

SOUTH DAKOTA INTEROPERABLE COMMUNICATIONS PLAN

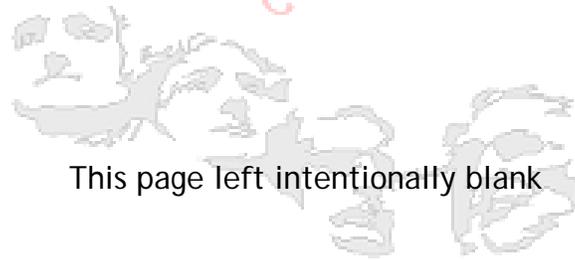
South Dakota



Interoperability Network

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Executive Summary

South Dakota has over 780,000 citizens living on the 77,000 square miles within its borders, which works out to a little over 10 citizens per square mile. Add to this a wide variety of topography and large tracts of federal and tribal lands, the challenge of communications between first responders has long been a problem in the state.

On October 23, 2002, the South Dakota Interagency Communications System was made available for use by any governmental agency in South Dakota with public safety ties. This communications system replaced several state systems and allowed access to local agencies that had migrated to systems and spectrum outside of that used by state agencies. As part of the process over 3,000 radios for state users and over 7,000 radios were distributed to local first responders, allowing over 97% of all first responders in the state access to a single unified communications system. In the period after the statewide system was made available, another nearly 4,000 radios have been added by state, local, federal, and tribal users providing access to nearly every first responder in the state.

The current system consists of tower sites across the state networked to a controller located in Pierre. "Roaming" is allowed between sites with the use of intelligent radios and networking. Roaming allows the user to traverse the state without losing communications, and the system allows individual agencies to maintain private communications with agency "talkgroups". The digital aspects of the system allow for clear communications over 97%+ of the geographic area of the state.

During the years 2003-2004 a large representative group of state, federal, and local first responders were assembled to develop policies and procedures for the statewide network. Out of this process came the current communications manual, a set of standardized protocols that all users adhere to, and a training program which allows local departments to instruct radio users with the aid of VHS, DVD, and printed media.

Over the course of being on line, the system has been delivering a capability to first responders in the state never before possible. Neighboring jurisdictions now have a common communications medium, emergency response is greatly enhanced and state/local/federal/tribal communications are possible anywhere within the state. The distribution of radios to state, local, federal, tribal, and others matches the percentage of use patterns observed through the control center.

All state agencies requiring wide-area communications utilize the network. Local agencies actively utilizing the system include fire departments, EMS/Emergent care, police departments, sheriff's offices, emergency managers, transit buses, highway/road departments, parks departments, municipal utilities, and other non-governmental agencies involved in public safety and infrastructure.

Federal and tribal radio users are migrating to the system as it offers the only statewide trunked network available outside of the commercial cellular systems.

Traffic over the network is averaging over 2,000,000 calls per month, and has been instrumental in the response to law enforcement, emergency medical, fire, and weather related situations.

After three years of development, and Executive Order was signed by the Governor in March of 2007 creating the South Dakota Public Safety Communications Council (SDPSCC). The SDPSCC is an oversight council with the mission to improving interoperable communications in the state. Represented on the council are all groups utilizing the statewide network.

- South Dakota Police Chief's Association
- South Dakota Sheriff's Association
- Division of Criminal Investigation, Office of the Attorney General
- South Dakota Game, Fish, and Parks
- South Dakota Department of Transportation
- South Dakota National Guard
- South Dakota Emergency Managers Association
- South Dakota Fire Fighters Association
- South Dakota Association of Healthcare
- South Dakota Department of Public Safety/Highway Patrol
- The South Dakota APCO/NENA Chapter
- South Dakota EMT Association
- South Dakota Department of Agriculture/Wildland Fire
- South Dakota Association of County Commissioners
- South Dakota Department of Health
- Tribal Government or tribal government association
- Federal Government or federal government association
- South Dakota Bureau of Information and Telecommunications Engineering Manager

This group will assume responsibility for this manual, provide priorities for grant funding, and update annually the protocols within this document.

South Dakota feels very fortunate to be in the situation we are currently. Interoperability in our state was a necessity before the term became the buzzword in national circles because our few first responders need to work together and pool resources to take on the challenges presented. We do however continue to look to the future and where we can make improvements. At this point our Project 25 (P25) digital voice traffic is relayed over a proprietary trunking system, and our ultimate goal is to continue to work towards an integrated voice and data network built upon open standards offered through the P25 suite.

The state agency assigned as the lead for communications, the Bureau of Information and Telecommunications, is currently going through an engineering study and budget process designed to implement a conversion of the trunking network. Included in those plans is a migration policy, integration with neighboring states operating on a different spectrum plan, and integration with the upcoming 700mhz spectrum and equipment.

Included in this document are the talkgroups that every radio in the state are required to program, routine and emergency protocols, a glossary of terms, and attachments outlining the system and users. The document has been designed with the practical use of the average radio operator in mind, and functionality will remain the cornerstone of this plan.

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1. Introduction

On October 23, 2002, the South Dakota Interagency Communications System was made available for use by any governmental agency in South Dakota with public safety ties.

Dating back to the 1940's the state has had a communications system based upon lowband technology (39mhz). The characteristics of lowband provide for excellent range, but lowband is very susceptible to outside interference, and with the advent of the electronic age, was fast becoming obsolete. The lowband system also had regional coverage only, and very limited car-to-car communications, limiting its effectiveness for wide-area emergencies.

In the 1960's and 1970's, local governments began the migration away from lowband to other spectrum such as VHF-Highband (150 MHz), UHF (450 MHz), and to a very small degree 800 MHz. These various bands of spectrum allow for repeater use, extending the car-to-car range, and are much less prone to outside interference. Created in this process, however, was the "interoperability challenge", that came from entities using different bands of the spectrum, which made it difficult to communicate between systems without maintaining multiple radios in vehicles.

The state began the process of upgrading its infrastructure in 1999, with the caveat that the system would be available to all levels of government, regardless of their affiliation. After a review process, a digital trunked radio system operating on VHF-Highband was selected, and in September of 2001 construction was initiated.

The current system consists of tower sites across the state networked to a controller located in Pierre. "Roaming" is allowed between sites with the use of intelligent radios and networking. Roaming allows the user to traverse the state without losing communications, and the system allows individual agencies to maintain private communications with agency "talkgroups". The digital aspects of the system allow for clear communications over 97%+of the geographic area of the state.

A backup "conventional" system is to be implemented statewide in 2006 that will allow conventional VHF radios access to the system via dispatcher patch.

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2. Background

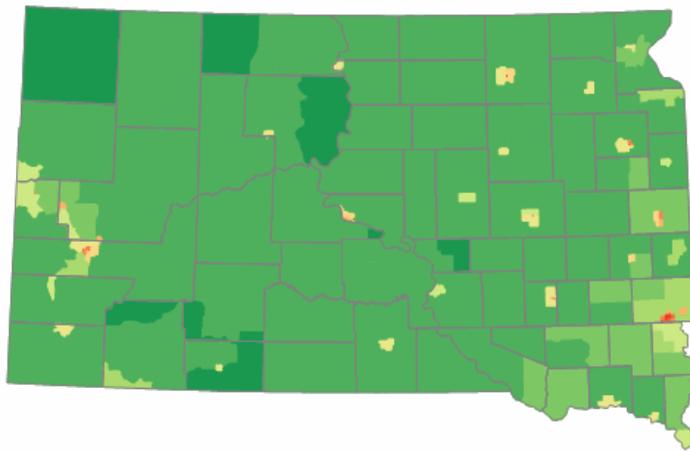
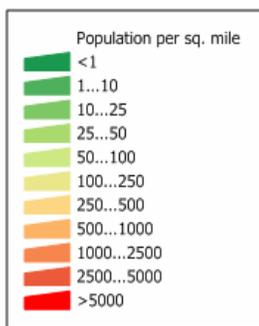
A. Intent

The goal of the user-driven process to develop a communications plan for the State of South Dakota has been to describe the basic radio communications procedures for the South Dakota statewide digital trunked radio system. The goal of the plan is to assure consistent, clear radio communications for routine operation and effective standardized emergency incident communications.

2.1. State of South Dakota Information

A. South Dakota Demographics

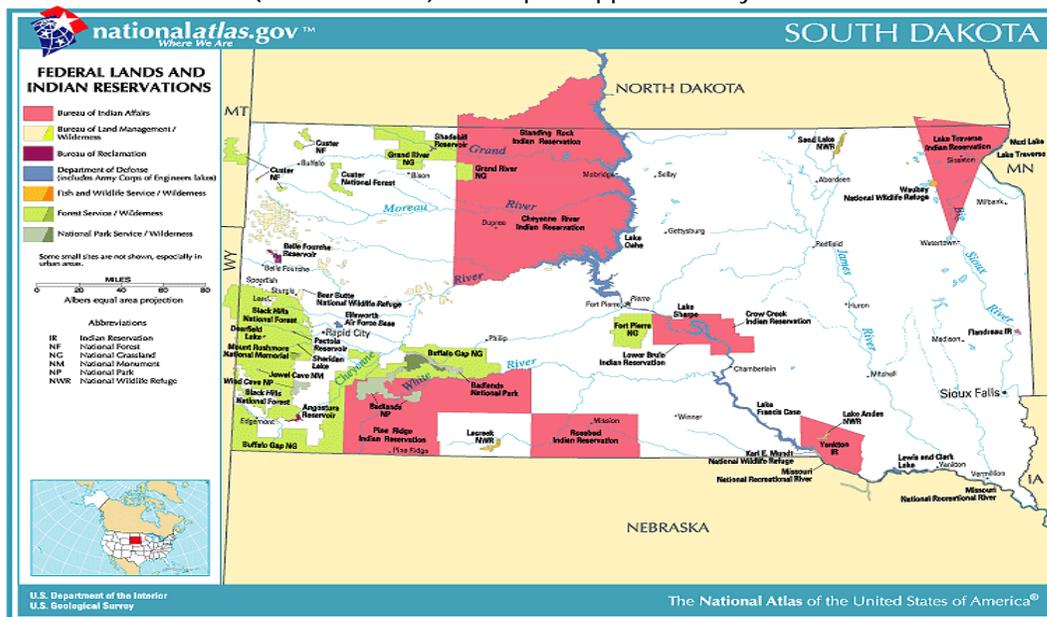
South Dakota has approximately 782,000 citizens living within its boundaries per 2006 projections. The primary population centers are along the I-29 corridor from southeastern South Dakota north to the border, and in the central-western area of the state.



Source: U. S. Census Bureau
Census 2000 Summary File 1
population by census tract.

B. South Dakota Federal/Tribal Land Use

Land use (1992): federal land 6.0%; non-federal land 94.0%, of which forest 1.1%, cropland 34.0%, pasture 4.5%, rangeland 45.3%, urban and built-up areas 2.3%, other 6.8%. The nine recognized tribal reservations (marked in red) encompass approximately 7.2 million acres.



C. South Dakota Geography and Climate

The state encompasses 77,123 square miles (200,520 sq km). 380 miles (608 km) across from east to west. 245 miles (392 km) from north to south. South Dakota ranks 16th in size among the 50 states.

The Missouri River runs through the central part of South Dakota. To the east of the river, lie low hills and lakes formed by glaciers. Fertile farm country covers the area. To the west of the Missouri River, the land consists of deep canyons and rolling plains.

South Dakota is comprised of four major land regions; the Drift Prairie, the Dissected Till Plains, the Great Plains, and the Black Hills.

The **Drift Prairie** covers most of eastern South Dakota. This is the land of low hills and glacial lakes. This area was called Coteau des Prairies (Prairie Hills) by early French traders. In the north, the Coteau des Prairies is bordered on the east by the Minnesota River Valley and on the west by the James River Basin. The James River Basin is mostly flat land, following the flow of the James River through South Dakota from north to south.

The **Dissected Till Plains** lie in the southeastern corner of South Dakota. This area of rolling Hills is criss-crossed by many streams.

The **Great Plains** cover most of the western 2/3 of South Dakota. The Coteau de Missouri hills and valleys lie between the James River Basin of the Drift Prairie and the Missouri River. West of the Missouri River much landscape becomes more rugged and consists of rolling hills, plains, canyons, and steep flat-topped hills called buttes. These buttes sometimes rise 400 to 600 feet above the plains. In the south, east of The Black Hills, lie the South Dakota Badlands. Badlands National Park is located here.

The **Black Hills** are in the southwestern part of South Dakota and extend into Wyoming. This range of low mountains covers 6,000 square miles with mountains that rise from 2,000 to 4,000 feet high. The highest point in South Dakota, Harney Peak (7,242 feet above sea level), is in the Black Hills. The Black Hills are rich in minerals such as gold, silver, copper, and lead. Here too are Mt. Rushmore, the Crazy Horse Memorial, and Wind Cave and Custer National Parks.



South Dakota has an interior continental climate, with hot summers, extremely cold winters, high winds, and periodic droughts. The normal January temperature is 12°F (-11°C); the normal July

temperature, 74°F (23°C). The record low temperature is -58°F (-50°C), set at McIntosh on 17 February 1936; the record high, 120°F (49°C), at Gann Valley on 5 July 1936.

Normal annual precipitation (1971-2000) averaged 24.7 in (62.7 cm) in Sioux Falls in the southeast, decreasing to less than 13 inches (33 cm) in the northwest. Sioux Falls receives an average of 41 in (104 cm) of snow per year.

Typical natural challenges faced by the citizens of South Dakota include:

- Spring flooding along the major waterways.
- Summer droughts, prairie fires, forest fires, and tornadoes.
- Winter blizzards and ice storms.

D. Critical Infrastructure

South Dakota has infrastructure that is critical to not only this area, but also has national significance:

- 4 major hydro-electric dams along the Missouri River.
- Electrical distribution infrastructure, transmission lines, switchyards, etc.
- Telecommunications infrastructure, facilities.
- Government facilities and tourist destinations.

E. Special Events

Throughout the year, a number of events are held that impact the state from a first-responder perspective.

A list of the major events in South Dakota are as follows:

- Sturgis Motorcycle Rally. Meade County, annual event in August. Up to 500,000 annually in attendance.
- South Dakota State Fair. Huron--Beadle County, annual event August/September 100,000 attending.
- County Fairs--Pennington, Brown, Minnehaha Counties, annual events in August. Combined attendance around 500,000.
- Jazzfest--Sioux Falls--Minnehaha County, annual event in July. Attendance in 2006 was approximately 100,000
- Lifelight--Sioux Falls--Minnehaha County, annual event in September. Attendance of approximately 250,000 per year.
- Black Hills Stock Show, Rapid City--Pennington County, annual event in January. Attendance of approximately 275,000 per year.

2.1.1 NIMS/Multi-Agency Coordination

South Dakota Office utilizes the Incident Command System (ICS) for all disaster response and during all the South Dakota Emergency Operation Center's activations. NIMS ICS principals include:

A. Common terminology

In accordance with HSPD-5, the South Dakota Emergency Operations Plan, and Local Emergency Operations Plans the use of common terminology will be utilized to help avoid confusion and to enhance interoperability. Major functions and functional units with domestic incident management responsibilities are named and defined. Terminology for the organizational elements involved is standard and consistent. Major resources--including personnel, facilities, and major equipment and supply items--used to support incident management activities are given common names and are "typed" with respect to their capabilities... Common terminology is used to designate the facilities in the vicinity of the incident area that will be used in the course of incident management activities.

B. Modular organization

The incident command organizational structure develops in a top-down, modular fashion that is based on the size and complexity of the incident, as well as the specifics of the hazard environment created by the incident. When needed, separate functional elements can be established, each of which may be further subdivided to enhance internal organizational management and external coordination. Responsibility for the establishment and expansion of the ICS modular organization ultimately rests with the Incident Commander (IC), who bases these on the requirements of the situation. As incident complexity increases, the organization expands from the top down as functional responsibilities are delegated. Concurrently with structural expansion, the number of management positions expands to adequately address the requirements of the incident. South Dakota is working to establish basic ICS charts for a variety of scenarios that can be expanded or contracted depending on the needs of the incident.

C. Management by Objectives

This is accomplished by developing and issuing assignments, plans, procedures, and protocols; establishing specific, measurable objectives for various incident management functional activities, directing efforts to attain them, and documenting results to measure performance and facilitate corrective action.

D. Incident action planning

Command Staff as defined consist of the Liaison Officer, Public Information Officer, and Safety Officer and report directly to the Incident Commander. Each function may have an assistant if needed. The command function may be conducted in two general ways:

- (a) 1. Single Command IC. When an incident occurs within a single jurisdiction and there is no jurisdictional or functional agency overlap, a single IC should be designated with overall incident management responsibility by the appropriate jurisdictional authority. (In some cases in which incident management crosses jurisdictional and/or functional agency boundaries, a single IC may be designated if all parties agree to such an option.) Jurisdictions should consider pre-designating ICs in their preparedness plans. The designated IC will develop the incident objectives on which subsequent incident action planning will be based. The IC will approve the Incident Action Plan (IAP) and all requests pertaining to the ordering and releasing of incident resources. The Incident Command System emphasizes orderly and systematic planning and the Incident Action Plan is the central tool for planning during a response to a disaster emergency. The Incident Action Plan is prepared by the Planning Section Chief with input from the appropriate sections

and units of the Incident Management Team. It should be written at the outset of the response and revised continually throughout the response.

- (b) 2. South Dakota Office of Emergency Management utilizes a core team of agencies from state government functions during all State Emergency Operations Center activations and disaster responses.

E. Manageable span of control

Span of control is key to effective and efficient incident management. Within ICS, the span of control of any individual with incident management supervisory responsibility should range from three to seven subordinates. The type of incident, nature of the task, hazards and safety factors, and distances between personnel and resources all influence span-of-control considerations.

F. Pre-designated incident facilities

Various types of operational locations and support facilities are established in the vicinity of the incident to accomplish a variety of purposes. South Dakota's pre-designated facilities include the State Emergency Operations Center, which is maintained monthly by the OEM staff and also includes a state radio console. In addition, local command posts, bases, camps, staging areas, mass casualty triage areas and others are utilized as required. South Dakota OEM also has an extensive GIS list of critical infrastructure throughout the state.

G. Comprehensive resource management

Resource management includes processes for categorizing, ordering, dispatching, tracking and recovering resources. Resources are defined as personnel, teams, equipment, supplies and facilities available or potentially available for assignment or allocation in support of the operation. Local Jurisdictions are utilizing the State resource system to type resources according to the 120 Federal Standards. South Dakota also has the regional HAZMAT teams that are located in Rapid City, Sioux Falls, Aberdeen, Watertown, and Pierre which has limited capability.

H. Integrated communications

South Dakota's incident communications are NIMS compliant through the development and use of this common communications plan and interoperable communications processes and architectures.

South Dakota has an operational Fusion Center which combines all aspects of sharing intelligence discovered through local, state, and federal law enforcement agencies, military organizations, public tips and media sources. The Fusion Center also enhances the state Homeland Security Office's ability to interact with the federally operated Joint Terrorism Task Force in Sioux Falls, South Dakota.

Interoperable communications is one of South Dakota's primary objectives. As demonstrated the capabilities of the State's digital radio system allows clear communications over 97 percent of the geographic area for the state. In addition, we continue to develop enhanced capabilities throughout the state to communicate before, during, and after any type of disaster.

I. Transfer of Command

South Dakota's command function is clearly established from the beginning of incident operations. The agency with primary jurisdictional authority over the incident designates the individual at the scene responsible for establishing command. When command is transferred, the process will include a briefing that captures all essential information for continuing safe and effective operations.

J. Unified Command

In South Dakota incidents involving multiple jurisdictions, single jurisdiction with multi-agency involvement, or multiple jurisdictions with multi-agency involvement Unified Command... Unified Command allows agencies with different legal, geographic, and functional authorities and responsibilities to work together effectively without affecting individual agency authority, responsibility, or accountability. South Dakota is currently developing its first ever Incident Management Team (IMT) Type 3, to assist jurisdictions in incidents.

K. Personnel and resource accountability

The State of South Dakota is diligently working towards NIMS compliance through education, information sharing, and through lines of open communication. New training courses, workshops, and exercises are conducted to facilitate NIMS adoption. Current training programs will be enhanced and or modified to permanently incorporate the NIMS and ensure continued NIMS education to all levels of state government.

