

Southeast Minnesota Regional Radio Board Standards, Protocols, Procedures

Document Section:	3 – Interoperability Standards	Status: Approved
Sub-Section:	SE 3.33.1	
Procedure Title:	STR – Radio Cache and transportable tower/repeater	SERRB Approval:
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1. Purpose or Objective:

To establish policies and procedures for the deployment and use of the following Strategic Technology Reserve (STR) components:

- 800 MHz Radio Cache
- 50 foot Transportable Tower and associated cross band repeater.

2. Technical Background

• Capabilities

As part of the Public Safety Interoperable Communication grant program, a radio cache of 30 ARMER capable radios is established in each of the six non-metro radio regions in the state. The ARMER radio cache capabilities are described as follows:

Resource	Description
ARMER Radio Cache	30 Motorola XTS1500 Portable Radios (Model 1.5) Note: The radios are programmed for trunked operation on the ARMER system. They are not provisioned with encryption software.
Extra Batteries and Chargers	Each radio cache contains an extra battery for each radio and three (3) Impress multi-unit chargers with two hardened plastic storage cases.
Transportable Tower	50' trailer based, crank up aluminum tower, assembled with 800 MHz, VHF and amateur radio antennas and transmission cables.
Repeaters	Repeaters-Transportable 800 MHz and VHF repeater capable of cross-band operation and operating in either analog or digital P25 modes. The 800 MHz repeater is equipped to support 5-800 MHz frequency pairs and a VHF frequency pair for repeater operation. The repeaters are enclosed in a case that can be transported in the back of an SUV, weight of approximately 70 lbs. The repeater is battery operated and can be connected to a 12 volt vehicle battery or 120 VAC power source.

The STR radio cache radios are programmed with statewide interoperability talkgroups (Zone 1), 800 MHz Scene of Action (SOA) channels and all National Public Safety Planning Advisory Committee (NPSPAC) interoperability channels (Zone 2), and regional interoperability talkgroups (Zone 3). A fleetmap for the STR Radio Cache radios is attached to this standard.

Through the allocation of the STR resource and STR transportable towers and repeaters, each region of the state should have an ability to respond immediately to any catastrophic loss of the existing public safety communications resources, to provide additional communication resources under certain circumstances and to provide local responders with a transportable communication resource should they respond to a major event or natural disaster in another state.

- **Constraints**

With a statewide footprint, the ARMER system is capable of providing immediate communication resources in locations where independent public safety radio systems are maintained. The deployment of an ARMER radio cache and transportable tower/repeater are capable of providing substantial regional and statewide communication resources under circumstances where the ARMER backbone remains intact.

Although more limited, the deployment of an ARMER radio cache in conjunction with the STR transportable tower and repeater provides added resources, operation without the ARMER backbone (or the STR Satellite Connected Communications Site on Wheels-SATCOW) will be limited to NPSPAC repeater channels and Scene of Action-SOA channel (radio to radio) operation.

Although maintenance demands are minimal, STR radio cache batteries must be periodically rotated through chargers to assure availability and radio users should be familiar with characteristics of trunked radio operation and critical radio features before radio assignment. The assignment and deployment of STR cache radios (as a unit of 30 radios and individually) must be documented to make sure radios and batteries are accounted for and returned to the proper location. (See Section 5)

3. Operational Context

The STR radio cache is one element of a comprehensive STR capability available within the state. Additional elements include transportable tower / repeater, Satellite Connected Communications Site on Wheels-enabled ARMER base radio site, SATCOW (Standard 3.33.3) and Satellite enabled Remote Communication Platform (RCP) (Standard 3.33.4). The allocation of an STR radio cache and an STR transportable tower/repeater to every Regional Radio Board (RRB) provides them with a resource that can be placed into service within the region very quickly. Upon deployment to the scene or area of operation, a STR radio cache can be put into operation very quickly, depending upon the configuration (for use on the ARMER backbone, for use on Scene of Action (SOA) channels, for use in conjunction with STR transportable tower/repeater, for use with STR SATCOW).

