

STATEWIDE EMERGENCY COMMUNICATIONS BOARD OPERATIONS & TECHNICAL COMMITTEE

September 13, 2016

1:00 – 3:00 p.m.

MnDOT Arden Hills Training Center
1900 West County Road I, Shoreview MN
Chair: Joe Glaccum

Call-in Number: 1-888-742-5095

Code: 2786437892#

AGENDA

Call to Order

Approval of Agenda

Approval of Previous Meeting's Minutes

Announcements

Action Items

1. Fire Service Communications Best Practices Guide (Cathy Anderson)
2. TriTech Interface to MCC7500 (Tom Folie)

Regional Reports

- Northwest (Dolan)
- Northeast (Sammelroth)
- Northern RIC (Bruning)
- Central (Fjerstad)
- Metro (Gundersen)
- Central/Metro RIC (Juth)
- South Central (Wesley)
- Southeast (Freshwater)
- Southwest (Hamann)
- Southern RIC (Donahue)

Other Reports

- MnDOT (Lee)
- System Managers Group (Lee)
- DPS Standing Report (Stromberg)
- Change Management Report (Stromberg)

New Business

Old Business

- Central Region Logger

Adjourn

STATEWIDE EMERGENCY COMMUNICATIONS BOARD

OPERATIONS & TECHNICAL COMMITTEE

August 9, 2016
MnDOT Arden Hills Training Center

MEETING MINUTES

Attendance

Members

Present Member/Alternate

Chair **Joe Glaccum**/Vacant- Minnesota Ambulance Assn
Vice Chair Dave Thomson/Vacant - MN Chiefs of Police Assoc.
John Gundersen/**Ron Jansen** - MESB
Tim Lee/Jim Mohn/Mukhtar Thakur- MnDOT
Tim Boyer/- MN State Patrol
Neil Dolan/Brian Zastoupil- NW Region
Tom Semmelroth/**Rowan Watkins** - NE Region
Terry Wesley/Darrin Haeder - SC Region
Al Fjerstad/**Kristen Lahr**/**Paul McIntyre** - CM Region
Rick Freshwater/**Michael Peterson** - SE Region
Paul A. Johnson/vacant- SW Region

*Members attending are marked with yellow highlight.

Guests reporting:

Name

Representing

Jim Stromberg, ECN
Cathy Anderson, ECN
Carol-Linnea Salmon, ECN
Rick Juth, ECN
Marcus Bruning, ECN
Carrie Oster, Motorola
Nate Timm, Washington County
Robin Weber, AT&T
Todd Tarpley, AT&T presentation
Ronnie Caluda, AT&T presentation
Brian Maholik, AT&T presentation
Brandon Larson, Central Region
Mary Borst, Mayo
Bob Schornstein, Allina Health
Troy Tretter, MESB
Philip Meixner, Pierce County Sheriff's Office
Mitch Sperl, Ancom Technical Center
Kurt W.

CALL TO ORDER

Chair Glaccum calls the meeting to order at 1:00 p.m.

AGENDA REVIEW

Chair Glaccum requests to add to the agenda a request from the Border Patrol for additional I.D.s.

Terry Wesley makes a motion to approve the agenda as amended.

Rick Freshwater seconds the motion.

Motion carries.

APPROVE PREVIOUS MEETING'S MINUTES

John Gundersen makes a motion to approve the June meeting minutes.

Al Fjerstad seconds the motion.

Motion carries.

SHERBURNE COUNTY SHERIFF'S OFFICE REQUEST (KYLE BREFFLE/SETH HANSON)

Fjerstad makes a motion to move this item to the next meeting as no one is in attendance to present it.

Freshwater seconds the motion.

Motion carries.

PUBLIC WORKS BEST PRACTICES GUIDE (CATHY ANDERSON)

Cathy Anderson introduces the revised Public Works Best Practices Guide, as submitted in the meeting materials. Anderson reviews highlights of the changes. A number of the standards were removed because the workgroup determined it was not necessary to reference them in this guide. The names of some standards were changed to reflect updated names. Statewide Interoperability Zone was added on page 3. The names and email addresses of contacts were removed and the ECN website was listed. There were verbiage changes on page 6. On page 7, Standard 1.11.5 was deleted because it has been incorporated into another standard and was sunsetted. On page 9, the section on Very High Frequency (VHF) Interoperability Frequency Plan was deleted. On page 10, the name of a standard was updated and other standards were deleted as referenced previously. On page 11, the links for the state patrol talkgroup information were updated. The table on page 12 and 13 was deleted. On page 13, a section on Statewide Interoperability Zone was added. On page 15, the section on Strategic Technology Reserve was removed. The table on page 16 was verified and the information is correct. COML and COMT information was removed from page 17. On page 18, the contact names were removed.

The names of those who contributed to the workgroup were added but this was done after the materials were submitted for this meeting.

Chair Glaccum asks that the guides list not only those who worked on the version but also in what capacity.

Gundersen notes that when he used the internet links listed on pages 5 and 6 he received an error message. Discussion about links. The preference is to direct people to the ECN website where the links can be kept updated.

Freshwater makes a motion to approve the Public Works Best Practices Guide.

Fjerstad seconds the motion.

Motion carries.

PIERCE COUNTY PARTICIPATION PLAN AMENDMENT (PHILIP MEIXNER)

Philip Meixner introduces the Pierce County Participation Plan Amendment, as presented in the meeting materials. The request is to add the Ellsworth Fire Department for interoperability with Goodhue County and that five of Pierce County's current allotment of radio 55 I.D.s be approved for use in Ellsworth Fire Department radios. Meixner is an authorized ARMER programmer and will program the Ellsworth Fire Department radios and provide training.

Freshwater asks if it would just be S-TACs.
Meixner says primarily S-TACS and MEs.

Fjerstad makes a motion to approve the Pierce County Participation Plan Amendment.

Freshwater seconds the motion.

Motion carries.

ADDITIONAL I.D.S FOR BORDER PATROL (JIM STROMBERG)

Jim Stromberg introduces a request for an additional 175 radio I.D.s for the U.S. Border Patrol, Grand Forks Sector, which will cover a five year plan for growth. Currently, the Grand Forks Border Patrol has two statewide talkgroups and 350 radio I.D.s. The NW, NE, LTAC, STAC and 8C talkgroups are programmed into radios for interoperability. The requested I.D.s are for new dual band radios and for uniformity with fleets and training. Stromberg adds that the new radios would most likely not come to Minnesota or affiliate with ARMER unless a very large incident were to take place.

Freshwater notes that a precedent was set with City of La Crosse.

Freshwater makes a motion to approve the Grand Forks Border Patrol request for additional radio I.D.s.

Gundersen seconds the motion.

Motion carries.

NEW BUSINESS

PUSH-TO-TALK PRESENTATION FROM AT&T (ROBIN WEBER)

Robin Weber, Integrated Solutions Account Manager, AT&T Government and Education division, introduces the presentation and her colleagues: Todd Tarpley, Ronnie Caluda, and Brian Maholik. A PowerPoint presentation is given. A copy of the presentation was added to the meeting materials packet after the meeting.

OLD BUSINESS

CENTRAL REGIONAL LOGGER

Al Fjerstad says it has been operating pretty well. As PSAPs upgrade to SIP to prepare for Text-to-91-1 there have been some issues with Northland Business being able to connect to the central logger. There are a lot of problems with the audio since the upgrade.

Freshwater says the Southeast region experienced the same thing and was down from logging for a few days after the upgrade.

Chair Glaccum says we will keep it on the agenda to keep the committee posted on how it's going.

CHANGE MANAGEMENT STANDARD (STROMBERG)

Stromberg reports that the Change Management Workgroup looked at combining the two change management standards into one and sent the revised standard to the regions for input. Stromberg has heard from all of the regions and there have been no objections to the newly draft Change Management Standard 1.08.1, Version 7.

Ron Jensen adds that the Metro Technical and Operations Committee (TOC) reviewed and approved this revised version.

Gundersen makes a motion to approve the revised Change Management Standard 1.08.1, version 7. Fjerstad seconds the motion.

Chair Glaccum notes that the revised standard was not submitted in the meeting materials and he would like all of the OTC members to have the opportunity to review it as revised.

Discussion that members of the OTC reviewed it during workgroup calls and when it was sent to the regions.

Motion carries with one opposed (Glaccum).

SOA-R CHANGE MANAGEMENT UPDATE (STROMBERG)

Stromberg reports that the workgroup has met by conference call on July 28. The list of those who participated was submitted in the meeting materials. A summary of the issue is that the communities of Atwater and Hancock in Central Minnesota do not have good in-building portable ARMER radio coverage. Outdoor and indoor BDA solutions were not practical. The solution identified was to install a local repeater using conventional 800 MHz frequencies and patching to a dedicated ARMER talkgroup. There was a request to the OTC to use a SOA channel and its repeater pair so that this might be a permanent solution to the coverage issue. There was general agreement from the workgroup that in-building coverage is an issue in some rural communities and that an 800 MHz conventional repeater may be a low-cost solution.

There was some reluctance by the workgroup to move forward using a repeated SOA channel. The concerns related to the coverage footprint and the inability for a user on the ARMER end of the connection to monitor the unrepeated SOA side of the connection before transmitting. This solution would require a major change through the change management process.

Two alternatives were considered by the workgroup and the changes would demote it to a minor change.

The first alternative was to patch a simplex SOA to a dedicated talkgroup rather than using a repeater. There was concern that a simplex channel may not provide adequate coverage.

The second consideration was to use a National Interoperability Channel (8-TAC) in lieu of the SOA. This solution was deemed to be technically and financially very similar to the original SOA solution and was widely accepted by the workgroup. It builds upon the interoperability solutions with the 8-TAC repeaters throughout the state and with non-ARMER users. The concern about being able to monitor the channel for use prior to transmitting was mitigated by the fact that 800 MHz National Interoperability Channels are dedicated interoperability channels, while SOAs are open to any ARMER user for any use. The workgroup understood *interoperability* not to mean the event has to be an emergency or large in scale and contends that this solution provides for *interoperability*. Another benefit is that 8-TACs are already programmed into ARMER radios so no reprogramming would be necessary. The workgroup recommends this solution and that if approved by the OTC it then be sent to the

Interoperability Committee for review.

Discussion that SOAs are digital to digital not analog to digital.

Discussion about accurately mapping where the repeaters are.

Tim Lee recommends the creation of a standard to advise which channels will be used and a coordination process. He suggests that anyone wanting to use this solution should bring a request to the OTC.

Stromberg will draft a standard and submit it to the workgroup for review.

Discussion and general agreement that this topic should be presented to the Interoperability Committee.

**Freshwater makes a motion to move this to the Interoperability Committee for review.
Tom Semmelroth seconds the motion.**

Stromberg adds that because this is falling under the old standard, it is already on the agenda for the next IOC to determine whether this is a major or minor change. The workgroup will meet after the IOC meeting.

Chair Glaccum would like it to come back to this committee after that.

Stromberg notes that in the meeting materials he submitted a chart outlining the process.

Motion carries.

REGIONAL RESPONSES ABOUT ALLOWING L-TACS IN NON-LAW ENFORCEMENT RADIOS LTAC CHANGE MANAGEMENT UPDATE (NATE TIMM)

Stromberg introduces the item and reminds the committee of the background. Maple Grove made a request to put L-TAC Es in its fire radios. The request was withdrawn but this committee asked for the regions to respond to this.

Freshwater and Randy Donahue report that the Southern Region is not in favor of non-law enforcement radios having LTACS in them, including cache radios.

Fjerstad reports that in May the Central Region passed a motion to not allow L-TACs in non-law radios.

Gundersen says that the Metro Region discussed it and considered some exceptions, such as SWAT paramedics. The region voted to have it go back to the workgroup because of outdated language such as on patching.

Freshwater says Mayo Clinic has a medic from Gold Cross who is issued an ERU programmed radio and told not to carry it unless on an ERU event. Fjerstad says Mille Lacs County does this as well. The paramedic only uses that radio when working or training with the SWAT team.

Tom Semmelroth reports that he and Bruce Hegrenes talked about it and it was discussed at the Northeast RAC and the RAC does not approve of LTACs in non-law radios.

Neal Dolan says the Northwest Region discussed it and is not in favor of LTACs in non-law radios.

Stromberg asks if the committee has objections to LTACs in cache radios that are issued by the state. He is hearing that L-TACs should not be in cache radios but also that we have all sorts of L-TACs in cache radios. He thinks that as

long as we are dedicating a certain portion of the cache for law enforcement it is okay.

Gundersen says the way the Metro Region has dealt with this is that it has set radios up with various zones and then doesn't allow scanning in those radios. As the radios are deployed they are set on a zone where there is no L-TAC. The thinking is that then it is a radio that is programmed to function for non-law enforcement.

Glaccum says the question is does the OTC object to LTAC enforcement radios caches being identified and L-TACs being in them. There are no objections from committee members.

Freshwater asks what about revising the standard to say that whoever is responsible for issuing the radio does not give the radios to people who are not authorized to use L-TACs.

Stromberg thinks that should come from the IOC.