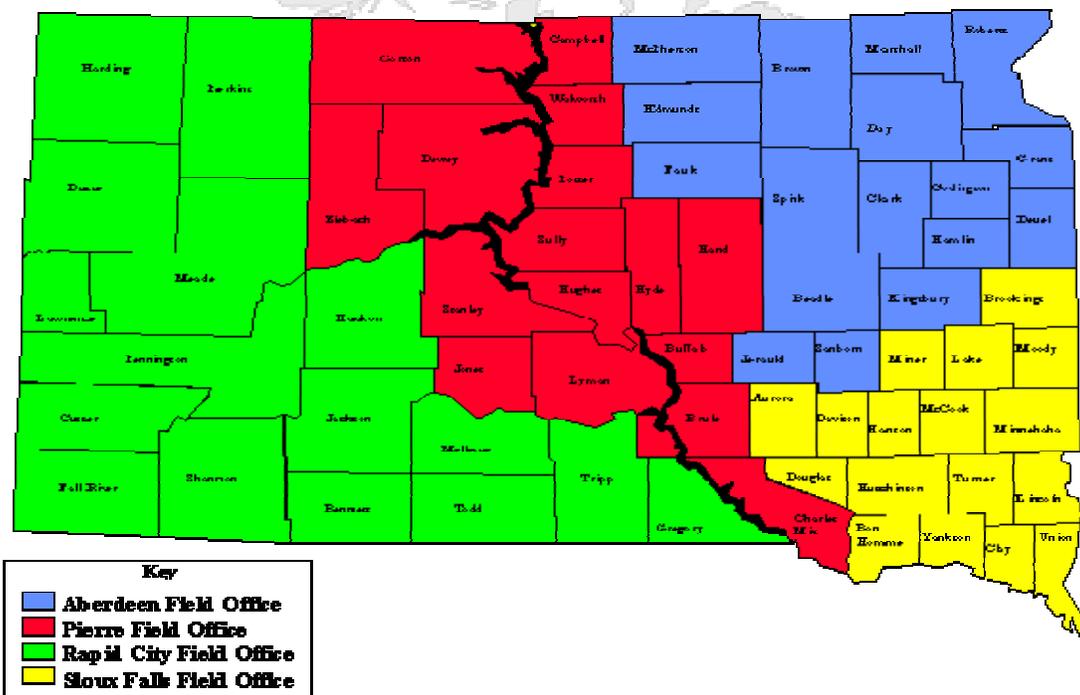
South Dakota has led the way with respect to Continuum of Government and Continuity of Operations. We have created a viable working plan; the notification portion was recently tested, with 96% of the state's employees being reached in a 12-hour period.

The South Dakota Office of Emergency Management Regional Coordinators are utilized by the State Homeland Security Office to assist with special projects that require the counties involvement.

2.1.2 Regions/Jurisdictions

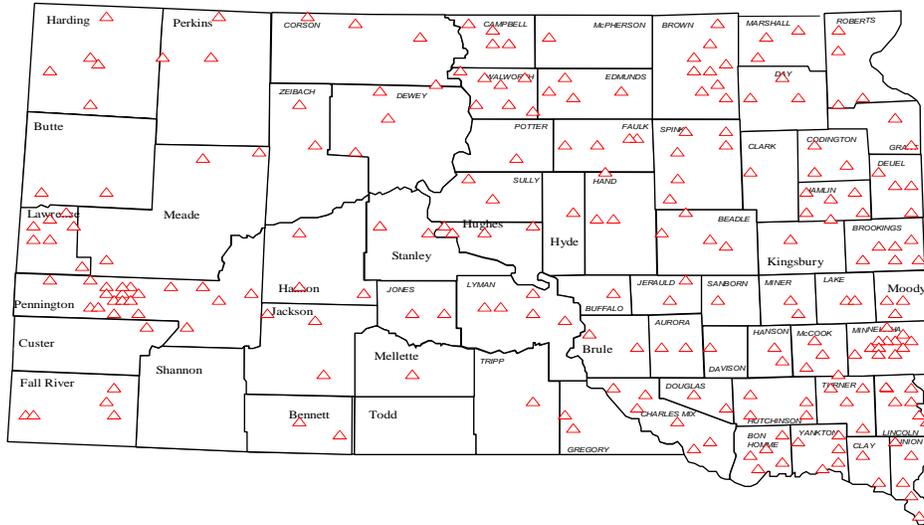


Following are the regions that the Office Of Emergency Management has divided the state into along with maps of first responders in the State of South Dakota.



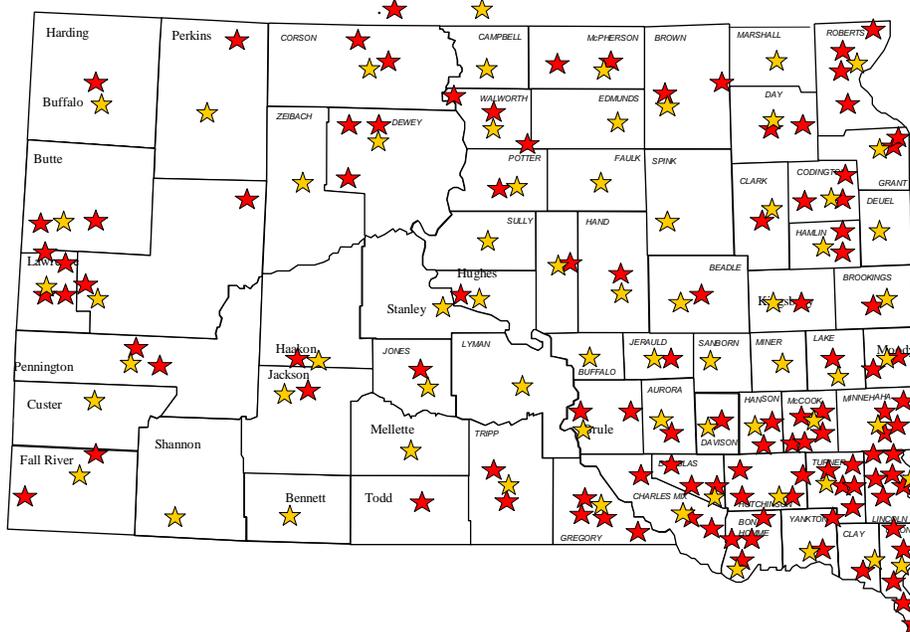
South Dakota fire fighting services are largely comprised of volunteer departments in the state. Following are the current fire departments in the state issued radios on the state interoperability network. All fire departments have been issued radios.

Fire Departments



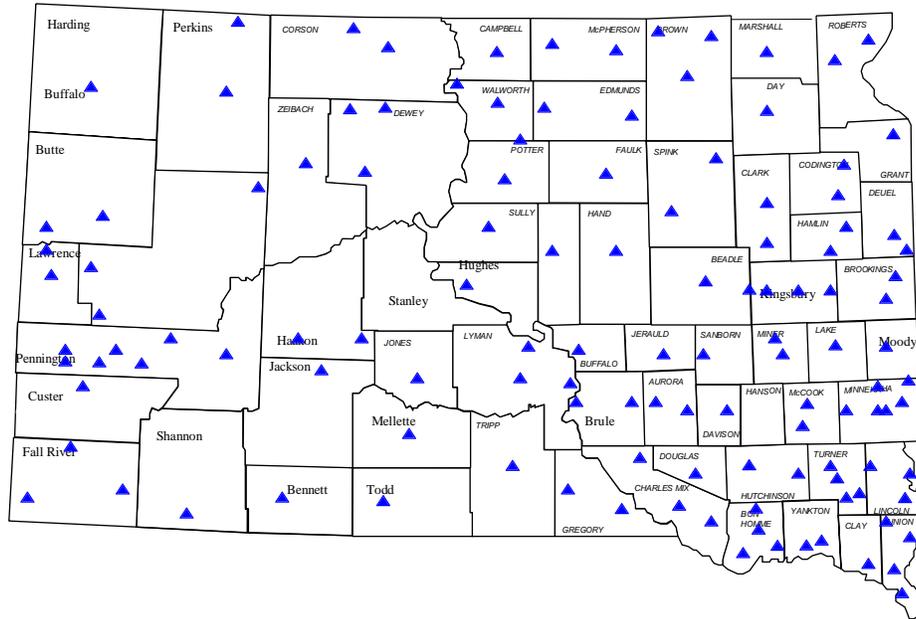
Following are the law-enforcement agencies in the state operating on the state interoperability network. All law-enforcement agencies have been issued radios.

Police/Sheriff Departments



Below are the Emergency Medical Service departments within South Dakota. All EMS services have been issued radio equipment.

Ambulance Services



Each of the above first responder agencies have been issued radios on the South Dakota Interoperability Network, and can counted as resources for disaster and other incidents.

2.1.3 UASI Areas/TIC Plans/Other Plans

South Dakota Tactical Interoperable Communications Plan (TICP) developed in 2006 for the Urban Area Security Initiative (UASI) for the state which encompasses Minnehaha and Lincoln Counties. http://www.minnehahacounty.org/dept/em/SDTICPlan03_08_06ICTAP_FINAL.pdf

This plan is a comprehensive definition of procedures and available resources to meet the security needs of the identified urban area in South Dakota. This plan was built upon the existing framework within this plan which had been drafted two year prior. The first exercise for the TICP was held in August of 2006 and the plan was rated in top 6 of the 75 exercises plans reviewed. The recommendations in the after-action report are being incorporated into the plan and funding requests. The following communities are part of the South Dakota designated UASI:
City of Sioux Falls

Primary Contact:

Name: Lynn De Young
Title: Director of Emergency Management, Minnehaha County
Address: 608 Sigler Avenue
Sioux Falls, SD 57104
Phone: 605-367-4290
E-Mail: ldeyoung@minnehahacounty.org

Authorizing Governmental Entity Telephone Contact

City of Sioux Falls (605) 367-8800
Minnehaha County Commission (605) 367-4206
Lincoln County Commission (605) 764-2581
State of South Dakota (605) 773-3450

The Regional ICC is comprised of:

- Lynn De Young, Co-Chair, Director of Emergency Management, Minnehaha County
- Harold Timmerman, Co-Chair, Director of Emergency Management, Lincoln County

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- An Operations Working Group, chaired by Lynn De Young
- A Technical Working Group, chaired by Harold Timmerman.

Members of the Regional ICC consist of representatives from the following agencies:

- Metro Communications
- Minnehaha County Emergency Management
- Minnehaha County Sheriff's Office
- South Dakota Homeland Security
- South Dakota Office of Emergency Management
- South Dakota Highway Patrol
- South Dakota Bureau of Information & Telecommunications
- South Dakota State Radio
- Sioux Falls Police Department
- Sioux Falls Fire Rescue
- Sioux Falls Emergency Management
- Rural/Metro Ambulance

TICP is available upon request. (See attachment 10 for ranking).

South Dakota Emergency Operations Plan, developed by the State Office of Emergency Management utilizes the communications plan as a cornerstone of its plan.

South Dakota Pandemic Flu Plan developed by the South Dakota Department of Health integrates the communications plan into.

2.2 Planning Participation

A special thank you goes out to all who participated in the development of this statewide communications plan. A large number of individuals dedicated time and resources to develop a plan that will fit the needs of public safety and first responders in the state.

The development of this plan involved many hours of group interaction, and many more hours of time dedicated to the process individually. The following sub-committees were formed to address the major portions of the plan with the following individuals providing a major contribution to the success of those areas:

Protocol -- Sheriff Ron Merwin, Meade County

Training -- Sheriff Ray Westendorf, Charles-Mix County; Doug Pavel Pennington County

Manual -- Bruce Nachtigal, South Dakota Game, Fish & Parks -- Sheriff Mike McKernan, Grant County

Other Departments that contributed time and resources to the project:

Aberdeen Fire Department

Avera Hospital Systems

Brookings County

Brown County

Bureau of Information & Telecommunications

Charles-Mix County

City of Mitchell

City of Watertown

City of Yankton

Federal Bureau of Investigation

Ft. Meade Fire Department

Grant County

Lawrence County

Madison Fire Department

Meade County

Minnehaha County

Pennington County

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Sioux Valley Hospital
South Dakota Association of County Commissioners
South Dakota Department of Corrections
South Dakota Department of Health
South Dakota Department of Homeland Security
South Dakota Department of Public Safety
South Dakota Department of Transportation
South Dakota Division of Criminal Investigation
South Dakota Highway Patrol
South Dakota Office of Emergency Management
State Radio Communications
United States Department of Agriculture

Further assistance with the plan has been provided by the following PSCC member organizations:

South Dakota Police Chief's Association
South Dakota Sheriff's Association
Division of Criminal Investigation, Office of the Attorney General
South Dakota Game, Fish, and Parks
South Dakota Department of Transportation
South Dakota National Guard
South Dakota Emergency Managers Association
South Dakota Fire Fighters Association
South Dakota Association of Healthcare
South Dakota Department of Public Safety/Highway Patrol
The South Dakota APCO/NENA Chapter
South Dakota EMT Association
South Dakota Department of Agriculture/Wildland Fire
South Dakota Association of County Commissioners
South Dakota Department of Health
Tribal Government representative
Federal Government representative

2.3 Statewide Plan Point of Contact

The maintenance of the statewide plan is the responsibility of the South Dakota Public Safety Communications Council (SDPSCC). The SDPSCC will be responsible for an annual review and ongoing changes per council bylaws.

A standing member of the SDPSCC is the State Radio Technical Administrator. For continuity purposes, the Technical Administrator will be the plan point of contact, and has been assigned the duty of the Statewide Interoperability Coordinator.

South Dakota Public Safety Communications Council
Att: Technical Administrator
910 E Sioux
Pierre, SD 57501
(605) 773-4347
jeff.pierce@state.sd.us

2.4. Scope

The scope of the South Dakota plan is very simple: "To include all first responders as well as other state and local agencies in the state on an integrated communications network." To date the following accomplishments have been achieved:

- Distribution of radios to every first responder agency.
- Distribution of radios to transit systems, utilities, transportation (including state and local highway and street departments)--in process.
- Radio traffic patterns in relation to distributed radios--percentage of local and state radio traffic are commensurate with the percentage of radios in use by those agencies.
- Development of on line, video, and printed training materials.
- Development of a monitoring system for traffic patterns and trouble reports.

Success of the system is gauged upon:

- Monthly traffic and busy studies. Ultimate goal is to eliminate busies, realistic goal at present is to keep busy conditions to less than 1 per 500 calls.
- Ability of the system to accommodate large scale events such as the Sturgis Motorcycle Rally. Performance measure expected in these events is 1 busy or less for every 100 calls.
- Training provided. Formal training is presently supplied at the Law Enforcement Training Center as part of the basic course. Ultimate goal is to have all users through a training program and refresher courses offered annually.
- Success of exercises for the system. Regular exercises are held by state and local users and groups of users, including health agencies, emergency management agencies, fire agencies, and law enforcement.



3. Methodology

The South Dakota Plan was developed by a representative committee formed in 2003 to address the needs for common protocols, a procedure manual to work from, and consistent training materials. The majority of this plan is from the work of that committee, with formatting changed and some content added to make it consistent with the DHS SAFECOM requirements.

The recently completed TICP for the only assigned UASI in South Dakota integrated the protocols set forth in this manual, and scored an "advanced implementation" during the exercise held in 2006.

3.1 Protocol Group

The protocol group met quarterly for 1 year completing the process of developing protocols that were consistent with all users that would be utilizing the system. The Minn/Metro plan for the State of Minnesota and the Minneapolis Metro area plan that had been completed earlier was used as a base example, and the South Dakota Plan was crafted around that format. The different disciplines of the group allowed for a well-rounded set of protocols.

3.2 Manual Group

The manual group was responsible for the form in which the protocols were presented. This group spent many hours after the completion of the protocols developing the format and presentation of the materials.

3.3 Training Group

The training group had the final responsibility of the committee developing the form in which the training would be presented. Initially most of the written materials were integrated into this manual, but are now being developed into a stand-alone product. The development of the training program involved not only the written materials, but also the taping and production of hands-on training by state and radio equipment representatives. The taped formats were put out in VHS and DVD form and have been distributed statewide.

3.4 Multi Regional/Discipline Representation

The group assembled for the protocol, manual, and training aspects of the communications system were from across the state. Currently the PSCC representation is comprised of statewide agencies and organizations. Each of these representatives has been chosen by their peers or organizations to represent the group as a whole. Each representative also has their own distribution lists, newsletters, websites, etc. allowing them to communicate independently of the PSCC to ensure that concerns and issues are being carried forth. This open line of communication will assist in improved communications within the state and local support for this planning process.

The broad range of disciplines represented on the initial planning group and now the PSCC ensure that every discipline and funding agency involved in communications in the state is represented. This group includes: local law enforcement, transportation, county government, state law enforcement, federal government, tribal government, health, military, emergency management, fire fighters, dispatch centers, Emergency Medical Technicians, agriculture, and state IT functions.

3.5 Completion and Updating the SCIP Plan/Local-Tribal Input

The SCIP in its present form has been adapted by the PSCC from the efforts of the above groups to meet not only the needs of the users throughout the state, but also the requirements established for the PSIC process which has added valuable information to the plan.

A delegation of two state and two local first responders attended the National Governors Association workshop held in Los Angeles in 2007 to ensure that the plan was on track, and that group finished a draft and presented it to the PSCC in August of 2007. The multidisciplinary council reviewed the draft and presented suggestions to the team drafting the final version. Those changes were integrated in to the plan, demonstrating the value of having such a wide variety of representatives working together to improve communications within the state.

Recommended updates to the SCIP are brought to the attention of the members of the PSCC, generally through the member's organizations and annual meetings. The representative on the PSCC then brings the recommendation up for discussion, and if adequate support is given, a motion is made and if approved, adopted as protocol or rule by the council. This input extends to the operational, procedural, and technical aspects of the statewide communications network.

Local involvement is also through a more direct process. Numerous counties and communities across the state have been directly involved in the application of grants to expand the system in their areas, as well as expending their local resources to meet that end. Minnehaha and Pennington Counties have been directly involved in the testing of equipment and software releases that benefits the rest of the state. The statewide system is truly that, with everyone involved participating.



4. Statewide Assessment

4.1 Governance Structure

The oversight for protocols, training, and the annual review and maintenance of this plan is the responsibility of the Dakota Public Safety Communications Council (SDPSCC), created by Executive Order in March of 2007. (See attachment 8). The 18 member council consists of local, tribal, state, and federal members with a stake in the operational and budgetary aspects of communications within their respective organizations. This group provides direct input on such items as grant expenditure, system expansion, protocols, technology changes/upgrades, and priorities of the system.

Budgetary and system maintenance responsibility falls within the South Dakota Bureau of Information and Telecommunications as outlined in the below South Dakota Codified Law (SDCL) statutes.

34-45-33. State to integrate telecommunications functions and facilities -- Bureau of Information and Telecommunications to develop plan. The State of South Dakota shall by July 1, 2001, integrate telecommunications functions and facilities of those state agencies, which

currently operate their own systems, into one cohesive and integrated network. These agencies currently include State Radio Communications; the Bureau of Information and Telecommunications; the Division of Emergency Management in the Department of Military and Veterans Affairs; Public Broadcasting in the Bureau of Information and Telecommunications; the Department of Game, Fish and Parks; the Department of Transportation; the Division of Forestry in the Department of Agriculture; and the Highway Patrol in the Department of Public Safety. The Bureau of Information and Telecommunications shall be responsible for development of a state agency integration plan by November 1, 1999.

1-13-2. Towers, repeater stations, and subheadquarters authorized. The Bureau of Information and Telecommunications may locate, construct, establish, equip, and maintain such towers, repeater stations, and subheadquarters as may be necessary, and for such purpose may acquire by purchase, lease, or condemnation all necessary sites and locations in order to install, establish, and operate a state communications system as provided by this chapter.

1-13-3. Employment of personnel and equipment -- Maintenance and operating costs. The Bureau of Information and Telecommunications may employ such operators and assistants and such equipment necessary to carry out the provisions of this chapter. The costs of maintaining and the operation of a state communications system and all receiving sets owned or operated by the bureau shall be paid out of the appropriation for the bureau.

1-13-5. Federal funds -- Acceptance and use. The Bureau of Information and Telecommunications may apply for, accept, and expend on behalf of the state communications system any appropriations, grants, matching funds, or moneys allotted to the State of South Dakota by the federal government pursuant to any act of Congress of the United States. The funds so received by the State of South Dakota shall be administered and expended under the supervision of the bureau to purchase the necessary apparatus and equipment for new construction and equipment improvements in the state communications system. Such funds shall be deposited in the state treasury to be paid out on warrants drawn by the state auditor on vouchers approved by the commissioner of the bureau.

The State of South Dakota division of Bureau of Information and Telecommunications is responsible for funding, operation, and maintenance of the SDICS by the statutes listed above, and will be regarded as the system owner. Exceptions to the ownership include:

- ✚ Subscriber equipment distributed to local agencies.
- ✚ Subscriber equipment purchased by other state agencies.
- ✚ Subscriber equipment purchased by local/federal agencies.
- ✚ Local dispatch equipment purchased by local/federal agencies.
- ✚ Site equipment purchased by local agencies with federal or other funding that requires local ownership.

The SDPSCC will also serve as the State Interoperability Executive Committee. The Federal Communications Commission has established that States form an executive committee to manage the 700 mhz spectrum being reallocated from the broadcast field as described below:

Interoperability Spectrum

Interoperability is the ability of different governmental agencies to communicate across jurisdictions and with each other. The FCC designated approximately 10 percent (2.6 MHz) of the 700 MHz public safety spectrum for nationwide interoperable communications. The FCC determined that administration of the Interoperability channels should occur at the State level either by a State Interoperability Executive Committee (SIEC) or an existing equivalent agency.

Exceptions to the established protocols must be submitted to the System Administrator to be forwarded to the SDPSCC.

