Appendix G:
SCIP Implementation Report to the U.S. Dept. of Homeland Security, Office of Emergency Communications 2008

Texas

Statewide Communication Interoperability Plan (SCIP) Implementation Report

September 2008

Homeland Security

Table of Contents

This report is a summary of the State of Texas's SCIP submitted December 2007. The report does not represent an independent DHS analysis of the State's gaps and initiatives. Further, it does not represent a DHS endorsement of the State's current communications interoperability environment or its initiatives.

State Overview

Overview of the State and its interoperability challenges

Texas is a vast state covering 261,797 square miles that include coastal prairies, southeastern piney woods, a central hill country, and portions of the Great Plains and the southwestern desert. The international border with Mexico forms 1,248 miles of the western and southern border of Texas. Texas has 367 miles of coastline on the Gulf of Mexico which forms part of the eastern Texas border. Texas is a major agricultural state with extensive farming, ranching, animal feeding, and agricultural processing operations. Some 20 million Texans live in urban areas and 3 million reside in rural areas. There are three federally recognized Native American tribes in Texas.

Texas shares state borders with New Mexico, Oklahoma, Arkansas, and Louisiana and has close working relations with those states. The five states compose the Federal Emergency Management Agency's Region VI and participate in regularly scheduled meetings to confer on emergency preparedness, response, and recovery activities and homeland security programs. Border counties in Texas routinely provide mutual aid assistance to neighboring counties in other states and firefighting assistance to neighboring cities in Mexico.

Texas has 34 Critical Infrastructure/Key Resources identified under the Buffer Zone Protection Plan, which have a direct and vital impact to the state and nation. Among them are 23 international ports of entry, 13 major sea ports (the Port of Houston is the seventh largest port in the world, and ranked first in the United States in foreign waterborne tonnage and second in the United States in total tonnage), and 23 commercial and more than 250 general aviation airports. Texas has the nation's largest highway system with more than 300,000 miles of highways. Major international transportation hubs in Texas include the Dallas Fort Worth International Airport, Houston Bush Intercontinental Airport, Dallas Love Field, Union Station in Dallas, Union Pacific Railroad, and the El Paso Natural Gas Pipeline. Texas also has the nation's largest rail system, serving 45 rail companies. Texas has more than 7,000 dams and over 2,500 critical infrastructure facilities. It has the nation's largest oil and gas production facilities, massive refining and petrochemical production complexes, plus more than 300,000 miles of pipeline. Two nuclear power plants are located in Texas as well as the U.S. Department of Energy's Pantex Nuclear Weapons Plant. In addition, 18 major military bases and extensive defense industrial production facilities are located in Texas. Texas is also home to various military, federal, state, and reserve strategic training bases. The state also has a very large banking and insurance industry.

Texas leads the nation in federal disaster declarations and has for some years. Texas has the largest number of tornado impacts of any state and leads the nation in the occurrence of flash flooding and deaths caused by such flooding. Texas is number two in the nation for hurricane and tropical storm impacts and, ironically, is regularly affected by large-scale and persistent drought and related wildfires. Because massive quantities of oil, gas, and hazardous materials are produced, used, stored, and transported throughout Texas, the state experiences large numbers of fires, explosions, and hazardous material accidents at both fixed facilities and during transportation operations.

Because of the lengthy and porous Mexican border, a sizeable coastline, the large number of international air, highway, rail routes and major highways that exist in Texas, and the great number of potential targets in the state, Texas is considered to have a significant risk of trans-national organized crime and a potential terrorist threat, particularly in its major urban areas and areas adjacent to the Texas – Mexico border.

More than 5,000 Texas public safety agencies and organizations provide emergency services to Texas' 23,507,783 residents. Generally, most Texas public safety agencies operate on 20-year-old wideband VHF (Very High Frequency) conventional radio systems. This allows for some interoperability, however, it is not spectrally efficient and there is a need for additional public safety radio channels in

regions adjacent to suburban and urban areas. The metropolitan areas are typically operating proprietary 800 megahertz (MHz) trunking systems or Project 25 (P25) systems. Some of the P25 systems have individual P25 operating switches. Some of the proprietary systems are also 20 years old and a majority of the systems are more than 10 years old. Most regions operating on proprietary radio systems have been equipped with audio gateways and/or console patching capabilities to provide interoperability with adjacent city and county systems.

The Texas Statewide Communications Interoperability Plan (SCIP) prioritized strategic initiatives to achieve interoperability are: ensure operability, provide interoperable solutions, and upgrade and expand regional shared systems. Among the critical success factors to ensure the ongoing effectiveness of its current interoperability initiatives, Texas identified:

- Proposing state legislation to enforce and support the strategic plan;
- Establishing and mandating a technology standard;
- Permanently designating mutual aid infrastructure;
- Leveraging funding and governance agreements to design and provide communications to secure the regional areas and emergency responders supporting the 1,248 miles of international border and 367 miles of Texas coastline; and
- Developing regional standard operating procedures (SOP's) and training and exercise programs, certifications and evaluations.

