NM DEPARTMENT OF INFORMATION TECHNOLOGY

P25 – Digital Trunked Radio System (DTRS)

Science, Technology and Telecommunication Committee

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Public Safety Radio Communications

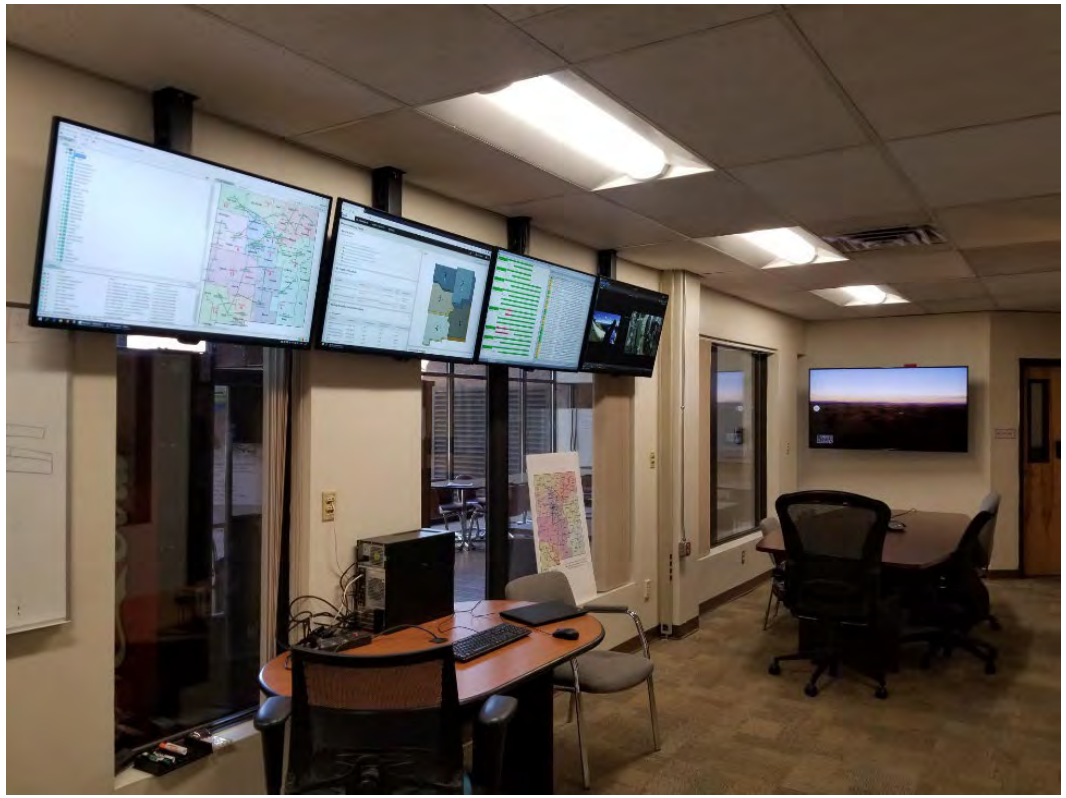
November 16, 2022

DoIT Public Safety Communications Overview

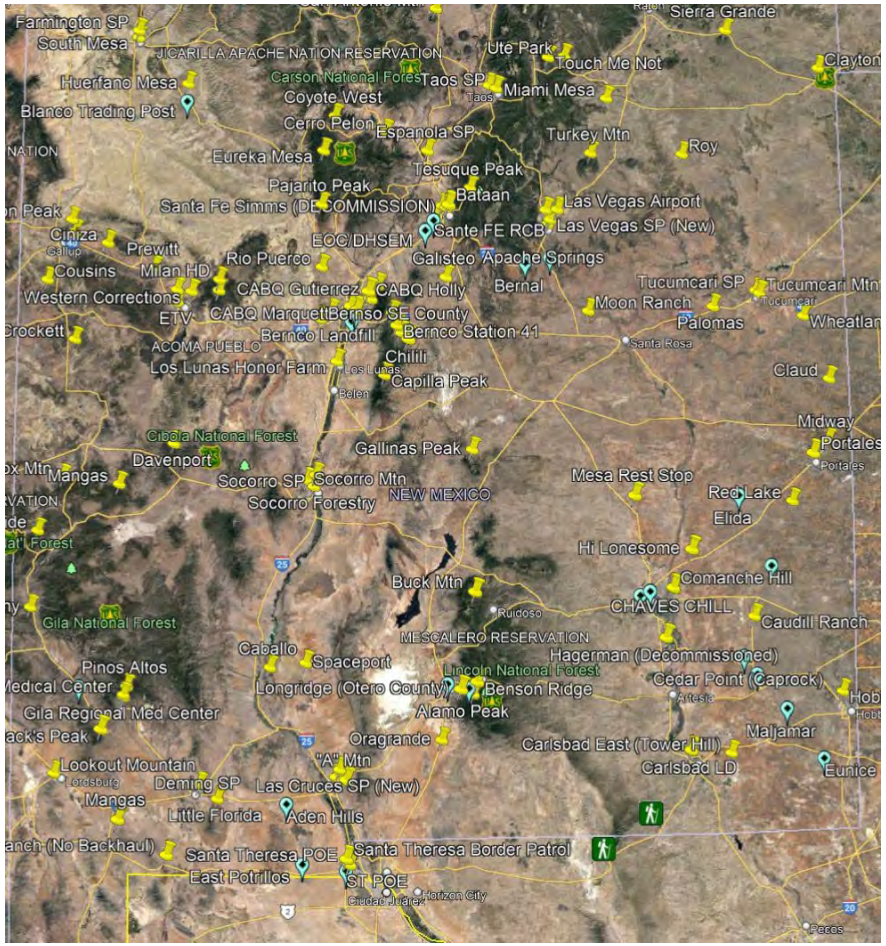
- Statewide Radio System and Microwave Network – Nearly 14,000 subscribers, 13 dispatch centers, 125 tower sites, over 1,200 devices
- Five service shops, four organizational groups, 40 employees, 100% self maintained
- Provides mission critical communications for all State agencies and local government, tribal and federal partners
- Partnerships with State and local agencies to provide service and promote interoperable communications
- Enterprise Services Revenue ~$14 million per year

Public Safety Network Operations Center

- Established 2017
- Santa Fe, three full time employees
- Proactive monitoring of all systems
- Reactive dispatch of maintenance team
- System management (radio, microwave, IP routing and DTRS systems)
- Data and trend analysis, subscriber support, advanced troubleshooting
- Network reliability increased from 78% in 2014 to 99.9% in FY21



Infrastructure Facilities



- DoIT maintains over 130 facilities throughout the state (up to 40 additional are planned)
