

Regional Advisory Committee
Friday, April 13, 2012 10:00 a.m.
Kandiyohi Law Enforcement Center, 2201 23rd Street SE
Willmar, MN – Kandiyohi County
Agenda

1. Call to Order
2. Roll Call
3. Communications
4. Revisions and Approval of Agenda
5. Approval of Minutes, March 9, 2012 **(P1-P4)**
6. Reports
 - a. SRB/ARMER Update; MnDPS/MnDOT
 1. MnDOT (Tim Lee or Dave Klema)
 2. SRB (Micah Myers)
 3. OTC (Jay Sikkink)
 4. Interop (Micah Myers)
 - b. Regional Leadership Group (None)
 - c. CMNESB Update (Micah Myers)
 - d. EMAC Update (Tina Lindquist)
 - e. Owner and Operators (Scott McKellep)
 - f. User Committee (Paul McIntyre)
 - g. EMS/Hospital Sub-Committee (Paul McIntyre)
 - h. STR Committee (Al Fjerstad)
 - i. RIC Report (John Tonding)
 - j. Executive Committee (Micah Myers)
 - k. CCGW (Jay Sikkink)
7. Emergency Services Board (Next Mtg. June 13th)
8. Updates from Partners on Current Projects
 - a. Regional Logger (Micah Myers)
 - b. Douglas County Migration (Tom Egan)
 - c. Mille Lacs County Migration (Al Fjerstad)
9. General Discussion and New Business
 - a. DECN Conference
 - b. SCIP- Planning Workshop for Wireless Broadband
 - c. Regional Advisory Committee (RAC) By-Laws
 1. Grant Update
 2. Regional Capacity
 3. 50/50 Grant
 4. Additional PSIC Subscriber Grant
 - d. Other
10. Old Business
 - a. Regional JSOA
 - b. Change Management Requests
 - c. CASM/TICP Update Process
 - d. Other
11. Upcoming Meetings
 - a. May 18, 2012 – Douglas County
 - b. June 8, 2012 – Grant County
12. Adjournment

**CENTRAL MINNESOTA REGIONAL ADVISORY COMMITTEE (RAC)
Meeting Minutes**

Friday, March 9, 2012 10:00 a.m. – 1:30 p.m.
First Presbyterian Church, 306 Norway Drive, Foley, MN
Benton County

Members/Alternates Present:

1. Micah Myers and Jerry Kaeter – City of St. Cloud
2. Troy Heck – Benton County
3. Tom Egan – Douglas County
4. Troy Langlie – Grant County
5. Ace Bonnema – Kandiyohi County
6. Randy Celander – Meeker County
7. Al Fjerstad and Brent Lindgren – Mille Lacs County
8. Jeff Jelinski – Morrison County
9. Matt McGuire and Judy Siggerud – Otter Tail County
10. Tim Riley – Pope County
11. Jay Sikkink – Stearns County
12. Scott Busche and Randy Willis – Stevens County
13. Bob Cuchna – Todd County
14. Trevor Wright – Traverse County
15. Scott McKellep – Wadena County
16. Dawn Mund – Wilkin County

Members/Alternates Absent:

17. Big Stone County
18. Sherburne County
19. Swift County
20. Wright County

Guests Present:

Dave Gabrielson – Meeker County Commissioner
Kathryn Gilson and Bruce Pederson – State Patrol
Tom Hannon – ARMER
Tom Johnson – ECN
Tim Lee and Dave Klema – MnDOT
Don Otte – Stearns County Commissioner
Greg Stepan – MN DOC

Meeting was called to order by Chair Micah Myers at 10:00 a.m. – 16 of 20 members in attendance with quorum present.

Communications:

None.

Revisions and Approval of Agenda:

Jay Sikkink moved to approve agenda, seconded by Ace, motion carried.

Approval of Minutes:

Jay Sikkink moved to approve the minutes of February 10th, seconded by Dawn Mund, motion carried.

Reports:

1. SRB/ARMER Update; MnDPS/MnDOT:
 - a. MnDOT: (Tim Lee or Dave Klema)
Tim provided updates on towers and interop.
 - b. SRB: (Micah Myers)
Stevens County plan change approved, SCSU plan approved and process of O&O approving participation plan changes were approved; still working on change control process.
 - c. OTC: (Jay Sikkink)
Traverse County participation plan is on agenda, change management process will be discussed. Metro had requests for IC zones requesting more STACS.
 - d. Interop: (None)
No report.
2. Regional Leadership Group: (Micah Myers)
Next meeting is July 30th.
3. CMNESB Update: (Micah Myers)
Next meeting is March 28th.
4. EMAC Update: (Tina Lindquist)
Need 14 counties to convene a meeting, currently at 11.
5. Owner and Operators: (Scott McKellep)
No report.
6. User Committee: (Paul McIntyre)
Met in the evening, good discussion on weather tabletop, had visitors pleased with discussion.
7. EMS/Hospital Sub-Committee: (Paul McIntyre)
Central region appointed Paul McIntyre and Gordy Vosberg to committee and needs ESB approval.
8. STR Committee: (Al Fjerstad)
Update on STR delivery and training provided. Camp Ripley has a big drill in June and inquired about the procedures and process of using the STR; there is a standard in place. Al Fjerstad and Kristin Lahr will work on an addition to addendum. There are two standards that indicate the capability of STR.
9. RIC Report: (John Tonding)
Best Practice Workgroups meeting monthly; guides to be completed by summer. 29 Counties are on system with several additional ones by 2nd and 3rd quarter of 2012. Three towers left to complete in Central MN. VHF plan developed and Interop will be reviewed in March; working with Manitoba and Ontario on interop. By end of month Alex Vo-Tech will have several web trainings available; equipment modules being developed with completion by end of month. Interop working on Statewide Pursuit and National Weather Service Standards. FEMA Region 5 conducting exercise evaluating communication with three states; COMT training is August 6-11 in Arden Hills. Principles of Interoperability Communications Guide conducted on August 21st at MnDOT Training Center. Annual SCIP Plan Implementation Workshop will be May 2nd on Broadband, each region is asked to send two attendees.

Reports: (Continued)

10. Executive Committee: (Micah Myers)

No report.

11. CCGW: (Jay Sikkink)

Working on short-term solutions with Motorola and MnDOT to ensure new entities can come on; at this time there is no room for additional capacity.

Emergency Services Board:

12. Review Agenda:

Next meeting is March 28th, a cover memo will be provided for members to review and it must be completed and submitted when requesting an item to be on agenda. *Brent Lindgren moved to forward form to ESB, second by Jay Sikkink, motion carried.*

Updates from Partners on Current Projects:

13. Regional Logger: (Micah Myers)

Resolution sent to all entities to determine if they will or will not be participating in regional logger; if a resolution is not returned it will be assumed they will NOT be participating. Morrison, Sherburne, Stearns, Todd and Wadena Counties will NOT participate; Big Stone, City of St. Cloud, Pope Counties will participate (currently 11 yes and 8 no, 1 no response). Will start conducting meetings to firm up details and a scope document for project management is being processed. If an entity chooses to come on at a later date there will be an increased cost.

14. Douglas County Migration: (Tom Egan)

Sheriff's Office anticipates everything in their renovation be completed by November 1st and to be migrated by November 1st.

15. Mille Lacs County Migration: (Al Fjerstad)

Moving on a fast track, provided detail on equipment delivery dates and anticipate migration by June and fully operational by July-August.

Otter Tail: (Matt McGuire)

Otter Tail made the switch yesterday, PSOA2 utilized in jail and works well. Tim Lee verified currently there is nothing in the standard that indicates the PSOA2 can't be utilized in the jails and that MnDOT does not have a problem with them being used as such.

