STATEWIDE EMERGENCY COMMUNICATIONS BOARD

January 28, 2016
12:30 P.M.
Chair: Mark Dunaski
MnDOT Arden Hills Training Center
1900 West County Road I Shoreview, MN 55126
Call in Number: 1-888-742-5095
Call in code: 2786437892#

MEETING AGENDA

Call to Order

Approval of Today's Agenda

Approval of Previous Meeting's Minutes

Announcements

Officer Elections

Reports of Standing Committees:

Operations and Technical Committee (Glaccum)

1. Carlton County Participation Plan Addendum — ***Action Item***
2. Dakota County Participation Plan Amendment — ***Action Item***
3. Douglas County Request for Requested Site — ***Action Item***
4. Standard 1.2.0 Network Management — ***Action Item***
5. Standard 2.4.0 Console Naming - Request to Sunset June 1, 2016 — ***Action Item***
6. Standard 2.6.0 Fleetmap Standards — ***Action Item***
7. Standard 2.16.0 Emergency Button — ***Action Item***
8. Standard 3.24.0 Public Safety Answering Point (PSAP) Interoperability — ***Action Item***
9. Standard 1.11.1 System Administrators Definition and Minimum Training Requirements — ***Action Item***
10. ARMER System Success Story

Interoperability Committee (Thomson)

1. Standard 3.40.0 CASM — ***Action Item***
2. Approval of an SOA3 Repeater for Stevens County at two fixed locations contingent upon approval through Change Management — ***Action Item***

Legislative & Government Affairs Committee (Workman)

1. Letters to the Chairs of Tax and Public Safety Finance Committees supporting making the sales tax exemption language for joint powers boards and special taxing districts effective July 1, 2016 rather than January 1, 2017 — ***Action Item***

Steering Committee (Hartog)

IPAWS Committee (Seal)

NG911 (Pankonie)

Interoperable Data Committee (Risvold)

- *FirstNet Update (Tim Pierce)*

Finance Committee (Gerlicher)

Reports – Other

- *ARMER Project Status Report (MnDOT OSRC)*
- *ECN Update (Mines, DPS ECN)*
    - *Status of SECB Initiatives*
        - *GIS Project*
        - *Text-to-911*
        - *7.19 Upgrade*
        - *FirstNet*

Old Business

New Business

- 2015 Attendance

Adjourn

STATEWIDE EMERGENCY COMMUNICATIONS BOARD

MEETING MINUTES

December 17, 2015

Attendance
Members:

MEMBER/ALTERNATE	REPRESENTING
Mark Dunaski (Chair)/Jackie Mines	DPS
Mukhtar Thakur/Tim Lee/Jim Mohn	MnDOT
Thomas Baden/Ed Valencia	MNIT
Rodmen Smith/Dan Kuntz	DNR
Rochelle Schrofer/Tim Boyer	MN State Patrol
Vince Pellegrin/Thomas Humphrey	METC
Bill Droste/ Vacant	League of MN Cities, Metro
Eric Anderson/Pat Novacek	League of MN Cities, Greater MN
Liz Workman/vacant	Assoc. of MN Counties, Metro
Jim McMahon/vacant	Assoc. of MN Counties, Greater MN
Chris Caulk/Darlene Pankonie	MSA, Metro
Dan Hartog/Scott Turner /Jeff Marquart	MSA, Greater MN
Mike Gamache/Ted Bearth	MESB
Mike Risvold/vacant	MN Chiefs of Police Assoc., Metro
Cari Gerlicher/Dave Thomson	MN Chiefs of Police Assoc., Greater MN
Ulie Seal/Vacant	MN Fire Chiefs Assoc., Metro
T. John Cunningham	MN Fire Chiefs Assoc., Greater MN
Joe Glaccum (Vice Chair)/vacant	MN Ambulance Assoc., Metro
Brad Hanson/Paul McIntyre	MN Ambulance Assoc., Greater MN
Vacant/Jeff Jelinski	NE MN Emergency Communications Board

Also in attendance:
Cathy Anderson DPS-ECN
Carol-Linnea Salmon, DPS-ECN
James Stromberg, DPS-ECN
Randy Donahue, DPS-ECN
John Dooley, DPS-HSEM
Troy Tretter, MESB
Jill Rohret, MESB
Mike Fink – Motorola
Dave Eischens, Motorola
Shane Chatleain, MnDOT
Philip Schaffner, MnDOT

DRAFT

Mark Navolio, Televate
Brandon Abley, Televate
Tim Pierce, FirstNet

CALL TO ORDER

Commissioner Dunaski calls the meeting to order at 12:35 p.m.

APPROVAL OF AGENDA

Chair calls for a motion to approve the agenda.

Cari Gerlicher requests to have the Finance Committee agenda items moved forward on the agenda. Jackie Mines requests to add to the agenda a report from Tim Pierce of FirstNet.

Thomas Humphrey moves to approve the agenda as amended.
Gerlicher seconds the motion.
Motion carries to approve the agenda as amended.

APPROVAL OF PREVIOUS MEETING MINUTES

Chair Glaccum calls for a motion to approve the previous meeting minutes.

Humphrey moves to approve the October meeting minutes.
Jim McMahon seconds the motion.
Motion carries to approve the minutes.

ANNOUNCEMENTS

No announcements.

REPORTS OF STANDING COMMITTEES

OPERATIONS AND TECHNICAL COMMITTEE REPORT (GLACCUM)

Chair Glaccum introduces an amendment to the Cass County Participation Plan, as presented in the meeting materials. The request is to replace the county's Gold Elite consoles with MCC7500s. The project will include three console positions. It was approved at the OTC contingent upon regional approval.

On behalf of the OTC, Chair Glaccum moves to approve the Cass County Participation Plan. Humphrey seconds.

Discussion: Carol Salmon adds that an email was received from Bruce Hegrenes saying the amended plan was approved by the region this morning.

DRAFT

Motion carries.

Chair Glaccum introduces Standards 1.11.2, 1.11.3, 1.11.4, 1.11.5, 1.41., 1.4.2, 1.6.1, and 2.2.0 as amended and as presented in the meeting materials. He requests to present them for approval in one vote after giving an overview of the changes. There is no opposition.

Glaccum gives an overview of the edits to the standards.

Standard 1.11.2 Training System Administrators. A definition of System Technical staff was added. Language was cleaned up to be consistent with other standards.

Standard 1.11.3 Training Radio Telecommunicators was modified with the intent to sunset Standard 1.11.5 so information from 1.11.5 was included (and also in 1.11.4) and language was cleaned up. Interoperability equipment was added and addition of refresher training required every two years at a minimum.

Standard 1.11.4 Training ARMER End Users was modified to include interoperability or ARMER equipment. Three tiers of user responsibility was changed to four tiers and "Emergency Room departments with two-talkgroup radios" was added. History of ARMER was added. NIMS ICS Training was added with the caveat that it is discipline specific.

Standard 1.11.5 Interoperability Participants was proposed to be sunset. Items from it were incorporated into 1.11.3 and 1.11.4.

Standard 1.4.1 System Login Naming Maintenance. Procedures for this standard were previously "at the discretion of the System Managers Group." That was changed to be at the discretion of the Operations and Technical Committee.

Standard 1.4.2 Management of Alias List. System Management Group was changed to Statewide System Administrator. If there is a conflict over acronym use it should be referred to the OTC.

Standard 1.6.1 System Security Groups. Changes were made to reflect what is in practice. Configuration Manager was changed to Provisioning Manager. Examples of RF Site Security Groups were added.

Standard 2.2.0 Radio Aliases. "Regional system" was changed to "ARMER System". Some clean up from what was originally a regional standard. Addition of the sentence, "Any exception to this naming standard must be approved by the OTC." The master table was assigned to the Statewide System Administrator.

On behalf of the OTC, Chair Glaccum moves to approve Standards 1.11.2, 1.11.3, 1.11.4, 1.11.5, 1.4.1, 1.4.2, 1.6.1, and 2.2.0.
Bill Droste seconds.
No discussion.
Motion carries.

INTEROPERABILITY COMMITTEE

Chair Thomson introduces the revised Standard 3.44.0 Pursuit, as presented in the meeting materials. He reports that the edits were mostly clean-up such as removing redundant language. The only area of significant change was under Number 4, Recommended Protocol. It will now require that as of June 30, 2017, all the law enforcement PSAPS using controls stations to integrate with ARMER will be required to have LTAC 1-4 available on their dispatch consoles. Only LTAC 1 and 2 were previously required and now as of June 30, 2017, LTAC 3 and 4 will also be required. The standard gives 18 months to add the additional LTAC resources.

Humphrey moves to approve Standard 3.44.0 as presented.
Glaccum seconds.

Discussion:

Jill Rohret says revision to the standard changes requirements for control stations effective June 2017 but the edits also deleted language that governs how things should be done during the 18 months before then (page 2, section five).

Thomson responds that the standard still says under Recommended Protocol that two LTACs are required until 2017. The majority of the language that was separate for integrated versus non-integrated PSAPs was brought together into a single standard that deals with both.

Motion carries.

LEGISLATIVE & GOVERNMENT AFFAIRS COMMITTEE (WORKMAN)

No report.

FINANCE COMMITTEE (GERLICHER)

Chair Gerlicher introduces the 2016-2020 Motorola Contract Approval, as presented in the meeting materials. She notes that this has been referred to in the past as the 7.19 upgrade. Gerlicher explains that the committee wrote letters to commissioners of the counties and radio systems that needed the large upgrade this coming year and over the next several years. Motorola had offered an opportunity for price decreases if there was a one point funding system. The committee received approval from all the counties to allocate the funding to allow that one point funding system to take place.

Dave Eischens from Motorola adds that Motorola was able to put together a plan with one contract and therefore could offer substantial savings to everyone involved. He reviews the materials presented in the meeting packet. In the contract, there is a pricing breakdown for all of the agencies involved over five years. Each agency will have a contract specific to their agencies. In January, Motorola will meet with MnDot and other agencies to determine a plan for the upgrade roll out. He notes that many other states are implementing similar types of plans.

Chair Gerlicher reports that coming to this point involved quite a lot of work over the last months. She thanks Motorola and Jackie Mines and Tim Lee and the regional radio representatives who spoke to county commissioners to explain the process.

On behalf of the Finance Committee, Chair Gerlicher moves that the 2016 -2020 Motorola Contract be approved.
Humphrey seconds.
Discussion: none
Motion carries.

Chair Dunaski points out that it was quite an accomplishment to achieve this in the timeframe required.

STEERING COMMITTEE (MINES FOR HARTOG)

Director Mines speaks on behalf of Chair Hartog who was unable to attend the meeting. Mines reports that the Steering Committee's Education and Outreach workgroup has been working on SECB branding. The purpose is to create a uniform look for the SECB and to differentiate it from other agencies. Mines presents a power point presentation, as presented in the meeting materials. The slides are templates that can be used by SECB and its committees. She points out the yellow swoosh which will be a marker on all SECB documents. She adds that ECN has been working on the SECB and the ECN websites to make them easier to navigate.

Humphrey moves to approve the SECB Power Point Template.
Droste seconds.

Discussion:
Humphrey says the design is simple and attractive.

Motion carries.

IPAWS COMMITTEE (SEAL)

Chair Seal introduces the Public Alerting Authorities Best Practices Guide, as submitted in the meeting materials. The guide is split into two sections. Section one covers alerting authorities best practices including such things as use of the alerting system, criteria for issuing warnings, correct alert codes, characteristics of effective alert messages, Section two covers Collaborative Operating Groups (COGs) including how COGs are issued, their structure, capabilities and responsibilities. The guide will be available on the website and distributed at all public outreach opportunities such as association events, conferences and classes.

On behalf of the IPAWS Committee, Chair Seal moves that the Public Alerting Authorities Best Practices Guide be approved.
McMahon seconds.

Discussion:
Dunaski comments that the guide turned out very well and that it will be useful to chiefs and sheriffs as well as others.

Mines points out that Ulie Seal and Julie Anderson did a lot of work on these documents. She adds that Julie Anderson was very helpful in working on the Steering Committee's Education and Outreach initiatives. Anderson has moved on to a different position and she will be missed.

Chair Dunaski adds that he and Chair Seal, Director Mines, State Fire Marshal Bruce West, Joe Kelly from HSEM, and Bruce Gordon and Julie Anderson from DPS Communications had a meeting to talk about communications and outreach, particularly around IPAWS.

Motion carries.

NG911 COMMITTEE (PANKONIE)

No report.

INTEROPERABLE DATA COMMITTEE (RISVOLD)

Chair Risvold reports that the committee met and reviewed the LTE Pilot Project Summary. He introduces Brandon Abley who presents a summary of the Minnesota Public Safety Broadband Pilot Project, as provided in the meeting materials.

Abley reports that the purpose of the project was to explore a private-public partnership to deploy a Public Safety Broadband Network in Minnesota. ECN managed a public safety broadband network trial from summer, 2014 to fall, 2015, in Elk River, MN. The project demonstrated that a partnership with Minnesota-based entities can be successfully leveraged to provide public safety broadband service in the state. It also demonstrated some of the capabilities of public safety broadband technologies to Minnesota stakeholders. A chief accomplishment was the successful implementation of a Band 14 Public Safety Broadband Network. Abley reviews accomplishments, shortcomings and lessons learned. These are summarized in the power point presentation which was presented in the meeting materials.

