Texas Statewide Communications Interoperability Plan

August 2012

Table of Contents

1. SCIP Overview

The Department of Homeland Security defines communications interoperability as the ability of public safety agencies (e.g., police, fire, emergency medical services) and service agencies (e.g., public works, transportation, and hospitals) to talk within and across agencies and jurisdictions via radio and associated communications systems, exchanging voice, data and/or video with one another on demand, in real time, when needed, and when authorized.

The purpose of the Texas SCIP is to provide a guide to achieve mission critical interoperable communications statewide. The plans provide the goals and target objectives for organizations to adequately plan, and build interoperable communications systems. [The Texas SCIP has a timeframe of two years (January 2012 – December 2013); however, minor revisions will be made as needed to ensure newly-identified communications gaps are recorded and addressed in annual funding programs.]

The Vision of the Texas Homeland Security Plan is to *"Optimally position Texas to prevent acts of terrorism, protect critical infrastructures and key resources, and respond to and recover from all disasters."* A priority action of the Texas Homeland Security Plan is to *"establish a statewide network of interoperable radio systems."*

The SCIP encompasses goals and target objectives for governance and funding, standard operating procedures, technology, training and exercises, usage and disaster communications for both Land Mobile Radio (LMR) and the National Public Safety Broadband Network (NPSBN). The Plan initiatives outline State, Tribal, regional and local government responsibilities for the organization, operational concepts, and procedures to adequately plan, build, and manage public safety communications systems.

SCIP Implementation Report: Texas submits an annual SCIP Implementation Report which updates and classifies the status of each initiative. The SCIP Implementation Reports for 2008 through 2011, which provides the U. S. Congress with annual updates on the status of building interoperable communications throughout each State, can be found at the following: http://www.dps.texas.gov/LawEnforcementSupport/communications/interop/txicc/scip.htm

Texas SCIP Vision

By the end of 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 voice and data radio communications utilizing Shared Standards-Based Systems.

Texas SCIP Goals

Goal 1: Governance – 1) Achieve statewide interoperability by institutionalizing collaborative approaches across the State based upon common priorities and consensus at the regional level.; 2) Secure consistent funding for ongoing development, capital replacement, operations and maintenance costs.

Goal 2: Standard Operating Procedures – Enhance use of interoperable communications systems with integrated, NIMS-compliant, regional SOPs.

Goal 3: Technology – Build a statewide, standards-based (P25) shared Land Mobile Radio (LMR) voice radio system, and a statewide, standards-based Public Safety Long-Term Evolution (PS LTE) broadband data communication network.

Goal 4: Training and Exercises – Ensure both LMR and NPSBN integrated local and regional training and exercise opportunities are available to all emergency responders.

Goal 5: Usage – Encourage daily use of regional standards-based shared communications systems for routine operations as well as all-hazards emergency communications.

Focus Group Sessions:

Each Region is required to complete a communications gap analysis in an annual Focus Group Session. The information gathered is used to report the status of Texas interoperable communications to the State and local elected officials, the State Legislature, and to compile the annual SCIP Implementation Report. The Focus Group Gap Analysis identifies the lack of communications and prioritizes SCIP initiatives for funding. Each SCIP initiative is reviewed, discussed and approved during annual Statewide Strategic Planning Conferences.

2. State Overview

With an area of 268,601 square miles and a population of more than 25 million, Texas is the second-largest state in both area (behind Alaska) and population (behind California). Texas is physically 850 miles east to west by 900 miles north to south, and is the southernmost state in the continental United States. Texas is bordered by four states—New Mexico, Oklahoma, Arkansas, and Louisiana, shares a 1,240-mile international border with Mexico and has a 367 mile coastline on the Gulf of Mexico. The great size and complexity of Texas' terrain, along with its exposure to natural and man-made risks, contribute to challenges with interoperable communications. This situation is captured in Figure 2. See Appendix A for more information on the characteristics of Texas, potential risk factors, and emergency response capabilities.

Figure 2: Texas location and geographic characteristics.

2.1 Significant Risks

There is no greater role or responsibility in government than protecting its citizens. The globalization and convergence of crime and terrorism; an unsecure border with Mexico, powerful and depraved Mexican Cartels, violent transnational and state-wide gangs, serial criminals; world- wide terrorist organizations and lone wolf actors, cyber intrusions and threats; the unpredictability of catastrophic natural disasters and pandemic diseases; the high loss of life from vehicle crashes; the large amount of critical infrastructure in Texas and the dramatic and continued increases in the state's population – all of these factors have resulted in an asymmetric threat environment in our state requiring constant vigilance and proactive, rather than reactive, strategies to minimize the danger to our citizens and their families.

"Director's Strategic Outlook"
Steven C. McCraw, Director, Texas Department of Public Safety, July 13, 2012

A large scale response to any disaster or incident brings together varied agencies, jurisdictions, and disciplines that often do not share a common communications infrastructure. Incompatible equipment, frequencies, and procedures hinder interoperability among responding agencies. First responders are often faced with organizing and supporting operations over large geographical

areas under rapidly escalating conditions. This requires a high degree of interoperability among all on-scene communications assets. The threat to the State of Texas from natural and man-made disasters can be mitigated by a long-term investment strategy for communications systems, equipment, and training.

Substantial Terrorism Risks

- Three Department of Homeland Security Terrorism Target city areas are located in Texas: Houston, Dallas-Fort Worth, and San Antonio areas.
- Texas Agriculture Commissioner Todd Staples testified about border security issues before the U.S. House Homeland Security Oversight and Investigations Subcommittee in Washington, D.C.— "Texas farmers and ranchers along the U.S.-Mexico border are regularly becoming victims of intimidation, aggression and outright violence by armed trespassers who often have direct ties to Mexico's drug cartel."
- Texas DPS reported that cartels have been recruiting Texas school children to be used in criminal activities such as drug, human, currency and weapon smuggling. "The Mexican cartels value Texas teenagers for their ability to serve as expendable labor in many different roles and they have unlimited resources to recruit our children," said DPS Director Steve McCraw.

Risk Factors Defined by Texas Division of Emergency Management

- 1,240 miles of international border with Mexico and 23 ports of entry
- 367 miles of coastline with 13 major ports
- 23 commercial airports and ≥ 250 general aviation airports
- Largest highway system in the U.S. – 300,000+ miles
- Largest U. S. rail system: 45 rail companies operate in Texas
- More than 2,500 critical infrastructure facilities
- Nation's largest oil and gas production facilities and massive refining and petrochemical production complexes
- More than 3,000 miles of pipeline
- Two nuclear power plants and Pantex nuclear weapons plant
- 18 major military bases
- Extensive defense industrial production facilities

Texas also faces an extraordinary threat environment in terms of frequency and severity of hazardous events and amount of losses. Texas has historically led the Nation in Federal disaster declarations. Since 1950 Texas has experienced 657 recorded NOAA storm events which resulted in 8,945 deaths. 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 fixed facilities and during transportation operations.

Natural disasters: Texas continues to be designated the state with the most hazardous events and losses due to natural disasters. The most significant natural hazards facing Texas on an annual basis are:

- Hurricane and Tropical Storms (Since Hurricanes Katrina and Rita in 2005 and Ike in 2008, more emphasis has been placed on coordinating emergency response to hurricanes in Texas.)
- Tornados (The NOAA Amarillo NWS shows a 2011 ten year average for tornados as 23, with a high count of 65 in 2007.)
- Drought (In 2011 Texas experienced the worst single-year drought in its history. The drought fueled wildfires, ruined crops and strained the state's electric grid.)
- Wildfires (Fires recorded between 11/15/2010 to 10/31/2011; Texas responded to 30,547 fires that burned 3,993,716 acres. Fires during this time destroyed 2,946 homes. Combined- 2005, 2006, 2008, and 2009 resulted in 48,150 wildfires causing 23 fatalities, numerous injuries, 1,222 homes lost, and 4.1 million acres burned. In 2006, fires and drought caused more than $6 billion in agricultural losses.
- Inland Riverine Flooding (prior to 2010, average 13 deaths each year)
- Local Windstorm
- Hailstorm

Other Significant Natural and Man-Made Risk Factors

- Rural Texas hosts the most producing farms both in number and acreage in the U.S. These properties provide the nation with many commodities. Texas leads the nation in the following:
    - In production of sheep and goat products
    - In cotton production
    - In cereal crop production
    - By providing 20% of the nation's beef
    - By providing 5% of annual U.S. rice production
- The Dallas-Fort Worth International Airport is the second largest airport in the U.S., the fourth largest in the world, and the third busiest in the U.S., and sixth busiest in the world.
- Texas is home to two of the U. S. Army's largest facilities, Fort Hood and Fort Bliss.

- In 2007, the Texas forest sector produced industry outputs worth $19.4 billion. It employed 78,350 workers and paid $4.4 billion in wages, salaries and benefits in the same year.
- The National Aeronautics and Space Administration, Houston, is a leading hub for the Aeronautics industry.
- Houston is the energy capital of the world.
- The Port of Houston ship channel is the largest in the United States in international commerce and the sixth-largest port in the world.
- Texas known petroleum deposits are about 8 billion barrels which makes up approximately one-third of the known U.S. supply.
- Texas is the leading crude oil-producing state in the nation.
- Texas's 26 petroleum refineries account for more than one-fourth of all U.S. refining capacity.
- More than one-fourth of all U.S. natural gas production occurs in Texas, making it the nation's leading natural gas producer.

3. Interoperability Continuum

Texas adopted the Interoperability Continuum as a guide to assist emergency response agencies and policy makers to plan and implement communications interoperability solutions. "Optimal interoperability is contingent on an agency's and jurisdiction's needs."[1]

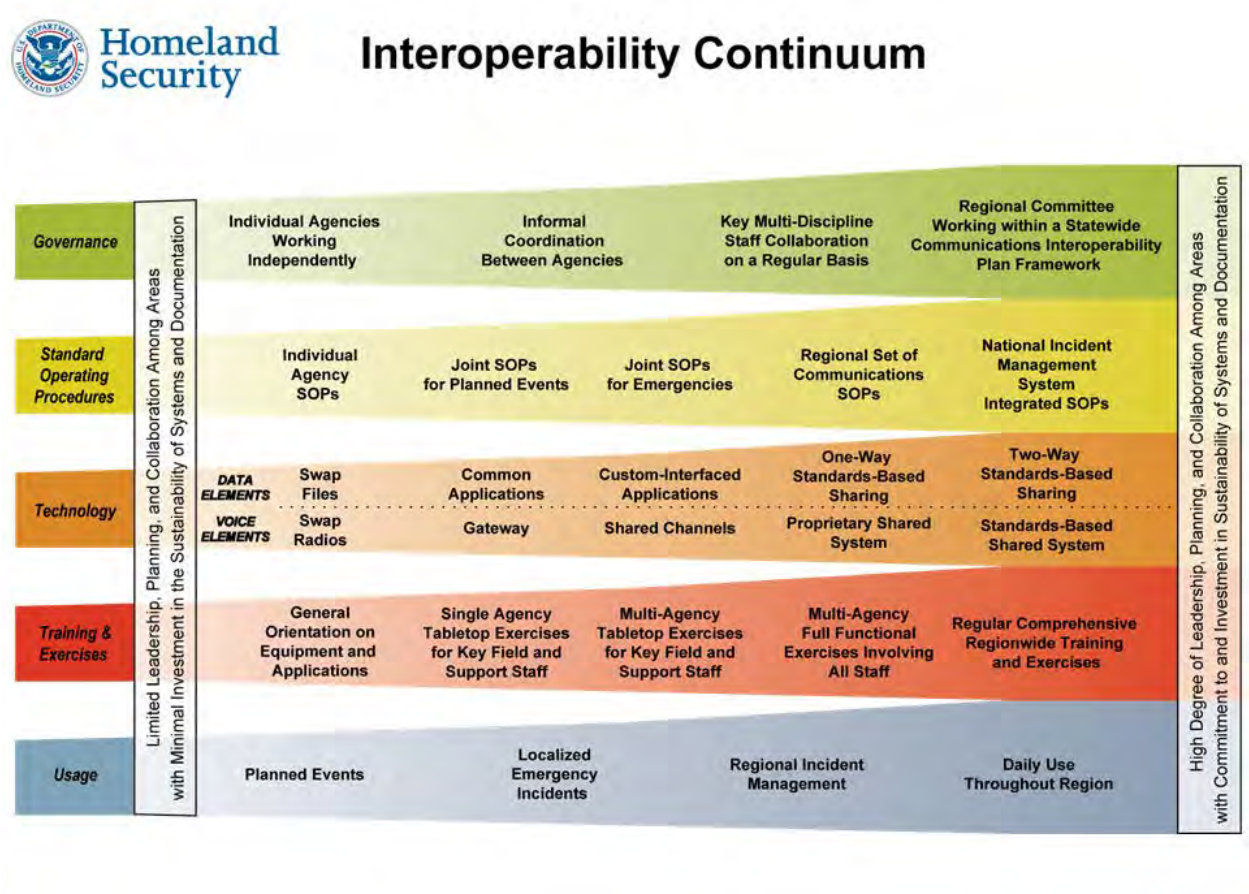

Figure 3: SAFECOM Interoperability Continuum

Texas Interoperable Communications Strategy

Create partnerships among emergency response agencies throughout Texas, public private organizations, and Executive Leadership to build and maintain a cost-effective interoperable communications network using shared resources.