Glaccum sums up that there can be a law enforcement cache and when the radios are distributed if there is time available to take out the LTACs if being used by non-law.

L-TAC Change Management Report from Nate Timm

Nate Timm reports that he talked to a few key people, such as Lance Lehman at the Bureau of Criminal Affairs (BCA), and his report is submitted in the meeting materials. It was agreed by representatives of the BCA that having the Metro Region add some encrypted talkgroups will alleviate some of the congestion on the four statewide encrypted LTAC talkgroups. Timm's report outlines four recommended options, all of which he suggests would be major changes in the change management process. Representatives from the BCA preferred option one, which is to add two to four new LTAC encrypted talkgroups. John Gundersen suggested another alternative, which was to keep SIU 1 and 2 under current restrictions and change SIU 3 and SIU 4 to LTAC9-E and LTAC 10-E. Monitor usage and if SIU 3 and 4 are infrequently used, this solution would provide more capacity and maintain taskforce only options. An immediate re-program would not be needed in taskforce radios. LTAC9-E and LTAC10-E would need to be added to law enforcement patrol radios.

Discussion and general agreement to recommend adding four LTAC encrypted talkgroups.

Gunderson makes a motion to recommend the addition of four LTAC-Es and move it through the change management process.

Fjerstad seconds the motion.

Chair Glaccum recommends that if there is no objection from MnDot that the System Managers Group consider whether the LTACs can be added to the radios right away and not turned on until approved. This would be helpful for those who are reprogramming radios now.

Jansen asks where these will be home-zone mapped. Where will these be deployed and how will they be used? Glaccum would ask the SMG to make a recommendation on that.

Motion carries.

REGIONAL REPORTS

Northwest (Zastoupil)

No report.

Northeast (Semmelroth)

Semmelroth reports on how law enforcement radios are used in the region. 125 radios were reprogrammed for the airshow. The law radios stay law and don't go out to anyone. The other cache radios go to everybody.

Northern RIC (Bruning)

No report.

Central (Fjerstad)

Fjerstad reports that the walk-on tour will happen and they should be on the air by the end of the week.

Metro (Gundersen)

Gundersen suggests that it would be helpful to have vendor presentations at the end of the meeting after the completion of business.

Central and Metro RIC (Juth)

No report.

South Central (Wesley)

No report.

Southeast (Freshwater)

No report.

Southwest (Johnson)

Paul Johnson introduces himself as the new representative from the Southwest.

Southern RIC (Donahue)

No report.

OTHER REPORTS

MnDOT (Mohn)

No report.

Systems Managers Group (Mohn)

No report.

DPS Standing Report (Stromberg)

Report was submitted in meeting materials.

Meeting adjourns at 3:20 p.m.

DATE: August 22, 2016
TO: SECB Operations and Technical Committee (OTC)
FROM: Cathy Anderson, Standards & Training Coordinator
RE: Fire Service Best Practice Guide

The Standards Workgroup had two or three phone calls regarding the Fire Service Best Practice Guide and updates made to it.

The calls included the following members of the workgroup: Ulysses Seal (Bloomington Fire Chief), Andrew LaVenture (Firefighter/EMT/COML, Edina Fire Department), Rod Olson (Manager of Radio Communications Electronics, City of Minneapolis), Monte Fronk (Mille Lacs Tribal PD/Tribal Emergency Management), Keith Ruffing (Police Officer, City of St. Peter), Randy Donahue (Southern MN RIC), Pat Wallace (Blue Earth County Communications center Administrator), Dave Thomson (Police Officer, City of Rochester), and Cathy Anderson (Standards & Training Coordinator, ECN).

Additionally, after each call, update information went out to all 72 members of the workgroup for their feedback.

While some of the changes were minor and included verbiage updates, some were more than that. Those changes are listed here and have led to the workgroup's final proposed version of the Fire Service Best Practices Guide:

Websites: verbiage has been changed to ECN's site for most URL's (except NIMS) so people get used to going to the website to find information.

Page 6 table: Remove words "fire specific talkgroups and channels" and just leave it as MN Fire User Talkgroups and Channels. The reasoning behind this change is due to the fact that there are STAC's listed, which are not fire specific.

Page 6 – bottom of page: Where it talks about agencies preplanning for use of SOA channels, there was discussion regarding whether or not there should be more guidance directed toward the use of FSOA's and non-repeated resources. Decision was made to move forward with it the way it is but a fire-specific workgroup be tasked with working on guidance – i.e., based on mutual aid resources use high numbers or drill versus unplanned, etc.

Page 6, Section 3 – Fire Communications Table – TC OP1 was added for when they have wildfires since they have their own Tribal law fire. Discussion about why that talkgroup would be in there since it was not available for all fire departments. It was determined that MNFOG has Tribal resource, as well, so the group was OK with leaving it.

Page 6 – Fire Communications Table. Question arose about the need to add regional talkgroups as needed or as advised by RAC/ECB/SECB. It was determined the verbiage in the table is sufficient – Region Specific TAC (Regional Interop Resource).

Page 9 – added Incident Dispatch Team (IDT). Per Chief Seal, they use that quite frequently.

Page 10 - radio equipment guidance. Determination was made that it was important to add sentence about how purchases should be coordinated with your System Administrator.

Page 11 - Statewide Interop Zone. Added the information for it.

Page 13 - removed all branch IC zone because it changed.

Page 14 - added MN VHF interop resources – Chief Seal checked and said everything is still valid.

Page 15 - took out State Planning verbiage related to VHF Interop Frequency Plan. Was removed from other BPG's interop frequency plans, as well.

Page 16 – names of those who contributed and their titles were added under Other Best Practice Guides section.

Page 17 – general assistance, fire points of contact – rather than specific people to contact, the group felt it was better to go through the RAC, ECB, or ESB. National Guard contact info changed. Workgroup decided nobody needed to know who the original workgroup was any more, but the OTC decided it was important to have names of who last worked on the best practice guides. (See page 16 info)



Minnesota Fire Service

Communications Best Practice Guide

Statewide Radio Board, Operations & Technical Committee, Interoperability
Committee, Fire Services Best Practice Workgroup

Approved by the Statewide Radio Board

September 2016

This document describes recommended best practices, statewide standards, and contact information for Minnesota fire agencies and regions to assist in planning for interoperability with fire and other public safety disciplines.



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DOCUMENT REVISION HISTORY

Date	Revision	Notes	Name
8-19-2016	Entire guide	By Workgroup	Cathy Anderson



Section I: Introduction

The Fire Services Communications Workgroup was created in 2012 to assist and coordinate radio use for fire service providers across the state of Minnesota during and after migration to the ARMER radio system. As ARMER has grown throughout the state, fire service providers need assistance, clarification, coordination, and best practice guidance. This guide was created to specifically address fire-related issues and to assist with planning for fire regions and agencies. Common fire communications paths include the following:

- Fire units to dispatch
- Fire units to fire units
- Fire units to EMS
- Fire units to law enforcement
- Fire units to air ambulance

The highest and most effective level of interoperability is achieved when users share the same radio system and have shared talkgroups directly accessible to them in their radios. A best practice recommendation would be for all users to operate on and share the same radio system. Realizing the difficulty in achieving this goal statewide, this guide will set forth best practices for using the current systems for the best interoperability solutions to address incidents and events. The Minnesota Fire Service Communications Best Practice Guide is a living document, and suggested changes may be submitted to the Emergency Communication Networks (ECN) Standards & Training Coordinator.

NOTE: Questions regarding State Standards or clarification of these standards should be directed to your Local System Administrator, your Regional Interoperability Coordinator (RIC), or the Statewide Interoperability Program Manager.

For current ECN contact information, please see Staff Contacts on ECN's website:
<https://dps.mn.gov/divisions/ecn/pages/default.aspx>.

Section II: Participation in ARMER

Should agencies choose to participate, Statewide Standard 1.10.0, Requesting Participation and Participation Plan Changes, details the requirements for participation. Statewide Standards may be found on ECN's website under ARMER and ARMER Standards.

The decision to participate in ARMER must be made in conjunction with county officials, local public safety, and adjacent Fire Agencies. This must also include an evaluation of interoperability with other radio systems. For questions, please utilize the points of contact in this document.

It is recommended that each agency either link to or attach their Limited or Full ARMER Participation Plan to this document.

Copies of Participation Plans may be obtained from the Local System Administrator, Director or Supervisor of the City, County, or Tribal Dispatch Center or PSAP or from the Regional Advisory Committee (RAC), Regional Emergency Services Board (ESB), or Regional Emergency Communications Board (ECB).



Section III: Statewide Fire Communications

Statewide fire radio communications were developed in Minnesota in the early 1970's to provide radio channels for mutual aid interoperability. The original oversight of the VHF mutual aid frequencies was the responsibility of the Minnesota State Fire Chiefs Association. This responsibility was assumed by the

Statewide Radio Board in 2010, which later formed the Interoperability Committee to work on and coordinate interoperability issues throughout the state. The Interoperability Committee formed the Fire Service Communications Best Practice Workgroup to develop this Best Practice Guide, which will assist fire services across the state.

VFIRE23 (Statewide FIRE)

The State of Minnesota VHF infrastructure will remain available, regardless of ARMER migration. Since issues may arise as the result of bordering states and fire departments continuing to remain on a VHF system, this workgroup recommends that all agencies consider interoperable solutions between ARMER and conventional radio systems.

Section III: Statewide Fire Communications Minnesota Fire Users Statewide Available Talkgroups & Channels

Minnesota Fire Users - Fire Specific Talkgroups & Channels	
Talkgroup/Channel	Intended Use
ARMER 800 MHz -All Fire Users	
Region Specific TAC	Regional Interop Resource
STAC's	Statewide All User Tactical channels 1-12
FSOA 1 & 2	Fire Scene of Action channels 1 & 2
TC OP1	Tribal Statewide Talkgroup (Tribal Gov't Use Only)
VHF CONVENTIONAL	
VFIRE23	VHF National Fire/Statewide Fire
MNFIR2	VHF Statewide Fire Tactical
MNFIR3	VHF Statewide Fire Tactical

It is recommended that agencies preplan for use of an SOA channel in case users lose trunking coverage or are in an area without trunking coverage.

Section V: Fire Service Related Statewide Standards

Statewide standards are available on ECN's website.

Current, applicable statewide fire related standards

- State Standard 2.16.0, Emergency Button
- State Standard 3.15.0, Use of Scene of Action (SOA)
- State Standard 3.16.0, 800 MHz Statewide Incident Response Talkgroups: STACs, ETACs, FTACs, & LTACs
- State Standard 3.16.2, Use of Statewide 800MHz STAC 1-12 Talkgroups - Air Ambulance Emergency Landing Zone Coordination
- State Standard 3.16.3, Cross Spectrum Interoperability System 800 MHz National Mutual Aid Resources
- State Standard 3.16.4, Cross Spectrum Interoperability System VLAW31 Resources



- Statewide Standard 3.16.5, Cross Spectrum Interoperability System VHF Variable Frequency Station (VFS) Resources (replaced Standard 3.5.0, National/Statewide VHF Interoperability Resources VLAW31, VMED28, VFIR23, MIMS)
- Statewide Standard 3.32.0, Statewide Interoperable Plain Language Policy

Section VI: Fire Service Interoperability

Applicable statewide standards

- Statewide Standard 3.16.5, Cross Spectrum Interoperability System VHF Variable Frequency Station (VFS) Resources (replaced Standard 3.5.0, National/Statewide VHF Interoperability Resources VLAW31, VMED28, VFIR23, MIMS)
- Statewide Standards 3.16.0 through 3.36.0, Interoperability Standards

The highest and most effective level of interoperability is achieved when users share the same radio system and have shared talkgroups directly accessible to them in their radios. Shared, interoperable talkgroup resources exist in a variety of forms and may be called common, pool, or tactical. It is imperative that fire agencies plan effectively with mutual aid, law enforcement, EMS, and hospital partners. Fire agencies must be aware of local, regional, and statewide interoperable radio resources and procedures. Best practice is to use shared, interoperable resources by progression, beginning with internal resources, progressing to local/county, regional, and utilizing statewide resources last. Some progression may need to be skipped, depending on the situation – i.e., using an STAC for fire mutual aid.

Planned Events

Planned events require consideration for the jurisdictions that will need to communicate. If shared, interoperable resources are required, planners should start by considering local/county talkgroups first, then progressing to regional and statewide talkgroups as necessary, given the agencies and the type of communications needed. This planning must be coordinated with the controlling dispatch center. Regional and statewide talkgroups need to be checked for availability and reserved by a dispatcher via the StatusBoard.

Emergency Incidents

Emergency response communications also requires pre-planning. Talkgroup progression should also be used and must be assigned by the controlling dispatcher, based on availability. It is important to work closely with the dispatch center to ensure a shared resource is not already in use. Regional and state talkgroups need to be checked for availability and reserved by a dispatcher via the StatusBoard.

Based on the scope of the incident, the controlling dispatcher and the incident command structure must communicate effectively to ensure the most appropriate resource is assigned that matches the radio resource requirements of all responders. Dispatchers and incident commanders may choose to patch local resources or VHF and ARMER resources to manage an incident.