Mines acknowledges Abley's hard work on the project and the partners that brought the mobile command centers and other equipment. It was successful and a lot of fun. She thinks people who participated enjoyed it and got a lot out of it. Mines says ECN would like to come up with a similar tabletop exercise for the Interop conference.

Abley says the participation of the volunteers and donated hardware can't be undervalued. The expenses to state government were very modest.

On behalf of the IDC, Chair Risvold moves for approval of the LTE Pilot Project report.
Humphrey seconds.
Motion carries.

Tim Piece from FirstNet reports that the FirstNet board approved the release of a nationwide RFP. This is a pivotal step for the nationwide network. FirstNet is planning on working with Minnesota in 2016 to continue to strengthen the relationship between FirstNet and Minnesota stakeholders. FirstNet would like to give a formal briefing to the SECB—probably in the second or third quarter—

to provide an update and get feedback from the governance body. FirstNet would like to continue a conversation with a more detailed look at how things would be implemented in the state.

REPORTS – OTHER

ARMER PROJECT STATUS REPORT (MNDOT OEC)

Mukhtar Thakur reports on the status of the ARMER project, as presented in the meeting materials. The budget and scope are well controlled. There have been some land acquisition delays. Of the 324 sites, 319 are on the air. The site at Island Lake, Beltrami County went live on the air this month. Eleven sites need new towers.

Shane Chatleain from MnDOT mentions some of the difficulties, particularly environmental sensitivities, in acquiring land.

Thakur says that recently there was a lightning storm in St. Cloud which impacted a lot of the tower sites but none went down because of the dual links that are in place. The system reliability is improving every week.

Chair Dunaski adds that it will be important for the board to keep in mind the old towers and other infrastructure that will need to be maintained.

REPORT ON MNDOT STATEWIDE MULTIMODAL TRANSPORTATION PLAN

Philip Shaffner, MnDot Policy Planning Director, reports on the MnDot Statewide Multimodal Transportation Plan, as presented in the meeting materials. The Multimodal is MnDot's highest level policy plan for transportation. The plan is required by state and federal law. MnDot is required to plan twenty years into the future and to update the plan every four years. The last update was completed in 2012. The full plan is available on the MnDot website.

Shaffner reviews the vision of the plan, the guiding principles and the policy objectives. He gives an overview of MnDot's family of plans, update process and schedule. He outlines trends in population, technology, the environment, the economy and transportation behavior that are considered in the planning process.

The plan has a System Security objective to reduce system vulnerability and ensure system redundancy to meet essential travel needs during emergencies. One strategy for this objective was to expand emergency communications infrastructure across the state, specifically ARMER.

Shaffner asks if this expanded emergency communications infrastructure still makes sense as a strategy? Should it be maintained or enhanced or something else? Should it be just ARMER?

Chair Dunaski responds that in addition to ARMER, IPAWS, NextGen911 and FirstNet each have a role to play in emergency communications. He thanks Shaffner for the presentation and suggests a meeting to discuss this further after additional work has been completed on the SECB strategic plan.

DRAFT

ECN UPDATE

Jackie Mines calls attention to the NG-911 GIS Project Status Update, as submitted in the meeting materials. She reports that a project newsletter is being produced on a quarterly basis; November issue is posted on the ECN website. ECN in partnership with MnGeo has been working on data collection of public safety entity boundaries for the FirstNet project. The team is working on inventorying existing NG911 GIS data and assessing and preparing the data. The MSAG/GIS Synchronization Project will work with the Metropolitan Emergency Services Board (MESB) initially and then with the Northeast region to synchronize GIS data with Master Street Address Guide (MSAG) data. A standards workgroup is working on the development of standards for GIS, in alignment with NENA standards. In February, the team will work with the Statewide Geospatial Advisory Council and MNIT on cyber security for the GIS database.

The pricing submitted in response to the NextGen RFP was varied enough among vendors so as to not be able to make a useful side-by-side comparison. ECN will be going out for best and final pricing and hopes to wrap that up soon.

OLD BUSINESS

None.

NEW BUSINESS

Chair Dunaski reports that he has asked Director Mines to setup a meeting with the Committee Chairs to look at the strategic plan with expectations to bring the plan back to the board in February.

OTHER BUSINESS/DISCUSSION

None.

Meeting Adjourns at 2:20 p.m.

DRAFT

Carlton County
Minnesota

ARMER Participation Plan
Addendum 2
December 20, 2015

Bruce Hegrenes
Technical Supervisor
St. Louis County Sheriff Office
Communications Division

Executive Summary

The Carlton County ARMER Participation Plan was completed and approved by Carlton County Board, Northeast Region Advisory Committee, Northeast Region Radio Board, Minnesota Department of Transportation-Electronic Communications Division, Operations and Technical Committee of the State Radio Board and the State Radio Board in 2010. The plan was modified with Addendum 1 dated April 12, 2013. Addendum 2 is an update to the June 10, 2010 plan due to additional review and equipment purchase.

Due to consistent busies at the Moose Lake and Mahtowa ARMER sites Carlton County is proposing to add two channels to these sites. Moose Lake and Mahtowa sites will have a total of seven channels at each site. The sites are owned by MN-DOT.

2. ARMER System Technical Review

A. System Design

ii) Local Equipment Additions and Enhancements

Moose Lake ARMER site

The MN-DOT owned Moose Lake ARMER site is a 5 channel ASR site. Due to additional traffic above the anticipated levels detailed in the original engineering studies for the participation plan in 2010, Carlton County will add 2 channels to the 5 existing channels at the site.

The additional channels at the Moose Lake site will provide capacity for the unanticipated Minnesota Department of Human Services MSOP facility, Minnesota Department of Corrections Willow River facility and Pine County Law and Fire traffic.

Mahtowa ARMER site

The MN-DOT owned Moose Lake ARMER site is a 5 channel ASR site. Due to additional traffic above the anticipated levels detailed in the original engineering studies for the participation plan in 2010, Carlton County will add 2 channels to the 5 existing channels at the site.

The additional channels at the Mahtowa site will provide capacity to allow Fond du Lac Tribal Police to monitor St. Louis County Law talkgroups and Cloquet Area Fire and EMS to monitor St. Louis County Fire and EMS talkgroups.

GTR8000 base stations, transmit combiner and rack equipment will be purchased from Motorola Solutions for both sites. St. Louis County will install and provision the site equipment.

v) 800 MHz Frequency Planning

Additional frequencies at both sites are from the recently Vacated Frequency Pool for Public Safety.

SITE	1	2	3	4	5	6	7
Moose Lake						New	New
Mahtowa						New	New

Frequency information redacted.

Ulie Seal, Troy Tretter
Chair – Metro Technical and Operation Committee
Metro Region TOC Members

Dakota County would like to respectfully request to modify its ARMER System participation plan. The Dakota Communication Center (DCC) will be adding a Motorola AIS unit to accommodate for logging. This configuration will be required do the obsolescence of the Motorola Gold Elite console configurations.

The Statement of Work for this project has been discussed and routed through MnDOT Radio personnel and there were no issues with the request.

Thank You for your time and consideration on this request,
Ron Jansen

Douglas County requesting to have DG FIRE 'Requested' on the West Union Tower Site

Douglas County has a 6 site VHF simulcast paging system. Douglas has patched the VHF Paging to the DG FIRE talk group, so the units in the field are able to hear all pages sent out by Douglas Dispatch. This is working well for the County with the exception of the Osakis Police Department. Because the City of Osakis is much closer to the West Union Tower Site, their mobile and portable radios have been programmed to 'prefer' the West Union Site. The Osakis Police Officers have been periodically missing pages. The Sheriff's Office, along with the Osakis Police Department and the Osakis Fire Department has attempted a couple of fixes for this problem and have not found a solution.

Douglas County is requesting the approval from the Owners & Operators Committee to allow the DG FIRE talk group to be 'Requesting' on the West Union Tower Site. Douglas County understands concerns of tower loading, although, DG FIRE is not a high volume talk group. The DG FIRE talk group is used for all VHF paging and the initial communication from the fire departments, first responder units and ambulance services acknowledging the page. The unit or units are then moved to 1 of the 8 DG Interoperable talk groups for all radio communication relating to that event.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 1	**Management of System**	**Status:** Complete
State Standard Number	**1.2.0**	
Standard Title	**Network Management**	
Date Established	**08/07/2001**	**SRB Approval**: 03/03/2005
Replaces Document Dated	**03/03/2005**	
Date Revised	**12/28/2015**	

1. Purpose or Objective

The purpose of this standard is to define the responsibilities for Network Management.
The network is composed of, but not limited to, channel banks, hubs, switches, routers, servers, local area networks at the equipment locations, and wide area links connecting sites together consisting of the microwave and fiber optic equipment, and the network management tools provided by the equipment manufacturer.

2. Technical Background

- **Capabilities**

The system architecture is primarily constructed around an internet protocol (IP) based network.

The network is composed of industry standard equipment, which also provides flexibility and a large variety of management and diagnostic tools.

Motorola will provide equipment configuration information as part of the system documentation.

- **Constraints**

The system network is complex, and unusual problems may be difficult to identify and resolve. The system documentation will have to be kept up-to-date to maintain its value in supporting the system network.

The system network is protected from other agency data networks, and shall remain so, to protect the security and functionality of the system. If there is a connection to another data network, it shall be through an appropriately designed and maintained firewall.

3. Operational Context

The components of the network shall be considered "owned" by one of the appropriate owners of the system. The individual owners will then be responsible for the maintenance of the sites and equipment they own. Agreements between the owners and/or maintenance contractors are at each agency's discretion, but the owner is still ultimately responsible for their portion of the system.

The backbone system is structured on the integrated network; any infrastructure hardware and software upgrades or changes that may impact the system network will need prior Minnesota Department of Transportation (MnDOT) and regional approval. The request will then be vetted thru the System Managers Group (SMG) before being submitted for approval by the Operations & Technical Committee (OTC). At the OTC's discretion, the requested upgrade may be subjected to State Standard 1.8.0, System Change Management.

All maintenance work being scheduled that may affect the system and/or sub-system's performance shall be preceded by reasonable and appropriate notification to the other System Managers.

The equipment configurations of the network components will need to be documented. This is primarily for the purpose of maintenance but also affects future planning. Motorola will provide the original as-built documentation.

The other defined standards for maintenance, documentation, notification, changes, security, and training also pertain to the network portion of the system.

4. Recommended Protocol/ Standard

This will be an ongoing task in the operation and management of the system.

5. Recommended Procedure

The methods for performing detailed network operations are defined in the technical resource manuals and training for the system. The technical resource manuals are classified as "Security Information" and "General Non-Public Data", pursuant to Minn. Stats. §13.37, Subd. 1a.

Details on procedures not otherwise defined are at the discretion of the System Managers Group and will be approved by the OTC.

6. Management

The System and Subsystem Administrators and Managers are responsible for managing and maintaining their agency's data attributes. The Statewide System Administrator shall be responsible for the statewide portion of the network.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 1	**Management of System**	**Status:** Complete
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Replaces Document Dated	~~**08/13/2001**~~**03/03/2005**	
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The network is composed of, but not limited to, channel banks, hubs, switches, routers, servers, local area networks at the equipment locations, and wide area links connecting sites together consisting of the microwave and fiber optic equipment, and the network management tools provided by the equipment manufacturer.

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The backbone system is structured on ~~the integrated~~ the integrated network; any infrastructure hardware and software upgrades or changes that may impact the system network will need prior Minnesota Department of Transportation (MnDOT) and regional approval. - The request will then be vetted thru the System Managers Group (SMG) before being submitted for approval by the Operations & Technical Committee (OTC). At the OTC's discretion, the requested upgrade may be subjected to State Standard 1.8.0, System Change Management. ~~need reasonable discussion/approval by the System Managers Group (SMG).~~

All maintenance work being scheduled that may affect the system and/or sub-system's performance shall be preceded by reasonable and appropriate notification to the other System Managers.

The equipment configurations of the network components will need to be documented. This is primarily for the purpose of maintenance but also affects future planning. Motorola will provide the original as-built documentation.

The other defined standards for maintenance, documentation, notification, changes, security, and training also pertain to the network portion of the system.

4. Recommended Protocol/ Standard

This will be an ongoing task in the operation and management of the system.

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Details on procedures not otherwise defined are at the discretion of the System Managers Group and will be approved by the OTC.

6. Management

The System and Subsystem Administrators and Managers are responsible for managing and maintaining their agency's ~~the~~ data attributes. ~~that they are individually responsible for~~. The

Statewide ~~Minnesota Department of Transportation (MnDOT)~~ System Administrator shall be responsible for the statewide ~~regional~~ portion of the network.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 2	**Configuration and Allocation**	**Status:** Complete
State Standard Number	**2.4.0**	
Standard Title	**Console Naming**	
Date Established	**01/19/2001**	**SRB Approval**: 09/01/2005
Replaces Document Dated	**12/04/2003**	
Date Revised	**03/04/2005**	

1. Purpose or Objective

The purpose of this standard is to set forth the principle by which all System Administrators of the ARMER system will establish names for the Radio IDs used to support dispatch console positions. This is necessary because IDs are not associated with a Radio User alias.

