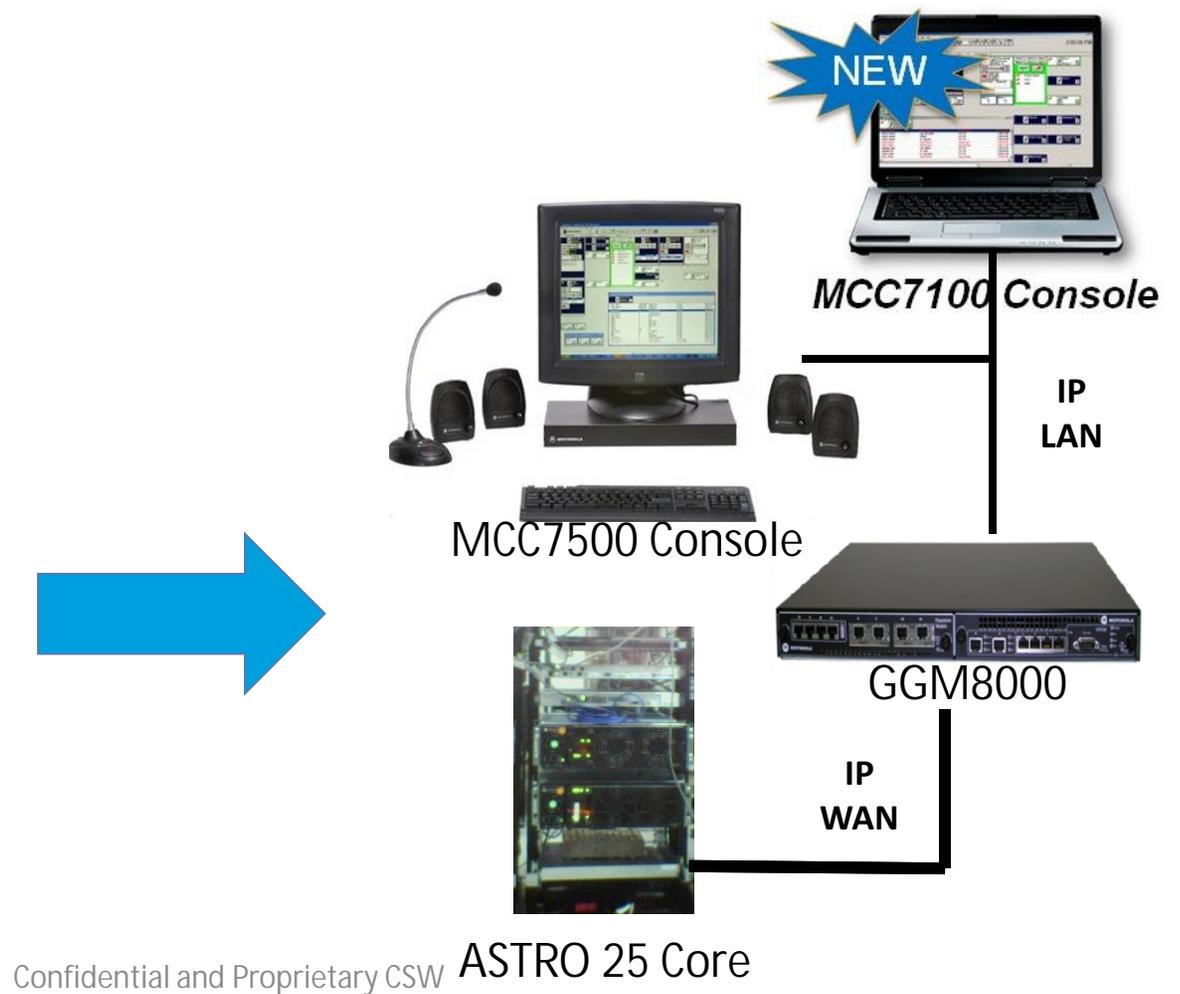
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# MCC7500 IP Console