Vision and Mission

Overview of the interoperable communications vision and mission of the State

The Texas SCIP has a long-term timeframe of **three years (January 2008-December 2010**). However, due to the critical and urgent need for disaster emergency communications, the Texas SCIP will be reviewed, updated and re-aligned annually. This will provide regions and/or agencies the opportunity to voice and prioritize new concerns. The annual update also provides the mechanism to realign the SCIP to the National Emergency Communications Plan (NECP), provide status updates on SCIP documents and procedures, and identify and list new SCIP initiatives.

Texas' long-term goal is to reach the optimal level of interoperability through a "high degree of leadership, planning, and collaboration among areas with commitment to and investment in sustainability of systems and documentation" as stated in the SAFECOM Interoperability Continuum.

SCIP Vision: By January 2015, provide all public safety and critical infrastructure responders at all levels of government, including local, county, special districts, tribal, state, and federal, with the highest level of real-time direct interoperable P25 standards based voice and future standards based data radio communications utilizing standards-based systems and incorporating the 700 MHz public safety frequencies.

SCIP Mission: Achieve the optimal level of voice and data communications interoperability, including growth, sustainability, and documentation of systems, through a high degree of leadership, planning, and collaboration with commitment to and investment in: 1) Building a governance structure of regional committees working with a statewide interoperability committee; 2) Developing SOP's where the National Incident Management System (NIMS) is integrated into the SOP's; 3) Expanding and/or implementing technology for regional shared systems; 4) Requiring training and exercises that are regular, comprehensive, and regional; and 5) Encouraging daily use of interoperable communications systems throughout the regions.

The SCIP goals and objectives are consistent with the Texas Homeland Security Strategic Plan as well as the Texas Emergency Management Plan, the Texas Department of Public Safety (DPS) Agency Strategic Plan, and the Urban Area Tactical Interoperable Communications Plans (TICP's).

On August 19th at the Texas SCIP annual Strategic Planning Conference, members met to begin SCIP revisions. One major outcome was to restructure the goals to align with the NECP and SAFECOM Continuum. Because funding is a high priority for Texas, the practitioners choose to add a specific goal and initiatives for funding. The "restructured" goals and objectives are:

- **Goal 1: Governance -** Achieve statewide interoperability by institutionalizing collaborative approaches across the state based upon common priorities and consensus at the regional level.
  - Objective: Ensure a coordinated governance structure, with representation from all regions, all disciplines, state, federal, and non-governmental agencies to plan and implement statewide communications interoperability for all stakeholders.
  - Key Strategy: Education and planning.
  - Milestone: Governance charter adopted February 11, 2008.

- **Goal 2: Standard Operating Procedures -** Enhance use of interoperable communications systems with integrated, NIMS compliant, regional standard operating procedures (SOP's).
  - Objective: Improve coordination of first responder activities with integrated SOP's that are included in training programs and exercised routinely.
  - Key Strategy: Facilitate regional integrated SOP's.
  - Milestone: Regional integrated SOP template developed and adopted August 19, 2008.

- **Goal 3: Technology** - Build a statewide "system-of-systems" network consisting of regional standards-based shared voice and data communications systems. Voice systems will adhere to the APCO Project 25 (P25) suite of standards. Data systems will adhere to a suite of standards still to be defined.
  - Objective: Ensure operability while leveraging investments in existing communications infrastructure and systems when designing and implementing regional interoperability.
  - Key Strategy: Planning and project management.
  - Milestone: Adopted P25 standard for interoperable voice communications; Regional Interoperable Communications Plan (RICP) template developed and adopted August 19, 2008.

- **Goal 4: Training & Exercises** - Ensure integrated local and regional training & exercise opportunities are available to all emergency responders.
  - Objective: Ensure first responders at all levels are trained and routinely exercise communications equipment, procedures and coordination.
  - Key Strategy: Multiple training and exercise opportunities.
  - Milestone: Pilot program planning underway for regional online interoperability training.

- **Goal 5: Usage** - Accelerate use of regional P25 shared voice communications systems for daily operations as well as all-hazards emergency communications.
  - Objective: Expand and/or transition voice communications systems to P25 regional shared (fixed and mobile) systems.
  - Key Strategies: Planning and project management.
  - Milestone: Communication Asset Survey & Mapping (CASM) database developed and being maintained.

- **Goal 6: Funding** – Secure consistent funding for ongoing development, capital replacement, and operations and maintenance costs.
  - Objective: Develop a funding plan that will generate the funding resources necessary to acquire and sustain statewide voice and data communications interoperability.
  - Key Strategies: Planning, support and legislative action.
  - Milestone: Developed and adopted the SCIP funding plan.