General Discussion and New Business:

15. Pursuit Standard:

Pursuit Standard provided and will be on March 20th agenda. Consensus that there needs to be training on implementation of the standard and the requirement of the patch and the wording of "highly recommended"; State Patrol confirmed most dispatchers agree that the tighter the requirement the more successful outcome. It's required to have all four LTACS in console and previously was only recommended; extensive discussion on requirements of LTACS in console.

16. DECN Conference:

Region will reimburse for two board members and four other members from committees. When requesting reimbursement, we'll need detailed food receipts and reimbursement form; radio shops can get sponsored although are not eligible for reimbursement.

SCIP Planning Workshop for Wireless Broadband:

Workshop will be May 2nd.

General Discussion and New Business: (Continued)

17. Regional Advisory Committee (RAC) By-Laws:

Reviewed changes to bylaws. *Troy Langlie moved, second by Tom Egan to approve proposed bylaws and move forward to ESB for approval.* Membership discussed proposed modifications, Sheriff Lindgren suggested the need to assure RAC members receive notices with discussion followed on his suggestion. *Sheriff Lindgren moved to amend current motion by adding “provided a majority of members and alternates respond in the affirmative” following the phrase “electronic transmission of meeting notice and agenda shall be sufficient” was added; the amendment was second by Tom Egan. Upon a vote the amendment was approved. Upon a vote the main motion as amended was approved and the by-law modifications as amended are adopted and forwarded to the ESB for ratification.*

18. Grant Update:

Regional Capacity:

In process of finishing paperwork and reimbursements.

50/50 Grant:

All entities were to respond by March 1st indicating if they were utilizing grant funding and submit any requests for additional consideration. Douglas will use all; Mille Lacs, Morrison, Otter Tail, Pope and Swift, and Traverse used all; Stevens \$100,000 and Grant’s \$8,800 unused to be applied towards regional logger, Meeker \$48,000 unused. Requests: Mille Lacs \$18,000 for microwave link, Stearns \$20,000 BDA, Todd \$3,100 for total of \$41,100 in additional requests with approximately \$160,000 available in returned funds. Grant County indicated there are 11 members involved in regional logger solution and since this is regional funding it should go towards the regional concept; the past funding was used for individual entities. Stearns felt the \$41,100 should go to the entities submitted and balance to the logger. Morrison County asked if it could be used for simulcast and Chair Myers stated yes and the concern is if the funds can be spent by the deadline. *Jay Sikkink moved to fund Todd, Stearns and Mille Lacs projects and the balance for the regional logger, Matt McGuire second, after vote motion failed. Jay Sikkink moved to fund four projects and any remaining funds from the 50/50 grant be utilized for the regional logger, motion carried with Troy Langlie voting nay.*

Additional PSIC Subscriber Grant:

2009 Homeland Security Grant – Mille Lacs and Traverse are outstanding, both are working with Jackie on reimbursement. Traverse should have their submissions completed by July.

Some agencies did not want infrastructure grant as they are required to accept the maintenance of it and need to sign a MOU which will be at April meeting; if there are unused funds they can be reallocated. Jeff Jelinski stated if there is any grant funding remaining following current capacity addition that it be used to fill in costs that were not reimbursed for channel capacity. Chair Myers stated there will be some funding remaining from the \$846,000 grant and it will be take into consideration.

Old Business:

19. Regional JSOA: (Micah Myers)

Waiting outcome of change management process next week.

20. Change Management Requests:

Already addressed.

21. CASM/TICP Update Process:

Region is required by statute to have the TICP updated by year end.

22. Other:

Current representation at the Emergency Services Board is Sheriff Hartog and discussed changing representation. *Troy Langlie nominated Micah Myers as delegate to ESB, second by Jay Sikkink, motion carried. Micah Myers moved Troy Langlie as alternate to ESB, Jay Sikkink second, motion carried.*

Upcoming Meeting Date and Location:

- April 13, Kandiyohi County
- May 18, Douglas County

Adjournment:

Tom Egan moved, second by Jay Sikkink to adjourn at 1:10 p.m.

Minutes recorded by Debbie Backes, Recording Secretary.

DRAFT

Central Minnesota Emergency Services Board

Request for Proposal Maintenance of the Regional Tactical Interoperable Communications Plan (TICP)

The Central Minnesota Emergency Services Board is accepting proposals for professional services for maintenance of the regional Tactical Interoperable Communications Plan (TICP).

Proposals may be submitted in person, by mail or common carrier, not later than **noon, June 29, 2012**. Proposals should be submitted in a sealed envelope or package and labeled **“Central Minnesota TICP Maintenance Proposal”**

Please submit proposals to:

City of St. Cloud IT Division
Central Minnesota RAC
Attention: Micah Myers
400 Second Street South
St Cloud, MN 56301

Contact Information:

Telephone: 320-650-3370
Email: micah.myers@ci.stcloud.mn.us

Questions, request for clarification, comment or additional information regarding this Request for Proposals should be directed to the contact listed above not later than noon, June 8, 2012.

Background

Creation of a TICP was a requirement of the Office for Domestic Preparedness 2005 UASI (Urban Area Security Initiative) grant program. The original document for Central Minnesota was prepared by On Target Consulting and was completed in December of 2010. This document establishes a Tactical Interoperable Communications Plan (TICP) for the 20 entities in the Central Minnesota Region, inclusive of Minnesota Homeland Security Region IV. The TIC Plan is intended to document the interoperable communications resources available within the Central Minnesota region, who controls each resource, and what rules of use or operational procedures exist for the activation and deactivation of each resource.

Scope

Central Minnesota is requesting proposals to update the current release of the Central Minnesota TICP. The vendor will need to solicit each agency to incorporate any changes to the plan. It is the vendor's responsibility to contact each entity for changes and verify the completeness and accuracy of that information.

Each proposal must contain a complete list and description of the Scope of Work intended to be included and optional services available. The proposal must include a timeline and a complete description of the resources each partner must make available to complete the proposed work.

The actual timeline for completion will be determined upon selection of the appropriate proposal and shall be mutually agreed by the parties.

The awarded vendor will:

- Perform technical analysis, liaison, and administrative functions that facilitate the management, expansion and update of the current Tactical Interoperable Communications Plan (TICP)
- Develop a plan to facilitate future updates and information gathering for ongoing maintenance to the TICP
- Update the electronic database for the region (CASM)

Fee

The proposal should provide a fixed price sum, plus usual and customary expenses for the completion of the proposed work. All proposals must be itemized including the fixed price sum for the proposed work together with an itemized list of expenses anticipated. The expenses can be listed as a "not to exceed" amount but must be itemized so that a fair and equitable determination of the proposed actual total costs and the elements it contains can be determined.

Minimum Requirements

It is essential that prospective firms or individuals have a working knowledge of Public Safety, interoperability methodologies, and knowledge of disparate radio systems.

To be considered each proposal must contain at least the following information.

A. Firm's Organization

1. **Organization.** State the full name and address of your organization. Include name, address, telephone number and email of the person in your organization

who has primary responsibility for developing the proposal and to whom technical questions may be addressed. Include web site address where appropriate.