[1] SAFECOM Interoperability Continuum Overview; http://www.safecomprogram.gov

4. SCIP Goals, Objectives and Initiatives

Goal 1: Governance

- Achieve statewide interoperability by institutionalizing collaborative approaches across the State based upon common priorities and consensus at the regional level.
- Secure consistent funding for ongoing development, capital replacement, operations and maintenance costs.
- Build Public-Private Partnerships to expand LMR and LTE emergency communications capabilities.

Status: The Texas Governance Structure consists of Regional Committees working within a Statewide Communications Interoperability Plan Framework – Multi-disciplinary jurisdictions working together across a region pursuant to formal written agreements as defined within the larger scope of a state plan – promoting optimal interoperability.

Linked to NECP Objective 1: Formal Governance Structures and Clear Leadership

SCIP Objectives:

- Maintain a coordinated governance structure, with representation from all regions, all disciplines, State, Tribal, Federal, non-governmental agencies, and public-private partners to plan and implement LMR and LTE statewide emergency communications networks for all stakeholders.
- Develop a funding plan that will generate the funding resources necessary to acquire and sustain statewide voice and data communications interoperability.
- Develop planning, support and legislative action.
- Enable connectivity to, and compatibility with, the new networks by establishing appropriate minimum specifications for equipment purchased with grant funding.
- Form partnerships which will strengthen emergency communications capabilities.

SCIP Governance Structure

In 2007 the Governor appointed the Texas Radio Coalition (TxRC) as the Statewide Interoperability Governing Body (SIGB) for public safety communications. The primary purpose of this organization is to provide oversight of interoperability projects throughout Texas and the development and on-going

reviews and revisions of the Texas SCIP. In 2010, in order to incorporate the many technologies and magnitude of future interoperable communications planning, the TxRC name was changed to the Texas Interoperable Communications Coalition (TxICC).

The TxICC is a member of the Governor's First Responder Advisory Council and designated by State law to advise the Governor on relevant Homeland Security issues.

Executive Authority

> Sec. 421.041. FIRST RESPONDER ADVISORY COUNCIL. (a) The First Responder Advisory Council is a permanent special advisory committee created to advise the governor or the governor's designee on homeland security issues relevant to first responders, radio interoperability, the integration of statewide exercises for hazards, and the related use of available funding.

The statewide radio interoperability administration authority is cited in Section 421.096 of the Government Code:

> Sec. 421.096. INTEROPERABILITY OF RADIO SYSTEMS. The office of the governor shall: (1) develop and administer a strategic plan to design and implement a statewide integrated public safety radio communications system that promotes interoperability within and between local, State, and Federal agencies and first responders; (2) develop and administer a plan in accordance with Subdivision (1) to purchase infrastructure equipment for State and local agencies and first responders; (3) advise representatives of entities in this State that are involved in homeland security activities with respect to interoperability; and (4) use appropriated money, including money from relevant Federal homeland security grants, for the purposes of designing, implementing, and maintaining a statewide integrated public safety radio communications system.

Public Safety Broadband Communications Governance Structure: During the annual SCIP Strategic Conference on August 15, 2012, the TxICC amended the SCIP governance structure to serve as the Texas State, Local and Tribal governance committee for both Land Mobile Radio (LMR) and Long Term Evolution (LTE) broadband. On January 22, 2013, the TxICC updated the new governance structure to reflect recommendations in the legislation creating the Public Safety Broadband Network. The new TxICC Governing Body is responsible for all decisions regarding both LMR and LTE broadband in the State. As LTE governance decisions are made at the National level, Texas and the TxICC will make adjustments accordingly.

State Governing Body

Texas interoperable communications plans and governance is directed and approved by the Texas Governor. The organizational chart below (Figure 4) identifies support positions from the Governor's Office down to the regional level.

Figure 4: SCIP Governance Structure

Statewide Interoperability Coordinator (SWIC): The Texas Department of Public Safety Director has assigned the Deputy Assistant Director of the Public Safety Communications Service as the full time SWIC. The SWIC will oversee the statewide interoperable communications development and implementation, including broadband radio interoperability, for the State of Texas.

- DHS & OEC — "The SWIC serves as the cornerstone of the State's interoperability effort." The office of the SWIC was designated in the DHS SCIP Guidelines and criteria.

SCIP TxICC Governance Structure

Members of the TxICC Governing Body: Each member of the TxICC is considered a representative of the SCIP Governing Body and therefore has a voice in the SCIP governance. The SCIP-established Governance Structure is made up of the four bodies of the TxICC; they are:

a) The Texas SWIC
b) The TxICC SCIP Executive Council (SEC)
c) The TxICC SCIP Steering Committee (SSC) [consists of membership-at-large attending any meeting and/or call]
d) The TxICC SCIP Strategic Advisory Groups (SSAG)

The following graphic illustrates the dynamics and relationship of each TxICC group.

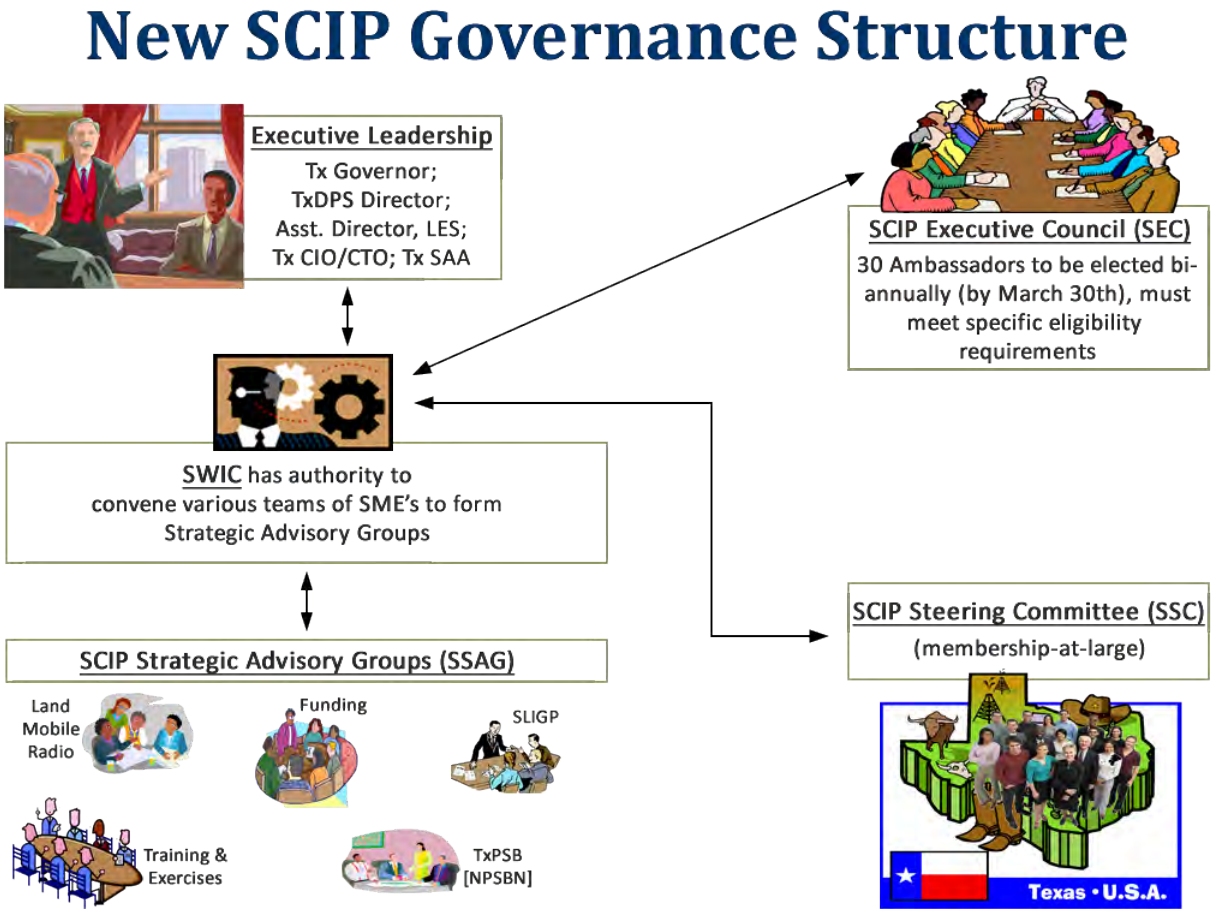

Figure 5: SCIP Governance Groups

Texas SCIP Governing Body roles and responsibilities

1. Executive Leadership:

   - The Executive Leadership consists of: the Texas Governor; TxDPS Director; Assistant Director, Law Enforcement Support; Texas CIO/CTO; Texas SAA.
   - The Executive Leadership makes final decisions on all SCIP operations, policies, and procedures.

2. The SWIC:

   - The SWIC has access to the Texas CIO/CTO, SAA, Homeland Security Director; TxDPS Director, and the Governor's office.
   - The SWIC passes recommendations on to the State Executive Leadership for final approval.
   - The SWIC office will act as the FirstNet single point of contact.
   - The SWIC Chairs the TxICC and the SEC.
   - The SWIC is given the authority by the State and TxICC to convene Strategic Advisory Groups on matters of interoperability as needed.

3. The SCIP Executive Council Ambassadors:

   - The SEC will be elected for two-year terms. [Recommendation: elect 1 primary delegate + 2 alternates to ensure your entity is represented for all voting occurrences.] Even number Regions and the State Agencies will elect their initial delegate for a one-year term in 2013, and two-year terms beginning in 2014. Odd number Regions and Tribal Nations will elect their initial delegate for a two-year term in 2013. Region numbers can be found in the Regions/Jurisdictions section in Appendix A: Background Information, Figure 13 of this report.
   - The SEC will consist of a delegate from each of the 24 COGs, from each of the 3 Tribal Nations, a delegate representing all State Agencies, if applicable a SSAG delegate, and the SWIC (SEC Chairman).
   - The SEC will meet when needed and annually at the SCIP Conference.
   - The SWIC may call a SEC meeting if and when appropriate.
   - Specific eligibility requirements for SEC Ambassadors:
     - Active participation in the TxICC
     - Appropriate knowledge of communications equipment, systems, and procedures.
     - Participate in routine LTE meetings and WebEx sessions.
     - Act as Regional PS LTE champion.
     - Attend LTE training programs.
     - Assist in the development of regional LTE Outreach and Educations Programs.
     - Provide appropriate alternate if unable to participate in an event.
     - ID and work with agencies within home region who may be interested in building a public safety broadband network.
   - The SEC may confirm, approve, and/or modify decisions (e.g. prioritized gaps) and reports (e.g. SCIP Implementation Report) developed by the TxICC.

4. The SCIP Steering Committee (Membership-at-large)

   The TxICC is a voluntary association of representatives from local, State, Tribal, and Federal government emergency response agencies/ organizations/ jurisdictions, and public-private partners. Participants include emergency first and secondary responders from across Texas, a critical element that allows the TxICC to serve as a voice for that community. The Steering Committee recommends programs for adoption, facilitates open discussions on agenda topics, participates in SSAG assignments, and voices concerns and/or confirmation of TxICC proposed actions.

5. The SSAGs will consist of an un-determined number of Subject Matter Experts (SME):

   - SSAG appointments are temporary.
   - SMEs must have expert knowledge in specified communications technology, funding, project management, policy and procedures and/or field administration.
   - SSAG membership will be dependent upon the expertise required to solve a problem, and/or address the assignment.
   - SSAG SMEs may differ in number and talent dependent upon the assignment.
   - If the TxICC membership-at-large does not have the talent needed for the assignment, the SWIC may identify a specialist to work with the SSAG.

6. Voting: Total = 30 votes, Beginning with the 2013 SCIP Annual Conference:

   - Voting members will consist of:
     - 24 COG votes (one for each COG delegate or alternate)
     - 1 vote for the combined State Agencies
     - 3 Tribal votes (one for each Tribal Nation)
     - 1 SSAG vote (representing the recommendation of a convened SSAG (if applicable)
     - 1 SWIC vote
   - SEC and SSAG members present at any TxICC meeting represent a quorum.

Funding: Additional funding sources must be developed. Work is underway to educate the Texas Legislature on the critical need for establishing a sustained funding mechanism for operations and maintenance. The Executive Leadership, SWIC and funding champions will actively educate state legislators on the need for legislation that enforces timely and cost-efficient execution of strategic plan initiatives which support mission critical communications and interoperability.

Texas House Bill: On July 13, 2011 Texas House Bill 442, relating to the establishment of an emergency radio infrastructure account, was passed by the full Texas Senate.

