

Subject: MPSCS Radio Configuration and Programming Standards

Date Issued or Revised: July 13, 2006

Date Review: April 1, 2007

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3.1.7 MPSCS Radio Configuration and Programming Standards

I. Subject and Purpose

The Michigan Public Safety Communications System (MPSCS) uses a system designed to the Project 25 standards. The MPSCS defines radio configuration for proper operation. Deviations from those standards may cause interruptions or failed communications messages. These standards may not be changed without written permission of the MPSCS.

This procedure is established to ensure and maintain the security and operational readiness of the system, while working to meet the needs of the MPSCS member.

The MPSCS radios require a programming “system key” for security purposes. The key is not available to any agency or individual subscriber. The system key is only authorized for use by the State of Michigan MPSCS employees during the course of their duties.

Changes beyond talkgroups must be approved by the MPSCS Radio Programming Unit (RPU).

II. Procedures and Guidelines

MPSCS is managed to meet defined levels of performance and expectations of public safety users of the State of Michigan. Programming of the radios will be done in a manner to maintain the functionality of the system, consistency in talkgroup development and provide the user with a radio template to meet their operational needs.

The programming of a radio involves three major activities:

- Template Design
- Template / Archive / Radio Programming
- Archive / Template Maintenance

A. Template Design

The MPSCS Template Design Unit (TDU) will work with the member to develop the template for their radios. This process requires:

- Designing a communications plan for the agency / jurisdiction.
- Verify the expected Grade of Service.
- Becoming a member of the system.
- Request or Identify customer accounts in the MPSCS asset management system.

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- Develop a template layout.
- Identify optional items within a template consistent with MPSCS standard operating practices.

A major item considered in the template design is the Talkgroup naming conventions.

In counties operating within a Central Dispatch environment, the MPSCS developed the following guideline that is highly recommended for naming talkgroups. For interoperability purposes, talkgroup names are limited to seven (7) characters or less due the display capacity of some models of mobile radios.

Primary Police Dispatch:	[County Number] P911
Primary Fire Dispatch:	[County Number] F911
Primary EMS Dispatch:	[County Number] E911
Consolidated Fire/EMS Dispatch:	[County Number] FE911
Emergency Management:	[County Number] EMER
County Common:	[County Number] COM
Special Events:	[County Number] SPEV1, SPEV2
Agency Proprietary:	[County Number] <u>XX</u> [Agency ORI]

In counties which do not operate within a Central Dispatch environment, the MPSCS developed the following guideline that is highly recommended for naming talkgroups. Please note, for interoperability purposes, talkgroup names are limited to seven (7) characters or less due the display capacity of some models of mobile radios.

Primary Police Dispatch:	[Agency ORI] P911
Primary Fire Dispatch:	[Agency ORI] F911
Primary EMS Dispatch:	[Agency ORI] E911
Consolidated Fire/EMS Dispatch:	[Agency ORI] F911
Emergency Management:	[Agency ORI] EMER
County Common:	[Agency ORI] COM
Special Events:	[Agency ORI] SPEV1, SPEV2

As an example;

740COM is a common talkgroup for Shelby Township in Macomb County.

50COM is a common talkgroup for Macomb County.

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A proprietary talkgroup may be established and assigned to a member agency. The proprietary talkgroup may be shared with another agency by written permission of the agency who established the talkgroup. Non-proprietary talkgroups have been established in the MPSCS for the benefit of MPSCS members and will be programmed into radios with demonstrated need and appropriate applications. The TDU personnel can identify talkgroups established for member agencies and common talkgroups for MPSCS member use.

Options such as Emergency Alert, Scan, Private Call, will be negotiated at the time of a template build. Some of these radio options may require additional equipment by the member agency for proper operation.

The MPSCS reserves final approval on template layout, ID's and options programmed into the radios.

**B. Template / Archive Programming**

After a template has been defined and released by the member agency and the TDU, the RPU will construct the master template. This process requires:

- Defined template layout
- Verifying and documenting flashcodes in the radios and identifying the options
- Identifying existing talkgroups in the MPSCS
- Establishing new talkgroups in the MPSCS
- Establishing new IDs on the MPSCS
- Assign radio equipment to customer accounts
- MPSCS owned System Key

When the RPU has completed the master templates and documented the radios for programming, the Network Communications Center (NCC) will continue with the process. The NCC will construct the individual archive files for each radio. The archive file contains:

- Unique system ID number
- Unique Serial number
- Template as defined by the RPU
- MPSCS owned System Key

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New radios must be programmed and tested prior to use. The following tests must be done as part of the tests:

- The transmit frequency shall be set within +/- 300 Hz of the assigned frequency.
- The analog modulation shall be +/- 2.4 kHz when transmitting.
- The digital modulation shall be within the normal APCO P25 standards for trunking.
- The transmitted ID of the radio shall be verified to match the assigned ID.
- The radio shall be checked for proper transmit and receive operation.