To maintain operational readiness and availability of the equipment, the Southeast Regional Radio Board, hereafter the SERRB designates the following:

- Points of Contact for access to the equipment:
Primary: Winona County PSAP
Phone: 507-457-6491

Secondary:
Phone:

• Point of Contact for operational functionality of equipment:
Primary Contact: Michael Peterson
507-457-6498
651-564-0875

A STR radio cache may be deployed individually or used in conjunction with other STR resources to include the transportable tower and repeater. There are 180 identically equipped and programmed radios available (30 in each non-metro region) as part of the STR radio cache resources that are available for rapid deployment throughout the state. Additional ARMER radio caches are available at various locations throughout the state, including a substantial ARMER Radio Cache of 180 radios maintained by the Division of Emergency Networks as part of the Urban Area

Security Initiative (UASI) capability. Depending upon the configuration, the range of operation of this resource may be limited.

Users should be advised of operational expectations at the time of deployment, as follows:

- ARMER Backbone Operation-Operational characteristics are consistent with normal backbone operation and are limited only by capacity (number of trunked channels available) and coverage (standard coverage characteristics).
- Scene of Action Channels (Radio to Radio) – depending upon the environment reliable communication may be expected at a distance of 2-3 miles between radios. Portable to mobile radio communication may provide better communications and at the fringes of coverage minor positioning shifts may re-establish communication between radios. Users should be advised that when operating on Scene of Action mode, they should not assume other users have received all communications unless the area of operations is very small.
- STR Transportable Tower/Repeater – While operating on a repeated NPSPAC channel, a range of operations of 3-7 miles might be expected. Actual coverage will vary depending upon tower placement, terrain, and the composition of structures within the area of operation.
- STR SAT-COW – while operating from the STR SAT-COW, a range of 7-10 miles from the SAT-COW location might be expected. Actual coverage will vary depending upon the SAT-COW placement, terrain, and the composition of structures within the area of operation.
- Users assigned to critical operations should all be made aware of one SOA channel that will be resorted to should system resources (ARMER backbone, Satellite enabled ARMER base radio site, NPSPAC repeater) become unavailable.

4. Standardized Policy

Every region of the state should have access to basic STR components (radio cache and transportable tower/repeater) necessary to immediately respond to any loss of basic public safety communications. The Standard defines the steps necessary to make sure the STR radio cache is available for deployment by addressing the requirements to maintain, operate and deploy the STR radio cache.

To the greatest extent possible, SERRB basic STR components (radio cache and transportable tower/repeater) will be made available to support operations in other regions of the state and to provide communication resources for public safety personnel responding to an event or disaster in another state.

5. Standardized Procedure

SERRB shall provide for the STR radio cache and STR transportable tower/repeater as follows:

Maintenance and Storage

- The STR radio cache must be maintained in a temperature controlled secured inside area to prevent loss or disturbance to equipment.
- Battery chargers must have uninterrupted access to an electrical power supply to provide for proper battery maintenance.

- STR radio batteries should be rotated through Impres charges at least once per month. Any deficiencies or issues should be reported to the primary point of contact for the resource immediately. In addition to rotation through Impres chargers provided for here, batteries should be operationally tested at least once every 18 months.
- STR radio cache radios should be shop tested at least every 18 months or at any other time a specific problem is noted.
- STR transportable tower/repeater must be maintained in a secured area to prevent intentional and unintentional damage to the equipment.
 1. Transportable towers may be stored outside in a secured or otherwise protected area and covered to protect coaxial cables and connectors from corrosion.
 2. Cased repeaters must be stored inside with access to an electrical power supply to keep on-board batteries fully charged at all times.

Safety note: Repeaters weigh approximately 70 pounds and should be carried by two people when loading or transporting.

- STR transportable tower/repeater should be fully exercised at least once every six months in a structured exercise to assure all equipment and features are in good working order. Any deficiencies or issues should be reported to the primary point of contact for the resource immediately. In addition to the semi-annual exercise of the equipment, the repeater battery should be maintained with a “maintenance charge” and tested under load at least once annually.
- STR transportable repeater should be tested by a qualified technician at least once every year, including tests of the frequency, power output and controller.