Urban Areas

Overview of the Urban Areas in the State and to what extent they are mentioned in the SCIP

Texas now has five Urban Areas Security Initiatives (UASI)-designated regions. Houston is Tier 1; El Paso, San Antonio, Dallas/Fort Worth/Arlington, and Austin are Tier 2. The SCIP lists each of the urban areas individually, and provides details on the Tactical Interoperable Communications Plan (TICP) scorecard recommendations by category, and the progress of implementing said recommendations. The state's urban areas provided leadership along with their invaluable experience gained by the development of their TICP's, exercises and scorecard recommendations in the development of the SCIP.

The SCIP indicates that interoperable communications has been incorporated into its regimen of regional UASI exercises, and describes the interoperable communications strengths and weaknesses of each Urban Area in significant detail. It describes efforts underway to coordinate and integrate SOP's and training programs throughout the urban areas as well as statewide.

All Urban Areas will collaborate with their region in the development of the Regional Interoperable Communications Plan (RICP). This plan will describe the migration strategy to achieve regional P25 standards based voice interoperability by 2015. The plan will include initiatives, cost estimates, milestones and a timeline.

Governance

Overview of the governance structure and practitioner-driven approaches

The Governor appointed the Texas Radio Coalition (TxRC) as the governing body for the Texas SCIP. The TxRC is represented on the Governor's First Responder Advisory Council and thus designated by state law to advise the Governor on relevant homeland security issues. The TxRC comprises various agencies and associations that represent the local first responder perspective, a critical element that allows the TxRC to serve as a voice for that community. The Texas SCIP governance charter is based on the SAFECOM/Department of Homeland Security (DHS) template. The governance charter was adopted February 11, 2008.

The SCIP established governance structure is made up of the three bodies of the TxRC that includes a variety of State and local stakeholders and organizations. These groups are:

- Executive Committee: An oversight body composed of higher-level administrators who will be vested with final decision-making authority by the Governor of Texas. Members of this group include Federal, State, regional, and local representatives.
- Steering Committee: This advisory group has regular monthly planning and review meetings, plus Web-based conferences when needed. The group consists of inter-disciplinary, inter-

jurisdictional representatives from across the State who have a broad knowledge of wireless communications and hold a formal or informal leadership position within their agency. Members of this group includes Federal, State, local, and tribal representatives.

- Working Groups: Temporary, narrowly chartered Working Groups were formed for specific tasks, such as conducting research and collecting data.

Additionally, jurisdictions in each of the regions have established various Memoranda of Understanding (MOU)/Interlocal Agreements for mutual aid/emergency services during disaster situations which include communications. State agencies, tribal governments, organizations, ports, transits, and other agencies have also signed communications agreements. The Texas Interoperability Channel Plan established a Channel Plan MOU specifically for mutual aid communications.

The TxRC worked under the direction of the Texas Homeland Security Director, Steve McCraw, to develop the SCIP. Jim Harrison, Office of the Governor, has been designated as the interim Texas Interoperability Coordinator while Texas seeks the right person to fill the position on a permanent basis.

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Governance Initiatives

The following table outlines the strategic governance initiatives, gaps, owners, and milestone dates Texas outlined in its SCIP to improve interoperable communications.

Initiative	Gap	Owner	Milestone Date	Status *(Complete, In Progress, Not Started)*
Hire full-time Interoperability Coordinator and support staff	Dedicated leadership	Executive & Governance Committees; Governor's Office	June 2009	
Finalize the Texas SCIP governance charter based on the SAFECOM/DHS template. Tasks: Research, evaluate, draft, confirm.	No formal governance agreement	Governance Working Group	March 2008	
Conduct Focus Group Sessions and Annual Strategic Planning Session.	Forum to voice operational requirements and current concerns	TxRC	Annually	
Promote State legislation that enforces timely and cost-efficient execution of strategic plan initiatives.	Lack of interoperability and funding	Executive & Funding WG's	Begin meeting with legislators by May 2008. Adopt legislation within two years.	
Assist regions with governance development for regional shared interoperable communications systems. Tasks: 1) Request ICTAP assistance.	Planning and collaboration	Governance WG	Template – 2009 Plan - 2010	
Don't Mess With Texas! Develop project accountability policies and procedures to ensure	Lack of funding; robust	Technology Advisors &	Aug 2008 and on-going	

Initiative	Gap	Owner	Milestone Date	Status (Complete, In Progress, Not Started)
successful implementation and that "taxpayer's get maximum value for their dollars." Tasks: 1) develop and require project management and cost analysis reports; 2) provide project management training; 3) update vendors on accountability measures.	accountability; project management	SAA		

Standard Operating Procedures

Overview of the shared interoperable communications-focused SOPs

Most SOP's are developed at the local or regional levels. In 2005, all 24 state planning regions were directed to assess regional communications interoperability and submit a regional interoperability plan for approval by the Texas Office of Homeland Security. Most local government communications operations are guided by a combination of emergency plans, the communications annexes to those plans, and local and regional communications interoperability operating procedures. Additionally, some UASI areas and densely populated cities and counties have structured SOP's for communications interoperability. Most State agencies have documented standard procedures for emergency communications operations.

