

RESOLUTION NO. 13-1

**A RESOLUTION REGARDING THE STARCOM RADIO SYSTEM  
UPGRADE**

**THE COUNTY OF SANGAMON, ILLINOIS**

**WHEREAS;** The Sangamon County Board is dedicated to ensuring dependable STARCOM radio communication with all police agencies served by the Sangamon County ETSD at all times; and,

**WHEREAS,** The Sangamon County ETSD's STARCOM radios located at the backup Dispatch Center were rendered obsolete during a recent software upgrade. If the backup Dispatch Center would be used, each police agency served by the ETSD would need to move to a secondary radio system that is not as reliable as STARCOM.

**WHEREAS,** The Sangamon County ETSD may purchase the STARCOM equipment required to upgrade the STARCOM system via the State of Illinois "master contract" that exists for STARCOM system equipment procurement and pricing; and,

**WHEREAS,** the plan is described in the document titled: and,

**WHEREAS,** Attached hereto is the "Backup Dispatch Center Radio Consoles" proposal based upon the State of Illinois "master contract". The cost is not to exceed \$522,872, but may be reduced based upon volume purchasing of STARCOM equipment by other governmental agencies.

**NOW, THEREFORE BE IT RESOLVED** by the Board the County of Sangamon, Sangamon County, Illinois, to authorize the Executive Director of the Sangamon County ETSD to enter into an agreement with Motorola for the purpose of this STARCOM radio system upgrade project, effective March 05, 2019

**FILED**

MAR 01 2019

*Don L. Hay*  
Sangamon County Clerk

**RECEIVED**  
2660

MAR 01 2019

Andy Goleman  
SANGAMON COUNTY AUDITOR

Sangamon County Purchase Order Template  
(Pre-ERP Implementation)

13-3

-- Purchase Orders are required for all Informal Quotes (>\$3,500) and Formal Solicitations (>\$30,000)

Department Information

Department Sangamon County ETSD

Employee Contact Amanda Brewer

Purchase Request Information

Vendor Motorola

Purchase Description Radio upgrade for PSAP2 (State Contract No RFP)

Quantity

Price Per Unit

Total Price 522,872.00

G/L 038.911.600.000

Tracking

PO Number 3012019MOTRAD

(Manually assigned by Department)

Date:

Legal Review (if applicable; see below)

Sent to Auditor's Office for Review

Note: PO request documents need to be to the Auditor's Office 5 business days prior to the oversight committee meeting.

Auditor's Office Review Completed

*Nian 3/1/19*

Approved by Oversight Committee

Approved by County Board (if applicable)

\*County Board Resolution Required

Note: Please attach all required documents such as quotes, bids, rfp's, evaluations, etc.

Legal Review is required for:

- All services being performed for or on behalf of the County
- All goods in excess of \$10,000 per year
- Any goods or services being procured through an RFP/Bid Process
- Intergovernmental/Interagency Agreements
- If a vendor or other agency requires a contract or written agreement.

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MAR 01 2019

Andy Goleman  
SANGAMON COUNTY AUDITOR

# BACKUP DISPATCH CENTER RADIO CONSOLES

## STARCOM21



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SECTION 1

# SYSTEM OVERVIEW

## 1.1 SYSTEM DESCRIPTION

In response to Sangamon County’s request for new radio dispatch consoles for its backup center, Motorola is proposing its MCC 7500 IP dispatch solution. These operator positions will be integrated into the STARCOM21 P25 radio system. The dispatch site will have capability of utilizing existing conventional resources via the Enhanced Conventional Channel Gateway (ECCGW) router.

- Each MCC 7500 operator position includes:
  - One (1) Motorola Solutions Certified PC with Windows 10 OS.
  - One (1) Headset Jack
  - One (1) Instant Recall Recorder
  - Two (2) Desktop Speakers
  - One (1) Gooseneck Microphone
  - One (1) Soft-wired 1000VA/900W UPS with 38 Minutes of Run-time
  - One (1) Surge Protected Power Strip
- The Fixed Equipment will consist of the following:
  - One (1) LAN switch.
  - One (1) Site Router.
  - One (1) Aux I/O SDM module supporting up to 16 outputs and 48 inputs.
  - Two (2) Conventional Channel Gateways (CCGW) supporting up to 16 conventional resources.
  - Two post racks (as needed) with grounding equipment.
  - A complement of critical spares

To enhance the feature offerings, Motorola has also included pricing for the following optional add-ons:

- AES Encryption.
- DES Encryption

## 1.2 ELEMENTS OF THE MCC 7500

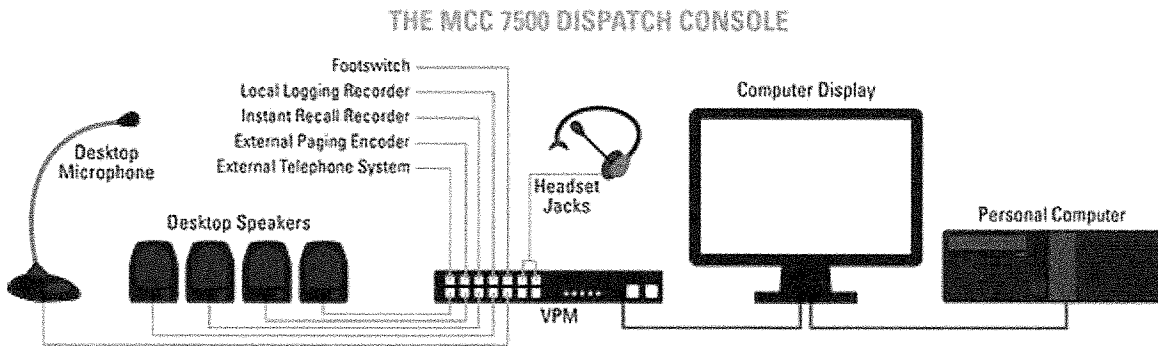


Figure 1-1: MCC 7500 Dispatch Console Components

As proposed to Sangamon County, the MCC 7500 Dispatch console includes the following elements:

### **1.2.1 Personal Computer (PC)**

The personal computer included with the console position runs Microsoft Windows 10, and is certified by Motorola to ensure that the dispatch software, voice cards, and secure cards are properly installed and configured.

### **1.2.2 Computer Display- Not Included**

Sangamon County has elected to provide the necessary displays. The cost of new displays has not been included in this proposal.

### **1.2.3 Headset Jack**

The dispatch console supports two headset jacks, both push-to-talk (PTT) and non-PTT-enabled for simultaneous use by the dispatch operator and a supervisor. The headset jack contains two volume controls for the separate adjustment of received radio and telephone audio.

### **1.2.4 Headset – Not Included**

Sangamon County has elected to provide the necessary headset. The cost of new headsets has not been included in this proposal.

### **1.2.5 Gooseneck Microphone**

The microphone controls the dispatch console's general transmit and monitor features through two buttons on its base. The microphone can be fastened down or left loose. It can be used alone or in conjunction with a headset.

### **1.2.6 Voice Processor Module (VPM)**

The secure VPM provides vocoding and audio processing for the dispatch console, and also serves as the hub for the console's speakers, microphone, footswitch, headset jacks, and recorders.

### **1.2.7 Footswitch**

Each dispatch console includes a dual pedal footswitch that can be configured to control general transmit and monitor functions.

### **1.2.8 Headset Port**

The telephone/headset port allows the connection of an external telephone to the dispatch console, allowing the operator to use a single headset to communicate on both the radio system and a telephone system.

### **1.2.9 Desktop Speakers**

Two (2) audio speakers have been included with each console position and can be configured to transmit audio from a specific talkgroup or set of talkgroups. Each speaker is a self-contained unit,



with individual volume controls and can be placed on a desktop, or mounted on a rack or computer display.

### **1.2.10 Instant Recall Recorder (IRR) Port**

The IRR port enables the connection of a short-term audio recorder, which allows the recording and playback of recent audio received by the console.



### 1.3 ADDITIONAL EQUIPMENT

The following additional items are essential to provide the console functionality required by Sangamon County. These are the system components commonly referred to as “back room electronics”.

#### 1.3.1 SDM 3000 Auxiliary Input/Output Server

The SDM 3000 provides dispatchers with the ability to control and monitor external devices, such as doors and lights, from the console user interface. The console interface uses icons to display the state of external devices via auxiliary inputs and outputs, which support momentary and latched inputs, as well as latched and interlocked latched outputs.



Figure 1-2: SDM 3000 Auxiliary Input/Output Server

#### 1.3.2 Enhanced Conventional Channel Gateway

An Enhanced Conventional Channel Gateway (ECCGWs) provides the interface for analog and ASTRO 25 conventional channels to the ASTRO 25 radio system infrastructure. The ECCGW can support combinations of analog, MDC 1200, ACIM Link, digital, and mixed mode channels simultaneously. An ECCGW can also be used in combination as a console site router or an RF site router, provided the WAN link is not redundant:

- **Analog Configuration**—The ECCGW provides two sets of ports that are used with analog channels. One set is called the Analog Ports and contains the analog inputs and outputs for the channels along with a COR/ Coded/ Clear input and a PTT Relay output. The other set is called the Supplemental I/O Ports and contains analog logging recorder outputs and various inputs that can be used with the analog channel.
- **IP Conventional Gateway**—ECCGWs can support up to 16 G Series-based ASTRO 25 conventional channels through the radio system’s IP network. The IP interface uses the same Ethernet cable that the ECCGW uses for everything else. The 16 IP-connected channels are in addition to any analog or V.24 channels that may also be connected to the ECCGW.