Wildfire and Interface Fires

Initial response to wildfire reports may be done by local fire departments, MN DNR, US Forest Service, US Fish and Wildlife Services, BIA/ Tribal, or National Park Service crews, and will vary based on jurisdiction, land ownership, fire type, and crew/equipment availability. Reports may come to the local PSAP, DNR, and United States Forest Service (USFS) dispatchers directly. Responding agencies will be operating on ARMER and/or



VHF systems from DNR or federal agencies. Due to the highly variable responses possible, it is difficult to describe a typical or model scenario.

The best practice is for agencies in wildfire affected areas to do an annual pre-fire planning session involving the local fire department(s), PSAP representative, and affected State/Tribal DNR and Federal wildfire agencies in the area. Review of communications equipment types, fleet maps and channel lists, system coverage, and patching capability for each of the agencies should occur. Pre-incident development of written incident communication resource lists and incident communications plans is highly recommended and will serve not only in the initial period of wildfire response, but also as a resource for incoming Incident Management Team's (IMT's) if the incident expands to higher Type levels. Pre-incident exercise of those plans is also highly recommended to identify technical or training issues that should be resolved.

Communications Unit Leader (COML)

The Communications Unit Leader, or COML, is responsible for developing plans for the effective use of incident communications equipment and facilities, installing and testing of communications equipment, supervision of the Incident Communications Center, distribution of communications equipment to incident personnel, and the maintenance and repair of communications equipment. The State of Minnesota has instituted a COML program to provide a ready cadre of trained communications unit leaders to assist Incident Commanders (ICs) in providing and maintaining effective incident communications. An IC can request a trained COML through the Minnesota State Duty Officer.

Communications Unit Technician (COMT)

The All-Hazards Communications Technician, or COMT, is responsible for practices and procedures common to radio communications technicians during all-hazards emergency operations. COMTs work within the Incident Command System (ICS) organizational structure.

COMTs may be federal, state, local, tribal emergency response professionals, and/or coordination/support personnel with communications backgrounds. COMTs have a technical aptitude and are responsible for managing a Strategic Technology Reserve (radio cache, mobile communications vehicle, or other deployable communications assets).

The major responsibilities of the COMT are:

- Support COMLs in the design of the communications plan.
- Stand up equipment in support of the communications plan.
- Assign and track radio caches.
- Document all communications activities.

Incident Management Team (IMT)

An Incident Management Team, or IMT, is a multi-agency/multi-jurisdiction team for extended incidents, formed and managed at the State, regional, or metropolitan level. An IMT is deployed as a team of 8-24 trained personnel to manage major and/or complex incidents requiring a significant number of local, regional, and state resources, as well as incidents that extend into multiple operational periods and require a written Incident Action Plan (IAP). An IC can request an IMT through the Minnesota State Duty Officer.



What An IMT Can Do For You

Provide individuals or an entire team with expertise in the following areas:

- Operations
- Logistics
- Incident Commander – Liaison officer
- Planning – Safety
- Finance- personnel cost, equipment cost, etc.
- Public Information Coordinator
- Perform specific functions, manage a designated part of an incident, or manage the entire incident through a Delegation of Authority.

Provide the following to your jurisdiction:

- Frequent updates on activities
- Detailed records of incident costs
- Tracking of resources
- Documentation of expenditures, claims, labor, and legal issues for the incident
- A written incident action plan for each operational period that includes objectives, strategies, tactics, current resources, and plans for communications, safety, and logistics for the incident.

Incident Dispatch Team (IDT)

The IDT is comprised of dispatch professionals from around the Metro Region. The team represents multi-discipline PSAP personnel (police fire, EMS) ready to deploy and bring the unique skills of the dispatcher to augment incident management at an incident or event. The IDT also serves as Minnesota's Telecommunications Emergency Response Taskforce (MN-TERT) under the National Joint TERT Initiative and is recognized nationally.

The Metropolitan Emergency Services Board (MESB) supports the CRTF and IDT/MN-TERT. The CRTF or MN-TERT can be requested for assistance at an emergency event by contacting the Minnesota State Duty Officer. If you have a planned event, please contact the MESB to make arrangements for the IDT.

Section VII: Aeromedical Interoperability

Applicable Statewide Standards

- Statewide Standard 1.13.0, Aircraft Radio Installations and Operations
- Statewide Standard 3.16.2, Use of Statewide 800 MHz STAC 1-12 Talkgroups - Air Ambulance Emergency Landing Zone Coordination

Responder and Aircraft have ARMER radios:

If the aircraft and personnel on scene coordinating the landing both have STAC talkgroups, they may use the STAC that has been assigned to them by the appropriate, controlling primary PSAP.

Responder or Aircraft that do NOT have ARMER radios:

If the aircraft does not have an ARMER radio, but personnel on scene coordinating the landing does, then the controlling, primary PSAP will assign the first available STAC and patch the responding air ambulance to VLAW31 if being landed by law enforcement personnel. If being landed by fire personnel, VFIRE23 is an option. If landing by EMS personnel, VMED28 can be used. If both the responder and the aircraft have VHF radios, they will use the appropriate VHF channel.



Section VIII: ARMER Communications and Interop Training

Applicable Statewide Standards

- Statewide Standard 1.11.1, Training System Administrators
- Statewide Standard 1.11.2, Training Technical Staff
- Statewide Standard 1.11.3, Training Telecommunicators
- Statewide Standard 1.11.4, Training 800 MHz Users

Training and training standards continue to evolve across the state. Metro region fire agencies have been training personnel since 2002 and can be a wealth of information and assistance. Training materials are widely available and can be tailored for individual agency application.

Whether or not your fire agency will be changing radio systems, field and dispatch personnel need proper training on the ARMER system. In addition, they need training on communications and interoperability basics, as outlined in the State Standards, and also in accordance with regional standards and protocol.

Section IX: Radio Equipment Guidance

Equipment authorized for use on the ARMER radio system is outlined on the ECN web site. Also available on the web site is the state contract, R-651, for communications vendors and equipment suppliers. Purchases should be coordinated with your Local System Administrator.

Applicable Standards

- Statewide Standard 1.7.0, Subscriber Radio Standards
- Statewide Standard 2.6.0, Fleetmap Standards
- Statewide Standard 2.7.0, Use of Shared Talkgroups

Mobile and portable radio fleetmap development should be coordinated with the Local System Administrator to ensure cooperative planning with mutual aid, law enforcement, EMS, and hospital partners.

Section X: Statewide Interoperability Zone

ARMER Standard 3.16.6, 800 MHz Statewide Uniform Interoperability Radio Zones, establishes policy and procedures for the implementation of two 800 MHz uniform interoperability zones in all subscriber radios throughout the state. This policy will guarantee standardized Statewide and Nationwide interoperable communications capabilities for all service branches.

This uniformity will provide dispatch centers, Incident Commanders (ICs), and Communications Unit Leaders (COMLs) the ability to develop and adapt incident radio communications plans quickly and effectively without having to rely on reprogramming radios, swapping radios, or establishing patches in the field.

Based upon Standard 3.16.6, all subscriber radios shall have these two statewide interoperability zones (unless a waiver or variance has been granted):



STATEWIDE INTEROP		
ZONE DISPLAY NAME	ROTARY CHANNEL SELECTOR	CHANNEL DISPLAY NAME
MN	1	STAC1
MN	2	STAC2
MN	3	STAC3
MN	4	STAC4
MN	5	STAC5
MN	6	STAC6
MN	7	STAC7
MN	8	STAC8
MN	9	STAC9
MN	10	STAC10
MN	11	STAC11
MN	12	STAC12
MN	13	STAC13E*
MN	14	STAC14E*
MN	15	
MN	16	

CONVENTIONAL INTEROP		
ZONE DISPLAY NAME	ROTARY CHANNEL SELECTOR	CHANNEL DISPLAY NAME
8C	1	8CALL90
8C	2	8TAC91
8C	3	8TAC92
8C	4	8TAC93
8C	5	8TAC94
8C	6	8CALL90D
8C	7	8TAC91D
8C	8	8TAC92D
8C	9	8TAC93D
8C	10	8TAC94D
8C	11	8SOA1
8C	12	8SOA2
8C	13	8SOA3
8C	14	8SOA4
8C	15	FSOA1*
8C	16	FSOA2*

*STAC13E and STAC14E: Required in all DES-equipped radios (or waiver). Must use Statewide Common DES Encryption Key.

*FSOA1 and FSOA2: Required in Fire and EMS only (or waiver). Not allowed in non-Fire and EMS radios.

Personnel should familiarize themselves with ARMER Standard 3.16.6. Specifically the areas of technical background, operational context, standardized policy, and standardized procedure. Your Local System Administrator should be contacted if you have any questions related to technical background and encryption.



Section XI: Standard Minnesota VHF Interop Resources*

CH #	Channel Name	Short Name ¹	Mobile TX	Mobile RX	TX/RX Mobile CTCSS ²	TX/RX Base CTCSS ³
1	VCALL10	VCAL10	155.7525	155.7525	156.7/CSQ	156.7/156.7
2	VTAC11	VTAC11	151.1375	151.1375	156.7/CSQ	156.7/156.7
3	VTAC12	VTAC12	154.4525	154.4525	156.7/CSQ	156.7/156.7
4	VTAC13	VTAC13	158.7375	158.7375	156.7/CSQ	156.7/156.7
5	VTAC14	VTAC14	159.4725	159.4725	156.7/CSQ	156.7/156.7
6	MNCOMM	MNCOMM	155.3700	155.3700	156.7/156.7	156.7/156.7
7	VFIRE23	VFIR23	154.2950	154.2950	156.7/156.7	156.7/156.7
8	MNFIRG2	MNFG2	154.0100	154.0100	156.7/156.7	156.7/156.7
9	MNFIRG3	MNFG3	153.8300	153.8300	156.7/156.7	156.7/156.7
10	DNRTAC1	DNRT1	151.4750	151.4750	156.7/156.7	N/A ⁴
11	VLAW31	VLAW31	155.4750	155.4750	156.7/156.7	156.7/156.7
12	VMED28	VMED28	155.3400	155.3400	156.7/156.7	156.7/156.7
13	IR 2	IR 2	165.9625	170.4125	167.9/167.9	167.9/167.9
14	VTAC14R	TAC14R	154.6875	159.4725	156.7/156.7	156.7/156.7
15	NGRPTR*	NGRPTR	Rest.	Rest.	Rest.	Rest.
16	LE 2*	LE 2	162.2625	167.2500	\$68F/\$68F	\$68F/\$68F

Section XII: VFIRE23 (Statewide Fire) State Planning

The workgroup recommends that fire users maintain VHF radio capability if there is a need for continued interoperability with other states or Minnesota VHF users.

Section XIII: Bordering States Considerations

VHF frequencies, such as VFIRE 23, are widely used by EMS in the adjacent states of North Dakota, South Dakota, Wisconsin, and Iowa. Each of these states' interoperability plans include some provisions for use of the national VCALL and VTAC channels, as well as all the current, primary VHF interoperability channels used in Minnesota. The one exception is MNCOMM (155.370MHz), which is not widely licensed or used in South Dakota.

EMS agencies that may require interoperability with hospitals or EMS across state lines need to carefully consider 800MHz and conventional interoperability.

¹ For use with limited character display radios

* Local option channel if not implemented with LOA or MOU for use of federal channels.

² CTCSS or NAC for subscriber radios. For VCALL10, VTAC11, VTAC12, VTAC13, and VTAC14, use receive CTCSS of 156.7 if needed to mitigate interference.

³ CTCSS or NAC for fixed stations.

⁴ There are no permanent, fixed stations on DNRTAC1.



Section XIV: Other Best Practices Guides

Law Enforcement
Emergency Management/Public Health
Dispatch
Public Works
EMS/Hospitals

These guides have been created as a result of diligent work by the groups involved. Members of the workgroup who contributed to the most recent update of this Guide: Ulysses Seal (Bloomington Fire Chief), Andrew LaVenture (Firefighter/EMT/COML, Edina Fire Department), Rod Olson (Manager of Radio Communications Electronics, City of Minneapolis), Monte Fronk (Mille Lacs Tribal PD/Tribal Emergency Management), Keith Ruffing (Police Officer, City of St. Peter), Randy Donahue (Southern MN RIC), Pat Wallace (Blue Earth County Communications center Administrator), Dave Thomson (Police Officer, City of Rochester), and Cathy Anderson (Standards & Training Coordinator, ECN). These guides provide guidance for their respective public safety disciplines and are available online. Access to completed Best Practice Guides is available on ECN's website under ARMER and Guide Books.

Section XV: Grants Guidance

All ARMER grant information is located on ECN's website.

The following grants are applicable to EMS for ARMER and VHF equipment. Agencies should contact their RAC for more information.

- IECGP Grants, Interoperable Emergency Communication Grant Program
- SHSP Grants, State Homeland Security Program grants
- PSIC Grants, Public Safety Interoperable Communications grant program
- Other, there are other available grant dollars

Section XVI: Fire Points of Contact for General Assistance

For further information about anything in this Best Practice Guide, please contact your Regional Advisory Committee (RAC), Emergency Communications Board (ECB), or Emergency Services Board (ESB).