The ability to track resources on a trunked network such as the South Dakota system is part of the ongoing management of the network. All radios need to be identified by both an alias (agency) and also a unique radio ID which are stored in the server databases of the controller. Following is the registration, agency count, and traffic patterns of the radios on the network.

4.2 Technology

Currently our records show around 14,000 State, Local, Federal, and Tribal radios that are distributed and are capable of operating on the state interoperable network. The State of South Dakota turned up a statewide VHF highband digital trunked radio network in the state in 2002. The system is a common system, open to all levels of state, local, federal, and tribal governments and first responders, and has approximately 97%+ statewide mobile radio coverage. The state funded the initial distribution of radio equipment in the state, and maintains the network. Every local first responder agency in the State has been issued radios and has access to the network including: all fire departments (volunteer and paid), all EMS units and emergent care centers, all police departments, all sheriffs offices, all emergency managers, transit systems, highway departments, utilities, and other departments/agencies.

Current Use (Talkgroup activity in June 2006)

- 67% Local traffic.
- 5% Tribal/Federal traffic.
- 28% State agency traffic.

Currently the primary need for the system and users is additional training. The single most voiced issue on surveys taken of system users is the complexity of the system and the radios, and efforts are being made to address those needs.

The other issue that is part of the long-term planning process of the network management is the continual process of improving coverage. In the 5 years after the turn-up of the network, an additional 15 sites have been added to the network (a 43% increase).

A number of efforts are ongoing and will be a permanent effort to improve communications within the state and with our neighbors.

- Western Border Interoperability Group, which includes our neighbors Wyoming, Montana, and North Dakota. This group is working on solutions to communications across borders.
- 700mhz plan. The SDPSCC will organize and operate as the SIEC for South Dakota. The planning meeting for the 700mhz bandwidth is currently being organized.
- 800mhz rebanding. There is very little 800mhz utilized for public safety in South Dakota.
- Narrowbanding. All future planning efforts for the state involve the narrowband standards.
- Local initiatives in Pennington, Minnehaha, Beadle, Yankton, Brookings, Codington, Perkins, Charles-Mix, Corson, and Tripp counties, and the Pine Ridge Reservation to improve coverage and operation of the system within their jurisdictions.

4.2.1 Technology Capability Assessment (9-12-07)

The statewide communications network is the centerpiece of emergency response and daily communications within the state. Currently every agency is supplied with radio equipment, and the state is served with 97% mobile coverage and 70%+ portable coverage. For the purposes of this assessment, it is our assumption that all emergency response will be conducted on the statewide network, as it is ubiquitous within the state.

A. Subscriber Radios:

- 9345 mobile radios distributed to local, state, federal, and tribal entities.
- 4563 portable radios.
- All subscriber radios are required to contain statewide Interagency, and Special Operations (emergency) talkgroups within their radios to gain access to the system.

B. System:

- 54 tower sites, capacity at sites range from 4 repeaters to 10 per site, generator protected power source.
- Protected ring connectivity up to last mile.
- Network master site has redundant zone controllers, backup routes for connectivity, UPS and generator backup.
- System diagnostics are monitored 24x7.

C. Dispatch Centers:

- 3 state dispatch centers, all 36 Public Safety Answering Posts (PSAP's) capable of operation on the statewide network.

D. Backup:

- Conventional mutual aid repeaters statewide for local mobile operation.
- Trunked system sites default to local operation upon loss of connectivity to network, all PSAP's are in proximity to a trunked site where very few areas of the stat would be without some means of communications.
- BIT/State Radio has an ACU-1000 that could be utilized in an emergency to link different communications systems, or even those to PSTN.

It is the intent of BIT/State Radio and the PSCC to ultimately provide a more complete view of every agency and each location. Tools such as CASM are being considered.

4.3 Standard Operating Procedures

4.3.1 Understanding Radio Terms

A. Frequency

This is a technical term used to describe a specific radio wave. Radio signals are electromagnetic waves and frequency is the measure of how many waves cross a point in a given time. Often people use frequency to indicate where in the radio spectrum a radio transmits in. Radios do not transmit on a single frequency; they use a part of the spectrum on either side as well. This entire group of frequencies is called the bandwidth.

B. Channel

Channel is the term used to describe the spectrum used by a radio to transmit and receive. This is the entire bandwidth not just the frequency. In some systems such as duplex repeaters, the channel includes two frequencies with bandwidth. The key point to remember is that channels are what the radio transmission uses. A channel is defined by but not the same as the frequency.

On the new state system this means that channels are related to the towers, and the internal workings of the radios, **not** the "Channel Selector" on the radio as with a typical analog radio. The number of channels is limited, even if your radio can have up to 256 positions.

C. Talkgroup

A talkgroup is often referred to as the electronic equivalent of a channel on a trunked system. This is a good definition for the basic user if the system is only trunked. The state system allows trunked talkgroups as well as non-trunked (analog and digital) channels.

A talkgroup is an identification of an electronic location where users may communicate to each other. This is very similar to chat rooms on the internet. They have a name and a method to connect, but they have no real existence in space or radio spectrum. They make use of another system controlled by a computer to actually connect the users.

In the state radio system this method would be the “Channels” on each tower. So like in a chat room when too many people attempt to use a chat room or several rooms; other users may get a slow response or be not allowed in.

4.3.2. Radio Technology Overview

Radio technology is full of confusing terms that come straight from a physics book. Sometimes when you ask a radio engineer a question, you even get an answer that is a formula. The authors of this manual have tried to simplify the terms as much as possible to allow you to get a good handle on the concepts. The goal in this section is not to turn you into radio experts, but, it is hoped that you'll be able to understand the experts a little better when they talk to you.

A. South Dakota System Radios

Each trunked radio on the South Dakota system is a computer with a receiver and transmitter attached. All traffic on the new system is data, or a series of 1's and 0's directed between radios. The computer also allows each radio to have a unique ID that allows the **Central Controller** to identify that radio and which talkgroup is selected on the radio. Each radio is in constant communication with the tower through the **control channel** at the tower site. This control channel passes on such information such as surrounding site information and site status. The radio also samples the signal strength or **RSSI** of the control channel and compares it with others that the radio is receiving and at preset levels will switch from one tower to another. This allows the radio to roam between sites without user action.

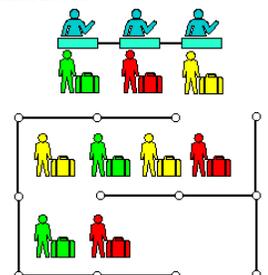
Each tower is in continuous communications with the **Central Controller**, passing on site status information, user registration information and of course, the voice traffic. A very important concept that needs to be understood about the system is **Affiliation**. Registration or affiliation occurs when a radio is turned on, when a new talkgroup is selected, or when the radio selects a new site through its RSSI level. When a radio affiliates with a tower, it sends the radio ID and the talkgroup selected to the **Central Controller**. Deregistration occurs when the radio is powered down, or leaves a coverage area.

The user radio equipment can be used on several existing radio system as well as the new state wide system. To understand these radios a little better we will discuss the radio system types that are in use currently.

B. Trunked (The new state radio system)

The basic premise behind trunking in radio systems is to efficiently utilize the radio frequency (rf) spectrum, and allow many users to operate on a few frequencies. Trunking allows the sharing of these resources by having the decision process of which site “repeater” is used left to the system, rather than the user having to select an individual frequency. When a radio user presses their push to talk button, the system assigns a repeater, tells the radio which channel to go to, and passes that traffic to other radios in the system that are selected up on the same talkgroup. We use the term radio “talkgroup” as opposed to radio “channel” for the digital portion of the radio. The new radios operating on this system are capable of both digital and analog operation, and the user needs to recognize that a “talkgroup” is an electronic grouping of radio users, whereas a “channel” is frequency related. This is important because an analog “channel” is area specific, where talkgroups can be statewide.

One can relate radio trunking to how a check-in line might work at an airport. There is a counter (tower) with three ticket agents (3 repeaters), each agent may assist a customer (user radio) as needed and there is a single line of customers. For example, if agents #1 and #2 are busy, a supervisor (central controller) will designate #3 as the next ticket agent to assist the next customer in line. If #1 and #3 are busy, the supervisor will designate #2 for the next customer. In this way, ticket agents do not stand vacant and the agents are more fully and effectively used.



Two technological breakthroughs have made trunked radio systems possible: 1) the development of microprocessors and personal computers, with their associated software and 2) synthesized frequency generators. Microprocessors allow the logical selection of frequencies for the repeaters. Frequency synthesizers at the repeater and mobile and portable stations allow the radios to set up individual transmitting and receiving frequencies as designated by the base station microprocessor called the "central controller."

The way that sites inform the central controller that there is a need for a repeater is a dedicated data control channel (repeater) at each site which monitors mobiles and handheld for activity. If a user desires to speak with another user or a group of users, he or she initiates a transmission on the data control channel by pressing the push to talk button, which sends his or her ID number and requests that he or she talk with another user or a group of users. The control channel repeater relays the information to the central controller, which determines which repeaters are available at the site and commands the initiating radio and the target radios to change their operating frequencies to that of the assigned repeater. Typically within 1/4 second, a voice conversation may then take place. After the conversation, the radios return to monitoring the control channel and the central controller determines that the repeater is now available for other use. Note that these systems are totally software driven.

C. Analog Radio Systems

Analog radio systems continuously transmit radio waves that are usually modulated by a voice. A typical analog voice radio consists of a transmitter and receiver.

D. Digital Radio Systems

People do not usually understand digital signals. Our senses are analog oriented and can only respond to continuous signals or impressions. Therefore, we must hear voice transmissions on a loudspeaker or a set of headphones and see visual signals, on either a video monitor or a printer, as words and pictures.

Voice transmissions may be sent over digital radio systems by sampling voice characteristics and then changing the sampled information to ones and zeros to modulate the carrier. This is done using a circuit called a voice coder, or "vocoder." At the receiver, the process is reversed to convert the digital voice samples back into analog voice.

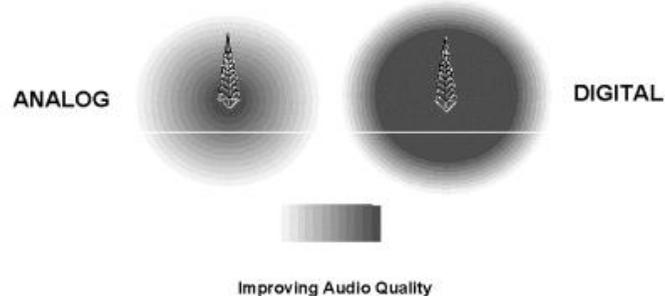
E. Transmission Differences

Analog and digital radio systems have vastly different transmission characteristics. As you move away from an analog radio transmitting site, the signal quality decreases gradually while noise levels increase. The signal becomes increasingly more difficult to understand until it can no longer be heard as anything other than static. A digital signal has fairly consistent quality as it moves away from the transmitter until it reaches a threshold distance. At this point, the signal quality takes a nose dive and can no longer be understood. A comparison of the transmission differences between analog and digital signals is shown above.

Interoperability

DIGITAL VOICE QUALITY

Digital offers superior system-wide audio



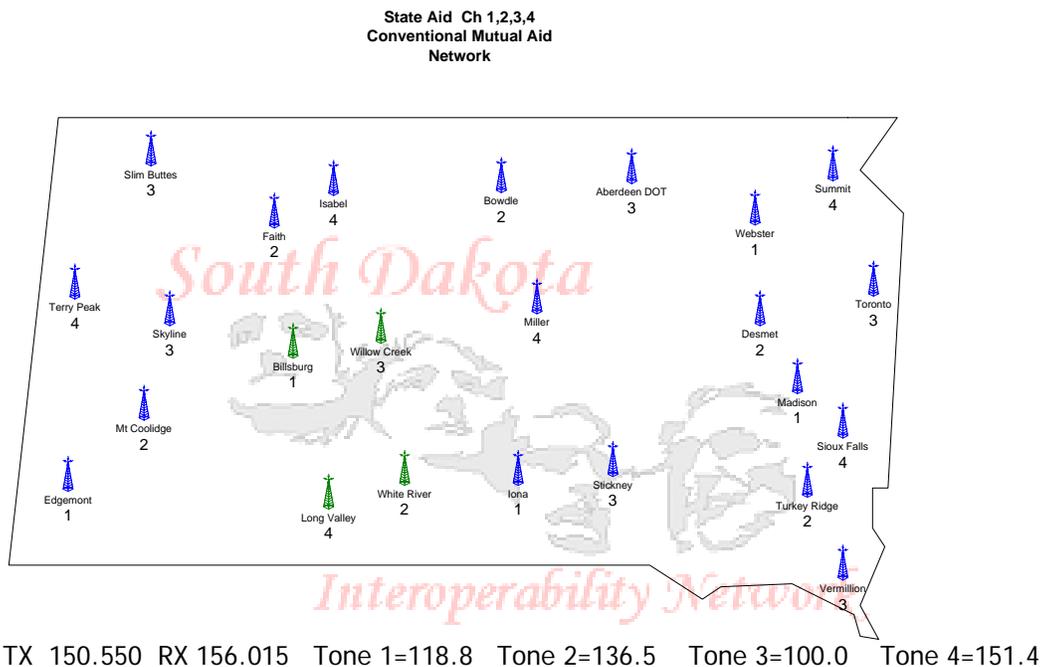
F. Duplex (Repeated) Channel Usage

The general purpose of a duplex (repeated) system is to provide communications over a longer distance. The radio signal generally goes through a repeater or network system on a fixed repeater frequency pair. The transmit distance may be extended, as much as 30 miles or more, but can be affected by terrain and other conditions.



G. State Aid

State Aid Channels are analog backup system for the trunked radio system. State Aid channels are repeated but may not be networked and are for local operations only. These channels will be monitored by State Radio dispatch and can be console patched into digital talkgroups.



H. Local Repeaters

Each local agency may maintain their local highband repeaters. These highband frequencies may be programmed into the new digital radios.

I. Simplex (Non-Repeated) Channel Usage

The general purpose of a simplex (non-repeated) is to provide communications over a shorter distance direct handheld to handheld, mobile-to-mobile, or handheld-mobile communications. Generally the transmit distance is less than 2 miles, but maybe longer or shorter depending on terrain and other conditions.

The radio signal generally does not go though any repeater or network system. The transmit and receive frequency are the same. The channel generally is not monitored by any central dispatch system.



These channels are generally used as on scene operations to provide direct communications between the incident commander and various operating branches.

National Law channels - Analog frequency generally known as Nat. Law. This channel is generally used as an on scene operations channel. National Law may be used anywhere in the United States by Law Enforcement officers and dispatch. This channel may be used to communicate with enforcement officers in adjoining states if those officers have this channel selected or if they scan it.

State Fire Mutual Aid channels - Analog frequencies generally known as SD Mutual Aid 1 and SD Mutual Aid 2 channels. SD Mutual Aid 1 & 2 should not be used outside SD as they are only licensed for use within the state of South Dakota.

National Fire - Analog frequency generally known as Nat. Fire. This channel is generally used as an on scene operations channel. National Fire may be used anywhere in the United States by fire departments.

EMS - Analog frequencies generally known as EMS or MED. These channels are generally used as on scene operations channels and ambulance to hospital communication.

Digital Simplex - Would be similar to analog simplex channels as described above except digital.

J. Mobile Data Subsystem

The system has the capabilities of mobile data traffic. Further applications beyond public safety will be reviewed on a case by case basis by the state Control Terminal Officer (CTO), System Administrator, and the PSCC review committee.

State of South Dakota has signed an agreement with a cellular carrier to utilize the carriers' data network statewide for mobile data. This infrastructure and specific software will allow subscriber's access to NCIC, SDLETS, and other databases necessary in the day to day and emergency operations within the state. This contract is open to all first responders in the state.

4.3.3. RADIO USER INFORMATION

A. How It Works

Each radio is a computer with a receiver and transmitter attached. The computer allows each radio to have a unique ID that enables the Central Controller to identify that radio, and which talkgroup is selected. Each radio is in constant communication with the tower through the control channel at the tower site. This control channel passes on information such as surrounding site information, and site status.

The radio also samples the signal strength or RSSI of the control channel and compares it with others that the radio is receiving, and at preset levels will switch from one tower to another. This allows the radio to roam between sites without user action, similar to a cell phone.

Sounds:

-  Listen for other radio traffic before attempting to transmit.
-  Wait until the quick chirp is done before you begin talking.
-  If a continuous beep is heard, radio is not affiliated with tower.
-  Two longer beeps indicate local site is busy, wait, and the system will give you the quick beeps indicating when access is ready.

- ✦ If a **“busy tone”** is received. The user should wait until receiving a talk permit tone. At this time the radio will key up for a few seconds. Do not continue to push the Push-to talk button.
- ✦ **Alert Tones:**
- ✦ Busy tone similar to phone busy signal. This tone is heard when a user attempts to transmit a message on a trunked talkgroup when all frequencies are in use.
- ✦ 4 short beeps received after a busy tone. Automatic Callback - A frequency is now available for you to transmit. Press PTT and begin the transmission.
- ✦ 4 beeps every six seconds. Call Alert has been received by the radio.
- ✦ 1 beep followed by 5 beeps. The Emergency button has been pressed and was acknowledged by the system.
- ✦ 3 short rapid beeps when the “PTT” is pressed. Talk permit tone - The user must wait for these tones before talking on a trunked talkgroup.
- ✦ A continuous tone when pressing the PTT. Talk prohibit - Occurs when pressing PTT and radio is out of range of the trunked system or system is out of service.
- ✦ A continuous tone. Time out timer - This continuous tone indicates your transmission is approaching 60 seconds, and will be discontinued at the 60-second point.
- ✦ Momentary higher pitched tone. Valid key chirp - This tone confirms that you have selected a valid, programmed button.
- ✦ A low pitched tone every 10 seconds. Failsafe - Trunked system failure where multiple agencies share a conventional channel.
- ✦ Momentary lower pitched tone. Invalid Chirp - Indicates that you have selected an un-programmed function.
- ✦ High pitched chirp. Low battery - Portable radio's battery needs charging.
- ✦ **Radio usage outside of Normal Operating Area:**
 - Your talkgroup works across the entire state.
 - To contact local units, turn to the closest Interagency Talkgroup and call. ie; “Metro-OEM5 on SF Interagency”.

Interoperability Network

B. User Priorities

Digital System access priority can be designated by the network administration. There are different levels of system access from 1-Emergency (highest) to 10 (lowest). The access priority affects the position in a queue (if in effect). The queue is the order in which system access is granted in the case when all tower resources are occupied.

- ✦ The order in which user priority is assigned is as follows:
 - 1 - Emergency—Highest priority, when emergency button, if so equipped, is activated.
 - 2 - State Radio, local 911 answering points, and other public safety communications centers
 - 3 - Law enforcement/Parole Agents/Inmate transport
 - 4 - Fire/rescue, emergency management
 - 5 - EMS/Health
 - 6 - Support agencies/Public Works/NWS/DOT
 - 7 -
 - 8 -
 - 9 - Other Public Service Agencies
 - 10 - Transit and other Transportation

C. ID and Alias Administration

Each agency or entity will be responsible for maintaining a current list of radio serial numbers, radio ID's and alias, in collaboration with the system administrator. A master list of Radio User Aliases and IDs will be created and maintained on a web based database. This will be readily accessible for all who have rights on that part of the system. Each agency will be responsible for updating and maintaining their information on the database, as alias names are created and approved. The web based database will be available for all appropriate parties for operations and planning.

The State Radio Communications System Administrator will be responsible for ensuring that all subscribers utilizing the system have complied with these requirements.

The State Radio Communications System Administrator will also furnish, upon request, new subscriber ID's for radios that authorized agencies need to add to the system. In addition to this the System Administrator will also coordinate additional alias needs with the requesting agency.

- + The current configuration has the alias displayed on calls received by dispatch centers that are networked.
- + Every Radio User ID in the system has to be unique; there can be no duplicated IDs.
- + System limitation is 14 characters.
- + The only figures that the system will accept are: Upper Case Alpha, Numeric, Period, Dash, Forward slash, and number sign.
- + The system Administrator is responsible for seeing that the defined Naming Standard is followed and maintained.

D. Call Sign Assignments

Call Signs of any agency or entity, subscribing to the system must be obtained or approved by the SRC System Administrator. All Call Signs must conform to the structure specified as follows.

- + State Agencies:
 - State Agencies will format call signs beginning with a phonetic designator that is indicative of the agency they are associated with, followed by a number designator, i.e. DOT###, HP###, GF###, DOH###, DCI###, ISB###, OEM###, etc.
- + Local/Federal Agencies:
 - Agencies outside of state government will continue to maintain current call sign numbering systems in day to day operations within the agency
- + Public Service Agencies:
 - Agencies outside of state government will continue to maintain current call sign numbering systems in day to day operations within the agency
- + New Agencies on System (Without numbering system):
 - Agencies applying for access on the system need to have call sign numbering system approved by the System Administrator.
- + Emergency/Interagency Radio Traffic:
 - Call signs for initial emergency or interagency communications on the digital radio system will need to be descriptive of calling agency, i.e. Rapid City PD#, Meade County SO#, FBI#, US Marshall#, Philip Ambulance #.
 - Once Incident Command has been established, radio plan will be developed identifying call signs & communications procedures. Agencies outside of state government will continue to maintain current call sign numbering systems in day to day operations within the agency.