- Includes locations and leases on private, federal, municipal, tribal and state land
- Extensive data networks provide reliable and redundant links between facilities utilizing microwave and fiber data transmission.
- Most sites have redundant connectivity with two or three egress points

Work Environment

Public Safety Communications Towers

P25/Digital Trunked Radio System Project

- DTRS supports critical mission for first responders in New Mexico by facilitating high quality, reliable and interoperable public safety radio communications to state, local, federal and tribal agencies
- The Department is following recommendations in the 2014 capabilities assessment and gap analysis report by Federal Engineering
- A state-wide system will promote interoperability and ultimately reduce duplication of services and systems costs

Why P25 is Needed

- DoIT Operates numerous disparate radio communications systems
- Limited inoperability - different system for different agencies
- Inadequate footprint coverage
- Insufficient capacity that could not be easily expanded
- Antiquated mode of operation
- Systems lack contemporary features
- Inadequate frequency spectrum (VHF) promotes interference
- System did not provide first responders with the tools they need

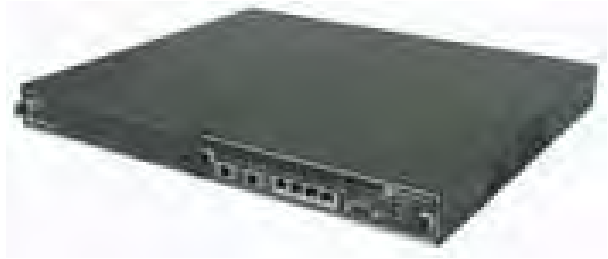
What is Project 25?