Resource Activation

- The region’s designated point of contact and alternate contact should be listed in each region’s Tactical Interoperable Communication Plan (TICP) and must have access to the STR radio cache and transportable tower/repeater at all times.
- When practical, a person capable of and authorized to program the radios should deliver the radios to the incident scene and be available for on-scene support during the deployment. For deployment of the transportable tower at least one person involved in the deployment, a deployment team leader, must have participated in deployment familiarization training within the last year. It may be possible for a qualified person to conduct deployment familiarization training immediately before deployment, but such training must be documented.
- A pre-deployment checklist should be maintained with the equipment that includes a thorough list of the equipment (including serial numbers of radios), verification of deployment familiarization training and verification of set up procedures.
- Written step by step set up procedures, including safety notices, should be reviewed periodically and must be maintained with the equipment at all times.

- Each radio should be labeled with the owning agency's identification.
- Copies of equipment lists, which may be combined with the pre-deployment check list, shall be maintained with each STR radio cache to document assignment of the STR radio cache as a unit or the assignment of individual pieces of equipment for the STR radio cache.
- A user deployment checklist should be maintained with each STR radio cache outlining the basic elements of use of cache radios (such as talkgroup selection, maintenance of assigned zone, and other relevant information) for users who have not previously participated in ARMER equipment use training.
- Laminated fleetmap lists shall be available for deployment with each STR radio cache radio and should be reviewed periodically to assure accuracy and legibility.
- Deployment of a STR radio cache or of individual radios from a STR radio cache or deployment of the transportable tower/repeater may be for any purpose authorized by the SERRB, provided that such deployments must be temporary and provide for immediate return where the resource is needed for assignment to an STR purpose.
- Deployment outside the region to support public safety response to an event or natural disaster shall be provided for in the RRB local standard which may contain reasonable prerequisites. Note: STR radio caches and STR transportable tower/repeater are standardized to assure compatibility of the resource across the state. Once the cache radios have arrived at the incident scene, the Incident Commander is responsible for resource tracking of the radio cache.

Resource Deactivation

- The requesting agency shall be responsible for the return of any cache radios/equipment to the owner agency. Unless other terms have been approved, the requesting agency shall return all cache radios/equipment within 72 hours of the closing of the event for which the request was made.
- The requesting agency shall ensure that all STR cache radios are returned to owner agency with the programming in which they were issued.
- The requesting agency assumes full risk for cache radios which are lost, stolen, damaged, consumed, and inoperable or destroyed until the radios are returned to the owner agency.
- The requesting agency shall reimburse the owner agency for the repair or replacement cost of any radio, accessories, batteries or other equipment which are lost, stolen, damaged, consumed, and inoperable or destroyed.
- Deactivation of the transportable tower/repeater shall be performed in the presence of at least one person, a deactivation team leader, who has participated in deployment familiarization training within the last year. It may be possible for a qualified person to conduct deactivation familiarization training immediately before deactivation, but such training must be documented.

Operational Training

- All trained Communication Unit Leaders (COM-L) in the SE region should be familiar with the STR radio cache and STR transportable tower/repeater capability and configuration and with basic operational characteristics of STR radio cache radios and STR transportable tower/repeater.
- Deployment familiarization training should be conducted at least once a year.
- Prior to the assignment of individual STR radio cache radios, users who have not been trained in the use of similar ARMER radios shall be provided with a short explanation of the basic elements of operation and of the radio fleetmap.
- The STR radio cache and STR transportable tower/repeater shall be made available for local disaster exercises, local events (fairs or celebrations) or other activities through which operational personnel will become familiar with the deployment procedures and operational characteristics of the equipment.

6. Management

The SERRB and the entity to which the STR radio cache has been transferred are responsible for assuring compliance with the standard. The Statewide Radio Board (SRB) STR subcommittee shall conduct an annual review of this standard and make adjustments as necessary. In that process, the subcommittee shall seek comment and suggestion from the STR ARMER radio cache and STR transportable tower points of contact and may inspect equipment to determine needs.

Standard Operating Procedures

- **Maintenance and Storage:**

- A. The STR radio cache must be maintained in a temperature controlled secured inside area to prevent loss or disturbance to equipment.

Designated Location:

Winona County Sheriff's Office
201 W 3rd St
Winona, MN 55987
507-457-6368

- B. Battery chargers must have uninterrupted access to an electrical power supply to provide for proper battery maintenance.
- C. STR radio batteries should be rotated through Impres charges at least once per month. Any deficiencies or issues should be reported to the primary point of contact for the resource immediately. In addition to rotation through Impres chargers provided for here, batteries should be operationally tested at least once every 18 months.