Section XVII: Assistance from Minnesota National Guard

Assistance from the Minnesota National Guard, including communications requests, may be obtained via the State Duty Officer. The assistance must be requested by the County Sheriff and/or the Mayor in Cities of the First Class. For planned events or exercises, communications assistance may be obtained by contacting:

SFC Thomas J. Simota
J6 JCP Systems NCOIC / Trainer
8076 Babcock Trail
Inver Grove Heights, MN 55076

Communications: 651-268-8055
DSN: 825-8055



Mobile: 651-336-7515

Additional information about Criteria for Usage of the National Guard in Emergency Operations and Procedures for Requests may be found on ECN's website under ARMER and Guide Books and Best Practices.

Section XVIII: Minnesota Emergency Communication Networks Contacts

Current email contact information can be found on the ECN website under Contact and then Staff Contacts.

Section XIV: Regional Radio Board and Advisory Committee Contacts

Fire agencies across Minnesota must be involved with their respective radio regional governance structure. There are radio regions that do not align with fire regions. Be aware of which regions may affect your primary response area.

Contacts for the Regional Emergency Communications Boards/Emergency Services Boards (ECB/ESB) and Regional Advisory Committees (RAC) can be found on ECN's website under ARMER and ARMER Standards.

Section XX: Radio Affiliated Acronyms

You can find a link to commonly used radio-affiliated acronyms on the ECN website.



Minnesota Fire Service

Communications Best Practice Guide

Statewide Radio Board, Operations & Technical Committee, Interoperability
Committee, Fire Services Best Practice Workgroup

Approved by the Statewide Radio Board

September~~May~~ 2016

This document describes recommended best practices, statewide standards, and contact information for Minnesota fire agencies and regions to assist in planning for interoperability with fire and other public safety disciplines.



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- Agency's Participation Plan

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- VFIRE23 (Statewide Fire)

Section IV: Minnesota Fire Specific Statewide Talkgroups & Channels

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- ~~Statewide Standard 3.5.0, National/Statewide VHF Interoperability Resources (VLAW31, VMED28, VFIR23, MIMS)~~
- Statewide Standard 3.15.0, Use of Scene of Action (SOA)
- Statewide Standard 3.16.0, 800 MHz Statewide Incident Response Talkgroups: STACs, ETACs, FTACs, & LTACs
- ~~Statewide Standard 3.16.2, Use of Statewide 800MHz STAC 1-124 Talkgroups - Air Ambulance Emergency Landing Zone Coordination~~
- [Statewide Standard 3.16.5, Cross Spectrum Interoperability System VHF Variable Frequency Station \(VFS\) Resources \(replaced Standard 3.5.0, National/Statewide VHF Interoperability Resources VLAW31, VMED28, VFIR23, MIMS\)](#)
- Statewide Standard 3.32.0, Statewide Interoperable Plain Language Policy
- Statewide Standard 3.31.0, [ARMER System Status Board](#)

Section VI: Fire Service Interoperability

- ~~Statewide Standard 3.5.0, National/Statewide VHF Interoperability Resources (VLAW31, VMED28, VFIR23, MIMS)~~
- Statewide Standards 3.16.0 through 3.36.0, Interoperability Standards
- Planned Events
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- Wildfire and Interface Fires
- Communications Unit Leader (COML)
- Communications Unit Technician (COMT)
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Section VII: Aeromedical Interoperability

- Statewide Standard 1.13.0, ARMER Aircraft Radio Installations and Operations
- Statewide Standard 3.16.2, Use of Statewide 800MHz STAC 1-124 Talkgroups - Air Ambulance Emergency Landing Zone Coordination

Section VIII: ARMER Communications and Interoperability Training

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- Statewide Standard 1.11.1, [System Administrators Definition and Minimum Training Requirements Training System Administrators](#)
- Statewide Standard 1.11.2, Training Technical Staff
- Statewide Standard 1.11.3, Training [Dispatchers Radio Telecommunicators](#)
- Statewide Standard 1.11.4, Training [ARMER End Users 800-MHz Users](#)
- ~~Statewide Standard 1.11.5, Training Non-Participating Radio Users~~

Section IX: Radio Equipment Guidance

- Statewide Standard 1.7.0, Subscriber Radio [Standards Equipment](#)
- Statewide Standard 2.6.0, Fleetmap Standards
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- All Branch IC Zone
- Limited Cross Service Branch Sharing

Section XI: Standard Minnesota VHF Interoperability Resources

Section XII: VFIRE23 State Planning

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Section XVI: Fire Points of Contact for General Assistance

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Section XVIII: Minnesota Emergency Communication Networks Contacts

Section XIX: Regional Radio Board and Advisory Committee Contacts

~~Section XX: Fire Best Practice Workgroup~~

Section XXI: Radio Affiliated Acronyms



DOCUMENT REVISION HISTORY

Date	Revision	Notes	Name
8-19-2016	Entire guide	By Workgroup	Cathy Anderson

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Section I: Introduction

The Fire Services Communications Workgroup was created in 2012 to assist and coordinate radio use for fire service providers across the state of Minnesota during and after migration to the ARMER radio system. As ARMER has grown throughout the state, fire service providers need assistance, clarification, coordination, and best practice guidance. This guide was created to specifically address fire-related issues and to assist with planning for fire regions and agencies. Common fire communications paths include the following:

- Fire units to dispatch
- Fire units to fire units
- Fire units to EMS
- Fire units to law enforcement
- Fire units to air ambulance

The highest and most effective level of interoperability is achieved when users share the same radio system and have shared talkgroups directly accessible to them in their radios. A best practice recommendation would be for all users to operate on and share the same radio system. Realizing the difficulty in achieving this goal statewide, this guide will set forth best practices for using the current systems for the best interoperability solutions to address incidents and events. The Minnesota Fire Service Communications Best Practice Guide is a living document, and suggested changes may be submitted to the [Emergency Communication Networks \(ECN\) Standards & Training Coordinator, Statewide Interoperability Committee through the Statewide Interoperability Program Manager, Tom.M.Johnson@state.mn.us, or by calling 651-201-7552.](#)

NOTE: Questions regarding [Statewide Radio Standards](#) or clarification of these standards should be directed to [your Local County System Administrator, your Regional Interoperability Coordinator \(RIC\), or the Statewide Interoperability Program Manager.](#)

[For current ECN contact information, please see Staff Contacts on ECN's website: https://dps.mn.gov/divisions/ecn/pages/default.aspx.](#)

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Section II: Participation in ARMER

Should [agencies jurisdictions](#) choose to participate, Statewide Standard 1.10.0, Requesting [Participation and Participation Plan Changes, & Configuring Participation](#), details the requirements for participation. Statewide Standards may be found on [ECN's website under ARMER and ARMER Standards, the SRB website, at https://dps.mn.gov/divisions/ecn/Pages/default.aspx.](#)

The decision to participate in ARMER must be made in conjunction with county officials, local public safety, and adjacent Fire Agencies. This must also include an evaluation of interoperability with other radio systems. For questions, please utilize the points of contact in this document.

[It is recommended The workgroup recommends](#) that each agency either link to or attach their [Agency's Limited or Full ARMER Participation Plan](#) to this document.

Copies of [County Participation Plans](#) may be obtained from the [Local System Administrator, Director or Supervisor of the City, County, or Tribal Dispatch Center or PSAP or from the Regional Advisory Committee](#)



(RAC), Regional Emergency Services Board (ESB), or Regional Emergency Communications Board (ECB). State Interoperability Program Manager, Tom.M.Johnson@state.mn.us, or by calling 651-201-7552.

Section III: Statewide Fire Communications

Statewide fire radio communications were developed in Minnesota in the early 1970's to provide radio channels for mutual aid interoperability. The original oversight of the VHF mutual aid frequencies was the responsibility of the Minnesota State Fire Chiefs Association. This responsibility was assumed by the

Statewide Radio Board in 2010, which later formed the Interoperability Committee to work on and coordinate interoperability issues throughout the state. The Interoperability Committee formed the Fire Service Communications Best Practice Workgroup to develop this Best Practice Guide, which will assist fire services across the state.

VFIRE23 (Statewide FIRE)

The State of Minnesota ~~will be narrowbanding its~~ VHF infrastructure, ~~which~~ will remain available, regardless of ARMER migration. Since issues may arise as the result of bordering states and fire departments continuing to remain on a VHF system, ~~and~~ this workgroup recommends that all agencies consider interoperable solutions between ARMER and conventional radio systems.

Section III: Statewide Fire Communications

Minnesota Fire Users Specific Statewide Available Talkgroups & Channels

Minnesota Fire Users - Fire Specific Talkgroups & Channels	
Talkgroup/Channel	Intended Use
ARMER 800 MHz -All Fire Users	
Region Specific TAC	Regional Interop Resource
STAC's Region Specific TAC	Statewide All User Tactical channels 1-12 Regional Interop Resource
FSOA 1 & 2 Region Specific TAC	Fire Scene of Action channels 1 & 2 Regional Interop Resource
TC OP1 Region Specific TAC	Tribal Statewide Talkgroup (Tribal Gov't Use Only) Regional Interop Resource
Fire-FTAC 1-	Statewide Fire Tactical-
Fire-FTAC 2-	Statewide Fire Tactical-
Fire-FTAC 3-	Statewide Fire Tactical-
Fire-FTAC 4-	Statewide Fire Tactical-
FSOA 1 & 2-	Fire Scene of Action-
TC OP1	Tribal Statewide Talkgroup - Tribal Gov't Use only
VHF CONVENTIONAL	
VFIRE23	VHF National Fire/Statewide Fire
MNFIR2	VHF Statewide Fire Tactical
MNFIR3	VHF Statewide Fire Tactical

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It is recommended that agencies preplan for use of an SOA channel in case users lose trunking coverage or are in an area without trunking coverage.

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Section V: Fire Service Related Statewide Standards

Statewide standards are available on [ECN's website](http://ecn.org), ~~the Statewide Radio Board web site-~~
~~Dps.mn.gov/entity/srb~~

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Current, applicable statewide fire related standards

- Statewide Standard 2.16.0, Emergency Button
- Statewide Standard 3.15.0, ~~Use of~~ ~~-How to use a~~ Scene of Action (SOA)
- Statewide Standard 3.16.0, 800 MHz Statewide Incident Response Talkgroups: STACs, ETACs, FTACs, & LTACs
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- ~~State Standard 3.16.3, Cross Spectrum Interoperability System 800 MHz National Mutual Aid Resources~~
- ~~State Standard 3.16.4, Cross Spectrum Interoperability System VLAW31 Resources~~
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The highest and most effective level of interoperability is achieved when users share the same radio system and have shared talkgroups directly accessible to them in their radios. Shared, interoperable talkgroup resources exist in a variety of forms and may be called common, pool, or tactical. It is imperative that fire agencies plan effectively with mutual aid, law enforcement, EMS, and hospital partners. Fire agencies must be aware of local, regional, and statewide interoperable radio resources and procedures. Best practice is to use shared, interoperable resources by progression, beginning with internal resources, progressing to local/county, regional, and utilizing statewide resources last. Some progression may need to be skipped, depending on the situation – i.e., using an ~~FTAC for fire mutual aid or an~~ STAC for fire mutual aid, an air ambulance landing.

Planned Events

Planned events require consideration for the jurisdictions that will need to communicate. If shared, interoperable resources are required, planners should start by considering local/county talkgroups first, then progressing to regional and statewide talkgroups as necessary, given the agencies and the type of communications needed. This planning must be coordinated with the controlling dispatch center. Regional



and statewide talkgroups need to be checked for availability and reserved by a dispatcher via the StatusBoard [available on ARMER dispatch consoles.](#)

Emergency Incidents

Emergency response communications also requires pre-planning. Talkgroup progression should also be used and must be assigned by the controlling dispatcher, based on availability. It is important to work closely with the dispatch center to ensure a shared resource is not already in use. Regional and state talkgroups need to be checked for availability and reserved by a dispatcher via the StatusBoard [available on ARMER dispatch consoles.](#)

Based on the scope of the incident, the controlling dispatcher and the incident command structure must communicate effectively to ensure the most appropriate resource is assigned that matches the radio resource requirements of all responders. Dispatchers and incident commanders may choose to patch local resources or VHF and ARMER resources to manage an incident.

Wildfire and Interface Fires

Initial response to wildfire reports may be done by local fire departments, MN DNR, US Forest Service, US Fish and Wildlife Services, BIA/ Tribal, or National Park Service crews, and will vary based on jurisdiction, land ownership, fire type, and crew/equipment availability. Reports may come to the local PSAP, DNR, and United States Forest Service (USFS) dispatchers directly. Responding agencies will be operating on ARMER and/or VHF systems from DNR or federal agencies. Due to the highly variable responses possible, it is difficult to describe a typical or model scenario.