Sec.A411.402. USE OF REVENUE

(a) Fees collected under Section 133.102(e)(11), Local Government Code, may only:

(1) be used for the planning, development, provision, enhancement, or ongoing maintenance of an interoperable statewide emergency radio infrastructure;

(2) be used in accordance with the statewide integrated public safety radio communications plan developed under Subchapter F, Chapter 421;

(3) be used for the development of a regional or State interoperable radio communication system;

(4) be distributed as grants by the department to:

(A)Regional councils of governments that have entered into Inter-local agreements authorized under State law; and

(B) State agencies requiring emergency radio infrastructure; or

(5) be used for other public safety purposes.

(b) Fees collected and distributed as provided by this subchapter may not be used to purchase or maintain radio subscriber equipment.

Sec.A411.403.EMERGENCY RADIO INFRASTRUCTURE ACCOUNT

(a) …

(…)

(e) The comptroller shall allocate the court costs received under this section to the following accounts and funds so that each receives to the extent practicable, utilizing historical data as applicable, the same amount of money the account or fund would have received if the court costs for the accounts and funds had been collected and reported separately, except that the account or fund may not receive less than the following percentages:

(1) …

(…)

(11) emergency radio infrastructure account 5.5904 percent;

Local, State, Tribal, and Federal governments make the most of available funding through infrastructure sharing for radio towers, facilities and shared channels. Regions and local governments share deployable communications vehicles and equipment sets that can be used to provide emergency communications in areas of the State where it is unfeasible to install permanent communications infrastructure.

Governance is a collaborative effort of jurisdictions, system owners and State agencies across Texas. This is a long-term effort that must be worked with Federal, Tribal, State and local agencies; major emergency response organizations, and the private sector.

Initiative	Gap	Owner	Milestone Date	Status
NECP Initiatives				
Establish a full-time statewide interoperability coordinator or equivalent position.	Dedicated leadership	Director TxDPS & Governor's Office	October 2010 full-time SWIC and staff	Completed October 2010
Incorporate the recommended membership into the Statewide Interoperability Governing Body (SIGB/TxICC)	No formal governance agreement	Gov Working Group; TxICC	2/11/08	Completed February 2008
Establish the SIGB/TxICC via legislation or executive order.	State Authority	Exec Committee & Gov Working Group; Governor's Office	2007	Completed February 2008
Additional State Initiatives				
Operation Texas Talks (OTT): Secure consistent funding for interoperable communications ongoing development, capital replacement, and maintenance costs.	No dedicated funding for emergency communications	SWIC & Regional OTT Champions	June 2013	In Progress
Texas Department of Public Safety Report on Interoperable Communications to the Texas Legislature	Annual status of interoperability and regional funding report	SWIC	September 1	On-going
Update the SCIP and TxICC Governance Structure to include responsibility for the Texas public safety LTE program	PS LTE Governance and Planning	SWIC, Regions	Q1, 2014	In Progress
Encourage State Legislature to establish a funding stream and legal communications authority for regionally operated systems to cover ALL public safety agencies.	No legal authority for funding and regulation of regional radio systems.	SWIC, Regional Champions	2015	In Progress
Provide WebEx meeting capability for all communications meetings and events	Timely input from members on significant items	SWIC & Staff	Q1, 2013	New
Conduct annual regional Focus Group Gap Analysis Sessions and annual Statewide Strategic Planning Conference.	Forum to voice operational requirements and prioritize initiatives	SWIC, TxICC; COGs; State Agencies	Annually	On-going
Assist regions with governance development for regional shared interoperable communications systems.	Planning and collaboration	SWIC & staff	RICP Vol 1 April 2010	On-going
Work with newly formed FirstNet to define Texas needs, deployment, funding and timeframe for Public Safety LTE	Grants, policies and procedures for building nationwide LTE system	SWIC & Staff	Phase 1 - 2013 Phase 2 - 2014	In progress
Early outreach to stakeholders and jurisdictions including information gathering and survey of broadband needs and plans	Work with jurisdictions to educate and determine interest and support for PS LTE system	SWIC and Regions	2012 thru 2014	In progress

Goal 2: Standard Operation Procedures

- Enhance use of public safety LMR and LTE communications systems with integrated, NIMS-compliant, regional SOPs.

Status: The 24 Texas Regions and state agencies that respond to emergency situations developed common, yet individual, Communications SOPs for multi-agency/multi-discipline/multi-hazard responses. Regional SOPs are molded to conform to the elements of the National Incident Management System.

SCIP Objectives

- Improve coordination of first responder activities with integrated RSOPs
- RSOPs are exercised through all integrated regional training programs

National Incident Management System (NIMS): Texas has adopted NIMS, which provides a standard operational picture to manage incidents effectively for local, state and federal governments.

Regional Standard Operating Procedures: The Regions developed and are implementing and training on common Regional Standard Operating Procedures (RSOPs), consistent with NIMS, National Response Framework (NRF) and National Emergency Communications Plan (NECP). The purpose of the RSOP is to define the authority, roles, and procedures for first responders to use when operating on the interoperability channels and/or activating and using mobile assets. RSOPs also provide general operational guidelines for using calling and tactical interoperability channels. The scope of the RSOP includes all state and local public safety agencies -- police, fire, and EMS -- and public service agencies operating within the region. Please contact the Texas SWIC's Office for access to the RSOPs.

SOP Initiatives

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

Initiative	Gap	Owner	Milestone Date	Status
NECP Initiatives				
Tactical planning among Federal, State, local, and tribal governments occurs at the regional interstate level.	Clear coordination and responsibility procedures	SWIC and all COGs	RSOPs adopted Mar 1, 2010	On-going
All Federal, State, local and tribal emergency response providers within UASI jurisdictions implement the Communications and Information Management section of the NIMS.	Incident Management	SWIC & staff	Executive Order RP 40 September 2006	Complete
Incorporate the use of existing nationwide interoperability channels into SOPs.	Lack of interoperability	SWIC	RSOPs adopted Mar 1, 2010	Complete
Update SCIP to reflect plans to eliminate coded substitutions throughout the Incident Command System (ICS).	Clear communications	TSICP and RSOP WG	2008-2010 SCIP and TSICP	Complete
Define alternate/backup capabilities in emergency communications plans.	COOP	RSOP WG	RSOPs Mar 1, 2010	Complete

Initiative	Gap	Owner	Milestone Date	Status
Additional State Initiatives				
Update, educate and train jurisdictions on RSOPs and proper communications procedures and Texas Forest Service (TSF) Interoperability Training Program	SOPs are not being used in daily operations or with regular use of interoperability equipment.	COGs, TA&MFS	Aug 2014	New
Post RSOPs on website for availability to regional and mutual aid emergency responder agencies. Develop and distribute educational materials announcing the availability of the RSOPs and how to access them.	RSOPs unavailable to public safety mutual aid responding agencies	SWIC & staff, COGs	June 1, 2013	In progress
To the extent possible, develop and adopt common subscriber unit programming protocols per TA&MFS training program.	Interoperability, knowledge of ICS channels	TxICC and COMLs	Jan 1, 2014	In progress
Exercise Regional SOP	Clear understanding of roles, responsibilities, policies, procedures	DPS Technical Asst. Unit	2011 Goal 2 Demonstrations	Complete
Build SOP and exercise planning / preparation, and evaluation teams	Regions lack teams to develop/ plan exercise scenario, exercise training/ controller staffing/ and after action documentation, and SOP validation	SWIC, T&E SSAG, Regions & COMLs	Aug 2013	New
Ensure State Agencies are involved in RSOP development, validation and After Action Report (AAR)	Clear understanding of roles, responsibilities, policies, and procedures	COGs, COMLs, T&E SSAG	Q3, 2014	New

Goal 3: Technology

- Build a statewide, standards-based (P25) shared Land Mobile Radio (LMR) voice radio system, and a statewide, standards-based Long-Term Evolution (LTE) broadband data communication network:
  - Voice communications will be developed using a "system of systems" architecture consisting of multiple regional LMR systems networked for coverage and interoperability when needed.
  - LTE broadband data communications will be developed as an integral component of the single nationwide network, ensuring operability and interoperability with all public safety LTE systems.

Target:

Voice Elements – Regional shared systems are the optimal solution for interoperability; standards-based shared systems promote competitive procurement and a wide selection of products to meet specific user needs. (SAFECOM)

Data Elements – Two-way standards-based sharing is the ideal solution for data interoperability.

SCIP Objectives

- Ensure operability while leveraging investments in existing communications infrastructure and systems when designing and implementing regional interoperability.
- Complete FCC mandated public safety radio communications narrowband conversion for affected agencies by January 1, 2013.
- Provide stakeholders with necessary information on emerging technologies, e.g. public safety LTE, sufficient for decisions on project construction, timeline, and funding.
- Incorporate and promote use of newer technologies to interconnect agency/jurisdictions systems as needed. This approach allows each agency to operate on a system configured for its needs, but will facilitate interoperability and can expand the virtual geographic range of operations.
- Continue support of legacy systems and developing interfaces among disparate systems while migrating to newer technologies.
- Improve regional mutual aid communications infrastructure where necessary utilizing the TSICP.
- Ensure emergency communications capability with deployable equipment and teams positioned throughout the state.

Emergency Disaster Communications: DPS is the State's First Responder Agency and provides vital communications during natural disasters and emergencies with multiple units and teams that specialize in interoperable communications, intelligence and information sharing, counter-terrorism, and disaster rescue and recovery and are quickly deployable throughout Texas. Deployable interoperability assistance includes:

- Internet Protocol (IP) based network solutions that allow first responders to communicate and exchange information with radio interoperability, live streaming video, wireless Internet, and voice over IP (VoIP) services.
- Surveillance cameras that allow commanders to assess the scene and make decisions using real-time pictures.

Implementation Priorities: The priorities for implementing public safety communications statewide, and achieving interoperability, as established by Texas first responders in the SCIP are:

1. *Ensure operability*
2. *Provide interoperable solutions*
3. *Upgrade and expand regional shared systems*

Texas Statewide Interoperability Channel Plan (TSICP)

The State of Texas has licensed frequencies for Mutual Aid channels, listed in the TSICP for all agencies providing public safety services in the State. Use of the interoperability channels is prioritized:

1. Emergency or urgent operation involving imminent danger to life or property.
2. Disaster or extreme emergency operation requiring extensive interoperability and inter-agency communications.
3. Special event, generally of a pre-planned nature.
4. Joint training exercises.
5. Inter-agency and en-route communications in accordance with local and regional policies and procedures.

The complete TSICP, with conditions for use and specific guidelines for each frequency band, and the Channel Plan MOU can be found at
http://www.dps.texas.gov/LawEnforcementSupport/communications/interop/index.htm

Please refer to the TSICP for specific frequencies, tones, labels and designated uses.

System of Systems - Leveraging Existing Assets and Systems

The Texas SCIP directs the foundation for statewide interoperable communications to be based on the SAFECOM/Office of Emergency Communications (OEC) "System of Systems" approach for interoperable communications.

The long-range goal for the State is to create a statewide, fully interoperable voice communications system-of-systems. This hybrid system will be multi-band, shared, and standards-based. Components

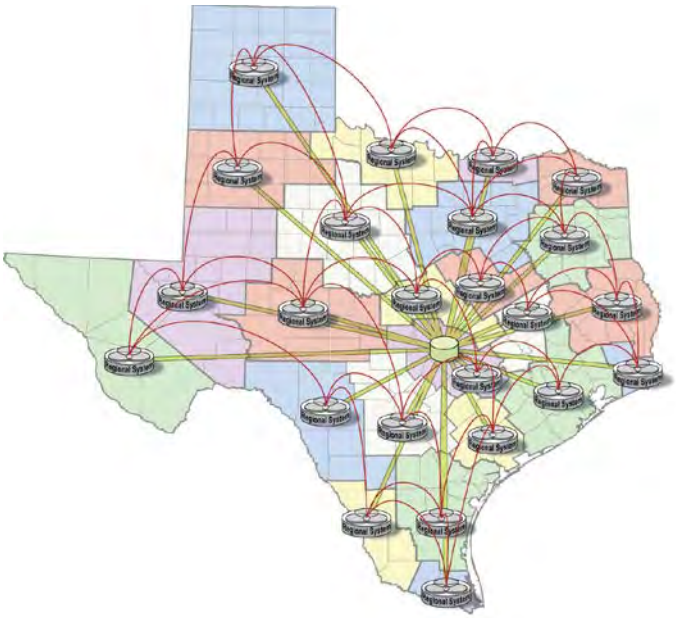

Figure 6: Texas System-of-Systems

will include VHF/700/800 Megahertz (MHz) Project-25 standards-based trunked and conventional systems, TSICP programmed radios, and high-level network connections to regional and existing systems.

Texas State and local agencies have significant investments in existing communications infrastructure. Because of the stakeholders' decision to leverage existing infrastructure and radio systems, where possible, Texas has attained giant steps toward statewide interoperability and building shared-regional communications systems. These individual systems will provide the communications infrastructure for the statewide system-of-systems. Regional systems will be used for daily operations as well as emergency communications operations.