Circuit Based



Network (Packet) Based

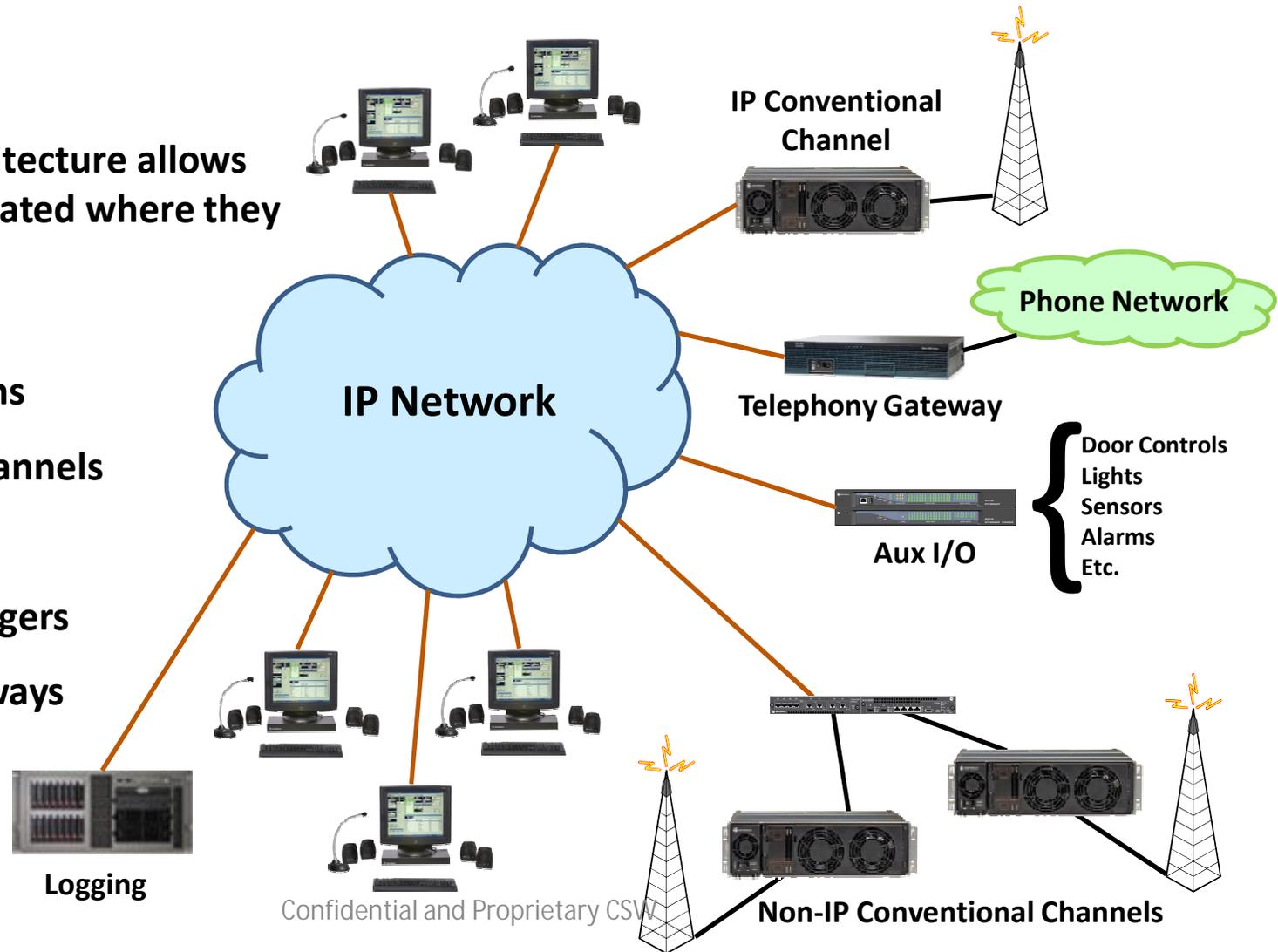


# MCC7500 IP Console

## FLEXIBLE ARCHITECTURE

Distributed IP Architecture allows Resources to be located where they are needed

- Dispatch Positions
- Conventional Channels
- Replay Stations
- Local Alias Managers
- Telephony Gateways
- Recorders
- Aux I/Os



