



**MOTOROLA SOLUTIONS**

# MARSHALL COUNTY FISCAL COURT

**KSP SYSTEM ADD**

**APRIL 16, 2021**



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April 16, 2021

Marshall County Fiscal Court  
C/O Judge Executive Kevin Neal  
1101 Main Street  
Benton, KY 42025

**Subject:** P25 Addition to Statewide System

Dear Judge Neal,

Thank you for giving Motorola Solutions the chance to provide an additional site onto the State of Kentucky P25 7/800 Trunked Radio System. The site is located in Draffenville KY and Motorola has included the costs to add additional antenna lines, Ice Bridge, grounding, and electrical. MSI advises Marshall County reserve a separate budgeted account for any remediation needed at the tower, 5% of System Price is a general idea. Any remediation needed at Draffenville or Site 01\_02 will be the responsibility of Marshall County and are not included in this proposal. The pricing formulas calculated have discounts applied if the contract is executed before August 27th to take advantage of the current Post 1/2 Deployment team being in and around the area for the next 12 - 18 months.

Motorola Solutions' proposal is subject to the terms and conditions of the enclosed Communications System and Services Agreement, including the Maintenance, Support, and Lifecycle Management Addendum and remains valid for ninety (90) days from the date of this proposal. This proposal may be accepted by returning to Motorola Solutions a signed copy of the aforementioned agreement.

We appreciate your consideration of this proposal and look forward to your response. Please feel free to contact your Motorola Solutions Direct Account Manager Robbie Smith ([Robert.smith3@motorolasolutions.com](mailto:Robert.smith3@motorolasolutions.com), 859-413-0016), or Area Sales Manager Jay Burla ([jburla@motorolasolutions.com](mailto:jburla@motorolasolutions.com)) for support in meeting your needs.

Sincerely,

MOTOROLA SOLUTIONS, INC.

A handwritten signature in blue ink that reads "Nicole Sherrill".

Nicole Sherrill  
Territory Vice President  
North America Government Markets

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## SECTION 1

# SYSTEM DESCRIPTION

Motorola Solutions is pleased to propose an ASTRO 25 solution to Marshall County that will meet their existing and future mission–critical two–way radio communication needs. ASTRO 25 delivers improved radio coverage, superior audio quality, and integrated data functionality. It employs the latest IP technology and server virtualization architecture, making it a flexible and scalable system platform. Marshall County can easily add new features through software updates as operational requirements evolve.

Proposed solution is based as an add-on to the next generation standards based communications platform built by the Kentucky State Police (KSP). Proposed solution provides Marshall County’s first responders with improved portable on-street coverage, superior in-building coverage and access to the statewide mobile coverage as the KSP system builds out.

## **The proposed P25 system for Marshall County includes following components:**

- One (1) RF Trunking site at Draffenville, using existing tower, shelter and generator, with the following included at the site:
  - Six (6) 700 MHz channels capable of supporting up to five (5) simultaneous conversations of various Marshall County’s public safety agencies.
  - Eltek DC power backup with built-in redundancy to allow for minimum of 2 hours of power backup at full load in case of power outage.
- Aviat’s Indoor Microwave (MW) Hot Standby link which includes:
  - Over Five Nines (99.999%) backhaul path reliability.
  - 51 Mbps bandwidth.
- Six (6) APX Consolettes with control station combiner and its outdoor antennas’ assembly
  - These Consolettes will interface with the existing Zetron Consoles and will allow the dispatchers to talk to the various users on the Draffenville site and KSP system.

It is recommended to save contingency money for the structural modifications of the Draffenville tower as the tower remediation plan is determined after the structural analysis of the tower in post sale.

Marshall County will be responsible for any services, equipment and/or software needed at the Zetron Console to interface with the APX Consolettes. The demarcation between the Zetron Console and the APX Consolettes will be at the punch block(s).

## 1.1 PROPOSED SOLUTION

Motorola Solutions has prepared a system design utilizing Kentucky State Police (KSP)’s ASTRO 25 system. Our design incorporates KSP’s infrastructure while adding a 700 MHz FDMA RF Trunking site for the Marshall County.



The Master site is the central point for all traffic in an ASTRO 25 system. Call processing and system management occurs at the Master site. The proposed solution utilizes KSP's ASTRO 25 Master Sites, which are fully redundant, consisting of a Primary Master Site and a Backup Master Site. This is known as Dynamic System Resilience (DSR). The DSR feature automatically maintains full system functionality in the event of a catastrophic Master site failure.

Dynamic System Resilience (DSR) adds a geographically separate backup for the Master Site to protect against a catastrophic failure. Each "zone" in the DSR system is supported by two Cores in two separate Master Sites. The backup Core provides the same level of redundancy as the primary Core; if the backup Core were to take over, it provides redundancy for voice, transport and other subsystems.

The KSP Platform has DSR cores. Marshall County's Trunking site will be connected to the two Cores via the hot-standby (redundant) Microwave link. If the Primary Master site in the City of Frankfort ever goes down because of a catastrophic failure, then the backup Master site (Core) in City of Elizabethtown will take over dynamically / automatically without user intervention.

The proposed Marshall County's RF site equipment is comprised of the following:

- 700 MHz ASR Site Equipment
  - Six (6) FDMA Trunking GTR8000 Base Radios
  - One (1) 700 MHz Transmit Combiner
  - One (1) 700 MHz Transmit Filter
  - One (1) Receive Multicoupler
  - Two (2) SRX345 Site Gateways
  - One (1) Transmit Antenna and Line
  - One (1) Receive Antenna and Line
  - One (1) Tower Top Amplifier (TTA)
  - One (1) TTA test line
  - One (1) Control Monitoring Unit (CMU) of TTA
  - One (1) SDM 3000 MOSCAD unit for alarms
  - Three (3) Punch Blocks at Telco board on the wall
- Eltek's DC power solution for 2 hours backup
- Aviat's Indoor Microwave (MW) Hot Standby link

The proposed equipment at the Dispatch site is:

- Six (6) APX Consolettes with encryption and with
  - One Hybrid Combiner
  - Two antenna assemblies

One of the Consolettes can be "locked" to a KSP site for the "Site Trunking" scenario.

## 1.2 AVIAT BACKHAUL MICROWAVE NETWORK

This project is to install a link of Eclipse IRU600 v4 radios for Marshall County, KY to provide a connection to the KSP/KEWS network. The new microwave network will provide 50 MB of Ethernet traffic.

The new equipment being proposed include Eclipse IRU600 v4 RF Shelves in conjunction with the Intelligent Node Units (INUe). New radios, circuit breaker panels, DC power (at the KEWS Site), ice shields, and antenna systems are part of the proposal.

## 1.2.1 System Layout & Radio Configurations

As shown in the System Layout (Figure 1-1) for this project only one (1) hop is included. IRU600 v4 All-indoor radios operating in the FCC Part 101 Upper 6 GHz band are proposed. The radios will be configured for MHSB (1+1) equipment protection. The link will operate in a 10 MHz RF channel with Adaptive Modulation from QPSK to 128 QAM (13 to 51 MB).

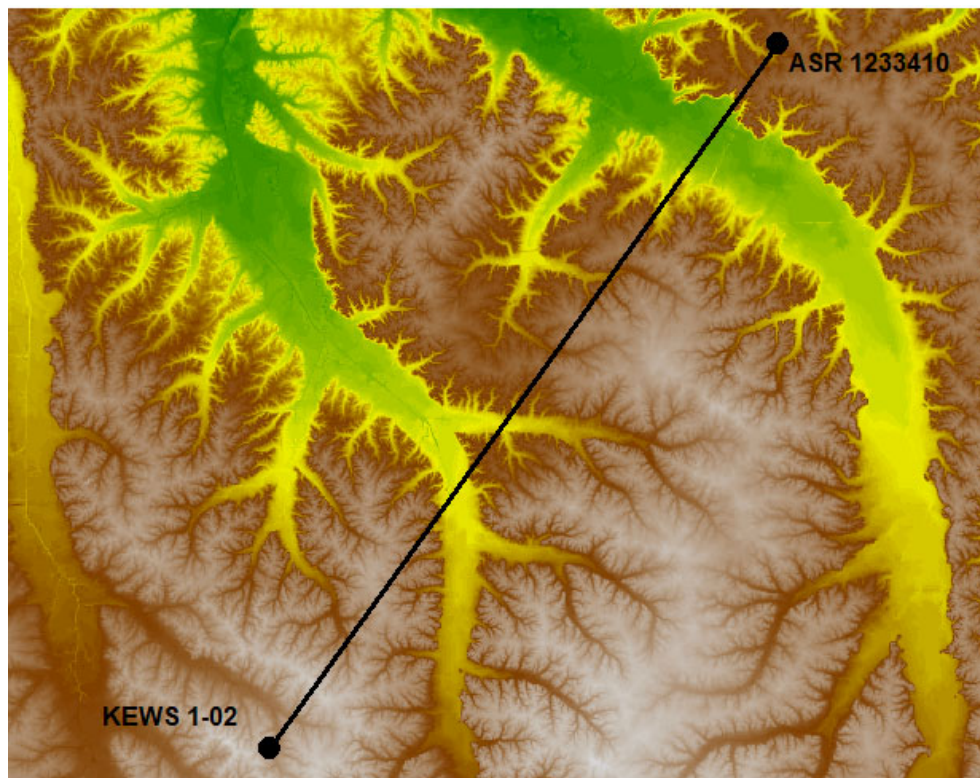


Figure 1-1: System Layout

## 1.2.2 Aviat Networks Path Loss and Fade Margin Calculations

Preliminary Path Loss and Fade Margin Calculations are provided as part of the documentation for this proposal. The Vigants 1975 reliability models have been used. Based on the PRELIMINARY transmission engineering the paths are expected to meet or exceed 99.999% annual two-way per-hop reliability objective at a receiver threshold of  $BER=10^{-6}$ . The path calculations are based on the data provided and radio specifications. It is assumed that enough clearance is available on path, but a path survey needs to be conducted.

Preliminary Path Profiles are generated using “National Elevation Dataset (NED) 10m” Terrain Database and “National Land Cover Database (NLCD)”. Antenna centerlines are derived based on the path clearance criteria, which are 100%F1@ K=1.33 and 0%F1@ K=0.5 for main path. All results are based on paper study. Please refer to the preliminary Path Calculations and Profiles for details.

The system design as proposed (including antenna model and size, transmission line length etc.) is subject to: 1) path/site survey verification; 2) frequency coordination; and 3) FCC licensing results.

### 1.2.3 Radio Equipment

The proposed equipment for this project consists of an IRU600 v4 indoor radios connected to the Intelligent Node Unit - Expanded (INUe) indoor baseband shelf.

IRU600 V4 Configuration (1 per location):

- 1x IRU600 v4 Chassis
- 2x Radio Frequency Unit (RFU) w/ Extra High Power (EHP) transmitters
- 1x Antenna Coupling Unit (ACU) w/ MHSB Configuration

The INUe chassis will be configured with the following cards (1 per location):

- 1x Node Controller Card (NCC)
- 1x Node Protection Card (NPC)
- 2x Modem Cards (RAC70)
- 2x Ethernet Switch Cards (DAC GE3) with 3x RJ45 and 2x SFP ports
- 1x 50 MB Total Node Capacity Software License (EZE-08001)
- 1x Adaptive Coding & Modulation (ACM) Software License (EZF-02)
- 1x Secure Management Software License (EZF-03)

### 1.2.4 Antenna System

Antenna systems consisting of RFS PAD6-65 antennas, E65 waveguide with associated connectors and installation material are included on the proposal. Dehydrators and manifolds are proposed to remove any humidity accumulated in the waveguide. Antenna ice shields will be provided at each end of the hop.

### 1.2.5 DC Power & Miscellaneous

One (1) Trimm circuit breaker panel (with 6A/6B breaker positions) is provided for each location. Two 15 Ampere circuit breakers for the INUe A side and B side power supplies are proposed. Two 3 Ampere circuit breakers for the RF shelf are also proposed. Final circuit breaker quantities and sizes are to be finalized later. Eltek DC power provides a -48 VDC power source to power the circuit breaker panel at the Draffenville site. For the WKMU site (KEWS 1-02) a redundant Eltek battery charger system is proposed along with 70 Amp Hour battery backup to provide at least 8 hours of power should the main power fail.

## 1.3 ASTRO 25 SITE REPEATER (ASR) DESCRIPTION

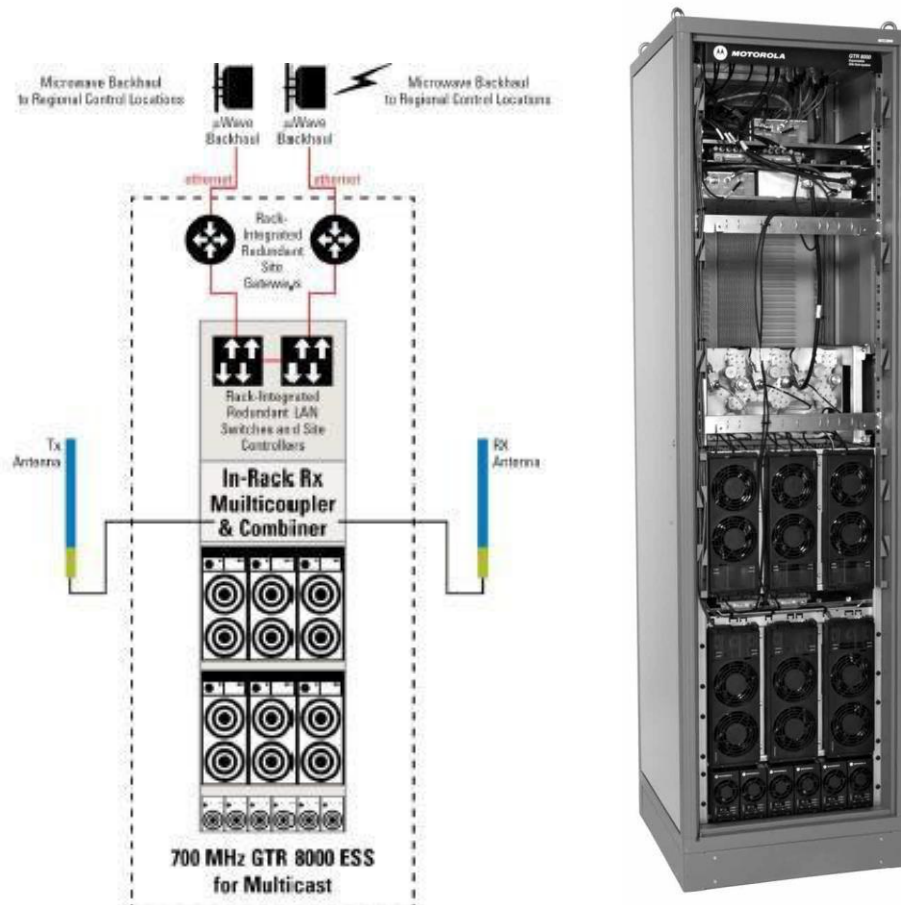
Proposed ASTRO 25 Repeater Site (ASR Site) consists of a single repeater site with two (2) site controllers (in a redundant configuration) and up to 6 base radios, which can be standalone or housed in a GTR 8000 Expandable Site Subsystem (ESS).

The GTR 8000 Expandable Site Subsystem in a single trunked site contains one (1) active control channel and a number of base radios supporting voice and data channels. Voice traffic is routed from each of the base radios to the system for distribution to other sites and is repeated by the base radios to support other local subscriber radios. Data traffic is routed to the GCP 8000 Site Controller. The site controller routes these packets upstream to the Master site for further processing and routing.

ASTRO 25 Repeater Sites consists of the following components:

- GTR 8000 Expandable Site Subsystem (ESS).
  - Six (6) GTR 8000 Repeater/Base Radios with five (5) FDMA talk paths.
  - Two (2) GCP 8000 Redundant Site Controllers.
  - Radio Frequency Distribution System (RFDS).
  - Two (2) SRX345 Site Gateways with redundant site link paths to the primary core at KEWS-HQ and backup core at Post-4.
- Preconfigured with multicoupler/combiner and DC power distribution which decreases field work allowing for easier implementation.
- Modular, front access design and minimized cabling reduces install and service labor.

The figure below (Figure 1-2) shows the layout of the GTR 8000 Expandable Site Subsystem for a multicast ASR site.



**Figure 1-2: GTR 8000 Expandable Site Subsystem for a multicast ASR site**

### GTR 8000 Base Station

The GTR 8000 Base Radio consists of a transceiver module, power amplifier module, fan module, and power supply. The transceiver module includes the functionality for the exciter, receiver, and station control. The base radio software, configuration, and network management, as well as inbound/outbound traffic handling, are performed through this transceiver module. On-board serial and Ethernet ports are located on this module for local servicing via CSS. The power amplifier module amplifies the low-level modulated RF signal from the transceiver module and delivers the amplified signal on the path to the transmit antenna. The power supply module supports the transceiver and power amplifier modules and can also provide auxiliary power to a connected site controller or Receive Multicoupler/Low Noise Amplifier (RMC/LNA).

### GCP 8000 Site Controller

Fully-redundant GCP 8000 site controllers with redundant power supplies are integrated into the GTR 8000 base radio at each multicast ASR Site. The GCP 8000 Site Controller (GCP 8000) is the control interface between the GTR 8000 base radios and the Master site.

The GCP 8000 Site Controller comprises redundant site controller modules; one site controller module acts as the active module, and the second module acts as a standby. The redundancy minimizes the possibility of a single point of failure at the site.

The GCP 8000 provides the following functions:

- Manages the channels to maximize throughput and channel availability.
- Administers registration and context activation requests.
- Monitors base radios and RF distribution equipment and interacts with the MOSCAD site device manager to facilitate centralized alarm and control monitoring.
- Provides redundant site control.
- Enables redundant site link routing for patch redundancy.

### SRX345 Site Gateways

Each ASR site uses redundant Site Gateways for network transport. Alarm outputs are provided with all equipment, as required, to deliver status information to the network management system.

The Site Gateway provides an interface that handles all of the IP Network Management traffic between the Master site and the ASR site. The Site Gateway provides the following:

**Media conversion** – the gateway converts Ethernet to the selected transport medium.

- **Traffic prioritization** – the gateway applies a prioritization marking to the packets leaving the site.
- **Fragmentation** – the gateway fragments large IP packets per industry standards.

## 1.4 TRUNKING CALL SERVICES

The trunking system offers a wide range of advanced call services to meet the demanding communications needs of a diverse, Mission–Critical workforce. The available calling features and benefits are described below:

### Talkgroup Call

The Talkgroup Call is the primary communication level in an ASTRO 25 trunked system as the majority of conversations take place within a talkgroup. Radios assigned to a given talkgroup are provided with Talkgroup Call capability and can communicate with other members of the same talkgroup. Talkgroup Call provides the effect of a “dedicated channel” for each talkgroup.

### Multigroup Call

A Multigroup Call is a call involving multiple talkgroups at the same time and can be initiated by a properly authorized console dispatcher or radio unit. The talkgroups that are addressed in the call are pre–programmed within the radio units and system.

The advantage of Multigroup Call is the ability to simultaneously communicate important information to multiple talkgroups quickly and efficiently. A single Multigroup Call transmission utilizes fewer channel resources and airtime than multiple, separate talkgroup calls.

### Emergency Alarm/Call

Emergency Alarm/Call provides users the ability to inform dispatch personnel of a life-threatening situation. By pressing the radio's Emergency Alarm button, an alarm is sent to the dispatcher. Upon activation of the emergency radio's Push-To-Talk, a channel is assigned for a predetermined amount of time. In the event that all voice channels are occupied, the system is capable of functioning in one of the following two modes:

- **Emergency Top-of-Queue**—If all voice channels are occupied when an emergency call is made, then the unit initiating the emergency shall be placed at the top of the busy queue list and allowed access to the next available voice channel. The emergency unit is given the highest level of priority regardless of how many units are already in queue. As soon as any user of any of the busy channels de-key, the emergency caller is granted the channel. This virtually eliminates channel contention and assures the first available channel will be assigned.
- **Emergency Ruthless Preemption**—If all voice channels are occupied when an emergency call is made, then the unit initiating the emergency is allowed access to the voice channel that has the lowest priority user currently assigned. It must be noted that until now the low priority current user de-keys, there could be RF contention between the emergency user and the low priority unit. Once the non-emergency user de-keys, the channel belongs to the emergency user.