Compelling Reason Exception: Although P25 is the adopted digital standard for voice communications in Texas, the SCIP provides for compelling reasons for using other solutions, or "compelling reason exceptions." All "compelling reason exceptions" requests must contain an explanation as to the requesting agency's plan to work toward an interoperability capability with incoming mutual aid units operating on designated VHF/700/800 MHz mutual aid channels. Such agencies must also have executed the DPS MOU concerning adoption of, and adherence to, the TSICP.

Agencies are required to move to conventional narrowband (which is an acknowledged "open" standard that supports interoperability), but will not be forced to move to P25 for lack of sufficient funding or an operational need to do so. The Texas compelling reason exception is aligned with the SAFECOM Grant Guidance.

Interoperability with Legacy Systems: Existing legacy systems will be supported while migrating to new standards-based systems. Strategies entail migrating to dual-mode subscriber equipment that will work on both legacy systems and new, standards-based systems. During this transition, the existing legacy infrastructure will tie into the new standards-based, P25 systems to help ensure smooth transitions. Any legacy systems that are not intended to be replaced by the new or expanded P25 compliant systems will be supported via appropriate interoperability solutions, e.g. gateways and/or IP network switches.

Public Safety LTE Broadband Approach

Texas has become a leader in pursuing early deployment of public safety LTE Broadband. Texas has identified the following objectives for public safety LTE:

- To create an effective and interoperable 700 MHz interoperable mobile public safety broadband network, which, when fully deployed, will enable public safety users operating in Texas to be safer, more responsive, and more effective in the saving of lives and property.

- To enable early deployments of interoperable 700 MHz public safety LTE network layers in Texas.
- To facilitate an open, standards-based (3GPP) LTE environment which supports a healthy, competitive, multi-vendor procurement environment for network infrastructure and terminal devices, while enabling LTE suppliers to innovate and produce sustainable products and services.
- To support the eventual deployment of a Nationwide Public Safety Broadband Network.
- To pursue public/private partnerships in order to leverage existing commercial capabilities and associated economies of scale. Among the more urgent areas for this partnership is the need to leverage commercial 3GPP Conformance and Interoperability Testing (IOT) programs.

Significant changes to Public Safety Broadband include:

Legislation: The "D-Block" legislation was passed February 22, 2012 as the "Middle Class Tax Relief and Job Creation Act of 2012". This established "FirstNet", the governing authority, which stood-up in August, and works toward a single operable PS LTE system across the country. Two key constructs of the legislation are the D-Block going to Public Safety and Federal match funding. This additional 10 MHz (5 MHz up + 5 MHz down) doubles the available bandwidth, easing LTE congestion in urban areas, and provides significant funding for planning and implementation over the next several years. While some initial deployments may be delayed, significant effort will be expended by FirstNet, the State and local jurisdictions to plan out FirstNet in Texas.

The State of Texas recently was the first state given authority to operate a Public Safety LTE system in the country. This authorization by the Federal Communications Commission, allows the system in Harris County to move forward, providing additional services for their citizens.

The State has received interest from numerous other jurisdictions interested in exploring and building Public Safety LTE systems in their areas. Further, Texas is working with other states and federal agencies to determine the best path forward.

- The State continues to be a leader in support of National LTE working groups.
- The State continues to participate in regional and local PS LTE forums.

Next Steps: The State has started a broad based outreach and education program. This program will provide the opportunity for all jurisdictions to understand the options, issues, costs, requirements and advantages of FirstNet. The State is looking for input from the jurisdictions, and building the requirements to present to FirstNet for build-out of the Texas based network.

Next Generation 9-1-1 (NG9-1-1) & Radio Communications Interoperability

The Commission on State Emergency Communications (CSEC) and Texas Department of Public Safety intend to leverage the collective State level and regional ESInet backbone (IP-enabled network infrastructure) to achieve long-haul radio communications interoperability with Radio over Internet Protocol (RoIP).

Benefits of NG9-1-1 & Radio Communications Interoperability

- More Accessibility: A NG9-1-1 system will be capable of accepting calls from a wider array of consumer communications devices;
- More Information: A NG9-1-1 system will be able to receive voice, text, data and images to provide more and better information to first responders;
- More Resiliency: A NG9-1-1 system offers the redundancy of a network to provide enhanced resiliency against natural disasters or individual Public Safety Answering Point outages; and
- More Interoperability: A NG9-1-1 system has the potential to provide a platform for greater interoperability between disparate public safety communication networks.

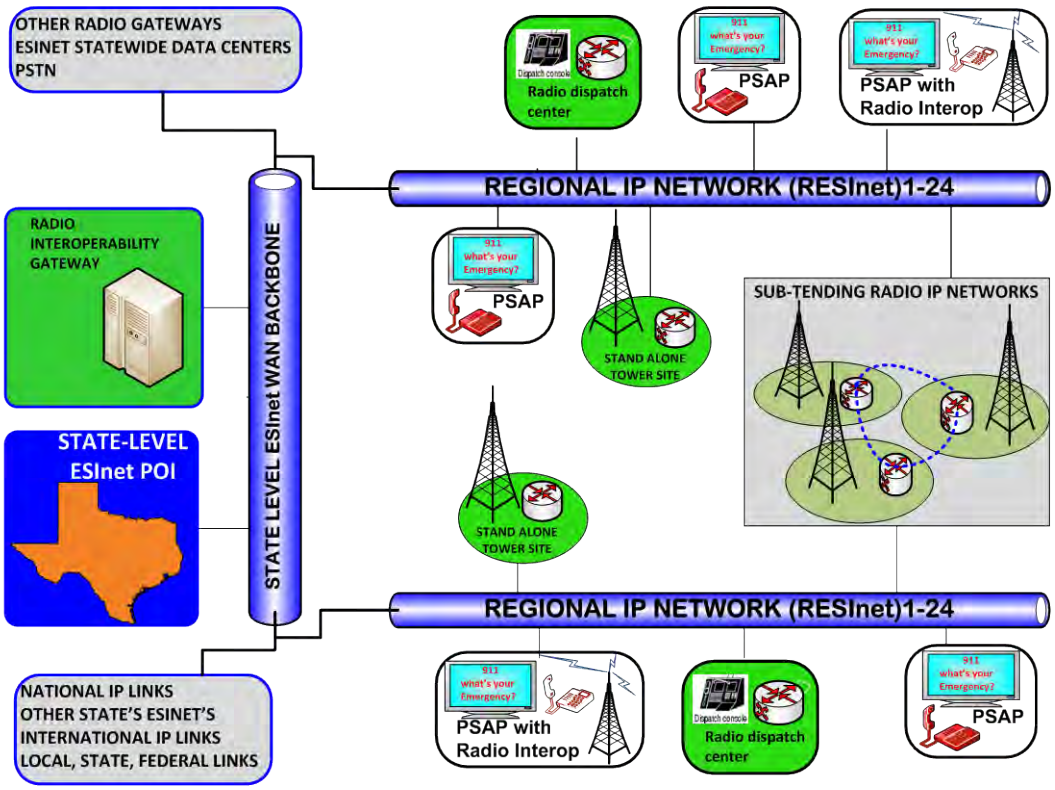

Figure 7: RoIP on the State-Level and Regional ESInet Backbone.

Figure 7 depicts the logical configuration of RoIP on the State-level and regional ESInet backbone interconnecting the "System of Regional Voice Communications Systems.[2]" For more detailed information on NG911 and radio communications interoperability go to: www.911.state.tx.us.

Technology Initiatives

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

Initiative	Gap	Owner	Milestone Date	Status
NECP Initiatives				
Program nationwide interoperability channels into all existing emergency responder radios.	Mutual aid interoperability	Regions	included in TX Interoperability Channel Plan Rev. April 2011	Channel Plan – Complete Implementation – Ongoing
Additional State Initiatives				
Provide operability throughout the State by implementing solutions to close gaps found through user surveys and CASM data analysis.	No operability in parts of Texas	Technology & Funding WGs	2013	In Progress
Regions develop plans to migrate radio assets to a standards-based, shared System-of-Systems, including a conceptual system design and required funding (RICP Round 2)	Coverage, Disaster Comms, Interoperability, Aged equipment	Tech Assist Unit - DPS; Regions	Revised RICPs due 6/30/11	Complete
Ensure emergency communications capability statewide with deployable equipment and teams positioned throughout the state.	Emergency communications capability for all areas of Texas.	SWIC, DPS	Q1, 2014	New
Educate stakeholders on the options, issues, costs, requirements and advantages of LTE	Understanding of public safety LTE	SWIC, TxPSBN team	2013	New

Goal 4: Training and Exercises

- Ensure LMR and LTE integrated local and regional training and exercise opportunities are available to all emergency responders.

Target: Ensure integrated local and regional training and exercise opportunities, focusing on needed capabilities, are available to all emergency responders and support personnel.

[2] Commission on State Emergency Communications (CSEC) Next Generation 9-1-1 Master Plan, Ver. 3.0, Dec. 2010

SCIP Objectives:

- Ensure that first responders at all levels are trained and routinely exercise communications equipment, procedures and coordination.
- Provide multiple training and exercise opportunities.

Regional Training and Exercise Plans

Optimal interoperability involves equipment familiarization and an introduction to regional/State interoperability at time of hire (or in an academy setting). Success will be assured by regular, comprehensive, and realistic exercises that address potential problems in the region and involve the participation of all personnel.

The State of Texas conducts State-directed Homeland Security training and exercise programs. Program descriptions and schedules can be found at https://www.preparingtexas.org/index.aspx. This site includes national, State and regional training and exercise events as well as national, State and regional workshops, seminars, conferences, and resource materials.

Through the annual SCIP Focus Group Sessions, the regions identify jurisdictional and/or individual agency training and exercise concerns. Training sessions to address these concerns will be identified and scheduled. These training sessions may range from on-site drills with an individual agency to a State-sponsored exercise.

National Emergency Communications Plan (NECP)

The NECP desired future State is that emergency responders can communicate:

- As needed, on demand, and as authorized
- At all levels of government
- Across all disciplines.

To measure progress toward this vision, three strategic goals were established in the NECP:

- Goal 1 – By 2010, 90 percent of all high-risk urban areas designated within the Urban Areas Security Initiative (UASI) are able to demonstrate response-level emergency communications within one hour for routine events involving multiple jurisdictions and agencies.
- Goal 2 – By 2011, 75 percent of non-UASI jurisdictions are able to demonstrate response-level emergency communications within one hour for routine events involving multiple jurisdictions and agencies.
- Goal 3 – By 2013, 75 percent of all jurisdictions are able to demonstrate response-level emergency communications within three hours of a significant event as outlined in national planning scenarios.

Texas Goal 1 Demonstrations / Exercises and Events:

100% of the five Texas UASIs demonstrated response-level emergency communications within one hour, during a major planned event. Communications interoperability was evaluated by DHS Office of Emergency Communications teams.

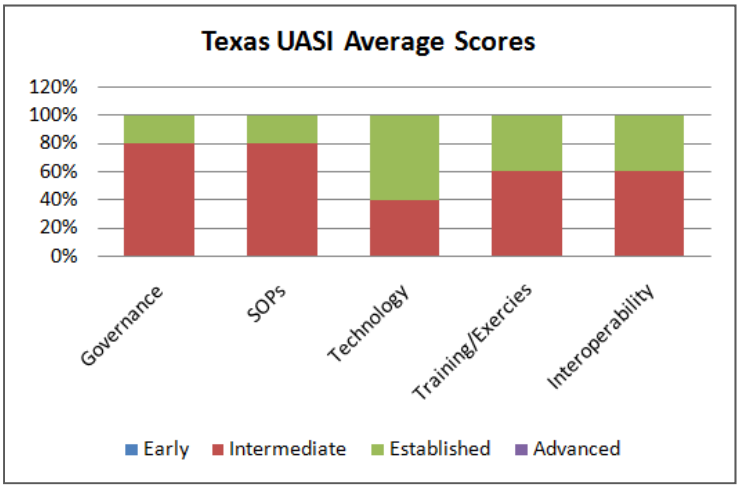

Figure 8: Texas UASI Average Scores

Texas Goal 2 Demonstrations / Exercises and Events: 98.8% of the 254 counties in Texas demonstrated their communications performance, and 100% of the 254 counties reported their capabilities as part of their NECP Goal 2 demonstrations

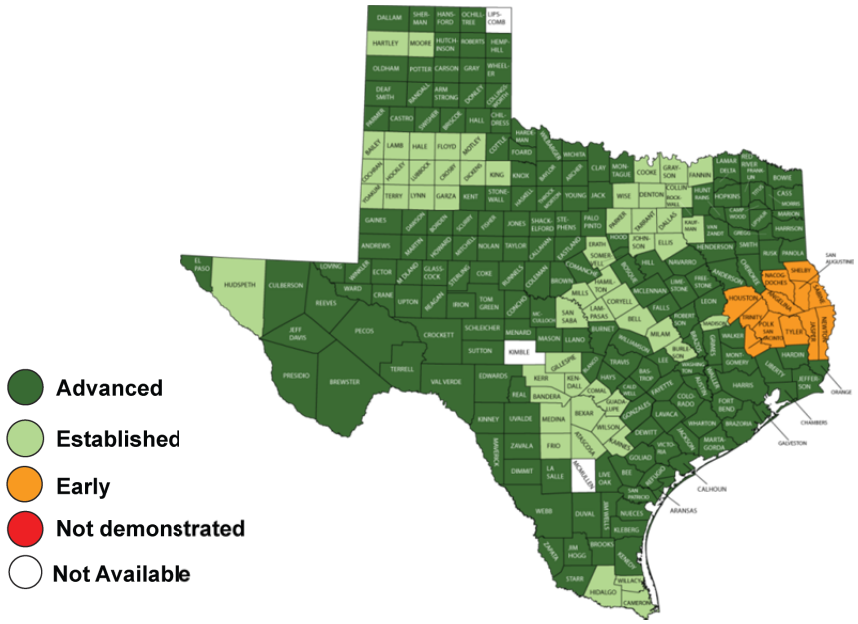

Figure 9: Reporting Counties
Performance: 98.8% (251/254)

Texas was able to quantify and verify our ability to demonstrate response-level emergency communications within one hour for routine events involving multiple jurisdictions and agencies

using the NECP Goal 2 process. This was accomplished through planned events, exercises, or live incidents, including the 30,547 wildfires that burned 3,993,716 acres across Texas during the 2010/2011 season. Figure 10 illustrates the level of capabilities reported by the 254 counties.