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# **CORE BASED SYSTEM**

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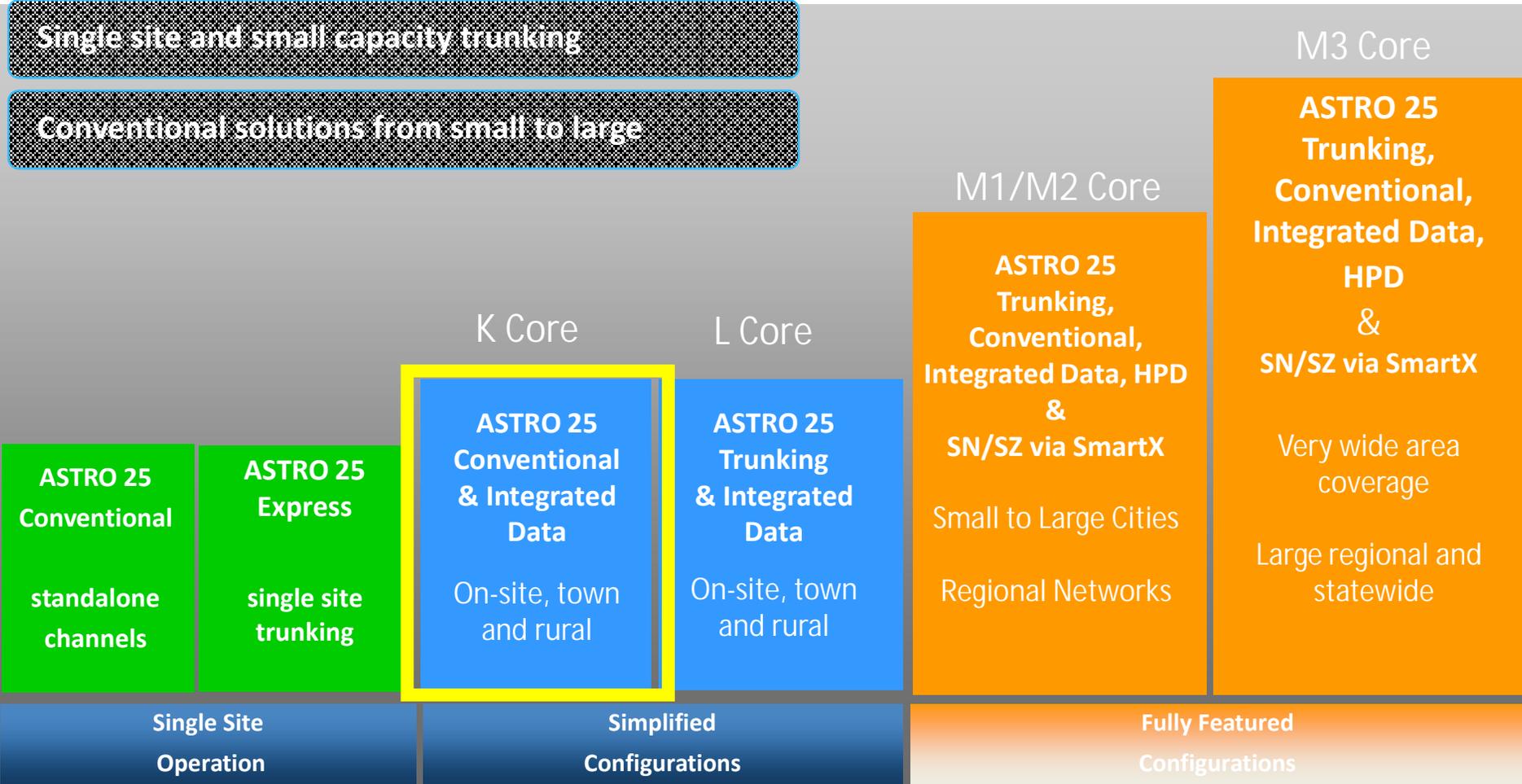
# Core Based System