Each agency will have a person designated as a Point of Contact (POC) that will maintain a current call sign registry. Also a record of radio serial numbers and unit designation shall be maintained. Any additions or deletions to inventory or call sign registry must be communicated to the SRC System Administrator (State Network Manager).
(www.state.sd.us/bit/tele/stateradio/application_form.htm)

4.3.4. - Failure Modes

A. Description

Trunking system failures may occur due to software problems or equipment failures. Additionally, storms, vandalism, and other events can damage system equipment and support. Radio operations under the most significant Failure Mode are described below.

All system failures create significantly increased demand for radio airtime on the available channels as well as limitations in power and coverage. Radio discipline must be maintained at a high level. Radio use will be limited to emergency related and resource management traffic only during Failsoft and System Failure conditions.

B. Site Trunking Failure

Event: Failure of the communications link to a trunked site. Radio displays "SITE TRUNKING".

Limited to coverage of the tower where affiliated.

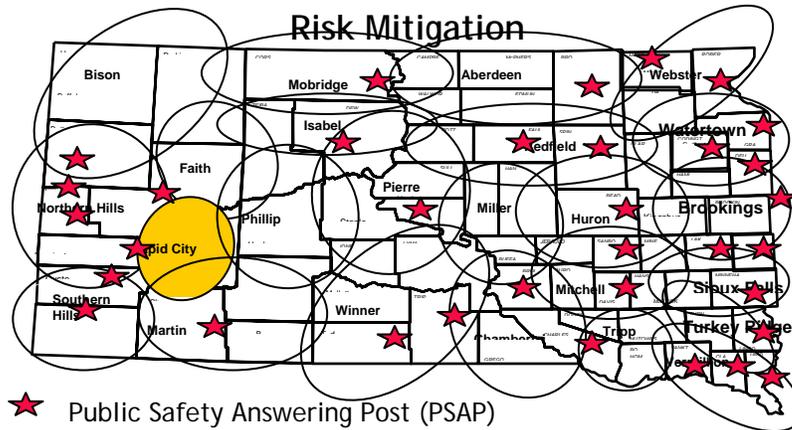
| | |
|---------|---|
| Action: | Remain on current assigned channel. Follow local Communications Center direction. |
| | direction. |
| | direction. |

C. Risk Mitigation

The South Dakota system is very fault tolerant. Generally the risk to the system is at a single site, with the telecommunications link from the fiber-optic network to the site being single-threaded, or not redundant. The Master Site (Network Controller) has full redundancy, but is at a single site.

In the event of a catastrophic failure at the Master site, the entire system will revert to site-trunking, or will only be able to communicate within the boundaries of the RF coverage of each site. Trunking features, talkgroups, etc. will continue, but only within the coverage of the tower affiliated on (see Risk Mitigation map for rough areas covered by each site).

If all network connections to the Master Site are lost, all dispatch communication will need to be routed through the PSAP in the coverage area of the tower affiliated on, or handled locally within the agency. Wide area communications will need to be relayed by the PSAP or agency through alternate means.



4.3.5. Operational Protocol Summary

A. Routine Traffic



1. All radio communication should be brief and to the point. Radio system traffic shall be limited to official business only. Agency heads are responsible for the appropriate use of the system in accordance with adopted standard protocols established by the PSCC. Proper radio etiquette is expected on any communications system.
2. Radio messages will be made and received in the following manner:
 - ✚ Caller waits for clear air time on selected talkgroup.
 - ✚ When initiating communication on the statewide radio system, the following format will be used.

“Receiving agency/unit—sending unit— on talkgroup used”.

 i.e. “Metro-HP20 on SF Interagency”.
 - ✚ Receiver acknowledges by stating their state assigned/approved call sign.
 - ✚ When utilizing private agency talkgroups, call sign protocol is at agency discretion.
 - ✚ All radio traffic must be conducted in a professional manner.
 - ✚ State-recognized 10 codes (Attachment 1) or clear speech will be used on system.
3. Local Operation:
 - Normal operations will be conducted on assigned agency talkgroups.
 - Interagency traffic will be conducted on the State Interagency Talkgroup for that geographic area.
 - Interagency talk groups are not to be used for normal dispatch.
 - Special Operations and State Fire 2 & 3 talkgroups must be requested and authorized by State Radio for events or incidents.
4. Operation outside of local area.

- Users traveling outside their normal operating area will switch from their local talkgroup to the appropriate Interagency talkgroup for the geographic area you are currently in. This is needed to prevent radios from unnecessarily tying up system resources.
 - The digital trunked radio system is not currently set up to limit talkgroups to particular sites. This configuration allows necessary communications outside of the normal service area of an agency, often made necessary by prisoner transports, EMS & fire support outside of area.
 - ✚ The drawback to this wide area operation is that when a talkgroup is transported to another area of the state, all traffic associated with that talkgroup is then repeated over the local tower that the user is affiliated on. This can cause an overload situation for the local tower, especially if a large number of users are affiliated on their home talkgroups on a single tower. This may result in a busy condition for not only the local users where the outside talkgroups are brought into, but a potential talkgroup busy back in the home area of the user.
 - ✚ The system is designed for this purpose, but within capacity limitations. Use home talkgroups outside of normal service area only when necessary.
5. Monitoring of talkgroups outside of home area for non-service related business is prohibited.
- ✚ The affect on system same as outlined above in Section V., Item A4.
 - ✚ Monitoring is defined as the physical affiliation of the radio on the talkgroup selected.
 - ✚ Non-selected talkgroups being scanned do not have the same impact on system.

B. Emergencies

An emergency is defined as a non-scheduled significant incident that requires the coordinated response and interoperability of multiple agencies or jurisdictions. All emergency communications will be subject to the National Incident Management System (NIMS) guidelines. To include incidents that move between jurisdictions. **All interagency emergency traffic will be conducted in clear language.**

1. When situation dictates coordinated resources from agencies without common talkgroups, communications will be on the State Interagency Talkgroup for that geographic area.
2. All responding units will monitor the Interagency talkgroup designated by the requesting agency for additional information and the initial report on conditions.
3. Special Operations talkgroup(s) will be assigned for the duration of the emergency upon request.
 - For fire operations, the acting Communications Unit Leader may request additional State Fire talkgroup(s).
4. State Radio dispatch will be notified by requesting agency or acting Communications Unit Leader within the Incident Command/Unified Command when the requested talkgroup will no longer be needed.

C. Planned/Scheduled Events

Any event, known in advance, that requires additional communications resources.

1. Special Operations talkgroup(s) will be assigned as available for the duration of the event upon request. Talkgroup assignment is subject to pre-emption if required for reassignment to an emergency incident.
 - Special Operations talkgroups should be scheduled as far in advance as possible.
2. State Radio dispatch will be notified by requesting agency or Incident Commander when the requested talkgroup will no longer be needed.

D. Heavy Radio Traffic Conditions

1. If a Communications Center or an Incident Commander feels that excessive non-essential radio traffic is impacting dispatch operations or incident operations, the Incident Commander or Communications Center will make a radio traffic restriction announcement. This announcement will be made on appropriate talkgroup(s). The radio traffic restriction announcement will normally be, "All Units and Stations with non-essential radio traffic stay off the air."
 - ✚ An alternate agency talkgroup can be assigned by Communications Center for non-incident related communications.
2. When the condition is over, the Communications Center or an Incident Commander will broadcast a message announcing resumption of normal radio traffic conditions.

E. Use of Equipment in Electronically Sensitive Areas

Radio equipment generates RF Interference (RFI) that may interfere with the operation of medical or other sensitive electronic equipment. Caution needs to be observed when operating radio equipment in such areas.

F. Communications With Adjacent States

All states bordering South Dakota operate on VHF systems, and a number of counties in surrounding states have access to the statewide trunked system. The following channel plan will be coordinated with adjacent states, and all first responder/public safety radios in the state of South Dakota are strongly encouraged to include this channel plan when programming/reprogramming radio equipment.

| FREQUENCY (MHz) OR CHANNEL SET | Notes | CHANNEL LABEL |
|--------------------------------|--------------------------|---------------|
| VHF | | |
| 151.1375 Base/Mobile | Emergency Use Only | VTAC1 |
| 154.4525 Base/Mobile | Emergency Use Only | VTAC2 |
| 155.475 Mobile | Law Enforcement Use Only | NATLAW |
| 155.7525 Base/Mobile | Emergency Use Only | VCALL |
| 158.7375 Base/Mobile | Emergency Use Only | VTAC3 |
| 159.4725 Base/Mobile | Emergency Use Only | VTAC4 |
| 157.250 Mobile | Emergency Use Only | RTAC1 |
| 161.850 Base/Mobile | | RTAC1a |
| 157.225 Mobile | Emergency Use Only | RTAC2 |
| 161.825 Base/Mobile | | RTAC2a |
| 157.275 Mobile | Emergency Use Only | RTAC3 |
| 161.875 Base/Mobile | | RTAC3a |
| UHF | | |
| 453.2125 Base/Mobile | Emergency Use Only | UCALLa |
| 458.2125 Mobile | | UCALL |
| 453.4625 Base/Mobile | Emergency Use Only | UTAC 1a |
| 458.4625 Mobile | | UTAC 1 |
| 453.7125 Base/Mobile | Emergency Use Only | UTAC 2a |
| 458.7125 Mobile | | UTAC 2 |
| 453.8625 Base/Mobile | Emergency Use Only | UTAC 3a |
| 458.8625 Mobile | | UTAC 3 |

G. Tribal Communications

Presently all tribal governments within the state are migrating to the South Dakota Interoperability Network. This will streamline further the process of communicating from and to the reservations and coordination with other emergency services. Previous to the conversion, all tribal operations were on conventional VHF and the same radios could be used for both systems.

Tribal agencies operating on the system are required to program the basic talkgroup plan and attend training. This ensures interoperability when needed.

H. Interoperability outside of VHF or the Statewide Network

Trunked radios to operate on the statewide network have been issued to all first responders in the state. This ensures that for any communications situation within the state, every first responder is able to communicate without intervention. It is also the communications goal of South Dakota to not only be interoperable within our own user base, but also with those coming in from the outside in times of need. VHF is a given and all interoperability channels possible that will not interfere with the operation of the system will be programmed into all radios as a prerequisite. For those responders coming into the state without VHF equipment, the plan is as follows:

1. VHF Low-Band

Prior to the installation of the statewide VHF Highband network in the state, operations for law enforcement were primarily on the VHF Lowband part of the spectrum. Portable base stations have been retained, and can be made compatible by cross-banding with an ACU-1000 gateway in the area of operations.

2. UHF

Currently all vehicular repeater operation in the state is on common UHF channels licensed by the state. The state also maintains a 200 radio UHF cache, portable repeaters, and has associated UHF equipment in the state mobile emergency response center. The national U-Call and U-TAC frequencies will be added to all radios upon next maintenance.

3. 700/800mhz

South Dakota is in the process of establishing its steering committee for the establishment of a state 700mhz plan. The 800mhz plan was established in the state per requirements in 1993 and is in place as needed.

In anticipation of possible responders from out of state arriving with 700mhz equipment, South Dakota is planning for interoperability with:

- Plans to integrate 700mhz radio cables into the ACU-1000 gateway device. This can then be tied into a base station or the transport for the statewide network and cross-banded to allow communications.
- Regional plans to convert mobile data operations from UHF frequencies to 700 for dual voice/data services are under review. There is a current effort to upgrade mobile data capabilities, and by moving operations to 700mhz. This will not only provide lower noise spectrum allowing higher speeds, but also a secondary function would be the capability of utilizing the fixed sites as a interconnect to 700mhz voice radios through a console patch.

I. Non-Governmental Organization

Governmental organizations in South Dakota are defined within South Dakota Codified Law as the following:

24-2-20.1. "Governmental entities" defined. As used in § 24-2-20, the term, governmental entities, means any department, division, or other public agency of any municipal, county, state, or national government.

Source: SL 2001, ch 118, § 5; SL 2004, ch 168, § 12.

Any organization not covered in the above description is known as a "Non-Governmental Organization". These organizations are inclusive of but not limited to:

- Aid organizations
- Public utilities
- Any organization, contractor, or personnel that are a recognized participant of an emergency response or disaster recovery process.

Communications equipment requests from Non-Governmental Organizations (NGO) are routed through the Incident Commander and are routinely approved to facilitate communications between NGO's and other emergency response personnel.

4.3.6. Strategic Reserve (STR)

In order to provide additional communications resources in emergency events, the State of South Dakota has established a reserve of communications equipment that will assist local communications in the areas affected.

1. Pierre

The State maintains a cache of system compatible portable radios (200) which have been distributed for emergencies in the past. As part of the cache, individual and bank battery chargers, external magnetic mount antennas, and extra batteries are maintained. In addition to equipment capable of operating on the statewide network, UHF repeaters and portables, a portable tower and tower building, an ACU1000 gateway, a mobile emergency operations center, and technical staff are on standby 24x7x365. Smaller items such as radios, chargers, etc. are loaded onto a state plane and can be anywhere in the state within 2 hours. The larger items such as the repeaters, tower and trailer, and mobile EOC are tested monthly for operation, and are transported to the scene.

2. Sioux Falls

The State Radio technician in Sioux Falls maintains a smaller cache of radios (50) along with batteries and chargers.

3. Rapid City

The State Radio technicians in Rapid City maintain a smaller cache of radios (50) along with batteries and chargers.

4.3.7. Talkgroups

A. Statewide Talkgroups

The following is a list of Statewide Talkgroups. It is recommended that these talkgroups be programmed as a Standardized Block within the appropriate radios to assure uniformity and interoperability across the State.

1. SRC (State Radio Communications) talkgroups – are intended for any law-enforcement communications between mobile and State Radio dispatch. All law enforcement field units will be programmed with these talkgroups. These talkgroups shall be labeled as follows:

| <u>Talk Group</u> | <u>Radio Display</u> |
|-------------------|----------------------|
| SRC Sioux Falls | SRC SF |
| SRC Turkey Ridge | SRC TKR |
| SRC Vermillion | SRC VERM |
| SRC TRIPP | SRC TRIP |
| SRC MITCHELL | SRC MIT |
| SRC BROOKINGS | SRC BRK |
| SRC WATERTOWN | SRC WTN |
| SRC WEBSTER | SRC WEB |
| SRC Isabel | SRC ISAB |
| SRC ABERDEEN | SRC ABR |

| | |
|-----------------|----------|
| SRC REDFIELD | SRC RED |
| SRC HURON | SRC HUR |
| SRC MILLER | SRC MIL |
| SRC CHAMBERLAIN | SRC CHAM |
| SRC WINNER | SRC WIN |
| SRC PIERRE | SRC PIER |
| SRC MOBRIDGE | SRC MOB |
| SRC PHILLIP | SRC PHIL |
| SRC MARTIN | SRC MAR |
| SRC BISON | SRC BISN |
| SRC RAPID CITY | SRC RC |
| SRC S. HILLS | SRC SH |
| SRC N. HILLS | SRC NH |
| SRC FAITH | SRC FATH |

2. INT (Interagency) talkgroups - are intended for any interdepartmental radio communications. Due to the potential for high volume usage of these talkgroups, *they are not intended as primary day-to-day routine dispatch operations*. All multi-jurisdictional/multi-agency incidents should be initiated on the Interagency talkgroups and then moved to an operational or user-specific talkgroup. Every radio on the system will be programmed with the 24 Regional Interagency Talkgroups. These talkgroups shall be labeled as follows:

| Talkgroup | Radio Display | Intended Use |
|----------------------------|---------------|---------------------|
| Sioux Falls Interagency | SF INT | Interagency Traffic |
| Turkey Ridge Interagency | TKR INT | Interagency Traffic |
| Vermillion Interagency | VERM INT | Interagency Traffic |
| Tripp Interagency | TRIPP INT | Interagency Traffic |
| Mitchell Interagency | MIT INT | Interagency Traffic |
| Brookings Interagency | BRK INT | Interagency Traffic |
| Watertown Interagency | WTN INT | Interagency Traffic |
| Webster Interagency | WEB INT | Interagency Traffic |
| Isabel Interagency | ISAB INT | Interagency Traffic |
| Aberdeen Interagency | ABR INT | Interagency Traffic |
| Redfield Interagency | RED INT | Interagency Traffic |
| Huron Interagency | HUR INT | Interagency Traffic |
| Miller Interagency | MIL INT | Interagency Traffic |
| Chamberlain Interagency | CHAM INT | Interagency Traffic |
| Winner Interagency | WIN INT | Interagency Traffic |
| Pierre Interagency | PIER INT | Interagency Traffic |
| Mobridge Interagency | MOB INT | Interagency Traffic |
| Phillip Interagency | PHIL INT | Interagency Traffic |
| Martin Interagency | MAR INT | Interagency Traffic |
| Bison Interagency | BIS INT | Interagency Traffic |
| Rapid City Interagency | RC INT | Interagency Traffic |
| Southern Hills Interagency | SH INT | Interagency Traffic |
| Northern Hills Interagency | NH INT | Interagency Traffic |
| Faith Interagency | FATH INT | Interagency Traffic |

3. SP OPS (Special Operations) talkgroups - are requested talkgroups for non-routine operations. Requests for these talkgroups will be directed towards one of the three State Radio dispatch centers. All radios on the system will be programmed with these talkgroups. These talkgroups shall be labeled as follows:

| <u>TALKGROUP</u> | <u>RADIO DISPLAY</u> | <u>INTENDED USE</u> |
|-----------------------|----------------------|--|
| Special Operations 1 | SP OP 1 | Communications During Disasters and Special Events |
| Special Operations 2 | SP OP 2 | Communications During Disasters and Special Events |
| Special Operations 3 | SP OP 3 | Communications During Disasters and Special Events |
| Special Operations 4 | SP OP 4 | Communications During Disasters and Special Events |
| Special Operations 5 | SP OP 5 | Communications During Disasters and Special Events |
| Special Operations 6 | SP OP 6 | Communications During Disasters and Special Events |
| Special Operations 7 | SP OP 7 | Communications During Disasters and Special Events |
| Special Operations 8 | SP OP 8 | Communications During Disasters and Special Events |
| Special Operations 9 | SP OP 9* | Communications During Disasters and Special Events |
| Special Operations 10 | SP OP 10** | Communications During Disasters and Special Events |

* Some radios labeled HP

** Some radios labeled SRC

✚ The Special Operations talkgroups were designed to allow for incident management communications off of the normal operating talkgroups, freeing up those talkgroups for normal operations. These are designated to be operated on in either a proactive manner, or a reactive manner, depending upon the situation.

✚ Special Operations talkgroups can be used for either scheduled events or emergencies, but must be reserved. Scheduled events assignments may be pre-empted by emergency situations. Special Operations talkgroups are request-only talkgroups, with request made to State Radio Dispatch via radio over any Interagency Talkgroup, or by telephone to one of the following dispatch centers:

Pierre-- 605-773-3536

Huron-- 605-353-7132

Rapid City-- 605-393-8121

4. State Fire (ST FIRE 2 and 3 only) talkgroups -- are intended for use as a request-mutual-aid fire talkgroup. All radios will be programmed with these talkgroups. These talkgroups shall be labeled as follows:

| <u>TALKGROUP</u> | <u>RADIO DISPLAY</u> | <u>INTENDED USE</u> |
|------------------|----------------------|---|
| State Fire 1 | STFIRE-1 | Interagency Fire related contact with Great Plains Dispatch Center in Rapid City* |
| State Fire 2 | STFIRE-2 | State Mutual Aid Fire - Special Operations Channel |
| State Fire 3 | STFIRE-3 | State Mutual Aid Fire - Special Operations Channel |

✚ *Note that State Fire 1 is intended for interagency fire-related communications with Great Plains Dispatch Center in Rapid City and IS NOT intended for Special Operations Request-Mutual Aid from resources other than Great Plains.

✚ The State Fire 2 and 3 talkgroups are request-only talkgroups, with requests being made to State Radio Dispatch via radio over any Interagency Talkgroup, or by telephone to one of the following dispatch centers:

Pierre-- 605-773-3536

Huron-- 605-353-7132

Rapid City-- 605-393-8121

5. NWS Talkgroups - The NWS talkgroups are a direct link to the National Weather Service Offices in Rapid City, Aberdeen, and Sioux Falls. These Talkgroups are to be used for communications with NWS when relaying weather spotter, fire conditions and other weather related information from the field. All radios on the system will be programmed with these talkgroups. These talkgroups shall be labeled as follows:

| <u>TALKGROUP</u> | <u>RADIO DISPLAY</u> | <u>INTENDED USE</u> |
|--------------------------|----------------------|--|
| National Weather Service | NWS-W | Weather Related Reporting to NWS - Western, South Dakota |
| National Weather Service | NWS-C/NE | Weather Related Reporting to NWS - Central/Northeastern South Dakota |
| National Weather Service | NWS-SE | Weather Related Reporting to NWS - Southeastern, South Dakota |

6. EMS (Hospital) Talkgroups - The public safety radio system is in place to support the day-to-day operations of South Dakota's various public safety agencies. Law Enforcement, Fire Departments, Ambulance Services, and Department of Transportation are but a few of the many different agencies that will be using this technology to complete their tasks.