Governor Perry signed Executive Order RP40[1] on February 23, 2005, requiring NIMS as the state standard. The State Administrative Agency (SAA) requires agencies to certify NIMS compliance to be eligible for federal grant funding.

The TxRC SOP and Governance Working Groups developed a regional template for integrated state and local agency SOPs for interoperable communications which each region and state agency can adapt to specific regional requirements and capabilities. These templates were approved on August 19, 2008. Agencies providing input into the template development include but are not be limited to: city and county emergency management coordinators; local and tribal law enforcement; fire departments; volunteer fire departments; emergency medical services organizations; UASI representatives; trauma centers; Texas DPS; Texas Department of Transportation (DOT); and Texas Military Forces. Each Council of Governments (COG) will identify the state and local agencies within the region to adapt the SOP to regional requirements. The SOP will follow the guidelines established by NIMS for incident command. All state and local public safety agencies and all agencies responding to incidents within a region will be expected to comply with the regional SOP or provide other applicable documentation by December 2008. Furthermore, as regional SOP's are developed, practitioners will have access to them via a web site.

SOP's will be revised when major changes are needed due to enhancements or other changes in the communications environment. SOP's will be made available to appropriate individuals for training purposes and to influence interoperability efforts. Each lead agency will provide the appropriate COG, the emergency management coordinator of each county within the region, the TxRC, and Emergency Management Council with electronic copies of the interoperable communications SOP for review on an annual basis. Each COG and/or county emergency management coordinator will provide all regional public safety agencies and personnel copies of the SOP and provide ongoing access to the SOP's for training purposes.

[1] Executive Order RP40, (http://governor.state.tx.us/news/executive-order/3690/).

Texas is a subscriber to the Emergency Management Assistance Compact (EMAC) which is a resource for State to State supplies of personnel and equipment. EMAC is a national governor's interstate mutual aid compact that facilitates the sharing of resources, personnel, and equipment, across state lines during times of disasters and emergencies. EMAC provides administrative oversight and support staff and formal business protocols, solves problems upfront with provisions in the compact including continuity of operations with SOP's, and integrates into existing command and control structures.

Texas invited the contiguous states to participate in the second annual Statewide Strategic Planning Conference to review and update the SCIP. This year two adjacent states were actively involved in the planning session. For regional-local and cross-border mutual aid events, interoperability with adjacent states, like adjacent counties and/or regions, will be accomplished by executing the TSIEC MOU and using the licensed Texas Interoperability Channels.

The U. S. State Department is currently finalizing a communications interoperability agreement with Mexico, which will include the United States/Mexico border from Brownsville, Texas, to San Diego, California. The plan includes microwave links to the DHS Customs and Border Patrol's sector headquarters in the affected areas. Agencies operating along the border will have access to interoperable communications via these microwave linkages when completed.

Lastly, in most cases, the Urban Areas with major transit and bus service companies have provided these organizations with interoperable equipment or have established interfaces with the organizations' communications systems.

SOP Initiatives

The following table outlines the SOP strategic initiatives, gaps, owners, and milestone dates Texas outlined in its SCIP to improve interoperable communications.

Initiative	Gap	Owner	Milestone Date	Status *(Complete, In Progress, Not Started)*
Each region to develop a regional SOP for regional response to emergencies. Tasks: 1) Draft a regional template for integrated State and local agency SOPs for interoperable communications using the SAFECOM guide. 2) Identify the State and local agencies within the region to adapt SOP template to regional requirements. 2) Require Regional-Integrated SOP (RI-SOP) by 12/2008. 3) Review and post RI-SOPs by 6/2009.	Clear coordination and responsibility procedures	SOP & Governance Working Groups; All regions	template – 09/ 2008 RI-SOP – 12/2008 Post – 6/2009	
Evaluate and coordinate Mutual Aid Interoperability Channels in the 800 MHz and VHF frequency bands. Fund infrastructure improvements for implementation of all recognized/defined mutual aid channels (800 MHz, 700 MHz, VHF, and UHF).	Mutual Aid channels are overloaded in metro and urban areas.	Governance and SOP/Training & Exercise WG's	December 2010	
Promote a communications interoperability plan/agreement with Mexico.	Unable to communicate when providing/receiving mutual aid	Governance WG	January 2009	

Technology

Overview of the technology approaches, current capabilities, and planned systems

Texas communications systems vary greatly and many areas are impacted by limited operability of public safety radio communications systems. Much of rural Texas has few land telephone lines and less cellular telephone service because of sparsely populated areas, as well as barren regions and piney forest wilderness areas. In addition, Texas has the longest international border and the most traffic across the border. This is a problem area for communications because a significant portion of the international border between El Paso and Brownsville lacks operability and interoperability. This area is very rural with no terrestrial radio communications or cellular telephone communications of any kind. Parts of the Texas coastline from the Louisiana border to Brownsville have similar operability problems, e.g. little to no radio coverage in some areas, aged infrastructure, proprietary systems, and lack of capacity to add users and lack of frequencies to add channels. These circumstances often prevent responding local, state, and federal agencies from maintaining internal communications during an incident and response. Because interoperability is essential for disaster emergency communications and the possibilities of catastrophic events along the Texas coastline and Mexico border are elevated, these areas remain a major concern for Texas.