### Call Alert

Call Alert allows a user to initiate a signal that notifies another user to call back the alerting party. Call Alert capability helps ensure that important messages get through, even if the called party is away from the radio. In addition, Call Alert signaling takes place over the system control channel. This helps to preserve valuable voice channels for other communications.

## 1.4.1 User Features

The following features are designed to make the system easier to use.

### Busy Queuing and Callback

Although trunking systems are considerably more frequency efficient than conventional radio systems, there may still be times when all of the voice channels are busy. If a radio user attempts to initiate a call while all the system channels are in use, the requesting user will be put into a Busy Queue and then automatically notified when a channel becomes available. This feature eliminates the need for the radio user to continually re-key in an effort to gain channel access.

### Multiple Priority Levels

Trunking system provides multiple levels of priority allowing system access to the most critical users during busy periods.

Individual users and talkgroups can be assigned specific priority level(s), with up to 10 levels available. This allows higher priority users to be placed higher in the busy queue for quicker system access.

### Continuous Assignment Updating

This feature is designed to insure that a radio just coming into service during an active talkgroup conversation will be immediately assigned to the appropriate voice channel. A user is included in his or her active talkgroup call with no special action required. To achieve this, the system control channel continuously transmits the channel assignment for talkgroups involved in active calls.

## 1.5 ASTRO 25 SYSTEM FAILURE MODE ANALYSIS

Motorola's ASTRO 25 Trunking networks have three modes of operation for increased reliability. The normal mode of operation is Wide-Area Trunking. In the event of multiple component failures that lead to system disruption, the system is equipped to continue operation in two reduced feature operational modes: Site Trunking and Failsoft.

The following pages include a detailed description of each of these operational modes, comprehensive analysis of the possible infrastructure failure scenarios and the system redundancy for mitigating each scenario.

### Wide-Area Trunking

Wide-Area Trunking is the ASTRO 25 system's normal mode of operation. Wide-area trunking implies that the Fixed Network Equipment is operating properly. All simulcast cells and ASTRO 25 repeater sites are communicating with the Master site. Subscriber units automatically roam between the various network RF cells. Talkgroup calls occur in the appropriate RF cells if users are distributed throughout multiple cells. Data applications are properly assigned channels for communication between the subscriber units and the host application.

### Site Trunking

Site Trunking is the first failover mode of operation. Site trunking impacts individual RF cells within a network. In multiple RF cell systems, one RF cell can be in site trunking, while the rest of the system remains in wide-area Trunking. Site trunking implies that the simulcast prime site controller or the ASTRO 25 repeater site has lost connectivity with the Master site. Talkgroup calls initiated in the RF cell that is in site trunking will only be broadcast in that RF Cell. Dispatch consoles use control stations, or the operators use portable radios to communicate on a site trunking RF cell. Console priority is not available in site trunking. Data applications are not available on a site in site trunking and will have to be reinitiated once the system reverts to wide-area trunking.

Radios detect if a site is in wide-area trunking or site trunking. Radio models with a display will indicate to the user when the site is operating in site trunking.

The radio alternately displays the selected talkgroup and “Site Trunking.” Depending on how the system and user equipment are programmed, subscriber units will try to roam to an RF cell that is in wide-area trunking.

### Failsoft by Talkgroup

Subsystem/site failsoft is the final fallback means of communication if a site no longer maintains wide-area or site trunking operation. Multiple failures have to occur for the system to enter failsoft. Failsoft impacts individual RF cells within a network. In multiple RF cell systems, one RF cell can be in failsoft, while the rest of the system remains in wide-area trunking. The subsystem goes into failsoft mode in any of these scenarios:

- Both the site controllers are not functioning properly.
- When all four control channels are disabled or malfunctioned.
- When only one channel is enabled.

Failsoft operation provides communications in conventional mode via repeaters/base radios in order to maintain vital communications.

The subscriber’s operation in failsoft mode is determined by the subscriber’s programming. A subscriber can be programmed to behave in the following manner:

- **Failsoft by control channel operation** – The subscriber first scans for alternate control channels outside the multi-site subsystem, then scans the control channel frequencies for failsoft data.
- **Failsoft by working group** – The subscriber looks for Failsoft data on a pre-programmed frequency after a scan for alternate control channels outside the multi-site subsystem is unsuccessful. If the subscriber cannot decode failsoft data on the pre-programmed frequency, the subscriber then scans the control channels in the simulcast subsystem for failsoft data.

Subscriber units in an RF cell that is in failsoft will try to roam to an RF cell that is in either wide-area trunking or site trunking. Data applications are not available on a site in failsoft and will have to be reinitiated once the system reverts back to wide-area trunking.

SECTION 2

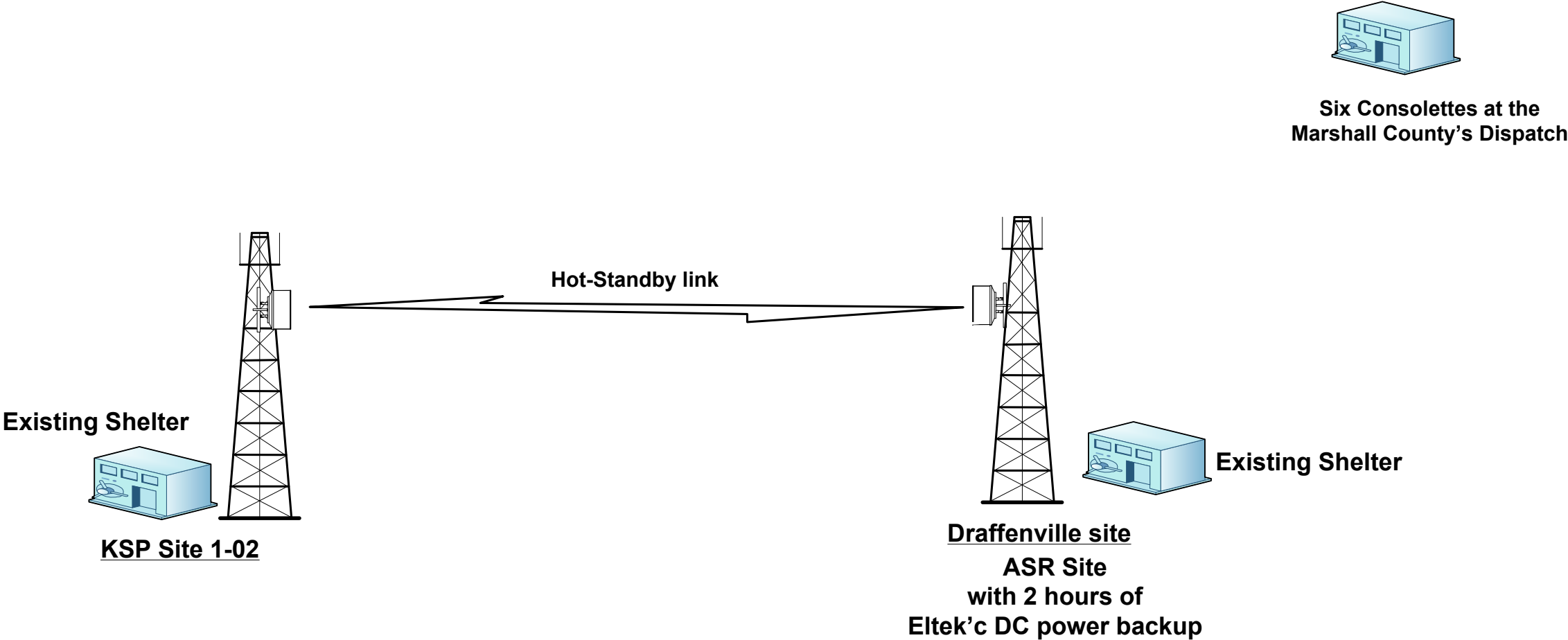
# SYSTEM DIAGRAMS

Motorola Solutions has provided the following system diagrams:

1. Sites Layout
2. Marshall County's ASR Site
3. Marshall County Consolettes




**Marshall County**  
**Proposed Sites and Microwave Link**



One RF Site with Six FDMA 700 MHz Trunking Channels

One Aviat's Microwave Hop - High Tier, over 5 Nines reliable link

 <b>MOTOROLA</b>	
PROJECT: <b>Marshall County, KY</b>	
TITLE: <b>Proposed Sites and Microwave link</b>	
DESIGNED BY: <b>Ravinder S Dhoophur</b>	DATE: <b>04-15-21</b>

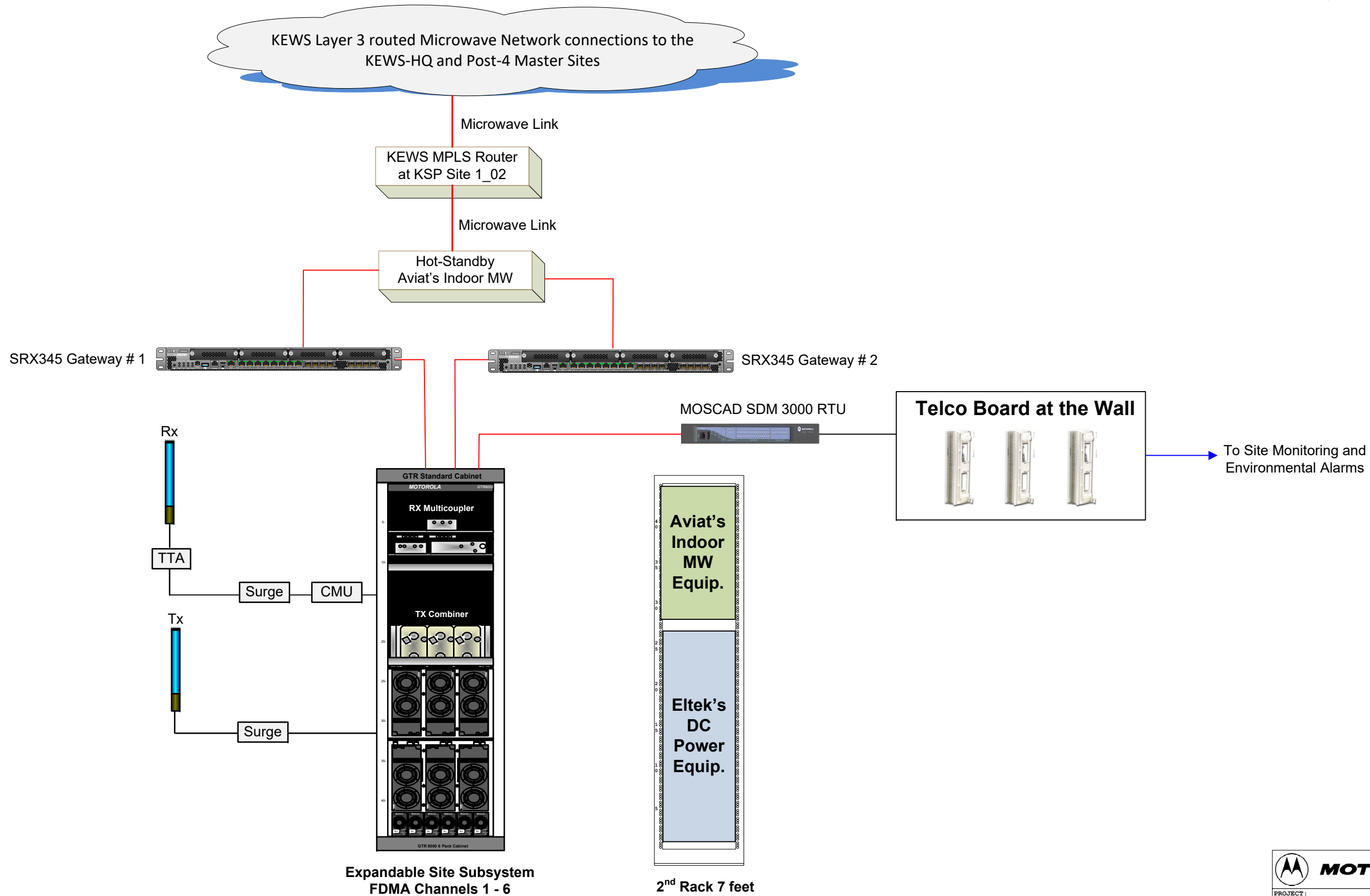
Draffenville Site at Marshall County

LEGEND

10/100 BaseT

RF

Other



MOTOROLA

PROJECT: Marshall County, KY

TITLE: Astro Site Repeater (ASR) Site

DESIGNED BY: Ravinder S Dhoophur

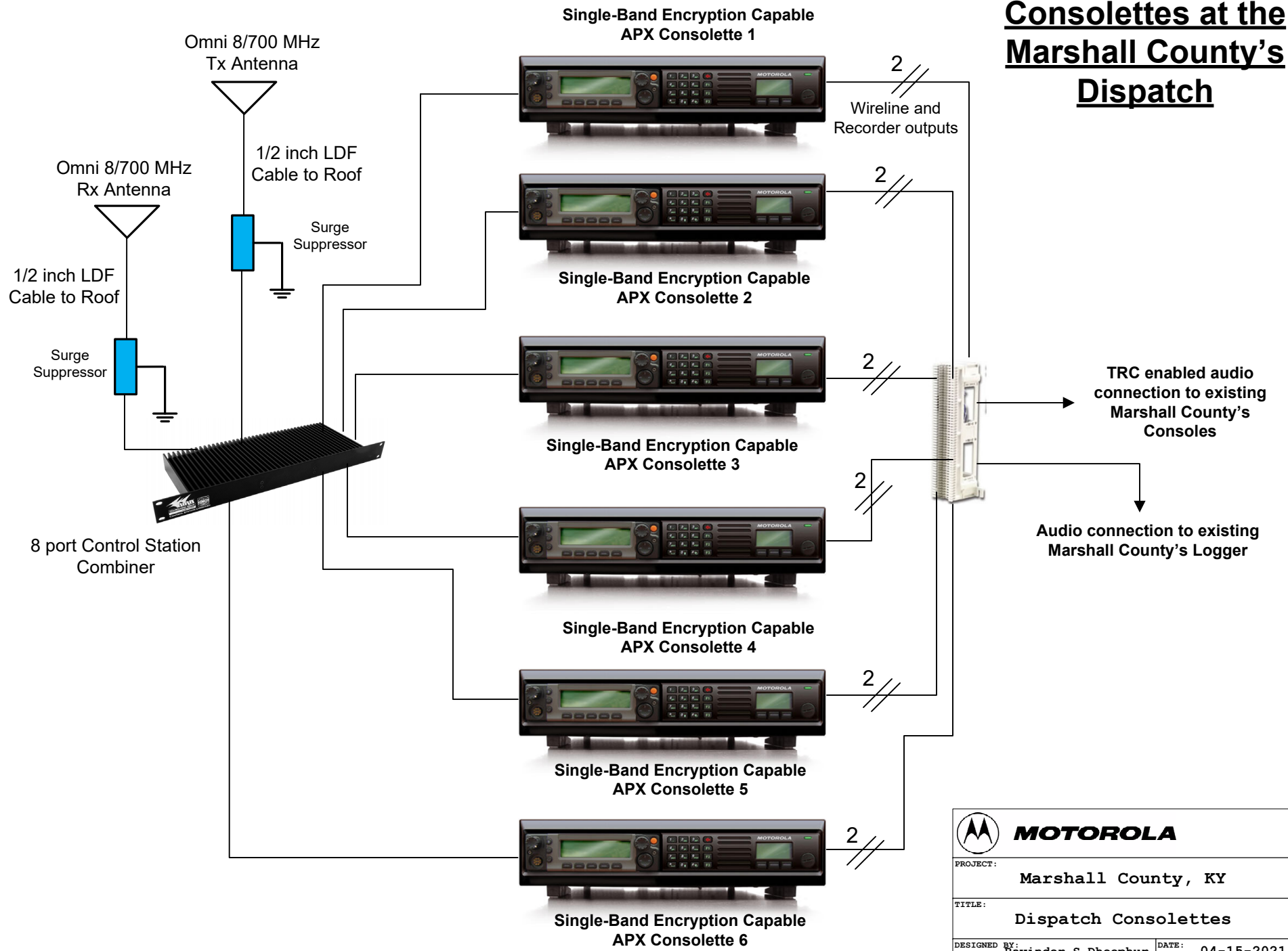
DATE: 04-15-21


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# Consolettes at the Marshall County's Dispatch



**MOTOROLA**

PROJECT: Marshall County, KY

TITLE: Dispatch Consolettes

DESIGNED BY: Ravinder S Dhoophur

DATE: 04-15-2021

## SECTION 3

## EQUIPMENT LIST

SUB SYS	BLOCK	LIM	O	QTY	NOMENCLATURE	DESCRIPTION
Master Site	Core Licenses	1	-	1	SQM01SUM0323	ASTRO MASTER SITE
Master Site	Core Licenses	1	a	1	CA03517AC	ADD: CORE EXPANSION
Master Site	Core Licenses	1	b	1	UA00153AB	ADD: P25 FDMA TRUNKING OPERATION SITE
Master Site	Core Licenses	1	c	1	UA00408AA	ADD: ENHANCED DATA-P25 TRNK SITE
Master Site	Core Licenses	1	d	1	CA01316AA	ADD: UNC ADDTL DEVICE LIC (QTY 10)
Master Site	Core Licenses	1	e	1	UA00152AA	ADD:500 RADIO USER LICENSES
ASR Sites	Core Licenses	2	-	1	T8343	G SERIES SOFTWARE LICENSING
ASR Sites	Core Licenses	2	a	6	UA00401AA	ADD: G SERIES BR-P25 TRNK ST RPTR
ASR Sites	Core Licenses	2	b	2	UA00406AA	ADD: G SERIES SC-P25 TRNK ST RPTR
ASR Sites	NETWORK	3	-	1	T8547	SITE ROUTER & FIREWALL- DC
ASR Sites	NETWORK	3	a	1	CA03445AA	ADD: MISSION CRITICAL HARDENING
ASR Sites	NETWORK	3	b	1	CA03448AA	ADD: STATEFUL FIREWALL
ASR Sites	NETWORK	4	-	1	T8547	SITE ROUTER & FIREWALL- DC
ASR Sites	NETWORK	4	a	1	CA03445AA	ADD: MISSION CRITICAL HARDENING
ASR Sites	NETWORK	4	b	1	CA03448AA	ADD: STATEFUL FIREWALL
ASR Sites	NETWORK	5	-	1	F4544	SITE MANAGER ADVANCED
ASR Sites	NETWORK	5	a	1	VA00872	ADD: SDM ASTRO RTU FW CURR ASTRO REL
ASR Sites	NETWORK	5	b	3	V592	AAD TERM BLCK & CONN WI
ASR Sites	NETWORK	5	c	1	VA00905	ADD:24/48 VDC PS TO SM
ASR Sites	GTR8000	6	-	1	SQM01SUM7054	GTR 8000 EXPANDABLE SITE SUBSYSTEM
ASR Sites	GTR8000	6	a	1	CA03677AA	ADD: ASTRO SYSTEM RELEASE 2020.1