2. **Experience.** Proposals must include a description of the individual or firm's overall experience in handling projects similar in character or scope to this project. A list of at least three different references listing the company/agency name, address, telephone number and contact person, including email if available, in addition to a brief description of the project scope. References related to projects similar in scope and subject are preferred.
 3. **Personnel.** Proposals shall identify each member of a consultants staff who would work on the project, the role they will be performing, and the hourly rate to be charged for their services (if applicable). Additionally, a resume stating the background and qualifications of key staff members proposed to be involved should be included. Particular attention should be given to the individual named as project coordinator or team leader.
- B. **Schedule.** This project shall be completed as soon as practical but not later than December 12, 2012.
- C. **Statement of Work.** Each proposal must contain a clear and concise Statement of Work defining the work proposed to be completed. The Statement of Work should provide a preliminary work plan that includes a detailed plan for gathering the required data for the project and its' inclusion in the TICP and CASM. The work plan should also define the tasks required of the Central Minnesota Emergency Services Board and the individual jurisdictions within the region. The work plan should identify the periodic reporting plan proposed by vendor.
- D. **Reports and Presentations.** The vendor will provide periodic updates to the Central Minnesota Regional Advisory Committee (CM-RAC), on behalf of the Emergency Services Board, through a process mutually defined that should include at least reports and updates delivered by vendor at CM-RAC meetings at least twice during the project.
- E. **Deliverables.** The vendor will provide the Central Minnesota Emergency Services Board with an updated version of the TICP in word format both by electronic transmission and provision of a CD containing all relevant files. The vendor will complete the update of the electronic database for the region (CASM) and provide a listing of the elements updated, modified, changed, added, deleted, etc. to the Central Minnesota Emergency Services Board.

- F. **Central Minnesota Emergency Services Board Requirements.** Detail the level of assistance and involvement of staff requirements necessary to perform the work.
- G. **Experience.** To be deemed qualified, consultant must demonstrate experience in Public Safety systems and knowledge of interoperability amongst different organizations, disciplines and agencies at various levels of government. Consultant must also demonstrate a working knowledge of the role non-government organizations (NGO's) in interoperability.
- H. **Insurance.** At a minimum the vendor shall provide proof of statutorily required insurance coverage. In addition, proof of insurance for all coverages maintained by the firm must be included.
- I. **Rejection of Proposal.** The Central Minnesota Emergency Services Board reserves the right to reject any or all proposals, modify the requirements, terms or conditions without notice and award the work based on their understanding of the best interests of the needs of Central Minnesota Emergency Services Board.
- J. **Property Rights.** All proposals submitted are the property of the Central Minnesota Emergency Services Board.

Addendums and Modifications; Responses to Questions.

Addendums and modifications to this RFP and responses to questions, requests for clarification, comment or additional information shall be provided by email to all firms providing email contact information. For inclusion in notifications of addendums, modifications and responses to questions, requests for clarification, comment or additional information provide an email request to micah.myers@ci.stcloud.mn.us not later than Monday June 11, 2012

All addendums or modifications will be provided prior to noon Monday, June 18, 2012. No addendums or modifications will be released after that date except those withdrawing this RFP or extending or modifying the due date for responses to this RFP.

Change	Change Scope	Change Type
Standard 3.18.0; standardized channel naming	Major	Operational
Standard 1.15.0; voluntary sunset of 700 MHz voice	Minor	Technical
Standard 3.15.0; 700 and 800 MHz SOAs	Major	Operational
Standard 3.16.0 and sub-standards; for IC Zone		
Standard 3.19.0; LTAC, LSCRAM & SIU talkgroups		
Standard 3.33.1; STR Cache Radio Standard		
Standard 3.xx.xx; LTAC policy updates	Minor	Operational

Site Trunking Talkgroup	Major	Technical and Operational
Assign an SOA for use in jail/correctional facility communications.	None	Not a change

Change Description	Submitted by	Submitted
Establish standardized interoperability channel names in Minnesota consistent with national standards.	ECN	3/1/2012
Establish a voluntary sunset date for voice operations between 769-773 and 799-803 MHz to accommodate potential future “flexible” broadband use of Public Safety narrowband spectrum in Minnesota.	ECN	3/1/2012
Provide standards, protocols, procedures and operating parameters for short range simplex Scene of Action (SOA) interoperability and tactical channels.	Hennepin Co	3/1/2012
Reconfigure of IC Zone to include 16 STACs, preserving LTACs while repurposing ETACs and FTACs as new STACs.		3/1/2012
Rename LETAC and LESIU to eliminate confusion.		3/1/2012
Establish new and more detailed policies and procedures for the deployment, use, configuration, and maintenance of cache radios as part of the Strategic Technology Reserve (STR).		3/1/2012
Separate proposal for preserving LTAC talkgroups while restricting LTAC talkgroups to law enforcement only for critical or dynamic incidents. Also enables use of LTAC talkgroups in patches and various other operational updates.	Anoka Co	3/1/2012

<p>Assign a statewide talkgroup for Site Trunking so when a subscriber unit is on a tower outside of its normal area it could still reach a PSAP it went into Site Trunking mode.</p>	Mille Lacs Co	3/1/2012
<p>Add language to existing standard 3.15 specifically section three (3) and six (6); to provide for additional intent of use of current Scene of Action PSOA2 for inter and intra communications at jails and/or correctional facilities.</p>	Stearns Co	3/1/2012

OTC Action	IOC Action	OEC/ECN Approval	Finance Approval
Determined as major operational change, 03/13/2012	Concur w/ OTC; 03/20/2012.		
Need Confirmed. Determined as minor technical change, 03/13/2012	Concur w/ OTC 03/20/2012.		
Merged with other Hennepin Co proposals. Collectively determined as major operational change.	Concur w/ OTC 03/20/2012.		
Determined as minor operational change, 03/13/2012	Concur w/ OTC 03/20/2012.		

Need Confirmed. Determined as minor technical and operational change, 03/13/2012	Concur w/ OTC 03/20/2012.		
Determined as not substantial enough to warrant change management review, 03/13/2012	Concur w/ OTC 03/20/2012.	n/a	n/a

SRB Action	Status
	Major operational change. IOC to determine review requirements.
	Minor technical change. To undergo state system admin and Mn/DOT review. Since it requires a standard revision, will also reappear at OTC.
	Major operational change. IOC to determine review requirements.
	Minor operational change. Requires SWIC concurrence and final IOC approval.

	Major technical and operational change. To undergo MnDOT technical review and system administrator review. Also, IOC to determine proposal review requirements. Will need to clear both legs of change management process.
n/a	To reappear at IOC and/or OTC outside of change management process as a regular standard amendment.

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

Document Section:	3 – Interoperability Standards	Status: Interoperability Committee Date: 00/00/10
Sub-Section:	State 3.18.0	
Procedure Title:	Standardized FCC Interoperability Channel Naming Format	
Date Established:	01/07/10	SRB Approval: 00/00/10
Replaces Document Dated:	n/a	
Date Revised:	n/a	

1. Purpose or Objective:

The intent of this policy is that each FCC designated Interoperability Channel in the Public Safety Radio Services (47CFR part 90) shall have a unique name developed according to a standardized format. This unique name shall be used by all jurisdictions participating on the ARMER Radio System.

The format consists of a maximum of eight characters. Because some radios cannot support eight characters a six character name for some channels where radios cannot, for technical reasons, support the eight character names has been developed. The six character name shall only be used in equipment that is not capable of implementing the eight character name.

2. Standard naming format:

B **Spectrum Band**

The Spectrum Band designator is a unique single alpha or numeric character to designate the public safety spectrum segment the channel is found within:

- L** VHF low Band (30-50 MHZ)
- V** VHF High Band (150.8-162.0 MHZ) – Not used for channel names in six character format.
- U** UHF band (450-470 MHZ) – not used for channel names in six character format.
- 7** 700 MHz Public Safety Narrowband Voice Band (769-775 / 799-805 MHz).
- 8** 800 MHz NPSPAC band **after the rebanding process** (806 – 809 / 851-854 MHz) – Not used for channel names in six character format.

type **Channel Use Designator**

The Channel Use Designator is an alphanumeric three or four place tag to signify the primary purpose of operations on the channel. use has been specified in FCC Rules or related Orders. To facilitate the use of these Channel Names in older radios with only 6

Characters available in the display, the first “Band” character is deleted, and the “**type**” Channel Use field is limited to the first 3 characters. Short Form names are not applicable to the 700 MHz Band since equipment for this band is new and does not have the character limitation.