2. Technical Background

- **Capabilities**
  N/A

- **Constraints**

The serial number field in Radio ID screens is 12 characters long. Every talkgroup per console position requires a Radio ID to be programmed for that position, e.g., a single console position may have 50 radio IDs programmed to support that position.

3. Operational Context

Every radio ID in the system represents a radio, but some radio IDs in the system are consoles and not radios. By planning an identification process, the radio serial number field can be used in the radio entry screen to categorize consoles for easy identification.

4. Recommended Protocol/ Standard

The serial numbers used in the records for console operator positions will be formatted according to the following:

OPTION 1

- Statewide operating agencies and first-class cities would have naming prefixes of at least two characters that would stand alone. Counties would be pre-named with a two character identifying mnemonic, and the cities and agencies of the counties would be included under the prefix of the county they are in.
- The next three characters would be the letters “con,” for console, to easily distinguish this identifier from other radio aliases.
- The characters following these first five are at the individual agency’s discretion.

OPTION 2

- Starting with a 2-digit prefix to identify the Console location "for example WE, NM, BP, GV, etc
- The next two digits represent the Central Electronics Bank (CEB) number
- The following two digits indicate the Time Division Multiplexing (TDM) slot on that CEB
- The last four characters are to be unique, at the individual agency's discretion.

5. Recommended Procedure

N/A

6. Management

The System Administrators are responsible for compliance of this standard.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 2	**Configuration and Allocation**	**Status:** Complete
State Standard Number	**2.6.0**	
Standard Title	**Fleetmap Standards**	
Date Established	**12/5/2000**	**SRB Approval**: 2/26/2009
Replaces Document Dated	**2/10/2009**	
Date Revised	**12/07/2015**	

1. Purpose or Objective

The Allied Radio Matrix for Emergency Response System (ARMER) will contain a large number of talkgroups and multigroups to support the various agencies that will be subscribing to the system.

The system has multiple administrating agencies that will maintain fleetmaps and system programming information for agencies they are responsible for.

For effective management of the system, a defined process needs to be used to document the fleetmap information that each administrating agency is supporting. This information will be shared with other System Administrators, providing a resource for subscribing agencies to reference when planning interagency communications. System fleetmaps contain configuration information that is classified as "Security Information" and "General Non-Public Data," pursuant to Minn. Stats. § 13.37, Subd. 1a.

2. Technical Background

- **Capabilities**

The fleetmap is parameter information programmed into the system infrastructure and into the subscriber radios to control how the radios will behave on the ARMER system.

The fleetmap itself contains the following detailed information:

Talkgroup	Name of the talkgroup & multigroup as it is programmed into the system.
Talkgroup ID	Numerical ID of the talkgroup or multigroup
Owner	The agency requesting the creation of the talkgroup
Description	General description of the talkgroup & multigroup
Multigroup	If the talkgroup is part of a multigroup, this will identify a multigroup
Priority	Priority level of the talkgroup
Logging	If the talkgroup is going to be recorded
Admin Agency	The agency that is responsible for the system administration for this talkgroup
Site # Access	Will be listing the RF sites individually and if the talkgroup is authorized

Media Access	If media access is permitted for this talkgroup
Global Sharing	The predefined global sharing authorizations
User Groups	The subscriber groups using the talkgroups, this becomes the matrix for the program

The fleetmap spreadsheet will become a documented matrix of the talkgroups in the system and the subscriber groups that are using/sharing these talkgroups.

- **Constraints**

Since the system will be administered by multiple agencies and access is controlled, no master list will be maintained.

3. Operational Context

The local System Administrator shall be responsible for managing the fleetmap information of the subscribers they are representing. This information is also shared with other System Administrators, and the ID information must be kept secure, as described in the "Security" section of the State Standards.

4. Recommended Protocol/Standard

Each administering agency will maintain a master fleetmap spreadsheet containing data on the subscribers for whom they are responsible.

5. Recommended Procedure

- System Administrators may omit listing any information in the master fleetmap spreadsheets for "unlisted" private talkgroups used for undercover operations and other highly sensitive confidential law enforcement and homeland security activities. Approval by the Statewide Emergency Communications Board (SECB) is required for a talkgroup to be designated "unlisted" and private. The request will include talkgroup system settings, names, priority level, and site access, if applicable. The existence of unlisted talkgroups is considered Non-Public Data and is not subject to disclosure in public meetings.
- The disclosure of fleetmap spreadsheet information including talkgroup IDs, user IDs, user privileges, and other related system information would substantially jeopardize the security of the system. Therefore, the master fleetmap spreadsheets shall be classified as "Security Information" and "Non-Public Data."

6. Management

The Statewide System Administrator will manage the master fleetmap spreadsheet information and the details of the process for communicating the information.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 2	**Configuration and Allocation**	**Status:** Complete
State Standard Number	**2.6.0**	
Standard Title	**Fleetmap Standards**	
Date Established	**12/5/2000**	**SRB Approval**: 2/26/2009
Replaces Document Dated	**2/10/2009**	
Date Revised	**~~2/10/2009~~12/07/2015**	

1. Purpose or Objective

The Allied Radio Matrix for Emergency Response System (ARMER) will contain a large number of talkgroups and multigroups to support the various agencies that will be subscribing to the system.

The system has multiple administrating agencies that will maintain fleetmaps and system programming information for agencies they are responsible for.

For effective management of the system, a defined process needs to be used to document the fleetmap information that each administrating agency is supporting. This information will be shared with other System Administrators, providing a resource for subscribing agencies to reference when planning interagency communications. System fleetmaps contain configuration information that is classified as "Security Information" and "General Non-Public Data," pursuant to Minn. Stats. § 13.37, Subd. 1a.

2. Technical Background

- **Capabilities**

The fleetmap is parameter information programmed into the system infrastructure and into the subscriber radios to control how the radios will behave on the ARMER system.

The fleetmap itself contains the following detailed information:

Talkgroup	Name of the talkgroup & multigroup as it is programmed into the system.
Talkgroup ID	Numerical ID of the talkgroup or multigroup
Owner	The agency requesting the creation of the talkgroup
Description	General description of the talkgroup & multigroup
Multigroup	If the talkgroup is part of a multigroup, this will identify a multigroup
Priority	Priority level of the talkgroup
Logging	If the talkgroup is going to be recorded
Admin Agency	The agency that is responsible for the system administration for this talkgroup
Site # Access	Will be listing the RF sites individually and if the talkgroup is authorized

Media Access	If media access is permitted for this talkgroup
Global Sharing	The predefined global sharing authorizations
User Groups	The subscriber groups using the talkgroups, this becomes the matrix for the program

The fleetmap spreadsheet will become a documented matrix of the talkgroups in the system and the subscriber groups that are using/sharing these talkgroups.

- **Constraints**

Since the system will be administered by multiple agencies and access is controlled, no master list will be maintained.

3. Operational Context

The local System Administrator shall be responsible for managing the fleetmap information of the subscribers they are representing. This information is also shared with other System Administrators, and the ID information must be kept secure, as described in the "Security" section of the State Standards. ~~this manual.~~

4. Recommended Protocol/Standard

Each administering agency will maintain a master fleetmap spreadsheet containing data on the subscribers for whom they are responsible.

5. Recommended Procedure

- ~~As a local System Administrator makes updates or changes to their fleetmap spreadsheet, the spreadsheet will be emailed to the rest of the System Administrators. This will allow System Administrators to update their information in a timely manner.~~
- ~~Talkgroups that are shared between subscribers of different administrating agencies will be reflected on all spreadsheets. The portion of the administrating agency's spreadsheet containing data on talkgroup ownership will be considered the master reference for the talkgroup.~~
- System Administrators may omit listing any information in the master fleetmap spreadsheets for "unlisted" private talkgroups used for undercover operations and other highly sensitive confidential law enforcement and homeland security activities. Approval by the Statewide Emergency Communications Board (SECB) is required for a talkgroup to be designated "unlisted" and private. The request will include talkgroup system settings, names, priority level, and site access, if applicable. The existence of unlisted talkgroups is considered Non-Public Data and is not subject to disclosure in public meetings.
- The disclosure of fleetmap spreadsheet information including talkgroup IDs, user IDs, user privileges, and other related system information would substantially jeopardize the security of the system. Therefore, the master fleetmap spreadsheets shall be classified as "Security Information" and "Non-Public Data."

6. Management

The Statewide System Administrator will manage the master fleetmap spreadsheet information and the details of the process for communicating the information.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 2	**Configuration and Allocation**	**Status:** Complete
State Standard Number	**2.16.0**	
Standard Title	**Emergency Button**	
Date Established	**01/19/2001**	**SECB Approval**: 09/01/2005
Replaces Document Dated	**04/19/2005**	
Date Revised	**12/14/2015**	

1. Purpose or Objective

The purpose of this standard is to address Emergency Button usage. There will be a large variety of users on the radio system with various Emergency Button needs. The various ways the Emergency Button can be configured allow for flexibility of use; however, it is important to design the system in such a way that when an Emergency Button is pushed, it is responded to quickly and appropriately.

2. Technical Background

- **Capabilities**

The Emergency Button feature, if programmed into radios, will allow a user to send an emergency notification by pressing a button on the radio. The notifications will audibly and visually alert all dispatch console positions displaying the talkgroup that receives emergency notification. Other radios that have the talkgroup selected will also receive the emergency notification and display the radio ID or alias of the radio generating the emergency.

Emergency calls are automatically assigned the highest priority available and would be first available from the queue if the system is in a busy situation. Subscribers' radios can optionally be configured to automatically key the Push-to-Talk (PTT) for a programmed period of time if the Emergency Button is pressed.

- **Constraints**

Emergency Button usage must be directed to a predefined talkgroup in the radio programming, and the talkgroup that is selected for this must be approved by the local System Administrator.

Pressing the Emergency Button does not provide a central radio monitoring point with emergency location information.

3. Operational Context

An agency may use the Emergency Button function if they so elect; however, the process to receive an emergency notification needs to be documented and include resolution for the items listed under Section 4 of this standard.

4. Recommended Protocol/ Standard

Use of the Emergency Button as an emergency signaling option should be available to any agency on the radio system, subject to certain conditions and provisions.

- Agencies are not required to use this capability of the radio system.
- No agency will be permitted to enable their emergency signal on a talkgroup designated as "Emergency Button Restricted."
- All agencies implementing the Emergency Button must have a plan in place to respond to Emergency Button activation.
- All Emergency Button response plans must include, at minimum:
    - A central radio monitoring point that can identify which radio user pushed the button and what the proper agency response should be.
    - A central monitoring point must be available during any/all hours that personnel are using the radio system.
    - A policy for use of the Emergency Button by radio users.
    - A response plan to assist the radio user in need.
    - In the event the central radio monitoring point is not the same agency as the radio user, an agreement on policy, monitoring, use, and response, must be in place among the agencies.

5. Recommended Procedure

N/A

6. Management

Agencies wishing to use the Emergency Button function must coordinate with agency resources that will be receiving the emergency calls. The receiving agencies must have an appropriate plan in place, documenting the process that they will use to handle the emergency notification.

Emergency Button usage must be directed to a predefined talkgroup in the radio programming, and the talkgroup that is selected must be approved by the local System Administrator.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 2	**Configuration and Allocation**	**Status:** Complete
State Standard Number	**2.16.0**	
Standard Title	**Emergency Button**	
Date Established	**01/19/2001**	**SECB ~~RB~~ Approval**: 09/01/2005
Replaces Document Dated	**~~012/31/2003~~4/19/2005**	
Date Revised	**~~04/19/2005~~12/14/2015**	

1. Purpose or Objective

The purpose of this standard is to address Emergency Button usage. There will be a large variety of users on the radio system with various Emergency Button needs. The various ways the Emergency Button can be configured allow for flexibility of use; however, it is important to design the system in such a way that when an Emergency Button is pushed, it is responded to quickly and appropriately.

2. Technical Background

- **Capabilities**

The Emergency Button feature, if programmed into radios, will allow a user to send an emergency notification by pressing a button on the radio. The notifications will audibly and visually alert all dispatch console positions displaying the talkgroup that receives emergency notification. Other radios that have the talkgroup selected will also receive the emergency notification and display the radio ID or alias of the radio generating the emergency.

Emergency calls are automatically assigned the highest priority available and would be first available from the queue if the system is in a busy situation. Subscribers' radios can optionally be configured to automatically key the Push-to-Talk (PTT) for a programmed period of time if the Emergency Button is pressed.

- **Constraints**

Emergency Button usage must be directed to a predefined talkgroup in the radio programming, and the talkgroup that is selected for this must be approved by the local System Administrator.

Pressing the Emergency Button does not provide a central radio monitoring point with emergency location information.