The best practice is for agencies in wildfire affected areas to do an annual pre-fire planning session involving the local fire department(s), PSAP representative, and affected [State/Tribal](#) DNR and Federal wildfire agencies in the area. Review of communications equipment types, fleet maps and channel lists, system coverage, and patching capability for each of the agencies should occur. —Pre-incident development of written incident communication resource lists and incident communications plans is highly recommended and will serve not only in the initial period of wildfire response, but also as a resource for incoming Incident Management Team's (IMT's) if the incident expands to higher Type levels.— Pre-incident exercise of those plans is also highly recommended to identify technical or training issues that should be resolved.

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- Document all communications activities.

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Provide individuals or an entire team with expertise in the following areas:

- Operations
- Logistics
- Incident Commander – Liaison officer

- Planning – Safety
- Finance- personnel cost, equipment cost, etc.
- Public Information Coordinator
- Perform specific functions, manage a designated part of an incident, or manage the entire incident through a Delegation of Authority.

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- Tracking of resources
- Documentation of expenditures, claims, labor, and legal issues for the incident
- A written incident action plan for each operational period that includes objectives, strategies, tactics, current resources, and plans for communications, safety, and logistics for the incident.

Incident Dispatch Team (IDT)

[The IDT is comprised of dispatch professionals from around the Metro Region. The team represents multi-discipline PSAP personnel \(police fire, EMS\) ready to deploy and bring the unique skills of the dispatcher to augment incident management at an incident or event. The IDT also serves as Minnesota's Telecommunications Emergency Response Taskforce \(MN-TERT\) under the National Joint TERT Initiative and is recognized nationally.](#)



The Metropolitan Emergency Services Board (MESB) supports the CRTF and IDT/MN-TERT. The CRTF or MN-TERT can be requested for assistance at an emergency event by contacting the Minnesota State Duty Officer. If you have a planned event, please contact the MESB to make arrangements for the IDT.

Section VII: Aeromedical Interoperability

Applicable Statewide Standards

- Statewide Standard 1.13.0, Aircraft Radio Installations and Operations
- Statewide Standard 3.16.2, Use of Statewide 800 MHz STAC 1-~~12~~ 4-Talkgroups - Air Ambulance Emergency Landing Zone Coordination

Responder and Aircraft have ARMER radios:

If the aircraft and personnel on scene coordinating the landing both have STAC talkgroups, they may use the STAC that has been assigned to them by the appropriate, controlling primary PSAP.

Responder or Aircraft that do NOT have ARMER radios:

If the aircraft does not have an ARMER radio, but personnel on scene coordinating the landing does, then the controlling, primary PSAP will assign the first available STAC and patch the responding air ambulance to ~~MINSEF (VLAW31)~~ if being landed by law enforcement personnel. If being landed by fire personnel, ~~SWFIRE (VFIRE23)~~ is an option. If landing by EMS personnel, ~~EMS HEAR (VMED28)~~ can be used. If both the responder and the aircraft have VHF radios, they will use the appropriate VHF channel.

Section VIII: ARMER Communications and Interop Training

Applicable Statewide Standards

- Statewide Standard 1.11.1, Training System Administrators
- Statewide Standard 1.11.2, Training Technical Staff
- Statewide Standard 1.11.3, Training ~~Telecommunicators Dispatchers~~
- Statewide Standard 1.11.4, Training 800 MHz Users
- ~~Statewide Standard 1.11.5, Training Non-Participating Radio~~

Training and training standards continue to evolve across the state. Metro region fire agencies have been training personnel since 2002 and can be a wealth of information and assistance. Training materials are widely available and can be tailored for individual agency application.

Whether or not your fire agency will be changing radio systems, field and dispatch personnel need proper training on the ARMER system. In addition, they need training on communications and interoperability basics, as outlined in the ~~State RB~~ Standards, and also in accordance with regional standards and protocol.

Section IX: Radio Equipment Guidance

Applicable Standards

- Statewide Standard 1.7.0, Subscriber Radio Equipment

Equipment authorized for use on the ARMER radio system is outlined on the ~~ECNARMER~~ web site, ~~:-~~ [Dps.mn.gov/entity/srb](https://dps.mn.gov/entity/srb). Also available on the web site is the state contract, R-651, for communications vendors and equipment suppliers. Purchases should be coordinated with your Local System Administrator.



Applicable Standards

- Statewide Standard 1.7.0, Subscriber Radio Standards
- Statewide Standard 2.6.0, Fleetmap Standards
- Statewide Standard 2.7.0, Use of Shared Talkgroups

Mobile and portable radio fleetmap development should be coordinated with the Local county and regional radio system Administrators to ensure cooperative planning with mutual aid, law enforcement, EMS, and hospital partners. The following fleetmap is a best practice example of a typical mobile and portable radio fleetmap.

Best Practice ARMER Fire Fleetmap for mobile & portable radio zones:

*ARMER Standards 3.15 & 3.16 (includes addendum to 3.16, approved 1-24-2011)

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Section X: Fire ARMER Fleetmap Planning Guidance Statewide Interoperability Zone

ARMER Standard 3.16.6, 800 MHz Statewide Uniform Interoperability Radio Zones, establishes policy and procedures for the implementation of two 800 MHz uniform interoperability zones in all subscriber radios throughout the state. This policy will guarantee standardized Statewide and Nationwide interoperable communications capabilities for all service branches.

This uniformity will provide dispatch centers, Incident Commanders (ICs), and Communications Unit Leaders (COMLs) the ability to develop and adapt incident radio communications plans quickly and effectively without having to rely on reprogramming radios, swapping radios, or establishing patches in the field.

Based upon Standard 3.16.6, all subscriber radios shall have these two statewide interoperability zones (unless a waiver or variance has been granted):



*STAC13E and STAC14E: Required in all DES-equipped radios (or waiver). Must use Statewide Common DES Encryption Key.

*FSOA1 and FSOA2: Required in Fire and EMS only (or waiver). Not allowed in non-Fire and EMS radios.

Personnel should familiarize themselves with ARMER Standard 3.16.6. Specifically the areas of technical background, operational context, standardized policy, and standardized procedure. Your Local System Administrator should be contacted if you have any questions related to technical background and encryption.

STANDARDIZED-ARMER SYSTEMWIDE INCIDENT COMMAND-ZONE FOR MAJOR INCIDENT-RESPONSE COORDINATION

Pos	Law-Enforcement	EMS	Fire	Public Service
1	*Local-Choice	*Local-Choice	*Local-Choice	*Local-Choice
2	L-TAC1	E-TAC1	F-TAC1	Regional-TAC1
3	L-TAC2	E-TAC2	F-TAC2	Regional-TAC2
4	L-TAC3	E-TAC3	F-TAC3	Regional-TAC3
5	L-TAC4	E-TAC4	F-TAC4	Regional-TAC4
6	STAC1	STAC1	STAC1	STAC1
7	STAC2	STAC2	STAC2	STAC2
8	STAC3	STAC3	STAC3	STAC3
9	STAC4	STAC4	STAC4	STAC4
10	Regional-TAC	Regional-TAC	Regional-TAC	LOG CH/ BLANK
11	Regional-TAC	Regional-TAC	Regional-TAC	LOG CH/ BLANK
12	Regional-TAC	Regional-TAC	Regional-TAC	LOG CH/ BLANK
13	Regional-TAC	Regional-TAC	Regional-TAC	LOG CH/ BLANK



14	LOC CH/ BLANK	LOC CH/ BLANK	LOC CH/ BLANK	LOC CH/ BLANK
15	P-SOA-1	P-SOA-1	P-SOA-1	LOC CH/ BLANK
16	A-SOA-1	A-SOA-1	A-SOA-1	A-SOA-1

800 MHz Statewide Incident Response Talkgroups—STACs, ETACs, FTACs, & LTACs—3.16.0

All Branch IC Zone

The following alternate “All Branch” STANDARDIZED INCIDENT COMMAND ZONE may be implemented either in addition to, or in lieu of, the service branch specific STANDARDIZED INCIDENT COMMAND ZONE specified in Section 4 of ARMER Statewide Standard 3.16.0.

If the All Branch zone is used, all 16 Statewide Incident Response talkgroups shall be included and they shall be programmed exactly in the order specified below. This will help maintain consistency and facilitate a potential future renaming of these talkgroups to STAC 1-16, as part of ARMER 3.0. The All Branch zone may be implemented in any radio regardless of service branch.

This All Branch IC Zone is programmed into all Strategic Technology Reserve cache radios positioned throughout the State, and is recommended for inclusion in all other cache radios.

Pos	All Branch IC Zone
1	STAC 1
2	STAC 2
3	STAC 3
4	STAC 4
5	LTAC 1
6	LTAC 2
7	LTAC 3
8	LTAC 4
9	FTAC 1
10	FTAC 2
11	FTAC 3
12	FTAC 4
13	ETAC 1
14	ETAC 2
15	ETAC 3
16	ETAC 4

Limited Cross Service Branch Sharing Permitted

In the event multiple, simultaneous incidents throughout the state exhaust all available branch specific talkgroups and STACs and additional talkgroup resources are needed, talkgroups from other service branches may be used on a secondary basis. Any such assignment shall only be made by the dispatch center controlling the incident, the Incident Commander, or the Incident Communications Unit Leader (COML).



Section XI: Standard Minnesota VHF Interop Resources*

CH #	Channel Name	Short Name ¹	Mobile TX	Mobile RX	<u>TX/RX Mobile CTCSS²</u>	<u>TX/RX Base CTCSS³</u>
<u>1</u>	<u>VCALL10</u>	<u>VCAL10</u>	<u>155.7525</u>	<u>155.7525</u>	<u>156.7/CSQ</u>	<u>156.7/156.7</u>
<u>2</u>	<u>VTAC11</u>	<u>VTAC11</u>	<u>151.1375</u>	<u>151.1375</u>	<u>156.7/CSQ</u>	<u>156.7/156.7</u>
<u>3</u>	<u>VTAC12</u>	<u>VTAC12</u>	<u>154.4525</u>	<u>154.4525</u>	<u>156.7/CSQ</u>	<u>156.7/156.7</u>
<u>4</u>	<u>VTAC13</u>	<u>VTAC13</u>	<u>158.7375</u>	<u>158.7375</u>	<u>156.7/CSQ</u>	<u>156.7/156.7</u>
<u>5</u>	<u>VTAC14</u>	<u>VTAC14</u>	<u>159.4725</u>	<u>159.4725</u>	<u>156.7/CSQ</u>	<u>156.7/156.7</u>

¹ For use with limited character display radios

² Local option channel if not implemented with LOA or MOU for use of federal channels.

³ CTCSS or NAC for subscriber radios. For VCALL10, VTAC11, VTAC12, VTAC13, and VTAC14, use receive CTCSS of 156.7 if needed to mitigate interference.

⁴ CTCSS or NAC for fixed stations.



6	MNCOMM	MNCOMM	155.3700	155.3700	156.7/156.7	156.7/156.7
7	VFIRE23	VFIR23	154.2950	154.2950	156.7/156.7	156.7/156.7
8	MNFIRG2	MNFG2	154.0100	154.0100	156.7/156.7	156.7/156.7
9	MNFIRG3	MNFG3	153.8300	153.8300	156.7/156.7	156.7/156.7
10	DNRTAC1	DNRT1	151.4750	151.4750	156.7/156.7	N/A ⁴
11	VLAW31	VLAW31	155.4750	155.4750	156.7/156.7	156.7/156.7
12	VMED28	VMED28	155.3400	155.3400	156.7/156.7	156.7/156.7
13	IR 2	IR 2	165.9625	170.4125	167.9/167.9	167.9/167.9
14	VTAC14R	TAC14R	154.6875	159.4725	156.7/156.7	156.7/156.7
15	NGRPTR*	NGRPTR	Rest.	Rest.	Rest.	Rest.
16	LE 2*	LE 2	162.2625	167.2500	\$68F/\$68F	\$68F/\$68F

Channel	Start	End	Mode	CTCSS	CTCSS	Emergency
1	Freq	Freq	Plan	Hz	Hz	Tone
1	154.2950	154.2950	12.5K	100.0	100.0	154.2950
2	154.2950	154.2950	12.5K	100.0	100.0	154.2950
3	154.2950	154.2950	12.5K	100.0	100.0	154.2950
4	154.2950	154.2950	12.5K	100.0	100.0	154.2950
5	154.2950	154.2950	12.5K	100.0	100.0	154.2950
6	154.2950	154.2950	12.5K	100.0	100.0	154.2950
7	154.2950	154.2950	12.5K	100.0	100.0	154.2950
8	154.2950	154.2950	12.5K	100.0	100.0	154.2950
9	154.2950	154.2950	12.5K	100.0	100.0	154.2950
10	154.2950	154.2950	12.5K	100.0	100.0	154.2950
11	154.2950	154.2950	12.5K	100.0	100.0	154.2950
12	154.2950	154.2950	12.5K	100.0	100.0	154.2950
13	154.2950	154.2950	12.5K	100.0	100.0	154.2950
14	154.2950	154.2950	12.5K	100.0	100.0	154.2950
15	154.2950	154.2950	12.5K	100.0	100.0	154.2950
16	154.2950	154.2950	12.5K	100.0	100.0	154.2950
17	154.2950	154.2950	12.5K	100.0	100.0	154.2950
18	154.2950	154.2950	12.5K	100.0	100.0	154.2950
19	154.2950	154.2950	12.5K	100.0	100.0	154.2950
20	154.2950	154.2950	12.5K	100.0	100.0	154.2950
21	154.2950	154.2950	12.5K	100.0	100.0	154.2950
22	154.2950	154.2950	12.5K	100.0	100.0	154.2950
23	154.2950	154.2950	12.5K	100.0	100.0	154.2950
24	154.2950	154.2950	12.5K	100.0	100.0	154.2950
25	154.2950	154.2950	12.5K	100.0	100.0	154.2950
26	154.2950	154.2950	12.5K	100.0	100.0	154.2950
27	154.2950	154.2950	12.5K	100.0	100.0	154.2950
28	154.2950	154.2950	12.5K	100.0	100.0	154.2950
29	154.2950	154.2950	12.5K	100.0	100.0	154.2950
30	154.2950	154.2950	12.5K	100.0	100.0	154.2950

***SRB Statewide VHF Interoperable Frequency Steering Committee 12-2-2010—**
***This CTCSS Tone is the National Standard emergency tone found in the National Interoperability Field Operations Guide (NIFOG) and recommended by NPSTC. The Minnesota SRB Statewide VHF Interoperability Steering Committee has established this tone in the Minnesota VHF Interop Plan, recognizing that other tones are currently used with VMED28 across the State of Minnesota. The plan recommends that Minnesota agencies using VHF migrate to the national standard CTCSS tone when appropriate, which may be when narrowbanding. Meanwhile, it may be advisable to work through any gaps created by changing the tone in your area.—**

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Section XII: VFIRE23 (Statewide Fire) State Planning

The workgroup recommends that fire users maintain VHF radio capability if there is a need for continued interoperability with other states or Minnesota VHF users.