8 Character Format	6 Character Format	Definitions
CALL	CAL	Channel is dedicated nationwide for the express Purpose of interoperability calling
DATA	DAT	Channel is reserved nationwide for the express Purpose of data transmission only
FIRE	FIR	Primarily used for interagency incident communications By Fire licensees
GTAC	GTC	Primarily used for interagency incident communications between Public Safety eligible entities and eligible non-government organizations
LAW	LAW	Primarily used for interagency incident communications By police licensees
MED	MED	Primarily used for interagency incident communications By Emergency Medical Service licensees
MOB	MOB	Primarily used for on-scene interagency incident communications By any Public Safety eligible, using vehicular repeaters (FCC Station Class M03)
TAC	TAC	Primarily used for interagency communications by any Public Safety eligible
TRVL	TRV	Primarily used for interagency communications by any Public Safety eligible to coordinate travel when responding to/from an incident outside of an agency’s own jurisdiction

Unique Channel Identifier

The Unique Channel Identifier is a numeric one or two place tag to uniquely identify the specific channel. Channel identifiers are grouped by band segment as follows:

- 1-9 VHF Low Band (30-50 MHz) [no leading zero used]
- 10-39 VHF High Band (150.8 – 163 MHz)
- 40-49 UHF Band (450-470 MHz)
- 50-89 700 MHz (769-775 / 799-805 MHz)
- 90-99 800 MHz “NPSPEC” Band (806-809/851-854 MHz) [Post-rebanding]

Notes:

- Starting in VHF High Band, Channel Identifiers are grouped by Channel Use type, with channel Identifiers ending in “0” reserved for Interoperability Calling use.
- Channels Identifiers specified for Emergency Medical Services (“MED”) in this document are numbered to avoid conflict with the FCC’s UHF medical channel naming methodology specified in 47CFR90.20(d)(65) and 47CFR90.20(d)(66)(i).
- If a new frequency becomes available, it will be given the next unique channel identifier.

M Modifier

The Modifier character is a single alphanumeric tag to identify a modification to the default operation type on the channel/channel pair:

- D Direct or “Talk around” use [Simplex operations on the output channel of a pair normally designated for half-duplex or mobile relay operations.]

3. Standardized Tone Squelch or network Access Codes

ANALOG OPERATIONS:

CTCSS Tone 156.7 Hz shall be used for all analog operations on Interoperability Channels:

1. All (fixed and subscriber) analog transmitters **shall** encode 156.7 HZ.
2. Subscriber receivers should be set for carrier squelch operations unless conditions in the area require the use of tone protection to mitigate adjacent channel interference from intermodulation products. In those cases, receivers shall decode 156.7 Hz.
3. Subject to the approval of applicable Statewide Communications Interoperability Plans and/or FCC-approved Regional Plans, mobile relay (repeater) stations that are part of a local, regional, or statewide interoperability network may be equipped with a second receive CTCSS tone to provide (“in cabinet”) mobile relay operation, provided:
 - a. The relay transmitter continues to transmit the common CTCSS tone of 156.7 Hz so that all users within range of the station are aware the station is in use:
 - b. The relay will accept the common CTCSS tone of 156.7 Hz and present the audio accompanying the 156.7 Hz- encoded transmission for automatic in-cabinet repeat or to a live operator at the appropriate controlling dispatch facility: and
 - c. The operational configuration of the mobile relay station is published in applicable interoperability resource tracking documents (such as the appropriate Tactical Interoperability Communications Plan, Statewide Communications Interoperability Plan, and/or FCC-approved Regional Plan) and databases (CAPRAD, CASM, and NIIX).

DIGITAL OPERATIONS:

Network Access Code (NAC) \$293 shall be used for all digital operations on FCC-designated Interoperability Channels where digital modulation is permitted or required as follows:

1. Subject to the approval of applicable Statewide Communications Interoperability Plans and/or FCC-approved Regional Plans, mobile relay (repeater) stations that are part of a local, regional, or statewide interoperability network may be equipped with a second receive NAC to provide local (“in cabinet”) mobile relay operation, provided:
 - a. The relay transmitter shall continue to transmit the common NAC of \$293 so that all users within range of the station are aware the station is in use;
 - b. The relay shall accept the Common NAC \$293 and present the audio accompanying the \$293-encoded transmission for automatic in-cabinet repeat or to a live operator at the appropriate controlling dispatch facility; and

- c. The operational configuration of the mobile relay station shall be published in applicable resources tracking documents (such as the appropriate Tactical Interoperability Communications Plan, Statewide Communications Interoperability Plan, and/or FCC-approved Regional Plan) and databases (CAPRAD, CASM, and NIIX).
2. NTIA Law Enforcement (LE) channels when operating in digital mode use NAC \$68F. These LE channels all operate in digital mode except LE A, LE B, LE 1, LE 10, and LE 16 which operate in analog mode using 167.9 Hz TX CTCSS.

Subscriber Radio Programming

INTEROPERABILITY CHANNEL CONFIGURATIONS

Interoperability channels listed with both mobile relay and direct configuration should have both configurations of each channel programmed in each subscriber radio, regardless of the available infrastructure in the user's home area.

State and local public safety and public service agencies programming the NTIA VHF and UHF law Enforcement and Incident Response channels into their subscriber equipment should partition those channels into a separate "zone" or "bank" designated as "FED" or "NTIA," while maintaining the NTIA channel designation, as a method to avoid confusion on the user's part between the NTIA channels and any similarly designated local channels.

3. Management:

Violations of the Standardized FCC Interoperability Naming Standard shall be reported to the Statewide Radio Board by the agency that monitors such violations. Repeated infractions will be reviewed by the Statewide Radio Board for the purpose of making recommendations to the Commissioner of Public Safety for action. Warning letters will be sent by the chair of the Statewide Radio Board to agencies who have allegedly violated these rules. Said letters will require a reply from the alleged violator agency to the Chair of the Statewide Radio Board within 10 days of receipt. The letter must include:

1. a detailed explanation of circumstances surrounding the alleged violation
2. what, if any, actions will be taken to prevent reoccurrence of the alleged violation.

If an agency repeatedly violates these rules, the Statewide Radio Board shall recommend that the Commissioner cancel their Authorization to operate on the ARMER Backbone.

Command and Control: Compliance with this standard shall be the responsibility of each Public Safety jurisdiction operating on the ARMER Radio System.

Candidate American National Standard Channel Nomenclature for the Public Safety Interoperability Channels