SUB SYS	BLOCK	LIM	O	QTY	NOMENCLATURE	DESCRIPTION
ASR Sites	GTR8000	6	b	1	CA00855AA	ADD: 700/800 MHZ
ASR Sites	GTR8000	6	c	1	X306AC	ADD: QTY (6) GTR 8000 BASE RADIOS
ASR Sites	GTR8000	6	d	6	X591AE	ENH: ASTRO 25 SITE REPEATER SW
ASR Sites	GTR8000	6	e	1	CA00861AA	ADD: CABINET RMC W/ CAPABILITY OF 6 BRS
ASR Sites	GTR8000	6	f	1	CA00879AA	ADD: PRIMARY 6 PORT CAVITY COMBINER
ASR Sites	GTR8000	6	g	1	CA00882AA	ADD: 700 MHZ TX FILTER W/PMU
ASR Sites	GTR8000	6	h	2	CA00303AA	ADD: QTY (1) SITE CONTROLLER
ASR Sites	GTR8000	6	i	2	CA03177AA	ADD: ASTRO SITE REPEATER SC SW
ASR Sites	GTR8000	6	j	1	CA01402AA	ADD: 7.0 FT OPEN RACK
ASR Sites	GTR8000	6	k	1	CA02686AA	ADD: AC DC POWER DISTRIBUTION
RF Assembly	TTA	7	-	1	DSSGG013P	700/800 MHZ, TTA SYSTEM, ESS, 4.3-10, NON-DIVERSITY, DUAL PWR SUPPLY,
RF Assembly	Surge	8	-	2	DS1101990	SPD, SHIELDED RJ-45 JACK, SINGLE LINE GBE (1000MBPS) R56 COMPLIANT
RF Assembly	Surge	9	-	1	DSTSJADP	RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS
RF Assembly	Tx Antenna	10	-	1	DSCC80712P	OMNI, CORPORATE COLLINER, 11.5DBD, 746-870MHZ, PIM & 25KW PIP RATED
RF Assembly	Tx Antenna	11	-	1	DSUC1143	PIPE TO PIPE CLAMP, 1.5" TO 5" PIPE, SET OF 3 CLAMPS
RF Assembly	Tx Antenna	12	-	1	DSCOLBRACE76	STABILIZER ARM FOR COL53/54 ANTENNA SERIES
RF Assembly	Tx Antenna	13	-	1	DSPSA6X	6FT STAND OFF MOUNT
RF Assembly	UPPERJU MPR	14	-	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET
RF Assembly	UPPERJU MPR	15	-	2	DS716M50V12N1	CONNECTOR, 7/16 DIN MALE INTERFACE FOR EC4-50
RF Assembly	UPPERJU MPR	16	-	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT
RF Assembly	MAINLINE	17	-	320	DSEC750A	COAXIAL CABLE, "A" SERIES 1-5/8" 50 OHM CORRUGATED COPPER
RF Assembly	MAINLINE	18	-	2	DS716F50V158N1	CONNECTOR, 7/16 DIN FEMALE INTERFACE WITH CAPTIVATED CENTER PIN



SUB SYS	BLOCK	LIM	O	QTY	NOMENCLATURE	DESCRIPTION
RF Assembly	MAINLINE	19	-	7	DSGKC158	CLIP ON GROUND KIT FOR 1 5/8" CABLES, 5' LEAD W/ UNATTACHED 3/8" TWO H
RF Assembly	MAINLINE	20	-	2	DSHG158	HG-158, LACE-UP HOISTING GRIP FOR 1-5/8" AIRCELL COAX
RF Assembly	ANTACC	21	-	11	DSBH158	BH-158 BUTTERFLY HANGER FOR 1-5/8 AIRCELL COAX,PKG OF 10
RF Assembly	SURGE	22	-	1	DSTSX4310FMP	4.3-10 M/F BULKHEAD COAX RF SURGE PROTECTOR, 698MHZ - 2.7GHZ PIM
RF Assembly	SURGE	23	-	1	DSBF4310	Placeholder - Change Quantities
RF Assembly	LOWERJU MPR	24	-	20	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET
RF Assembly	LOWERJU MPR	25	-	2	DS716M50V12N1	CONNECTOR, 7/16 DIN MALE INTERFACE FOR EC4- 50
RF Assembly	Rx Antenna	26	-	1	DSCC80712P	OMNI, CORPORATE COLLINEAR, 11.5DBD, 746- 870MHZ, PIM & 25KW PIP RATED
RF Assembly	Rx Antenna	27	-	1	DSUC1143	PIPE TO PIPE CLAMP, 1.5" TO 5" PIPE, SET OF 3 CLAMPS
RF Assembly	Rx Antenna	28	-	1	DSCOLBRACE76	STABILIZER ARM FOR COL53/54 ANTENNA SERIES
RF Assembly	Rx Antenna	29	-	1	DSPSA6X	6FT STAND OFF MOUNT
RF Assembly	UPPERJU MPR	30	-	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET
RF Assembly	UPPERJU MPR	31	-	1	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50
RF Assembly	UPPERJU MPR	32	-	1	DS716M50V12N1	CONNECTOR, 7/16 DIN MALE INTERFACE FOR EC4- 50
RF Assembly	UPPERJU MPR	33	-	5	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT
RF Assembly	TTAJUMPR	34	-	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET
RF Assembly	TTAJUMPR	35	-	2	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50
RF Assembly	MAINLINE	36	-	320	DSEC550A	COAXIAL CABLE, "A" SERIES 7/8 IN 50 OHM CORRUGATED COPPER W/ BLACK PE



SUB SYS	BLOCK	LIM	O	QTY	NOMENCLATURE	DESCRIPTION
RF Assembly	MAINLINE	37	-	1	DSNF50V78N1	CONNECTOR, N FEMALE INTERFACE FOR EC5-50-A
RF Assembly	MAINLINE	38	-	1	DSNM50V78N1	CONNECTOR, N MALE INTERFACE FOR EC5-50-A
RF Assembly	MAINLINE	39	-	7	DSGKC78	CLIP ON GROUND KIT FOR 7/8" CABLES, 5' LEAD W/ UNATTACHED 3/8" TWO HOL
RF Assembly	TESTLINE	40	-	2	DSHG78	HG-78, LACE-UP HOISTING GRIP FOR 7/8" AIRCELL COAX
RF Assembly	TESTLINE	41	-	320	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET
RF Assembly	TESTLINE	42	-	3	DSNM50V12	CONNECTOR, N MALE INTERFACE FOR EC4-50
RF Assembly	TESTLINE	43	-	7	DSGKC12	CLIP ON GROUND KIT FOR 1/2" CABLES, 5' LEAD W/ UNATTACHED 3/8" TWO HOL
RF Assembly	TESTLINE	44	-	2	DSHG12	HG-12, LACE-UP HOISTING GRIP FOR 1/2" AIRCELL COAX
RF Assembly	ANTACC	45	-	11	DSSHS12	STACKABLE SNAP-IN HANGER FOR 1/2" AIRCELL COAX (PACKAGE OF 10)
RF Assembly	ANTACC	46	-	11	DSSHS78	STACKABLE SNAP-IN HANGER FOR 7/8" AIRCELL COAX (PACKAGE OF 10)
RF Assembly	SURGE	47	-	2	DSMVG002P	SURGE PROTECTOR, LIGHTNING, N-F TO N-F, DC PASS THRU
RF Assembly	TESTLINE	48	-	20	DSEC150HF	COAXIAL CABLE, 1/4" HIFLEX, 50 OHM WITH BLACK PE JACKET
RF Assembly	TESTLINE	49	-	1	DSNM50B14X	CONNECTOR, N MALE INTERFACE FOR EC1-50-HF
RF Assembly	TESTLINE	50	-	1	DSNM50BL14X	CONNECTOR, N MALE RIGHT ANGLE INTERFACE FOR EC1-50-HF
RF Assembly	LOWERJU MPR	51	-	20	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET
RF Assembly	LOWERJU MPR	52	-	2	DSNM50B12X	CONNECTOR, N MALE INTERFACE FOR EC4-50-HF
MW Rack	RACK	53	-	1	THN1012	RACK 7' OPEN
MW	MW	54	-	1	DQMW	Hardware and Software for the Microwave system
DC Power	DC Power	55	-	1	DSFPSS030100017	FPSK59I-ANL-VC, FPS 2U, REAR WIRE, -48V/200A OUTPUT, REAR WIRE, LVBD



SUB SYS	BLOCK	LIM	O	QTY	NOMENCLATURE	DESCRIPTION
DC Power	DC Power	56	-	5	DS241122125	FLATPACK S HE RECTIFIER 1800W 48V
DC Power	DC Power	57	-	1	DS331E00116500	FLATPACK S BLANK PANEL FOR EMPTY RECTIFIER SLOTS
DC Power	DC Power	58	-	1	DSSPSFPS200A01VV	SMARTPACK S CONTROLLER WITH A01 PROFILE, 48V FPS 2U STD CONFIG
DC Power	DC Power	59	-	5	DSLA1014UU	LINE CORD W/AMP MATE-N-LOCK CONN AND UNTERM, 14AWG CBL, 10FT
DC Power	DC Power	60	-	2	DS502877	48V 125AH 12V125F ENERSYS BATT SET
DC Power	DC Power	61	-	1	DSCBB025E	CIRCUIT BREAKER, 25 AMP, E TRIP
DC Power	DC Power	62	-	1	DS265503	INVERTER, 1000VA 48VDC/120VAC ESI SERIES 1KVA/800W
DC Power	DC Power	63	-	1	Warranty	5 year extended warranty
DC Power	DC Power	64	-	2	DSCBB050E	CIRCUIT BREAKER, 50 AMP, E TRIP
DC Power	DC Power	65	-	2	DSCBB100E	CIRCUIT BREAKER, 100 AMP, E-TRIP
DC Power	DC Power	66	-	3	DS083E21959700	BRKR 3A 1P CR15 SNAPAK
DC Power	DC Power	67	-	3	DS083E21960000	BRKR 10A 1P CR15 SNAPAK
DC Power	DC Power	68	-	3	DS083E21960100	CIRCUIT BREAKER 15 AMP
DC Power	DC Power	69	-	1	DS346E22503600	BREAKER PANEL FILLER PLATE
Dispatch Site	Rack	70	-	1	THN1012	RACK 7' OPEN
Dispatch Site	Power	71	-	2	DSRMP615A	SPD, TYPE 3, 120V RACK MOUNT, 15A PLUG-IN W/ (6) 15A NEMA 5-15 OUTLETS
Dispatch Site	Punch Blocks	72	-	1	6406066M02	PANEL PUNCH BLOCK
Dispatch Site	Punch Blocks	73	-	1	BLN6884	PUNCH BLOCK



SUB SYS	BLOCK	LIM	O	QTY	NOMENCLATURE	DESCRIPTION
Dispatch Site	Punch Blocks	74	-	1	DSS66M25T68L125R	SIX 4-PAIR MODULAR JACKS, ONE 25-PAIR FEMALE CONNECTOR, T568B
Dispatch Site	Punch Blocks	75	-	1	DDN9995	3TELCO 25 FT 50 WAY CABLE, 180 DEG MALE - 90 DEG MALE , .35 INCH SCREW
Dispatch Site	Consolette	76	-	6	L37TSS9PW1 N	APX CONSOLETTTE 7/800
Dispatch Site	Consolette	76	a	6	GA05508	DEL: DELETE VHF BAND
Dispatch Site	Consolette	76	b	6	GA05509	DEL: DELETE UHF BAND
Dispatch Site	Consolette	76	c	6	G806	ADD: ASTRO DIGITAL CAI OPERATION
Dispatch Site	Consolette	76	d	6	G51	ENH: SMARTZONE OPERATION APX
Dispatch Site	Consolette	76	e	6	G361	ENH: P25 TRUNKING SOFTWARE APX
Dispatch Site	Consolette	76	f	6	G843	ADD: AES ENCRYPTION APX AND ADP
Dispatch Site	Consolette	76	g	6	W969	ADD: MULTIPLE KEY ENCRYPTION OPERATION
Dispatch Site	Consolette	76	h	6	GA09008	ADD: GROUP SERVICES
Dispatch Site	Consolette	76	i	6	L999	ADD: FULL FP W/05/KEYPAD/CLOCK/VU
Dispatch Site	Consolette	76	j	6	W382	ADD: CONTROL STATION DESK GCAI MIC
Dispatch Site	Consolette	76	k	6	CA01598	ADD: AC LINE CORD US
Dispatch Site	Consolette	76	l	6	GA00318	ADD: 5Y ESSENTIAL SERVICE
Dispatch Site	Consolette	76	m	6	QA00205	ADD: DATA LINK MANAGER APP CD- MOBILES
Dispatch Site	Consolette	76	n	6	G799	ADD: PRINTED TEST RESULTS APEX
Dispatch Site	Consolette	77	-	6	HKN6233C	APX CONSOLETTTE RACK MOUNT KIT



SUB SYS	BLOCK	LIM	O	QTY	NOMENCLATURE	DESCRIPTION
Dispatch Site	Combiner	78	-	1	DSCS74860805SN	HYBRID CONTROL STATION COMBINER, 746-869 MHZ 8 CH.
Dispatch Site	Combiner	79	-	80	DSFSJ150ACABLE	CABLE: 1/4" SUPERFLEX POLY JKT PER FOOT
Dispatch Site	Combiner	80	-	12	DDN9769	F1PNM-HC 1/4" TYPE N MALE CONNECTOR FOR FSJ1-50A CABLE
Dispatch Site	RF Assembly	81	-	200	DSLDF450ACABLE	CABLE: 1/2" LDF HELIAX POLY JKT PER FOOT
Dispatch Site	RF Assembly	82	-	6	DDN1088	TYPE N MALE PS FOR 1/2 IN CABLE
Dispatch Site	RF Assembly	83	-	2	DDN1089	L4TNF-PSA TYPE N FEMALE PS FOR 1/2 IN CABLE
Dispatch Site	RF Assembly	84	-	6	DSSG1212B2U	SG12-12B2U, SUREGROUND 1/2", 48"
Dispatch Site	RF Assembly	85	-	6	TDN9289	CABLE WRAP WEATHERPROOFING
Dispatch Site	RF Assembly	86	-	2	TDN6670	STRAP CBL TIE NYL
Dispatch Site	RF Assembly	87	-	2	DSISB50HNC2MA	RF SPD, 125-1000MHZ DC BLOCK BULKHEAD MT NM ANTENNA, NF EQUIPMENT SIDE
Dispatch Site	RF Assembly	88	-	4	DSSSH12	SSH-12 1/2" SNAPSTAK HANGER 10PK
Dispatch Site	RF Assembly	89	-	4	DS43211A	BUTTERFLY HANGER FOR 1/2 IN OR 3/8 IN COAX CABLE
Dispatch Site	RF Assembly	90	-	2	DSMFBW7463	WIDEBAND FIBERGLASS OMNI ANTENNA 746-869 NFM BULKHEAD
Dispatch Site	RF Assembly	91	-	2	DSMMK12	ANTENNA MOUNTING BRACKET



SECTION 4

# COVERAGE MAPS

Motorola Solutions has provided the following coverage maps:

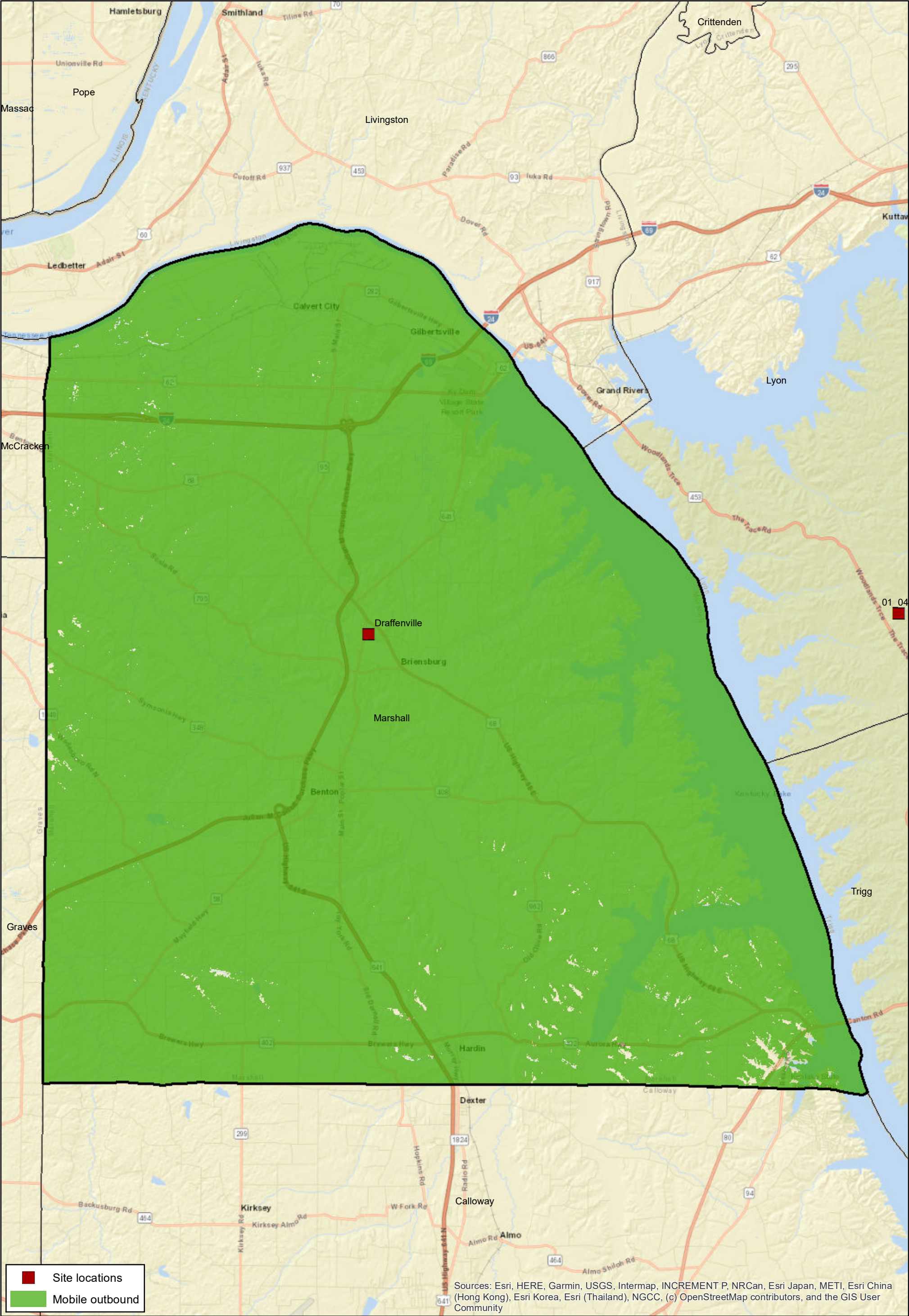
1. Mobile Outbound
2. Mobile Inbound
3. Portable On Street Outbound
4. Portable On Street Inbound
5. Portable in building 6dB loss Outbound
6. Portable in building 6dB loss Inbound
7. Portable in building 12dB loss Outbound
8. Portable in building 12dB loss Inbound
9. Coverage Test Grid Portable On Street Inbound





## 6-site 700 MHz ASTRO P25 System Overlay

## For Information Only



0 1.25 2.5 5 Miles

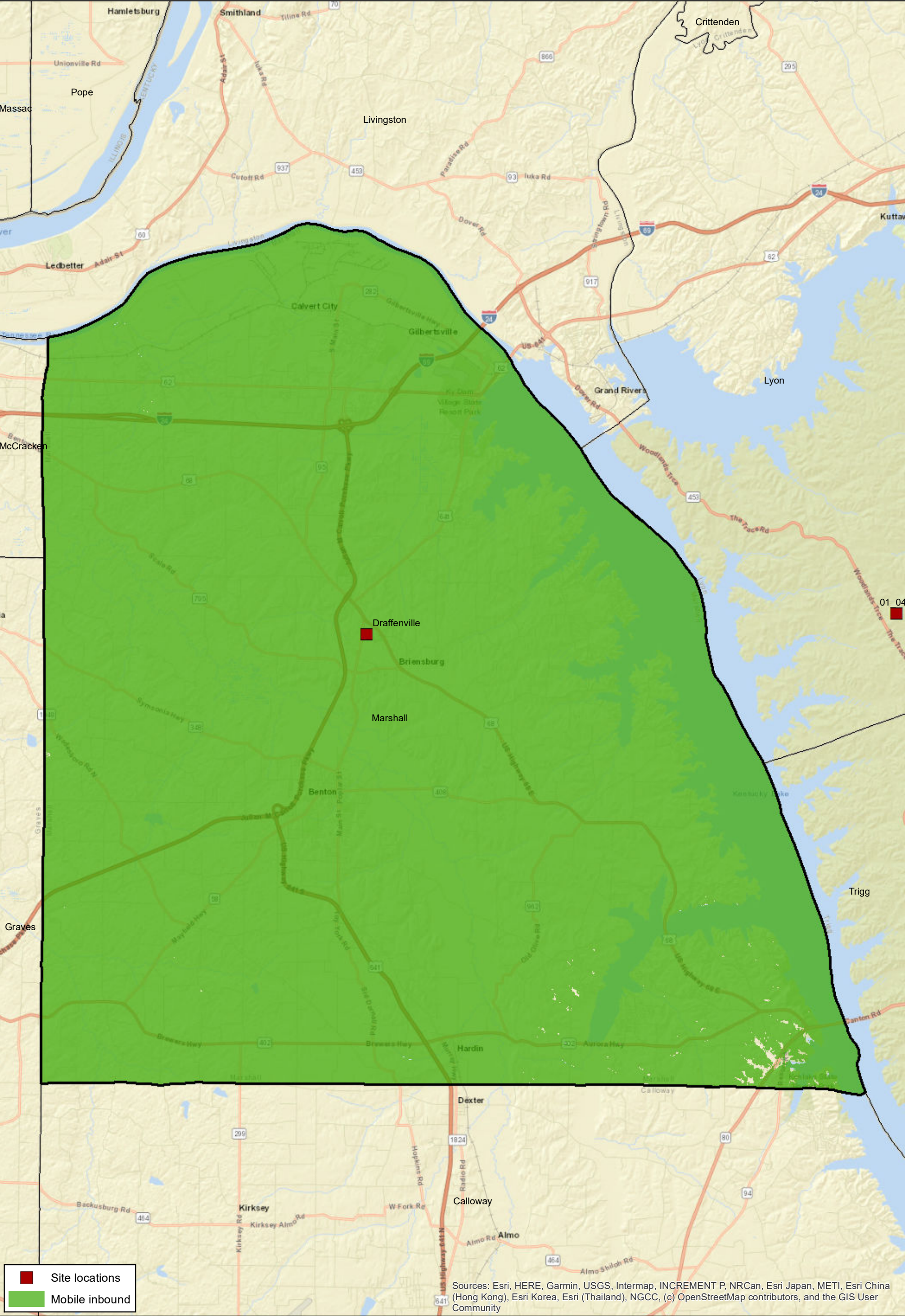
1 in = 2.15 miles

**Outbound Coverage at DAQ 3.0 shown for a mobile APX8500.  
with Roof center Mounted Antenna.**

This map is intended solely for the equipment configuration stated above.  
Coverage can vary significantly if different configurations are used.