## ASTRO 25 K Core Overview

- Available Configurations: Rack or Cabinet
  - K2 Configuration for High Availability (Redundant)
- Capacity
  - Conventional Voice or Integrated Data
  - Up to 50 Conventional Channels
  - Up to 75 IP Devices
- Dispatch Solutions
  - MCC7500



# Core Based System



# ASTRO 25 Network Manager Tools

Zone 1 - Unified Event Manager

File Custom Views Edit View Snmp-Node SnmpMonitor Actions Tools Window Help

MOTOROLA

Motorola Unified Event Manager

- Applications
  - Zone Maps
    - Physical
      - Physical Summary View
      - Physical Detail View
    - Service
  - Fault Management
    - Network Events
    - Alarms
  - Performance
  - Network Database
  - Administration Tools
    - Policies
    - Job Status View

Alarm Summary View

Network Database

Network Database Total 51 Displaying 1 to 25 Page Length 25

Severity	Type	Managed Resource	IPAddress	SubSystemName
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.25.202	10.101.25.0 - Repeater Sit
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.25.201	10.101.25.0 - Repeater Sit
✓ Clear	Network - RF Site	District 16 RF Site	10.101.25.0	
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.24.202	10.101.24.0 - Repeater Sit
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.24.201	10.101.24.0 - Repeater Sit
✓ Clear	Network - RF Site	District 16 RF Site	10.101.24.0	
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.23.202	10.101.23.0 - Repeater Sit
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.23.201	10.101.23.0 - Repeater Sit
✓ Clear	Network - RF Site	District 16 RF Site	10.101.23.0	
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.22.202	10.101.22.0 - Repeater Sit
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.22.201	10.101.22.0 - Repeater Sit
✓ Clear	Network - RF Site	District 16 RF Site	10.101.22.0	
✓ Clear	Motorola Site Controller - RS	District 16 Site Controller	10.101.21.202	10.101.21.0 - Repeater Sit
✓ Clear	Motorola Site Controller - RS	10.101.21.201	10.101.21.201	10.101.21.0 - Repeater Sit
✓ Clear	Network - RF Site	District 16 RF Site	10.101.21.0	
✓ Clear	Motorola Site Controller - RS	10.101.20.202	10.101.20.202	10.101.20.0 - Repeater Sit
✓ Clear	Motorola Site Controller - RS	RptrSite-Sch1	10.101.20.201	10.101.20.0 - Repeater Sit
✓ Clear	Network - RF Site	10.101.20.0	10.101.20.0	
✗ Critical	Motorola Dispatch Console - MCC75...	District 16 Dispatch Console	10.101.19.223	10.101.19.0 - Dispatch
✗ Critical	Network - RF Site	District 16 RF Site	10.101.19.0	
✓ Clear	Network - RF Site	10.101.11.0	10.101.11.0	
✓ Clear	Network - RF Site	10.101.1.0	10.101.1.0	
✓ Clear	Network - Master Site	10.1.253.0	10.1.253.0	
✓ Clear	Network - Master Site	10.1.251.0	10.1.251.0	
✓ Clear	GenericNode	10.1.250.1	10.1.250.1	10.1.250.1