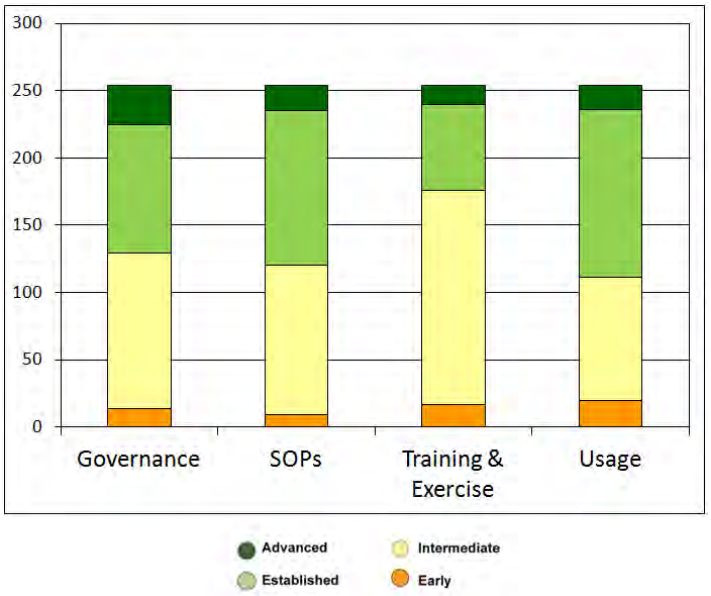

Figure 10: Texas' NECP Goal 2 Capabilities

Figure 11 illustrates the NECP Goal 2 emergency response communications capabilities comparison between Texas, FEMA Region 6, and the Nation.

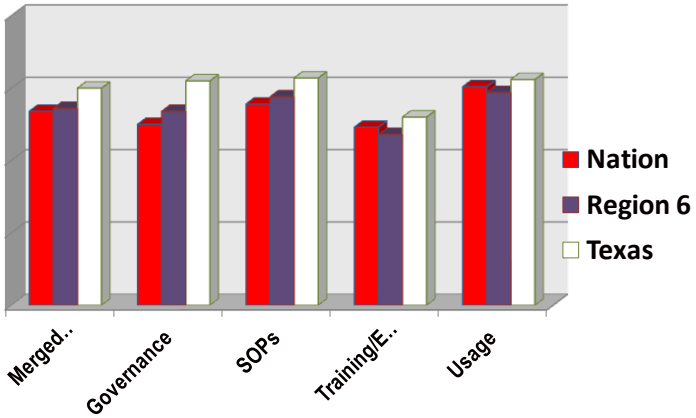

Figure 11: NECO Goal 2 Comparison

Regional Certified COML and COMT

Despite the best planning and technology preparations, there is always the risk of the unexpected—those critical and unprecedented incidents that require experts at the helm who can immediately adapt to the situation. Within the Incident Command System, these specialists are

called Communications Unit Leaders (COMLs) and Communications Technicians (COMTs). The roles of the COML and COMT positions are critical functions that require adequate training above and beyond the basic knowledge of communications systems. The COML and COMT manage emergency voice and data communications components of larger interoperability incidents[3]. Each region shall identify and provide training to individuals to serve in these positions.

Training and Exercises Initiatives

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

Initiative	Gap	Owner	Milestone Date	Status
NECP Initiatives				
Incorporate the use of existing nationwide interoperability channels into training and exercises.	Mutual aid interoperability	TDEM, SWIC	June 1, 2012 TSICP & RSOPs	In Progress
Complete disaster communications training and exercises.	Reliable coordinated communications for emergency disaster response.	SWIC, DPS, and COGs	2011 Goal 2 demos	Complete
Additional State Initiatives				
COML: Enhance training and exercise programs. Tasks: 1) Have individuals trained and certified as COML trainers; 2) Identify regional Communications Unit Leaders and provide necessary training;	Interoperability training	DPS; TDEM; T&E WG	COML classes, 2011- 3 2012-4 COML TTT-1 COMT classes, 2011-1 2012-3 COMT TTT-1	Complete & Ongoing
NECP Goal 1 emergency communications demonstrations.	UASI Interoperability Capabilities Assessment	UASIs, State Agencies, and SWIC	Oct 1, 2010	Complete
NECP Goal 2 emergency communications demonstrations.	UASI Interoperability Capabilities Assessment	COGs, State Agencies, and SWIC	Aug 2011	Complete
Develop short, simple drills which exercise interoperability channels and equipment that individual agencies (dispatchers and end users) can incorporate into daily operations. Train all end-users and dispatchers on radio operation and interoperability at the local level on a regular basis.	Interoperability training	TxICC, T&E SSAG, and COMLs	June 2013, Q1, 2014	In Progress
Develop formal communications curriculum and delivery programs for use by responders and academies statewide.	Knowledge of radio systems, equipment, and SOPs	SWIC, TDEM, DPS, and TA&MFS	Jan 2014	In Progress

[3] "National Summary of Statewide Communications Interoperability Plans", February 2009, DHS, http://www.safecomprogram.gov/NR/rdonlyres/C6C0CD6A-0A15-4110-8BD4-B1D8545F0425/0/NationalSummaryofSCIPs_February2009.pdf

Initiative	Gap	Owner	Milestone Date	Status
Additional State Initiatives *(continued)*				
Establish regular regional comprehensive training /exercise programs. Evaluate regional standard operating procedures during all training and exercises. Schedule quarterly training programs in different geographic areas throughout the state. Schedule and establish training sessions within jurisdictions where necessary.	Interoperability training	CCG, T&E SSAG, Regions & COMLs	Q3, 2014	In Progress
Educate jurisdictions and agencies on the critical need for training and exercises.	Locals look at exercises as a low priority.	SWIC	Aug 2013	New
Develop and provide LMR and LTE training materials and programs for regional leadership, and the SCIP Executive Council to ensure decision makers understand the technologies.	Difficulty understanding the direction of change in communications.	SWIC	Aug 2013	New

Goal 5: Usage

- Encourage daily use of regional standards-based shared communications systems for routine operations as well as all-hazards emergency communications.

Target: Interoperability systems are used every day for managing routine as well as emergency incidents. In this optimal solution, users are familiar with the operation of the system(s) and routinely work in concert with one another.

SCIP Objectives:

- Expand and/or transition voice communications systems to P25 regional shared (fixed and mobile) systems.
- Provide assistance with planning and project management.
- Involve multi-agency/multi-jurisdictional stakeholders in planning for the TxPSBN.

The system that works best in an emergency is the one that is used on a daily basis. Users will follow their instincts when confronted with a stressful situation, and those instincts are honed by daily use and exercise of the communications system. Construction of a mutual aid system on an ad-hoc basis does not provide the instinctive reliability as that realized by daily use.[4]

Most major regional systems provide both primary communications capability and seamless interoperability within the region. As systems are upgraded for interoperability and expanded for

[4] Emergency Response Council "Nationwide Plan for Interoperable Communications" http://www.nga.org/Files/pdf/07ERCINTEROPPLAN.PDF

coverage, 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, etc. Communications personnel will be expected to voice-test calling channels with subscribers in the field regularly. Clear-cut processes have been implemented to test and exercise SOP's on a routine and cost-efficient basis.

Usage Initiatives

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

Initiative	Gap	Owner	Milestone Date	Status
Develop and keep current an interactive statewide communications assessment database (CASM)	Capabilities assessment	Regions & State Agencies	1/1/2010	Completed / Biannually
Assist in the development and submission of 700 & 800 MHz Regional Communications Plans for the Texas Regional Planning Committees	Spectrum planning	RPCs and DPS	Q2, 2013	800 MHz complete, 700 MHz in progress
Implement programs to require routine use of interoperability equipment.	Knowledge of equipment	Regions & COMLs	June 2011	Completed / Biannually
Develop a tower upgrade program	Tower maintenance	SWIC, COGs	Aug 2013	New

5. Appendix A: Background Information

Texas Characteristics

The State of Texas consists of

254 counties: The most populous county has more than three million residents. The least populated county has 80 residents and is the most sparsely populated county in the U.S.

1,206 incorporated cities: three of the 10 most populous cities in the United States; 83 percent of Texas cities have a population less than 5,000.

24 Council of Governments / State planning regions established by State law.

TEXAS

With an area of 268,601 square miles and a population of almost 25 million, Texas is the second-largest state in both area (behind Alaska) and population (behind California).

The highest elevation point is the Guadalupe Peak at 8,749 feet and the lowest is the Gulf of Mexico at sea level.

Texas is internationally known for its energy and aeronautics industries, and for the Port of Houston ship channel – the largest in the United States in international commerce and the sixth-largest port in the world

Three DHS-designated UASIs:

- The Houston Urban Area, located on the Texas Gulf Coast.
- The Dallas/Fort Worth/Arlington Urban Area (these three areas operate as a single metro urban area), located in north-central Texas.
- The San Antonio Urban Area, located in south-central Texas.

Two State-designated Urban Areas (previously designated DHS Tier II UASIs)

- The Austin Urban Area, located in central Texas.
- The El Paso Urban Area, located in far west Texas, adjoining the international border with Mexico.

Three Tribal nations:

- The Alabama-Coushatta Tribe of Texas has a population of about 500 and is located on a 4,600-acre Indian Reservation near Livingston, Texas in Polk County.
- The Kickapoo Traditional Tribe of Texas is located near Eagle Pass in Maverick County on the international border with Mexico.
- The Ysleta del Sur Pueblo Tribe located near El Paso in El Paso County.

More than 5,300 public safety entities, both career and volunteer, that include State, local and Federal agencies, tribes, commercial and non-profit agencies. This list is not all-inclusive, as many tribes, commercial agencies, parks, nonprofit hospitals, EMS organizations, and public utility companies have staff or contract public safety personnel. See a breakdown of the entities by discipline in Figure 12

Public Safety Entities	
Law Enforcement	>2200
Career and Volunteer Fire Departments	>2000
EMS Provider Organizations (2011)	>1100

Figure 12: Texas Public Safety Entities

Emergency Operations: The Texas Department of State Health Services EMS/Trauma Registry online system currently lists 1371 active EMS providers (July 2011). EMS call volume reported to the Trauma Registry in recent years is: 2009 = 2,285,687, 2008 = 1,978,043, 2007 = 1,635,975, 2006 = 1,456,585, and 2007 = 1,415,024[5].

Texas Law Enforcement Agencies responded to 1,116,939 emergency calls in 2009, a 2.2% increase over 2008. These calls included murder, rape, robbery, aggravated assault burglary, larceny-theft and motor vehicle theft.[6]

In 2009, 1,053 fire departments (estimated half of total Texas Fire organizations) reported responding to 1,516,806 fire and non-fire incidents. During that year, fire departments responded to 80,961, fires, a fire occurring every six minutes. As a result of these fires, 133 civilians lost their lives, 746 civilians were injured and $548,270,056 in property loss was realized. The fire statistical incident information is collected and submitted by participating fire departments; participation is voluntary and not all fire incident information is complete.[7]

Regions/Jurisdictions

Texas consists of 24 Councils of Governments (COGs) / planning regions, which are voluntary associations of local and tribal governments formed under Texas law. The COGs serve as regional emergency management organizations, and Disaster Districts whose boundaries are coterminous. The regional entities and local governments join State, Federal and private partners, to provide cost-effective planning and more efficient public services statewide.