Excerpt from the SRB MN VHF Interoperable Frequency Plan—Dated 12-2-2010—
 The Statewide VHF Interoperable Frequency Steering Committee established the final revision of the VHF plan on 12-2-2010. This plan describes the primary channel for interagency fire communications in the state as 154.2950 MHz, commonly referred to as Statewide Fire. The national naming convention for this channel is VFIRE 23. Under FCC rules, “this frequency may be designated by common consent as an intersystem mutual-assistance frequency under an area-wide fire communications plan”. The use of this channel is widespread in Minnesota, and permission to utilize this channel outside the fire discipline from the SRB and previous authorities has been limited. The current standard operational mode for this channel is wideband analog, but this channel is subject to the FCC mandated narrowbanding deadline.—

⁴ There are no permanent, fixed stations on DNRTAC1.
 Minnesota Fire Service
 Communications Best Practice Guide
 September 2016/September 2012—
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VHF Narrowbanding (Excerpted from the SRB MN VHF Interoperable Frequency Plan)

The Department of Public Safety (DPS), in conjunction with the SRB has recommended that, in order to preserve interoperability, agencies continue to maintain wideband capability on these channels in mobile and portable radios until the narrowbanding deadline of January 1, 2013. This could be accomplished by programming or updating the four current, statewide interoperability channels in existing radio modes and zones using wideband names as shown in Table and adding the Statewide VHF interoperability zone with narrowband channels into their radios prior to the 60 day transition period.

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DPS proposes that users should proceed with reprogramming base stations on these four statewide channels beginning on October 1, 2012. Reprogramming of mobile and portable radios could begin before that date if users retain wideband capabilities as well. DPS also urges all users to complete narrowbanding these channels in all their radios no later than November 30, 2012. All wideband operations on these channels must cease as of January 1, 2013.

During this 60-day narrowbanding transition period, significant difficulties communicating on these four primary, statewide mutual aid channels may occur if users at an incident are attempting to communicate from a narrowband channel to a wideband channel and vice versa. Even though the operating frequency is unchanged, the substantial differences in operating bandwidth between these modes can cause low or muted audio and/or significant distortion of radio communications.

Section XIII: Bordering States Considerations

VHF frequencies, such as VFIRE 23, are widely used by EMS in the adjacent states of North Dakota, South Dakota, Wisconsin, and Iowa. Each of these states' interoperability plans includes some provisions for use of the national VCALL and VTAC channels, as well as all the current, primary VHF interoperability channels used in Minnesota. The one exception is MNCOMM #45 (155.370MHz), which is not widely licensed or used in South Dakota.

EMS agencies that may require interoperability with hospitals or EMS across state lines need to carefully consider 800MHz and conventional interoperability.

Section XIV: Other Best Practices Guides

- Law Enforcement
- Emergency Management/Public Health
- Dispatch
- Public Works
- EMS/Hospitals

These guides have been created as a result of diligent work by the groups involved. Members of the workgroup who contributed to the most recent update of this Guide: Ulysses Seal (Bloomington Fire Chief), (Bloomington Fire Chief), Andrew LaVenture (Firefighter/EMT/COML, Edina Fire Department), Rod Olson (Bloomington Fire Chief), Rod Olson (Manager of Radio Communications Electronics, City of Minneapolis), Monte Fronk (Minneapolis), Monte Fronk (Mille Lacs Tribal PD/Tribal Emergency Management), Keith Ruffing (Police Ruffing (Police Officer, City of St. Peter), Randy Donahue (Southern MN RIC), Pat Wallace (Blue Earth County Earth County Communications center Administrator), Dave Thomson (Police Officer, City of Rochester), and Rochester), and Cathy Anderson (Standards & Training Coordinator, ECN). These guides provide guidance for



provide guidance for their respective public safety disciplines and are available online. Access to completed Access to completed Best Practice Guides is available on ECN's website under ARMER and Guide Books. - Guide Books. - at: <https://dps.mn.gov/entity/SRB>

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Section XV: Grants Guidance

All ARMER grant information is located on the ARMER web site:
[Dps.mn.gov/entity/srb](https://dps.mn.gov/entity/srb)

The following grants are applicable to EMS for ARMER and VHF equipment. Agencies should contact their RAC for more information.

- IECGP Grants, Interoperable Emergency Communication Grant Program
- SHSP Grants, State Homeland Security Program grants
- PSIC Grants, Public Safety Interoperable Communications grant program
- Other, there are other available grant dollars

Section XVI: Fire Points of Contact for General Assistance

For further information about anything in this Best Practice Guide, please contact your Regional Advisory Committee (RAC), Emergency Communications Board (ECB), or Emergency Services Board (ESB).

Bill Mund, Fire Chief, St. Cloud Fire Department, State Fire Chiefs Radio Board Representative
St. Cloud Fire Department
101 10th Avenue North
St. Cloud, MN 56303
Bill.Mund@ci.stcloud.mn.us
(320) 650-3500

Ulie Seal, Fire Chief, Bloomington Fire Department, State Fire Chiefs Radio Board Representative
Bloomington Fire Department
10 West 95th Street
Bloomington, MN 55420
useal@ci.bloomington.mn.us
(952) 563-4811

Section XVII: Assistance from Minnesota National Guard

Assistance from the Minnesota National Guard, including communications requests, may be obtained via the State Duty Officer. The assistance must be requested by the County Sheriff and/or the Mayor in Cities of the First class. For planned events or exercises, communications assistance may be obtained by contacting:

[SFC Thomas J. Simota](#)
[J6 JCP Systems NCOIC / Trainer](#)
[8076 Babcock Trail](#)



[Inver Grove Heights, MN 55076](#)

[Communications: 651-268-8055](#)

[DSN: 825-8055](#)

[Mobile: 651-336-7515](#)

[Troy P. Tretter, COMB
J6 JCP Systems NGOIC / Trainer
8076 Babcock Trail
Inver Grove Heights, MN 55076](#)

[Communications: 651-268-8055](#)

[DSN: 825-8055](#)

[Mobile: 612-242-2847](#)

[G-net: 8055](#)

Additional information [about Criteria for Usage of the National Guard in Emergency Operations and Procedures for Requests](#) may be obtained on [ECN's website under ARMER and Guide Books and Best Practices](#), the SRB website, <https://dps.mn.gov/entity/srb>

Section XVIII: Minnesota Emergency Communication Networks Contacts

[Current email contact information can be found on the ECN website under Contact and then Staff Contacts.](#)

[Jackie Mines, Director, DECN
jackie.mines@state.mn.us, 651-201-7550](#)

[Thomas Johnson, DECN Statewide Interoperability Program Manager
tom.m.johnson@state.mn.us, 651-201-7552](#)

[Brandon Abley, DECN Technical Coordinator
brandon.abley@state.mn.us, 651-201-7554](#)

[Bill Bernhjelm, DECN North Regional Interoperability Coordinator
william.bernhjelm@state.mn.us, 218-349-3531](#)

[John Tonding, DECN Central/Metro Regional Interoperability Coordinator
john.tonding@state.mn.us, 762-587-8234](#)

[Steve Borchardt, DECN South Regional Interoperability Coordinator
steven.borchardt@state.mn.us, 507-398-9687](#)

[Erny Mattila, DECN Grants Project Coordinator
ernest.mattila@state.mn.us, 651-201-7555](#)

[Dana Wahlberg, 911 Program Manager, DECN](#)

Minnesota Fire Service
Communications Best Practice Guide

[September 2016](#)~~September 2012~~

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dana.wahlberg@state.mn.us, 651-201-7546

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Section XIV: Regional Radio Board and Advisory Committee Contacts

Fire agencies across Minnesota must be involved with their respective radio regional governance structure. There are radio regions that do not align with fire regions. Be aware of which regions may affect your primary response area.

[Contacts for the Regional Emergency Communications Boards/Emergency Services Boards \(ECB/ESB\) and Regional Advisory Committees \(RAC\) can be found on ECN's website under ARMER and ARMER Standards.](#)
[Contacts for the Regional Radio Boards \(RRBs\) and Regional Advisory Committees \(RACs\) can be found on the ARMER web site here: \[Dps.mn.gov/entity/srb\]\(http://Dps.mn.gov/entity/srb\)](#)

Section XX: Fire Best Practice Workgroup

- Ulie Seal — useal@ci.bloomington.mn.us
- Curt Meyer — Curtis.Meyer@co.hennepin.mn.us
- Dan Lallier — diallier@virginiamn.us
- Dean Wrobbel — Dean.Wrobbel@ci.stcloud.mn.us
- Erik Jonassen — jonassene@virginiamn.us
- James Van Eyll — jvaneyll@Longlakemn.us
- John Tonding — John.tonding@state.mn.us
- Cathy Anderson — Cathy.Anderson@state.mn.us
- Mark Marcy — Mark.Marcy@state.mn.us
- Steven Borchardt — Steven.Borchardt@state.mn.us
- Thomas Humphrey — Thomas.Humphrey@metrotransit.org

- Vince Pellegrin — Vince.Pellegrin@metc.state.mn.us
- William Bernhjelm — William.Bernhjelm@state.mn.us
- Thomas Johnson — Tom.M.Johnson@state.mn.us

Section XXI: Radio Affiliated Acronyms

You can find a link to commonly used radio-affiliated acronyms on the ECN website.
Link to commonly used, radio affiliated acronyms — <https://dps.mn.gov/entity/SRB>, click on ARMER, and then click on Acronyms.



August 17, 2016

MESB Radio TOC

Subject: MCC7500 Interface Request

The LOGIS consortium is moving to a TriTech system for Computer Aided Dispatch and we have a desire to interface to the MCC7500 consoles for our member PSAPS. I've attached a diagram provided by LOGIS network staff after consultation with John Anderson. Below is the description of the interface provided by TriTech.