3. Operational Context

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- No agency will be permitted to enable their emergency signal on a talkgroup designated as "Emergency Button Restricted."
- All agencies implementing the Emergency Button must have a plan in place to respond to Emergency Button activation.
- All Emergency Button response plans must include, at minimum:
    - A central radio monitoring point that can identify which radio user pushed the button~~key, the location and nature of the emergency,~~ and what the proper agency response should be.
    - A central monitoring point must be available during any/all hours that personnel are using the radio system.
    - A policy for use of the Emergency Button by radio users.
    - A response plan to assist the radio user in need.
    - In the event the central radio monitoring point is not the same agency as the radio user, an agreement on policy, monitoring, use, and response, must be in place among the agencies.

5. Recommended Procedure

N/A

6. Management

Agencies wishing to use the Emergency Button function must coordinate with agency resources that will be receiving the emergency calls. The receiving agencies must have an appropriate plan in place, documenting the process that they will use to handle the emergency notification.

Emergency Button usage must be directed to a predefined talkgroup in the radio programming, and the talkgroup that is selected must be approved by the local System Administrator.

Allied Radio Matrix for Emergency Response
Standards, Protocols, Procedures

Document Section 3	**Interoperability Standards**	**Status**: Complete
State Standard Number	**3.24.0**	
Standard Title	**Public Safety Answering Point (PSAP) Interoperability**	
Date Established	**1/30/2001**	**SECB Approval**: 10/27/2011
Replaces Document Dated	**10/27/2011**	
Date Revised	**01/04/2016**	

1. Purpose or Objective

The purpose of this standard is to establish minimum guidelines for development of regional interoperability standards enabling users throughout the state to communicate with Public Safety Answering Points (PSAPs).

2. Technical/Operational Background

- Capabilities

The statewide implementation of the ARMER backbone provides the opportunity to establish a uniform approach to using the ARMER system for communicating with PSAPs across the state. For counties that are full participants on the ARMER system, PSAPs generally have access to multiple talkgroups, including statewide and regional interoperability talkgroups.

Two ARMER radio control stations were provided to all non-metro PSAPs through the Public Safety Interoperable Communication (PSIC) grant program, establishing a uniform capability to communicate with participating and non-participating PSAPs. Under the grant agreement, one ARMER radio control station was provided for the purpose of monitoring a regional hailing talkgroup. The second ARMER radio control station was provided for the purpose of patching local communication resources.

- Constraints

The use of ARMER radio control stations to connect to the ARMER system is limited to one talkgroup for each radio control station. As such, non-participating counties operating with the two ARMER radio control stations provided under the PSIC grant are limited to two talkgroups.

With over one hundred PSAPs in Minnesota, it is not practical to require users (regional, state, and transient local) to program separate county talkgroups for each individual county PSAP in the state.

3. Operational Context

A consistent approach to the use of the ARMER radio control stations is required to ensure consistent interoperability with PSAPs throughout the state. This approach must be applied to both full-participation counties and limited-participation counties to be effective. Interoperability among public safety users is anchored upon the Regional Emergency Communications Boards (ECBs) and Emergency Services Boards (ESBs), which have adopted regional interoperability fleetmaps and regional Tactical Interoperable Communication Plans (TICPs).

ECBs and ESBs may designate one or more PSAP as the region's primary PSAP(s).

4. Recommended Protocol/Standard

Each region shall develop a regional standard specifying the following:

- Defining all talkgroups adopted in the region as regional interoperability talkgroups
- Defining which regional talkgroup is adopted in the region for required monitoring by all primary PSAPs within the region
- Designate which regional interoperability talkgroups each primary PSAP is required to maintain for patching to local communication resources

The regional standard must also reference State Standard 3.16.0.

5. Recommended Procedures

ECBs and ESBs shall adopt standards defining regional interoperability talkgroups and their use, including the designation of an interoperability hailing talkgroup that must be monitored by primary PSAPs.

6. Management

The Department of Public Safety (DPS), Division of Emergency Communication Networks (DECN), should provide assistance and direction to ECBs and ESBs in the development of a regional standard consistent with this State Standard. The Statewide Emergency Communications Board (SECB) Interoperability Committee (IOC) shall be responsible for monitoring the development of regional standards and coordinating those standards between regions to the maximum extent possible.

Allied Radio Matrix for Emergency Response
Standards, Protocols, Procedures

Document Section 3	**Interoperability Standards**	**Status**: Complete
State Standard Number	**3.24.0**	
Standard Title	**Public Safety Answering Point (PSAP) Interoperability**	
Date Established	**1/30/2001**	**SECB Approval**: 10/27/2011
Replaces Document Dated	**~~1/30/2001~~10/27/2011**	
Date Revised	**~~10/27/2011~~01/04/2016**	

1. Purpose or Objective

The purpose of this standard is to establish minimum guidelines for development of regional interoperability standards enabling users throughout the state to communicate with Public Safety Answering Points (PSAPs).

2. Technical/Operational Background

- Capabilities

The statewide implementation of the ARMER backbone provides the opportunity to establish a uniform approach to using the ARMER system for communicating with PSAPs across the state. For counties that are full participants on the ARMER system, PSAPs generally have access to multiple talkgroups, including statewide and regional interoperability talkgroups.

Two ARMER radio control stations were provided to all non-metro PSAPs through the Public Safety Interoperable Communication (PSIC) grant program, establishing a uniform capability to communicate with participating and non-participating PSAPs. Under the grant agreement, one ARMER radio control station was provided for the purpose of monitoring a regional hailing talkgroup. The second ARMER radio control station was provided for the purpose of patching local communication resources.

~~The ARMER system can also be used to provide a consistent and reliable capability for PSAP-to-PSAP communications, replacing capabilities once provided over the VHF frequency (155.370 MHz Point-to-Point).~~

- Constraints

The use of ARMER radio control stations to connect to the ARMER system is limited to one talkgroup for each radio control station. As such, non-participating counties operating with the two ARMER radio control stations provided under the PSIC grant are limited to two talkgroups.

With over one hundred PSAPs in Minnesota, it is not practical to require users (regional, state, and transient local) to program separate county talkgroups for each individual county PSAP in the state.

3. Operational Context

A consistent approach to the use of the ARMER radio control stations is required to ensure consistent interoperability with PSAPs throughout the state. This approach must be applied to both full-participation counties and limited-participation counties to be effective. Interoperability among public safety users is anchored upon the Regional Emergency Communications Boards (ECBs) and Emergency Services Boards (ESBs) ~~Radio Boards (RRBs)~~, which have adopted regional interoperability fleetmaps and regional Tactical Interoperable Communication Plans (TICPs).

~~Regional~~ ECBs and ESBs ~~Radio Boards~~ may designate one or more PSAP as the region's primary PSAP(s).

4. Recommended Protocol/Standard

Each region shall develop a regional standard specifying the following:

- Defining all talkgroups adopted in the region as regional interoperability talkgroups
- Defining which regional talkgroup is adopted in the region for required monitoring by all primary PSAPs within the region
- Designate which regional interoperability talkgroups each primary PSAP is required to maintain for patching to local communication resources

The regional standard must also reference State Standard 3.16.0.

5. Recommended Procedures

~~Regional~~ ECBs and ESBs ~~Radio Boards~~ shall adopt standards defining regional interoperability talkgroups and their use, including the designation of an interoperability hailing talkgroup that must be monitored by primary PSAPs.

6. Management

The Department of Public Safety (DPS), Division of Emergency Communication Networks~~s~~ (DECN), should provide assistance and direction to ~~RRBs~~ ECBs and ESBs in the development of a regional standard consistent with this State Standard. The Statewide Emergency Communications Board (SECB) Interoperability Committee (IOC) shall be responsible for monitoring the development of regional standards and coordinating those standards between regions to the maximum extent possible.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 1	**Management of System**	**Status:** Complete
State Standard Number	**1.11.1**	
Standard Title	**System Administrators Definition and Minimum Training Requirements**	
Date Established	**10/01/2003**	**SECB Approval**: 09/01/2005
Replaces Document Dated	**02/17/2005**	
Date Revised	**03/30/2015**	

1. Purpose or Objective

The purpose of this standard is to establish the minimum training standards for system administration staff. This is to ensure that system functionality and integrity are maintained because qualified personnel are performing system administration functions.

There are four levels of system administrators that will be described below.

2. Technical Background

- **Capabilities**
  Different levels of access allow different changes to the system.

- **Constraints**
  N/A

3. Operational Context

System functionality and integrity must be maintained by ensuring that only qualified personnel perform system administration functions.

4. Protocol/ Standard

Local System Administrators are responsible for maintaining system configuration databases for local infrastructure, subscriber databases, and console configuration databases. Therefore, they shall have successfully completed the appropriate training as defined by each class of administration duties:

System Admin Level 1. **Statewide System Administrator**. This Administrator is assigned to MnDOT or its designee and has full access and rights to the system and all subsystems. This Administrator assigns network authority for all other levels. Administrators performing at this

Level must also have qualifications of System Admin Levels 2, 3, and 4. Minimum training for Admin Level 1 consists of formal manufacturer training and MnDOT Best Practices Training.

System Admin Level 2. This Administrator handles any or all of the following based on security rights given by System Admin Level 1: local network controls, databases, console infrastructure administration, system and site maintenance, and other system resources as required. Administrators performing at this Level must also have qualifications of System Admin Levels 3 and 4. Minimum training for Admin Level 2 consists of formal manufacturer training or OTC approved vendor training (see Section 6, Management) and MnDOT Best Practices Training.

System Admin Level 3. This Administrator has access to the system software tools used to manage subscribers. They can add, update, or delete radio and talkgroup id's, handle code plug creation and management, and run appropriate reports. Administrators performing at this Level must also have qualifications of System Admin Level 4. Minimum training for Admin Level 3 consists of formal manufacturer training or OTC approved vendor training (see Section 6, Management) and MnDOT Best Practices Training.

System Admin Level 4. This Administrator has no access to network management. Tracks local ID's, handles mandated reporting, managing their talkgroups, request talkgroup use permissions from others, and responsible for security group permission and for the Communications Subsystem. Minimum training for Admin Level 4 consists of training from a System Admin at any level and an overview of MnDOT Best Practices Training.

It is recommended that all System Administrators view ARMER training modules.

These courses, created on behalf of the Statewide Emergency Communications Board (SECB) and reviewed and approved by subject matter experts, are hosted through the Alexandria Technical & Community College online website. They can be accessed from the Emergency Communication Networks (ECN) website under ARMER Standards.

A user name and password will be needed for these training modules, and instructions for obtaining these are posted on ECN's website under ARMER Standards. While web-based training is supplemental, except for the Minimum Training Requirements, all users must attend formal training for the ARMER system.

All system administrators shall be familiar with the ARMER State Standards.

The appropriate Local System Administrator shall certify that:

- Personnel acting as system administrators are properly trained.
- A current record of personnel who are trained and acting as system administrators will be maintained. The Local System Administrator shall forward this list to the Statewide System Administrator as changes are made. This list will also be included as part of the annual report sent to the Statewide System Administrator each December.
- System access rights shall not be given to personnel who have not met the minimum training requirements for their respective level

5. Recommended Procedure

It is highly recommended that System Administrators read and familiarize themselves with all Minnesota Communications Best Practice Guides as part of their training. The Best Practice Guides are available on ECN's website under Allied Radio (ARMER).

6. Management

Local System Administrators are responsible for ensuring that:

- An appropriate training plan has been developed for their agency that includes statewide interoperability training.
- Minimum training requirements are met, as listed in #4, Recommended Protocol/Standard.
- Only qualified personnel perform system administration functions.
- Local System Administrators are familiar with all applicable sections of the system standards manual.
- The annual MNDOT report is compiled and submitted.

Approval of Curriculum

- All vendors who wish to perform System Administrator training must submit current curriculum for each level of training to the Operations and Technical Committee (OTC) for approval.
- System Administrators with credentials to the ARMER system prior to February 1, 2016, shall retain their current system rights.

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 1	**Management of System**	**Status:** Complete
State Standard Number	**1.11.1**	
Standard Title	**System Administrators Definition and Minimum Training Requirements**	
Date Established	**10/01/2003**	**SECB~~RB~~ Approval**: 09/01/2005
Replaces Document Dated	**02/17/2005**	
Date Revised	**0~~-~~3/~~-~~30/~~-~~2015**	

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1. Purpose or Objective

The purpose of this standard is to establish the minimum training standards for system administration staff. This is to ensure that system functionality and integrity are maintained because qualified personnel are performing system administration functions.

There are four levels of system administrators that will be described below.

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2. Technical Background

- **Capabilities**

  Different levels of access allow different changes to the system.

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- **Constraints**
  - N/A

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3. Operational Context

System functionality and integrity must be maintained by ensuring that only qualified personnel perform system administration functions.

4. Protocol/ Standard

Local System Administrators are responsible for maintaining system configuration databases for local infrastructure, subscriber databases, and console configuration databases. Therefore, they shall have successfully completed the appropriate training ~~on~~ as defined by each class of administration duties:

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System Admin Level 1. Statewide System Administrator. This Administrator is assigned to MnDOT or its designee and has full access and rights to the system and all subsystems. This Administrator assigns network authority for all other levels. Administrators performing at this Level must also have qualifications of System Admin Levels 2, 3, and 4. Minimum training for Admin Level 1 consists of formal manufacturer training and MnDOT Best Practices Training.