Done. UEM Server Status : OK

# Subscriber Units



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# **RF INFRASTRUCTURE**

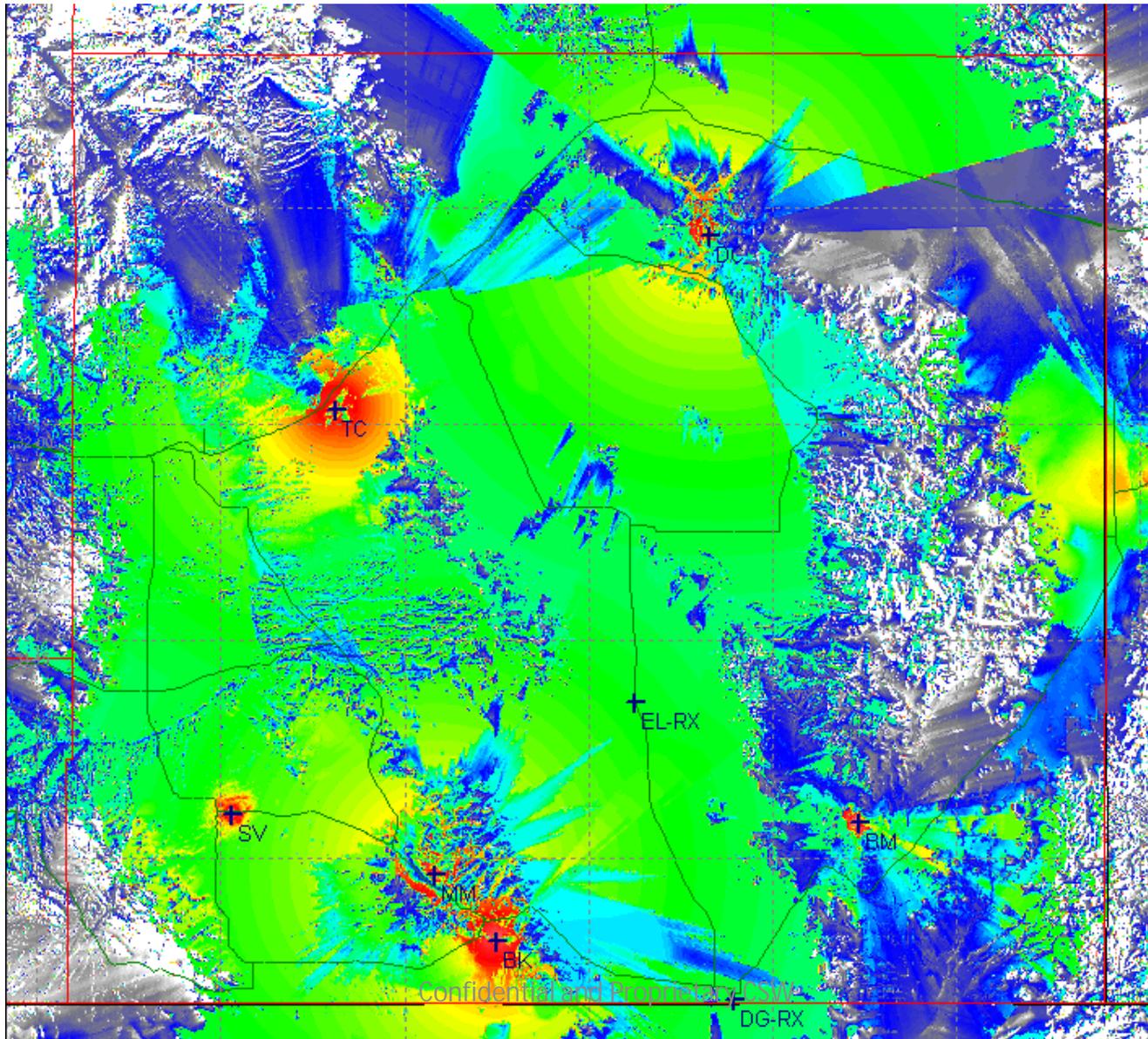
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# RF Infrastructure

- Coverage Maps
  - VHF
  - 700/800

# VHF Coverage Map

VHF







# **BUDGET**

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# Option One

## **Equipment Cost -**

Eight (8) MCC7500 dispatch console positions,

an ASTRO 25 Redundant K2-Core, Simulcast

System with six (6) transmit and receive sites

plus two (2) additional receive only sites.

See Detailed Equipment list Section 3

List Price: \$2,093,797.00

Your Price: \$1,662,965.00

# Option One

## **Motorola Services**

Includes the following:

- CCSi Factory Staging
- Installation & Programming
- Program Management
- ST System Configuration, Optimization and

cutover support

- Engineering Support
- R-56 site audit (post-install)
- System Documentation
- Warranty Wrap Services One (1)Year, 7x24

warranty, maintenance, support

Your Price: \$878,780.00

# Option One

## **System Total – Arizona State Dispatch Console Pricing**

Eq.List Price Plus Services:

\$2,972,577.00

Your Price;\$2,541,745.00

**System Discount and trade in- ASTRO 25 K  
Core and MCC 7500 IP Dispatch Consoles.**

- Valid through September 30, 2013
- Applies to new orders booked and received by September 30, 2013 and shipped by December 31, 2013
- Requires trade in of all existing repeaters.

