STATEWIDE EMERGENCY COMMUNICATIONS BOARD

INTEROPERABILITY COMMITTEE

Tuesday, January 19, 2016 1:00 p.m.
Chair: Dave Thomson
MnDOT Arden Hills Training Facility
1900 West County Road I
Shoreview, MN 55126

Call-in number: 1-888-742-5095
Conference code: 2786437892#

MEETING AGENDA

Call to Order

Approval of Agenda

Approval of Previous Meeting Minutes - May

Action Items

- CASM Standard 3.40.0 (Jim Stromberg)
- SOAR Change Management Proposal and Standard (Micah Myers)

New Business

Old Business

Reports

- ECN Report (James Stromberg)

Adjourn

STATEWIDE EMERGENCY COMMUNICATION NETWORKS

INTEROPERABILITY COMMITTEE

November 17, 2015 1:00 p.m.
Chair: Dave Thomson
Mn/DOT Arden Hills Training Facility
1900 West County Road I
Shoreview, MN 55126

MEETING MINUTES

Attendance:

Members/alternates*

Chair: Dave Thomson/vacant—MN Chiefs of Police Association
Vice Chair: Tim Boyer/vacant – Minnesota State Patrol
Victor Wanchena/Vacant – MN Dept of Corrections
Clif Giese/Dan DeSmet– MN Ambulance Association
Bill Schmidt/Vacant – MN Department of Health
Brian Askin/Dan Kuntz – MN DNR
Tim Lee/Mukhtar Thakur/Brad Peters – Mn/DOT
Bob Norlen – MN EMSRB
Ron Jansen/Chris Kummer– MESB
John Sanner/vacant – MN Sheriffs Association
Ulie Seal/Vacant – MN Fire Chief's Association
Lance Lehman /Bill O'Donnell –MN Bureau of Crime Apprehension
Pat Coughlin/Vacant – MIFC
Mike Martin/Brian Smith – Federal Seat
B.J. Battig/Vacant – UASI
Tom Simota/vacant– MN National Guard
John Dooley/– HSEM
Michael Wisniewski - HSEM Greater MN
Terry Stoltzman/Vacant – HSEM Region 6
Rick Freshwater/Mark Darnell – SE MN RAC
John Maatz/Kimberly Hall / SW MN RAC
Brett Miller/Darrin Haeder – SC MN RAC
Micah Myers/Kristen Lahr– Central MN RAC
Kerry Swenson /Bruce Hegrenes– NE MN RAC
Dave Olson/Bryan Green– NW MN RAC
Monte Fronk – Tribal Government
vacant– Association of MN Emergency Managers (AMEM)

**Members attending marked with highlight.*

Guests:
Jackie Mines, DPS-ECN

DRAFT

Cathy Anderson, DPS-ECN
Marcus Bruning, DPS-ECN
Rick Juth, DPS-ECN
Carol-Linnea Salmon, DPS-ECN
Troy Tretter, MESB
Steve Ouradnik, DOC
Nate Timm, Washington County
Carrie Oster, Motorola
Mike Fink, Motorola
Rod Olson, City of Minneapolis
Joe Reichstad, Metro Transit
Mary Borst, Mayo

CALL TO ORDER

Chair Thomson calls the meeting to order at 1:01 p.m.

APPOVAL OF THE AGENDA

Chair asks for a motion to approve the agenda. Micah Myers requests to add a discussion about SOA repeaters.

Micah Myers moves to approve the agenda as amended.
Victor Wanchena seconds.
Motion carries.

APPROVAL OF MINUTES

Chair asks if there are any changes to the May meeting's minutes. None stated.

Monte Fronk moves to approve the May minutes.
Wanchena seconds.
Motion carries.

ACTION ITEMS

STANDARD 3.44.0 PURSUIT (CATHY ANDERSON)

Cathy Anderson introduces Standard 3.44.0, as presented in the meeting materials.

This standard was revised by the standards workgroup and reviewed by the Operations and Technical Committee. Anderson gives an overview of some of the edits.

In the first paragraph, the word vehicle was added in front of "pursuit communications".

Under *Technical Background, Capabilities*, the radio board name was changed to the Statewide Emergency Communications Board and the following two lines were deleted:

"This standard empowers each service branch to establish the threshold for use of its talkgroups."
"Law enforcement service branch talkgroups include LTAC1, 2, 3, and 4."