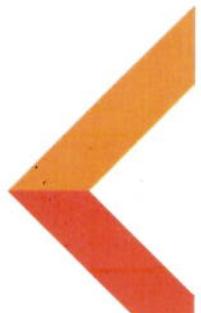
TriTech – Motorola MCC 7500 Interface Description

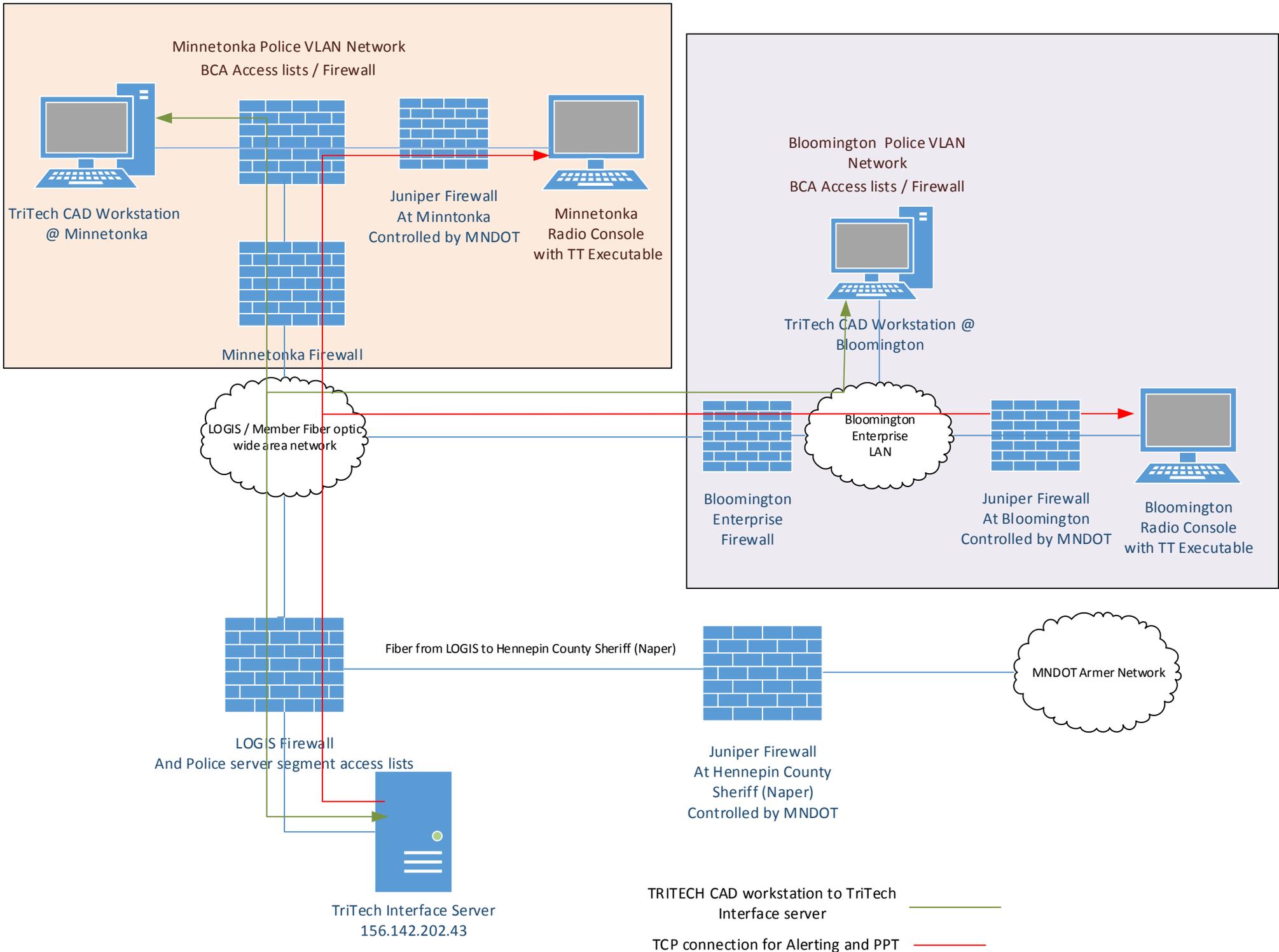
The Interface will function with 4 public safety answering points, Bloomington, Minnetonka, Rice and Steele 911 Center and the Dakota Communications Center. The interface calls for the installation of a small executable on the consoles. The TriTech executable running on the console exists to receive communication via TCP and call the corresponding function calls. The executable also receives the API messages, which can be sent back to our interface server via the TCP connection.

The interface shall generate alerting/notification messages for stations upon unit dispatch events.

Alerting/Notification: The interface shall generate alerting/notification messages for stations upon unit dispatch events. Alert messages will correspond to a "Page Alias" or "Page Alias Group" identified in the console as a representation of a station.

LOGIS is requesting MESB approval.





Allied Radio Matrix for Emergency Response



ARMER

Project Status Report

Reporting Period August 1, 2016 through September 1, 2016

Executive Summary

Overall Status:

	Green (Controlled)	Yellow (Caution)	Red (Critical)	Reason for Deviation
Budget	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
Schedule	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	Land acquisition delays will impact completion of some sites
Scope	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	

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

Budget

Construction Budget Status as of September 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	\$1,902,831.00	\$0	\$0	COMPLETE
Phase 456 (FY 09)	61,996,957.89	\$61,996,957.89	\$0	\$0	\$ 0
Phase 456 (FY 10)	\$62,015,407.77	\$61,912,097.77	\$28,000.00	\$0	\$ 28,000.00
Phase 456 (FY 11, 12, 13)	\$61,987,634.34	\$54,938,100.92	\$7,049,533.42	\$2,438,806.33	\$ 4,610,727.09
Total Phase 456	\$186,000,000.00	\$178,847,156.58	\$7,152,843.42	\$2,514,116.33	\$ 4,638,727.09
Projected Contingency as of September 1, 2016					\$363,727.09

Comments:

Scheduled Milestones / Deliverables

Status updated September 1, 2016

Milestone	Total Sites	Sites Not Started	Sites in Progress	Sites Complete
ARMER Backbone Construction	335 Sites			
Tower Site Acquisition	335	0	5	
Tower Construction & Site Development Work	335	6	6	
Microwave Connectivity & RF Deployment	335	6	3	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:

- o Finland
- o Duluth South
- o Eden Valley
- o Lake Crystal

Of the 326, 4 are on temporary sites; sites construct and move still in the works.

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

Completion Targets

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 in process. Master site upgrades completed. RF sites software upgraded. Working through dispatch center upgrades.
- Working on contracts for billing with local agencies involved in 7.19 equipment replacements under the Motorola contract. Only contract not completed yet is with the City of Minneapolis.
- 2016 Motorola SUAll local agency billings received.
- SUAllPlus 7.19 equipment upgrades. Over the next 5 years before we can go to Motorola system release 7.19 all circuit based simulcast and Quantar based ASR sites need to be upgraded. The hardware and services are all included in our current SUAllPlus contract. We have meet with the agencies that this involves and we have come up with the following tentative implementation schedule for these upgrades:

<u>System</u>	<u>Equipment order</u>	<u>Install</u>
○ St Cloud subsystem	1 st half 2016(Rcvd)	2 nd half 2016
○ Stearns ASR sites	1 st half 2016(Rcvd)	2 nd half 2016
○ Enfield(Wright-Sherburne) subsystem	1 st half 2016(Rcvd)	2 nd half 2016
○ Goodhue subsystem	1 st half 2016(Rcvd)	2 nd half 2016
○ North Branch(Isanti-Chisago) subsystem	1 st half 2016(Rcvd)	2 nd half 2016
○ City Center	1 st half 2016(Rcvd)	Completed
○ Olmsted subsystem	2 nd half 2016	2 nd half 2016
○ Hennepin SAT COW ASR	2 nd half 2016	2 nd half 2016
○ Norwood (Carver- Scott) subsystem	1 st half 2017	1 st half 2017
○ Hennepin West subsystem	2 nd half 2017	2 nd half 2017
○ Washington subsystem	1 st half 2018	1 st half 2018
○ Minneapolis subsystem	2 nd half 2018	2 nd half 2018
○ Dakota subsystem	1 st half 2019	1 st half 2019
○ Hennepin East subsystem	2 nd half 2019	2 nd half 2019
○ Anoka subsystem	1 st half 2020	1 st half 2020
○ Ramsey subsystem	2 nd half 2020	2 nd half 2020

Planned system upgrades during this contract period are:

- 7.17 May of 2018
- 7.19 End of 2020

Site improvements

- Still working on the addition of card key reader to the equipment shelters. Working on installs, 98% 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. Specification being prepared for bidding the tower constructions. .

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. Tower contract awarded. Site construction in process.
- Still reviewing microwave performance, ongoing.

VHF interop layer

- VPN access for access to MotoBridge network has been worked out. Remote access is now working.
- Working on plans in the metro area to simplify the VHF interop layer as we move from Gold Elites to 7500s. Removing the metro voters and voting receivers scheduled for Oct 3, 2016.

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 1950'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 SEPTEMBER 1, 2016)					\$4,638,727.09
Site Name <small>(Green - site on air)</small>	County	Description	Land/ Construction	Estimate to Complete	Balance
Madelia	Watonwan	New tower	Specs at Bldg Sec	\$350,000.00	\$4,288,727.09
Lake Crystal	Blue Earth	New tower	Specs at Bldg Sec	\$575,000.00	\$3,713,727.09
Red Lake	Beltrami	Working on Lease	Red Lake-Lease	\$75,000.00	\$3,638,727.09
Finland	Lake	Replace Tower	Envir	\$440,000.00	\$3,198,727.09
NE Lake County	Lake	New tower	DNR/Envir	\$930,000.00	\$2,268,727.09
Lima Mt	Cook	New tower	DNR/Envir	\$880,000.00	\$1,388,727.09
Molde	St Louis	Replace fire tower	DNR/Envir	\$320,000.00	\$1,068,727.09
Berner	Clearwater	New tower	Indent Land	\$505,000.00	\$563,727.09
PENDING WORK					
Site clean up, shelter and tower removals				\$200,000.00	\$363,727.09
				\$0.00	\$363,727.09
TOWER REPLACEMENTS (This work being held until above projects completed)					
Cass Lake	Replace tower	Working on spec for replacement		\$600,000.00	
Windom	Replace tower	Working on spec for replacement		\$600,000.00	
Freedhem	Replace tower			\$600,000.00	
Middle River	Replace tower			\$600,000.00	
Theif River Falls	Replace tower			\$600,000.00	
Virginia	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	



Monthly Project Summary

James Stromberg
 ARMER Program Manager & Statewide Interoperability Coordinator

Date	September 6, 2016		Committee Priority	IOC & OTC
Project	Website Updates of ARMER and Interop Pages			
Progress	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
	On Track	Delay	On Track	

Summary
<p>The objectives of this project are:</p> <ul style="list-style-type: none"> to define a clean, efficient look and feel for the ECN website so that information is plainly presented and easy to find to provide guidelines and a roadmap for refinement of other ECN webpages to reorganize and clean up the ARMER pages of the ECN website to reorganize and clean up the Interoperability pages of the ECN website <p>The key steps are:</p> <ul style="list-style-type: none"> Take inventory of the current ECN website, in its entirety Work with DPS Communications to create a plan of action Identify and implement global site changes necessary to ensure uniformity Identify and implement changes specific to the ARMER and Interoperability pages Add content to the new ARMER and Interoperability pages and seek approval for publishing Publish the update pages

Current Status
<ul style="list-style-type: none"> DPS Communications is engaged and is meeting with me regularly to implement suggested changes.

Challenges
<ul style="list-style-type: none"> ECN staff does not have authority to change page architecture, only content. Look and feel changes, page additions and deletions, and webparts (e.g. automatic lists) may only be done by DPS Communications staff.



Monthly Project Summary

James Stromberg
 ARMER Program Manager & Statewide Interoperability Coordinator

Date	September 6, 2016		Committee Priority	OTC
Project	7.19 Upgrade Monitoring			
Progress	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
	On Track	On Track	On Track	

Summary
<p>The project objective is to monitor the ARMER 7.19 upgrade to ensure that hardware and software upgrades are remunerated and received consistent with contract.</p> <p>The key steps are:</p> <ul style="list-style-type: none"> • Meet with Motorola and MnDOT to identify tracking process. • Create a tracking tool to monitor process.

Current Status
<ul style="list-style-type: none"> • MnDOT has defined a schedule for rollout. • MnDOT has added rollout reporting to their monthly ARMER report. • MnDOT has shared it SUA2 Plus Monitoring Worksheet with ECN. • MnDOT is forwarding invoices to ECN and ECN has started reconciling contract deliverables against packing slips and invoices.

Challenges
<ul style="list-style-type: none"> • No specific challenges are apparent



Monthly Project Summary

James Stromberg
 ARMER Program Manager & Statewide Interoperability Coordinator

Date	September 06, 2016		Committee Priority	OTC & IOC
Project	Strategic Reserve Equipment Review			
Progress	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
	On Track	On Track	Delayed	

Summary

The project objective is to review the current practices associated with the strategic reserve equipment and to explore ways to enhance the usability and availability of the equipment.

The key steps are:

- Identify and catalogue all Strategic Technology Reserve equipment
- Identify custodians of STR equipment
- Identify current practices in place to exercise and test equipment
- Evaluate current practices and explore new ways to ensure equipment is ready
- Identify working group to review Standards and to consider updates
- Encourage use of equipment through training and exercises

Current Status

- SharePoint tool developed to track all STR equipment, custodians, and reviews.
- Collection of regional standards underway

Challenges

- Finding time for site visits has hampered my progress. I am trying to combine this process with other trips so progress depends on whether I need to visit a region or not.



Monthly Project Summary

James Stromberg
 ARMER Program Manager & Statewide Interoperability Coordinator

Date	September 6, 2016			Committee Priority	OTC
Project	Change Management				
Progress	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	
	On Track	On Track	On Track		

Summary
<p>The project objective is to review, revise, and implement a new Change Management process and state standard.</p> <p>The key steps are:</p> <ul style="list-style-type: none"> • Create a working group to address the issue • Refine the current process • Carefully consider timelines of state and local budget cycles as part of the process • Memorialize new process in an updated standard • Seek approval of the new process and standard from OTC and SECB

Current Status
<ul style="list-style-type: none"> • The Workgroup has created a new standard and submitted it to the OTC for approval. • The Standard was approved by the OTC and forwarded to the SECB. Waiting on approval from SECB.