Most Texas public safety agencies, regardless of the geography, operate on conventional wideband VHF systems. This allows for some interoperability in coverage areas; however, it is not spectrally efficient and there is a need for additional public safety radio channels in regions adjacent to suburban and urban areas. Many of these systems operate on aged unreliable infrastructure, much of which is more than 20 years old, providing only partial operability and limited if any interoperability. In addition, some areas such as Houston and Dallas/Fort Worth/Arlington use several different and aged radio systems within the cities for emergency communications.

The focus statewide was to achieve interoperability by providing gateways and patches where needed. We found that this process can be time consuming and somewhat confusing when seconds count and lives are at stake. The new goal is to provide seamless interoperability by building out standards-based shared systems to form a system of standards-based systems. This will be accomplished by leveraging existing infrastructure and systems, where appropriate, and with standards-based communications system purchases. Texas's approach is to support large multi-agency regional systems and link them to provide expanded statewide coverage as needed, on demand, and as authorized. There are currently several large regional public safety systems in the state that are P25 compliant or are migrating to P25 TIA/EIA 102 Standards-based systems.

The metropolitan areas typically operate on proprietary 800 MHz trunking systems with few P25 systems. Some of the proprietary systems in the state are 20± years old and a majority of the systems are more than 10 years old. System managers are unable to expand the capacity and coverage of these systems because of a lack of available radio channels. Most regions operating on proprietary radio systems are equipped with audio gateways or console patching solutions to provide interoperability with adjacent cities and counties. Some of these regions have mobile communications equipment that supports various interoperability components. Many of the older systems are experiencing problems finding adequate sources and supplies of replacement parts to keep the systems operable.

Local & Regional Data Capabilities: Many private radio systems and most regional radio systems currently have some data capability. This ranges from integrated voice and data on a voice radio system to mobile data operating on 800 and 900 MHz frequencies and mesh broadband systems. Applications include text messaging, mapping and database searches, and access to TLETS (Texas Law Enforcement Telecommunications System) and NCIC (National Crime Information Center).

The following tables list the major systems in Texas and include those used for interoperable communications, large regional systems specifically designed to provide interoperability solutions, and large wireless data networks.

State System Name	Description	Status
Texas Department of Public Safety	The Texas Department of Public Safety (DPS) operates a state-wide digital VHF Project 25 compliant conventional radio system through 32 Communications Facilities strategically located throughout the State across the 254 counties. The Department has begun to migrate toward a hybrid trunked radio system utilizing 700 MHz where feasible. The first 700 MHz trunked radio intelli-repeater (IR) site was placed at the State Capitol and integrated with the City of Austin's Regional Radio System. DPS has also integrated five communications facilities into the Harris County Regional Radio System. These interfaces provide immediate interoperability for all users utilizing these systems. The Department will leverage existing radio infrastructure throughout the State by partnering with the regional radio systems and State Agencies to build the state-wide system of systems. The Department is working closely with the Texas Border Communications Project representatives to provide the equipment to connect the border radio systems together. The Department is the primary public safety first responder agency during catastrophic incidents. DPS is partnering with the regional planning areas in an effort to improve disaster emergency communications specifically along the Texas coastline. Through the State strategic reserve, DPS is able to provide interoperability equipment to establish immediate interoperability for disaster emergency communications dependent upon the size and scale of the events. Funding has recently been authorized for laptops/data terminals in all DPS Highway Patrol units. This equipment will operate on commercial networks to provide officers with text messaging capability for coordination of operations across multiple counties. It will also provide direct mobile access to TLETS. TLETS provides access to a variety of local, state, and federal criminal data base systems, e.g. NCIC.	Existing and planned improvements
Harris County Regional Radio System	A regional system with a coverage area larger than most states; Harris County has 11 counties on the system, 35,000 subscriber units, and about 550 agencies on the system; the system is operational in both the 800MHz and 700MHz bands using P25 compliant trunk technologies. Regional subscribers to the system include: Federal, State and Local Public safety and Law Enforcement Agencies, Fire Departments, Public Works Departments, Cities, Counties, public schools and University systems, in addition to the Texas Medical Center and several private air ambulance services.	Existing and planned expansion
East Texas Medical Center (ETMC) System	Covers 15 counties, providing primary communications for 250 local and volunteer, non-governmental public safety agencies and 7,000 users. Operates an 800 MHz analog trunked system through rural counties in east Texas. System is no longer supported by the vendor and must be transitioned to P25. The new ETMC sites will tie into the Harris County/H-GAC Regional P25 System extending that coverage from Galveston to Dallas. The joining of the systems will create a P25 standards-based system that uses 700/800 MHz trunking technologies covering 25 counties.	Existing and planned improvements
Austin-Travis County Regional Radio System	The Austin-Travis County Regional Radio System shares its system controller with the newly-upgraded Williamson County system, a trunked VHF system serving the Middle Rio Grande Valley, and a 700 MHZ system built by Texas DPS in Austin. The combined systems serve more than 100 agencies and 15,000 users. Future projects will connect agency-owned systems in counties adjacent to Austin-Travis County to the Austin-Travis switch, with the goal of creating a shared standards-based system that covers the entire 10 county planning region. Austin-Travis are currently pursuing integrated voice and data to provide short text messaging and global positioning information over the voice radio	Existing and Planned Improvements and expansions