Weekly Rotation Procedure:

- Week 1 - Radios SE-STR-01 thru SE-STR-15 (GROUP A)
- Week 2 - Radios SE-STR-16 thru SE-STR-30 (GROUP B)
- Week 3 - Battery Group C
- Week 4 - Battery Group D

Documentation:

Appendix E: Battery Maintenance Log

- D. STR radio cache radios should be shop tested at least every 18 months or at any other time a specific problem is noted.

Documentation: Appendix D: Radio Maintenance Log

- **Operational Training:**

- A. All trained Communication Unit Leaders (COM-L) in the SE Region should be familiar with the STR radio cache and STR transportable tower capability and configuration and with basic operational characteristics of STR radio cache radios and STR transportable tower.
- B. Prior to the assignment of individual STR radio cache radios, users who have not been trained in the use of similar ARMER radios shall be provided with a short explanation of the basic elements of operation and of the radio fleetmap.

- C. The STR radio cache and STR transportable tower shall be made available for local disaster exercises, local events (fairs or celebrations) or other activities through which operation personnel will become familiar with the deployment procedures and operational characteristics of the equipment.

- **Resource Activation**

- A. The SE Region's designated and alternate point of contact shall be listed in the SE TICP and have access to the STR radio cache and STR transportable tower/repeater at all times.

Designated Point of Contact:

Winona County PSAP

Phone: 507-457-6491

Alternate Point of Contact:

Michael Peterson, Winona County Sheriff's Office

507-457-6498

- B. **Resource Request Procedure:**

- a. SE Regional STR Deployment Request Form (**Appendix A**) must be completed by either the requesting agency or Designated Point of Contact prior to the deployment of any SE STR equipment.
- b. Requested resource will be listed as "Checked Out" to requesting agency for date range on ARMER Status Board.

- C. **Resource Deployment Procedure:**

- a. A signed, completed copy of the Deployment Request Form (**Appendix A**) must be provided to the deployment agency at the time of equipment pick-up. The Deployment Request Form can be faxed to 507-454-5020 or emailed to dispatch@co.winona.mn.us.
- b. Deployment Checklist (**Appendix B**) must be completed at the time of pick-up.
- c. Requesting Agency Point of Contact must initial the "Checked Out" column of the Deployment Request Form (**Appendix A**) as receipt of requested STR equipment.
- d. A signed, completed copy of the Deployment Request Form (**Appendix A**) will be held with Deployment Checklist (**Appendix B**) as a permanent record in STR Deployment Binder.

- **Resource Deactivation**

- A. The requesting agency shall be responsible for the return of any cache radios/equipment to the owner agency.

- B. Unless other terms have been approved, the requesting agency shall return all cache radios/equipment within 72 hours of the closing of the event for which the request was made.
- C. The requesting agency assumes full risk for equipment which is lost, stolen, damaged, consumed, and inoperable or destroyed until radios are returned to the owner agency.
- D. The requesting agency shall reimburse the owner agency for the repair or replacement cost of any radio, accessories, batteries, antennae, clip, charger, transportation case or other equipment which is lost, stolen, damaged, consumed, inoperable or destroyed.
- E. Deactivation of the transportable tower/repeater shall be performed in the presence of at least one person, a deactivation team leader, who has participated in deployment familiarization training within the last year. It may be possible for a qualified person to conduct deactivation familiarization training immediately before deactivation, but such training must be documented. The arrangement of the deactivation of the transportable tower shall be the responsibility of the requesting agency.

F. Resource Deactivation Procedure:

- a. Representative of owner agency shall inspect and initial the return or "Check In" of all STR equipment listed as "Checked Out" on Deployment Checklist (Appendix B).
- b. Programming changes, damages, or issues with use of STR Cache radios shall be noted and reported to Technical Contact.
- c. Representative of owner agency shall contact an ARMER Public Safety Answering Point (PSAP) with Status Board access and ask that they list the STR Radio Cache as "AVAILABLE".