- Project 25 (P25) is the standard for the design and manufacture of interoperable digital two-way wireless communications products
- Developed in North America with state, local and federal representatives and Telecommunications Industry Association (TIA) governance
- Integrates with DoIT's existing primary and redundant system cores
- Vendor agnostic subscriber platform
- Required for federal grant eligibility

P25 DTRS General information

- Multiyear capital project initiated FY19; Planned project duration through FY27
- Estimated cost $170 Million, $65,164,254 funded to date – Capital appropriations
- System Type: APCO P25, Band 700/800 MHz, Modulation FDMA/TDMA
- CY2022 System Stats:
  - 145 Individual dispatch consoles connected
  - 820 Individual talk groups active
  - Average call volume 52,675 / day - 100.23 hours / day airtime
  - 2022 YTD call volume 11.624 million 2021; Total call volume 7.2 million (Average group call 6.2 Seconds)

Channelized to IP Migration



- P25 DTRS is entirely IP transport driven
- Promotes cost and space savings
- Ease of maintenance and operation
- Permits flexible and redundant transport and routing protocols

Current P25 DTRS Subscribers-Partners

Subscriber Agency (Full Subscriber)	Date Joined
New Mexico State Parks	Jun-22
TRD - Tax Fraud Investigations Division	Jun-22
City of Santa Fe	May-22
Dona Ana County Office of Emerg. Management	Apr-22
BNSF Railroad Police	Oct-21
Eddy County (In Deployment)*	Sep-21
New Mexico District Attorney's Office	Sep-21
New Mexico State Attorney General's Office	Sep-21
New Mexico Corrections Department	Jul-21
New Mexico Children Youth and Families Department	Jul-21
City of Rio Rancho (in deployment)*	Jul-21
Sandoval County (in deployment)*	Jul-21
Village of Los Lunas	May-21
Village of Tijeras Fire Dept.	May-21
United States Marshal Service	Nov-20
Bernalillo County	Sep-20
Bureau of Alcohol, Tobacco and Firearms	Jul-20
New Mexico State University	Jun-20
City of Albuquerque	Feb-20
Spaceport America	Jan-20
New Mexico State Police	Jan-18

Interoperability Partner (Limited Participant)	Date Joined
Dona Ana County Sheriff's Office	Aug-22
Public Service Co. of NM (PNM) EOC	Feb-22
UNMH Health (Dept. of Emergency Medicine)	Dec-21
Federal Buraru of Investigation	Jun-21
Federal Bureau of Land Management	Jun-21
Department of Homeland Security (ICE)	Apr-21
Hidalgo County	Apr-21
National Park Service	Mar-21
Albuquerque Ambulance	Feb-21
Cibola County	Aug-20

Two service subscription options:

- Limited Participant (Interop only)
- Full Subscriber (Daily use)

Project Phases

FY22 Phase - Nearing Completion	FY23 Phase – In Implementation	FY24 Phase – In Procurement	FY25 Phase – Planned	FY26 Phase – Planned	FY27 Phase - Planned
Key Stats : Received Appropriation: $ 8,000,000 41 Sites in SysteM 40% Mobile Coverage 32% State radios onboarded	**Key Stats** : Planned Appropriation Request: $ 26,167,148 73 Sites In System Approx. 60% Mobile Coverage 70% State radios onboarded	**Key Stats** : Planned Appropriation Request: $ 26,208,937 108 Sites In System Approx. 69% Mobile Coverage 100% State radios onboarded	**Key Stats** : Planned Appropriation Request: $ 26,208,937 144 Sites In System Approx. 76% Mobile Coverage 100% State radios onboarded	**Key Stats** : Planned Appropriation Request: $26,208,937 170 Sites In System Approx. 90% Mobile Coverage 100% State radios onboarded	**Key Stats** : Planned Appropriation Request: $26,208,937 196 Sites In System Approx. 92% Mobile Coverage 100% State radios onboarded
Coverage Added: - Completion of I-10 Corridor - Sandoval County - Los Lunas / Belen - HWY 285 Expansion - Border Region Start: Portions of Dona Ana, Grant, Hidalgo, Lincoln, Chaves, Roosevelt, De Baca, Socorro and Luna Counties - Eddy County	**Coverage Added**: - Completion US 70, I-40, I-25, US 380, US 70 - Enhancement US 62/180 - Alamogordo Area / US 54 - State Road 87 - Border region completion, Hidalgo County	**Coverage Added**: - HWY82 Cloudcroft to Artesia - Northeast & Southeast areas Completion	**Coverage Added**: - Northwest area / mountains - Mobile and Portable fill in - In-building coverage enhancements	**Coverage Added**: - Northwest Mountains Area & Coverage - In-building coverage enhancements	**Coverage Added**: - Northwest Mountains Area - In-building coverage enhancement
Milestones: - 23 DTRS tower sites added - NMCD, EMNRD, AG, DA, DOT onboarding continues	**Projected Milestones**: - 38 DTRS tower sites added for major road coverage - Addition of micro-sites at State Parks properties	**Projected Milestones**: - 35 DTRS tower sites added for minor road coverage - Onboarding of DOT	**Projected Milestones**: - 36 DTRS tower sites added for minor road and portable service coverage	**Projected Milestones**: - 26 DTRS tower sites added for portable coverage - Completion of project implementation.	**Projected Milestones**: - 26 DTRS tower sites added for portable coverage - Completion of project implementation.