System Admin Level 2. This Administrator handles any or all of the following based on security rights given by System Admin Level 1: local network controls, databases, console infrastructure administration, system and site maintenance, and other system resources as required. Administrators performing at this Level must also have qualifications of System Admin Levels 3 and 4. Minimum training for Admin Level 2 consists of formal manufacturer training or OTC approved vendor training (see Section 6, Management) and MnDOT Best Practices Training.

System Admin Level 3. This Administrator has access to the system software tools used to manage subscribers. They can add, update, or delete radio and talkgroup id's, handle code plug creation and management, and run appropriate reports. Elite Admin user. Administrators Persons performing at this Level must also have qualifications of System Admin Level 4. Minimum training for Admin Level 3 consists of formal manufacturer training or OTC approved vendor training (see Section 6, Management) and MnDOT Best Practices Training.

System Admin Level 4. This Administrator has no access to network management. Tracks local ID's, handles mandated reporting, managing missioning their talkgroups, request talkgroup use permissions from others, and responsible for security group permission and for the Communications SubsSystem. Ensure proper technical staff is trained to this standard. Minimum training for Admin Level 4 consists of training from a System Admin at any level and, in addition to an overview of MnDOT Best Practices Training.

The Minimum Training Requirements for each level are as follows:

System Admin Level 1

- Attend formal manufacturer training
- Attend MnDOT Best Practices Training

System Admin Level 2

- Attend formal manufacturer training
- Attend MnDOT Best Practices Training

System Admin Level 3

- May be trained by System Admin level 1, 2, or 3
- Must receive approved code plug training class and mentorship
- Attend MnDOT Best Practices Training

In the absence of formal manufacturer training, a level 1, 2 or 3 may do peer-to-peer Provisioning Manager network training (PM), Private Radio Network Management (PRNM), and Unified Event Manager (UEM).

System Admin Level 4

- May be trained by System Admin at any level.

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- ~~Must receive overview of MNDOT Best Practice Training from instructor~~
- ~~Attend MnDOT Best Practices Training~~

It is recommended that ~~All~~all System Administrators view ARMER training modules. ~~levels of System Admin Training also include the following:~~

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~~Training Modules~~

- ~~Radio 101~~
- ~~History of ARMER~~
- ~~Interoperability 101~~
- ~~Interoperability – How to Communicate Outside of Your Agency~~
- ~~Technology of the ARMER System for Decision Makers~~
- ~~MCC 7500 Dispatch Console Part 1~~
- ~~MCC 7500 Dispatch Console Part 2~~

These courses, created on behalf of the Statewide Emergency Communications Board (SECB) and reviewed and approved by subject matter experts, are hosted through the Alexandria Technical & Community College online website. They can be accessed from the Emergency Communication Network~~'~~s (ECN'~~s~~) website under ARMER Standards.

A user name and password will be needed for these training modules, and instructions for obtaining these are posted on ECN's website under ARMER Standards. While web-based training is supplemental, except for the Minimum Training Requirements, all users must attend formal training for the ARMER system.

All ~~Local~~ system administrators shall be familiar with the ARMER State Standards.

The appropriate Local System Administrator shall certify that:

- Personnel acting as system administrators are properly trained.
- A current record of personnel who are trained and acting as system administrators will be maintained. The Local System Administrator shall forward this list to the Statewide System Administrator as changes are made. This list will also be included as part of the annual report sent to the Statewide System Administrator each December.
- System access rights shall not be given to personnel who have not met the minimum training requirements for their respective level

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5. Recommended Procedure

~~This Standard does not contain specific training procedures or training modules; however,~~ I~~i~~t is highly recommended that System Administrators read and familiarize themselves with all Minnesota Communications Best Practice Guides as part of their training. The Best Practice Guides are available on ECN's website under Allied Radio (ARMER). ~~at https://dps.mn.gov/divisions/ecn/programs/armer/Pages/Guide-Books.aspx.~~

~~Additionally, online training for the ARMER system should be completed. These courses, created on behalf of the Statewide Emergency Communications Board (SECB) and reviewed and approved by subject matter experts, are hosted through the Alexandria Technical & Community College online website. They can be accessed from the Emergency Communication Network's (ECN) website under ARMER Standards.~~

~~A user name and password will be needed for these training modules, and instructions for obtaining these are posted on ECN's website under ARMER Standards or under the Refresher Training Plan section in all Best Practice Guides except Fire. While web-based training is supplemental, except for the Minimum Training Requirements, all users must attend formal classroom training for the ARMER system.~~

6. Management

Local System Administrators are responsible for ensuring that:

- An appropriate training plan has been developed for their agency that includes statewide interoperability training.
- Minimum training requirements are met, as listed in #4, Recommended Protocol/Standard.
- Only qualified personnel perform system administration functions.
- Local System Administrators are familiar with all applicable sections of the system standards manual.
- The annual MNDOT report is compiled and submitted.

Approval of Curriculum

- All vendors who wish to perform System Administrator training must submit current curriculum for each level of training to the Operations and Technical Committee (OTC) for approval.
- System Administrators with credentials to the ARMER system prior to February 1, 2016, shall retain their current system rights.

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Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 3	Interoperability Standards	Status: Under Review
State Standard Number	3.40.0	
Standard Title	CASM Standard for Administration, Data Entry, and Maintenance	
Date Established	11/15/2011	SRB Approval: 11/17/11
Date Revised	09/28/2015	SECB Approval:
Date Revised	In Progress	SECB Approval:

1. Purpose or Objective

The purpose of this standard is to define administration, rules for data entry, and maintenance of information related to Communication Assets Survey and Mapping Tool (CASM) for the State of Minnesota and its seven Regional Emergency Communication Board regions.

2. Technical Background

CASM is a repository for data related to communications assets, personnel, points of contact, and interoperable capabilities. It also provides detailed information about interoperability to Communications Unit Personnel (COMU) assigned to manage communications for a large-scale or mutual aid event/incident. CASM is operated by the Department of Homeland Security Office of Emergency Communications (DHS-OEC) and the Interoperable Communications Technical Assistance Program (ICTAP). The CASM database is hosted by the Space and Naval Warfare Systems Center (SPAWARSYSCEN).

3. Operational Context

CASM is capable of housing information about communication assets, personnel, and points of contact, as well as shared channels and talkgroups for all public safety and public service entities across the United States. Each state is responsible for entering its own information. Minnesota assigns CASM data entry responsibility to the State CASM Administrator and Regional CASM Administrators from each of the Emergency Communication Board regions.

4. Recommended Protocol/Standard

The Statewide Interoperability Coordinator (SWIC) and the Department of Public Safety Emergency Communication Network's (ECN) Standards and Training Coordinator will serve as the State CASM Administrators.

Each Emergency Communications Board region will identify a primary and secondary Regional CASM Administrator and provide that contact information to the ECN Standards and Training Coordinator.

Requests for CASM access received by the State CASM Administrator(s) will be processed by the State CASM Administrator(s) or forwarded to the appropriate Regional CASM Administrator.

The Regional CASM Administrator(s) will create and maintain new user accounts for their region, as well as enter and maintain communications resources for their region. They will also be responsible for oversight of entries made by approved personnel within their region. The

Regional CASM Administrator(s) shall follow the procedures outlined in this standard to ensure that data is entered uniformly across the state. The State CASM Administrator(s) or their designee may provide guidance and/or maintain user accounts in the absence of a Regional CASM Administrator.

5. Recommended Procedure

Any user entering and maintaining data into CASM must adhere to the following structure outline:

General:

- CASM data should be kept current.
- Plain language should be used.
- Acronyms should be avoided (e.g. Bloomington Fire *versus* BFD).
- Abbreviations should be avoided (e.g. Saint *versus* St. *and* Street *versus* St.).
- Phone numbers should be entered in this format: (218) 555-1234.

Agency Entry:

- Do not use "Department," "Office," or similar following an entity's name (e.g. Bloomington Fire *versus* Bloomington Fire Department).
- The full name should be spelled out as far as characters limitations allow.
- Agencies should be listed individually and not under the county in which they reside (e.g. Rochester Fire *versus* Olmsted County-Rochester Fire or Olmsted Fire).
- An "agency" need not be a government entity (e.g. private ambulance services) nor must it be a primary responder (e.g. disaster relief organizations, utilities, railroads, and private hazmat response companies).
- Agencies that have large geographical jurisdiction should be entered separately in each area where the agency serves based on its self-assigned jurisdictional boundaries. As an example, the Minnesota State Patrol should be listed in each of its districts and North Memorial Ambulance should be listed in each of its service regions.
- Agencies that are not interoperable radio users should not be included in CASM and, if found in CASM, should be removed (e.g. POST Board, Minnesota Fire Chief's Association).

Point of Contact (POC) Entry:

- At least two contacts are recommended for each asset.
- The primary contact should be a 24/7 contact with knowledge of the asset and who has physical access to the asset. In many cases this would be a PSAP. Primary contacts for CASM assets should be educated about CASM and the asset(s) for which they may be called. The primary contact should be able to promptly locate and notify the correct person able to provide access to the asset.
- The secondary contact should be the lead person assigned to manage the asset.
- Tertiary contacts should include technical staff and/or key holders to storage sites.
- In all cases, POC data should be thorough and updated semiannually

Asset Entry:

- Include only radio systems that might be used for interoperability or listed on an ICS 205 (Communications Plan).
- Include only talk groups or channels that might be used for interoperability or listed on an ICS 205 (Communications Plan).
- Include equipment that may be used for an event or incident such as emergency resource personnel, gateways, cache radios and Strategic Technology Reserve equipment

Training:
It is highly recommended that users attend a CASM class or view training modules prior to requesting a user name and password. Training modules can be found at www.publicsafetytools.info under CASM NextGen Targeted Training Information.

6. Management

The State CASM Administrator(s) is responsible for CASM data entry, management, and maintenance process for state, federal, tribal, and non-regional entities. The State CASM Administrator(s) is responsible for entering and maintaining state sponsored COMU class lists to ensure that personnel records are kept up-to-date in CASM.

Each Regional Emergency Communication Board is responsible for CASM data entry, management, and maintenance process its regions.

Issues involving the data entry and maintenance process will be reviewed by the state CASM Administrator.

Access:
CASM offers three levels of access to its users:

- MANAGE: Full authority over Minnesota's CASM program
- EDIT: Ability to read/view CASM records and the ability to make additions, changes, and deletions of CASM records
- READ: Ability to read/view CASM records

In all cases, CASM access is defined as statewide access.

State CASM Administrators:

- The Statewide Interoperability Coordinator (SWIC) and the Department of Public Safety Emergency Communication Network's (ECN) Standards and Training Coordinator will serve as the State CASM Administrators
- Possess MANAGE access
- May appoint assistants and grant the assistants EDIT access to CASM
- Should grant EDIT access to Regional CASM Administrators
- Should decide access and, if approved, the level of CASM access for federal, tribal, state, and miscellaneous officials

Regional CASM Administrator:

- Each Statewide Emergency Communications Board region of the state must identify a Regional CASM Administrator
- Should have EDIT access to CASM
- May appoint assistants and grant the assistants EDIT access to CASM
- Should decide access and, if approved, level of CASM access for county, city, and miscellaneous officials within their region

Generally, the following should be afforded READ access to CASM:

- Professional public safety communications personnel (employed by a public entity or under contract to a public entity)
- COMU students currently engaged with a public safety entity during their training and the three-year window to become certified
- COMU credentialed personnel certified and currently engaged with a public safety entity

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 3	Interoperability Standards	Status: Under Review ~~Complete~~
State Standard Number	3.40.0	
Standard Title	CASM~~/TICP~~ Standard for -Administration, Data Entry, and Maintenance	
Date Established	11/15/2011	SRB Approval: ~~9/24/2015~~11/17/11
~~Replaces Document Dated~~Date Revised	~~11/17/2011~~09/28/2015	SECB Approval:
Date Revised	~~09/24/2015~~In Progress	SECB Approval:

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1. Purpose or Objective

The purpose of this standard is to define administration, rules for data entry, and maintenance of information related to ~~for CASM (~~Communication Assets Survey and Mapping Tool (CASM) ~~data entry for radio/homeland security regions to ensure accurate TICP (Tactical Interoperable Communications Plan) reports~~for the State of Minnesota and its seven Regional Emergency Communication Board regions.

2. Technical Background

CASM is a repository for data related to communications assets, personnel, points of contact, and interoperable capabilities. It also provides detailed information about interoperability to Communications Unit Personnel (COMU) assigned to manage communications for a large-scale or mutual aid event/incident. CASM is operated by the Department of Homeland Security Office of Emergency Communications (DHS-OEC) and the Interoperable Communications Technical Assistance Program (ICTAP). The CASM database is hosted by the Space and Naval Warfare Systems Center (SPAWARSYSCEN).