Table 1: Sorted by band in Numeric Order

FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE,MOBILE, OR FIXED (REPEATER OR CONTROL)	ELIGIBILITY / PRIMARY USE	Original NCC Name	COMMON NAME	LIMITATIONS (47 CFR Part 90)
RECEIVE	TRANSMIT					
MHz	MHz	FCC 30 MHz Public Safety Band				
39.4600	SIMPLEX	Base-Fixed-Mobile	Law Enforcement	3LAW1	LLAW1	90.20(c)(3) [15]
39.4800	SIMPLEX	Base-Fixed-Mobile	Fire <i>Proposed</i>	3FIR2	LFIRE2	Prop. 90.20(c)(3) [19]
45.8600	SIMPLEX	Base-Fixed-Mobile	Law Enforcement	3LAW3	LLAW3	90.20(c)(3) [15]
45.8800	SIMPLEX	Base-Fixed-Mobile	Fire	3FIR4	LFIRE4	90.20(c)(3) [19]
MHz	MHz	FCC 150 - 162 MHz Public Safety Band				
155.7525	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1CALL18	VCALL10	90.20(c)(3) [80,83]
151.1375	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1TAC5	VTAC11	90.20(c)(3) [80]
154.4525	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1TAC13	VTAC12	90.20(c)(3) [80]
158.7375	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1TAC22	VTAC13	90.20(c)(3) [80]
159.4725	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1TAC23	VTAC14	90.20(c)(3) [80]
161.8500	157.2500	Mobile-Fixed	Allocated for Public Safety Use in 33 Inland VPCAs/EAs	1TAC19D	VTAC17	90.20(g)
	SIMPLEX	Base-Fixed-Mobile		1TAC24	VTAC17D	
154.2800	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR9	VFIRE21	90.20(c)(3) [19]
154.2650	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR7	VFIRE22	90.20(c)(3) [19]
154.2950	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR11	VFIRE23	90.20(c)(3) [19]
154.2725	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR8	VFIRE24	90.20(c)(3) [19]
154.2875	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR10	VFIRE25	90.20(c)(3) [19]
154.3025	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR12	VFIRE26	90.20(c)(3) [19]
155.3400	SIMPLEX	Base-Fixed-Mobile	EMS	1EMS14	VMED28	90.20(c)(3) [40]
155.3475	SIMPLEX	Base-Fixed-Mobile	EMS	1EMS15	VMED29	90.20(c)(3) [40]
155.4750	SIMPLEX	Base-Fixed-Mobile	Law Enforcement	1LAW16	VLAW31	90.20(c)(3) [41]
155.4825	SIMPLEX	Base-Fixed-Mobile	Law Enforcement	1LAW17	VLAW32	90.20(c)(3) [41]
MHz	MHz	NTIA VHF Law Enforcement Channels				
167.0875	SIMPLEX	Base-Fixed-Mobile	LE Calling 167.9 Hz CTCSS TX	Analog	LE A	FCC Public Notice DA 01-1621
167.0875	162.0875	Mobile-Fixed	LE Tactical Analog - 167.9 Hz CTCSS TX		LE 1	FCC Public Notice DA 01-1621
167.2500	162.2625	Mobile-Fixed	LE Tactical Digital - \$68F NAC	P25	LE 2	FCC Public Notice DA 01-1621
167.7500	162.8375	Mobile-Fixed	LE Tactical Digital - \$68F NAC	P25	LE 3	FCC Public Notice DA 01-1621
168.1125	163.2875	Mobile-Fixed	LE Tactical Digital - \$68F NAC	P25	LE 4	FCC Public Notice DA 01-1621
168.4625	163.4250	Mobile-Fixed	LE Tactical Digital - \$68F NAC	P25	LE 5	FCC Public Notice DA 01-1621
167.2500	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 6	FCC Public Notice DA 01-1621
167.7500	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 7	FCC Public Notice DA 01-1621
168.1125	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 8	FCC Public Notice DA 01-1621
168.4625	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 9	FCC Public Notice DA 01-1621
MHz	MHz	NTIA VHF Incident Response Channels				
169.5375	164.7125	Mobile-Fixed	Incident Calling 167.9 Hz CTCSS TX	Analog	NC 1CALL	FCC Public Notice DA 01-1621
170.0125	165.2500	Mobile-Fixed	Incident Tactical 167.9 Hz CTCSS TX	Analog	IR 1	FCC Public Notice DA 01-1621
170.4125	165.9625	Mobile-Fixed	Incident Tactical 167.9 Hz CTCSS TX	Analog	IR 2	FCC Public Notice DA 01-1621
170.6875	166.5750	Mobile-Fixed	Incident Tactical 167.9 Hz CTCSS TX	Analog	IR 3	FCC Public Notice DA 01-1621
173.0375	167.3250	Mobile-Fixed	Incident Tactical 167.9 Hz CTCSS TX	Analog	IR 4	FCC Public Notice DA 01-1621
169.5375	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 5	FCC Public Notice DA 01-1621
170.0125	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 6	FCC Public Notice DA 01-1621
170.4125	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 7	FCC Public Notice DA 01-1621
170.6875	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 8	FCC Public Notice DA 01-1621
173.0375	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 9	FCC Public Notice DA 01-1621
<p><i>Use of the NTIA Interoperability Channels by FCC licensees is subject to the conditions specified in FCC Public Notice DA 01-1621. Since DA 01-1621 was issued by the FCC in 2001, NTIA has modified the table of frequencies. NPSTC is working with our Federal partners to have a revised Public Notice issued by the FCC.</i></p>						

Candidate American National Standard Channel Nomenclature for the Public Safety Interoperability Channels

Table 1: Sorted by band in Numeric Order

FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE,MOBILE, OR FIXED (REPEATER OR CONTROL)	ELIGIBILITY / PRIMARY USE	Original NCC Name	COMMON NAME	LIMITATIONS (47 CFR Part 90)
RECEIVE	TRANSMIT					
MHz	MHz	NTIA UHF Law Enforcement Channels				
414.0375	SIMPLEX	Base-Fixed-Mobile	LE Calling Analog - 167.9 Hz CTCSS TX		LE B	FCC Public Notice DA 01-1621
409.9875	418.9875	Mobile-Fixed	LE Tactical Analog - 167.9 Hz CTCSS TX		LE 10	FCC Public Notice DA 01-1621
410.1875	419.1875	Mobile-Fixed	LE Tactical P25 Digital - \$68F NAC		LE 11	FCC Public Notice DA 01-1621
410.6125	419.6125	Mobile-Fixed	LE Tactical P25 Digital - \$68F NAC		LE 12	FCC Public Notice DA 01-1621
414.0625	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 13	FCC Public Notice DA 01-1621
414.3125	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 14	FCC Public Notice DA 01-1621
414.3375	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 15	FCC Public Notice DA 01-1621
409.9875	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) Analog - 167.9 Hz CTCSS TX		LE 16	FCC Public Notice DA 01-1621
410.1875	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 17	FCC Public Notice DA 01-1621
410.6125	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct) P25 Digital - \$68F NAC		LE 18	FCC Public Notice DA 01-1621
MHz	MHz	NTIA UHF Incident Response Channels				
410.2375	164.7125	Mobile-Fixed	Incident Calling 167.9 Hz CTCSS TX	Analog -	NC 2CALL	FCC Public Notice DA 01-1621
410.4375	165.2500	Mobile-Fixed	Incident Tactical - 167.9 Hz CTCSS TX	Analog	IR 10	FCC Public Notice DA 01-1621
410.6375	165.9625	Mobile-Fixed	Incident Tactical - 167.9 Hz CTCSS TX	Analog	IR 11	FCC Public Notice DA 01-1621
410.8375	166.5750	Mobile-Fixed	Incident Tactical - 167.9 Hz CTCSS TX	Analog	IR 12	FCC Public Notice DA 01-1621
413.1875	167.3250	Mobile-Fixed	Incident Tactical - 167.9 Hz CTCSS TX	Analog	IR 13	FCC Public Notice DA 01-1621
413.2125	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 14	FCC Public Notice DA 01-1621
410.2375	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 15	FCC Public Notice DA 01-1621
410.4375	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 16	FCC Public Notice DA 01-1621
410.6375	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 17	FCC Public Notice DA 01-1621
410.8375	SIMPLEX	Base-Fixed-Mobile	Incident Tactical (Direct) Analog - 167.9 Hz CTCSS TX		IR 18	FCC Public Notice DA 01-1621
<p><i>Use of the NTIA Interoperability Channels by FCC licensees is subject to the conditions specified in FCC Public Notice DA 01-1621. Since DA 01-1621 was issued by the FCC in 2001, NTIA has modified the table of frequencies. NPSTC is working with our Federal partners to have a revised Public Notice issued by the FCC.</i></p>						
MHz	MHz	FCC 450 - 470 MHz Public Safety Band				
453.2125	458.2125	Mobile-Fixed	Any Public Safety Eligible	4CAL27D 4CAL27	UCALL40	90.20(c)(3) [80,83]
	SIMPLEX	Base-Fixed-Mobile			UCALL40D	
453.4625	458.4625	Mobile-Fixed	Any Public Safety Eligible	4TAC28D 4TAC28	UTAC41	90.20(c)(3) [80]
	SIMPLEX	Base-Fixed-Mobile			UTAC41D	
453.7125	458.7125	Mobile-Fixed	Any Public Safety Eligible	4TAC29D 4TAC29	UTAC42	90.20(c)(3) [80]
	SIMPLEX	Base-Fixed-Mobile			UTAC42D	
453.8625	458.8625	Mobile-Fixed	Any Public Safety Eligible	4TAC30D 4TAC30	UTAC43	90.20(c)(3) [80]
	SIMPLEX	Base-Fixed-Mobile			UTAC43D	