Appendix A

SE Regional STR Deployment Request Form

Please complete all information requested to ensure timely fulfillment of the deployment request. Please return this form to Equipment Access Primary Contact. Voice contact via telephone should be made to ensure that the request has been received and understood.

Name of Requesting Agency: _____

Agency Point of Contact: _____

Voice number: _____

Fax number: _____

Event/Incident Name: _____

Event/Incident Location: _____

Event/Incident Date: _____

Expected Duration of Event: _____

Equipment Requested: _____

Party Picking up STR: _____

Voice Number: _____

Title/Signature: _____

Title/Printed Name: _____

Note: Request for deployment of the STR indicates acceptance of fiscal responsibility for the replacement of any lost or damaged equipment.

Fax to 507-454-5020 or email to dispatch@co.winona.mn.us

Call Winona County to verify receipt: 507-457-6491

Please bring this form when picking up and dropping off STR.

Appendix B

Deployment Check List

SN	R ALIAS	Battery	Clip	Bank Charger	Checked OUT	Checked IN
					Initial by Requestor	Initial by Owner Representative
687CLM2087	SE-STR-01					
687CLM2088	SE-STR-02					
687CLM2089	SE-STR-03					
687CLM2090	SE-STR-04					
687CLM2091	SE-STR-05					
687CLM2092	SE-STR-06					
687CLM2093	SE-STR-07					
687CLM2094	SE-STR-08					
687CLM2095	SE-STR-09					
687CLM2096	SE-STR-10					
687CLM2097	SE-STR-11					
687CLM2098	SE-STR-12					
687CLM2099	SE-STR-13					
687CLM2100	SE-STR-14					
687CLM2101	SE-STR-15					
687CLM2102	SE-STR-16					
687CLM2103	SE-STR-17					
687CLM2104	SE-STR-18					
687CLM2105	SE-STR-19					
687CLM2106	SE-STR-20					
687CLM2107	SE-STR-21					
687CLM2108	SE-STR-22					
687CLM2109	SE-STR-23					
687CLM2110	SE-STR-24					
687CLM2111	SE-STR-25					
687CLM2112	SE-STR-26					
687CLM2113	SE-STR-27					
687CLM2114	SE-STR-28					
687CLM2115	SE-STR-29					
687CLM2116	SE-STR-30					
Radio Case	N/A	N/A	N/A	N/A		
Charger Case	N/A	N/A	N/A	N/A		
3 Chargers	N/A	N/A	N/A	N/A		

Appendix C**STR Equipment Contacts**

Point of Contact	Agency	Phone #	Cell #	Responsibility
PSAP	Winona County	507-457-6368		Primary – Equipment Access
Michael Peterson	Winona County	507-457-6498	651-564-0875	Secondary – Equipment Access
				SE RAC Chair
				SE RAC Technical Chair
Michael Peterson	Winona County	507-457-6498	651-564-0875	Primary – Technical
Rick Freshwater	Olmsted county		507-254-0067	Secondary – Technical

Appendix D**Radio Maintenance Log**

SN	R ALIAS	Battery Operationally Tested	Aligned	Initial
687CLM2087	SE-STR-01			
687CLM2088	SE-STR-02			
687CLM2089	SE-STR-03			
687CLM2090	SE-STR-04			
687CLM2091	SE-STR-05			
687CLM2092	SE-STR-06			
687CLM2093	SE-STR-07			
687CLM2094	SE-STR-08			
687CLM2095	SE-STR-09			
687CLM2096	SE-STR-10			
687CLM2097	SE-STR-11			
687CLM2098	SE-STR-12			
687CLM2099	SE-STR-13			
687CLM2100	SE-STR-14			
687CLM2101	SE-STR-15			
687CLM2102	SE-STR-16			
687CLM2103	SE-STR-17			
687CLM2104	SE-STR-18			
687CLM2105	SE-STR-19			
687CLM2106	SE-STR-20			
687CLM2107	SE-STR-21			
687CLM2108	SE-STR-22			
687CLM2109	SE-STR-23			
687CLM2110	SE-STR-24			
687CLM2111	SE-STR-25			
687CLM2112	SE-STR-26			
687CLM2113	SE-STR-27			
687CLM2114	SE-STR-28			
687CLM2115	SE-STR-29			
687CLM2116	SE-STR-30			