Additional information on the 24 COGs and the counties within each region can be found at www.txregionalcouncil.org. City and county Web sites provide specific public safety agency information. Information on State agencies can be found at http://www.governor.state.tx.us

[5] Manager Epidemiology Studies & Initiatives Branch, Texas Department of State Health Services, 7/12/11.
[6] Texas Department of Public Safety Crime Records Service, The Texas Crime Report for 2009. http://www.txdps.state.tx.us/crimereports/09/citCh2.pdf
[7] Texas Fire Incident Reporting System 2005 Fire Statistics; http://www.tdi.state.tx.us/fire/fmtexfir.html

The COGs/State Planning Regions/Disaster District Boundaries map in Figure 13 depicts the service area of each planning region, with the name of each planning COG listed in alphabetical order.

#	Region Name
18	Alamo Area Council of Governments
5	Ark-Tex Council of Governments
13	Brazos Valley Council of Governments
12	Capitol Area Council of Governments
23	Central Texas Council of Governments
20	Coastal Bend Council of Governments
10	Concho Valley Council of Governments
14	Deep East Texas Council of Governments
6	East Texas Council of Governments
17	Golden Crescent Regional Planning Commission
11	Heart of Texas Council of Governments
16	Houston-Galveston Area Council
21	Lower Rio Grande Valley Development Council
24	Middle Rio Grande Development Council
3	Nortex Regional Planning Commission
4	North Central Texas Council of Governments
1	Panhandle Regional Planning Commission
9	Permian Basin Regional Planning Commission
8	Rio Grande Council of Governments
15	South East Texas Regional Planning Commission
2	South Plains Association of Governments
19	South Texas Development Council
22	Texoma Council of Governments
7	West Central Texas Council of Governments

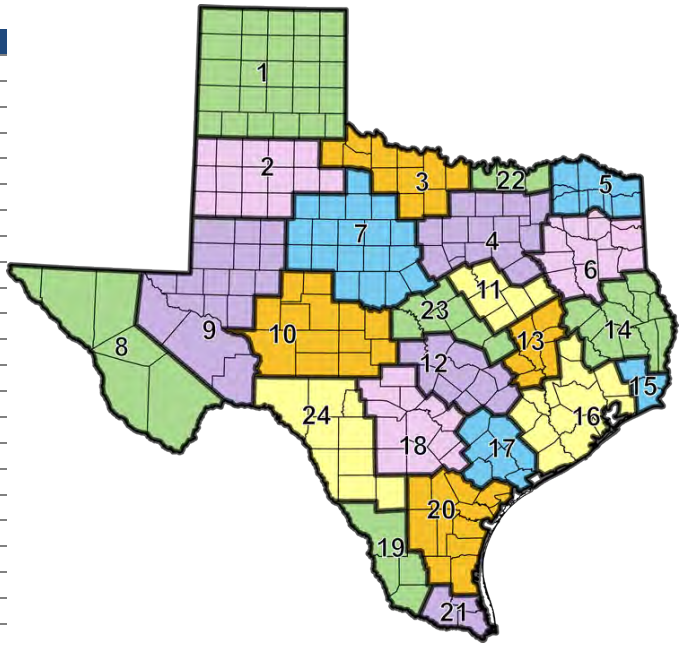

Figure 13: State Planning Regions/COGs and Disaster District Boundaries

Building Interoperable Communications through Partnerships

Public Safety communications along the Texas/Mexico border were, until recently, non-existent in some areas and limited to individual agency operability in most areas. Many regional jurisdictions and state agencies formed partnerships to build-out regional shared interoperable communications systems, such as the one created by the Middle Rio Grande Development Council (MGRDC). The MGRDC formed partnerships with local governments and State and Federal agencies to overcome coverage and interoperability problems. The partner agencies include Texas Department of Public Safety, Texas Department of Transportation, Texas Parks and Wildlife, U.S. Customs and Border Protection, and International Water and Boundary Commission.

As a result of these partnerships, the MRGDC designed and built the Regional Trunked Radio System (RTRS). The RTRS is a P25 VHF system providing interoperable communications over 30,000 square miles and 17 counties in south Texas and along the Mexico border. The 19 site digital trunked radio system supports multiple public safety and public service disciplines.

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

Regional Systems	Description	Status
AACOG Radio Communications	Regional trunked P25 700 MHz and P25 VHF communications systems	Existing/planned: provide 11 counties 700 MHz P25 trunked radio service; interoperability with San Antonio's 8,000 users, Austin's 14,000 users, and 8,000 LCRA system users.
ARK-TEX COG	Cass, Franklin, Hopkins, Lamar, Morris, and Red River Counties and Cities of Sulphur Springs, Atlanta, and Clarksville all use VHF P25 systems. Bowie, Delta, and Titus Counties use VHF analog systems. The City of Texarkana utilizes an 800mhz trunked system, and the City of Paris utilizes a dual-band VHF and UHF P25 system. All entities in the region have obtained interoperability with each other.	Existing/planned
CAPCOG: Greater Austin-Travis Co. RRS (GATRRS)	GATRRS is 700/800 MHz trunked P25; provides system controller for: Williamson, Caldwell, Bastrop, and Lee Counties, South Texas Development Council's four VHF counties, Middle Rio Grande Valley Developments Council's nine VHF counties, and a 700 MHz Texas DPS State Capitol trunked site. Combined systems serve more than 100 agencies and 15,000 users.	Existing/planned
Brazos Valley Wide Area Communications System (BVWACS)	P25, 700 MHz, 7-site trunked system in Brazos and Washington Counties; shares controller with the TxWARN system.	Existing/planned expansion: remaining five counties of the Brazos Valley COGs area.
Concho Valley COG	P25 VHF MHz trunked system: connected by 4.9 GHz point-to-point links.	Existing/ planned: build-out of VHF trunked sites through the remainder of the 13-county CVCOG region.
Deep East Texas COG	Conventional VHF P25 mixed mode repeater system replacing 25 legacy city/county dispatch repeater channels in the 12 counties; secure IP network links 25 repeaters and 30 dispatch consoles that enables wide-area roaming and interoperability.	Existing/planned
East Texas COG	Thirteen of the fourteen counties use VHF for their primary public safety communications. Approximately 90% of the region has converted to narrowband compliance. In recent years, there has been a push to migrate everyone to P25 compliance and this continues with new purchases. Attainment of this goal is approximately 50% in the region. Smith County and the City of Longview operate 800 MHz systems as part of the East Texas Medical Center / TxWARN system.	Existing: 75% of the COG is covered by TxWARN system partnership w/East TX Medical Ctr. Planned: Utilize existing TxWARN infrastructure to create an overlay for ETCOG connectivity via ISSI routing.
El Paso City and County Regional Radio System	Voice: 800 MHz proprietary trunked system; 4 sites. Data: Automatic Vehicle Locater and CAD.	Existing planned: P25 800 MHz trunked System city-wide with gateway to VHF users.
Harris County P25 TxWARN	Proprietary and P25 700/800 MHz trunked voice and data regional network; coverage over 24 counties, approximately 80,000 subscriber units, and more than 600 agencies on the system.	Existing/planned
Harris County BIGNet (broadband)	Broadband Interoperability Gateway-Network (BIGNet) 700 MHz LTE Public Safety Broadband Network. Projected go-live date for Harris County is August 1, 2012.	Existing/planned
Heart of Texas COG (HOTCOG)	Waco uses a proprietary analog trunked system, but is migrating to the P25 TxWARN trunked network (partners: Harris Co. and East TX Medical); expect to be fully migrated by mid-2013.	Existing/planned
Houston, City of	Land Mobile Voice: P25, 700 MHz trunked system; @20,000 subscriber units expected; 45-50 sites. Mobile Data: current capability: WEB EOC with up to 1000 users; CAD handles 5000+ calls per day; Fire RMS with 1000+ users; OLO (On-Line Offense) PD RMS @5000 users; and voice logger that records 10,000+ calls. City of Houston will be a partner with P-25 TxWARN.	Existing/planned
Laredo, City of	P25 700/800 MHz Simulcast trunked System; 3 sites, ten (10) channels. Provides voice communication for 24 City departments, including public safety, police, and fire. Approximately 2,200 subscribers. Used by DPS, TABC, and CBP, during combined operations (interoperability), 65 subscribers.	Existing/planned;

Regional Systems	Description	Status
LCRA	900 MHz proprietary trunked system: covers 46,000 square miles and 60 counties; provides primary communications for public safety agencies within the area. 700 MHz P25 trunked O\overlay system: provides seamless integration into regional systems and conventional systems.	Existing/planned: Completed 14, 700 MHz overlay sites of 56 sites.
LRGVDC Regional Radio	P25 700/800 MHz trunked with a P25 core. Hidalgo, Cameron, and Willacy counties share this system consisting of 9 sites across the region. Combined sites serve more than 100 agencies and 8,000 users. Currently installing 10th site. 2 to 7 additional 700/800 MHz P25 sites planned as well as VHF overlay.	Existing/planned: 9 sites active, 10th site under construction, 2 to 7 additional sites planned.
MRGDC Regional Radio System	VHF P25 trunked, 19 site system; serves 9 counties, 51 agencies, and the Kickapoo Traditional Tribe along the Texas-Mexico border area.	Existing/planned
North Central Texas COG Communications Systems Dallas/Fort Worth/Arlington UASI	P25 700 MHz trunked Communications Overlay System active (ISSI between DFW Airport Harris brand and City of Dallas Motorola Cores) McKinney: P25 trunked System. Plano/Allen/Wylie/Murphy: P25 trunked System. Frisco: P25 800 MHz trunked system. DFW Airport: P25 700 MHz trunked site connected to its P25 core. Dallas: P25 core. Dallas Area Rapid Transit (DART): Proprietary trunked radio system. Parker County: P25 VHF trunked system Hurst: P25 700 MHz trunked system (single site) White Settlement: P25 800 MHz trunked system (single site) Nine additional proprietary shared trunked radio systems in the UASI.	Existing and planned: Fort Worth/Tarrant County/Johnson County-initial planning for a multi-site, multi-county P25 700/800 MHz trunked radio system; Dallas hiring consultant for County wide RFP and system development for new 700/800 MHz radio system; Irving final decision stages of system migration from existing 800 MHs proprietary to P25; Richardson 800 MHz P25 system (replacing proprietary) to be on air in last quarter of 2011.
Panhandle Regional Interoperable Communication System (PANCOM)	Conventional VHF P25 repeater system replacing 60 legacy county dispatch repeater channels in the 26 counties; secure IP network links 130 repeaters and 60 dispatch consoles that enables wide-area roaming and interoperability.	Existing/planned: 24 of 26 counties are operating on PANCOM equipment. 5 additional sites have been identified to integrate the two remaining counties. The microwave backhaul system connecting 42 VHF tower sites is almost complete.
PermianLink (PBRPC)	P25 VHF/800 MHz trunked system: connected by 4.9 GHz point-to-point links.	Existing and planned: continue the build-out of VHF trunked sites through the remainder of the 17-county PBRPC region. The P25 trunked repeater site in Andrews County is our 10th site of 11 sites and is 50% completed and awaits the installation of field network equipment by 1 Sept 2012. The eleventh and final site in Jeff Davis County on Gomez Peak is awaiting FEMA EHP approval for the installation of a new tower. The regional system is “live” and has over 200 trunked radio subscribers from around the Permian Basin, including local, state, and federal agencies.
San Antonio-Bexar County Regional 800 MHz Trunked Radio System (SA-BCRRS)	Proprietary 800 MHz Trunked Radio System: provides service to more than 40 county-wide local, State, and Federal public safety agencies; serving a total of over 8,000 subscribers; interconnected to LCRA 900 MHz proprietary trunked radio system and the City of Corpus Christi/Nueces County Regional Radio System (proprietary) providing interconnectivity along the emergency evacuation routes; 19 channel simulcast sites provide radio coverage for the core of the metropolitan area, with six additional remote multicast sites providing extended coverage in outlying areas of Bexar County.	Existing and planned: expanding with a two site P25 Conventional VHF overlay system; and a 5 site 700 MHz P25 layer.

Regional Systems	Description	Status
South East Texas Regional Planning Commission (SETRPC)	Jefferson, Hardin, and soon the City of Orange in Orange County is a proprietary 800 MHz Trunked Radio System. In process of upgrading to a 7X (P25) system with Smart X switch. Orange County seeking to add 700 MHz simulcast system in Orange County through new regional 7X switch. All Jefferson & Hardin County Public Safety on SETRRS. Shared talk groups with Orange County Public Safety.	Existing/planned merger of Orange systems to SETRRS and P25 compliance.
South Texas Development Council (STDC)	Four -Site VHF P-25 trunked system; 4 repeaters at each site and connected to the Greater Austin Travis County Area Regional Radio System P25 core; wide-area testing completed and successful.	Existing/planned: pending installation of consoles and programming of subscriber units
Victoria, City of	P25 800 MHz digital 11 channel trunked system serving City of Victoria PD, Fire & EMS, Victoria Sheriff's Office, Victoria County Fire, TABC, and Victoria College Police Department.	Existing, no planned expansion now; possibly to the remaining six counties of the Golden Crescent area
West Central Texas System (19 Counties)	19 county shared systems: VHF wideband conventional; P25 repeaters. City of Abilene: a proprietary non-P25 800 MHz trunked system with non-trunked VHF radios on key deployable assets that routinely respond in support of surrounding jurisdictions. 18 of 19 dispatch centers upgraded to multi-channel and multi-band (VHF, UHF, 700, and 800 MHz) patching capability	Existing/planned: interconnect all county dispatch centers and the City of Abilene dispatch center into a VoIP/RoIP network comprising a system-of-systems for the region.