Candidate American National Standard Channel Nomenclature for the Public Safety Interoperability Channels

Table 1: Sorted by band in Numeric Order

FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE,MOBILE, OR FIXED (REPEATER OR CONTROL)	ELIGIBILITY / PRIMARY USE	Original NCC Name	COMMON NAME	LIMITATIONS (47 CFR Part 90)
RECEIVE	TRANSMIT					
FCC 700 MHz Public Safety Band (12.5 kHz Channels)						
769.24375	799.24375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Calling Channel	7CAL59	7CALL50 7CALL50D	90.531(a)(1)(ii)
769.14375	799.14375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service (secondary trunked)	7TAC58	7TAC51 7TAC51D	90.531(a)(1)(iii)
769.64375	799.64375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service (secondary trunked)	7TAC62	7TAC52 7TAC52D	90.531(a)(1)(iii)
770.14375	800.14375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service (secondary trunked)	7TAC66	7TAC53 7TAC53D	90.531(a)(1)(iii)
770.64375	800.64375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service (secondary trunked)	7TAC70	7TAC54 7TAC54D	90.531(a)(1)(iii)
769.74375	799.74375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service	7TAC63	7TAC55 7TAC55D	
770.24375	800.24375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service	7TAC67	7TAC56 7TAC56D	
770.99375	800.99375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Other Public Service	7TAC73	7GTAC57 7GTAC57D	
770.89375	800.89375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Mobile Repeater (M03 Use Primary)	7MOB72	7MOB59 7MOB59D	
770.39375	800.39375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Law Enforcement	7LAW68	7LAW61 7LAW61D	
770.49375	800.49375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Law Enforcement	7LAW69	7LAW62 7LAW62D	
769.89375	799.89375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Fire	7FIR64	7FIRE63 7FIRE63D	
769.99375	799.99375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Fire	7FIR65	7FIRE64 7FIRE64D	
769.39375	799.39375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	EMS	7MED60	7MED65 7MED65D	
769.49375	799.49375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	EMS	7EMS61	7MED66 7MED66D	
770.74375	800.74375 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Mobile Data	7DAT71	7DATA69 7DATA69D	90.531(a)(1)(i)
773.25625	803.25625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Calling Channel	7CAL75	7CALL70 7CALL70D	90.531(a)(1)(ii)
773.10625	803.10625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service (secondary trunked)	7TAC74	7TAC71 7TAC71D	90.531(a)(1)(iii)
773.60625	803.60625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service (secondary trunked)	7TAC78	7TAC72 7TAC72D	90.531(a)(1)(iii)
774.10625	804.10625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service (secondary trunked)	7TAC82	7TAC73 7TAC73D	90.531(a)(1)(iii)
774.60625	804.60625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service (secondary trunked)	7TAC86	7TAC74 7TAC74D	90.531(a)(1)(iii)
773.75625	803.75625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service	7TAC79	7TAC75 7TAC75D	
774.25625	804.25625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	General Public Safety Service	7TAC83	7TAC76 7TAC76D	
774.85625	804.85625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Other Public Service	7TAC89	7GTAC77 7GTAC77D	
774.50625	804.50625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Mobile Repeater (M03 Use Primary)	7MOB88	7MOB79 7MOB79D	
774.00625	804.00625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Law Enforcement	7LAW84	7LAW81 7LAW81D	
774.35625	804.35625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Law Enforcement	7LAW85	7LAW82 7LAW82D	
773.50625	803.50625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Fire	7FIR80	7FIRE83 7FIRE83D	
773.85625	803.85625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Fire	7FIR81	7FIRE84 7FIRE84D	
773.00625	803.00625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	EMS	7EMS76	7MED86 7MED86D	
773.35625	803.35625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	EMS	7EMS77	7MED87 7MED87D	
774.75625	804.75625 SIMPLEX	Mobile-Fixed Base-Fixed-Mobile	Mobile Data	7DAT87	7DATA89 7DATA89D	90.531(a)(1)(i)

Candidate American National Standard Channel Nomenclature for the Public Safety Interoperability Channels

Table 1: Sorted by band in Numeric Order

FREQ / FCC CHANNEL (SUBSCRIBER LOAD)		BASE, MOBILE, OR FIXED (REPEATER OR CONTROL)	ELIGIBILITY / PRIMARY USE	Original NCC Name	COMMON NAME	LIMITATIONS (47 CFR Part 90)
RECEIVE	TRANSMIT					
MHz		FCC 800 MHz NPSPAC Band (<i>Post-Rebanding</i>)				
851.0125	806.0125	Mobile-Fixed	Any Public Safety Eligible	8CAL90	8CALL90	90.16
	SIMPLEX	Base-Fixed-Mobile		8CAL90D	8CALL90D	
851.5125	806.5125	Mobile-Fixed	Any Public Safety Eligible	8TAC91	8TAC91	90.16
	SIMPLEX	Base-Fixed-Mobile		8TAC91D	8TAC91D	
852.0125	807.0125	Mobile-Fixed	Any Public Safety Eligible	8TAC92	8TAC92	90.16
	SIMPLEX	Base-Fixed-Mobile		8TAC92D	8TAC92D	
852.5125	807.5125	Mobile-Fixed	Any Public Safety Eligible	8TAC93	8TAC93	90.16
	SIMPLEX	Base-Fixed-Mobile		8TAC93D	8TAC93D	
853.0125	808.0125	Mobile-Fixed	Any Public Safety Eligible	8TAC94	8TAC94	90.16
	SIMPLEX	Base-Fixed-Mobile		8TAC94D	8TAC94D	

Allied Radio Matrix for Emergency Response (ARMER)

Change Proposal

1. Administrative Information:

Type of Change (Technical or Operational):

Technical

Date Submitted:

03/01/2012

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

Emergency Communication Networks

Change Sponsor (Individual) Contact Information:

Tom Johnson

tom.m.johnson@state.mn.us

Office 651-201-7552

2. Summary of proposed change(s):

To establish standardized interoperability channel names in Minnesota consistent with national standards.

Additionally, to establish standard signaling CTCSS tones and NAC codes for interoperability channels also consistent with national standards.

3. Existing SRB standards impacted:

1.1.1

2.6.0

3.1.0

3.5.0

3.7.0

3.8.0

3.9.0

3.10.0

4. Scope of Change:

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

All radio users in Minnesota.

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

None. No upgrades will be required to support this standard. This standard only changes text names for channels and sets standard values for the signaling in those channels.

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

None. All interoperability channels will be used consistent with their original intent.

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

None. Users will use interoperability channels in the same manner as prescribed.

Impact on reprogramming or configuration of end-user equipment:

Subscribers: Most subscribers in Minnesota are likely to have already programmed or plan to program channel names to be consistent with national standards. However, all those subscribers with channel names inconsistent with these standards will have to be reprogrammed to reflect these new names.

Consoles: See above.

Other equipment: See above.

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

A lack of standardized channel names creates confusion and needlessly inhibits interoperability.

E.g., to a user, "VLAW31" and "MINSEF" do not appear to be the same channel. However they use the same frequency and CTCSS tones and are, in fact, the same channel.