State System Name	Description	Status
	system. They're also working with Harris County and LCRA to provide connectivity and interoperability from Houston, Galveston, and Corpus Christi back to Austin.	
City of Houston	In the process of acquiring a new interoperable voice P25, 700 MHz trunked system that will be linked to regional radio systems across Texas; @ 20,000 subscriber units expected. This system will provide in-building public safety radio coverage for multiple agencies in and around the City of Houston. The system will have between 45-50 sites and cost between $100 - $150 million. Current data capability includes: WEB EOC with up to 1000 users dependent upon event; Houston CAD handles 5000+ calls per day; Fire RMS with 1000+ users; OLO (On-Line Offense) Houston PD RMS with approximately 5000 users; and voice logger that records 10,000+ calls.	Planned (in the final stages of contract negotiations)
City of Dallas, Dallas/Fort Worth/ Arlington Urban Area	Dallas proposed upgrade of an analog trunked 800 MHz communications system to include 700 MHz will provide interoperability to the Dallas public safety agencies as well as public works agencies. This system will serve a population of 1.25 million persons and provide communications for approximately 3,500 first responders and about 4,000 support and public works personnel. Dallas has set up some wireless video surveillance in a few areas; this may be expanded with available funding. The goal for the UASI area is to have seamless interoperability among all Metroplex systems. There are 15 to 20 proprietary 800 MHz trunked systems in the area. A multi-phased approach is being considered, due to the high cost of implementing new systems in the UASI area. The project currently being evaluated is the installation of a 700 MHz P25 system overlay of the Region (3-6 channels) for agencies to roam outside their jurisdictional boundaries	Existing and Planned Improvements
El Paso	In the process of upgrading to a standards-based interoperable communications system. This will provide interoperability and coverage for the UASI area (City of El Paso and County of El Paso). This portion of the plan includes interoperable communications in both 800 MHz and VHF frequencies. Officials are planning to build out interoperable communications coverage in Region 8's six counties, and linking the El Paso system to the Texas Border Communications project.	Existing and Planned Improvements
San Antonio Area	Intend to enhance the existing 800 MHz coverage area by consolidating several non-simulcast sites into new simulcast sites. In addition, plan to improve system interoperability by creating 700 MHz interoperability overlays and establish switch-to-switch connections with several public safety and critical infrastructure agencies (LCRA, VIA Transit, Corpus Christi / Nueces County, AEP, etc.) locally and regionally. These overlays and connections will leverage existing 800 MHz and 900 MHz coverage areas, existing infrastructure, and resources throughout multiple regions but especially along major coastal evacuation routes, logistical support corridors, and between regional medical centers. Currently implementing a regional emergency communications information sharing and mobile data system providing record management system (RMS), and Field Reporting Systems. All public safety answering points (PSAP's) within Bexar, Comal, and Guadalupe counties will soon be connected with dedicated fiber.	Existing and Planned Improvements
City of Bryan	Mixed mode, 800 MHz trunked system. Partnered with the City of College Station, Brazos County, Texas A & M University, the City of Brenham, and Washington County to form the Brazos Valley Wide Area Communications System (WACS) which is seeking funding for a P25, 700/800 MHz, shared system that will encompass the entire area, and be expandable into the remaining five counties of the Brazos Valley COG. The system will be linked to the adjoining regional shared systems of the Harris County Regional Radio System and the Austin-Travis County/Williamson County Regional Radio System.	Existing and Planned Improvements
Lower Colorado River Authority	900 MHz trunked system covering 37,000 square miles and 54 counties. Implementing 700 MHz overlay to existing LCRA system. This equipment will allow for a seamless integration into existing regional systems, as well as the agencies' existing conventional	Existing and planned improvements