South Dakota's facilities are included in this plan for three primary reasons.

1. Ambulance services throughout the state will be using this technology to communicate with hospitals to obtain online medical control, and relay pertinent patient information.
2. Helicopter air ambulances will be equipped with the technology to:
 - a. Provide air to ground communications during emergencies
 - b. Provide communications to referring facilities during inter-facility transport.
 - c. Provide contact for dispatch/communications centers during flight following procedures when traditional duplex communication is not possible.
3. Hospital laboratories that are designated by the State as surge laboratories must have access to the system during bio-terror threats, or other mass casualty events for surveillance purposes.

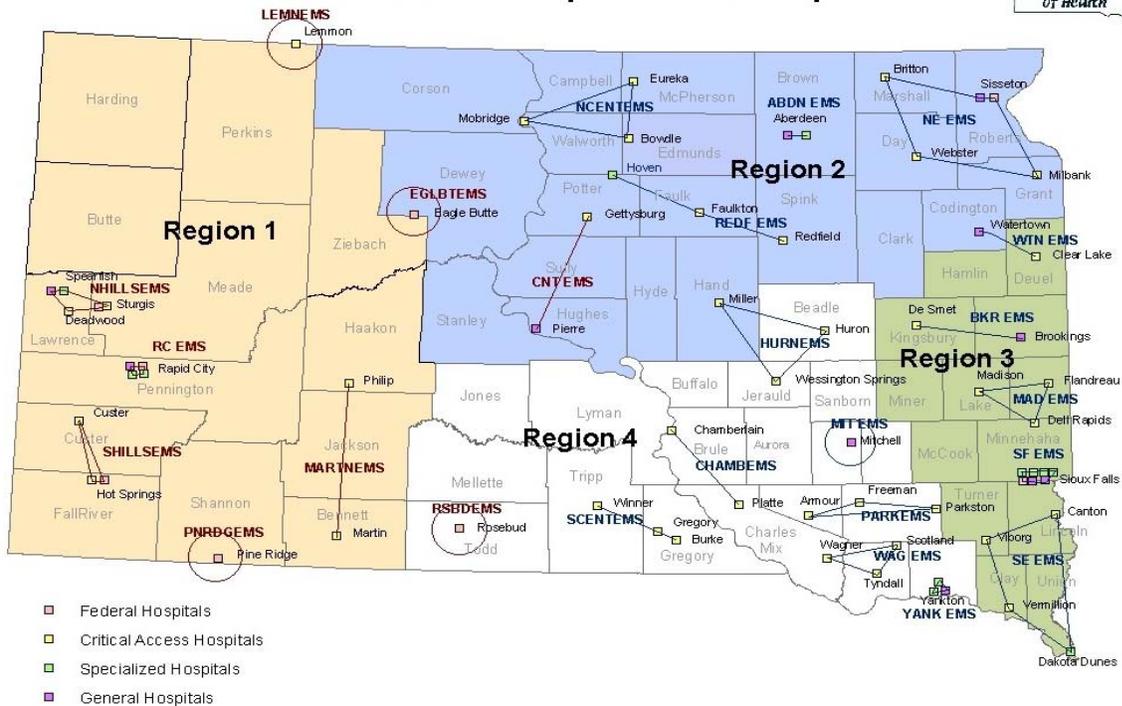
Procedure:

Radios provided by the South Dakota Department of Health to facilities in the state have been pre-programmed with various local and regional talkgroups. These Talkgroups are in place so public safety agencies (primarily ambulance services) would be able to predict the talkgroup the receiving facility would be operating when transporting a patient. This principle will apply to all hospitals in the state that have obtained the state public safety radio system. Hospitals should monitor the talkgroup of which they are a member according to the following map entitled "SOUTH DAKOTA HOSPITAL TALKGROUPS"

Example:

According to the following map, hospitals in Madison, Flandreau, and Dell Rapids are connected on the MAD EMS talkgroup. This must be the talkgroup monitored by these facilities since ambulances coming from other areas will expect to contact them here. Hospitals in Spearfish, Deadwood, and Sturgis are connected on the NHILLS EMS talkgroup. Public safety agencies need to be able to contact these facilities in emergencies, and a statewide plan that can be predicted by all agencies will be the most effective. Hospitals in Parkston, Freeman, and Armour are connected via the PARK EMS talkgroup; a helicopter responding to a call to transport needs to be able to contact these facilities, and when the plan is followed, can predict which talkgroup the facility will be monitoring. If the hospital in Faulkton has a patient to be transferred, a helicopter called to transport would be able to select the REDF EMS talkgroup in order to make landing arrangements, and so on. If an ambulance is called to transport a patient from Phillip to a hospital in Rapid City, that ambulance would be able to select the RC EMS talkgroup to relay pertinent information to the receiving facility in Rapid City.

South Dakota Hospital Talk Groups



B. Agency Talkgroups

Each agency is considered as "owner" of the private talkgroup assigned to them. Agencies are expected to use the talkgroups assigned to the department for all interdepartmental traffic. Policies and procedures for the use of the agency talkgroup are at the discretion of the department, within the technical limitations set forth in Section V item A4.

C. Requests for Additional Talkgroups

Requests for new talkgroups will be submitted to the System Administrator using Attachment 2.

Authorization of private talkgroups for operations and monitoring of other agencies will be processed through the System Administrator. Attachment 3 will be filled out for each authorization, a copy kept on file, and another copy sent to:

State Radio Communications
 Attn: System Administrator
 1302 E Hwy 14
 Pierre, SD 57501

Or Faxed To: 605-773-4629

D. Authorization/Revocation for Sharing of Talkgroups

To access non-agency talkgroups, authorization from the "owner" of that talkgroup must be obtained using attachment 3 in this document. Authorization of private talkgroup to operate/monitor on that talkgroup may be rescinded by the talkgroup "owner" by written notice.

4.3.8. AUTHORIZED SYSTEM ACCESS

Access will be granted to public safety. Further applications beyond public safety will be reviewed on a case by case basis by the System Administrator and the PSCC review committee.

A. Public Safety

Law Enforcement

- ✚ Any agency recognized by the SD Attorney General, and their associated dispatch/911 operations
- ✚ Any agency recognized by US Attorney General
- ✚ Any agency recognized as a tribal law-enforcement agency

Fire Departments

- ✚ Any agency recognized by state Fire Marshals Office
- ✚ Any federally recognized fire agency/department
- ✚ Any tribal fire agency/department

EMS

Ambulance:

- ✚ Any licensed ambulance service

Facilities:

- ✚ Any hospital or facility recognized by the state Department of Health

Emergency Management

- ✚ Any emergency management agency recognized by the state Department of Public Safety

B. Public Service

Transportation

- ✚ State and local transportation units
- ✚ Transit systems(by request & review process)

Support Agencies

- ✚ Agencies authorized by state statute such as Red Cross, Salvation Army, and like agencies that support in times of emergency. To include communications service agencies that support radio maintenance or operations, utility and other assigned critical support entities.

NWS

- ✚ 3 current weather services offices

Public Works

Court Services/Corrections

Regulatory

Other Governmental Agencies

4.3.9. Applying for System Access

Agencies or entities wishing to be granted access to the State-wide Radio Network System fill out the System Access application (Attachment 2) and submit it to the SRC System Administrator.

- ✦ The SRC System Administrator will recommend approval or denial and forward the applicant information to the PSCC.
- ✦ The PSCC will review the application and will give written notice of approval or denial within 45 days.
 - If the requesting agencies application is denied, the PSCC will provide the requesting agency with the necessary stipulations of compliance to obtain system access, or a written explanation of the decision to deny access to the system.
 - A copy of the notice of approval or denial will be forwarded to the PSCC and the Commissioner of BIT.
 -

4.3.10. Revocation of Privileges

The objective of this procedure is to describe the consequences of non-compliance. These consequences will be spelled out for varying degrees and duration of non-compliance.

The PSCC is charged with setting standards and determining protocols and procedures for the smoothest possible operations between and among the users of the shared state-wide public safety radio system.

The ability to communicate between full participants and non-participants in the statewide system is possible due to the inter-operational hardware and software being developed. The improper use of this hardware can have minor to grave consequences. These standards, policies and procedures have been set forth to describe how and under what conditions the statewide radio system will be used. This is essential in order to maximize service to the citizens of the state and minimize potential negative consequences. Responsible management of this resource, therefore, requires that standards, protocols and procedures be enforced and that consequences of non-compliance be developed and implemented.

- ✦ Recommended Protocol/ Standard: Consequences of failure to comply with these standards, protocols and procedures fall into two categories of non-compliance.
 - Moderate to high potential for serious adverse affect on participants and/or non-participants of the Backbone System.
 - Low potential for adverse affect on participants and/or non-participants of the Backbone System.
 - The SRC System Administrator will be the first to review the complaint for discovery or report of non-compliance.
 - The PSCC will then review the complaint for discovery or report of non-compliance.
 - The Commissioner of BIT will be the final review of the complaint for discovery or report of non-compliance.
- ✦ SDCL Chapter 1-13 authorizes the Bureau of Information and Telecommunications (BIT) to fund, operate, and maintain the radio system, and shall be regarded as the system owner. Failure to comply with the protocols may result in the following actions:

Moderate to high

| | |
|---|--|
| First violation | Written order to immediately stop the non-compliant practice. Either the SRC System Administrator, PSCC, owner agency of affected Systems/Sub-System may send this letter, with a copy to the all affected parties. The governing body of the violating agency shall be notified of the violation. |
| Failure to correct problem and respond within 30 days <u>or</u> 2nd offense within 180 days | Suspension of user privileges on the Backbone System to the extent of time recommended by the PSCC and executed by the Commissioner of BIT with prior notification to the affected agencies. |
| Failure to respond within 60 days <u>or</u> 3rd offense within 180 days | Revocation of user privileges on the Backbone System. This action must be recommended by the PSCC and executed by the Commissioner of BIT. |

Low

| | |
|---|--|
| First violation | Written warning calling attention to the non-compliant practice. The violator is asked to stop the non-compliant practice(s). The SRC System Administrator or owner agency may send the warning with a copy to the PSCC and affected parties. The governing body of the violating agency shall be notified of the violation. |
| Failure to respond within 30 days <u>or</u> 2nd offense within 180 days | Written order to immediately stop the non-compliant practice or be subject to suspension or revocation of user privileges. The SRC System Administrator or the owner agency may send this letter with a copy to the affected agencies and the PSCC. |
| Failure to respond within 60 days <u>or</u> 3rd offense within 180 days | Suspension or revocation of user privileges on the Backbone system. The specific penalty must be recommended by the PSCC and executed by the Commissioner of BIT. |

- ✚ Recommended Procedure for non-compliance may come to the attention of various personnel as a result of routine monitoring, an audit, a report or complaint from radio users, to name a few of the possible alternatives.
- ✚ Regardless of how the issue arises, as soon as there is awareness of non-compliance:
 - The individual discovering non-compliance is obliged to immediately report it to their respective system manager or administrator. If local management fails to resolve the situation within a reasonable time the manager will notify the SRC System Administrator.
 - System Usage Complaints shall be directed in writing to:

System Administrator, State Radio Communications
1302 E Hwy 14
Pierre, SD 57501

- Concurrently, the System Administrator will notify the Point of Contact of the agency not in compliance, the PSCC and the Commissioner of BIT.
- If the matter is determined to be urgent by the SRC System Administrator, PSCC or Commissioner of BIT, it will be placed on the next PSCC meeting agenda.

- Should immediate action be required the SRC System Administrator will notify the non-compliant agency of:
 - ✦ The required action. This will include a request to explain the reason for non-compliance.
 - ✦ The date the matter will come before the PSCC, or before the Commissioner of BIT.
 - ✦ Their rights to appeal.

- The SRC System Administrator and the PSCC will hear the issue and recommend corrective action or consequences.
- These will be communicated to the violator within 10 days.
- The SRC System Administrator will follow up to ensure that all next steps and or corrective action have been completed within the time frame.
- ✦ The SRC System Administrator and the PSCC, acting on behalf of the radio users, will manage this process. Any action taken by staff shall be reported to the SRC System Administrator and shall be subject to review and/or appeal.

Appeals

All users of the State-wide Radio Network System, whether full participants or conventional users connecting by means of inter-operational infrastructure, have the right to appeal a procedure, a decision or a sanction set forth.

In the event of a dispute regarding the outcome of non-compliance procedures, an aggrieved party may file a written appeal to reverse recommendations or sanctions within 30 days of issuance of directives or sanctions.

- ✦ In the event of a dispute regarding the outcome of non-compliance procedures, an aggrieved party may file a written appeal to reverse recommendations or sanctions within 30 days of issuance of directives.
- ✦ Within ten days of receiving a request for appeal, the PSCC shall provide written notice of the request to all involved parties and set a date for an appeal hearing by the Commissioner of BIT within 45 days.
- ✦ DECISION - The Commissioner of BIT, after a hearing on the matter, shall make a decision regarding the dispute within 60 days and transmit an order to all parties involved. The action called for shall be implemented in accordance with the order. Copies of the order will be mailed to all affected parties, the PSCC and the State Radio Communications System Administrator.

4.4 Training and Exercises Plan

A. Training

Training for radio/system operation is available in a number of formats:

- ✦ Printed form.
- ✦ DVD/VHS format. County Emergency Managers have all been issued materials.
- ✦ On-line at the following website:
<http://www.state.sd.us/bit/tele/stateradio/training/commtrainingmanual.pdf>

It is recommended that an annual inter-department radio training session be held.

B. Exercises

There are a number of exercises held across the state that test the local and wide area aspects of the interoperable communications network:

1. Quarterly radio tests by the South Dakota Department of Health (DOH). Each quarter, a test is conducted where state personnel in Pierre contact each healthcare center facility and emergency medical service in the state via radio. Testing is pre-scheduled and users are required to reply on talkgroups other than their normal operating talkgroup.
2. Annual TICP plan testing (multidisciplinary) testing of the radio system during exercise. The UASI for the State of South Dakota consists of Minnehaha and Lincoln Counties as well as the City of Sioux Falls.
3. South Dakota Forestry conducts a communications exercise every spring between the state, local, and federal responders in the area that might be called in to fight forest fires in the Black Hills

NIMS training requirements are as follows:

| | |
|--|--|
| <p>Federal/State/Local/Tribal/Private Sector & Non-governmental personnel to include:</p> <p><i>Entry level first responders & disaster workers</i></p> <ul style="list-style-type: none"> • Emergency Medical Service personnel • Firefighters • Hospital staff • Law Enforcement personnel • Public Health personnel • Public Works/Utility personnel • Skilled Support Personnel • Other emergency management response, support, volunteer personnel at all levels | <ul style="list-style-type: none"> • FEMA IS-700: NIMS, An Introduction • ICS-100: Introduction to ICS or equivalent |
| <p>Federal/State/Local/Tribal/Private Sector & Non-governmental personnel to include:</p> <p><i>First line supervisors, single resource leaders, field supervisors, and other emergency management/response personnel that require a higher level of ICS/NIMS Training.</i></p> | <ul style="list-style-type: none"> • FEMA IS-700: NIMS, An Introduction • ICS-100: Introduction to ICS or equivalent • ICS-200: Basic ICS or equivalent |
| <p>Federal/State/Local/Tribal/Private Sector & Non-governmental personnel to include:</p> <p><i>Middle management including strike team leaders, task force leaders, unit leaders, division/group supervisors, branch directors, and multi-agency coordination system/emergency operations center staff.</i></p> | <ul style="list-style-type: none"> • FEMA IS-700: NIMS, An Introduction • FEMA IS-800: National Response Plan (NRP), An Introduction* • ICS-100: Introduction to ICS or equivalent • ICS-200: Basic ICS or equivalent • <i>ICS-300: Intermediate ICS or equivalent (FY07 Requirement)</i> |
| <p>Federal/State/Local/Tribal/Private Sector & Non-governmental personnel to include:</p> | <ul style="list-style-type: none"> • FEMA IS-700: NIMS, An Introduction |

| | |
|--|---|
| <p><i>Command and general staff, select department heads with multi-agency coordination system responsibilities, area commanders, emergency managers, and multi-agency coordination system/emergency operations center managers.</i></p> | <ul style="list-style-type: none"> • FEMA IS-800: National Response Plan (NRP), An Introduction* • ICS-100: Introduction to ICS or equivalent • ICS-200: Basic ICS or equivalent • <i>ICS-300: Intermediate ICS or equivalent (FY07 Requirement)</i> • <i>ICS-400: Advanced ICS or equivalent (FY07 Requirement)</i> |
|--|---|

4.5 Usage

The first responders of South Dakota utilize the network for daily and emergency situations. This ensures that familiarity with the system and allows the network managers to recognize "pinch" areas that need technical attention. A real indication of the utilization of the system is the calls in relation to the numbers of radios in use by the different levels of government:

Radio Counts

- 3,090 state (22%)
- 9,606 local (69%)
- 337 federal (2%)
- 960 BIA & tribal radios (7%)

Current Use (Talkgroup activity in June 2006)

- 67% Local traffic.
- 5% Tribal/Federal traffic.
- 28% state agency traffic.

From these statistics, it is clear that the radios in the field are being used in close relation to the level of distribution.

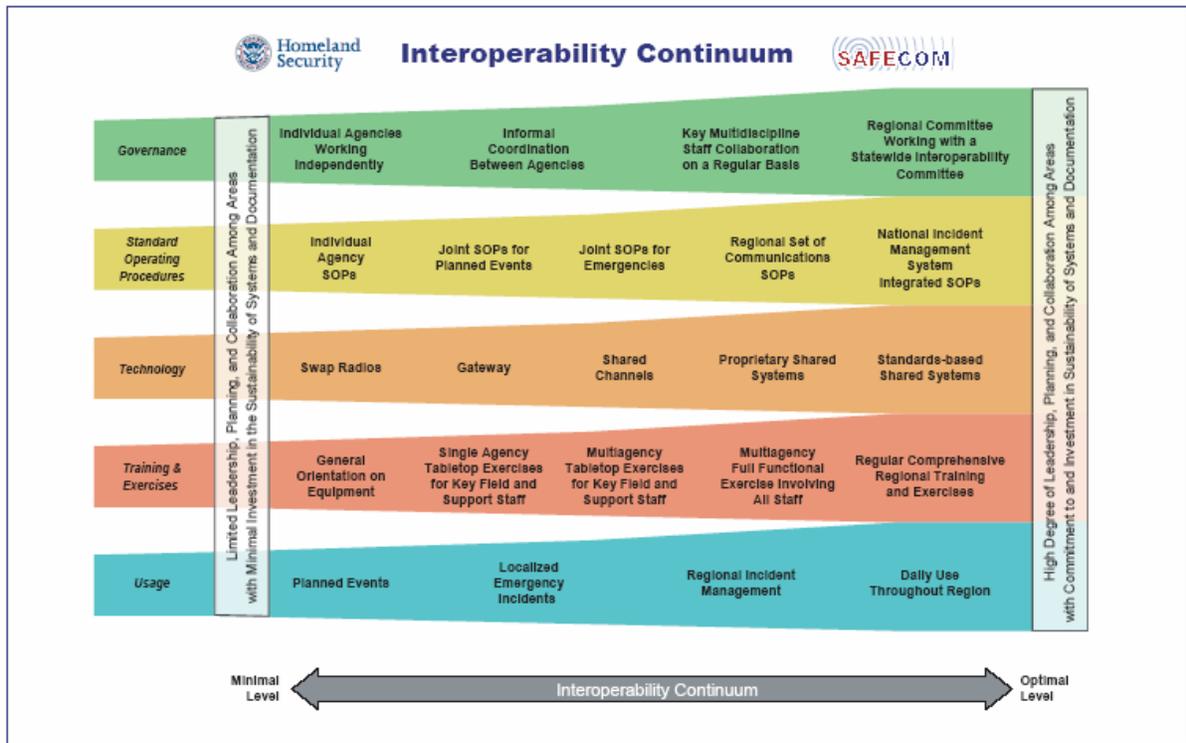
4.6 Interoperability Continuum

Interoperability Network

South Dakota feels that it is in a unique position as a result of an early effort to establish interoperability in the state:

- Every first responder was issued radios at the outset of the project and is capable of communicating statewide
- The statewide network is used as a primary communications media for the majority of the users in the state, system is used and tested on a daily basis
- A user-based council (PSCC) has been established to provide representation
- A standards-based communications manual has been in place since 2004
- Quarterly and annual testing is done on the system by Department of Health, Office of Emergency Management, and the UASI for which the state TICIP was established. This testing involves statewide users of all disciplines. Additional county-wide and region-wide testing is performed annually per local protocols.

From the following Interoperability Continuum Chart, South Dakota has achieved a very high level of interoperability within the state.