Shared Statewide System[8]	Description	Status
Texas Department of Public Safety	VHF P25 narrowband and Internet Protocol (IP) Gateway system to interconnect disparate systems provide radio communications to multiple State and local agencies.	Planned and currently being executed
Lower Colorado River Authority	900 MHz proprietary trunked system and 700 MHz P25 trunked overlay system with interoperability into Austin and San Antonio's 800 MHz systems; total coverage: 60 central Texas counties.	14 sites deployed; future deployment based on funding
Texas Department Of Transportation	Statewide VHF narrowband analog and P25, regional VHF/700/800/900 MHz trunking in various areas, HF SSB Network, and IP Gateway system to interconnect selected sites and agencies.	Existing, planned, and currently being installed

The individual State Agency systems listed below may support alternate radio communications during the aftermath and recovery of disasters which may affect primary interoperable communications systems.

State Agency Systems	Description	Status
Texas Department of Public Safety (DPS)	Statewide coverage, VHF Narrowband, and P25. DPS owns and operates a statewide P25 VHF radio system used by DPS units for daily operations with radio coverage over approximately 95% of Texas. This system is also designed for use during emergency operations to provide interoperable communications between various State agencies and local responders; shared used of VHF/700/800 MHz regional trunked systems.	Existing

[8] Shared statewide radio systems are typically designed to consolidate the communications of multiple State agencies onto a single system, thereby providing strong interoperability. Many States also make these systems available to Federal, local, and tribal agencies on a voluntary basis. In this case, local governments either chose to use the shared statewide radio system as their primary system, or they decided to interface their system to the shared statewide radio system creating a system-of-systems.

State Agency Systems	Description	Status
Texas Department Of Transportation	Statewide VHF narrowband analog and P25, regional VHF/700/800/900 MHz trunking, HF SSB Network.	Existing
Texas Juvenile Justice Department (TJJD)	Central Office + 3 facilities – proprietary 700 MHz, 3 facilities - VHF Narrowband.	Existing – planning addition to 4 (700 MHz) sites to provide P25 compliance + migrate remaining 3 VHF sites to 700 MHz w/P25 Compliance.
Lower Colorado River Authority	900 MHz proprietary trunked system: covers 46,000 square miles and 60 counties; 700 MHz P25 Overlay system: provides seamless integration into regional systems and conventional systems.	Existing and planned: 900 MHz trunked system covers 60 counties is in place. 700 MHz: completed 17 of 56 700 MHz overlay sites. Trunked system provides interoperability between the 700 MHz and 900 MHz systems.
Texas Alcoholic Beverage Commission (TABC)	None	None; TABC is not replacing its repeater systems due to very limited areas of use. TABC has agreements to operate via local, county, and other State agency systems.
Texas Parks and Wildlife	Statewide coverage, VHF Wideband	Planned: conversion to narrowband when funded.
Brazos River Authority	Partial regional coverage - Three major reservoirs; Possum Kingdom, VHF conventional/700 MHz trunked repeaters, Narrowband/P25, gateway connection into Parker County switch; Lake Granbury, single channel 100 watt VHF Analog conventional repeater; Lake Limestone, VHF conventional repeater, Narrowband / P25; Currently no link between sites. Waco central office and basin treatment plants lack any communications infrastructure.	All locations will be narrowband by the FCC deadline; based on future funding, the goal is to upgrade all locations in the basin with VHF, Narrowband/P25 infrastructures and connect into the system-of-systems. Not all locations will have 700 MHz
Texas Military Forces (TMF) (National Guard) J6	TMF J6 operates 17 emergency communications platforms linked to the Department of Defense (DOD) network via dedicated, private Ku-band satellite service. Each platform provides at least six Voice Over IP (VoIP) phones and six computers, internet/WiFi, DOD network, printer/fax, onboard air conditioner, and diesel generator. Each trailer hosts P25 radios on all bands with rooftop antennas, or base station antennas on a 40ft mast. All radios are linked to Cisco IPICS to bridge on site, between sites, or operated remotely via VoIP phone. TMF J6 has a cache of over 600 P25 radios along with eight deployable repeaters. TMF J6 manages a network control facility at Camp Mabry, in Austin. TMF J6 is currently planning integration of deployable cellular phone sites operating in DOD spectrum accessible by most existing cell phones.	Existing and expanding

6. Appendix B: Disaster Communications Coordination and Resources

Planning and Coordination

Communications Coordination Group (CCG): Established by the Texas Legislature in 2009, the CCG facilitates public and private collaboration to plan and deliver communications support during large-scale, multi-agency disaster responses.

- CCG responsibilities include:
- Organization
- SOP
- Compliance with the State of Texas Emergency Management Plan - Annex B (Communications) http://www.dps.texas.gov/dem/documents/planState/state_annex_b.pdf
- Platform typing
- Estimating costs for deployment during exercises and incidents.

The goal of the CCG is to optimize the use and effectiveness of government and commercial communications systems and resources. The CCG is well-trained and stands ready to mobilize public and private assets and coordinate statewide resources wherever in Texas they are needed.

The Texas Military Forces (TMF) hosts the State's CCG where J6 and the State collaboratively use communications resources during emergencies. Statewide, there is a critical need for mobile communications assets and trained first responders ready to deploy to support local communities in a disaster. TxDPS and the TMF have built the STR cache of communications equipment which deploys with trained personnel to oversee its operation.

With plans in place, the STR equipment and support personnel, along with regional mobile command and communications vehicles, Texas is able to respond within hours to establish interoperable communications in any part of Texas hit by a disaster.

NIMS and Multi-Agency Coordination Systems (MACS)

"The NIMS places responsibility on individual Federal, state, local, tribal, and territorial governments and agencies for establishing a preparedness cycle in advance of an incident and for including the private sector, organizations, and individual citizens, as appropriate."[9]

[9] National Preparedness Guidelines; September 2007; page 3

The Texas Division of Emergency Management (TDEM) has implemented well-developed MACS which are compliant with NIMS and the National Response Plan. Each region has adopted and implemented NIMS procedures for emergency response. Use of an ICS, compliant with the National Incident Management System, is required for use of any regional interoperability resource.
Figure 14 shows a graphic assessment of how MACS are implemented in Texas.

Disaster Districts

Disaster Districts are the State's regional emergency management organizations that serve as the initial source of State emergency assistance for local governments. A Chair (the local Texas Highway Patrol commander) directs Disaster District operations. A Disaster District Committee, which consists of state agencies and volunteer groups that have resources within the District's area of responsibility, assists the Chair in identifying, mobilizing, and deploying personnel, equipment, supplies, and technical support in response to requests for emergency assistance from local governments and state agencies. Disaster District Chairs may activate and commit all state resources in their area of responsibility to aid requesters, except that activation of the National Guard or State Guard requires prior approval by the Governor. State resources that are committed to assist local governments normally work under the general direction of the Disaster District Chair and take specific task assignments from the local IC. If the resources of a Disaster District are inadequate to provide the type or quantity of assistance needed, the request for assistance is forwarded to the SOC for state-level action.

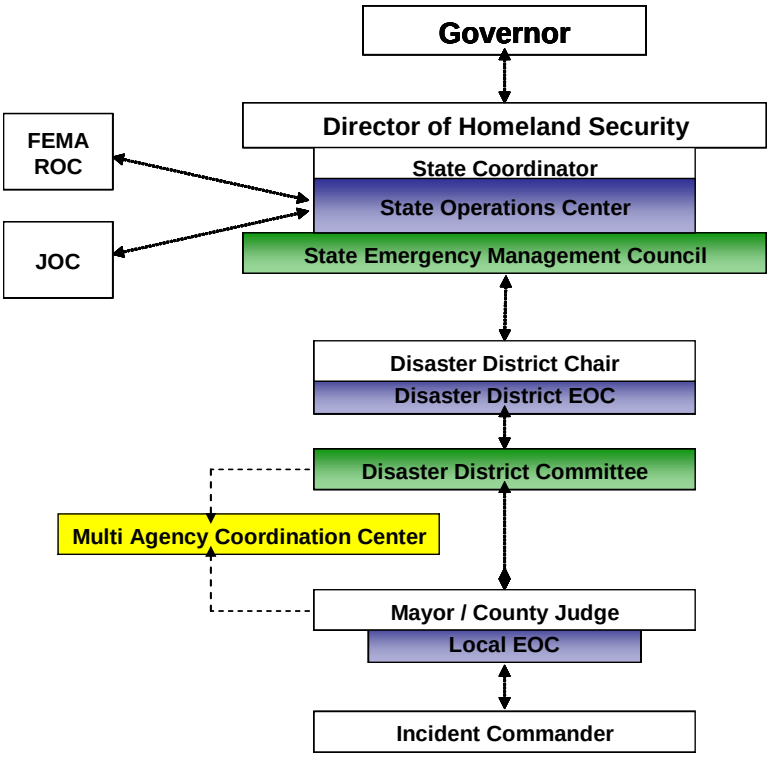

Figure 14: Procedure for requesting Operational Assistance

Disaster District/State Planning Regions boundaries coincide with the boundaries of the 24 COGs.

The State Operations Center (SOC)

The SOC is operated by TDEM and serves as the state warning point. The SOC uses an extensive suite of communications to receive and disseminate threat warnings to regional warning points, local, tribal, State, and Federal officials, and non-governmental agencies; to monitor emergency situations throughout the state; to provide information on these events to local, State, and Federal officials; and to coordinate State assistance to local governments that are dealing with emergencies. The suite of communications at the SOC includes:

- Video Teleconference System (VTC) to all Disaster District EOCs
- Texas Warning System (TEWAS), a direct push-to-talk landline system to all National Weather Service Offices, DPS Communications Facilities, and the National Warning Center
- Satellite Radio System
- Satellite Telephone System
- Computer Aided Dispatch (CAD) system with connectivity to TLETS/NLETS for Message Distribution
- State Radio Amateur Civil Emergency Services (RACES) and Military Auxiliary Radio System (MARS) Radio Networks with high frequency (HF), very high frequency (VHF) and ultra high frequency (UHF) amateur bands
- WebEOC management software

The SOC coordinates more than 5,000 emergency incidents per year. The SOC is housed in an underground bunker three stories below ground level at the Texas Department of Public Safety Headquarters in north-central Austin.

The State Emergency Management Council

The Emergency Management Council is composed of 34 state agencies, the American Red Cross (ARC), and the Salvation Army (TSA). State law established the Council to advise and assist the governor in all matters relating to disaster mitigation, emergency preparedness, disaster response and recovery.

During major emergencies, Council representatives convene at the SOC to provide advice on and assistance with response operations, and to coordinate the activation and deployment of state resources to respond to the emergency. Generally, state resources are deployed to assist local governments that have requested assistance because their own resources are inadequate to deal with an emergency.

State First, Secondary and Support Emergency Response Agencies: State and local agencies responsible for providing public safety emergency services are integral partners in regional

communications systems, policies and procedures, and are critical members of regional, county and local jurisdictions' public safety first responder teams. State agencies integrated in this effort include (but are not limited to):

- Texas Department of Public Safety - The Law Enforcement Support Division of DPS has four emergency response teams, called Communications Emergency Operations Teams (CEOT, made of communications personnel, radio and tower technicians, and IT personnel. CEOT members have studied ICS and several have completed COML, COMT and AHIMT training. These teams are strategically placed throughout the state and team members regularly participate in emergency communications field operations training using interoperable communications equipment.
- The Texas A&M Forest Service (TA&MFS) has several Communications Unit Leaders who completed the National Wildfire Coordinating Group (NWCG) Communications Unit Leader Training. To finalize certification, participation in actual incidents and exercises are required to complete the field task requirements. TA&MFS has organized and trained regional incident management teams staffed by local and regional volunteers.

Prioritization and Shared Use of Regional Interoperability Assets

In response to events or incidents which cross political jurisdictions, there will potentially be competing demands and priorities for interoperable communications assets. Until such time as Incident Command is established, the lead agency designee (i.e., communications supervisor/command personnel), in cooperation with assisting agencies, will have the authority to designate the use of interoperable assets. Once Incident Command has been established, Command Staff or Communication Unit Leaders (when designated) direct the further coordination and delegation of the interoperable communications assets assigned to the event or incident in question.