Challenges
<ul style="list-style-type: none"> • An updated standard appears to be on track for approval and no challenges are apparent.

Change Manage Progress Form
Additional Encrypted LTAC Talkgroups

Summary of Suggestion

Addition of two encrypted law enforcement talkgroups

Change Sponsor (entity)

MESB

Sponsor's Representative (person)

Curt Meyer, Hennepin County – curtis.meyer@hennepin.us, 612-596-1922

First Introduction to an OTC or IOC

Introduced by Curt Meyer to the OTC on May 10, 2016. A Change Proposal form was included.

Standard(s) Impacted

Proposal identified only 3.19.0 - Use of 800 MHz Statewide LTAC and SIU Interoperability Talkgroups

Technical/System Change Suggestion

OTC Decision about whether Technical/System Change Suggestion would be a Major or Minor Change (if applicable)	
Major	Minor
<p><u>May 10, 2016</u>: the OTC decided that this was a Change Management matter and the change would be a MAJOR Technical/System change. The OTC advised that a workgroup should be formed.</p> <p><u>June 14, 2016</u>: Jim advised that the workgroup had not yet been formed because of pushback from regions about too many workgroups. Need for workgroup was reinforced and Nate Timm agreed to chair it and identify members.</p> <p><u>July 27, 2016</u>: Received report from Nate that he intended to send to OTC via Joe G. Looked thorough. Email sent to Nate advising that he should include his recommendations for the next steps in the Change Management process.</p>	n/a

If a Major Technical/System Change	If a Minor Technical/System Change
OTC Review of Necessity and Substantial Benefit If YES, move on to MnDOT If No, return to Proponent	MnDOT System Administrator's Recommendation
<p><u>August 9, 2016</u>: OTC approves four additional LTAC-Es. Forwards to MnDOT, SMG, regions, and Finance for review.</p>	n/a

Change Manage Progress Form
Additional Encrypted LTAC Talkgroups

If a Major Technical/System Change
MnDOT Technical Review
<u>August 25, 2016</u> : Workgroup suggests sending update to Tim Lee after they review today's meeting notes.

If a Major Technical/System Change
System Administrator Review
<u>August 25, 2016</u> : Workgroup suggests sending update to John Anderson after they review today's meeting notes.

If a Major Technical/System Change
Regional Input

If a Major Technical/System Change
Finance Committee Review and, if applicable, Regional Concurrence in Local Share

If a Major Technical/System Change	If a Minor Technical/System Change
OTC Review and Recommendations	If a Standard Revision is Required, OTC Review and Recommendations
	n/a

If a Major Technical/System Change	If a Minor Technical/System Change
SECB Decision	MnDOT Decision
	n/a

Operational/SOP Change Suggestion

IOC Decision about whether Operational/SOP Change Suggestion would be a Major or Minor Change (if applicable)	
Major	Minor
<u>May 17, 2016</u> : Mentioned to IOC that issue would be on the next agenda as an item. IOC needs to decide if this is a major or minor change. <u>August 16, 2016</u> : IOC decided this was a Major Change.	n/a

Change Manage Progress Form
Additional Encrypted LTAC Talkgroups

If a Major Operational/SOP Change	If a Minor Operational/SOP Change
IOC Review of Necessity and Substantial Benefit If YES, IOC Determines Change Proposal Review Requirements If No, return to Proponent	ECN Recommendations
<p><u>August 16, 2016:</u> IOC recommended that the OTC workgroup should study this further. Specific items to study include home zone mapping, encryption keys, and patching rules. Micah offered to join the workgroup. Suggested that King Fung or Curt Meyer join the workgroup with Nate.</p> <p><u>August 17, 2016:</u> Email sent to John (per Nate's suggestions) and Curt asking if they could be part of a meeting to finish this discussion. Asked that they forward to King. John suggested Ron and Rod join discussion for their Home Zone Mapping knowledge.</p> <p><u>August 19, 2016:</u> Meeting invite sent to Nate, John, Curt, King, Rod, and Ron for 8/25/16.]</p>	n/a

If a Major Operational/SOP Change
IOC Requirements for Assessments and Focus Groups
<p><u>August 16, 2016:</u> OTC decided this was a major issue and supported the OTC workgroup should study this further. Specific items to study include home zone mapping, encryption keys, and patching rules.</p>

If a Major Operational/SOP Change
ECN Report

If a Major Operational/SOP Change
Facilitator Reports
<p><u>August 25, 2016:</u> Workgroup call held. Attendees: King Fung, John G., Curt M., Nate T., Ron J., and me. Encryption Key: Keep same as others. May be time to review encryption standards but not as part of this process. Home Zone Mapping: Mostly metro use. Not much demand for patching. LTACE1-4 currently in Zone 4. Recommend putting 2 of the new ones in zone 1 and the other two in zone 2. New talkgroups v repurposing SIUs: Leave SIUs alone. Create new talkgroups. Patching Rules: Use existing standards. Consider reviewing the patching standards while reviewing the encryption standards. Discussion about if there are enough non-encrypted LTACs and the thought was that there were. STACs also available. I should draft an update and sent it to this group for review and then forward to SMG (John) and MnDOT (Tim). Pending.</p>

If a Major Operational/SOP Change
MnDOT Report

Change Manage Progress Form
Additional Encrypted LTAC Talkgroups

If a Major Operational/SOP Change
Reports and Assessments Circulated to Regions (ECBs, RAC, O&Os)

If a Major Operational/SOP Change
Finance Committee Review and, if applicable, Regional Concurrence in Local Share

If a Major Operational/SOP Change	If a Minor Operational/SOP Change
IOC Review and Recommendations	IOC Review and Recommendations

If a Major Operational/SOP Change	If a Minor Operational/SOP Change
SECB Decision	SECB Decision

Change Manage Progress Form

Scene of Action Repeater (SOAR)

Summary of Suggestion

Request to use conventional channel SOA-3 as a repeated channel to provide a low cost coverage solution in rural areas where in-building ARMER coverage suffers and without demand or resources for ARMER enhancements.

Change Sponsor (entity)

Central Emergency Communications Board for Stevens County.

Sponsor's Representative (person)

Micah Meyers

First Introduction to an OTC or IOC

October 13, 2015

Standard(s) Impacted

- 3.15.0 (Use of 700 MHz and 800 MHz Statewide Scene of Action (SOA) Channels)
- 3.24.0 (RF Control Stations)?
- 3.25.0 (Radio to Radio Cross Band Repeaters)?
- 3.33.3

Technical/System Change Suggestion

OTC Decision about whether Technical/System Change Suggestion would be a Major or Minor Change (if applicable)	
Major	Minor
On 4/12/2016 the OTC identified this as a Major Change Management request.	← Identified as a Major Change

If a Major Technical/System Change	If a Minor Technical/System Change
OTC Review of Necessity and Substantial Benefit If YES, move on to MnDOT If No, return to Proponent	MnDOT System Administrator's Recommendation
<p><u>May 10, 2016:</u> OTC asked Al Fjerstad to form and lead a workgroup to explore this question. The workgroup was authorized to move this item on to MnDOT and System Admins for input.</p> <p><u>June 14, 2016:</u> Al reported to OTC that there was a poor response to his request for workgroup members. OTC guided that he try again and then move forward.</p> <p><u>July 18, 2016:</u> Al reported he was too busy at work to follow up. Jim will get group formed to review the "necessity and benefit" of this proposal. Al provided Workgroup membership info to Jim.</p> <p style="text-align: center;"><u>July 28, 2016</u></p> <p>Workgroup met and recommended using an 8TAC instead of an SOA. Memo drafted and sent to OTC.</p> <p style="text-align: center;"><u>August 9, 2016</u></p> <p>SOAR discussed at OTC. Suggestion received that a simplex SOA be allowed as an option as well as repeated 8TACs. OTC supported using 8TACs and simplex SOAs. Tim Lee suggested that IOC should</p>	<p>n/a</p>

Change Manage Progress Form
Scene of Action Repeater (SOAR)

formally endorse this use of 8TACs. Motion to move to IOC for further consideration. Also included in motion was to <u>send to MnDOT for Technical Review, SMG for System Admin review, regions, and Finance Committee</u> . Recommended that a Standard be drafted to address this topic. In progress.	
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If a Major Technical/System Change
MnDOT Technical Review

If a Major Technical/System Change
System Administrator Review

If a Major Technical/System Change
Regional Input

If a Major Technical/System Change
Finance Committee Review and, if applicable, Regional Concurrence in Local Share

If a Major Technical/System Change	If a Minor Technical/System Change
OTC Review and Recommendations	If a Standard Revision is Required, OTC Review and Recommendations
	n/a

If a Major Technical/System Change	If a Minor Technical/System Change
SECB Decision	MnDOT Decision
	n/a

Change Manage Progress Form Scene of Action Repeater (SOAR)

Operational/SOP Change Suggestion

IOC Decision about whether Operational/SOP Change Suggestion would be a Major or Minor Change (if applicable)	
Major	Minor
<p><u>May 17, 2016</u>: Interop Cmte identified this as a MAJOR change and empowered the workgroup to sort out the next steps, per standard.</p> <p><u>May 18, 2016</u>: Email sent to AI advising that the IOC wants to add two people to the workgroup and offering assistance if those volunteers do not become apparent.</p> <p style="text-align: center;">Workgroup should consider</p> <ul style="list-style-type: none"> • Comm Truck additions • Ability to be encrypted 	n/a

If a Major Operational/SOP Change	If a Minor Operational/SOP Change
IOC Review of Necessity and Substantial Benefit If YES, IOC Determines Change Proposal Review Requirements If No, return to Proponent	ECN Recommendations
5/18 This should be decided by the workgroup	

If a Major Operational/SOP Change
IOC Requirements for Assessments and Focus Groups
<u>August 16, 2016</u> : Workgroup already exists and is working on standard. No objections to moving forward with using simplex SOAs and repeated 8TACs. Workgroup should bring standard back to IOC for approval.

If a Major Operational/SOP Change
ECN Report

If a Major Operational/SOP Change
Facilitator Reports
See workgroup info

If a Major Operational/SOP Change
MnDOT Report

If a Major Operational/SOP Change
ECN Report

If a Major Operational/SOP Change
Reports and Assessments Circulated to Regions (ECBs, RAC, O&Os)

If a Major Operational/SOP Change
Finance Committee Review and, if applicable, Regional Concurrence in Local Share

If a Major Operational/SOP Change	If a Minor Operational/SOP Change

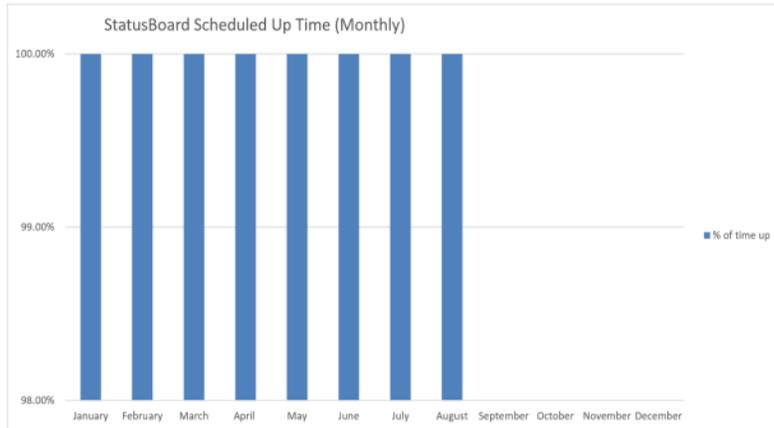
Change Manage Progress Form
Scene of Action Repeater (SOAR)

IOC Review and Recommendations	IOC Review and Recommendations
If a Major Operational/SOP Change	If a Minor Operational/SOP Change
SECB Decision	SECB Decision

Status August 2016

Friday, September 2, 2016 8:54 AM

StatusBoard Unscheduled Down Time								
Date	Time Down Military Time	Time Up Military Time	Total Unscheduled Down Time HH:MM	Scheduled Availability HRS	Actual Availability HRS/MIN	% of time up	Cause	Actions



StatusBoard CY 2016

	Total Hours Month	Total hours SCHEDULED MAINTENANCE Tues. 0900 - 1100 Wed. 1900 - 2300	Total Hours SCHEDULED Availability	Actual Duration of maintenance Rounded up to nearest hour	Total hours available AFTER scheduled maintenance	UNSCHEDULED OUTAGES Rounded up to nearest hour	TOTAL HOURS AVAILABLE	YTD Availability
January	744	24	720	0	744	0	744	100.00%
February	696	24	672	0	696	0	696	100.00%
March	744	30	714	2	742	0	742	100.00%
April	720	24	696	4	716	0	716	100.00%
May	744	28	716	4	740	0	740	100.00%
June	720	26	694	0	720	0	720	100.00%
July	744	24	720	1	743	0	743	100.00%
August	744	30	714	0	714	0	714	100.00%
September	720	24	696					
October	744	24	720					
November	720	30	690					
December	744	24	720					