6. Expected improvements & benefits resulting from the change:

Standardized channel names for interoperability channels will reduce the confusion and needless inhibition on interoperability as described above.

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

Start and End Date:

It is anticipated that other requested changes under change management will require reprogramming of radios. This request shall defer to any of the change schedules proposed under alternative plans; e.g., will be executed in concert with any other anticipated change requiring reprogramming of radios.

Alternatively, the following dates are proposed:

November 1, 2012: Transition period begins. Users may reprogram interoperability channels at any point beginning at this time.

January 1, 2012: Transition period ends. All radios will have been reprogrammed consistent with this change at this time.

Description of Implementation Plan:

See above.

Additionally, ECN shall maintain a list of all counties who have completed reprogramming their radios consistent with this standard.

Each Regional Radio Board shall report during regular meetings during December November 2012, December 2012, and January 2013 whether it his completed reprogramming radios.

Those entities not belonging to a Regional Radio Board shall report to the Statewide Radio Board as above.

ECN shall query each Regional Radio Board the week following its regular meeting during November 2012, December 2012, and January 2013 to receive a list of members who have completed reprogramming radios.

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

Standard 3.18.0 was passed by the IOC in 2010 and referred to the OTC for concurrence. The OTC elected in August 2010 to defer this standard to the then “Change Control Workgroup”, whose modern equivalent is the Change Management Process.

9. List of Attached proposed new or revised Standards, Plans or Best Practices Guides:

Standard 3.18.0 as seen in 2010 by the IOC and OTC.

10. Other Attachments:

Standard 3.18.0 as seen in 2010 by the IOC and OTC.

IOC minutes, May 2010.

OTC Minutes, August 2010.

APCO Standard Channel Naming Policy. APCO/NPSTC ANSI 1.104.1-2010.

11. Tracking and Approvals:

Submitter Approval:

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

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

Document Section:		Status: Committee Date: 00/00/00
Sub-Section:	State 1.15.0	
Procedure Title:	Voluntary sunset for narrowband transmissions between 769-773 and 799-803 MHz	
Date Established:	03/01/2012	SRB Approval: 00/00/00
Replaces Document Dated:	00/00/00	
Date Revised:	00/00/00	

1. Purpose or Objective

To establish a voluntary sunset date for voice operations between 769-773 and 799-803 MHz to accommodate potential future “flexible” broadband use of Public Safety narrowband spectrum in Minnesota.

2. Technical Background:

The Middle Class Tax Relief and Job Creation Act of 2012, Title VI, Subt. A, Sec. 6102, “Flexible use of narrowband spectrum” enables the Federal Communications Commission to allow public safety narrowband spectrum to be used in a flexible manner, including usage for public safety broadband communications, subject to such technical and interference protection measures as the Commission may require.¹

▪ **Capabilities:**

700 MHz public safety narrowband and guard band spectrum, which is directly adjacent the Public Safety Broadband allocation, could be used for broadband communications to increase total public safety broadband spectrum from 10x10 MHz to 15x15 MHz, effectively increasing by 50% the throughput available over-the-air to public safety devices in the field.

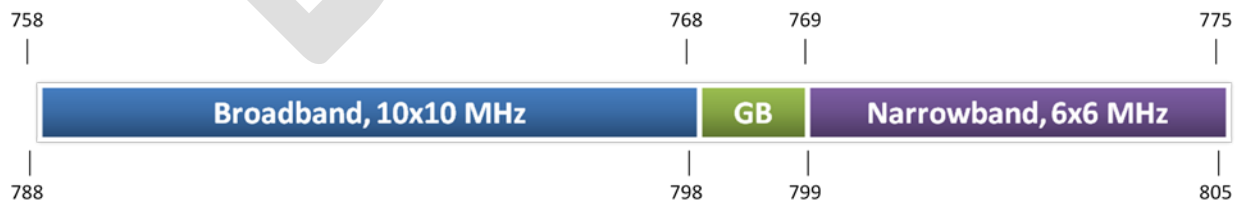


Figure 1: Public Safety 700 MHz spectrum

¹ See Middle Class Tax Relief and Job Creation Act of 2012. <http://www.gpo.gov/fdsys/pkg/BILLS-112hr3630enr/pdf/BILLS-112hr3630enr.pdf>

- **Constraints**

In general, this standard is subject to pending regulatory action from the FCC. It is strictly anticipatory and voluntary. As of this writing, the SRB does not have the authority to utilize narrowband spectrum for broadband.

This spectrum is originally designated for public safety narrowband voice communications, generally using Project 25 modulation, except for a small number of special-purpose channels.

Broadband transmissions in LTE and P25 cause destructive co-channel/adjacent-channel interference to each other. In order to use this spectrum for broadband communications, there must be no voice operations on the same spectrum within the same service area. This exclusivity reduces effective spectrum available for land mobile radio in Minnesota by a total of 6 MHz.

As of this writing, this spectrum is not included in LTE Band Class 14 (758-768 and 788-798 MHz). 3GPP will have to pass a standard incorporating this spectrum into future LTE specifications. The current LTE version in most network equipment is at 3GPP Release 9, which was frozen in December 2009.² Expansion for Band Class 14 would be incorporated into LTE in 3GPP Releases 10, 11, or 12, which are scheduled for future implementation.

As of this writing, existing equipment does not support these frequencies, as existing equipment is built to support existing band classes. Current equipment supports Band Class 14 (758-768 and 788-798 MHz). This equipment would not benefit from the extra bandwidth in an expanded band class.

As of this writing, the FCC has not authorized flexible use of 700 MHz narrowband spectrum. However, the FCC has explored this topic in public inquiries before it was signed into law.³ Minnesota's filings with the FCC have supported flexible use of this spectrum in Minnesota, but have observed that in some markets, this use is not feasible as the spectrum is used for land mobile radio systems.

- **Interoperability Channels Affected**

Repurposing this spectrum for broadband communications would reduce available interoperability channels in the 700 MHz band in Minnesota by approximately 75%.

This standard would cause interference with a number of nationwide interoperability channels within Minnesota and immediately outside of its borders. These channels are:

23, 24, 39, 40, 63, 64, 79, 80, 103, 104, 119, 120, 143, 144, 159, 160, 183, 184, 199, 200, 223, 224, 239, 240, 263, 264, 279, 280, 303, 304, 319, 320, 641, 642, 657, 658, 681, 682, 697, 698,

² See "LTE". <http://www.3gpp.org/LTE>

³ See FCC DA 10-1877, "Public Safety and Homeland Security Bureau Seeks Comment on the Technical and Operational Feasibility of Enabling Flexible use of the 700 MHz Public Safety Narrowband Allocation and Guard Band for Broadband Service." http://transition.fcc.gov/Daily_Releases/Daily_Business/2010/db0928/DA-10-1877A1.pdf

721, 722, 737, 738, 761, 762, 777, 778, 983, 984, 999, 1000, 1023, 1024, 1039, 1040, 1063, 1064, 1079, 1080, 1103, 1104, 1119, 1120, 1143, 1144, 1159, 1160, 1183, 1184, 1199, 1200, 1223, 1224, 1239, 1240, 1263, 1264, 1279, 1280, 1601, 1602, 1617, 1618, 1641, 1642, 1657, 1658, 1681, 1682, 1697, and 1698.⁴

This standard would cause interference with all nationwide interoperability calling channels, again within Minnesota and immediately outside of its borders. These channels are:

39/999, 40/1000, 681/1641, and 682/1642.

This standard would cause interference with a number of low-power “7SOA” channels:

1-8 paired with 961-968; itinerant channels 9-12 paired with 969-972.⁵

All interoperability channels listed in this section would be covered under the voluntary sunset provision and unavailable for use.