The workgroup deleted a paragraph about control stations. Under Recommended Protocol "law enforcement" was added before PSAPs. (All LTAC talkgroups are required for law enforcement PSAPs…)

Under Recommended Procedure on page 3—"The pursing agency's dispatcher will reserve the resource on the StatusBoard" was moved to the second bullet point.

On the bottom of page 3, there is a note saying this information should go in the best practices guide.

On the last page, under Management, language was cleaned up to reflect the new names of the regional radio boards.

Chair calls for questions or comments.

Wanchena moves to approve Standard 3.44.0, as presented.
Micah Myers seconds.

Chair calls for further discussion.
No discussion.

Motion carries.

NEW BUSINESS

Micah Myers introduces a discussion about SOA repeater pairs (SOAR). He reminds the committee that a request was made to the Operations and Technical Committee (OTC) from the Central Region for an SOA repeater pair to be used by Kandiyohi and Stevens Counties to assist in areas where there is limited indoor coverage. The Operations and Technical Committee voted that an SOA3 repeater could be used as a temporary solution at fixed locations in Stevens County subject to approval through change management and approval by the Interoperability Committee. Myers raises the concern that the change management process can take a long time.

Chair Thomson responds that one of the concerns brought up at the System Managers Group (SMG) and OTC was that incoming units would not have a clear pathway until this went through change management and every radio was reprogrammed.

Discussion of the pros and cons of this solution and possible impact on other users and of alternative solutions to the coverage issues.

Bruce Hegrenes reiterates that at the OTC the solution was allowed on a temporary basis but the committee required that it not circumvent the change management process.

Myers says Kandiyohi County will put in a repeater pair and patch to it for now.

OLD BUSINESS

None.

DRAFT

ECN REPORT (JACKIE MINES)

Jackie Mines reports for Jim Stromberg, the new ARMER SWIC program manager, who was unable to be at the meeting.

ECN is planning a Statewide Communications Interoperability Plan (SCIP) conference on August 3rd, 2016 to update the SCIP.

Planning is also underway for the Interop Conference which will be held on April 25-27 in St. Cloud. One idea under consideration is holding a table top exercise similar to the one held in Elk River earlier this year. Another idea is to broaden the focus on one of the days to appeal to a larger audience and in particular to fire chiefs. Mines encourages anyone interested to get on the planning committee. Contact Jim Stromberg.

The Minnesota Communications Field Operations Guide (MNFOG) was last updated in April of 2014 and needs some changes. Jim Stromberg will create a workgroup to update it. The National Interoperability Field Operations Guide (NIFOG) was just released with some changes.

Control stations were purchased in the past for interoperability with neighboring states. Some counties are using them and some are likely not being used. Stromberg will be reviewing this to see where the control stations are located, who is using them and where they are not being used, and will offer training.

BNSF and CN Railroads have asked about being on the ARMER system. They would use it for interoperability in the case of a derailment, not for day to day. The RICS and regions working on that.

Stromberg is also looking at the COML and COMT programs. The goal up to this point has been training and having enough COMLs and COMTs. Stromberg will consider goals for the program going forward. He will work with this committee it.

Marcus Bruning gives an update on border interoperability with Canada and North Dakota.

ECN received an opinion from the FCC some time back that if we were to achieve interoperability with Ontario if the equipment was to be located in the state of Minnesota or in the U.S. it would have to be owned by Ontario. A week ago, Bruning received a donor radio from Ontario with their VHF resources programmed into it. MnDot and has agreed to install the equipment at the International Falls ARMER tower site and they are going to connect it via CCGW. The MN State Patrol has agreed to control that resource. Part of the agreement with the Ministry of Communication calls for operations and testing of the asset.

It has been recommended that we seek FCC licensure for the station. There is a treaty from the 1950s that allows resources to communicate back and forth, which initially applied to taxi cabs. The treaty allows you to cross over the border and talk back to your home country without any licensure but the concern is that it is not a taxi cab but a fixed resource. Jim Stromberg is working with Jim Jarvis on FCC applications. Bruning anticipates that MnDot will be installing the equipment shortly and as soon as the FCC licensure comes through we should have a protocol developed and be able to test and then operate it.

In addition to trying to establish interoperability at the International Falls Fort Francis site, the Northeast Users and Owners and Operators groups are looking at how it will impact Ontario as it goes across Lake County and Cook County and on the operations that they frequently have in the Boundary Waters area particularly with regard to wildfire.