Utilizing the system on a daily basis with protocols and SOP's that have been jointly developed, the system is far advanced on the interoperability continuum. The remaining prevalent problem is the training component for the users. To this point, the following have been developed through a joint user effort:

1. DVD and VHS formatted training materials on use of the network and subscriber equipment.
2. Printed versions of the training materials.
3. On-line resources on operation of the network and subscriber equipment.
4. Dealer training for local government users.

Efforts underway at this time:

1. Development of a "train the trainer" course.
2. Updating course materials.
3. Considering a regional training academy approach for users.

4.7 Resource Management and Sharing

The South Dakota Office of Emergency Management (OEM) has the responsibility of tracking resources that can be utilized in emergencies. The equipment lists and associated MOU's maintained by OEM alleviates the need for individual agreements, and is an all-risk coverage for all assets.

5. Strategy

5.1 Interoperability Vision

Interoperability is not a luxury in a rural state such as South Dakota, it is a necessity. There is no one single entity that has the capabilities to withstand the worst of what can come its way. From everyday law enforcement to the worst that mother nature can throw at us, we rely on each other for operational and material support. With an average population density of 10.14 people per square mile, emergency services are few and far between.

Through events such as the tornado that leveled the town of Spencer in 1998 the state became acutely aware of the shortcomings the multiple communications systems in use. Responding to this need, the 1999 South Dakota legislature passed HB 1292 that directed the integration of communications infrastructure for the eight listed state agencies with radio communications.

During the following summer, South Dakota experienced the largest forest fire in history of the state. The Jasper fire burned over 93,000 acres and required services of volunteer fire departments from all across the state. Many of the department vehicles showed up with radios that were incompatible with those being utilized on the fire scene. This created operational and safety issues that were difficult to overcome, and further highlighted the need for a common communications infrastructure.

The state agency tasked with the integration of statewide communications was directed by then Governor William Janklow to change the scope from state only communications to one that would serve all public safety and first responders in the state. That has continued to be the mission of current Governor Mike Rounds.

The South Dakota Interoperability Network has become woven into the first responder fabric of the state. Response for major winter storms, prairie and forest fires, and multi-agency law enforcement activities have been coordinated over the system, and the system is continually being improved.

The current statewide communications system in South Dakota is an example of what can come of a process that considers every first responder in the state to be a critical asset. The current 54 sites provide a 97%+ level of mobile coverage, the nearly 14,000 users reflects all government levels, state, federal, local, and tribal utilizing a common interoperability system.

5.2 Mission

To create and maintain an interoperable communications system that will serve all first responders in South Dakota with radio communications for routine and emergency purposes.

5.3 Goals and Objectives

The goals and objectives as outlined by the committee drafting this document are as follows:

1. To continually improve the technical operation of the system by:
 - Improve coverage by increasing the number of sites.
 - Improving operation of subscriber radios through programming updates.
 - Upgrading the network to the most recent standards.
 - Increasing number of users on the network.

2. To improve daily operations by updating system protocols:
 - Annual review by the PSCC.
 - Considering suggested changes by users at PSCC scheduled meetings.
 - Implementing a clear language policy on the system.
 - Improve interoperable communications capabilities between entities.

3. To improve user knowledge of system by:
 - Continually improving on-line and other electronic training media.
 - Having at least one resource per county that has attended the train the trainer course.
 - Sponsoring training at major meetings and other statewide events.
4. To provide a common data network through.
 - Contracts with common telco and cellular carriers.
 - Improvements in the statewide data network.
 - Developing standards for all mobile data users in first responder community.
 - Messaging capabilities between different networks.
 - Adding AVL capabilities to vehicles/dispatch.
5. To provide common strategic planning with non-system users.
 - Issue radios to all responders in the state--completed.
 - Integrate statewide network into all PSAP's--completed.
 - Common county emergency management coordination through a single statewide emergency plan--completed and ongoing. County emergency management personnel are required to comply with the statewide emergency plan, including communications.
6. To provide statistics that will allow participating agency administration access to the system usage, issues, and ongoing progress with the network.
 - Monthly reports are generated by the BIT Technical Administrator outlining calls per site, per agency, and per unit.
 - Monthly reports are generated by the State Radio System Manager outlining outages, and network issues/updates.
 - BIT CIO and Technical Administrator will present each legislative session a full report on activity, issues, and overall operation of the network.

5.4 Strategic Initiatives

Many of the strategic initiatives to accomplish the vision of statewide communications interoperability have been met. The statewide network initiative was begun in the year 2000, and became a reality in the year 2002. Initiatives at this point are more focused on what improvements can be made to facilitate a more functional and user-friendly system.

Goal 1: To continually improve the technical operation of the system by:

- Improve coverage by increasing the number of sites.
- Improving operation of subscriber radios through programming updates.
- Upgrading the network to the most recent standards.
- Increasing number of users on the network.

Identified Gap:

The existing radio network was built primarily for mobile coverage, and the original system of 35 sites provided coverage to 90% of the states' geography with a 90% reliability factor. In the past 6 years the additional sites added have raised the mobile geographic coverage to 97% and the reliability factor to 95%, however there are still difficult topographical areas of the state that are underserved. Factoring into the equation is that the current Smartzone network is in the twilight of the technology cycle, is nearly at maximum for number of sites, and is a proprietary trunking format that only two vendors support. It is our goal to upgrade the network to an open-standard that is current technology and is supported by multiple vendors, and bring the subscriber radios up to that technology through re-programming.

Initiative 1: Upgrade to 7.0 system (P25 trunking)

Currently the network is based upon a 4.xx platform for the trunking component. This is a proprietary system and limits the use of two manufacturers for subscriber equipment. The 4.xx platform is also being phased out of production and we will be required to look at replacement at some point before support is discontinued. The current system has a maximum site count of 56, of which we are fast approaching, and to improve the operation of the subscriber radios, upgrade to the most recent standards, and increase the number of users on the system, we will need to upgrade to a 7.x platform, which will allow us these advancements.

The 7.0 system is an open standards-based network that allows multiple equipment suppliers, utilizes much of the same infrastructure and telecommunications net, and brings the system up to the most modern standard with long-term support.

- Approve a migration path by October 2007. (Done, PSCC approved in 08-2007).
- Outline a transition strategy by December 2007. (Technical standards approved).
- Define a funding source by December 2008. (In process)
- Procurement by May of 2009. (Contingent upon funding source)
- Transition of system June 2009 to March 2010. (Contingent upon above two items).

Goal 2: To improve daily operations by updating system protocols:

- Annual review by the PSCC.
- Considering suggested changes by users at PSCC scheduled meetings.
- Implementing a clear language policy on the system.
- Improve interoperable communications capabilities between entities.

Identified Gap:

Documentation, policies, and procedures are and should be considered as "living" documents, meaning that the current policies and procedures must fit the needs of today. The review of and establishing of procedures and protocols must be considered a permanent gap that needs to constantly be updated. Working away from such limiting and confusing systems such as "10 codes" is one such item that is currently being addressed.

Interoperability Network

Initiative 2: Policy and procedure changes

The South Dakota Public Safety Communications Council was established in 2007. During the year 2007 three meetings were held to organize and begin the work of reviewing policies and procedures. The group will meet ongoing at minimum quarterly, and as part of its bylaws, will review the communication plan annually.

- Establish a governance/oversight council (PSCC established 3-14-07).
- PSCC policy requires annual review of policies and procedures and a recommendation of any changes to the full council for approval (Ongoing, annual report due August 1 of every year). In Progress. BIT and PSCC.
- Each of these is ongoing and will improve interoperable communications in the state.

Goal 3: To improve user knowledge of system by:

- Continually improving on-line and other electronic training media.
- Having at least one resource per county that has attended the train the trainer course.
- Sponsoring training at major meetings and other statewide events.

Identified Gap:

Training existing and new users on the system is an ongoing process and should be considered a permanent gap.

Initiative 3: User Training

- Work began in November of 2007 to construct website for the PSCC. Completion of this website and associated on-line training materials is set for October 2008. This will be a joint BIT/PSCC project.
- Train the trainer course has been completed as of 12-2007. Regional training seminars are expected to be held in January through March of 2009. BIT is lead.
- User training at regional and statewide meetings is ongoing. BIT is lead.

Goal 4: To provide a common data network through:

- Contracts with common telco and cellular carriers.
- Improvements in the statewide data network.
- Developing standards for all mobile data users in first responder community.
- Messaging capabilities between different networks.
- Adding AVL capabilities to vehicles/dispatch.

Identified Gap:

It has become increasingly important to provide data services to the field. The State of South Dakota (BIT) maintains the message switch with access to NCIC, NLETS, EPIC, and the local criminal records, driver's license, and motor vehicle databases. The lack of a single means of delivering the required information directly to the users has long been a problem, and the local system developed to serve city and county-wide areas have added to the problem by not having a single standard.

Initiative 4: Provide a common data network.

South Dakota is in the final stages of releasing the mobile data network to the general public safety community in the state. The following steps have been completed and/or are ongoing:

- A contract with Datamaxx was approved in March of 2007. Datamaxx has made arrangements with both cellular carriers in the state to utilize their data overlay for public safety use. Completed. BIT was lead.
- The offering of data rates up to and including EVDO service will vastly improve the capabilities of units operating in the field. Alltel and Verizon both plan to have systems fully upgraded by December 31, 2008. Vendor.
- Equipment testing has been ongoing, and an approved list of aircards and modems has been submitted. (Completed December 15, 2007). BIT is lead.
- It is the intent to allow messaging capabilities between users through the state message switch via the cellular data overlay. Ongoing. BIT is lead.
- AVL capabilities are being discussed to allow CAD users access to real-time mapping and officer monitoring. Standards have not been set for this, but it will be discussed by the PSCC and a timeframe established by December 31, 2008. PSCC will set standard, BIT will implement.

Goal 5: To provide common strategic planning with non-system users:

- Issue radios to all responders in the state--completed.
- Integrate statewide network into all PSAP's--completed.
- Common county emergency management coordination through a single statewide emergency plan--completed and ongoing. County emergency management personnel are required to comply with the statewide emergency plan, including communications.

Identified Gap

It has long been the goal of the public safety community in South Dakota to establish a common strategic communications plan for all regular and potential radio users in the state. Potential radio users are those non-governmental organizations (NGO's) such as aid

groups, utilities, and other organizations that might be part of an emergency response. The first part was to equip the first responder community with communications capabilities. The challenges of working with NGO's will continue as new personnel and agencies become involved in emergency response.

Initiative 5: Coordinate non-system user communication:

The public safety community of South Dakota has been equipped with radios as part of the initial statewide initiative. The state also maintains a cache of radios to be issued during circumstances that require non-system users such as utilities and out of state personnel. This cache has been utilized in blizzard and flooding situations in the past with good results. Other actions underway and planned are:

- Utilization of the ACU1000 bridge owned by the state of South Dakota. This bridge has been utilized in the past and will be a tool in future events. Ongoing. BIT is lead.
- Expanding the common programming plan to include such national interoperability channels as VTAC's, VCALLS, etc. Programming template to be completed by 12-31-2008. Implementation of required programming by 12-31-2009. PSCC and BIT will develop plan.

Goal 6: To provide statistics that will allow participating agency administration access to the system usage, issues, and ongoing progress with the network.

- Monthly reports are generated by the BIT Technical Administrator outlining calls per site, per agency, and per unit.
- Monthly reports are generated by the State Radio System Manager outlining outages, and network issues/updates.
- BIT CIO and Technical Administrator will present each legislative session a full report on activity, issues, and overall operation of the network.

Identified Gap;

While the success of the South Dakota Statewide Communications System is widely known, specifics of how the system is performing, and other pertinent statistics are not currently available to the public and user base.

Initiative 6: Providing metrics to measure system performance:

In order to measure the ability of the network to accommodate traffic emergency and otherwise, it is important to have identifiable metrics to gauge the system performance. Currently this information is provided to the State Radio Technical Administrator, and then on to the Commissioner and Governor through a monthly report. It is the intent to expand the availability of this information to the user base by:

- Completion of the PSCC website, it is our plan to begin including monthly statistics (calls, busies, etc) to the website when operational. October 2008. BIT is lead.
- It is the plan of the BIT Commissioner/CIO to include a communications assessment to the legislature as part of the BIT status report starting in 2009.

5.5 National Incident Management System (NIMS)/National Response Plan(NRP) Compliance

The South Dakota Department of Public Safety is spearheading the effort to adopt NIMS and ensure that state, local, and tribal entities meet the requirements. The Department has created a NIMS Implementation Plan to guide the implementation process at the state level, and the Department is updating a current Local and Tribal NIMS Implementation Plan template that will include all local and tribal NIMS requirements, as well as steps and suggestions for how to meet the requirement. Federal preparedness funding, including the homeland security grant program and the emergency management performance grant, can be used to fund NIMS implementation activities.

During the entire NIMS implementation process, the Department of Public Safety will provide as much assistance as possible to other state agencies, local, and tribal entities. Please watch for additional information and progress updates on NIMS from the Department of Public Safety. For further information on NIMS, please visit www.fema.gov/NIMS or www.nimsonline.com, where you will find the actual NIMS document, NIMS news, frequently-asked-questions, additional NIMS resources, and a link to the NIMS awareness course developed by the Emergency Management Institute.

The South Dakota communications network is an extension of NIMS, and procedures for initial contact of an emergency area, allocation of resources, and procedures are all within the guidelines set forth in NIMS.

All policies are reviewed for compliance with the National Response Plan. Continued changes will be reflected in the South Dakota Plan as the NRP evolves.

5.6 Review and Update Process

The South Dakota Interoperable Network communications plan was developed by a group of first responder peers from all disciplines and all areas across the state. That representative process will continue as the PSCC will assume responsibility for the review and update of the plan, per by-laws of the council. An annual review is mandated, and suggested changes will be reviewed and changes will be considered at each scheduled PSCC meeting. All changes will be updated on the PSCC website.

Part of the review process is having benchmarks identified for success. Many of the original objectives have been achieved, which is a success of its own:

- Every first responder was issued radios at the outset of the project and is capable of communicating statewide
- The statewide network is used as a primary communications media for the majority of the users in the state, system is used and tested on a daily basis
- A user-based council (PSCC) has been established to provide representation
- A standards-based communications manual has been in place since 2004

Continuing progress and the ultimate success of the program will be dependent upon the ability of the administrators and users of the system to keep up with an ever-changing technology, and the associated training.

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6. Implementation

The South Dakota Interoperable Network has been in place and operating since 2002. In 2003 a DHS training earmark allowed the formation of a committee of representative first responders to develop the state manual for communications. (See section 2.2) A follow up group to attend the NGA Communications Manual Workshop and modify the plan to meet guidelines consisted of:

- Metro Communications Director David Atherton--Sioux Falls
- Southeast Office of Emergency Management Director Tom Welch--Sioux Falls
- Pennington County Sheriff Don Holloway--Rapid City
- BIT Technical Administrator Jeff Pierce--Pierre

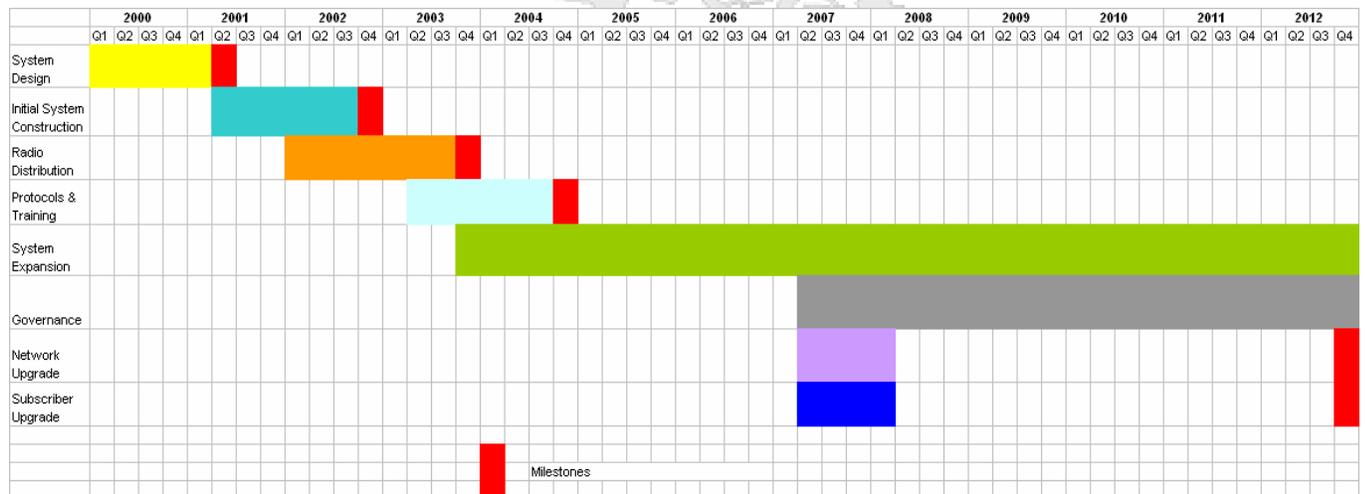
The governance creating the PSCC was signed on March 14, 2007.

6.1 System Timelines and Progress

The State of South Dakota has been in the design, construction, and polishing of the statewide communications system for nearly 8 years. In that time, we have constructed a system, issued radios to every first responder, worked with tribal and federal entities to integrate their users onto the system, worked on governance, protocols, and training. Although no system is ever really "completed", using the SAFECOM Continuum chart as a reference we are at an advanced stage in every category.

Following are graphical representations of the time involved, future work, and present status of system & users. The original project plan was in Microsoft Project, along with detailed milestones. Some items such as governance and system expansion are viewed as not having specific milestones as each is viewed as a perpetual process.

Network upgrades are scheduled to coincide with the discontinuance of support for the present system in 2012.

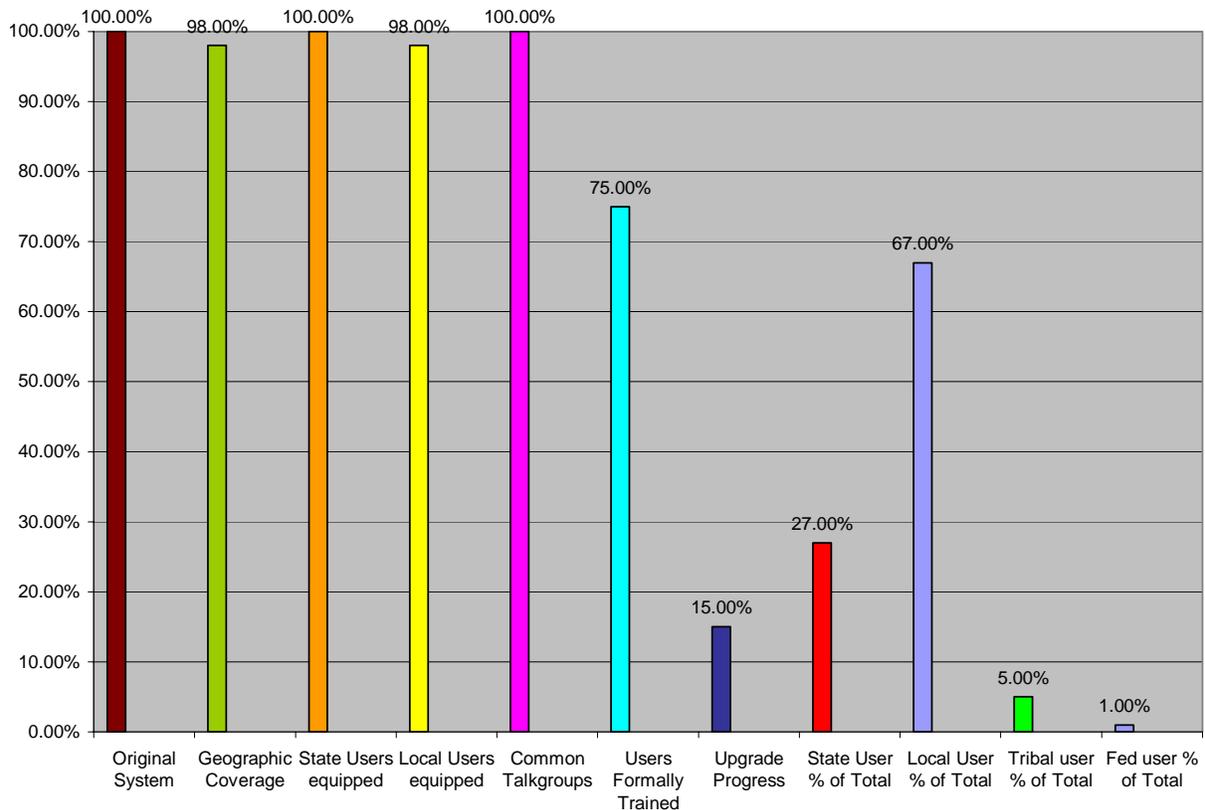


The chart on the following page gives a graphical view of the South Dakota system at this time. The original system was completed in 2002, and ongoing efforts are being made to fill in the last few holes in coverage, train the remaining users, and most importantly upgrade the trunking network to keep in step with modern standards.