**\$(124,752.00)**

**System Total – including system discount  
and equipment trade in promo plus  
estimated tax at 9.25%**

**\$2,570,818.00**

# Option Two

## **Equipment Cost -**

Eight (8) MCC7500 dispatch console positions, and an ASTRO 25 Redundant K2-Core, Simulcast System with six (6) transmit and receive sites (Dos Cabezas, Texas Canyon, Sierra Vista, Mule Mountain, Black Knob, and Bernadillo plus two (2) additional receive only site (Willcox, El Frida).

*Included Option: Add two (2) additional transmit and receive sites (Douglas and Kansas Settlement)*

See Detailed Equipment list Section 3

List Price: \$2,606,253.00

Your Price: \$2,048,231.00

# Option Two

## **Motorola Services**

Includes the following:

- CCSi Factory Staging
- Installation & Programming
- Program Management
- ST System Configuration, Optimization and  
cutover support
- Engineering Support
- R-56 site audit (post-install)
- System Documentation
- Warranty Wrap Services One (1) Year,  
7x24

warranty, maintenance, support

Your Price:\$1,030,921.00

# Option Two

## **System Total – Arizona State Dispatch**

### **Console Pricing**

Eq.List Price Plus Services:

\$3,636,174.00

Your Price:\$3,079,152.00

**System Discount and trade in- ASTRO 25 K  
Core and MCC 7500 IP Dispatch Consoles.**

- Runs through September 30, 2013
- Applies to new orders received and booked by September 30, 2013 and shipped by December 31, 2013
- Requires trade in of all existing repeaters.

**\$(231,749.00)**

**System Total – including system discount  
and trade in promo plus estimated tax at  
9.25%**

**\$3,036,864.00**

# Mobile and Portable Radios

Dual Band VHF/800MHz Radios

280 APX7000 Portable Radios

280 APX7500 Mobile Radios

Cost: \$4,195,676.00

# Total Cost Projection For VHF

- **\$7,232,540.00 VHF Backbone/Radios**
- **-\$1,000,000.00 County Contribution**
- **-\$ 250,000.00 City Contribution**
- **=**
- **\$5,982,540.00 Private Vendor Donation**

# Cochise/Sierra Vista Combine Communications Studies

**September 21, 2005 Initial Feasibility  
Study with Basic Design and Cost  
Analysis**

**January 19, 2006 Downsizing Study**

**May 23, 2007 Final Report**

# Why Do A Combined Communications Center?

- **Public Safety Answering Points**
  - **7 in the Cochise County**
  - **Money is drying up**
  - **State E911 Office like consolidation**
  - **The technology is here to consolidate**
- **Radio Systems**
  - **Digital P25 requirements**
    - **National Incident Management System**
    - **Digital is the future but expensive**
  - **Narrowbanding by Jan 1, 2013**
- **Working Towards Ideal Balance**
  - **Operational efficiency and effectiveness**
  - **Best use of limited funding**

# Consolidation

- It is more than brick and mortar
- It is a cultural and organizational change
- The focus always remains to serve and protect public
- During critical incidents we will achieve a higher level of command and control
- Intelligence sharing and case information
- Going to be harder to afford a dedicated public safety dispatch center at individual agency levels in the future

# Current Consolidation Efforts

- **Cochise County Sheriff Office**
  - **Spillman software services**
    - Tombstone Marshalls Office
    - Bisbee Police and Fire
    - Douglas Police and Fire
  - **Dispatching for Rural Fire Departments**
- **Sierra Vista Police Department**
  - **Spillman software services**
    - Fort Huachuca DOD Police
  - **Dispatch Services**
    - Fry Fire
    - Whetstone Fire
    - Sierra Vista Fire



# **QUESTIONS / ROUND TABLE**

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