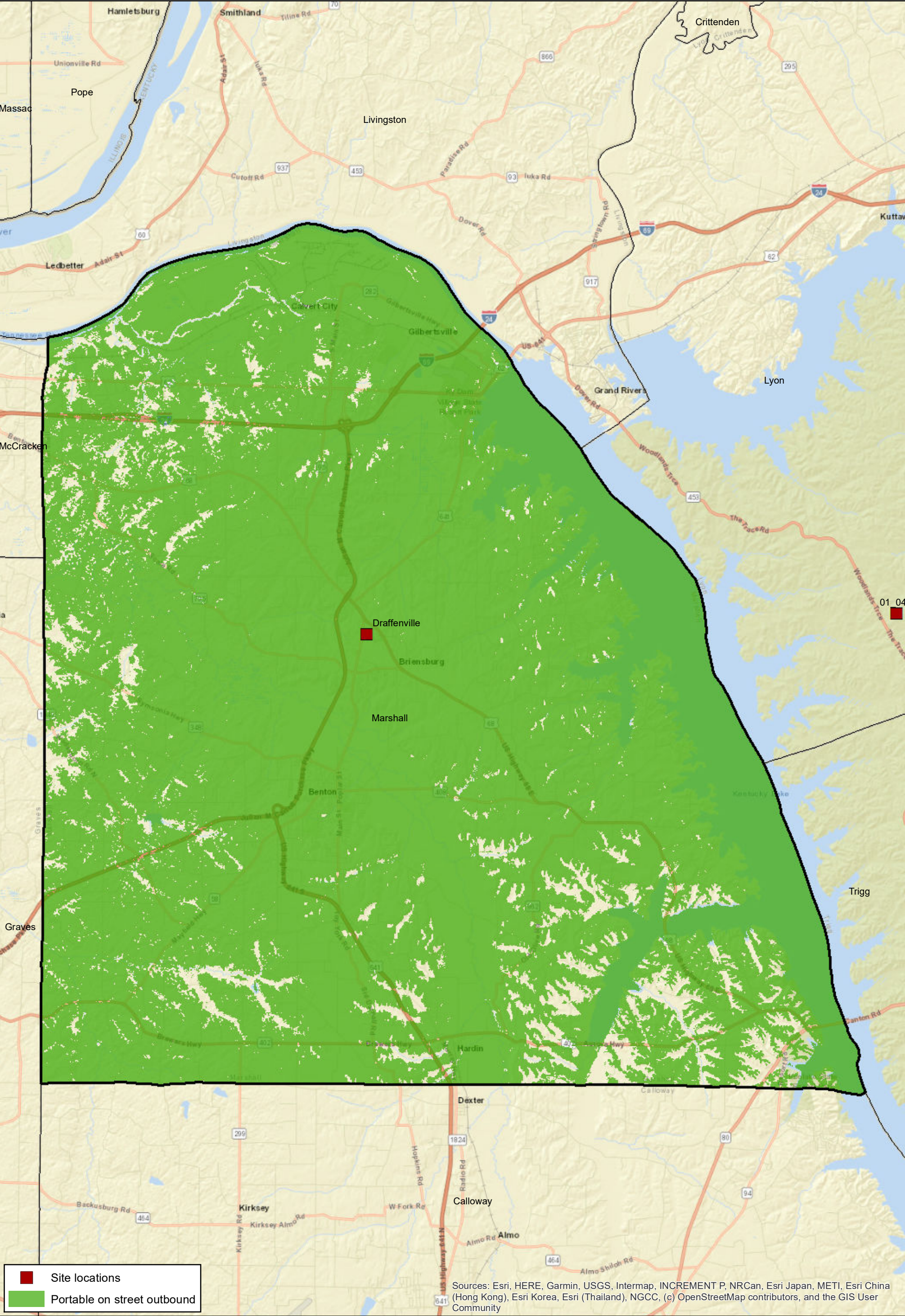
KY\_Marshall County  
Marshall Sept 2020  
HS, D17  
kpt483

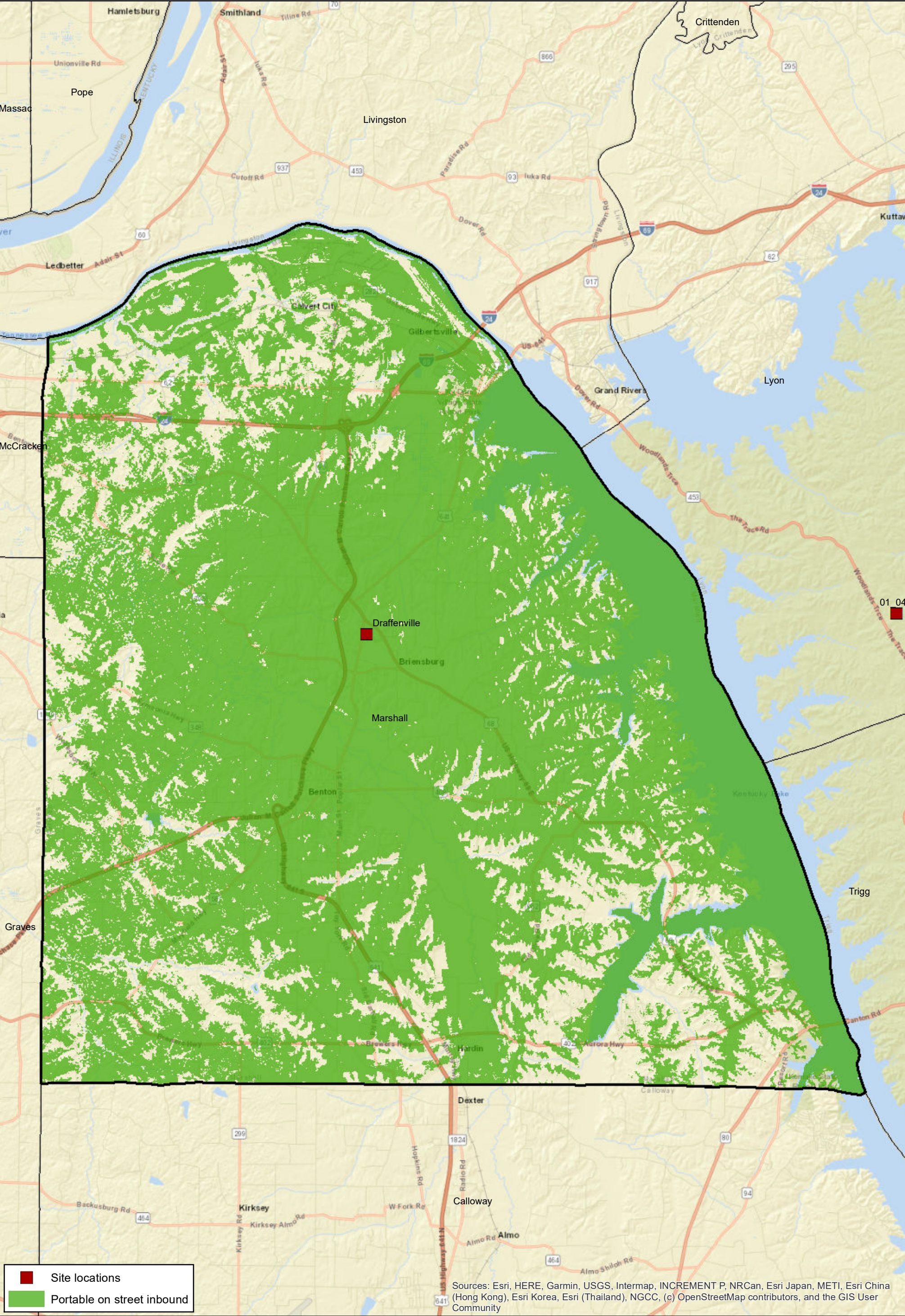
3012340055.1.12 mob



Inbound Coverage at DAQ 3.0 shown for a mobile APX8500.  
with Roof center Mounted Antenna.

This map is intended solely for the equipment configuration stated above.  
Coverage can vary significantly if different configurations are used.

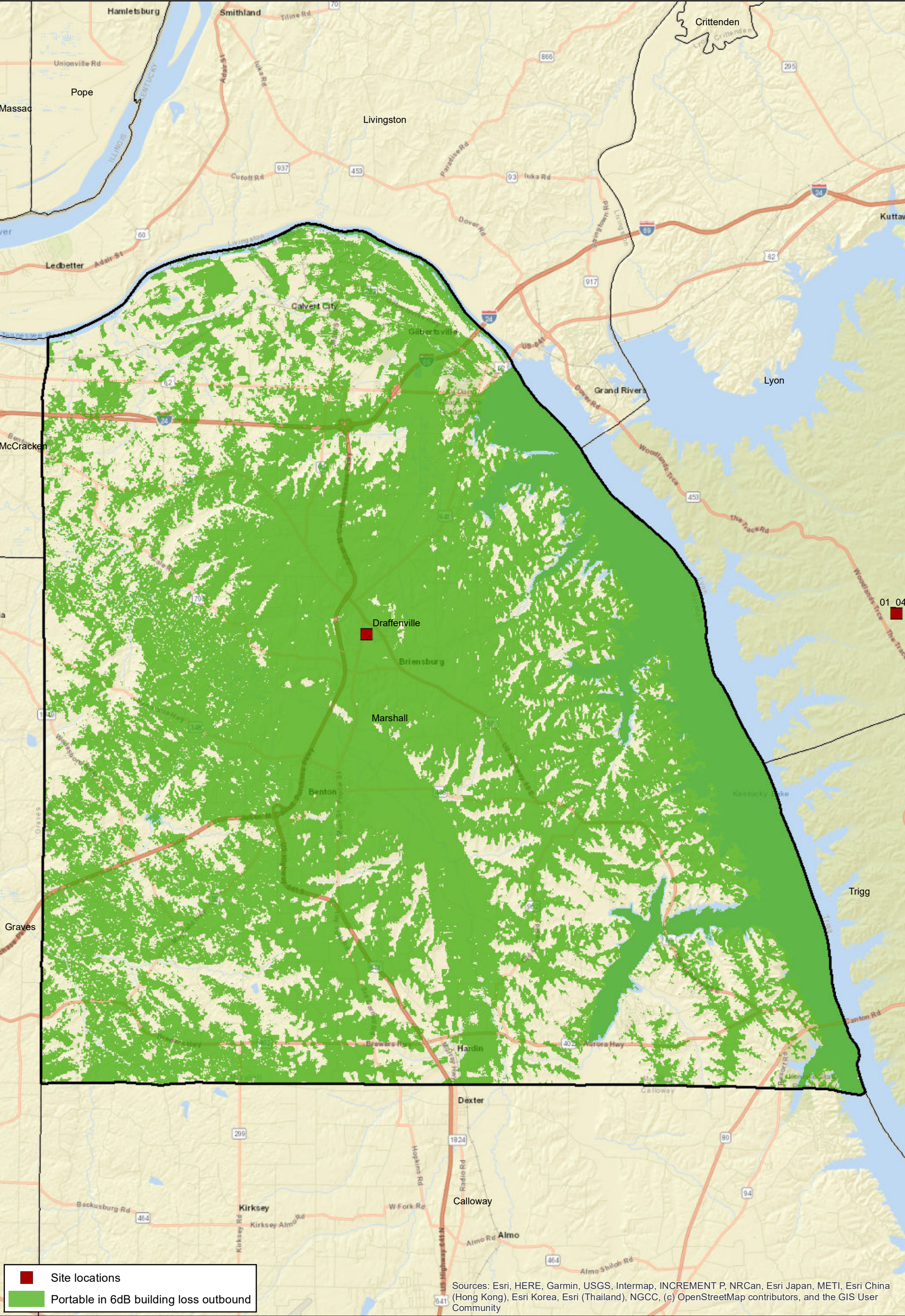




0 1.25 2.5 5 Miles  
1 in = 2.15 miles

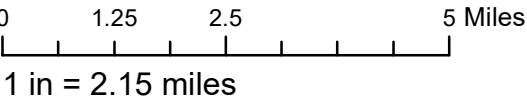
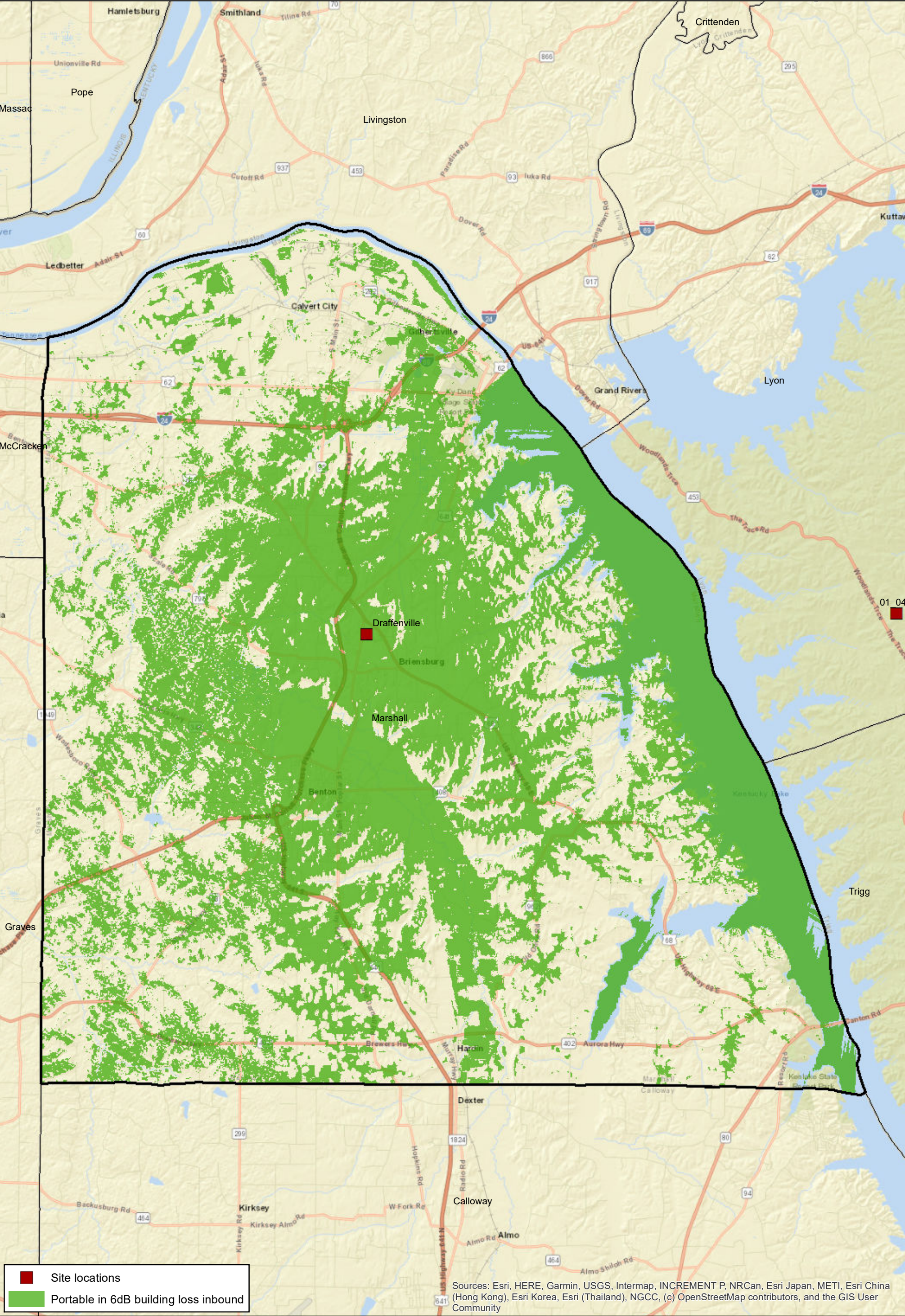
Inbound Coverage at DAQ 3.0 shown for a portable APX4000.  
Transmitting and Receiving at hip level in swivel case w/ Remote Speaker Mic.  
Portable on street.