3. Operational Context:

If this spectrum is planned to be repurposed for broadband communications in the future, there must be a sunset date for voice operations on that spectrum so that there are no issues for potential incumbents who would have implemented the spectrum into their land mobile radio systems. If this spectrum is used for broadband, incumbent narrowband communications on that same spectrum must cease. Establishing a sunset date ahead of time will allow users to plan accordingly and avoid causing any destructive interference.

The Minnesota Public Safety Broadband Needs Assessment Report shows that major incidents, not including push-to-talk voice, could require greater than the available 20 MHz of public safety broadband spectrum to meet demand.⁶

As of this writing, there are two groups of licenses using public safety 700 MHz narrowband spectrum:

- Metropolitan-area HPD mid-speed data system, operating under waiver under old interleaved 700 MHz band plan, licensed to Hennepin County and surrounding counties on fixed and mobile stations.

⁴ Note that in the 700 MHz band plan, one channel is equivalent to 6.25 kHz. Accordingly, a Project-25 Phase 1 transmission occupies 2 channels.

⁵ Note as above. These channels are exempt from the 2017 6.25 kHz narrowband requirement for 700 MHz transmissions. Since 2 channels in the 700 MHz band plan are occupied by one Project 25 Phase 1 or analog narrowband transmission, channels 1-2 are 7SOA1, channels 3-4 7SOA2, etc.

⁶ See Minnesota Public Safety Wireless Data Network Requirements project, Needs Assessment Report, pg. 20. The “future metropolitan” traffic scenario shows a peak downlink of 11.366 Mbps and peak uplink of 5.263 Mbps. LTE will support approximately 15 Mbps down and 6.5 Mbps up with 10 MHz channels in ideal conditions; leaving very little room for any issues that may reduce throughput, any new technologies or users not anticipated in the report, and almost no bandwidth to add voice communications if desired during an incident.

- “7SOA” low-power analog channels, licensed to Hennepin County for statewide (low power channels) and nationwide operation (itinerant low power channels) on mobile stations on a per-frequency basis as rules apply.

It is unlikely that flexible use of this spectrum would be authorized before 2014 at the soonest as it would be subject to a standard FCC rulemaking cycle. Additionally, any flexible use would likely be subject to regional coordination and approval. Finally, it is possible that the FCC will never authorize flexible use of the spectrum.

The Region 22 700 MHz Plan has not designated 700 MHz low-power “7SOA” channels, stating that “the need is fulfilled by . . . NPSPAC [8]SOA channels”.⁷ Additionally, 700 MHz spectrum is not used extensively throughout Minnesota or the Greater Midwest. It is presently used in Manitoba or Ontario for broadcast television but is scheduled for auction after DTV transition. There are efforts within Canada to harmonize 700 MHz public safety spectrum with that of the US post-auction.

Allocated between 768-769 and 798-799 MHz is a 1 MHz guard band. According to prior FCC inquiry, this guard band would be included under the “flexible use” provision and used for broadband and a new guard band would be established at 773-774 and 803-804 MHz. LTE supports, among others, channel bandwidths of 5, 10, 15, and 20 MHz. It does not support 6 MHz channel bandwidths. While there are paired 6 MHz narrowband channels in 700 MHz band, only 5 MHz of each channel is useful for LTE broadband. The remaining 1 MHz of each channel should thus remain available to narrowband.

2 MHz of the narrowband spectrum will be preserved for narrowband voice, preserving up to 80 Project 25 Phase I channels and 160 Project Phase 2 channels, minus those special-purpose channels reserved for interoperability and low-power “SOA” purposes and with respect to adjacent-channel interference.

4. Recommended Protocol/ Standard:

These rules in effect, on a voluntary basis, -when:

- ~~there~~ There exists a public safety broadband network in Minnesota capable of operating between 768-773 and 798-803 MHz, or on January 1, 2017 or a separate date determined upon majority vote by the Statewide Radio Board, whichever is later.;
- The Statewide Radio Board and each Regional Radio Board, or their equivalents, concur.
- Each and every incumbent licensee operating in the 700 MHz public safety narrowband spectrum concurs and has a plan for vacating that band.
- On a voluntary and planning basis only, with no tangible penalty for lack of compliance, noting that the Statewide Radio Board is Minnesota’s SIEC but has limited or no actual authority to allocate spectrum.

All narrowband voice operations between 769-773 and 799-803 MHz (channel nos. 1-800 and 961-1760) in the state of Minnesota will cease.

⁷ See Region 22 700 MHz Plan 5.14. <https://dps.mn.gov/divisions/ecn/Documents/Region%2022%20Plan1.pdf>

Narrowband voice operations in the 700 MHz band are allowed between only 774-775 and 804-805 MHz (channel nos. 801-960 and 1761-1920).

There are no transmissions within the state of Minnesota between 773-774 and 803-804 MHz.

In no case shall any action taken pursuant to this policy interfere with incumbent narrowband radio or wideband data operations in the band.

5. Recommended Procedure:

The following requested of the RPC:

The RPC will only provide concurrence for narrowband channels between 774-775 and 804-805 MHz (those General Use channels within channel nos. 801-960 and 1761-1920). In such case as a qualified potential licensee requests concurrence from the RPC for its license, and there are no pre-allocated channels within the provided range, the RPC shall amend its plan to provide for an available channel within 30 days of the request plus time for coordination through adjacent RPCs and approval by the FCC. Should the RPC otherwise approve of the request, it shall provide a tentative letter of concurrence within 30 days of the request to be followed by a formal letter of concurrence once the Region 22 700 MHz plan is amended and approved.

The RPC will amend its Region 22 Plan according to this standard.

The following requested of the state of Minnesota:

The State will only use State License channels within the 700 MHz band between 774-775 and 804-805 MHz (channel nos. 805–816, 845–856, 885–896, 925–936, 985–996 paired with 1765–1776, 1805–1816, 1845–1856, 1885–1896).

6. Management:

This standard to be maintained by DPS-ECN.

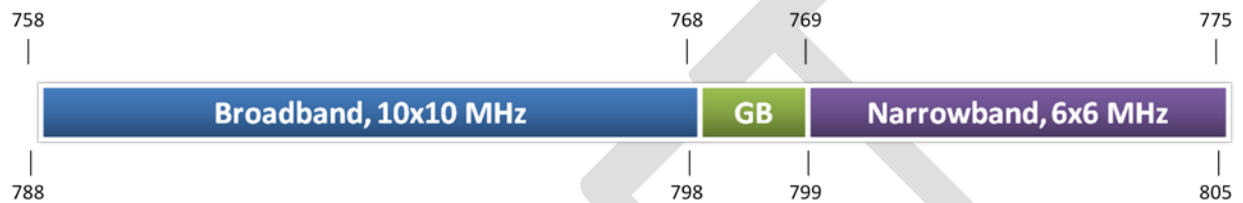
DPS-ECN to interact with the appropriate governance and legal entities, including FirstNet, NTIA, and the FCC, to pursue enacting rules consistent with this standard.

Upon such time as the FCC elects either to permit or *not to permit* flexible use of narrowband spectrum as described in this standard, the standard shall be amended accordingly.

Upon such time as affected stakeholders, such as adjacent region RPCs, the FCC, the provinces of Manitoba and Ontario or other entities may reject or request added qualifications to this standard or the RPC's amended plan, this standard shall be amended accordingly.

APPENDIX A: NEW VOLUNTARY USE OF 700 MHz BAND RECOMMENDED BY SRB

1. Current band plan:



2. New voluntary use recommended by SRB by January 1, 2017, subject to applicable rules:



APPENDIX B: EXISTING 700 MHz BAND PLAN

The 700 MHz public safety band plan is outlined in the attached following pages.

Note that this chart only includes downlink channel nos. 1-960; all channels in this band are paired with an uplink channel at +30 MHz, or +960 channels.

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