The initial programming and testing of the radio can be done by the MPSCS. The radios must be delivered to a designated MPSCS location for programming. A small fee, as identified in the MPSCS Subscriber Agreement, is incurred by the customer when the MPSCS initially programs and tests the radios.

Several models of radios are eligible for initial programming by the MPSCS customer. An MPSCS Radio Programming Agreement must be completed prior to an MPSCS customer programming and testing their new radios.

**C. Archive / Template Maintenance**

An archive file is available for each MPSCS radio to the agency owning the radio when the file does not compromise the security of the MPSCS. This file will be used by the agency's service provider to restore programming to the radio after maintenance. The archive file is unique to a radio and can only be programmed into a specific radio.

As part of the yearly subscriber fees, Full Service Level radios are eligible for a yearly template re-write as part of their normal subscriber fees. Radios at the Level 2 or Level 3 service level are not eligible for the yearly template rewrite and each modification will incur a new charge for a master template and archives.

A template re-write is done when the communications plans of an agency change. The template re-write will be done on the template stored in the MPSCS file server. If a template has been modified by an agency, it will be the agency's responsibility to send the current archive to the State prior to any re-writes. The TDU, RPU and NCC sections will still process the template.

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The installation of a re-written template is the sole responsibility of the member agency. When a template rewrite is complete and when possible, the archive file will be sent to the member agency for programming. The State does not program the re-written templates into radios unless security restrictions of the radio prevent the MPSCS customer from programming the radio. If the MPSCS must reprogram the radio due to security restrictions of the radio, the customer will incur a charge for the reprogramming. The reprogramming of the radio location must be negotiated with the MPSCS. Questions regarding programming options available to the member may be directed to the NCC Manager.

III. Responsible Party

A. Contact for questions:  
NCC Manager

B. Phone, Fax and Email Addresses  
(517) 336-6240 (MPSCS)  
(517) 333-5002 (NCC Manager)

IV. Applicable Forms:

MPSCS Radio Programming Agreement

Template Worksheets (Contact TDU for worksheet)

V. Termination or Review Responsibility

MPSCS Director

VI. Linkages to Other Relevant Data:

None

# MPSCS Radio Programming Agreement

This agreement is between the State of Michigan, Michigan Public Safety Communications System (MPSCS) and MPSCS member as entered below.

Several models of MPSCS subscriber radios are eligible for initial programming by the MPSCS customer. The following tests must be done by the member during the programming / initialization of each new radio:

- The transmit frequency shall set within +/- 300 Hz of the assigned frequency.
- The analog modulation shall be +/- 2.4 kHz deviation when transmitting a 1 kHz tone at 100% modulation.
- The digital modulation shall be with normal APCO P25 standards for trunking
- The transmitted ID of the radio shall be verified to match the assigned ID.
- The radio shall be checked for proper transmit and receive operation.

The following models of radios are eligible for initial programming by the customer:

**Motorola:**

Saber II	XTS3000 I	Spectra W3	XTL5000 W3
Saber III	XTS3000 II	Spectra W4	XTL5000 W4
XTS1500 I	XTS3000 III	Spectra W5	XTL5000 W5
XTS2500 I	XTS5000 II	Spectra W7	XTL5000 W7
XTS2500 1.5	XTS5000 III	Spectra W9	XTL5000 W9
XTS2500 II		XTL1500 MX	XTL5000 05
XTS2500 III		XTL2500 M5	

**Kenwood:**

None

**E.F. Johnson:**

None

The member may be required to read the radio and send a seed template for each model of radio. This seed template will be used in the process of building the master template.

The MPSCS will return an individual archive file for each radio. The archive will be used by the member to program the radio.

The member shall maintain a written record of the initial tests for 1 year. The member shall provide a copy of the test records to the MPSCS if requested.

If requested by the MPSCS, the member may be required to re-test radios when technical or performance issues are observed.

This agreement is between the MPSCS and MPSCS member. The member may utilize the services of a qualified vendor for programming. The responsibility for compliance with this agreement remains the sole responsibility of the member.

_____	_____
Member Agency	MPSCS
_____	_____
Member Representative (signature) & Date	MPSCS Representative & Date
_____	_____
Member Representative (printed)	MPSCS Representative (printed)