KY\_Marshall County  
Marshall Sept 2020  
HS\_D17  
kp483

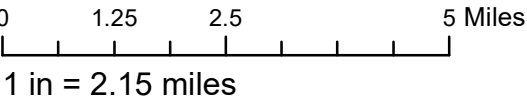
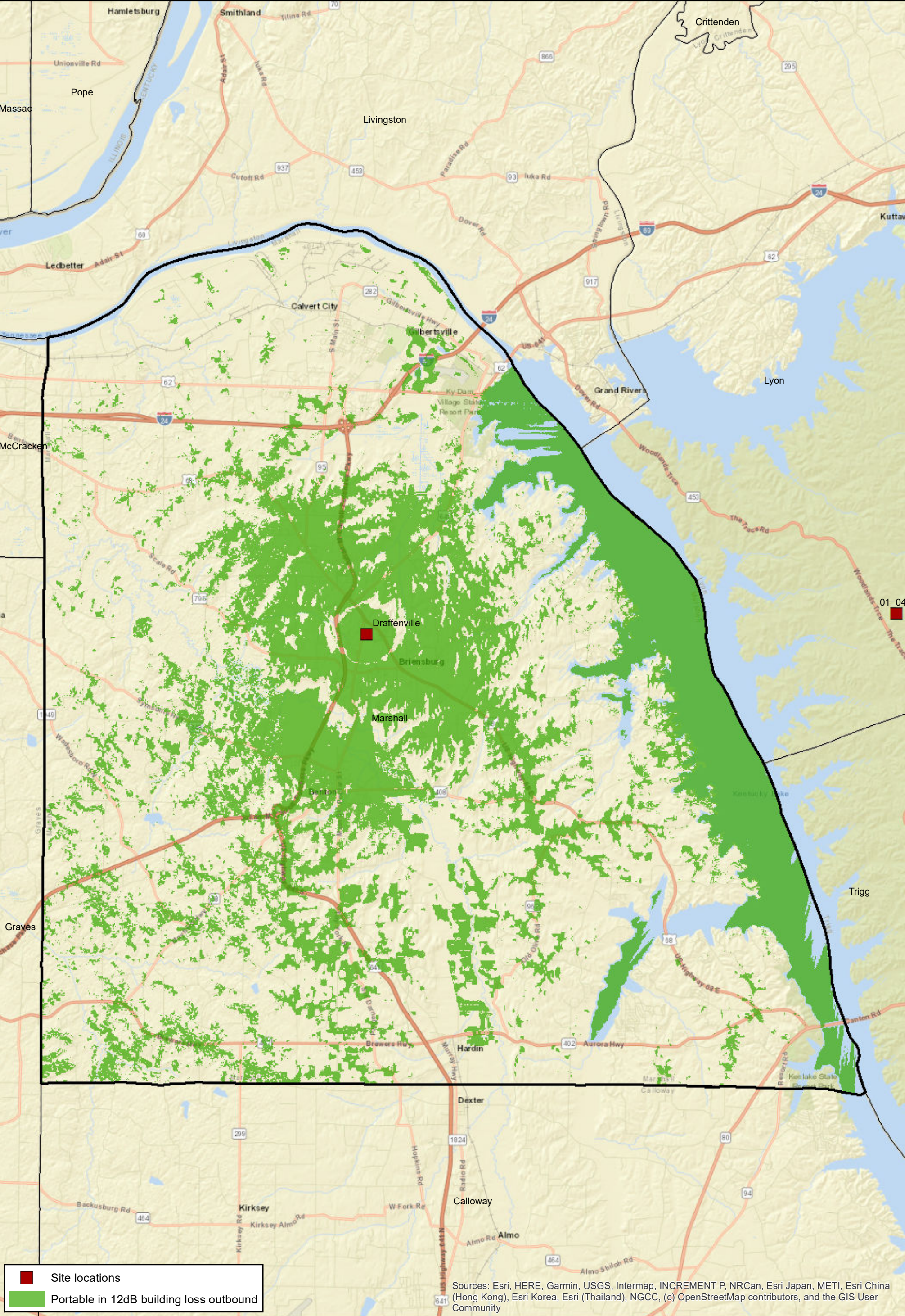


Outbound Coverage at DAQ 3.0 shown for a portable APX4000.  
Transmitting and Receiving at hip level in swivel case w/ Remote Speaker Mic.  
Portable in 6dB building loss.

This map is intended solely for the equipment configuration stated above.  
Coverage can vary significantly if different configurations are used.

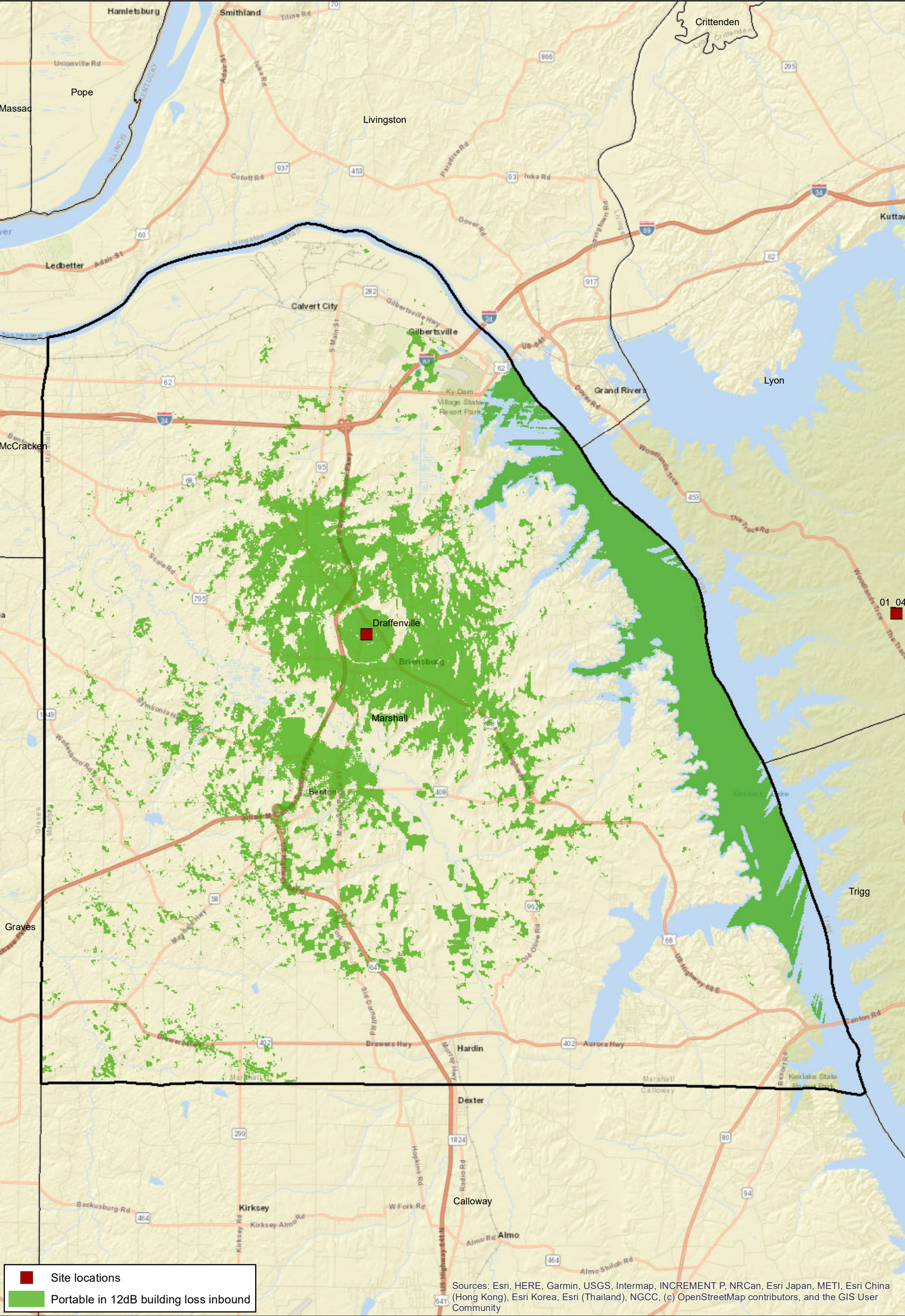


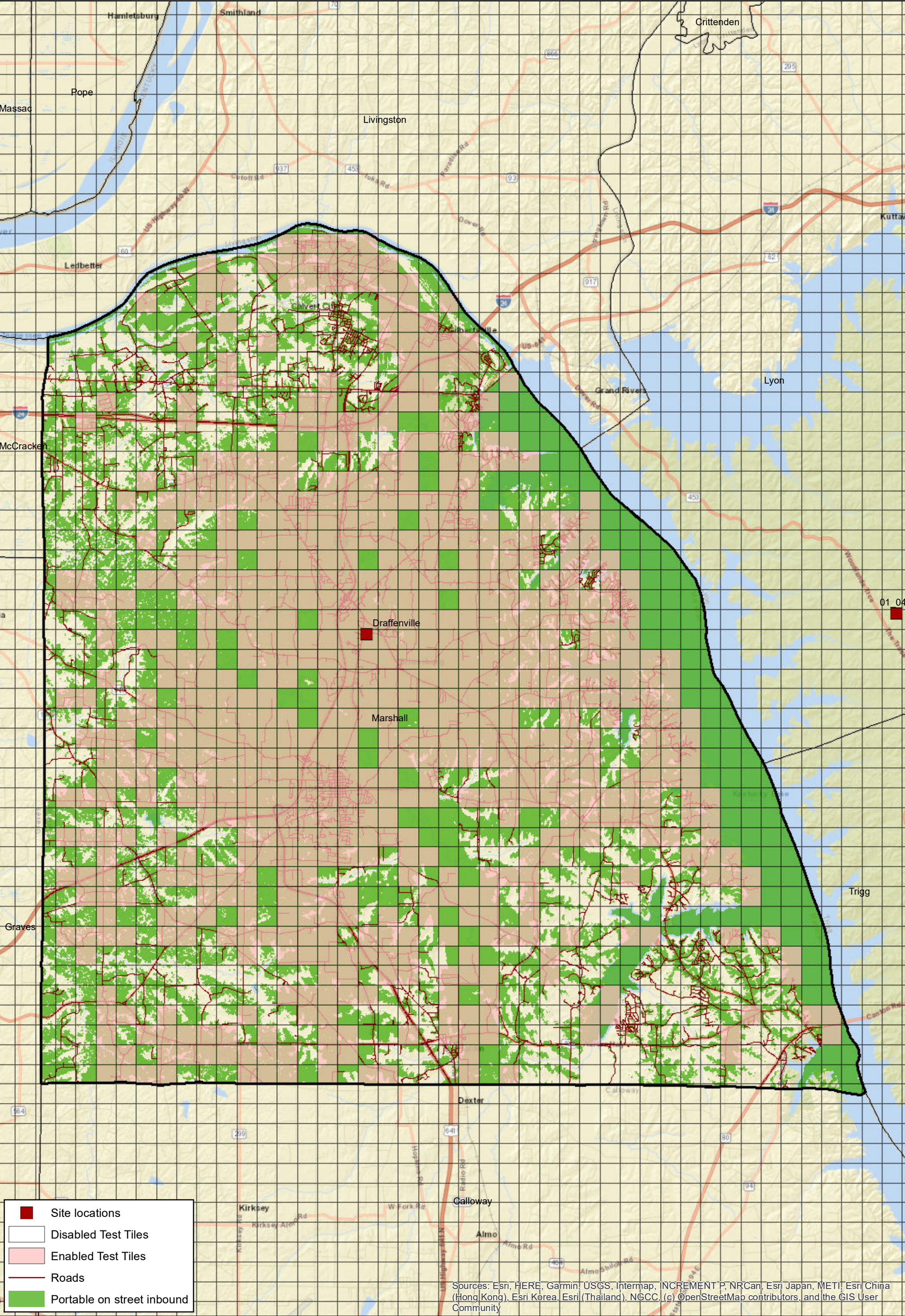
**Inbound Coverage at DAQ 3.0 shown for a portable APX4000.**  
**Transmitting and Receiving at hip level in swivel case w/ Remote Speaker Mic.**  
**Portable in 6dB building loss.**



**Outbound Coverage at DAQ 3.0 shown for a portable APX4000.**  
**Transmitting and Receiving at hip level in swivel case w/ Remote Speaker Mic.**  
**Portable in 12dB building loss.**

This map is intended solely for the equipment configuration stated above.  
Coverage can vary significantly if different configurations are used.





0 1.25 2.5 5 Miles

1 in = 2.15 miles

CATP Test Grid over Portable on street inbound coverage.

This map is intended solely for the equipment configuration stated above.  
Coverage can vary significantly if different configurations are used.

## SECTION 5

# COVERAGE ACCEPTANCE TEST PLAN

## 5.1 OVERVIEW

This Coverage Acceptance Test Plan (CATP) is designed to verify that the voice radio system implemented by Motorola Solutions for Marshall County meets or exceeds the required reliability as shown on Motorola Solutions' maps. The CATP defines the coverage testing method and procedure, the coverage acceptance criterion, the test documentation, and the responsibilities of both Motorola Solutions and Marshall County.

Coverage Acceptance Testing is based upon a coverage prediction that accurately represents the implemented infrastructure and parameters that are consistent with the contract agreements.

Subsequent sections define the coverage acceptance test configuration(s) and test criteria.

## 5.2 CATP DEFINITIONS

Several definitions are needed to accurately describe the coverage acceptance test method and criteria. Where cited, these terms or methods are defined in TIA TSB-88.1-E<sup>1</sup> or TSB-88.3-E<sup>2</sup>.

### 5.2.1 Defined Test Area

The defined test area is the geographical area in which communications will be provided that meet or exceed the specified Channel Performance Criterion (CPC) at the specified reliability for the specified equipment configuration(s). The defined test area(s) are listed in Table 5-2 Coverage Acceptance Test Summary, along with names of the corresponding Motorola Solutions map(s) which show the defined test areas. Please see "Coverage Maps" section for the maps.

For some defined test areas (identified in Table 5-2 Coverage Acceptance Test Summary), the coverage reliability commitment is on-roads only. The roads included in the on-road commitment are defined by the US Census Bureau TIGER streets that are accessible by 2-wheel drive vehicles.

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<sup>1</sup> *Wireless Communications Systems --- Performance in Noise- and Interference-Limited Situations --- Part 1: Recommended Methods for Technology Independent Performance Modeling* Technical Service Bulletin TSB-88.1-E, Telecommunications Industry Association (TIA), Arlington VA, 2018.

<sup>2</sup> *Wireless Communications Systems --- Performance in Noise- and Interference-Limited Situations --- Part 3: Recommended Methods for Technology Independent Performance Verification*, Technical Service Bulletin TSB-88.3-E, Telecommunications Industry Association (TIA), Arlington VA, 2018.



For coverage testing, each defined test area will be divided into a grid pattern by Motorola Solutions to produce at least the number of uniformly sized test locations (or tiles) required by the Estimate of Proportions formula. [TSB-88.3-E, §5.2.1, equation 2] The minimum number of test tiles required varies, from a hundred to many thousands, depending on the size of the defined test area, desired confidence in results, type of coverage test, and the predicted versus required reliability.

## 5.2.2 Channel Performance Criterion (CPC)

The CPC is the specified minimum design performance level in a faded channel. [TSB-88.1-E, §5.2] For this system, the CPC is the Delivered Audio Quality (DAQ) as stated in Table 5-2 Coverage Acceptance Test Summary. The DAQ definitions are provided in Table 5-1. [TSB-88.1-E, §5.4.2, Table 3].

**Table 5-1: DAQ Definitions**

DAQ	Subjective Performance Description
1	Unusable, speech present but unreadable.
2	Understandable with considerable effort. Frequent repetition due to noise/distortion.
3	Speech understandable with slight effort. Occasional repetition required due to noise/distortion.
3.4	Speech understandable with repetition only rarely required. Some noise/distortion.
4	Speech easily understood. Occasional noise/distortion.
4.5	Speech easily understood. Infrequent noise/distortion.
5	Speech easily understood.

The CPC pass/fail criterion is the faded performance threshold, plus any adjustments for antenna performance, external noise, and in-building or in-vehicle losses. [TSB-88.1-E, §5.4.2, Figure 6] The faded performance threshold for the specified CPC is determined using the receiver's static reference sensitivity adjusted by the projected CPC parameters for the applicable Modulation Type and DAQ as listed in the current version of TSB-88.1, Annex A, Table A-1. For coverage testing of digital voice radio systems, the faded performance threshold is the applicable Bit Error Rate (BER) from the projected CPC parameters.

## 5.2.3 Reliability

The Covered Area reliability is the percentage of locations within the defined test area that are predicted to meet or exceed the specified CPC. The Motorola Solutions map(s) indicate the Covered Area(s) within which this system is predicted to provide at least the reliability of meeting or exceeding the CPC as stated in Table 5-2 Coverage Acceptance Test Summary.

For the defined test area(s) guaranteed for Covered Area reliability, only the painted covered area on Motorola Solutions' maps will be tested for coverage acceptance. No acceptance testing will be performed in locations predicted on Motorola Solutions' maps to be below the required Covered Area reliability.

After all accessible tiles in the defined test area have been tested, the Covered Area reliability will be determined by dividing the number of tiles tested that meet or exceed the CPC pass/fail criterion by the total number of tiles tested. [TSB-88.3-E, §5.1, equation 1]

## 5.2.4 Direction(s) of Test

The direction(s) of test in Table 5-2 Coverage Acceptance Test Summary defines the direction(s) which will be tested for coverage acceptance. Outbound (also called forward link, downlink, or talk-out) is the path from the fixed equipment outward to the mobile or portable radios. Inbound (also called reverse link, uplink, or talk-in) is the path from the mobile or portable radios inward to the fixed equipment.

## 5.2.5 Equipment Configurations

This section defines the equipment configurations and infrastructure design parameters upon which the coverage guarantee and the coverage acceptance test are based. The equipment configurations are defined in Table 5-2 Coverage Acceptance Test Summary, and include user equipment, outdoor/in-building definition, defined test area, number of test tiles, reliability, CPC, CPC pass/fail, and direction(s) of test. The infrastructure design parameters are defined in Table 5-3 Infrastructure Design Parameters, and include site names, site locations, and antenna system parameters. If the implemented system equipment configuration and/or infrastructure design parameters vary from these configurations and/or parameters, a revised coverage map will be used to define the test configuration and potential areas from which test tiles will be included in the revised coverage acceptance test.

Coverage testing will be conducted with equipment installed per the configurations in Table 5-2 Coverage Acceptance Test Summary.

**Table 5-2: Marshall County Coverage Acceptance Test Summary**

User Equipment	Outdoor / In-Building	Defined Test Area & Map Name	Number of Test Tiles	Reliability	CPC	CPC Pass/Fail	Direction(s) of Test
Motorola 2.5 Watt APX4000 Portable with a Remote Speaker Microphone (RSM) configuration in a swivel case, with half-wave antenna at a height of 3.3 feet for transmit and receive.	Outdoor	"Coverage Test_Grid_Portable on street_inbound" map in the "Coverage Maps" section (On-Roads Only)	686 (0.5 mile tiles)	95%	DAQ-3.0	Subjective DAQ	Inbound Only



**Table 5-3: Marshall County Infrastructure Design Parameters**

Site Name	Latitude	Longitude	Transmit Antenna System				Receive Antenna System			
			Height	Azimuth	Antenna Model	ERP (watts)	Height	Azimuth	Antenna Model	EFS (dBm)
Standalone Sites										
01_02	36° 41' 34" N	88° 32' 11" W	440 ft	0°	RFI CC807-12, 11.5 dBd omni	200.5 watts	440 ft	0°	RFI CC807-12, 11.5 dBd omni	-123.7 dBm
01_04	36° 55' 17.7" N	88° 5' 47.8" W	340 ft	0°	RFI CC807-12, 11.5 dBd omni	235.5 watts	340 ft	0°	RFI CC807-12, 11.5 dBd omni	-123.7 dBm
01_06	37° 5' 40" N	88° 40' 20" W	380 ft	225°	dbSpectra DS7C15PPAU -D_160, 11.2 dBd directional, HBW:160°	205.1 watts	380 ft	225°	dbSpectra DS7C15P PAU-D_160, 11.2 dBd directional , HBW:160°	-123.4 dBm
01_08	37° 14' 11.6" N	88° 17' 40.4" W	90 ft	90°	RFI CC807-12, 11.5 dBd omni	348.4 watts	90 ft	0°	RFI CC807-12, 11.5 dBd omni	-123.7 dBm
Draffenville	36° 54' 50.47" N	88° 20' 15.09" W	280 ft	0°	RFI CC807-12, 11.5 dBd omni	96 watts	280 ft	0°	RFI CC807-12, 11.5 dBd omni	-123.7 dBm
KEWS_MSU_1-3	36° 36' 47" N	88° 19' 21" W	125 ft	0°	RFI CC807-12, 11.5 dBd omni	310.5 watts	125 ft	0°	RFI CC807-12, 11.5 dBd omni	-123.7 dBm



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### 5.2.5.1 Outdoor Only Coverage

Motorola Solutions' portable coverage prediction is for outdoor locations only. Portable coverage inside buildings and vehicles is not a design requirement of this system and is, therefore, not guaranteed.

### 5.2.6 CPC Pass/Fail Criteria for a Test Tile

For each equipment configuration, the CPC pass/fail criteria for a test tile is stated in Table 5-2 Coverage Acceptance Test Summary. Each equipment configuration will have only one CPC pass or fail criterion for a test tile.