- Agencies judiciously activate needed interoperable assets so as to both effectively respond to the event and/or incident and also minimize any negative impact on surrounding agencies or jurisdictions.

When the same resources are requested for two or more incidents, resource assignments are be based on the priority levels. In the event of multiple simultaneous incidents within the same priority level, the resources will be evaluated by the CCG and allocated according to priority levels.

1. Incidents with the greatest level of exigency (e.g., greater threat to life or property, more immediate need, etc.) have priority over less exigent incidents.
2. Agencies with single/limited interoperable options have priority use of those options over agencies with multiple interoperable options.

3. When at all possible, agencies already using an interoperable asset during an event should not be redirected to another resource.

Emergency/Mutual Aid Communications with Adjacent States

In the emergence of a national disaster event, communications with adjacent states are conducted under the Emergency Management Assistance Compact (EMAC). EMAC was signed into law and adopted by individual states in 1996. 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 disaster and emergency. EMAC provides:

- Administrative oversight, support staff and formal business protocols.
- A solution to potential problems by establishing provisions in the Compact for reimbursement, licensure and liability.
- Continuity of operations with SOPs and integrates into existing command and control structures.
- Continual improvements with a five-year strategic plan, critiques, training, exercises and meetings.
- An EMAC Operations Systems that manages events.

EMAC is the mutual aid agreement. The actual communications are coordinated through TDEM and achieved with state and regional communications vans and trailers, and a radio cache and satellite phones to be distributed at the scene from the STR.

Redundancies in Communications

Texas has established redundancies in communicating in the event of a catastrophic loss of communications: 1) the Radio Amateur Civil Emergency Service (RACES); 2) Military Auxiliary Radio System (MARS); 3) and a Strategic Technology Reserve (STR).

In addition to state efforts to provide communications redundancy, the UASI areas and most regions of the state have communication system with stocks of replacement parts, backup generators, alternate tower or working sites and radio site on wheels (SOW).

Radio Amateur Civil Emergency System: RACES is a public service provided by reserve (volunteer) group of Amateur Radio Operators. The service is administered by local, county and state emergency management agencies and is supported by the Federal Emergency Management Agency (FEMA). As part of the Amateur Radio Service, it provides radio communications for civil-preparedness purposes only, during periods of local, regional or national civil emergencies, including natural disaster such as earthquakes, hurricanes, wildfires, power outages, floods,

victim searches and other disasters. The RACES program is administered by the Division of Emergency Management and has an appointed State Races Radio Officer responsible for organizing and directing the program.

Military Auxiliary Radio System: MARS is a Department of Defense communications service that is available for military and civilian emergency management agencies at the local, state and federal level. MARS has the capability to provide email by High Frequency Radio that is independent of standard internet based email. In addition, MARS can provide both voice and data communications over dedicated Federal Frequencies coordinated by NTIA. Texas Military Forces (TMF) J6 as part of its response preparation has tasked MARS to staff six teams for emergency deployment. In addition TMF has 16 Communications Trailers that have MARS support. MARS has dedicated equipment installed FEMA Region VI RRCC, the State Operations Center (SOC), Communications Coordination Group (CCG) and the TMF Joint Operations center at Camp Mabry. The MARS program is administered by a State Coordinator.

Strategic Technology Reserve (STR): Texas has an existing STR of communications vans, trailers, and radio caches pre-positioned regionally throughout Texas. In addition, each DPS District Coordinator has satellite phone and cellular phones with Wireless Priority Service (WPS), which provides priority service during emergencies. The STR, established by the Department of Public Safety and the Texas Military Forces, is used to provide and/or restore emergency communications due to natural hazards and terrorist or criminal activities. As the designated state agency first responder, DPS is responsible for the purchase and maintenance of the STR equipment. Mobile packages include an array of basic radio transceivers enabling coverage in multiple bands in both analog and P25 digital modes. Radios will be linked, when appropriate, with IP-based technology providing the most effective currently available method of interoperability.

7. Appendix C: Operational Communications Training Guide[10]

Operational Communications training is a vital element for efficient and effective emergency response, as well as communications interoperability. "Combining resources and people is a complex endeavor that cannot be first attempted during an actual emergency. Experience shows that success requires a foundation of common processes, policies, interoperable equipment, and cooperative training and exercises. The public is best served when officials at every level train to a common standard and exercise their emergency roles routinely. Interoperability, integration, and mutual support must be the daily norm – not the exception." (Source: Texas Homeland Security Strategic Plan 2010-2015.)

The Texas SCIP Overarching Goal for Training and Exercises state: "Ensure integrated local and regional training and exercise opportunities are available to all emergency responders."The Texas SCIP Mission Statement requires: "Training and Exercises that are Regular, Comprehensive, and Regional."

Practical and regular training and drills are essential to accustom users with operational requirements during disaster situations. Communications training needs should be driven by the incident command system procedures utilizing the COM-L position.

Most COGs and some major cities have training academies that provide both general and specialized training programs in courses such as Intermediate Incident Command System (ICS-300), Advanced Incident Command System (ICS-400), and Homeland Security tabletop exercises. The Texas Interoperability Channel Plan and Channel Plan MOU require agencies to participate in joint training exercises, i.e.: integrating communications element in an existing planned exercise.

It is the responsibility of agency officials to ensure all responders are trained as necessary.

Current SCIP training initiatives (submitted in the 2011 SCIP Implementation Report) include:

TRAINING INITIATIVE	GAP
Develop formal communications curriculum and delivery programs for use by responders and academies statewide.	Knowledge of radio systems, equipment, and SOPs.
Develop short, simple drills which exercise interoperability channels and equipment that individual agencies (dispatchers and end users) can incorporate into daily operations.	Interoperability training.
Ensure each COG has assigned COMLs and COMTs skilled in deployment, setup, and operation of gateway equipment.	Basic skills in setup, and operation of interoperable resources.

[10] Guidance abbreviated for SCIP inclusion; go to http://www.txdps.state.tx.us/LawEnforcementSupport/communications/interop/index.htm for the complete guide.

Target Objective:

- Ensure first responders at all levels are trained and routinely exercise communications equipment, procedures and coordination.

Statewide Training and Exercise Programs

Texas is implementing a statewide training program for interoperable communications. This effort will include a combination of:

1. Incorporating interoperable communications in standardized training for emergency responders provided by public safety organizations.
2. Providing a basic multi-disciplinary interoperable communications course on-line that can be accessed by first responders and the large number of volunteer public safety personnel in the State, as well as industry and non-governmental organizations who find it difficult to participate in face-to-face training courses.
3. Adding focused interoperable communications courses to the extensive emergency preparedness, response, and recovery curriculum offered statewide by the Texas Division of Emergency Management at no cost to local government, tribal, and state agency personnel, and members of volunteer groups active in disasters

Region-wide Training Policies, Procedures and Plans

General interoperable communications rules of use, policies, procedures and training that apply across all participating systems, mutual aid channels and gateways are detailed below.

- **Incident Command System (ICS)**
  - Each agency will use ICS as an operational guide at large-scale incidents. Radio communications procedures on the interoperability channels must be consistent with NIMS.

Region-wide Shared System Rules of Use

- **National Incident Management System** – Use an Incident Command System (ICS) compliant with NIMS when using any regional interoperability resource.
- **Plain Language** – All interoperable communications during multi-agency, multi-discipline incidents will be in plain language. Avoid using radio codes, acronyms, and abbreviations as they may cause confusion between agencies. Ensure that all verbal

requests for assistance or backup specify the reason for the request. Specifically, "10-codes" shall not be used.

- **Unit Identification** – Announce your home agency prior to announcing your unit identifier during interoperable communication situations. (i.e., Nueces SO 7304)
- **Encryption** – All encrypted radios users must operate in a "clear" mode when a gateway is used, unless otherwise arranged in advance. **Never assume encryption carries across the gateway**.
- **Monitoring** – The Incident Commander, or their designee, will ensure that each activated interoperability channel is monitored consistently while in use.

Region-wide Gateway Training Procedures

To ensure that equipment components of the gateway operate properly, each agency will participate in the following training procedure:

- Representatives from multiple agencies should meet on a regular basis to test each gateway.
- Testing should include deployment (mobile only), setup, operation, and deactivation of each gateway.
- If an issue or problem is identified during the testing procedure, determine who will take corrective action. If the issue or problem cannot be resolved, contact the appropriate technical personnel to address the issue or problem.

Regional Training and Exercise Recommendations

Implementing effective training and exercise programs to practice communications interoperability is essential for ensuring that the technology works and responders are able to effectively communicate during emergencies[11]. Optimal interoperability requires regular, comprehensive, and realistic exercises that address potential problems in the region and involve the participation of all personnel. *It is the responsibility of each region/ agency/jurisdiction to ensure adequate training and exercise opportunities are available for all emergency responders, and that all responding emergency responders are adequately trained*.

If the training concerns are significant throughout the region, the COG should study and evaluate the benefits of using the SAFECOM guide for "Communications-Specific Tabletop Exercise (TTX) Methodology" to create a regional table-top exercise specific to their identified needs.

[11] SAFECOM Continuum, www.safecomprogram.gov

Regional exercises should:

- Should be examined to determine the best method for the region.
- Should include an interoperable communications component to evaluate the training and usage by local, state and federal partners and identify gaps and best practices.
- Should identify training gaps in communications
- Should provide basic and advanced training through in-service refreshers and training courses to ensure that all participating first responder agencies attain and maintain NIMS/ICS compliance.
- Should increase first responders training and awareness on how to make current equipment and communications systems interoperable and effective.
- Should include training for system to system Console Patch, shared channel use, shared system use, mobile gateway use (including steps to set-up mobile gateways); IP gateway use (including steps to set-up IP gateways.
- Should improve and expand regional responder efficiency and effectiveness with mandated evaluations and certifications using the SAFECOM Continuum as a guide.
- Should include training curriculum modules that provide new dispatchers with fundamental procedures prior to assuming their duties on live systems.
- Should include first responder training materials that provide detailed instruction on radio interoperability as well as regular hands-on "refresh" training.
- Should provide on-going sustainment training to install, operate, and maintain all interoperable packages.
- Should include appropriate use of interoperability channels.

8. Appendix D: Acronyms

List of Acronyms	
Item/Acronym	**Definition**
APCO	Association of Public Safety Communications Officials
ARC	American Red Cross
BZPP	Buffer Zone Protection Plan
CASM	Communications Asset Survey and Mapping
CI	Critical Infrastructure
COG	Council of Governments
COWs	Cells/Channels on Wheels
DDC	Disaster District Committee
DFW	Dallas Fort Worth
DHS	Department of Homeland Security
DPS	Department of Public Safety
EOC	Emergency Operations Center
EMS	Emergency Medical Services
ETMC	East Texas Medical Center
FCC	Federal Communications Commission
GJXDM	Global Justice XML Data Model
IACP	International Association of Chiefs of Police
ICTAP	Interoperable Communications Tactical Assistance Program
ICS	Incident Command System
IP	Internet Protocol
JOC	Joint Operations Center
KR	Key Resources
LCRA	Lower Colorado River Authority
LETPP	Law Enforcement Terrorism Prevention Program
LMR	Land Mobile Radio
MHz	Megahertz
MOU	Memorandum of Understanding
NIMS	National Incident Management System
NPSPAC	National Public Safety Planning Advisory Committee
OEM	Office of Emergency Management
P25	Project 25 (formerly APCO Project 25)
POC	Point of Contact

List of Acronyms	
Item/Acronym	**Definition**
PSAP	Public Safety Answering Point
PSIC	Public Safety Interoperable Communications
RACES	Radio Amateur Civil Emergency Service
RECIM	Regional Emergency Communications Information sharing
RFI	Request for Information
RFP	Request for Proposal
RMS	Records Management System
SCIP	Statewide Communications Interoperability Plan
SHSP	State Homeland Security Program
SIPRNET	Secret Internet Protocol Router
SME	Subject Matter Expert
SOC	State Operations Center
SOI	Standard Operating Instructions
SOP	Standard Operating Procedures
STR	Strategic Technology Reserve
TARC	Texas Association of Regional Councils
TCLEOSE	Texas Commission on Law Officer Standards and Education
TDEM	Texas Division of Emergency Management
TEEX	Texas A&M Engineering Extension
TA&MFS	Texas A&M Forest Service
TIC	Texas Interoperability Coordinator
TICP	Tactical Interoperable Communications Plan
TRCIP	Texas Radio Communications Interoperability Plan
TSA	Salvation Army
TSICP	Texas Statewide Interoperability Channel Plan
TSIEC	Texas State Interoperability Executive Committee
TVE	Tactical Validation Exercise
TXMF	Texas Military Forces
TxRC	Texas Radio Coalition
UASI	Urban Area Security Initiative
UHF	Ultra High Frequency
VHF	Very High Frequency
XML	eXtensible Markup Language

9. Appendix E: Regional Environment & Communications Risks and Accomplishments

Regional status will be added as subsections to Appendix E as they are submitted.