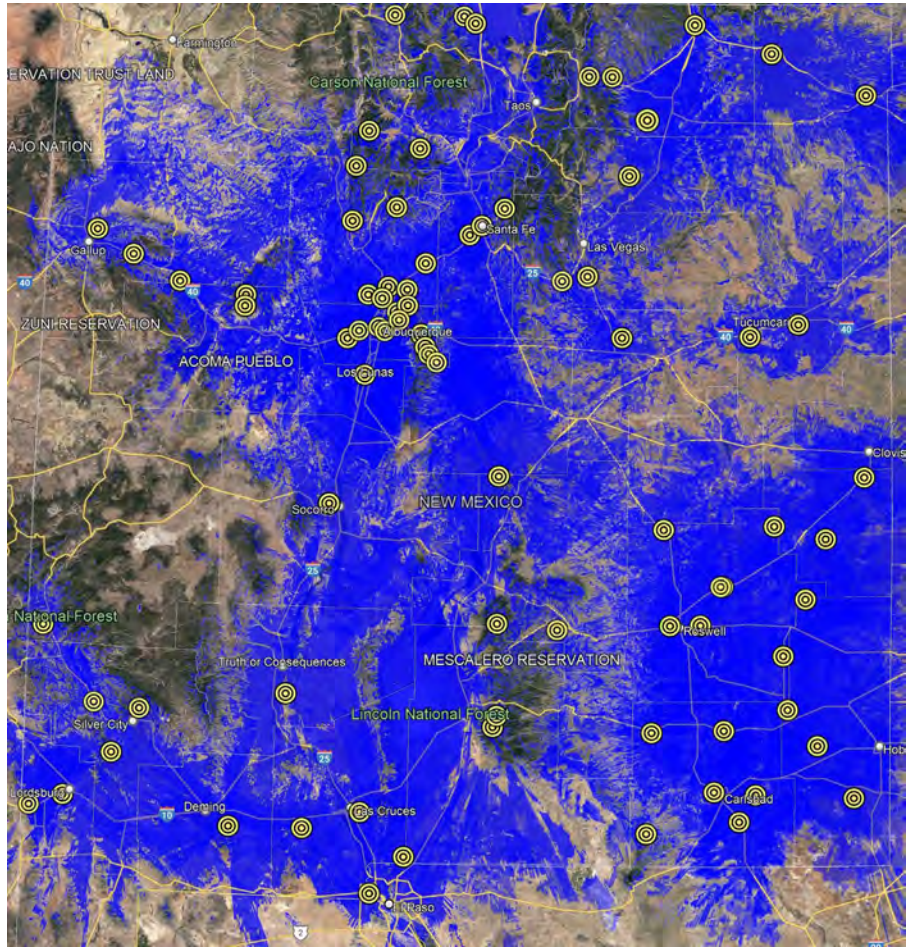
FY21 System Coverage and Stats (includes work in progress)