Coverage for the portable outdoor equipment configurations will be verified for acceptance by attenuation of the test radio for DAQ tests. The attenuation will be the difference between the test radio's antenna system and the additional loss used in Motorola Solutions' coverage prediction to account for portable antenna performance. The attenuator value will be provided during the coverage testing design review. This provides a method of verifying that the radio system provides the required DAQ for the specified CPC for each of the defined equipment configurations.

The methodology to determine the attenuator value is demonstrated in TSB-88.1-E §5.4.2, Figure 6. The attenuator value includes the proper values for the equipment configuration requirement plus adjustments for the test equipment setup. Should the test equipment setup losses (e.g. cable length) vary, an adjustment to the attenuator value may be required to represent the required equipment configuration accurately.

#### **Informational BER (Bit Error Rate) Measurement for a Test Tile**

Outbound BER measurements will be taken in all accessible enabled test tiles for the portable equipment configuration defined in Table 5-2. To collect BER information, the measurements will be performed with the appropriate attenuator value, as described above, installed in the test radio antenna line, to establish an equivalent signal level performance for the portable "on street" equipment configuration. The BER measurements will be provided for informational purposes only.

### 5.2.7 Required Number of Test Tiles in the Defined Test Area

The method used to test coverage is a statistical sampling of the defined test area to verify that the CPC is met or exceeded at the required reliability for each of the defined equipment configurations. It is impossible to verify every point within a defined test area, because there are infinite points; therefore, coverage reliability will be verified by sampling a statistically significant number of randomly selected locations, quasi-uniformly distributed throughout the defined test area. There is one test sample per test tile, where a sample consists of multiple sub-samples.

Coverage acceptance testing will be performed in the defined test area as indicated on Motorola Solutions-provided maps. To verify that the reliability requirement is met, the defined test area indicated on Motorola Solutions' maps will be divided into uniformly sized test tiles, with at least the number of test tiles indicated in Table 5-2 Coverage Acceptance Test Summary.

The number of test tiles indicated in Table 5-2 is at least the minimum required by the Estimate of Proportions formula as stated in section 1.2.1 (Defined Test Area) of this document.

Per TSB-88.3-E, the stated minimum outdoor tile size is 100 by 100 wavelengths; however, the minimum *practical* test tile size is typically about 400 by 400 meters (about 0.25 by 0.25 miles). The minimum practical tile size for any system is determined by the distance traveled at the speed of the test vehicle while sampling, GPS error margin, and availability of road access within very small test tiles. A related consideration is the time, resources, and cost involved in testing very large numbers of very small tiles. For a given defined test area, all test tiles must be of equal size. The maximum test tile size is 2 by 2 km (1.24 by 1.24 miles) [TSB-88.3-E, §5.5.1]. In some wide-area systems, this constraint on maximum tile size may dictate a greater number of test tiles than the minimum number required by the Estimate of Proportions formula.

No acceptance testing will be performed in locations outside the defined test area as indicated on the Motorola Solutions-provided maps. Motorola Solutions and Marshall County may agree to perform “information only” tests in locations outside the defined test area; however, these “information only” test results will not be used for coverage acceptance. Any “information only” test locations must be defined before starting the test. If the added locations require significant additional time and resources to test, a change order will be required and Motorola Solutions may charge Marshall County on a time-and-materials basis.

## 5.2.8 Accessibility to Test Tiles

Prior to testing, Motorola Solutions and Marshall County will plan the route for the test vehicle(s) through the defined test area, to ensure that at least the minimum required number of tiles is tested. While planning the route (if possible) or during the test, Motorola Solutions and Marshall County will identify any test tiles that are inaccessible for the coverage test (due to lack of roads, restricted land, etc.). Inaccessible tiles will be eliminated from the acceptance test calculation. [TSB-88.3-E, §5.5.4]

If elimination of inaccessible test tiles results in less than a statistically significant number of test tiles or substantially alters the defined test area, Motorola Solutions reserves the right to adjust the committed reliability based on the reduced number of accessible test tiles within the altered test area and the Estimate of Proportions formula. [TSB-88.3-E, §5.2.1, equation 2]

## 5.2.9 Random Selection of a Test Location in Each Tile

This CATP provides an objective method of randomly selecting and tracking test locations using Motorola Solutions’ Voyager<sup>SM</sup> coverage testing tool. The method follows TIA TSB-88.3-E §5.0, “Performance Confirmation”, and has direct correlation with Motorola Solutions’ coverage prediction methodology.

Using Voyager, the actual test location within each test tile will be randomly selected by the test vehicle crossing into the tile at an arbitrary point, with an arbitrary speed and direction.

If the selected test location is in a shielded area such as a tunnel or underground parking garage, the data from that test location must be eliminated and a replacement test location must be used.

## 5.2.10 CPC Measurements in Each Tile

In each test tile, a voice test exchange will be initiated using predetermined text typical of a common voice exchange between the fixed location (dispatcher) and the location (portable user in the field). The person conducting the test at the portable will be moving at a typical speed for the surrounding conditions.

## 5.3 RESPONSIBILITIES AND PREPARATION

This section identifies the responsibilities of Marshall County and Motorola Solutions regarding requirements for equipment, personnel, and time during the coverage test.

Marshall County will provide the following for the duration of the coverage test:

- At least one test vehicle that is representative of the vehicles to be installed with radios, and will provide the driver.
- Exclusive use of the test channels required by Motorola Solutions during the test.
- When using an attenuated test radio to verify portable coverage, the antenna must be mounted in the center of the vehicle roof and free of obstructions.
- At least one team with two or more representatives designated by Marshall County per team to evaluate and record the pass/fail result of each subjective audio transmission at the dispatch location. The required quantity of test participants shall be available a minimum of eight hours a day.
- Facility with one console for the fixed end subjective audio test.

Motorola Solutions will provide the following for the duration of the coverage test:

- One or more Motorola Solutions representatives to navigate and to operate Voyager and the portable radio.
- One or more Motorola Solutions representatives to operate / stay at the fixed equipment (dispatch center), and to evaluate and record the pass/fail results of each subjective audio transmission.
- At least one Motorola Solutions Voyager coverage testing tool with Motorola APX test radios.

As required, Motorola Solutions will provide a receiver signal strength calibration file for the test radio(s) used with the Voyager coverage testing tool.

Before starting the test, Marshall County and Motorola Solutions will agree upon the time frame for Motorola Solutions' submission of a report containing the coverage test results.

## 5.4 CATP PROCEDURES

A coverage acceptance test will be performed using Motorola Solutions' Voyager tool to randomly select test locations.

Voyager consists of the following:

- A Global Positioning System (GPS) receiver, which will provide the computer with the location and speed of the test vehicle.
- A laptop computer with Voyager software and a mapping database, which includes highways and local streets, rivers, and railroads.

The procedure for the subjective DAQ coverage test outdoors will be as follows:

- A subjective listening test will be performed for coverage acceptance testing, to verify talk-in DAQ performance of the system.
- To perform a statistically valid subjective DAQ test, a large group of people is required to ensure high confidence in the results. However, obtaining a large group of people for a subjective listening test is usually impractical; therefore, several (three or more) people must be used for the test. Since a group this small cannot provide statistically significant results, it is very important that the personnel participating in the subjective test be familiar with the sound of radio conversations. Before subjectively testing, all personnel who will evaluate audio quality must be “calibrated” by listening to examples of audio that pass and fail the subjective DAQ test.
- A fixed dispatch location will be established. Prior to testing, Marshall County and Motorola Solutions will agree upon a procedure to allow each audio transmission to be evaluated for approximately five seconds.
- The test participants will be divided into teams, each consisting of personnel from both Marshall County and Motorola Solutions. Each team will have members that operate a portable radio in the field, and members that are stationed at the fixed dispatch location.
- As the field test team drives through the coverage area, test locations within each test tile will be selected randomly by Voyager’s GPS location indication. Voyager will be used to log any pertinent notes for the location.
- At each test tile location, team members stationed at the dispatch location will evaluate talk-in audio quality of transmissions from the test radio in that tile. Each team member will maintain a test log to record date, time, and subjective pass/fail evaluation for each test tile location. Subjective pass/fail evaluation will be based on the DAQ descriptions in Table 5-1. The determination of whether each test tile passes or fails the required DAQ value will be the majority vote of all team members’ pass/fail subjective evaluations for that tile. An odd number of team members is required to avoid ties for the pass/fail majority vote.
- Should any subjective DAQ test tile fail, a retry of the transmission will occur. Should the retry pass, the test tile will be considered a pass. If a retry should occur, it will be noted in the test log notes for that test tile.

## 5.5 CATP DOCUMENTATION AND COVERAGE ACCEPTANCE

During the coverage acceptance test, Voyager generates computer files that include the raw test data. A copy of this data will be provided to Marshall County at the conclusion of the coverage test. Motorola Solutions will process this data to produce a map detailing the coverage test results, and to determine whether the coverage test was passed for each user equipment configuration.

The coverage acceptance criterion for a user equipment configuration will be that the voice radio system implemented by Motorola Solutions for Marshall County meets or exceeds the reliability stated in Table 5-2 Coverage Acceptance Test Summary for that user equipment configuration. The system coverage acceptance criterion will be the successful passing of each of the user equipment configurations defined in Table 5-2 Coverage Acceptance Test Summary.

Motorola Solutions reserves the right to review any test tiles that fail. If a coverage test, or a portion thereof, is suspected by Motorola Solutions to have failed due to external interference, those tiles suspected of being affected by an interferer may be re-tested. If the test tiles re-tested are confirmed to have failed due to interference or external noise, those test tiles will be excluded from all acceptance calculations and Motorola Solutions will work with Marshall County to identify potential solutions to the interference issues.

Motorola Solutions will conduct this Coverage Acceptance Test only once. If any portion of the test is determined to be affected by proven equipment malfunctions or failures, Motorola Solutions will repeat the portion of the test affected by the equipment malfunction or failure. Marshall County will have the option to accept the coverage at any time prior to completion of the coverage test or documentation process.

Motorola Solutions will submit to Marshall County a report detailing the coverage test results. This report will include a document, which is to be signed by both Marshall County and Motorola Solutions, indicating the test was performed in accordance with this CATP and the results of the test indicate the acceptance or non-acceptance of the coverage portion of the system.

## SECTION 6

# IMPLEMENTATION PLAN

Motorola Solutions' approach to successfully implementing Marshall County Fiscal Court's project will control risk, schedule, and costs from contract signing through post-implementation.

For Marshall County Fiscal Court's system implementation, Motorola Solutions will bring together a local team of engineers, system technologists, subject matter experts, and qualified subcontractor personnel, all under the direction of an experienced Project Manager who will have overall responsibility for the project. The combined strengths of the Motorola Solutions' project team will enable us to successfully balance Marshall County Fiscal Court's project schedule and technical/budgetary requirements. Motorola Solutions' project team for Marshall County Fiscal Court's implementation will include, but may not be limited to, the key personnel listed in below in Table 6-1.

**Table 6-1: Motorola Solutions Project Team**

Project Team Member	Core Competencies
Project Manager	Manages the entirety of the project from start to completion, as defined in the contract. The Project Manager will be the single point-of-contact for all items related to the contract and will serve as the official communication between Marshall County Fiscal Court's Project Manager and Motorola Solutions.
Systems Engineer	Ensures the technical integrity and functionality of the system design. The Systems Engineer will serve as the technical point-of-contact for Marshall County.
System Technologist	Tests and optimizes the system to ensure it performs as designed. The System Technologist leads a team of technologists responsible for planning, installing, configuring, testing, and cutover efforts, while also providing diagnostic and troubleshooting expertise for the operational system.
Account Manager	Addresses the needs that arise from daily operations, as well as issues resulting from system implementation.
Customer Support Manager	Coordinates support resources, such as issue resolution and escalation, to ensure optimal quality-of-service (maintenance) delivery.



The project team will work with Marshall County Fiscal Court's personnel to establish a project schedule that tracks tasks, milestones, start-end dates, predecessors and critical path, and owners based on a Work Breakdown Structure (WBS). The project schedule will guide the implementation through each phase, as shown in Figure 6-1 below.



**Figure 6-1: Work Structure Breakdown Diagram**

## 6.1 SUPPORT AND SERVICES

Motorola Solutions will provide Marshall County with a suite of system support and services designed to maximize network uptime during the warranty. This warranty will begin on the date of system acceptance, and will continue for 12 months from that date on a 24/7 basis. During this time, Motorola Solutions will repair any unit or component of the communications system that becomes defective through normal use or that fails because of defective materials or workmanship, without charge to Marshall County.

In addition to Motorola Solutions' Standard Warranty, Motorola has proposed 5 additional years of the Advanced Plus Services and SUAll package as part of this solution. With this package, Marshall County will receive quick response to network issues from Motorola Solutions' qualified technicians who analyze and diagnose the system and deliver routine maintenance. Our expert service teams help mitigate downtime and ensure reliable network connectivity.

For a full description of the services provided, please refer to the Support Plan.

## 6.2 PROJECT SCHEDULE

A final project schedule will be developed based upon mutual agreement between Motorola Solutions and Marshall County at the Detailed Design Review (DDR). The dates for the installation and activation are highly dependent on the actual completion dates of tasks associated with site acquisition, R56 upgrades, installation, cabling and providing unobstructed cable routes. The biggest drivers for project schedule are site acquisition (including lease/NTP, permitting, zoning, NEPA, SHPO, etc.) and tower readiness (including structural analysis and remediation/construction) where applicable.

## 6.3 ACCEPTANCE TEST PLAN

System Acceptance of the proposed solution will occur upon successful completion of a Functional Acceptance Test Plan (FATP), which will test the features, functions, and failure modes for the installed equipment in order to verify that the solution operates according to its design. This plan will validate that Marshall County Fiscal Court's solution will operate according to its design, and increase the efficiency and accuracy of the final installation activities. A detailed FATP will be developed and finalized during project implementation.

## 6.4 ASSUMPTIONS

Motorola Solutions has made several assumptions in preparing this project for Marshall County.

1. Primary and backup power for the APX Consolettes at the dispatch center is provided by Marshall County.
2. Marshall County will be responsible for any services, equipment and/or software needed at the Zetron Console to interface with the APX Consolettes. The demarcation between the Zetron Console and the APX Consolettes will be at the punch block(s).
3. Dispatch tower will be able to hold two new antennas for the Control Stations combiner.
4. Marshall County's subscribers are enabled to work on P25 FDMA Trunking system.
5. No subscriber programming or configuration costs are included in the proposal.
6. Marshall County and the Kentucky State Police will be responsible for the MOU between parties.

## 6.5 STATEMENT OF WORK

Motorola Solutions will install and configure the proposed equipment. The following table describes the tasks involved with installation and configuration.

Tasks	Motorola Solutions	Customer
<b>PROJECT INITIATION</b>		
<b>Contract Finalization and Team Creation</b>		
Execute contract and distribute contract documents.	X	X
Assign a Project Manager as a single point of contact.	X	X
Assign resources.	X	X
Schedule project kickoff meeting.	X	X



Tasks	Motorola Solutions	Customer
Deliverable: Signed contract, defined project team, and scheduled project kickoff meeting.		
<b>Project Administration</b>		
Ensure that project team members attend all meetings relevant to their role on the project.	X	X
Record and distribute project status meeting minutes.	X	
Maintain responsibility for third-party services contracted by Motorola Solutions.	X	
Complete assigned project tasks according to the project schedule.	X	X
Submit project milestone completion documents.	X	
Upon completion of tasks, approve project milestone completion documents.		X
Conduct all project work Monday thru Friday, 7:30 a.m. to 5:00 p.m.).	X	
Deliverable: Completed and approved project milestones throughout the project.		
<b>Project Kickoff</b>		
Introduce team, review roles, and decision authority.	X	X
Present project scope and objectives.	X	
Review SOW responsibilities and project schedule.	X	X
Schedule Design Review.	X	X
Deliverable: Completed project kickoff and scheduled Design Review.		
<b>Design Review</b>		
Present the system design and operational requirements for the solution.	X	
Present installation plan.	X	
Discuss preliminary cutover plan and methods to document final cutover process.	X	X
Present configuration and details of sites required by system design.	X	
Validate that Customer sites can accommodate proposed equipment.	X	X
Provide approvals required to add equipment to proposed existing sites.		X
Review safety, security, and site access procedures.	X	
Present equipment layout plans and system design drawings.	X	
Provide backhaul performance specifications and demarcation points.	X	
Provide heat load and power requirements for new equipment.	X	



Tasks	Motorola Solutions	Customer
Provide information on existing system interfaces.		X
Provide frequency and radio information for each site.		X
Complete the required forms required for frequency coordination and licensing.	X	
Ensure that frequency availability and licensing meet project requirements, and pay licensing and frequency coordination fees.		X
Review and update design documents, including System Description, Statement of Work, Project Schedule, and Acceptance Test Plan, based on Design Review agreements.	X	
Provide minimum acceptable performance specifications for customer provided hardware, software, LAN, WAN and internet connectivity.	X	
Execute Change Order in accordance with all material changes to the Contract resulting from the Design Review.	X	
Deliverable: Finalized design documentation based upon “frozen” design, along with any relevant Change Order documentation.		
<b>SITE PREPARATION AND DEVELOPMENT</b>		
<b>Site Access</b>		
Provide site owners/managers with written notice to provide entry to sites identified in the project design documentation.		X
Maintain access roads in order to provide clear and stable entry to sites for heavy-duty construction vehicles, cement trucks and cranes. Ensure that sufficient space is available at the site for these vehicles to maneuver under their own power, without assistance from other equipment.		X
Obtain site licensing and permitting, including site lease/ownership, zoning, permits, regulatory approvals, easements, power, and telco connections.		X
Deliverable: Access, permitting, and licensing necessary to install system equipment at each site.		
<b>Site Planning</b>		
Provide necessary buildings, equipment shelters, and towers for installation of system equipment.		X
Provide the R56 requirements for space, power, grounding, HVAC, and connectivity requirements at each site.	X	
Provide adequate electrical power in proper phase and voltage at sites.		X
Provide as-built structural and foundation drawings of the structures and site locations, along with geotechnical reports, in order to facilitate a structural analysis.		X
Perform structural analysis of towers, rooftops, or other structures to confirm that they are capable of supporting proposed and future antenna loads. Only applies to Draffenville Site.	X	
Confirm that there is adequate utility service to support the new equipment and ancillary equipment.		X



Tasks	Motorola Solutions	Customer
Modify towers or other structures, or relocate sites in the system, to ensure that they are capable of supporting proposed and future antenna loads.		X
Conduct site walks to collect pertinent information (e.g. location of telco, power, structures, etc.)	X	
Ensure that each site meets the R56 standards for space, grounding, power, HVAC, and connectivity requirements.		X
Conduct one three-point ground resistance test of RF site.	X	
Review and approve site construction drawings.		X
Pay for application fees, taxes, and recurring payments for lease/ownership of property.		X
Deliverable: Information and permitting requirements completed at each site.		
<b>General Facility Improvements</b>		
Provide adequate HVAC, grounding, lighting, cable routing, and surge protection based upon Motorola Solutions' Standards and Guidelines for Communication Sites (R56)		X
Ensure the resolution of environmental and hazardous material issues at each site including, but not limited to, asbestos, structural integrity (tower, rooftop, water tank, etc.), and other building risks.		X
Ensure that electrical service will accommodate installation of system equipment, including isolation transformers, circuit breakers, surge protectors, and cabling.		X
Provide obstruction-free area for the cable run between the demarcation point and system equipment.		X
Provide structure penetrations (wall or roof) for transmission equipment (e.g. antennas, microwave radios, etc.).		X
Supply interior building raceways, conduits, and wire supports.		X
Pay for usage costs of power and generator fueling, both during the construction and installation effort, and on an ongoing basis.		X
Provide one-time mobilization of construction crews.	X	
Transport removed site equipment to a location designated by Customer and within Customer's jurisdiction.		X
Deliverable: Sites meet physical requirements for equipment installation.		
<b>SYSTEM INSTALLATION</b>		
<b>Equipment Order and Manufacturing</b>		
Create equipment order and reconcile to contract.	X	
Manufacture Motorola Solutions-provided equipment necessary for system based on equipment order.	X	
Procure non-Motorola Solutions equipment necessary for the system.	X	
Deliverable: Equipment procured and ready for shipment.		