State System Name	Description	Status
	systems for interoperability. • 700 MHZ channel equipment installation at 46 existing sites to provide approximately 37,000 square miles of RF coverage that consist of all or part of 54 counties in central Texas.	
Middle Rio Grande Development Council Regional Radio System	Multi-phase VHF P25 trunking system supporting the multi-agency and multi-discipline jurisdictions along the Texas-Mexico border area which include 9 counties, 51 membership agencies, the Kickapoo Traditional Tribe of Texas, plus federal and state users.	Existing and planned improvements

Technology Initiatives

The following table outlines the short-term technology strategic initiatives, gaps, owners, and milestone dates Texas outlined in its SCIP to improve interoperable communications.

Initiative	Gap	Owner	Milestone Date	Status *(Complete, In Progress, Not Started)*
Provide operability throughout the State by implementing solutions to close gaps found through user surveys and CASM data analysis. Tasks: 1) Identify gaps; 2) Implement solutions.	No operability in parts of Texas	Technology & Funding Working Groups	Sept 2010 Jan 2013	
Assist regions in the development of implementation plans to migrate radio assets to a standards-based, shared System of Systems. Task: 1) Establish and mandate the technology standard for the Texas SCIP. 2) Form regional working groups to leverage existing systems and infrastructure when building new or upgrading and expanding systems. 3) Identify solutions that incorporate existing technologies and allows for new technologies and functionality in the future. 4) Prioritize system connections for both statewide and regions, implementing the connections that respond to the greatest threat first.	Regional interoperability, Aged equipment	TxRC, Technology Working Group, All Regions, State Agencies	Voice – 2010; Data - 2011	
Develop a detailed plan for operability and interoperable communications along the Texas coast from Louisiana to Mexico. Tasks: 1) Monitor, participate, engage with DHS OEC and FEMA as they further develop the Gulf Coast Communications Interoperability System concept to support disaster communications from Florida to Texas; 2) Build on existing regional systems and incorporate new technologies; 3) build-in resilience and add redundancy throughout regional systems; 4) provide daily communications for all State, local, federal and non-governmental first responders that routinely operate within each region; 5) include interstate interoperable communications with Louisiana and Mexico; 6) include disaster emergency communications surge requirements; 7) provide coverage, capacity and console connectivity along the entire coast	Coverage, operability, Aged equipment, Interoperability, Disaster communications	TxRC; Regions 15, 16, 17, 20 & 21; State Agencies	Jan. 2009	

Initiative	Gap	Owner	Milestone Date	Status *(Complete, In Progress, Not Started)*
Develop a detailed plan for operability and interoperable communications along the Texas/Mexico Border from El Paso to Brownsville. Tasks: 1) Monitor, participate, engage with DHS OEC and CBP to further develop the Border Communications capabilities; 2) Plan to include and build on existing regional systems and incorporate new technologies; 3) to include interstate interoperable communications with New Mexico; 4) to provide daily communications for all State, local, federal and non-governmental first responders that routinely operate within each region; 5) to include Disaster Emergency Communications surge requirements; 6) to provide coverage, capacity and console connectivity along the entire coast	Coverage, operability, Aged equipment, Interoperability, Disaster communications	TxRC; Border Radio Coalition; BSOC; State Agencies	Jan. 2009	
Develop a detailed process for frequency coordination, radio interference, and conflict mediation.	Insufficient channel availability; Interference	Texas Radio Coalition, DPS	June 2009	

Training and Exercises

Overview of the diversity, frequency, and inter-agency coordination of training and exercises

Training

Texas has incorporated interoperable communications training into all of the Governor's Division of Emergency Management state sponsored training programs. Texas plans to implement regional training programs that include:

- Providing stand-alone single discipline and multi-discipline interoperable communications training courses through existing State and regional training academies and organizations.
- Providing a basic multi-disciplinary interoperable communications course online.

The State has a number of specialized communications teams who all have training curriculum, requirements, and annual required training hours.

In addition, standard communications personnel training curricula will be modified to include interoperability training modules, so that new dispatchers are schooled in these fundamental procedures prior to assuming their duties on live systems. The State's SOP's will be updated to reflect the training for primary and back-up communication unit leaders. First responders likewise will be provided detailed instruction on radio interoperability as well as regular hands-on "refresh" training. Lastly, as the communications assessment information becomes available via the CASM tool, programs will be developed to provide users with "how-to" guides for specific radio equipment. Along with equipment investments, vendors will be encouraged to provide electronic copies of detailed training materials and programs for mass distribution and local customization.

Clear-cut processes will be implemented to test and exercise SOP's on a routine and cost-efficient basis.

Exercises

Currently, the Governor's Division of Emergency Management (GDEM) is conducting regional exercises to test regional plans and interoperable communications equipment and identify needed improvements in plans, procedures, equipment, and training. These exercises include responders from federal, state, local, and tribal agencies.