~~For CASM to work properly, the data entry needs to be kept up-to-date. This tool provides detailed information on interoperability to the Communications Unit Leader (COML) assigned to manage the communications for a large-scale or mutual aid event/incident. The program and server is maintained by the Office of Emergency Communications (OEC) and the Interoperable Communications Technical Assistance Program (ICTAP) hosted by Space and Naval Warfare Systems Center (SPAWARSYSCEN).~~

3. Operational Context

CASM is capable of housing ~~houses~~ information about communication assets, personnel, and points of contact, as well as ~~on~~ shared channels and talkgroups for all public safety and public service entities across the United States. Each state is responsible for entering ~~the breakdown of~~its own information. Minnesota assigns CASM data entry responsibility to the State CASM Administrator and Regional CASM Administrators from each of the Emergency Communication Board regions~~breaks the information down to radio regions, entering and maintaining resources for communications interoperability~~.

4. Recommended Protocol/Standard

The Statewide Interoperability Coordinator (SWIC) and the Department of Public Safety Emergency Communication Network's (ECN) Standards and Training Coordinator will serve as the State CASM Administrators.

Each Emergency Communications Board region will identify a primary and secondary Regional CASM Administrator and provide that contact information to the ECN Standards and Training Coordinator.

Requests for CASM access received by the State CASM Administrator(s) will be processed by the State CASM Administrator(s) or forwarded to the appropriate Regional CASM Administrator.

The Regional CASM Administrator(s) will create and maintain new user accounts for their region, as well as enter and maintain communications resources for their region. They will also be responsible for oversight of entries made by approved personnel within their region. The Regional CASM Administrator(s) shall follow the procedures outlined in this standard to ensure that data is entered uniformly across the state. The State CASM Administrator(s) or their designee may provide guidance and/or maintain user accounts in the absence of a Regional CASM Administrator.
~~It is required that all radio regions have a designated CASM representative, along with a TIC plan, to enter and maintain communications resources for their designated region.~~

5. Recommended Procedure
Any user entering and maintaining data into CASM must adhere to the following structure outline:

General:

- CASM data should be kept current.
- Plain language should be used.
- Acronyms should be avoided (e.g. Bloomington Fire *versus* BFD).
- Abbreviations should be avoided (e.g. Saint *versus* St. *and* Street *versus* St.).
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- Agencies should be listed individually and not under the county in which they reside (e.g. Rochester Fire *versus* Olmsted County-Rochester Fire or Olmsted Fire).
- An "agency" need not be a government entity (e.g. private ambulance services) nor must it be a primary responder (e.g. disaster relief organizations, utilities, railroads, and private hazmat response companies).
- Agencies that have large geographical jurisdiction should be entered separately in each area where the agency serves based on its self-assigned jurisdictional boundaries. As an

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Point of Contact (POC) Entry:

- At least two contacts are recommended for each asset.
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- The secondary contact should be the lead person assigned to manage the asset.
- Tertiary contacts should include technical staff and/or key holders to storage sites.
- In all cases, POC data should be thorough and updated semiannually

Asset Entry:

- Include only radio systems that might be used for interoperability or listed on an ICS 205 (Communications Plan).
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- Include equipment that may be used for an event or incident such as emergency resource personnel, gateways, cache radios and Strategic Technology Reserve equipment

Training:

It is highly recommended that users attend a CASM class or view training modules prior to requesting a user name and password. Training modules can be found at www.publicsafetytools.info under CASM NextGen Targeted Training Information.

~~Any region entering and maintaining data must adhere to the structure in place:~~

- ~~Only shared radio systems~~
- ~~Only shared talkgroups and channels (shared channels are common radio channels or talkgroups established and programmed into radios prior to an incident, providing a conduit for interoperable communications among agencies)~~
- ~~Only shared resources (emergency resource personnel, gateways, cache radios, and Strategic Technology Reserve (STR) equipment)~~

6. Management

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Each Regional Emergency Communication Board is responsible for CASM data entry, management, and maintenance process its regions.

Issues involving the data entry and maintenance process will be reviewed by the state CASM Administrator.

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State CASM Administrators:

- The Statewide Interoperability Coordinator (SWIC) and the Department of Public Safety Emergency Communication Network's (ECN) Standards and Training Coordinator will serve as the State CASM Administrators
- Possess MANAGE access
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Regional CASM Administrator:

- Each Statewide Emergency Communications Board region of the state must identify a Regional CASM Administrator
- Should have EDIT access to CASM
- May appoint assistants and grant the assistants EDIT access to CASM
- Should decide access and, if approved, level of CASM access for county, city, and miscellaneous officials within their region

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Generally, the following should be afforded READ access to CASM:

- Professional public safety communications personnel (employed by a public entity or under contract to a public entity)
- COMU students currently engaged with a public safety entity during their training and the three-year window to become certified
- COMU credentialed personnel certified and currently engaged with a public safety entity

~~The Regional Radio Boards (RRB's), Emergency Communications Boards (ECB's), or Emergency Services Boards (ESB's) will be responsible for the CASM/TICP data entry and management/maintenance process within their regions, which includes updating the Regional TICP. Upon completion of the data entry and TICP, by March 31 of each year, the RRB's, ECB's, or ESB's will submit an electronic version to the State CASM Administrative Manager (State Communications Officer) for official use only.~~

~~Minnesota State agencies that own shared resources, as defined in #5 above, will be responsible for CASM data entry and the management/maintenance associated with those resources.~~

~~Issues involving the data entry and maintenance process will be reviewed by the State CASM Administrative Manager. The State Communications Officer from the Division of Homeland Security Emergency Management (HSEM) is responsible for the maintenance of this standard.~~

~~The following areas should be reviewed prior to submitting the electronic version:~~

- ~~Points of contact – Update any that may have moved on or have had telephone number changes.~~
- ~~Additions to the agency's usage – Additional interoperability talkgroups, gateways, and radio caches.~~
- ~~Facility changes/PSAP consolidations – Deletion of old facilities absorbed in a consolidation.~~
- ~~Cache radio – Additions, deletions, talkgroup changes – does the code plug include the interoperable resources for CASM?~~
- ~~If a jurisdiction changed to ARMER during that year, have the VHF assets been removed if no longer necessary?~~

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Sept 23 2015

Operational and Technical Committee (OTC)

Subject:SOA repeater (SOAR)

We are asking the OTC for the use of a SOA repeater pair to be used statewide for the purpose of enhancing coverage for the ARMER radio system.

The intent of the SOA repeater is for radio to radio communication through an 800 MHz repeater and into a gateway, then access into the ARMER radio system using a talk group. Once on the ARMER system a local dispatch agency will control and direct traffic from the SOA repeater.

The weak coverage areas that would use a SOA repeater are low traffic, multi structure with poor or no portable coverage from ARMER. These areas are small in size, which would not justify enhancement with an ASR site and with too many structures to warrant indoor BDA systems, yet difficult enough for outdoor BDA to penetrate indoors. These areas are critical enough for indoor coverage to not be ignored by Emergency responders for communications to dispatch centers. Therefore the repeater will offer portable to portable communications throughout the weak coverage area.

The request for Statewide use is for Interoperability. The SOA repeater could be used for one Emergency personnel, the local Fire/EMS or County wide resources, and to regional partners. It is feasible that multiple SOA repeaters would be located within a County and many throughout a Region. With this in mind, a common SOA repeater pair will achieve interoperability. Individual FCC license for each area would defeat interoperability, cause user confusion, and create code plug nightmares; especially when there could be multiple repeaters located within one jurisdiction. A search to find a statewide 800mhz frequency pair that could be used statewide cannot be found and the locations of these repeaters on non SOA channels are dependent on their locations within the state.

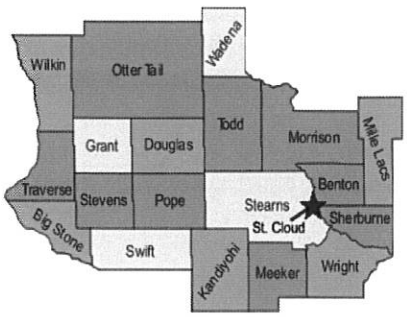
We understand the footprint of the SOA repeater has to be robust to cover the intended area, yet small enough to not over reach the intended area or interfere with SOA or SOA repeaters used elsewhere. A FCC license will be filled for areas requesting operation and the OTC will have control of the SOA repeaters, location and coverage areas. If individual 800Mhz licensed frequencies were to be used, the OTC would have no control of locations or coverage. In addition, the 800 MHz licensed frequencies would be within the framework of the ARMER system repeaters and could possibly cause interference with the ARMER system. The use of the SOA repeater pairs would not cause harm to the ARMER system because of their location within the 800 MHz band.

It is understood that by asking for a SOA repeater pair it could possibly tie up one SOA channel in a small geographic area. Since the traffic over the SOA repeaters will be very low and used when an event occurs within the area, and also taking into account that 3 more SOAs are available along with 2 FSOAs, we feel the burden on the one SOA used will not exists or be very minor at the least.

As for programming of subscriber radios, only individual agencies, county or regional resources that implement a SOA repeater channel would change their subscriber programming to accommodate the SOA repeaters.

We explored the use of 700 MHz repeater channels but with lack of available used equipment and possible antenna issues we are requesting to stay with an 800 MHz pair.

The Central Minnesota Regional Owner's and Operator's Committee suggest using 8SOA3 for this project. That way if there is a jail nearby using 8SOA4, it would not interfere. The concept and request to ask for a SOA repeater pair, is supported by the Central Minnesota Owner's and Operator's committee.



2015 CENTRAL MN OWNERS AND OPERATORS

May 29 2015

Local Repeater Coverage to ARMER. (LRCA)

The purpose of the LRCA is to provide portable indoor coverage in areas where the ARMER signal does not penetrate structures, where the outdoor coverage from ARMER is adequate for portable and mobiles.

ARMER Coverage limitations:

Atwater in Kandiyohi county and Hancock in Stevens county both have the same coverage issues. ARMER signal to a mobile covers the city. ARMER signal coverage in some buildings and outside in town for portables is useable. ARMER signal coverage within brick and metal structures does not work. In this case both towns have Schools with no in building coverage.

System Tested:

We have used a Quantar 800Mhz repeater with an antenna system low enough to give us town coverage, yet contain the signal to the areas that need indoor coverage and a small radius around the town, for our test we used 8TAC94.

A gateway system, consisting of two mobile radios, one on the 8TAC94 and the other on a County ARMER talk group as the interface.

Test Results:

In both cases (Atwater and Hancock) we found no internal buildings that we could not penetrate using the 8TAC94 repeater. The Dispatch centers choose to use a lower County interop talk group which dispatch would monitor, and patch when required. All users inside and outside of the structures understand what channels and "talk groups" to use.

Audio Delays and bonk tones:

A concern of ours was if the audio delays in our system design would cause users on the 8TAC94, ARMER subscriber radios and dispatchers too much delay and make the system unusable. We did not find this to be the case, technically there is a slight delay, but not much more than what users experienced on a VHF repeater system. One drawback we did find is that if an ARMER talk group would be denied, the 8TAC94 user would not know this, as well as the ARMER subscriber or dispatcher not knowing if the 8TAC94 users did hear the talk group traffic.

LRCA/ASR/BDA:

In both of our cases we found the coverage is not bad enough for the Counties to justify an ASR site and use valuable 800 channels. There are too many buildings with poor coverage to implement indoor BDA's. An outdoor BDA system would not guarantee in building penetration.

Frequency to be used and interoperability.

For our test we used 8TAC94 channel which all subscribers have which is good for interoperability even if it is an analog channel. The use of a 8TAC channel makes a strong case for increased coverage within the communities, and would support agencies from across the nation access to dispatch centers. If permitted on nationwide basis it could fill a nationwide access to whatever system each state or territory might. However understanding Region 22 NPSPAC plan, the use of the 8TAC is controlled at the national level and meant only "for interop between agencies not sharing any other compatible communication system, and not meant to be used for routine, daily operations".

Each County was assigned 800Mhz NPSPAC channels that could be used, however some counties have used up their channels. A new licensed channel for each community could be issued at the expense of the 800Mhz spectrum. However in both cases we would forfeit interoperability between agencies.

Therefore we are asking for a Statewide repeater channel to be assigned for the use of the LRCA which could be used by multiple agencies across the state and maintain interoperability, in time though programming of radios.

If there are no state wide repeater channels available, could a 8SOA-R repeater channel be implemented for this purpose across the state, it would again maintain interoperability, in time through programming of radios.

We feel that the use of the LCRA repeater channel will be used infrequently on a daily basis, however provide significant assurance to emergency responders when entering these no coverage areas.

Ace Bonnema Kandiyohi County LSA
Dan Hartog Kandiyohi County Sheriff
Jason Dingman Stevens County Sheriff
David Sisser West Central Communications

Allied Radio Matrix for Emergency Response (ARMER)
Standards, Protocols, Procedures

Document Section 1		**Status:** DRAFT O & O: 12/10/15 RAC: 01/08/16 OTC:
State Standard Number		
Standard Title	**SOA Repeater (SOAR) Standard**	
Date Established	**12/08/15**	**SRB Approval**:
Replaces Document Dated		
Date Revised		

1. Purpose or Objective:
   A SOAR repeater is designed for radio to radio coverage in a poor or no coverage area of the ARMER radio system, also giving the radio one talk group on the ARMER system. With a use of a gateway the SOAR would tie to the ARMER talk group, effectively improving coverage for one talk group and also increasing the radio to radio coverage in the affected area. Once on the ARMER system a local dispatch agency will control and direct the traffic from the SOAR repeater.