Figure 1-3: GGM 8000 Gateway with a Conventional Channel Gateway Interface (CCGW)



# SERVICES

## 2.1 MOTOROLA SOLUTIONS INTEGRATION SERVICES

To ensure a smooth system installation and deployment, our solution for Sangamon County includes estimates for the following services:

- Project Management.
- Field Engineering.
- System installation and optimization.

This solution will be installed, optimized, tested, and cutover by our dedicated Project Implementation Team.

## 2.2 INCLUDED SERVICES

This section is a high level list of the deliverables to be furnished to Sangamon County and the tasks to be performed by Motorola Solutions and its subcontractors.

- **Project Kick-off and Detailed Design Review** – This is an on site meeting with the Sangamon County team, Motorola and any subcontractors involved in the system implementation. Team introductions, communications flows, system elements and scheduling of events will be discussed and documented.
- **Site Readiness Evaluation** – The project team will assess the dispatch center and advise Sangamon County of any found deficiencies (e.g. hazardous materials, water leaks, insufficient space, cooling, etc.)
- **Trial Validation and Order Fulfillment** – Motorola’s engineers will review the final equipment list to validate quantities, versions and compatibility. Once the trial validation is complete and free of errors, the equipment list will be entered into Motorola’s procurement system.
- **System Staging** – All equipment will be received and consolidated. The entire equipment order will be checked for shipping damage, versions, accuracy against the bill of materials, dead out of the box components, etc. All electrical items will be powered to perform a “green-light” test. Motorola will load the console operating software onto the computers. An inventory of all items will be created that includes quantity, descriptions, part numbers, versions and manufacturers.
- **System Removal and Installation** – Motorola and its subcontractors will perform a one-time removal and disposal or local relocation of the existing legacy dispatch consoles. Motorola will permanently install the new equipment in accordance with its best practices, local codes and R56 guidelines.
- **System Optimization and Testing** – Motorola Systems Technologist(s) will develop the user interface including icons, folders and general screen layout per the agreements made during the design review. The System Technologist will also test the backhaul to the STARCOM21 Master site. Finally, the System Technologist will run a battery of functional acceptance tests including placing calls through STARCOM21 and any conventional resources as well as testing I/O operations.
- **Punchlist Resolution and Final Acceptance** – Sangamon County and Motorola will perform a final site walk and document any flaws in workmanship or functional deficiencies. Once the

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punch list items have been resolved, Sangamon County will be asked to sign a System Acceptance certificate which triggers to the start of the system warranty.

## SECTION 3

# ASSUMPTIONS

Motorola Solutions has made several assumptions in preparing this budgetary estimate for Sangamon County. In order to provide a firm proposal, we will need to verify all assumptions or seek alternate solutions in the case of invalid assumptions.

- All existing sites or equipment locations will have sufficient space available for the equipment described.
- All existing sites meet R56 grounding and safety standards.
- Any site/location upgrades or modifications are the responsibility of Sangamon County or the site owner.
- The existing connectivity between the dispatch site and the STARCOM21 Master site is active, stable and meet the operating requirements for MCC 7500.
- The existing headsets, monitors, consolettes and logging solution will be reused.
- Because the product interface similarities with the consoles at the primary dispatch center, Telecommunicator training will not be required. Training has not been included in this proposal.
- All existing sites or equipment locations will have adequate electrical power and backup power (generator) suitable to support the requirements of the system described.
- A performance bond is not required and has been included in this quote.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment, are the responsibility of Sangamon County.



## SECTION 4

# SYSTEM ESTIMATES

	Hardware & Software List Price		State Contract Discounted Price	
6 Operator Positions	\$	332,998	\$	259,500
Implementation Services			\$	139,635
<b>Total</b>			\$	<b>399,135</b>
<b>Optional AES or DES (6)</b>			\$	<b>32,522</b>

8 Operator Positions	\$	443,997	\$	346,001
Implementation Services			\$	176,871
<b>Total</b>			\$	<b>522,872</b>
<b>Optional AES or DES (8)</b>			\$	<b>43,363</b>

14 Operator Positions	\$	776,995	\$	605,501
Implementation Services			\$	167,562
<b>Total</b>			\$	<b>773,063</b>
<b>Optional AES or DES (14)</b>			\$	<b>75,885</b>



## SECTION 5

# OUR PURPOSE

## 5.1 HELPING PEOPLE BE THEIR BEST IN THE MOMENTS THAT MATTER

### 5.1.1 An Enduring Partnership Committed to Your Success

Throughout our history, Motorola has transformed innovative ideas into products that connect people to each other and the world around them. Moving forward, we strive to fulfill our commitment to improve products and services, and to make sound recommendations to guide Sangamon County as you link current and future communication objectives with technology's ever-evolving promise. By partnering with our customers and observing how our products can help in their specific work environments, we are able to enhance their experience every day.

Upon request, Motorola can provide Sangamon County a firm proposal tailored to address your unique solution requirements. We appreciate the opportunity to support your communications needs and look forward to continuing a strong collaboration that achieves your vision.