Percentages for the various items in the chart are pulled from a variety of sources:

- Geographic coverage relates to a pixel count, and correlation to geographic area

- User counts and traffic are direct information from the network switch
- State and local users equipped are from radio distribution records. Agencies are continually adding members, which makes the 100% figure a moving target.
- Common talkgroups are mandated in every authorized radio.
- Training figures are estimates from the representative PSCC members and include only those that have attended structured training. In-house and self-study training courses offered for the system are not classified as "structured training". This is a process that we anticipate never reaching 100% as agencies change personnel continuously.
- System upgrade status will change as funding is procured and progress resumes. The technical and migration plan are complete.



Statistics will be reviewed annually by the PSCC as part of its annual review. Milestones will be adjusted annually, and any new milestones will be added as part of a minimum four-year outlook.

7. Funding

The South Dakota Interoperable Network is currently funded through general funds obligated to the Bureau of Information and Telecommunications (BIT). BIT is active partner in the acquisition of grants funding for improvements and updates to the network and subscriber equipment, and also has a seat on the DHS Senior Advisory Committee. Between the general obligated funds and the anticipated grant funding, short and long term planning will be coordinated by the PSCC, and recommendations forwarded to BIT.

Local jurisdictions have contributed funds and obtained grant monies to help support the construction and expansion of the network. Local agencies have demonstrated an increasing awareness of the advantages of the system through application of grants and the appropriation of funds to purchase radios on the system.

Grant applications are coordinated through a process that will involve the PSCC, the DHS Senior Advisory Committee, and BIT Engineering personnel. Grants have been routinely applied to improvements in the network and for subscriber equipment. Grant approval is only given for equipment compatible with the state system. An approved list of equipment is submitted to the State Office of Procurement each year for an annual contract.

The Statewide Coordinator position is one that is currently shared with the other duties assigned to the BIT Engineering Technical Administrator, and is funded through the administrative budget for BIT.

All administrative, travel, and training costs associated with the PSCC will be covered through two sources:

- BIT Engineering administrative budget.
- South Dakota DHS training budget.

The process of identifying a comprehensive funding strategy is a joint effort of BIT/State Radio and the PSCC. BIT/State Radio is the recipient of general funds appropriated by the legislature each year, and any new requests for expansions to that amount will be a joint recommendation of the agency and the PSCC.

The PSCC will also prioritize grant funding and designate projects or equipment to best utilize that funding.

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8. Glossary of Terms

Affiliation -- Radios on the trunked system will send a signal with radio ID and the talkgroup selected to the central controller in Pierre. This occurs when the radio is turned on, when a new talk group is selected, or when the radio selects a new site by checking RSSI levels of tower sites.

Alert Tones:

- Busy tone similar to phone busy signal. This tone is heard when a user attempts to transmit a message on a trunked talkgroup when all frequencies are in use.
- 4 short beeps received after a busy tone. Automatic Callback - A frequency is now available for you to transmit. Press PTT and begin the transmission.
- 4 beeps every six seconds. Call Alert has been received by the radio.
- 1 beep followed by 5 beeps. The Emergency button has been pressed and was acknowledged by the system.
- 3 short rapid beeps when the "PTT" is pressed. **Talk permit tone** - The user must wait for these tones before talking on a trunked talkgroup.
- A continuous tone when pressing the PTT. **Talk prohibit** - Occurs when pressing PTT and radio is out of range of the trunked system or system is out of service.
- A continuous tone. Time out timer - This continuous tone indicates your transmission is approaching 60 seconds, and will be discontinued at the 60-second point.
- Momentary higher pitched tone. **Valid key chirp** - This tone confirms that you have selected a valid, programmed button.
- A low pitched tone every 10 seconds. **Failsoft** - Trunked system failure where multiple agencies share a conventional channel.
- Momentary lower pitched tone. **Invalid Chirp** - Indicates that you have selected an un-programmed function.
- High pitched chirp. Low battery - Portable radio's battery needs charging.

Alias -- An identifier that is displayed on dispatch's screen when a radio is transmitting on a talkgroup that is being monitored. The Alias corresponds with a specified subscriber ID.

Analog Signals -- Analog radio systems continuously transmit radio waves that are usually modulated by a voice. A typical analog voice radio consists of a transmitter and receiver.

BKLHT -- Backlight button, illuminates display.

Central Controller -- The network management equipment that directs all activities of the radio system.

Channel -- Conventional (analog) frequency.

Control Channel -- Dedicated channel on each tower site that passes information between the radio and the controller in Pierre.

Digital Signal -- A combination of zeros and ones that are transmitted. These signals must be converted by digital radios (computers) into sound that can be heard and understood.

DOT -- Department of Transportation.

Duplex Repeater -- A repeater system that uses different transmit and receive frequencies.

Frequency - Frequency is defined as the number of cycles that occur each second. Thousands of radio wave cycles usually repeat themselves each second, so engineers have adopted the practice of writing kilohertz (shortened to KHz), which means 1,000 cycles per second, megahertz (MHz), which means 1 million cycles per second, or gigahertz (GHz), which

means 1 billion cycles per second, when they refer to radio frequency. Thus, 10 million cycles per second can also be written as 10 MHz. The South Dakota system is in the 150MHz range (VHF).

HP—Highway Patrol.

MON—Monitor button allows the radio to receive analog signals without protection tones.

Out of Range- Indication of no service available to radio. Accompanied by a long tone at regular intervals.

Project 25 - A non-proprietary standard for public safety radio communications. Allows manufacturers to build equipment that is compatible.

Queue - Circumstance where user keys up on a site that is fully utilized. As all resources are in use, radio system puts the user in a "queue", or waiting line for the first open resource. User will first hear the "busy" signal followed by a chirp when a resource is available to transmit on. If system is extremely busy, each additional keying of the push-to-talk button will reset the user to the bottom of the queue.

RF - Radio frequency.

Roaming - The ability of a radio on a trunked radio system to move from site to site without any interaction by the user.

RSSI—Radio Signal Strength Indication.

RWS—Radio Wide Scan. Only scan in EF Johnson radios that can scan both analog and digital.

SCAN—Allows radios to search programmed channels/talkgroups for activity.

SDPSCC - South Dakota Public Safety Communications Council (PSCC).

Simplex - Non-trunked radio channel that uses the same frequency for receive and transmit.

Site Busy - Indication that no repeater resources are available at the tower the radio is affiliated at. Accompanied by short repeated tones, much like telephone busy signal.

Site Lock- Action by radio user to "lock" radio on a particular site, preventing the radio from roaming.

Site Trunking - Indication that site connectivity to network central controller has been lost. Radio will be operational only in the coverage area of the tower affiliated on.

SRC - State Radio Communications, State 24hr dispatch: Huron, Pierre, and Rapid City.

Subscriber ID - Number that system uses to identify individual radios on a trunked system. No two radios should use the same subscriber ID number.

System Administrator - State of South employee responsible for the day to day operations and management of the radio network.

Talkgroup - An electronic grouping of users. Talkgroups are an electronic sectoring of users, allowing private communications for a group of radios users. This may be referred to as the conventional system equivalent of a channel.

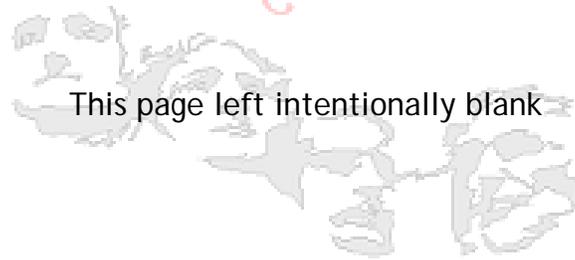
Talk Group Busy - Circumstance where user keys up on a talkgroup that is already in use. Indication on EF Johnson radio is "feature disable".

Trunked - Trunking permits a large number of users to share a relatively small number of communication paths or trunks. This sharing of communication paths is managed automatically by a computer. Channel selections and other decisions normally handled by the radio user are made by a computerized switch in the central controller. Thus, the user needs only to pick up the radio and talk, just as one does an ordinary telephone. Channel assignment is automatic and completely transparent to the individual user.

Zone - A group of 16 channels/talkgroups in EF Johnson radios. All EF Johnson Radios have 16 zones. Depending upon model, Motorola radios can range from 128 to 256 talkgroups in flexible zones.



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Interoperability Network

9. Attachments

1. 10 codes
2. Authorization for New Talkgroup or System Access
3. Authorization to Use Talkgroups Not Owned By Requesting Agency
4. Site Location Maps
5. Coverage Maps
6. National Weather Service/Interagency Operations Areas
7. Dealer/Contact List
8. PSCC charter/Executive Order
9. ICS Communications forms
10. South Dakota TICP



Attachment 1

10 Signals

South Dakota is actively involved in developing a common language for radio communications. The "10" code chart listed below is the codes used by state personnel, but do not necessarily correlate with those used by local, tribal, and federal units. This will be one of the primary challenges for the PSCC as it moves into full participation in the operational oversight of the radio network.

| "10 SIGNALS" | | |
|--|--|--|
| 10-1 RECEIVING POORLY 10-2 RECEIVING WELL 10-3 ETA LANDLINE RESIDENCE 10-4 OK, AFFIRMATIVE 10-5 RELAY/J1 PERSON/J2 PROPERTY 10-6 BUSY/STAND BY 10-7 OUT OF SERVICE 10-8 IN SERVICE 10-9 REPEAT 10-10 OUT OF SERVICE SUBJECT TO CALL 10-12F FEMALE VISITOR OR OFFICIAL PRESENT 10-12M MALE VISITOR OR OFFICIAL PRESENT 10-13 WEATHER AND ROAD CONDITIONS 10-14 CONVOY OR ESCORT 10-15F FEMALE PRISONER IN CUSTODY 10-15M MALE PRISONER IN CUSTODY 10-16 NCIC CHECK 10-16H HIT ON NCIC 10-19 RETURN TO YOUR STATION 10-20 LOCATION 10-21 CALL THIS STATION BY TELEPHONE 10-22 TAKE NO FURTHER ACTION LAST INFO 10-23 STATUS CHECK 10-24 MAKE PERSONNEL CONTACT, TIME/PLACE 10-25 DO YOU HAVE CONTACT WITH 10-28 CHECK FULL REGISTRATION 10-29 CHECK FOR RECORD OR WANTED 10-29H LOCAL WANTS WARRANT HIT 10-29W WANTED CHECK ONLY 10-30 DOES NOT CONFORM TO RULES AND REGS 10-31 SEND WRECKER TO 10-32 SEND AMBULANCE TO | 10-33 EMERGENCY TRAFFIC, ALL STAND BY 10-34 CLEAR TO COPY 10-35 CONFIDENTIAL INFORMATION 10-36 CORRECT TIME 10-37 WHO IS OPERATOR ON DUTY 10-39 YOUR MESSAGE DELIVERED 10-40 CLEAR FOR LOCAL DISPATCH 10-41 PERMISSION GRANTED FOR 10-40 10-42 OFFICER NOW AT HIS RESIDENCE 10-44 STOPPING (DESCR & LICENCE OF VEHICLE) 10-45 PATROL WITH 2 OFFICERS 10-50 USE CAUTION 10-50M MEDICAL PROBLEMS 10-53 REQUEST BACKUP- NON EMERGENCY 10-54 REQUESTING BACKUP- EMERGENCY 10-57A GENERAL HUNTING LICENSE CHECK 10-57B BIG GAME LICENSE CHECK 10-57C CITATIONS/VIOLATIONS CHECK 10-58 CHECK FOR DRIVER LICENSE AND RECORD 10-59 DRIVER LICENSE STATUS ONLY 10-60 NEXT CASE NUMBER 10-70 IS THERE TRAFFIC FOR THIS UNIT/STATION 10-71 SEND CORONER 10-78 FOR YOUR INFORMATION. INFO ITEM 10-78P PROTECTION ORDER 10-78S SEX OFFENDER 10-80 ANY NARCOTICS INFORMATION 10-82 REQUEST ROOM RESERVATIONS, ETA 10-88 WHAT NUMBER SHALL I CALL TO MAKE STATION TO STATION CONTACT WITH 10-89 UNIT IS OFF THE AIR NEEDS SERVICE 10-90 CIVIL DISTURBANCE 10-97 ARRIVED AT THE SCENE 10-98 ASSIGNMENT COMPLETED 10-99 EMERGENCY, ALL UNITS & STATIONS COPY | <h3>RADIO SIGNALS FOR LAW ENFORCEMENT</h3> <ol style="list-style-type: none"> 1. ACCIDENT AT...PERSONAL INJURY 2. ACCIDENT AT... PROPERTY DAMAGE 6. DROWNING AT... 7. DRUNK AT... 8. DRUNK DRIVER... 11. FIRE AT... 15. MURDER AT... 16. DEATH AT...UNKNOWN CAUSE 20. SUICIDE AT... |

Attachment 2

**South Dakota Interagency Communications System
AUTHORIZATION FOR NEW TALKGROUP OR SYSTEM ACCESS**

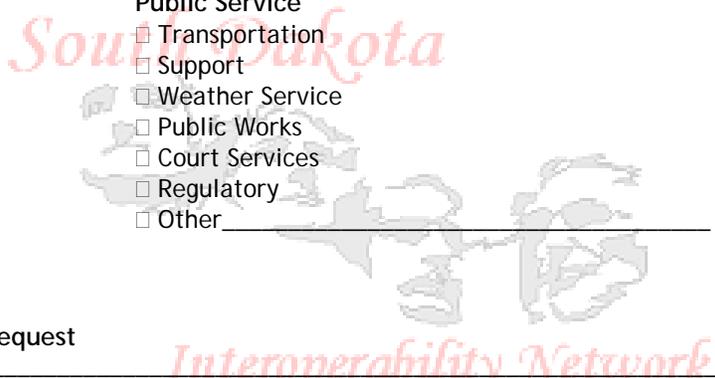
Date: _____

Requesting Agency: _____

Type of Request New Talkgroup Request
 New User
 Other _____

Type of Agency **Public Safety**
 Law Enforcement
 Fire Department
 Emergency Medical Service
 Emergency Management
 Other _____

Public Service
 Transportation
 Support
 Weather Service
 Public Works
 Court Services
 Regulatory
 Other _____



IV. Reason for Request

(Attach supporting documentation)

Name of individual completing application _____

Address _____

Phone _____

E-mail address _____

State Radio Communications
Attn: System Administrator
1302 E Hwy 14
Pierre, SD 57501
Fax 605-773-4629

Attachment 3

**South Dakota Interagency Communications System
AUTHORIZATION TO USE TALK GROUPS
NOT OWNED BY THE REQUESTING AGENCY**

Date: _____

Requesting Agency: _____

Authorizing Agency: _____

Reason for Request Add Talk Group(s) to Radios
 Scan Talk Group(s)
 Other _____

I. Request permission to ADD the following talk groups

| Talk Group | To Be Installed in: (i.e., Portable, Mobile, Command Post) | For the following Work Units: |
|------------|--|-------------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Interoperability Network

II. Request permission to SCAN/ MONITOR the following talk groups

| Talk Group | To Be Installed in: (i.e., Portable, Mobile, Command Post) | To be monitored by the following positions: | Request for Receive Only |
|------------|---|---|-----------------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

III. Other Request/ Requirements (Explain)

IVI. Reason for Request

(Attach supporting documentation)

Name of individual completing application _____

Address _____

Phone _____
address _____

E-mail



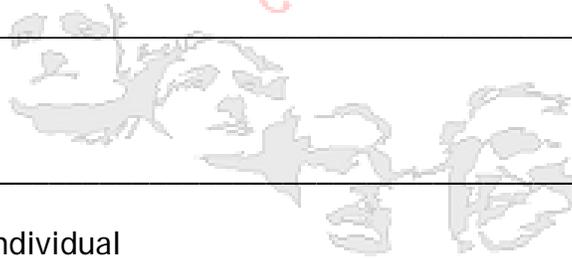
This Side for Authorizing Agency use Only

**South Dakota Interagency Communications System
AUTHORIZATION TO USE TALK GROUPS
NOT OWNED BY THE REQUESTING AGENCY**

Request Approved_____ Approved with Conditions_____ Denied_____

Conditions:

South Dakota



Authorized Signature:

Name of Authorizing Individual

Interoperability Network

Address_____

Phone_____

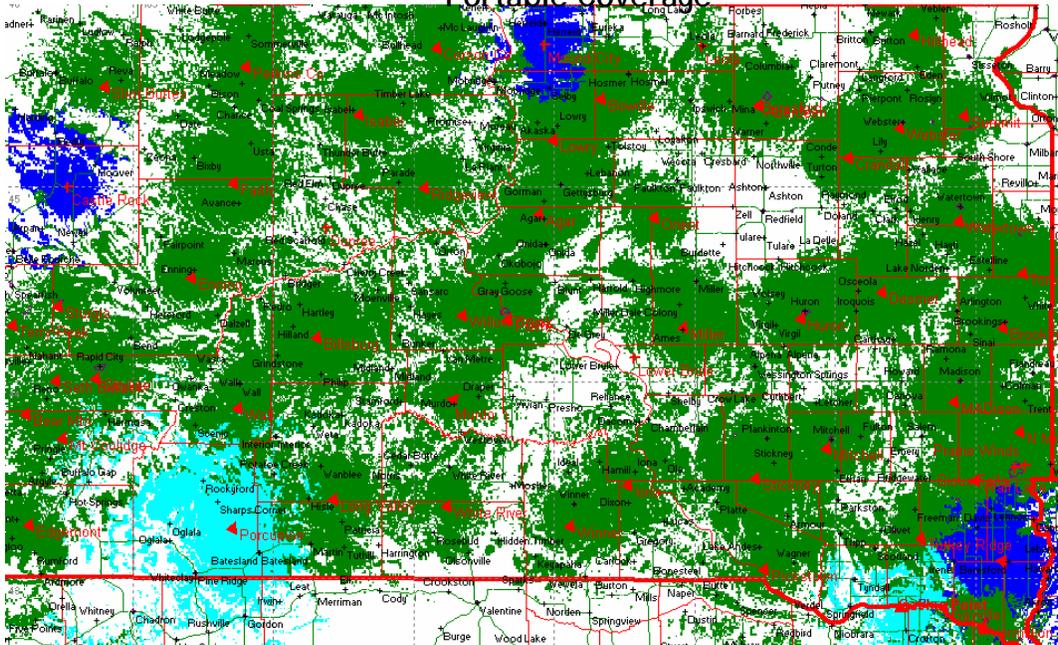
E-mail

address_____

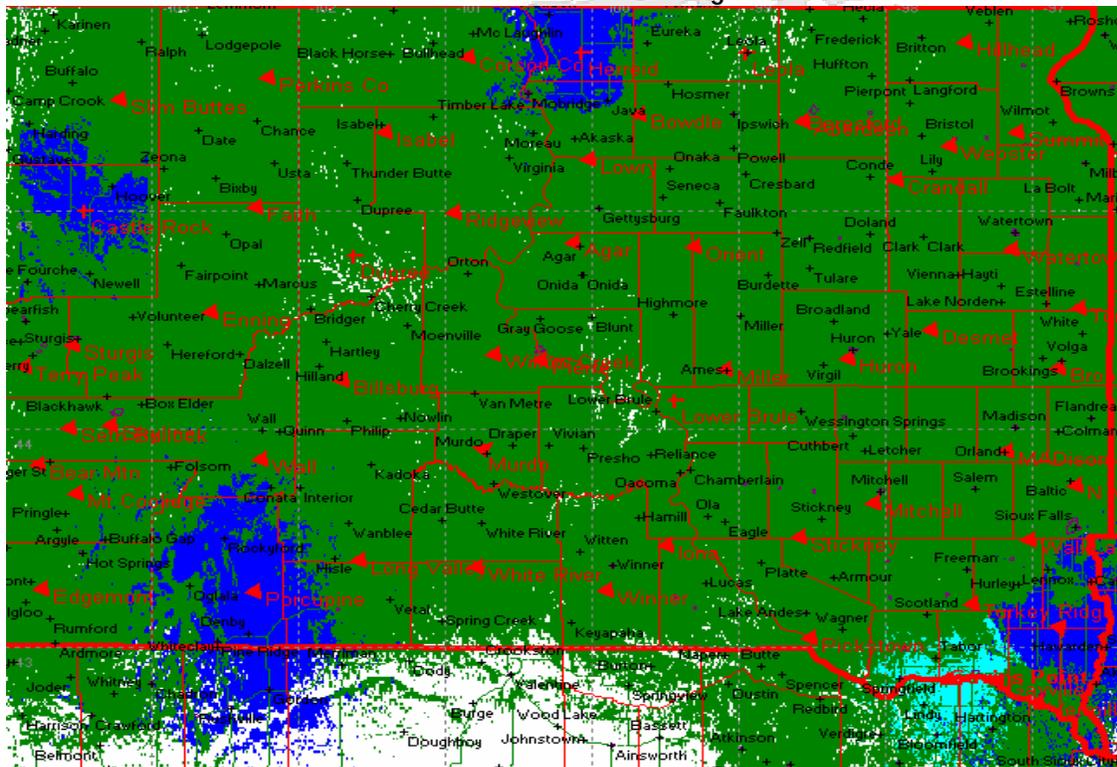
State Radio Communications
Attn: System Administrator
1302 E Hwy 14
Pierre, SD 57501
Fax 605-773-4629

Attachment 5

Portable Coverage



Mobile Coverage



Attachment 7

Dealer/Contact List

| EFJ | EFJ/Motorola | Motorola Service Shops |
|---|--|---|
| Dakota Two-Way 1001 Hotrod Rd. Mitchell, SD 57301 bvp@dakotainet.net Bryan VanderPol 605-996-1200 | Sioux Falls Two-Way 700 E. 3rd St. Sioux Falls, SD 57103 dhorner@siouxfallstwoway.com Dan Horner 605-334-9816 | B&L Communications 519 Main St. Platte, SD 57369 rcgjr@midstatesd.net Rick Gustad 605-337-3377 |
| Rushmore Communication 1715 Cambell Rapid City, SD ddupre@rushede.com Doobie Dupre 605-348-4940 | | Milbank Communications 901 S Dakota Street PO Box 3 Milbank, SD 57252 GeneJ@MilbankCommunications.com Gene Johnsen 605-432-6798 |
| Dakota Electronics 424 County Road 19 Aberdeen, SD 57401 dakel@nvc.net Rolly Moerke 605-225-1672 |  | Western Communications 3101 Airport Road Pierre, SD 57501 WESCOM123@aol.com Curt Rees 605-224-2054 |
| Communication Center 1520 North Garfield Pierre, SD 57501 jchadwick@iw.net James Chadwick 605-224-1676 |  | Western Communications 3106 S Hwy 79 Rapid City, SD 57701 westerncommunications@compuserve.com Michael Lees 605-342-7885 |

System Administrator

Todd Dravland
 1302 E Hwy 14
 Pierre, SD 57501
 605-773-3536
 fax: 605-773-4629
 todd.dravland@state.sd.us

Attachment 8 Public Safety Communications Council Executive Order

**STATE OF SOUTH DAKOTA
OFFICE OF THE GOVERNOR
EXECUTIVE ORDER 2007-05**

WHEREAS, Meeting emergency communications needs for all public safety entities in South Dakota is critical for ensuring public safety; and,

WHEREAS, At the encouragement of the South Dakota public safety community, the state of South Dakota has developed a comprehensive and coordinated statewide emergency communications network; and,

WHEREAS, A representative user group must be developed that will provide oversight for providing policy level direction related to planning, designing and implementing guidelines, best practices and standard approaches to address South Dakota's public safety communications interoperability issues.