2. Technical Background:
   Weak and no coverage areas that are low traffic, multi structure with poor or no portable coverage from the ARMER system will benefit from a SOAR. These areas are small in size and with too many structures to warrant an indoor BDA, and where Outdoor BDA will not penetrate the structures, yet these areas are critical enough for indoor coverage for emergency responders.

   - Constraints:
     The footprint of the SOAR must be contained to address immediate poor coverage area and not over extended beyond the intended coverage area.

3. Operational Context:
   SOAR shall be utilized for communications where a non reliable or no signal is present from the ARMER system.

4. Recommended Protocol/Standard
   Use of SOA 3 as a repeater pair 853.950/808.950 with a NAC code of 293 operating in Project 25 Phase 1 and not utilizing any Encryption.

   The need or necessity for the SOAR channel to be programmed into radios will be determined by each agency. If an agency opts to not place this channel into their radios they will be responsible for any limitations on their ability to communicate within the SOAR coverage area.

5. Recommended Procedure:
   Users when entering into the SOAR coverage area with the intent of using the SOAR system will notify the governing dispatch agency. The agency will be responsible for the use of the SOAR during the event.

DRAFT

Application for a SOAR will be submitted from the agency to their ESB for approval. Application must include.

- Letter explaining reason for SOAR,
- Intended coverage area, how they will limit coverage foot print
- Agency who will be responsible for SOAR and contact information
- FCC form 601, schedule D, schedule H showing SOAR location and coverage area must be attached with application.
- Other SOAR's within a 30 air mile radius
- A Valid FCC License must be obtained for every SOAR

6. Management:
The agency who is applying for the SOAR must follow local regional procedures for approval and will be responsible for its operation. Agency must forward the application to their ESB for approval. The region will forward application to OTC for their final approval.
If a SOAR will be within 30 air miles of another region, the ESB will notify the other region's ESB of its intent to implement a SOAR and its location.

Local System Administrators will be responsible for ensuring that users follow the standards, protocol and procedures.

- Training
SOAR procedures will need to be addressed in the training of all personnel operating within the SOAR system. Training will cover the different on scene procedures utilized by all users. It is critical that all users are aware of the rules and procedures and limitation in utilizing the SOAR channel.

DRAFT

Allied Radio Matrix for Emergency Response (ARMER)

Change Proposal

1. Administrative Information:

Type of Change (Technical or Operational): Both Technical and Operational

Date Submitted: 01/12/16

Submitter (e.g., Regional Radio Board or state agency): Central Mn Regional Radio Board

Change Sponsor (Individual) Contact Information: Central MN RAC & Stevens County

Summary of proposed change(s): Local use of 8SOA3 during an emergency, training, exercises or special events.

Weak and no coverage areas that are low traffic, multi structure with poor or no portable coverage from the ARMER system will benefit from a SOAR. These areas are small in size and with too many structures to warrant an indoor BDA, and where Outdoor BDA will not penetrate the structures, yet these areas are critical enough for indoor coverage for emergency responders.

2. Existing SRB standards impacted:

New Standard written and included.

CM- 3.15.0 How to Use Scene of Action (SOA)

State- 3.15.0 - Use of 700 MHz and 800 MHz Statewide Scene of Action (SOA) Channels *effective 11/22/13*

3.24 RF Control Stations?

3.25.0 - Radio to Radio Cross Band Repeaters?

3. Scope of Change:

Impact on users (e.g., majority of users, minority of users, number of counties/regions): Potentially all

Impact on the placement of resources in communications equipment (e.g., upgrades):

The footprint of the SOAR must be contained to address immediate poor coverage area and not over extend beyond the intended coverage area.

Impact on operational procedures (e.g., changes to operational standards): New Standard (attached)

Impact on user training (e.g., training required for compliance):

Users would need to be instructed on where the talkgroup is located in their radio, how to use it, and informed of any pertinent ARMER standards. SOAR procedures will need to be addressed in the training of all personnel operating within the SOAR system. Training will cover the different on scene procedures utilized by all users. It is critical that all users are aware of the rules and procedures and limitation in utilizing the SOAR channel.

Impact on reprogramming or configuration of end-user equipment:

Subscribers: Use of SOA 3 as a repeater pair 853.950/808.950 with a NAC code of 293 operating in Project 25 Phase 1 and not utilizing any Encryption.

The need or necessity for the SOAR channel to be programmed into radios will be determined by each agency. If an agency opts to not place this channel into their radios they will be responsible for any limitations on their ability to communicate within the SOAR coverage area.

Consoles: Control Stations currently set up for Site Trunking would need to be reprogrammed (if made mandatory).

Other equipment:

4. Existing deficiencies, problems, needs addressed by the proposed changes:

The Hancock School, Hancock Police Department, Chokio Fire Hall, Chokio School and other buildings within these cities have limited to no indoor coverage. A SOAR repeater is designed for radio to radio coverage in a poor or no coverage area of the ARMER radio system, also giving the radio one talk group on the ARMER system. With a use of a gateway the SOAR would tie to the ARMER talk group, effectively improving coverage for one talk group and also increasing the radio to radio coverage in the affected area.

Once on the ARMER system a local dispatch agency will control and direct the traffic from the SOAR repeater.

5. **Expected improvements & benefits resulting from the change:**
   Interoperability

6. **Proposed implementation & transition plan including timeline, milestones and training:**

Start and End Date: Start date could begin immediately.

Description of Implementation Plan: Stevens County is in line for a 2016 Central MN grant, the Stevens County Board of Commissioners has approved this grant and the 50 % match required.

After OTC/Change Management approval: Application for a SOAR will be submitted from the agency to the CM ESB for approval. Application will include.

- Letter explaining reason for SOAR
- Intended coverage area, how they will limit coverage foot print
- Agency who will be responsible for SOAR and contact information
- FCC form 601, schedule D, schedule H showing SOAR location and coverage area will be attached with the application.
- Other SOAR's within a 30 air mile radius
- A Valid FCC License has been obtained

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7. **Preliminary assessments which have been completed (documentation attached):**

System Tested:

We have used a Quantar 800Mhz repeater with an antenna system low enough to give us town coverage, yet contain the signal to the areas that need indoor coverage and a small radius around the town.

A gateway system, consisting of two mobile radios, one on the 8TAC94 and the other on a County ARMER talk group as the interface, this was tested in Hancock and Atwater and both operational.

Test Results:

In both cases (Atwater and Hancock) we found no internal buildings that we could not penetrate using the 8TAC94 repeater. The Dispatch centers choose to use a lower County interop talk group which dispatch would monitor, and patch when required. All users inside and outside of the structures understand what channels and "talk groups" to use.

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A concern of ours was if the audio delays in our system design would cause users on the 8TAC94, ARMER subscriber radios and dispatchers too much delay and make the system unusable. We did not find this to be the case, technically there is a slight delay, but not much more than what users experienced on a VHF repeater system.

8. **List of Attached proposed new or revised Standards, Plans or Best Practices Guides:** Proposed Standard Included

9. **Other Attachments:**

Draft Standard, Letter to OTC Dated 09/23/15 & Letter Dated 05/29/15

10. Tracking and Approvals:

Submitter Approval: 01-11-2016

Signature Date

DECN Receipt:

Signature Date

OTC/IOC Determination of Need:

Signature Date

MnDOT/ECN Approval:

Signature Date

OTC/IOC Approval of Assessments:

Signature Date

Finance Committee Approval:
(if required)

Signature Date

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(if required)

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Next Generation 9-1-1 GIS Project

SECB Project Update
Arden Hills, MN
January 28, 2016

Presenter:
Adam Iten, Project Manager

NG9-1-1 GIS Project Update

- 2015 Accomplishments
- 2016 Goals
  - GIS Data Collection, Assessment, and Preparation
  - GIS Data Workflow and Repository
  - MN NG9-1-1 GIS Standards
  - Communication Plan

2015 Accomplishments

- Hired Project Manager – Q1 2015
- Scope of Work – Q1 2015
- Regional project kickoff meetings – Q2 2015
- Request for Information – Q2 2015
- Formed NG9-1-1 GIS Subcommittee – Q2 2015
- RFI Summary Report – Q3 2015
- Hired two GIS Analysts for project – Q3 2015
- Formed GIS Standards Workgroup – Q3 2015
- Initial NG9-1-1 GIS data collection and assessment – Q3 2015
- Delivered compiled statewide emergency service boundaries for FirstNet project – Q3 2015
- Issue #1 of Project Newsletter – Q4 2015
- Purchased development and repository servers – Q4 2015

2016 Goals

- Data Collection, Assessment, and Preparation
- GIS Data Workflow and Repository
- MN NG9-1-1 GIS Standards
- Communication Plan

GIS Data Collection, Assessment, and Preparation

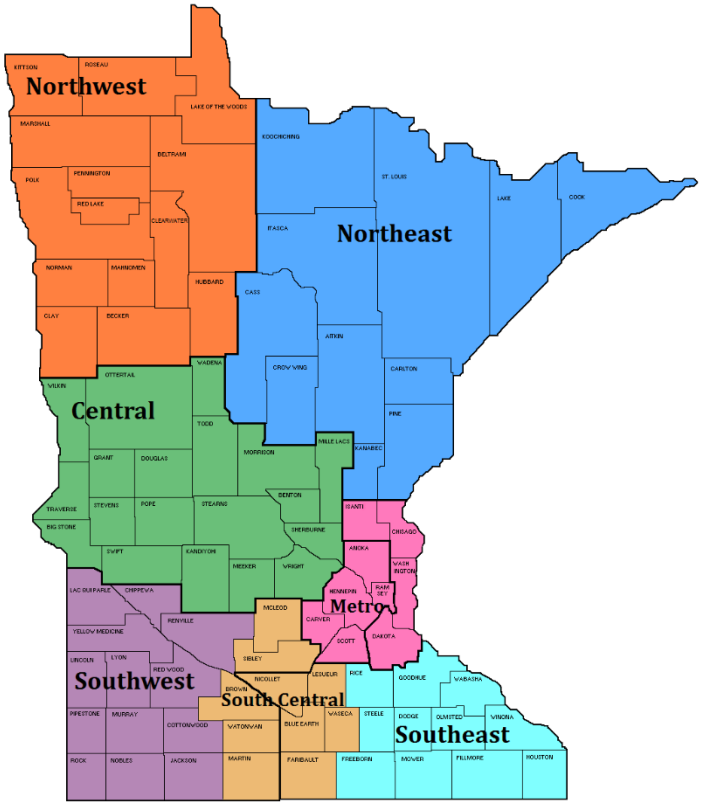
- Required GIS Data
  - Street centerlines with address ranges
  - Address points
  - Public Safety Answering Point (PSAP) boundaries
  - Emergency Service boundaries
    - Fire
    - Law Enforcement
    - Emergency Medical Service
  - Data maintenance boundaries

- Required 9-1-1 Data
  - Master Street Address Guide (MSAG)
  - Automatic Location Information (ALI)
  - English Language Translation (ELT)

GIS Data Collection, Assessment, and Preparation

- Data Readiness Profiles
  - Complete Metro and NE – Q2 2016
  - Complete all regions – Q4 2016

- MSAG/GIS Synchronization Project
  - Metro – ongoing with MESB
  - NE – begin Q2 2016
  - Remaining regions – begin Q3 2016



GIS Data Workflow and Repository

- NG9-1-1 GIS Data Workflow Scope and Requirements
  - Data uploads and portal – Q2 2016
  - Normalization – Q2 2016
  - Validation – Q2 2016
  - Aggregation – begin Q3 2016
  - Provision ECRF/LVF – begin Q3/Q4 2016
- Add PSAPs/counties to NG9-1-1 GIS repository
  - Metro region
    - Centerlines – Q1 2016
    - Remaining GIS data – begin Q3 2016
  - NE region – begin Q2 2016
  - Remaining regions – TBD

MN NG9-1-1 GIS Standards

- Developing GIS data requirements for NG9-1-1 in Minnesota
- Aligning with NENA standards and validate against similar standards
  - Other states (IA, KS, ND, TN, TX) and MRCC
- Standards Workgroup working on Version 1.0
- Stakeholder review of v1.0 – starting Q1 2016
  - Metropolitan Emergency Services Board (MESB)
  - GIS Subcommittee and stakeholders
  - NG9-1-1 Committee and PSAP stakeholders

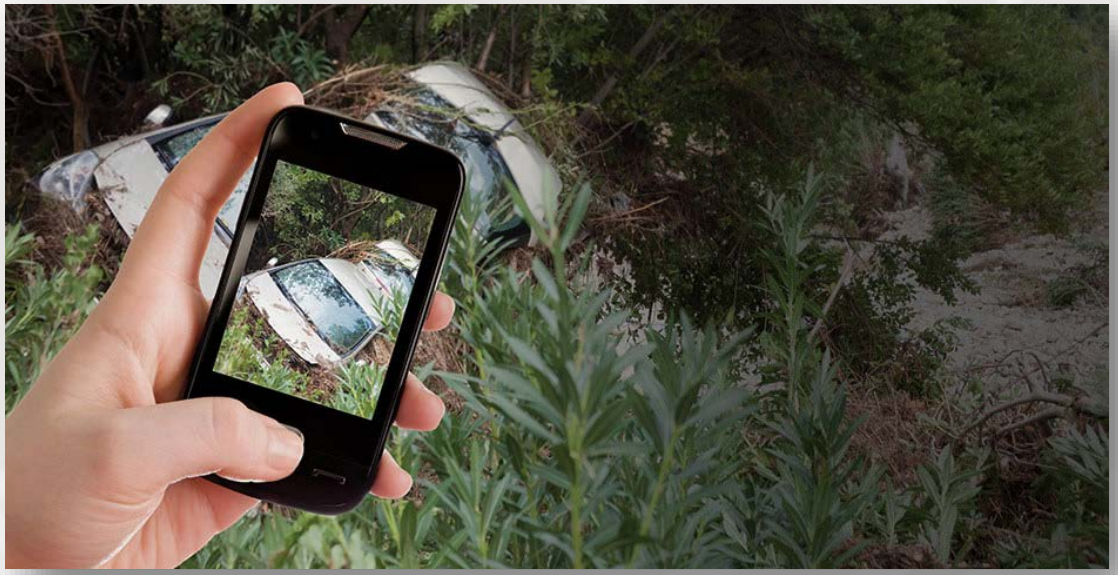
MN NG9-1-1 GIS Standards

- Stakeholder approval of v1.0 – Q3 2016
  - Metropolitan Emergency Services Board (MESB)
  - GIS Subcommittee
  - NG9-1-1 Committee
  - Statewide Emergency Communications Board (SECB)
  - Statewide Geospatial Advisory Council (SGAC)
  - MN Information Technology Agency (MNIT)

Communication Plan

- ECN website
- Monthly
  - Project newsletter
  - GIS Subcommittee meeting
  - NG9-1-1 Committee meeting
  - SECB meeting
- Quarterly
  - Regional PSAP/GIS meetings
  - Statewide Geospatial Advisory Council

Thank You!