Tasks	Motorola Solutions	Customer
<b>Equipment Shipment and Storage</b>		
Provide secure location for solution equipment.		X
Pack and ship solution equipment to the identified, or site locations.	X	
Receive solution equipment.		X
Inventory solution equipment.	X	
Deliverable: Solution equipment received and ready for installation		
<b>General Installation</b>		
Deliver solution equipment to installation location.	X	
Coordinate receipt of and inventory solution equipment with designated contact.	X	
Install all proposed fixed equipment as outlined in the System Description based upon the agreed-upon floor plans, connecting audio, control, and radio transmission cables to connect equipment to the power panels or receptacles, and audio/control line connection points. Installation performed in accordance with R56 standards and state/local codes.	X	
Provide system interconnections that are not specifically outlined in the system design, including dedicated phone circuits, microwave links, or other types of connectivity.		X
Install and terminate all network cables between site routers and network demarcation points, including microwave, leased lines, and Ethernet.	X	
Connect installed equipment to the provided ground system.	X	
Label equipment, racks, and cables.	X	
Perform preliminary audit of installed equipment to ensure compliance with requirements and R56 standards.	X	
Note any required changes to the installation for inclusion in the "as-built" system documentation.	X	
Remove, transport, and dispose of old equipment.		X
Deliverable: Equipment installed.		
<b>Antenna and Transmission Line Installation</b>		
Install antennas, including supplying and installing new side arm mounts	X	
Install tower top amplifiers, as applicable.	X	
Install transmission lines required for system.	X	
Provide structure penetrations for transmission equipment (e.g. antennas & microwave line.).	X	
Install microwave waveguide and lines, as applicable.	X	



Tasks	Motorola Solutions	Customer
Perform sweep tests on transmission lines.	X	
Provide and install attachment hardware for supporting transmission lines on antenna support structure.	X	
Supply and install ground buss bar at the bottom of each antenna support structure.		X
Deliverable: Antenna and Transmission Line installed.		
<b>Control Station Installation and Configuration</b>		
Provide the locations of control stations and desk sets at each site.		X
Survey mounting locations and develop control station installation plan.	X	
Provide adequate space, grounding, and power for the control station installation.		X
Properly connectorize and ground the cabling, which will be run to the outdoor antenna location using the least obtrusive method.	X	
Provide an elevated antenna mounting location, and adequate feed-line routing and support.		X
Install line (not greater than 100 feet in length) and antenna system (connectors, coax grounding kit, antenna, and surge protection).		X
Install RF local control stations identified in the equipment list.	X	
Perform control station programming.	X	
Deliverable: Control station equipment installation completed.		
<b>ASTRO 25 Core and Remote Site Installation and Configuration</b>		
Install fixed equipment contained in the equipment list and system description.	X	
Provide backhaul connectivity and associated equipment for all sites to meet latency, jitter and capacity requirements.		X
Configure ASTRO 25 system to support the new RF sites.	X	
Verify site link performance, prior to the interconnection of the solution equipment to the link equipment.	X	
Provide list of subscriber IDs for loading into the Zone Controller.		X
Load subscriber IDs in the Zone Controller.	X	
Provide required radio ID and alias information to enable alias database setup for interface to consoles.		X
Integrate the RF sites into the system to ensure proper operation.	X	
Deliverable: ASTRO 25 core and remote site equipment installation completed.		
Deliverable: Fleetmap plan completed and approved by Customer.		
<b>Microwave Installation</b>		



Tasks	Motorola Solutions	Customer
<b>Feasibility Studies:</b> <ul style="list-style-type: none"> <li>Providing system topology maps</li> <li>Providing preliminary path profiles, path calculations and availability calculations</li> <li>Providing a technical report summarizing system design considerations and Equipment requirements</li> </ul>	X	
<b>Feasibility Studies:</b> <ul style="list-style-type: none"> <li>Latitude and Longitude of the proposed microwave sites</li> <li>Existing tower heights, if known</li> </ul>		X
<b>Path Surveys:</b> <ul style="list-style-type: none"> <li>Provide documents relating to previous path calculations and frequency coordination</li> <li>Verify site elevations above sea level</li> <li>Verify site longitude and latitude</li> <li>Provide existing tower description and information</li> <li>Provide general survey observations, comments and site photographs</li> <li>Provide site layouts including towers with antennas at proposed center lines</li> </ul>	X	
<b>Path Studies:</b> <ul style="list-style-type: none"> <li>Provide information to the surveyors to locate the proposed microwave sites</li> <li>Arrange for surveyor access to the proposed microwave sites</li> </ul>	X	X
<b>Site Surveys:</b> <ul style="list-style-type: none"> <li>Determine and document locations for new equipment rack at each site.</li> <li>Determine, measure, and document DC power interface locations and cable routes.</li> <li>Determine, measure, and document Ethernet locations and cable routes.</li> <li>Complete facility drawings, floor plans, cable running sheets and wall elevations relative to the new Equipment.</li> <li>Determine, measure, and document cable routes from the equipment rack to the customer provided 66 block</li> <li>Engineer and document fuse any AC breaker types, sizes and assignments.</li> <li>Complete outside plant general survey and document.</li> <li>Prepare Customer Survey documentation and Installation Specification.</li> </ul>	X	
<b>Site Surveys:</b> <ul style="list-style-type: none"> <li>Provide info on any environmental alarms that are required to monitor</li> </ul>		X
<b>Path Design:</b> <ul style="list-style-type: none"> <li>Select frequency band and capacity requirements for each path</li> <li>Determine antenna centerline heights based on Infinity's path clearance criteria</li> <li>Design paths to protect against ground-based reflections</li> </ul>	X	



Tasks	Motorola Solutions	Customer
<ul style="list-style-type: none"> <li>Select radio types, antenna sizes and types, power output, and protection scheme required to meet Customer availability and capacity requirements</li> <li>Calculate path availability using industry accepted models for predicting outages and countermeasure improvements associated with normal atmospheric multi-path fading, up-fading, rain fading and obstruction fading</li> <li>Submit a final path design report, including system maps, path profiles and availability calculations.</li> </ul>		
<b>Frequency Planning and Licensing:</b> <ul style="list-style-type: none"> <li>Complete frequency selection and provide frequency coordination data sheets</li> <li>Complete the Prior Coordination Notice and associated Supplemental Showing documents under FCC Part 101.103(d) rules</li> <li>Complete the FCC 601 license application</li> <li>File the license application with the FCC</li> </ul>	X	
<b>Frequency Planning and Licensing:</b> <ul style="list-style-type: none"> <li>Payment of FCC license fees for non-government licenses</li> </ul>		X
<b>Civil Work/Towers:</b> <ul style="list-style-type: none"> <li>Provide as built documentation including plot plans and architectural blueprints for towers and shelters.</li> <li>Provide survey documentation with proposed tower locations, property boundaries, true north, landscape details, fences and other details necessary for new towers.</li> <li>Provide soil analysis report and foundation design for new towers and shelters.</li> <li>Provide foundation design and tower design drawings and other technical data i.e. tower mapping of existing appurtenances.</li> <li>Complete necessary documentation (formal survey &amp; 2C letter) for FCC and FAA filing for approval and obtaining building permits.</li> <li>Construct or modify tower in accordance with approved final design and the applicable version of EIA/TIA RS-222(G), including painting, tower lights, safety climb ladders and lightning rods.</li> <li>Provide and connect adequate earth ground in accordance with final design and the applicable version of EIA/TIA RS-222(G).</li> <li>Provide antenna and waveguide support systems including waveguide ladder, waveguide bridge, and ground bus bars.</li> <li>Provide and install footing hardware and building modifications required to accommodate tripod or antenna mount on building rooftop or side wall if applicable.</li> </ul>		X
<b>Shelters and Facilities:</b> <ul style="list-style-type: none"> <li>Provide and install AC/DC rectifiers and battery backup systems.</li> <li>Provide and install DC battery backup systems.</li> </ul>	X	



Tasks	Motorola Solutions	Customer
<b>Shelters and Facilities:</b> <ul style="list-style-type: none"> <li>Facilities will have adequate space, heating and air conditioning to meet the operational requirements of new Equipment proposed herein.</li> <li>Provide 110 VAC or 220 VAC power to the DC system.</li> <li>Provide attachment for station ground within the maximum distance of fifteen (15) feet of the proposed Equipment location. Existing facility grounding is a single point configuration.</li> <li>Provide a ground ring or plate as recommended by local practices.</li> <li>Provide a 66 block for any environmental alarms to be monitored over the microwave</li> <li>Provide a timing source for synchronization of and TDM traffic over the backhaul network</li> </ul>		X
<b>Microwave Engineering:</b> <ul style="list-style-type: none"> <li>Providing system designs that meet Customer specifications and requirements.</li> <li>Defining demarcation points for Infinity related work</li> <li>Defining technical requirements and interfaces of Infinity provided outside vendor purchased items</li> <li>Designing and engineering a frequency channel plan</li> <li>Providing functional system and equipment drawing</li> <li>Providing a bill of materials for the Project</li> <li>Developing manufacturing systems test, integration and field test requirements to ensure the system operates as per the design intent</li> <li>Providing systems and network engineering support during Equipment manufacturing and field deployment phases of the Project.</li> <li>Provide as built drawings and system documentation.</li> </ul>	X	
<b>Microwave Staging:</b> <ul style="list-style-type: none"> <li>Provide a staging facility with appropriate power at the location</li> <li>Provide an appropriately sized 48VDC plant at the staging facility</li> <li>Load the configuration file on each network element.</li> <li>Perform advanced configuration, including interfaces and services, as needed.</li> <li>Validate the connections to the microwave radios.</li> <li>Validate the routing configuration on a network-wide basis.</li> <li>Test end to end network connectivity.</li> <li>Test network resiliency components and path redundancy.</li> </ul>	X	
<b>Antenna &amp; Waveguide Systems Installation:</b> <ul style="list-style-type: none"> <li>Antennas, waveguide and mounting Equipment delivered to site and inventoried.</li> <li>Assemble antennas, rig towers and de-rig towers upon completion.</li> <li>Provide and install standard leg pipe mounts.</li> <li>Provide and install steel support members for side braces as required.</li> </ul>	X	



Tasks	Motorola Solutions	Customer
<ul style="list-style-type: none"> <li>Penetrate building wall or roof for waveguide entry ports and install entry plates as required.</li> <li>Install antennas and radomes at centerlines per final path design. Waveguide lengths additional waveguide and labor, if required per the final design will result in additional charges.</li> <li>Provide and install ice shields for MRT and Susank.</li> <li>Install waveguide runs, hanger kits and ground kits in accordance with manufacturer's specifications.</li> <li>Terminate waveguide runs within two feet of proposed radio location.</li> <li>Perform antenna and waveguide sweep tests to confirm compliance with manufacturer's specifications.</li> <li>Install pressurization system equipment and calibrate.</li> <li>Perform antenna alignment. Performance objectives of path will be set to performance calculation sheets.</li> </ul>		
<b>Microwave Radio Installation:</b> <ul style="list-style-type: none"> <li>Radio and antenna equipment delivered to site and inventoried. Uncrate radio and locate in general vicinity of final Equipment location.</li> <li>Install new radio in existing rack or install new radio in new rack. Bolt rack to floor and install rack top support. It is assumed the customer will provide all cable ladders to run cable, waveguide and top support to the radio rack.</li> <li>Complete power connections at radio location and circuit breaker within 50 feet of radio locations.</li> <li>Complete radio ground connection to station ground ring or bus bar within 50 feet of radio location.</li> <li>Complete radio / waveguide interface connection.</li> <li>Power on radio, warm up and provision.</li> <li>Conduct and record the Acceptance Test Plan (ATP) as documented in this SOW in accordance with the instructions contained in the applicable radio instruction books.</li> </ul>	X	
<b>Ancillary Equipment Installation:</b> <ul style="list-style-type: none"> <li>Install and test DC power system &amp; batteries</li> <li>Complete cabling from the radio to the customer provided 66 block for any environmental alarms to be monitored</li> </ul>	X	
<b>Ancillary Equipment Installation:</b> <ul style="list-style-type: none"> <li>Complete alarm wiring from the 66 block to any ancillary equipment to be monitored over the microwave</li> </ul>	X	X
<b>Microwave Path Acceptance Test:</b> <ul style="list-style-type: none"> <li>Develop a Method of Procedure (MOP), which will specify the activities to be performed and include a standard Acceptance Test Plan (ATP).</li> <li>Record measurements and complete test documentation</li> <li>Conduct over the path one way DS1 Bit Error Rate Test (BERT) of 2 hours per transmitter or in accordance with agreed to requirements.</li> <li>Complete RFC2544 testing of 2 hours per path or in accordance with agreed to requirements.</li> <li>Ensure all facilities have been connected to the installed equipment and found to be error free.</li> </ul>	X	



Tasks	Motorola Solutions	Customer
Deliverable: Microwave Installed and Accepted		
<b>SYSTEM OPTIMIZATION AND TESTING</b>		
<b>R56 Site Audit</b>		
Perform R56 site-installation quality-audits, verifying proper physical installation and operational configurations.	X	
Create site evaluation report to verify site meets or exceeds requirements, as defined in Motorola Solutions' R56 Standards and Guidelines for Communication Sites.	X	
Deliverable: R56 Standards and Guidelines for Communication Sites audits completed successfully.		
<b>Solution Optimization</b>		
Verify that all equipment is operating properly and that all electrical and signal levels are set accurately.	X	
Verify that all audio and data levels are at factory settings.	X	
Verify communication interfaces between devices for proper operation.	X	
Ensure that functionality meets manufacturers' specifications and complies with the final configuration established during design review or system staging.	X	
Deliverable: Completion of System Optimization.		
<b>Functional Acceptance Testing</b>		
Verify the operational functionality and features of the solution supplied by Motorola Solutions, as contracted.	X	
Witness the functional testing.		X
Document all issues that arise during the acceptance tests.	X	
If any major task for the system as contractually described fails during the Customer acceptance testing or beneficial use, repeat that particular task after Motorola Solutions determines that corrective action has been taken.	X	
Resolve any minor task failures before Final System Acceptance.	X	
Document the results of the acceptance tests and present for review.	X	
Review and approve final acceptance test results.		X
Deliverable: Completion of functional testing and approval by Customer.		
<b>Coverage Testing</b>		
Determine the required number of test vehicles for simultaneous testing of multiple service areas.	X	X
Perform coverage testing according to the Coverage Acceptance Test Plan (CATP), Submit test reports within the agreed period.	X	
For any area that fails, take corrective action.	X	



Tasks	Motorola Solutions	Customer
Retest any areas for which corrective action has been taken.	X	
Document all issues that arise during the coverage testing.	X	
Submit final test reports, according to the agreed period.	X	
Provide the required number of test vehicles, drivers, and resources to witness the coverage testing.		X
Review and approve test results.		X
Deliverable: Completion of coverage testing and approval by Customer.		
<b>PROJECT TRANSITION</b>		
<b>Cutover</b>		
Finalize Cutover Plan.	X	X
Provide Motorola Solutions with user radio information for input into the system database and activation, as required.		X
Provide programming of user radios and related services (i.e. template building, re-tuning, testing and installations), as needed, during cutover period.		X
Conduct cutover meeting with relevant personnel to address both how to mitigate technical and communication problem impacts to the users during cutover and during the general operation of the system.	X	
Notify the personnel affected by the cutover of the date and time planned for cutover.		X
Provide ongoing communication with users regarding the project and schedule.	X	X
Cut over users and ensure that user radios are operating on system.		X
Resolve punchlist items, documented during the Acceptance Testing phase, in order to meet all the criteria for final system acceptance.	X	
Assist Motorola Solutions with resolution of identified punchlist items by providing support, such as access to the sites, equipment and system, and approval of the resolved punchlist items.		X
Deliverable: Migration to new system completed, and punchlist items resolved.		
<b>Transition to Warranty</b>		
Review the items necessary for transitioning the project to warranty support and service.	X	
Motorola Solutions to provide services during year 1 warranty which align with the proposed services.	X	
Provide a Customer Support Plan detailing the warranty support associated with the contract equipment.	X	
Deliverable: Service information delivered and approved by Customer		
<b>Finalize Documentation and System Acceptance</b>		



Tasks	Motorola Solutions	Customer
Provide manufacturer's installation material, part list and other related material to Customer upon project completion.	X	
Provide an electronic as-built system manual on CD or other Customer preferred electronic media. The documentation will include the following: <ul style="list-style-type: none"> <li>▪ Site Block Diagrams.</li> <li>▪ Site Equipment Rack Configurations.</li> <li>▪ Antenna Network Drawings for RF Sites (where applicable).</li> <li>▪ ATP Test Checklists.</li> <li>▪ Functional Acceptance Test Plan Test Sheets and Results.</li> <li>▪ Equipment Inventory List.</li> <li>▪ Console Programming Template (where applicable).</li> <li>▪ Maintenance Manuals (where applicable).</li> <li>▪ Technical Service Manuals (where applicable).</li> </ul> Drawings will be delivered in Adobe PDF format.	X	
Receive and approve documentation.		X
Execute Final Project Acceptance.	X	X
Deliverable: All required documents are provided and approved. Final Project Acceptance.		



## SECTION 7

# SUPPORT PLAN – ADVANCED PLUS SERVICES

## 7.1 OVERVIEW

Motorola Solutions is proposing our Advanced Plus Services for ASTRO® 25 infrastructure, a comprehensive program to sustain the long-term performance of Marshall County Fiscal Court's network. Advanced Plus Services consists of the following elements:

- Network Event Monitoring.
- Remote Technical Support.
- Network Hardware Repair with Advanced Replacement.
- Remote Security Update Service (RSUS).
- On-site Infrastructure Response.
- Annual Preventive Maintenance.
- Network Updates.
- Security Monitoring.

Together, these elements will help to avoid operational disruptions and maintain the value of Marshall County Fiscal Court's communications investment.

## 7.2 ADVANCED PLUS SERVICES ELEMENT DESCRIPTIONS

The following sections describe the elements proposed for Marshall County Fiscal Court's ASTRO 25 infrastructure.

### 7.2.1 Network Event Monitoring

Motorola Solutions will continuously monitor Marshall County Fiscal Court's ASTRO 25 network to detect potential issues or communications outages, maximizing network uptime. Motorola Solutions assesses each alert with advanced event detection and correlation algorithms to determine how to respond. Potential responses include remote restoration or dispatching a local field technician to resolve the incident on-site.

### 7.2.2 Remote Technical Support

Motorola Solutions' Centralized Managed Support Operations (CMSO) will provide Remote Technical Support for infrastructure issues that require specific technical expertise.

Experienced technical support specialists will be available to consult with Marshall County to help diagnose, troubleshoot, and resolve infrastructure issues.



Service Desk maintenance procedures and incident resolution techniques are based on ISO 9001 and TL 9000 standards.

### 7.2.3 Network Hardware Repair with Advanced Replacement

To restore Marshall County Fiscal Court's ASTRO 25 network components if they malfunction, Motorola Solutions will repair Motorola Solutions-provided infrastructure equipment. This includes select third-party infrastructure equipment supplied by Motorola Solutions. Motorola Solutions will ship and return repaired equipment, and will coordinate the repair of third-party solution components.

To reduce the impact of a malfunction, Motorola Solutions will exchange malfunctioning equipment with Advanced Replacement units or Field Replacement Units (FRU), as available. Motorola Solutions' repair depot will diagnose and repair malfunctioning components, and once repaired, add those to the depot's FRU inventory. Replacement components will remain in Marshall County Fiscal Court's ASTRO 25 network to maintain continued network functionality.

If Marshall County prefers to maintain their existing FRU inventory rather than using Motorola Solutions' depot inventory, Motorola Solutions can provide "loaner" FRUs during the repair process.