Predicted statewide mobile coverage (60%) planned for FY23 Phase completion

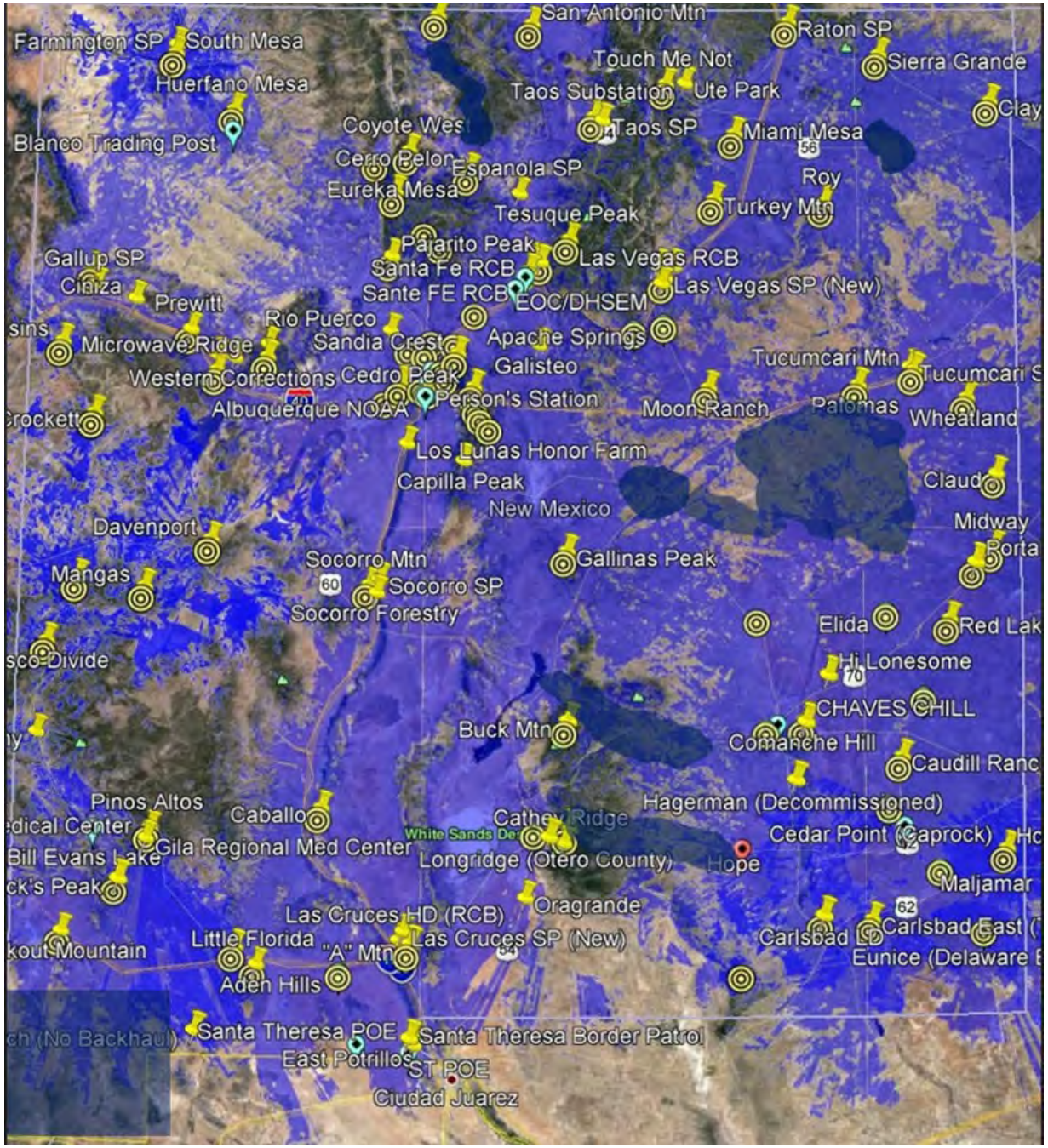
- Completion US 70,
- I-40, I-25, US 380
- Enhancement US 62, US 180
- Alamogordo Area
- US 54
- State Road 87
- Border Region - Hidalgo County

County	% Mobile Coverage
Bernalillo_County	94.4
Catron_County	5.8
Chaves_County	88.9
Cibola_County	44.4
Colfax_County	56.8
Curry_County	41.3
De_Baca_County	47.2
Doña_Ana_County	89.2
Eddy_County	88.9
Grant_County	60.8
Guadalupe_County	40.7
Harding_County	42.9
Hidalgo_County	46.5
Lea_County	90.9
Lincoln_County	62.6
Los_Alamos_County	80
Luna_County	88.2
McKinley_County	53.4
Mora_County	60.1
Otero_County	62.1
Quay_County	51.7
Rio_Arriba_County	30.7
Roosevelt_County	86.8
San_Juan_County	12.2
San_Miguel_County	39.5
Sandoval_County	80.7
Santa_Fe_County	89.2
Sierra_County	71.7
Socorro_County	64.2
Taos_County	57.9
Torrance_County	75.6
Union_County	65.4
Valencia_County	93.6

- Mobile coverage represented
- Target mobile coverage approximately 92% geographic after project completion



FY24 Planned System Coverage



Planned work pending appropriation – Predicted statewide mobile coverage (75%) for planned FY24 Phase completion

- Significant buildout of coverage on intermediary roadways
- Significant expansion of coverage within the border corridor

Bernalillo County Fire Station 41 new construction site near completion – January 2023

Whispering Pines new construction site near completion - January 2023

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Thank You!

QUESTIONS?

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