IT IS, THEREFORE, BY EXECUTIVE ORDER, Directed that the Public Safety Communications Council be established and authorized to function in compliance with the following sections of this order:

General Provisions

Section 1. The name of the committee is the South Dakota Public Safety Communications Council (SDPSCC).

Section 2. The governor of South Dakota may appoint 18 members to the committee which are representative of the major users of the communications network. The membership shall include representatives from the following public safety agencies, professional associations and state departments:

- South Dakota Police Chief's Association
- South Dakota Sheriff's Association
- Division of Criminal Investigation, Office of the Attorney General
- South Dakota Game, Fish and Parks
- South Dakota Department of Transportation
- South Dakota National Guard
- South Dakota Emergency Managers Association
- South Dakota Fire Fighters Association
- South Dakota Association of Healthcare
- South Dakota Department of Public Safety/Highway Patrol
- South Dakota Association of Public Safety Communications Officials, Inc./National Emergency Management Association Chapter
- South Dakota Emergency Medical Technician's Association
- South Dakota Department of Agriculture/Wildland Fire

- South Dakota Association of County Commissioners
- South Dakota Department of Health
- Tribal government or tribal government association
- Federal government or federal government association
- South Dakota Bureau of Information and Telecommunications Engineering Manager

Section 3. The South Dakota Public Safety Communications Council shall foster collaboration among stakeholders at the local, federal and state level. The South Dakota Public Safety Communications Council shall focus on the following priorities:

- Update protocols and standards for the operation and use of the South Dakota Interoperable Communications System.
- Develop strategies and recommendations to improve current and future operations of the radio network.
- Develop recommendations for legislation or other state action that may be required to further promote public safety communications in South Dakota.
- Develop recommendations and strategies for best utilization of grant funding to improve communications in South Dakota.

Section 4. The South Dakota Public Safety Communications Council shall be administered by the South Dakota Bureau of Information and Telecommunications.

Section 5. Members shall be appointed for 1-year terms which end on June 30. Members may be reappointed for no more than three consecutive terms. Representatives of state agencies shall serve as long as their agency directs.

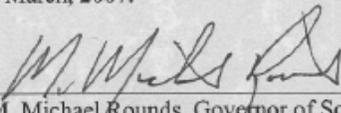
Section 6. The South Dakota Public Safety Communications Council shall elect a chairperson.

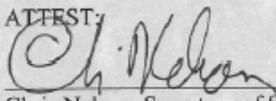
Section 7. The council shall prepare an annual report for the governor.

Section 8. All expenses and costs of administration for the council shall be paid from funds available to the Bureau of Information and Telecommunications.

Dated in Pierre, South Dakota, this 14th day of March, 2007.




M. Michael Rounds, Governor of South Dakota

ATTEST:

Chris Nelson, Secretary of State

Public Safety Communications Council Members

South Dakota Police Chiefs Association--Member at Large

Steve Christensen
Platte Police Chief

South Dakota Sheriff's Association

Sheriff Fred Lamphere
Butte County Sheriff's Office

Division of Criminal Investigation (DCI)

Bryan Gortmaker
Assistant Director--DCI

South Dakota Game Fish & Parks

Emmett Keyser
Assistant Director of Field Operations

South Dakota Department of Transportation

Greg Fuller
Operations Support Program Manager

South Dakota National Guard

Dayton Myers
State Communications Officer

South Dakota Emergency Managers Association--Vice President

Brad Steifvater
McCook County Emergency Manager

South Dakota Firefighters Association--President

Dennis Gorton
Pennington County Fire Director

South Dakota Association of Healthcare Organizations

Ms. Rebekah Craddock
Vice President, SDAHO

South Dakota Department of Public Safety

Gt. David Driscoll
South Dakota Highway Patrol

South Dakota APCO/NENA Chapter

David Atherton
Director, Metro Communications--Sioux Falls

South Dakota Emergency Medical Technicians Association

Danny Hayes
President, SDEMTA

South Dakota Department of Agriculture/Wildland Fire

Ken Wesche

Lead Dispatcher, Great Plains Interagency Fire Center

South Dakota Association of County Commissioners

Shirlee Leighton

SDACCO member

South Dakota Department of Health

Jim Holmes

South Dakota Department of Health

Tribal Government

Larry Jandreau

Lower Brule Sioux Tribe Emergency Manager

Federal Government

Christopher Lewis

DOI, Public Safety Communications Program Manager

Bureau of Information & Telecommunications

Jeff Pierce

Technical Administrator, South Dakota Bureau of Information & Telecommunication

Executive Board

Dennis Gorton

Steve Christensen

Brad Steifvater

Jeff Pierce

South Dakota

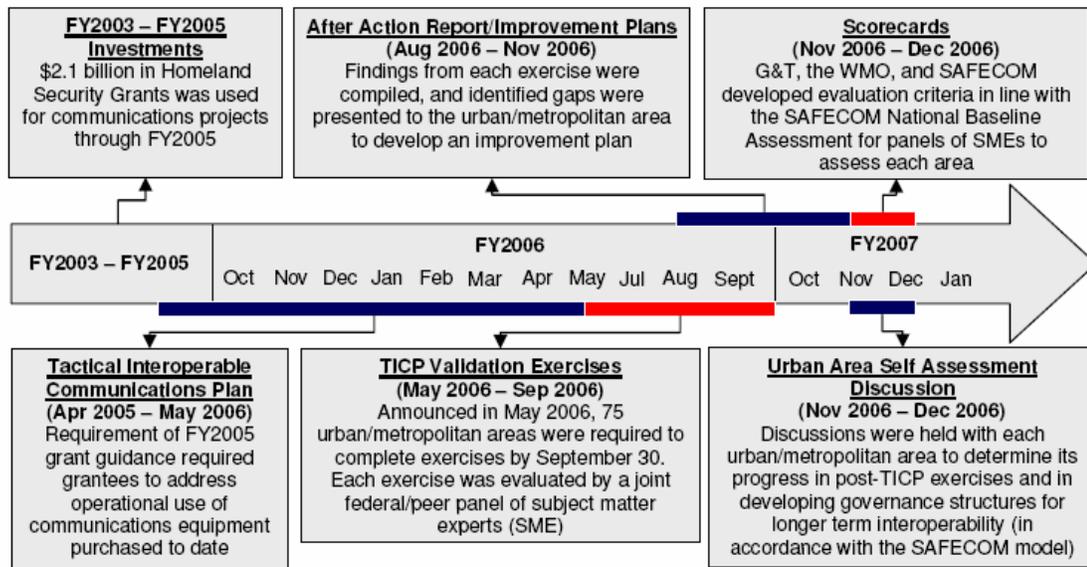


Interoperability Network

Attachment 10

South Dakota TICP Plan

Tactical Interoperable Communications Initiative Roadmap



Interoperability Network

Sioux Falls (South Dakota)



Tactical Interoperable Communications Scorecard

Summary

● **Governance:** *Advanced Implementation* ● **Standard Operating Procedures:** *Advanced Implementation* ● **Usage:** *Advanced Implementation*

South Dakota designated Sioux Falls as its metropolitan area (area), which includes the City of Sioux Falls and the counties of Minnehaha and Lincoln.

Governance: *Advanced Implementation* ●

South Dakota has demonstrated strong governance across multiple jurisdictions. The area's Metro Management Council (composed of representatives from the City of Sioux Falls, Minnehaha County, and Lincoln County) developed the regional Tactical Interoperable Communications Plan (TICP). The communications committee includes the area's public support disciplines and local leadership, but appears to lack federal involvement, which would be beneficial to include in the future. The area has published and active agreements, which are frequently updated and reviewed. South Dakota should be commended for its multiyear funding plan that takes into account local and state funding. Once revised, the area should distribute the strategic plan to all regional public safety agencies.

Recommendations:

- Proactively recruit new participants, including state and federal agencies
 - Align local and state strategic planning efforts to promote regional interoperability needs are met
-

Standard Operating Procedures (SOP): *Advanced Implementation* ●

Previously established communications policies and procedures from the area were incorporated into the TICP, thereby providing a solid basis for implementing the SOPs across the area. These formalized SOPs are used regularly, and updates are frequently distributed to all public safety agencies. The area has been practicing the interoperable communications aspects of the National Incident Management System (NIMS)/Incident Command System (ICS) for more than 1 year. Despite some minor glitches in the area's exercise (e.g., the ICS Form 205 was not updated throughout the exercise and the Communications Unit Leader was not clearly identified to the participating agencies), the exercise evaluators stated that the area generally performed well.

Recommendations:

- Continue basic and advanced training and exercises on SOPs (include communications unit implementation consistent with the TICP) to ensure that all participating first responder agencies attain and maintain NIMS/ICS compliance
-

Usage: *Advanced Implementation* ●

The area successfully demonstrated correct use of the available interoperable communications equipment (e.g., statewide radio caches, national shared channels, gateways, statewide system) during the TICP validation exercise. For example, users demonstrated familiarity with set-up and effective use of cached radios after instruction by the radio cache manager. The area also demonstrated strong participation from the

state and federal agencies during the exercise. Sioux Falls officials indicate that shared channels and the shared system are used on a daily basis, and this day-to-day familiarity with the available interoperability solutions was adequately demonstrated by area first responders during the validation exercise.

Recommendation:

- Consider adding communications interoperability as component for all future exercises

Below is a summary of the area's existing technology used to provide communications interoperability:

Technology Overview

South Dakota employs a statewide very high frequency (VHF) digital trunked radio system that consists of tower sites across the state networked to a controller located in Pierre. Roaming allows the user to traverse the state without losing communications, and the system allows individual agencies to maintain private communications with agency talk groups. The digital aspects of the system allow for clear communications over 90 percent of the geographic area of the state, including Sioux Falls in Minnehaha County. Lincoln County uses its own conventional ultra high frequency radio system. Interoperability between Minnehaha and Lincoln counties is achieved by mobile repeaters and portable radios programmed on the statewide trunked system. A backup conventional system is in place to allow conventional VHF radios access to the system via dispatcher-enabled console patch. The metropolitan area uses a mixture of shared channels and talk groups, gateways, and cached radios to provide interoperability among regional first responders.

**Attachment 11
PSCC By-Laws**

**BYLAWS OF THE
SOUTH DAKOTA PUBLIC SAFETY COMMUNICATIONS COUNCIL**

ARTICLE I: NAME

The name of this body shall be the South Dakota Public Safety Communications Council, hereinafter referred to as "SDPSCC".

ARTICLE II: PURPOSE

Section 1. Authority

The legal authority for establishment and administration of the SDPSCC rests in South Executive Order 2007-05 signed by Governor Rounds March 14, 2007.

Section 2. Purpose

The purpose of the SDPSCC shall be to serve to provide oversight for providing policy level direction related to planning, designing, and implementing guidelines, best practices, and standard approaches to address South Dakota's public safety communications interoperability issues

Section 3. Functions

The SDPSCC shall, after consulting with the Bureau of Information and Telecommunications (BIT)--

- (1) Update protocols and standards for the operation and use of the South Dakota Interoperable Communications System (SDICS).
- (2) Develop strategies and recommendations to improve current and future operations of the SDICS.
- (3) Develop recommendations for legislation or other state action that may be required to further promote public safety communications in South Dakota.
- (4) Develop recommendations and strategies for best utilization of grant funding to improve communications in South Dakota.
- (5) prepare and submit an annual report to the Governor, the BIT Commissioner, and others as necessary on the status of communications interoperability in the state;

ARTICLE III: MEMBERS

Section 1. Appointment

Members of the SDPSCC shall be appointed by the Governor. The Governor shall select members after soliciting recommendations from representatives of organizations representing a broad range of users utilizing the SDICS.

Section 2. Qualifications

A majority of SDPSCC members shall be persons who are familiar with communications practices within South Dakota.

Section 3. Terms

Membership of the SDPSCC shall serve for a term of one year which ends on June 30th. Members may be reappointed for no more than three consecutive terms. Representatives of state agencies shall serve as long as their agency directs.

If an appointment or reappointment has not been made, a member shall continue to serve at the pleasure of the Governor until such appointment or reappointment is made, as stipulated by South Dakota Codified Law (Section 3-14-1).

Section 4. Attendance

SDPSCC members may designate persons other than themselves to attend meetings as a non-voting attendee. SDPSCC members shall notify BIT staff when they are unable to attend a meeting.

SDPSCC members missing two consecutive meetings without an excused absence shall be considered a member not in good standing. The SDPSCC Chair shall contact the member concerning the member's ability and/or interest in continuing to serve on the SDPSCC.

Section 5. Resignation

Any member desiring to resign from the SDPSCC shall submit her/his resignation to the Governor's Office and send a copy of the letter to the SDPSCC Chairperson.

Section 6. Compensation & Expenses

The SDPSCC may use funds appropriated under the general fund allocation to BIT for reasonable and necessary expenses of attending SDPSCC duties. Members serving on the SDPSCC shall be reimbursed for travel expenses as set forth in Title 5 of the Administrative Rules of South Dakota and within the limits set by the annual appropriation approved by the Legislature.

ARTICLE IV: OFFICERS

Section 1. Positions

The officers of the SDPSCC shall include a Chairperson, Vice-Chair and Member-at-Large. These officers and the Technical Administrator for BIT shall comprise the

SDPSCC Executive Committee. The SDPSCC may elect additional officers as are deemed necessary.

The Chairperson, Vice-Chair and Member-at-Large of the SDPSCC shall be selected from among SDPSCC members.

Section 2. Duties

a. Chairperson. The Chairperson shall preside at all SDPSCC meetings. The Chairperson, in cooperation with BIT, shall schedule all meetings of the SDPSCC and perform all such duties relative to the office. The Chairperson shall represent the SDPSCC in dealing with other organizations and at public meetings and conferences, or designate an alternate to do so.

b. Vice-Chairperson. The Vice-Chair shall act as Chairperson in the absence of the Chairperson. In the event of the resignation, incapacity, or death of the Chairperson, the Vice-Chair shall serve as Chairperson until the SDPSCC elects a new Chairperson. The Vice-Chair shall perform other duties as assigned by the Chairperson.

c. Member-at-Large. The Member-at-Large shall serve as a member of the Executive Committee.

d. Executive Committee. The Executive Committee is chaired by the SDPSCC Chairperson. The Executive Committee (1) may act on behalf of the SDPSCC to perform necessary business matters between regular meetings provided their actions receive concurrence of a majority of the SDPSCC members at the next full SDPSCC meeting; (2) acts on behalf of the SDPSCC on actions as directed by the full SDPSCC; and (3) reports regularly its work and actions to the SDPSCC. The minutes of the Executive Committee meetings shall be sent to all SDPSCC members.

Section 3. Nomination

Nominations for all offices shall be made from the floor.

Section 4. Election

The Chairperson, Vice-Chair and Member-at-Large shall be elected by a majority vote of the full SDPSCC membership. Elections shall be held during the final quarter of the State fiscal year (April, May or June). The Vice-Chair may assume the Chairperson's position upon the completion of his/her term(s).

Section 5. Eligibility to Hold Office

Officers deemed necessary shall be elected from the full SDPSCC membership.

Section 6. Terms

The term of offices for the Chairperson, Vice-Chair and Member-at-Large shall be one year.

Section 7. Vacancies

Vacancies in the offices shall be filled by a majority vote of the members in attendance at the next SDPSCC meeting. Officers so elected shall serve for the remainder of the vacated term and shall be eligible for election to a full term.

ARTICLE V: MEETINGS

Section 1. Schedule

The SDPSCC shall meet as often as necessary, as determined by the Chairperson and in cooperation with BIT staff, but at least quarterly. The SDPSCC activities shall function on a state fiscal year basis.

Special meetings of the SDPSCC may be called by the Chairperson, the Designated State Agency or upon the written request of five or more SDPSCC members.

Notice of special meetings shall be made to all SDPSCC members, not less than 10 days prior to the meeting, stating the purpose(s) of the meeting. No other business shall be transacted at a special meeting.

Section 2. Quorum

A quorum for a SDPSCC meeting shall be over 50 percent (50%) of the appointed SDPSCC membership.

Section 3. Agenda and Supporting Materials

An agenda and supporting materials shall be distributed 10 days in advance. Requests for items to be included on the agenda shall be submitted to the BIT Staff 14 days prior to the meeting.

Section 4. Open Meetings Law

All meetings shall be open to the public in accordance with the State open meetings law, SDCL 1-25-1.

Section 5. Voting

Voting by proxy shall not be permitted.

Section 6. Minutes

The minutes of all regular and special meetings shall be filed and available for inspection by the public at all times at the BIT Commissioners Office, as set forth in SDCL 1-25-3. Minutes will be available in draft form after reviewed and approved by the SDPSCC Chairperson.

Section 7. Public Notice

Public notice of all meetings shall be given by posting the agenda outside the principal place of business at least 24 hours prior to any meeting as set forth in SDCL 1-25-1.1.

ARTICLE VI: COMMITTEES

The Chairperson may appoint such standing or ad hoc committees as he/she deems necessary and shall determine the membership of those committees.

ARTICLE VII: PARLIAMENTARY AUTHORITY

SDPSCC meetings shall be conducted in accordance with the rules contained in the current edition of Robert's Rules of Order Newly Revised in all cases in which they are applicable and in which they are not inconsistent with these bylaws and any special rules the SDPSCC may adopt.

ARTICLE VIII: AMENDMENT OF BYLAWS

These SDPSCC bylaws may be amended at any meeting of the SDPSCC by a majority vote of the appointed SDPSCC membership in attendance, provided the amendment has been distributed to all SDPSCC members at least 10 days prior to the date of the meeting.

ARTICLE IX: CONFLICT OF INTEREST

If an issue comes before the SDPSCC in which the member has a personal vested interest or a vested relationship with an agency or person that will benefit from a decision related to that issue, it shall be the duty of the member to declare a conflict of interest prior to the discussion of the issue. The member shall be exempt from the right to vote on that issue. The member then will be free to participate in the discussion of the issue within the time limits established by the Chairperson for all SDPSCC members.

If a member disagrees with any decision made by the majority of the SDPSCC and wishes to act contrary to that decision, it shall be the duty of the member to inform others that the action is in opposition to the SDPSCC's wishes and on behalf of the individual member only.

ARTICLE X. DESIGNATED STATE AGENCY

Per the Executive Order 2007-05 creating the SDPSCC, the council shall be administered and funded by the South Dakota Bureau of Information and Telecommunications.

ARTICLE XI. COUNCIL STAFF

Technical assistance and staff support shall be provided to the SDPSCC by the Telecommunications division of the South Dakota Bureau of Information and Telecommunications.