All GDEM training and exercise programs are NIMS compliant. On February 23, 2005, Governor Rick Perry issued Executive Order RP 40 adopting NIMS as the statewide system to be used for emergency prevention, preparedness, response, recovery, and mitigation activities, as well as in support of all actions taken to assist local entities.

Training and Exercises Initiatives

The following table outlines the training and exercises strategic initiatives, gaps, owners, and milestone dates Texas outlined in its SCIP to improve interoperable communications.

Initiative	Gap	Owner	Milestone Date	Status *(Complete, In Progress, Not Started)*
Enhance training and exercise programs. Tasks: 1) Have individuals trained and certified as COM -L trainers; 2) Identify regional Communications Unit Leaders and provide necessary training; 3) Develop templates for SOP's and drills, that can be incorporated into, and augment, the State's existing training and exercise programs.	Lack of local training and education on current interoperability capabilities and structure	TxRC & GDEM	March 2010	
Provide online training programs with testing and certifications. Tasks: 1) Develop a regional pilot program to be tested and evaluated; 2) Expand the pilot to multiple regions; 3) Expand the pilot statewide.	multiple training venues	TxRC, CAPCOG, SOP & Training and Exercise WG's	1st Pilot - 2010	

Usage

Overview of the testing of equipment and promotion of interoperability solutions

Regular usage of interoperable communications procedures and equipment will be required and made uncomplicated by providing templates for simple drills that exercise capabilities (e.g., console patches, gateways). Communications personnel will be expected to voice-test calling channels with subscribers in the field regularly. Remote enabling/disabling of mutual aid repeaters as well as simple console patches (e.g., 8TAC-91 patched to a law enforcement sector channel) likewise will be practiced regularly.

As an example of usage, the Harris County Regional Radio System has *The Book of Knowledge,* which includes the SOP for emergency communications. Harris County, Houston and the Dallas/Fort Worth urban areas participated with DOJ in the "25 Cities Federal Interoperability Channels Project" where the SOP requires participating cities/counties to test interoperability with the VHF Federal agency system weekly, along with interoperability with other agencies and systems.

Usage Initiatives

The following table outlines the usage strategic initiatives, gaps, owners, and milestone dates Texas outlined in its SCIP to improve interoperable communications.

Initiative	Gap	Owner	Milestone Date	Status *(Complete, In Progress, Not Started)*
Develop and keep current an interactive statewide communications assessment database. Task: 1) Enter 80 percent of statewide communications assets into the CASM tool to validate agency radio communications capabilities and survey results. 2) Jurisdictions must routinely update CASM information to show commitment to adhere to the SCIP and to receive grant funding.	Capabilities assessment	Capabilities Working Group; All Regions; State Agencies	December 2008	
Implement programs to require routine use of interoperability equipment. Tasks: 1) Voice-test calling channels with subscribers in the field. 2) Provide templates for regular usage of interoperable communications procedures and equipment that exercise capabilities (e.g., console patches, gateways).	Knowledge of equipment	SOP & Training & Exercise WG	Regularly	
90% of UASI areas provide response-level emergency communications within one hour for routine events involving multiple jurisdictions and agencies.	Interoperability	TxRC, UASI's, state agencies	2010	
75% of non-UASI jurisdictions provide response-level emergency communications within one hour for routine events involving multiple jurisdictions and agencies.	Interoperability	TxRC, All regions and state agencies	2011	
75% of all jurisdictions provide response-level emergency communications within three hours in the event of a significant incident.	Interoperability	TxRC, All regions and state agencies	2013	

Funding Initiatives

The following table outlines the strategic funding initiatives, gaps, owners, and milestone dates Texas outlined in its SCIP to improve interoperable communications.

Initiative	Gap	Owner	Milestone Date	Status *(Complete, In Progress, Not Started)*
Operation Texas Talks: Secure consistent funding for ongoing development, capital replacement, and maintenance costs. Tasks: 1) Develop funding plan; 2) Identify new and existing sources of funding; 3) Promote legislative action for public safety communications funding.	No dedicated funding mechanism for communications and interoperability efforts	Executive Committee & Funding WG; Regions	1) August 2008; 2) on-going; 3) March 2008 Meet with State level stakeholders monthly	
Prioritize Public Safety Interoperable Communications (PSIC), DHS and State funds for immediate and critical interoperability needs. Tasks: 1) Distribute grants, as available, to build-out	Lack of funding	Working Groups; Regions	On-going. 1) Provided SAA input on PSIC priorities by October 2007; 2	

Initiative	Gap	Owner	Milestone Date	Status *(Complete, In Progress, Not Started)*
operability and statewide interoperability. 2) Identify on-going operations, maintenance and back-haul expenses to support statewide system; 3) Develop a funding program to support on-going interoperability expenses.			& 3) 2012.	