DRAFT

Bruning reports that some time ago ECN gave grants to the Northwest region to obtain 800 megahertz control stations and install them in Roseau County to establish interoperability with Manitoba. Equipment was purchased and installed but the project was never completed. There were staff changes and it was no longer clear what the status of the project was. Recently, ECN gave a grant to the NW region to hire a consultant to make an assessment about whether the original plan still makes sense and that the equipment had all been acquired and accounted for and to make a recommendation to the NW board. Bruning will have more information the next time this committee meets.

Regarding interoperability with East Grand Forks, MN and Grand Forks, ND, Bruning reports there was a VHF overlay located in Crookston but some portable resources in North Dakota were not able to reach it, particularly those in the Red River area. He worked with MnDot to relocate the VHF overlay to East Grand Forks. That is in place now and working well. He also reports on a solution between East Grand Forks and Grand Forks to be able to have immediate interoperability across three bridges. When they were both on VHF systems they had interoperability but as Polk County migrates to ARMER they need a new solution. Polk County is going to purchase a VHF resource and use a directional antenna pointed to Grand Forks and have Grand Forks PD main in their PSAP in Polk County.

ADJOURN

Meeting adjourns at 1:44 p.m.

DRAFT

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

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

1. Purpose or Objective

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

2. Technical Background

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

3. Operational Context

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

4. Recommended Protocol/Standard

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

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

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

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

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

5. Recommended Procedure

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

General:

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

Agency Entry:

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

Point of Contact (POC) Entry:

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

Asset Entry:

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

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

6. Management

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

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

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

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

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

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

State CASM Administrators:

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

Regional CASM Administrator:

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

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

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

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

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

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1. Purpose or Objective

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

2. Technical Background

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

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

3. Operational Context

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

4. Recommended Protocol/Standard

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

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

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

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

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

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Training:

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

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

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- COMU students currently engaged with a public safety entity during their training and the three-year window to become certified
- COMU credentialed personnel certified and currently engaged with a public safety entity

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

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

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

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

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

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Sept 23 2015

Operational and Technical Committee (OTC)

Subject:SOA repeater (SOAR)

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

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

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

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

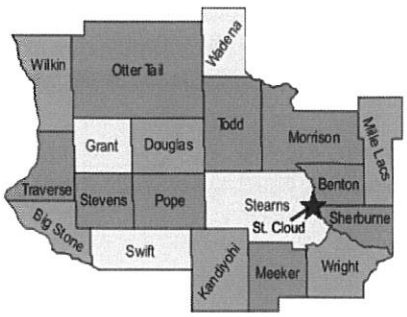
We understand the footprint of the SOA repeater has to be robust to cover the intended area, yet small enough to not over reach the intended area or interfere with SOA or SOA repeaters used elsewhere. A FCC license will be filled for areas requesting operation and the OTC will have control of the SOA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

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

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

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

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



2015 CENTRAL MN OWNERS AND OPERATORS

May 29 2015

Local Repeater Coverage to ARMER. (LRCA)

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

ARMER Coverage limitations:

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

System Tested:

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

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

Test Results:

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

Audio Delays and bonk tones:

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

LRCA/ASR/BDA:

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

Frequency to be used and interoperability.

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

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

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

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

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

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

Allied Radio Matrix for Emergency Response (ARMER)

Change Proposal

1. Administrative Information:

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

Date Submitted: 01/12/16

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

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

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

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

2. Existing SRB standards impacted:

New Standard written and included.

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

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

3.24 RF Control Stations?

3.25.0 - Radio to Radio Cross Band Repeaters?

3. Scope of Change:

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

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

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

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

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

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

Impact on reprogramming or configuration of end-user equipment:

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

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

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

Other equipment:

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

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

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

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

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

Start and End Date: Start date could begin immediately.

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

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

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

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

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

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

System Tested:

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

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

Test Results:

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

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

9. **Other Attachments:**

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

10. Tracking and Approvals:

Submitter Approval: 01-11-2016

Signature Date

DECN Receipt:

Signature Date

OTC/IOC Determination of Need:

Signature Date

MnDOT/ECN Approval:

Signature Date

OTC/IOC Approval of Assessments:

Signature Date

Finance Committee Approval:
(if required)

Signature Date

Final SRB Approval:

Signature Date

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

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- Training
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9. **Other Attachments:**

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Signature Date

Finance Committee Approval:
(if required)

Signature Date

Final SRB Approval:

Signature Date

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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