Adam Iten, Project Manager
Adam.Iten@state.mn.us
651-201-7559

Allied Radio Matrix for Emergency Response

ARMER

Project Status Report

Reporting Period December 1, 2015 through January 1, 2016

Executive Summary

Overall Status:

	Green (Controlled)	Yellow (Caution)	Red (Critical)	Reason for Deviation
Budget	☒ ☐ ☐	☐ ☐	☐	
Schedule	☐ ☐ ☐	☐ ☒	☐	Land acquisition delays will impact completion of some sites
Scope	☒ ☐ ☐	☐ ☐	☐	

ARMER Backbone

97%

On-the-air

Controls

Issue Status:

Change Status:

- No pending plan changes

Accomplishments

Accomplishments during this Reporting Period:

- The following sites went on the air:
  - Island Lake

- The land acquisition has been completed for the following sites:

Budget

Construction Budget Status as of January 1, 2016

Project Funding	Original Budget	Spent to Date	Unspent Balance Remaining	Encumbered	Available Balance
Phase 3	$45,000,000	$44,952,397.19	$47,602.82	$0.00	***COMPLETE**
SRB Funds (FY 09)	$1,902,831.00	$1,902831.00	$0	$0	**COMPLETE**
Phase 456 (FY 09)	61,996,957.89	$61,981,069.99	$15,887.90	$15,887.90	$ 0.00
Phase 456 (FY 10)	$62,015,407.77	$61,896,212.77	$119,190.00	$119,190.00	$ 0.00
Phase 456 (FY 11, 12, 13)	$61,987,634.34	$52,920,120.22	$9,067,514.12	$2,757,102.04	$ 6,310,412.08
Total Phase 456	$186,000,000.00	$176,797,407.98	$9,202,592.02	$2,892,179.94	**$ 6,310,412.08**
Projected Contingency as of January 1, 2016					$200,412.00

Comments:

Scheduled Milestones / Deliverables

Status updated January 1, 2016

Milestone	Total Sites	Sites Not Started	Sites in Progress	Sites Complete
ARMER Backbone Construction	335 Sites			
Tower Site Acquisition	335	0	8	
Tower Construction & Site Development Work	335	8	5	
Microwave Connectivity & RF Deployment	335	11	0	326 On the Air

Some Sites are on the air, but on the old towers or temporary towers. They are counted as on the air, but still require construction and/or installation at the new tower sites before they are complete:

- Finland
- Duluth South
- Eden Valley
- Lake Crystal

Of the 335, 4 are on temporary sites; sites construct and move still in the works.

SE – all sites completed
SR – 2 land acquisitions remaining, 1 new site plus leased site replacement for Lake Crystal.
SW – all sites completed
CM – 1 land acquisitions remaining, leased site replacement for Eden Valley.
Metro – all sites completed
NW – 2 land acquisitions remaining.
NE – 3 land acquisitions remaining, 5 site under construction.

<u>Completion Targets</u>

ARMER all Phases:

4 original plan sites will be delayed due to delays in land acquisition.

Ongoing ARMER System Work

Motorola System Upgrade

- 7.15 upgrade scheduled to begin May 2016. Lock down for any system changes prior to the 7.15 upgrade will be around the beginning of April 2016.
- Motorola 2016-2020 Support services contract is completed.
- Working on contracts for billing with local agencies involved in 7.19 equipment replacements under the Motorola contract.
- Notice for 2016 Motorola SUAII local agency billing amounts will be sent out in January with actual billing invoices to be sent in March.

Site improvements

- Still working on the addition of card key reader to the equipment shelters. Parts are in. Working on installs, 95% of the sites completed.

- We are continuing our review of our leased sites/land. Plans had always been to build towers in these areas, but to get the project moving we leased sites to get on the air. In review of some of the land and lease cost it would make sense to find land in these areas and build towers. Also looking at long term land lease from private parties, would prefer to have towers we own on state, County or City owned land.

- Replace Lake Crystal leased site with 2 new sites. This adds a new site to the area.

Microwave improvements

- At this point we have identified one bad path where an intermediate microwave site is needed. So we are looking to add a microwave site somewhere in the Cromwell area to split the Lawler – Moose Lake link. Working with the County, a site has been identified. Need to work through the acquisition and easements.

- We are also working to get the DC power systems updated at all sites to improve system reliability. Battery system install is nearing completion.

- Still reviewing microwave performance, ongoing.

VHF interop layer

- VPN access is being worked on for access to MotoBridge network.
- Working on plans in the metro area to simplify the VHF interop layer as we move from Gold Elites to 7500s.

Old towers that need replacement

- We have a number of towers that are on the air for ARMER that are old towers constructed in the 50's. These towers did not pass structural when we added the new ARMER equipment. But the level of structural deficiency was not a risk that required immediate replacement. So we have held off on replacement of these towers to see where we were in the ARMER budget to build what we had planned. We are still holding off on these until we are a little further along with ARMER. Towers not replaced under the ARMER project will be scheduled for replacement as the ARMER maintenance budget allows, estimate 1 to 2 per year until completed.

ARMER Construction Budget (Remaining Work)

			Unencumbered Fund Balance (As of December 1, 2015)		$6,310,412.00
Site Name (Green - site on air)	**County**	**Description**	**Land/ Construction**	**Estimate to Complete**	**Balance**
Duluth South	St Louis	New tower	Spec posted	$280,000.00	$6,030,412.00
Cromwell	Carlton	New tower	Spec posted	$605,000.00	$5,425,412.00
Finland	Lake	Replace Tower	Envir	$440,000.00	$4,985,412.00
NE Lake County	Lake	New tower	DNR/Envir	$930,000.00	$4,055,412.00
Lima Mt	Cook	New tower	DNR/Envir	$880,000.00	$3,175,412.00
Red Lake	Beltrami	New tower	Indent Land	$505,000.00	$2,670,412.00
Eden Valley	Meeker	New tower	Envir/Lease	$500,000.00	$2,170,412.00
Lake Crystal	Blue Earth	New tower	Indent Land	$575,000.00	$1,595,412.00
Madelia	Watonwan	New tower	DOT/Envir	$350,000.00	$1,245,412.00
Molde	St Louis	Replace fire tower	DNR/Envir	$320,000.00	$925,412.00
Berner	Clearwater	New tower	Indent Land	$505,000.00	$420,412.00
PENDING WORK					
Card Key				$20,000.00	$400,412.00
Site clean up, shelter and tower removals				$200,000.00	$200,412.00
MSO - Backup equipment				$0.00	$200,412.00
Microwave DC power - Upgrades to meet run time required				$0.00	$200,412.00
TOWER REPLACEMENTS (This work being held until above projects compeleted)					
Hawley	Replace tower			$600,000.00	
Freedhem	Replace tower			$600,000.00	
Middle River	Replace tower			$600,000.00	
Theif River Falls	Replace tower			$600,000.00	
Windom	Replace tower			$600,000.00	
Virginia	Replace tower			$600,000.00	
Cass Lake	Replace tower			$600,000.00	
Viola	Replace tower			$600,000.00	
Kimball	Replace tower			$600,000.00	
Hoffman	Replace tower			$600,000.00	
New London	Replace tower			$600,000.00	
Woodland	Replace tower			$600,000.00	
Littlefork	Replace tower			$600,000.00	
Roosevelt	Replace tower			$600,000.00	
Hewit: Land Purchase, replace tower.				$500,000.00	
Scandia: Need to look at land purchase.				$100,000.00	
Geneva: Need to look at land purchase, new tower ?				$500,000.00	
Mapleton: Find land and build new tower				$500,000.00	
Red Wing: Land purchase				$100,000.00	

Statewide Emergency Communications Board 2015 Attendance

		Jan 22	Feb	Mar 26	Apr 27	May 28	Jun 23	Jul 23	Aug	Sep 24	Oct 22	Nov	Dec 17
9	**DPS: Mark Dunaski**	X		X	X	X	X	X		X	X		X
9	Alternate: Jackie Mines	X		X	X	X	X	X		X	X		X
7	**MnDOT**: Mukhtar Thakur			X	X	X	X	X			X		X
2	Alternate: Tim Lee/Jim Mohn						X			X			
7	**MnIT:** Dave Van Thiel/Thomas Baden	X		X	X	X	X			X	X		
v	Alternate: vacant	v		v	v	v	v	v		v	v		v
7	**DNR: Rodmen Smith**	X		X		X	X	X			X		X
0	Alternate: Dan Kuntz												
6	**State Patrol**: vacant/Rochelle Schrofer	v		v	X	X	X			X	X		X
4	Alternate: vacant/Tim Boyer	v		v	X			X			X		X
0	**METC: Vince Pellegrin**												
7	Alternate: Thomas Humphrey			X	X	X	X	X		X			X
8	**League of MN Cities, Metro: Bill Droste**	X		X	X	X		X		X	X		X
v	Alternate: VACANT	v		v	v	v	v	v		v	v		v
2	**League of MN Cities, Greater MN: Eric Anderson**	X		X									
5	Alternate: Pat Novacek			X	X			X			X		X
8	**Assoc. of MN Counties, Metro: Liz Workman**	X		X	X	X	X	X		X	X		
v	Alternate: VACANT	v		v	v	v	v	v		v	v		v
8	**Assoc. of MN Counties, Greater MN Jim McMahon**	X		X	X	X	X			X	X		X
v	Alternate: VACANT	v		v	v	v	v	v		v	v		v
7	**Sheriff's Assoc., Metro: Jim Bayer/Kathy Hughes/Chris Caulk**	X		X	X	X	X			X	X		

Statewide Emergency Communications Board 2015 Attendance

8	Alternate: Darlene Pankonie	X			X	X	X	X		X	X		X
7	**Sheriff's Assoc., Greater MN: Dan Hartog**	X		X	X	X	X			X	X		
0	Alternate: Scott Turner/Jeff Marquart												
9	**MESB: Mike Gamache**	X		X	X	X	X	X		X	X		X
3	Alternate: Ted Bearth	X						X		X			
9	**Chiefs of Police Assoc., Metro: Mike Risvold**	X		X	X	X	X	X		X	X		X
v	Alternate: VACANT	v		v	v	v	v	v		v	v		v
6	**Chiefs of Police Assoc., Greater MN: Cari Gerlicher**	X		X	X			X		X			X
7	Alternate: Dave Thomson	X		X	X	X		X		X			X
7	**Fire Chiefs Assoc., Metro: Ulie Seal**	X		X	X	X		X		X			X
v	Alternate: VACANT	v		v	v	v	v	v		v	v		v
8	**Fire Chiefs Assoc., Greater MN: T. John Cunningham**	X		X	X	X	X	X		X	X		
v	Alternate: VACANT	v	v	v	v	v	v	v		v	v		v
8	**Ambulance Assoc., Metro: Joe Glaccum**	X		X	X		X	X		X	X		X
v	Alternate: VACANT	v		v	v	v	v	v		v	v		v
0	**Ambulance Assoc., Greater MN: Brad Hanson**												
7	Alternate: Paul McIntyre	X		X	X			X		X	X		X
5	**Regional Radio Boards: Scott Camps/vacant**	X		X	X	X	X	v		v	v		v
2	Alternate: Vacant/Jeff Jelinski	v		v	v	v	v	X		X			