### 7.2.4 Remote Security Update Service

Commercial security software updates are often designed without consideration for specialized systems like radio communications networks. Therefore, they may at times inadvertently disrupt ASTRO 25 networks such as the one proposed to Marshall County. The Remote Security Update Service will test anti-virus, operating system, and other patches for compatibility with the proposed system. Motorola Solutions will remotely install the pre-tested updates on Marshall County Fiscal Court's ASTRO 25 network.

### 7.2.5 On-site Infrastructure Response

Motorola Solutions will provide repair service from trained and qualified technicians. Once dispatched, technicians will travel to Marshall County Fiscal Court's ASTRO 25 network location to diagnose issues and restore functionality. These technicians will run diagnostics on hardware to identify defective components, and repair or replace them as appropriate. Infrastructure Response times are based on a given issue's impact on overall system function.

Travel times and service levels are governed by local geography. Motorola Solutions will provide additional information in the Statement of Work for ASTRO 25 Advanced Plus Services and in the Customer Support Plan agreed between Marshall County and Motorola Solutions.

## 7.2.6 Annual Preventive Maintenance

Motorola Solutions will annually test and service network components. Qualified field technicians will perform routine hands-on examination and diagnostics of network equipment to keep them operating according to original manufacturer specifications.

## 7.2.7 Network Updates

The Network Updates service provides public safety radio system release updates on a consistent, budgeted plan. These updates maintain reliable network operations and cybersecurity protection. In addition, Network Updates keeps Marshall County Fiscal Court's ASTRO 25 network compatible with expansion elements, as well as new products or features. With Network Updates, Marshall County Fiscal Court's network will remain on a release that qualifies for support services.

Motorola Solutions will deliver updates based on a predefined cadence of upgrade windows, with up to one update in each window. The Network Updates service includes the following:

- ◆ **Software Release Updates** - Motorola Solutions-certified software that improves network functions over previous releases. This also includes commercial operating system and application software updates.
- ◆ **Hardware Update** – When needed to support a software release update, Motorola Solutions provides new hardware. New hardware will both support the new software update, as well as maintain existing functions and features.
- ◆ **Professional Implementation Services** – Motorola Solutions will plan and implement updates at Marshall County Fiscal Court's site. This includes factory integration, testing, and supply chain management for new software and hardware.

With these services, Marshall County will have access to the technology, support, and planning expertise needed for an effective upgrade.

## 7.2.8 Security Monitoring

Increased network activity, reduced performance, and loss in functionality may be symptoms of malicious software intrusion. Motorola Solutions will continuously monitor Marshall County Fiscal Court's ASTRO 25 network for attempts to compromise the network. Security Monitoring tools will collect automatic security alerts from network firewalls.

Motorola Solutions security professionals will evaluate if that alert indicates there is an active cybersecurity threat. If a potential threat is identified, Motorola Solutions will alert Marshall County.

## 7.3 **MOTOROLA SOLUTIONS SERVICE DELIVERY ECOSYSTEM**

Advanced Plus Services are delivered through a tailored combination of field service personnel, centralized teams, product repair depots, and MyView Portal. These service resources will collaborate to swiftly analyze network issues, accurately diagnose root causes, and efficiently resolve issues to return the network to normal operation.

Motorola Solutions services will be delivered by staff experienced in servicing mission-critical networks. Motorola Solutions uses the Information Technology Information Library (ITIL) framework to define service tasks based on industry-recognized best practices. As staff perform tasks, service incident information will be available to Marshall County Fiscal Court's administrators and personnel through MyView Portal.

Service activities and Motorola Solutions' service team are described in more detail below.

### 7.3.1 **Centralized Managed Support Operations**

The cornerstone of Motorola Solutions' support process is the Centralized Managed Support Operations (CMSO) organization. This TL 9000/ISO 9001-certified organization is staffed 24x7x365 by experienced service desk specialists, security analysts, and operations managers. The CMSO houses critical central functions, including the Service Desk.

The CMSO Service Desk will serve as a single point of contact for services. It processes service requests, service incidents, change requests, and dispatching. The Service Desk communicates necessary information to stakeholders, bridging communications among Marshall County, Motorola Solutions, and third-party subcontractors.

Service Desk teams record, track, and update incidents through the Motorola Solutions Customer Relationship Management (CRM) system. They document and respond to inquiries, requests, concerns, and service tickets. When an incident is initiated, the CMSO will engage with teams to resolve that incident. The CMSO will escalate to new teams when needed. Depending on the incident, the CMSO will coordinate incident resolution with local field service and authorized repair depots.

### 7.3.2 **Field Service**

Motorola Solutions authorized and qualified field service technicians will perform the On-site Infrastructure Response service, repair malfunctioning hardware in the field, and conduct preventive maintenance tasks.

These technicians will coordinate with the Service Desk, technical support teams, and product engineering as needed to resolve incidents.

### 7.3.3 Repair Depot

The Motorola Solutions Repair Depot will provide Marshall County with a central repair location. This will eliminate the need to send network equipment to multiple vendor locations for repair. Motorola Solutions tracks products sent to the Depot via a case management system throughout the repair process. This system will enable Marshall County Fiscal Court's representatives to check repair status, from inbound shipment to return.

### 7.3.4 Customer Support Manager

A Motorola Solutions Customer Support Manager (CSM) will be Marshall County Fiscal Court's key point of contact for the definition and administration of services. The CSM will work with Marshall County to define service delivery details to address Marshall County Fiscal Court's specific priorities.

### 7.3.5 MyView Portal

To provide Marshall County with quick access to service details, Motorola Solutions will provide our MyView Portal online network information tool. MyView Portal provides our customers with real-time critical network and services information through an easy-to-use graphical interface (Figure 7-1).



**Figure 7-1: MyView Portal offers real-time, role-based access to critical network and services information.**

With MyView Portal, Marshall County Fiscal Court's administrators will be able to monitor system health and maintenance updates. Capabilities include:

- Viewing network and support compliance.
- Viewing incident reports.
- Updating and creating incidents.
- Checking system update status.
- Receiving pro-active notifications regarding updates.

Available 24x7x365 from any web-enabled device, the information provided by MyView will be based on your needs and user access permissions, ensuring that the information displayed is secure and pertinent to your operations.



# ASTRO 25 ADVANCED PLUS SERVICES STATEMENT OF WORK

## 8.1 OVERVIEW

Motorola Solutions' ASTRO® 25 Advanced Plus Services ("Advanced Plus Services") provide an integrated and comprehensive sustainment program for fixed end network infrastructure equipment located at the network core, RF sites, and dispatch sites. Advanced Plus Services do not include maintenance for mobile devices, portable devices, or network backhaul equipment.

Advanced Plus Services consist of the following elements:

- Network Event Monitoring.
- Remote Technical Support.
- Network Hardware Repair.
- Remote Security Update Service.
- On-site Infrastructure Response.
- Annual Preventive Maintenance.
- Network Updates.
- Security Monitoring.

Each of these elements is summarized below and expanded upon in Section 8.4. In the event of a conflict between the descriptions below and an individual subsection of Section 8.4, the individual subsection prevails.

This Statement of Work ("SOW"), including all of its subsections and attachments, is an integral part of the Services Agreement for maintenance services, Professional Services Agreement for security update and monitoring services, Communications System and Services Agreement ("CSSA") for Network Updates, or other applicable signed agreement ("Agreement") between Motorola Solutions, Inc. ("Motorola Solutions") and the Customer ("Customer"), and is subject to the terms and conditions set forth in the Agreement.

In order to receive the services as defined within this SOW, the Customer is required to keep the system within a standard support period as described in Motorola Solutions' [Software Support Policy \("SwSP"\)](#).

### Network Event Monitoring

Real-time, continuous ASTRO 25 radio communications network monitoring and event management. Using sophisticated tools for remote monitoring and event characterization, Motorola Solutions will assess events, determine the appropriate response, and initiate that response.

Possible responses include remotely addressing the issue, escalation to product technical support groups, and dispatch of designated field technical resources.



## **Remote Technical Support**

Motorola Solutions will provide telephone consultation with specialists skilled at diagnosing and swiftly resolving infrastructure performance and operational technical issues requiring a high level of ASTRO 25 network experience and troubleshooting capabilities.

## **Network Hardware Repair**

Motorola Solutions will repair Motorola Solutions-manufactured infrastructure equipment and select third-party manufactured infrastructure equipment supplied by Motorola Solutions. Motorola Solutions coordinates the equipment repair logistics process.

## **Remote Security Update Service**

Motorola Solutions will pre-test third-party security updates to verify they are compatible with the ASTRO 25 network, and remotely push the updates to the Customer's network.

## **On-site Infrastructure Response**

When needed to resolve equipment malfunctions, Motorola Solutions will dispatch qualified local technicians to the Customer's location to diagnose and restore the communications network. Technicians will perform diagnostics on impacted hardware and replace defective components. The service technician's response time will be based on pre-defined incident priority levels.

## **Annual Preventive Maintenance**

Qualified field service technicians will perform proactive, regularly scheduled operational testing and alignment of infrastructure and network components to verify those components comply with the original manufacturer's specifications.

## **Network Updates**

Periodically updates the Customer's ASTRO 25 system release software, and includes hardware and implementation services necessary to complete the update. With this service, the Customer's system is kept current so that it is prepared to support the latest capabilities.

## **Security Monitoring**

Real-time, continuous ASTRO 25 radio network security elements monitoring by specialized security technologists with extensive experience working with ASTRO 25 mission-critical networks. For highly complex or unusual security events, Motorola Solutions technologists have direct access to Motorola Solutions engineers for rapid resolution.

## **8.2 MOTOROLA SOLUTIONS SERVICE DELIVERY ECOSYSTEM**

Advanced Plus Services are delivered through a tailored combination of local field service personnel, centralized teams equipped with a sophisticated service delivery platform, product repair depots, and MyView Portal. These service entities will collaborate to swiftly analyze issues, accurately diagnose root causes, and promptly resolve issues to restore the Customer's network to normal operations.



## 8.2.1 Centralized Managed Support Operations

The cornerstone of Motorola Solutions' support process is the Centralized Managed Support Operations ("CMSO") organization, which includes the Service Desk and technical support teams. The CMSO is staffed 24x7x365 by experienced personnel, including service desk specialists, security analysts, and operations managers.

The Service Desk provides a single point of contact for all service related items, including communications between the Customer, Motorola Solutions, and third-party subcontractors. The Service Desk processes service requests, service incidents, change requests, and dispatching, and communicates with stakeholders in accordance with pre-defined response times. All incoming transactions through the Service Desk are recorded, tracked, and updated through the Motorola Solutions Customer Relationship Management ("CRM") system. The Service Desk also documents Customer inquiries, requests, concerns, and related tickets.

The CMSO coordinates with the field service organization that will serve the Customer locally.

## 8.2.2 Field Service

Motorola Solutions authorized and qualified field service technicians perform on-site infrastructure response, field repair, and preventive maintenance tasks. These technicians are integrated with the Service Desk and with technical support teams and product engineering as required to resolve repair and maintenance requests.

## 8.2.3 Customer Support Manager

A Motorola Solutions Customer Support Manager ("CSM") will be the Customer's key point of contact for defining and administering services. The CSM's initial responsibility is to create the Customer Support Plan ("CSP") in collaboration with the Customer.

The CSP functions as an operating document that personalizes the services described in this document. The CSP contains Customer-specific information, such as site names, site access directions, key contact persons, any tailored incident priority level definitions, incident handling instructions, and escalation paths for special issues. The CSP also defines the division of responsibilities between the Customer and Motorola Solutions so response protocols are pre-defined and well understood when the need arises.

The CSP governs how the services will be performed and will be automatically integrated into this Statement of Work by this reference. The CSM and Customer will review and amend the CSP on a mutually agreed cadence so the CSP remains current and effective in governing the Advanced Plus Services.

## 8.2.4 Repair Depot

The Motorola Solutions Repair Depot provides the Customer with a central repair location, eliminating the need to send network equipment to multiple vendor locations for repair. All products sent to the Depot are tracked throughout the repair process, from inbound shipment to return, through a case management system that enables Customer representatives to see repair status.

## 8.2.5 MyView Portal

Supplementing the CSM and the Service Desk as the Customer points of contact, MyView Portal is a web-based platform that provides network maintenance and operations information. The portal is accessed from a desktop, laptop, tablet, or smartphone web browser. The information available includes:

- Network Event Monitoring: Manage incidents and view self-service reports. Observe incident details by incident priority level, and track the progress of issue resolution.
- Remote Technical Support: Manage incidents and view self-service reports. Observe incident details by incident priority level, and track the progress of issue resolution.
- Network Hardware Repair: Track return material authorizations (“RMA”) shipped to Motorola Solutions’ repair depot and eliminate the need to call for status updates. In certain countries, customers will also have the ability to create new RMA requests online.
- Remote Security Update Service: View patch history and status of recently completed security updates.
- On-site Infrastructure Response: Manage incidents and view self-service reports. Observe incident details by incident priority level, and track the progress of issue resolution.
- Annual Preventive Maintenance: View incident status and details of each annual change request for preventive maintenance, including completed checklist information for the incident.
- Network Updates: View system status overview and software update information.
- Security Monitoring: Manage incidents and view self-service reports. Observe incident details by incident priority level, and track the progress of issue resolution.
- Orders and Contract Information: View available information regarding orders, service contracts, and service coverage details.

The data presented in MyView Portal is provided to support the services described in the following sections, which define the terms of any service delivery commitments associated with this data.

## 8.3 CONNECTIVITY SPECIFICATIONS

The Advanced Plus Services package requires available internet connectivity provided by the Customer. A minimum connection of 2 Mbps is necessary to enable remote monitoring and update services.

## 8.4 ADVANCED PLUS SERVICES DETAILED DESCRIPTION

Due to the interdependence between deliverables within the detailed sections, any changes to or any cancellation of any individual section may require a scope review and price revision.

### 8.4.1 Network Event Monitoring

Network Event Monitoring provides continuous real-time fault monitoring for radio communications networks. Motorola Solutions uses a defined set of tools to remotely monitor the Customer’s ASTRO 25 radio network and characterize network events.

When an actionable event takes place, it becomes an incident, which Centralized Managed Support Operations (“CMSO”) technologists acknowledge, assess, and initiate a defined response.

#### 8.4.1.1 Description of Service

With Network Event Monitoring, Motorola Solutions uses a Managed Services Suite of Tools (“MSST”) to detect events 24/7 as they occur, analyze them, and escalate them to the Network Operation Center (“NOC”). Incidents will be generated automatically based on the criteria shown in Table 8-1.

**Table 8-1: Alarm Threshold Rule Options for all Event Types**

Standard Threshold	Optional Threshold
<p>An incident will be triggered if an event fulfills one of the two following criteria:</p> <ul style="list-style-type: none"> <li>▪ Event occurs 5 times in 30 minutes.</li> <li>▪ Event causes 10 minutes of continuous downtime for a monitored component.</li> </ul>	<p>An incident will be triggered if an event fulfills one of the two following criteria:</p> <ul style="list-style-type: none"> <li>▪ Event occurs 7 times in 30 minutes.</li> <li>▪ Event causes 15 minutes of continuous downtime for a monitored component.</li> </ul>

The CMSO NOC agent assigns a priority level to incidents based on an incident’s severity, then initiates a response in accordance with the Customer Handling Procedure (“CHP”). Depending on the incident, Motorola Solutions’ response may include continued monitoring for further incident development, remote remediation by technical support, dispatching a field service technician, or other actions Motorola Solutions determines necessary.

To prevent duplicate incidents from being generated by the same root cause, Motorola Solutions employs an auto triage process that groups related incidents.

The auto triage process therefore automatically assigns grouped incidents to a field service technician, enabling the resolution of these incidents together if the root alarm has been addressed.

Motorola Solutions uses a set of standard templates to record key information on service process, defined actions, and points of contact for the Customer’s service. In the event of an incident, Motorola Solutions and the Customer can reference these templates. When information is updated, it will be organized in four categories:

- Open – Motorola Solutions’ points of contact for dispatch permissions, entitlement information, and knowledge management.
- Vendor – Escalation and contact information.
- Resolution – Incident closure information.
- Site Arrival – Site arrival and exit process information.

The Customer will be able to access information on Network Event Monitoring activities via MyView Portal, including incident management reports. Any specific remediation and action notes from Motorola Solutions’ CMSO or field service technicians will be available for the Customer to review as well.

Service Configuration Portal-Lite (“SCP-Lite”), accessed through MyView Portal, provides a read only view of the Customer’s current service configuration, including site parameters, notification preferences, and dispatch information. If the Customer or Motorola Solutions make changes to the network, the updated information will be incorporated into SCP-Lite allowing the Customer a view of the ASTRO 25 radio network’s state.

### 8.4.1.2 Scope

Network Event Monitoring is available 24 hours a day, 7 days a week. Incidents generated by the monitoring service will be handled in accordance with the times and priorities defined in Section 8.4.1.7: Engagement Matrix.

Network Event Monitoring is a globally provided service unless limited by data export control or other applicable local and regional regulations. Timeframes are based on the Customer's local time zone.

### 8.4.1.3 Inclusions

Network Event Monitoring is available for the devices listed in Section 8.4.1.10: Monitored Elements.

### 8.4.1.4 Motorola Solutions Responsibilities

- Provide a dedicated network connection necessary for monitoring the Customer's communication network. Section 8.4.1.8: Connectivity Matrix describes available connectivity options.
- If determined necessary by Motorola Solutions, provide Motorola Solutions-owned equipment at the Customer's premises for monitoring network elements. The type of equipment and location of deployment is listed in Section 8.4.1.9: Motorola Solutions Owned and Supplied Equipment.
- Verify connectivity and event monitoring prior to system acceptance or start date.
- Monitor system continuously during hours designated in the Customer Support Plan ("CSP"), and in accordance with Section 8.4.1.7: Engagement Matrix.
- Remotely access the Customer's system to perform remote diagnosis as permitted by the Customer pursuant to Section 8.4.1.6: Customer Responsibilities.
  - Create an Characterize the issue.
  - Determine a plan of action.
- Assign and track the incident to resolution.incident, as necessary. Gather information to perform the following:
  -
- Provide the Customer with system configuration info, site info, system notifications, and system notes via MyView Portal.
- Cooperate with the Customer to coordinate the transition of monitoring responsibilities between Motorola Solutions and the Customer as specified in Section 8.4.1.6: Customer Responsibilities.
- If the Customer's technician designated in the CSP is Mobile OSS ("MOSS") enabled, the incident will be Automatically Dispatched to MOSS. Otherwise, the incident will be sent to the CMSO Service Desk.
- Maintain communication as needed with the Customer in the field until incident resolution.
- Provide available information on incident resolution to the Customer.

### 8.4.1.5 Limitations and Exclusions

- The following activities are outside the scope of the Network Monitoring service:
  - Motorola Solutions will not monitor any elements outside of the Customer's ASTRO 25 network, or monitor infrastructure provided by a third party, unless specifically stated. Monitored elements must be within the ASTRO 25 radio network and capable of sending alerts to the Unified Event Manager ("UEM").
  - Additional support charges above contracted service agreement fees may apply if Motorola Solutions determines that system faults were caused by the Customer making changes to critical system parameters without written agreement from Motorola Solutions.
  - Monitoring of network transport, such as WAN ports, WAN cloud, and redundant paths, unless provided by supplemental service outside this standard scope.

### 8.4.1.6 Customer Responsibilities

- Allow Motorola Solutions continuous remote access to enable the monitoring service.
- Provide continuous utility service to any Motorola Solutions equipment installed or used at the Customer's premises to support delivery of the service. The Customer agrees to take reasonable due care to secure the Motorola Solutions equipment from theft or damage while on the Customer's premises.
- Prior to contract start date, provide Motorola Solutions with pre-defined information necessary to complete a CSP, including:
  - Incident notification preferences and procedure.
  - Repair verification preference and procedure.
  - Database and escalation procedure forms.
- Submit timely changes in any information supplied to Motorola Solutions and included in the CSP to the Customer Support Manager ("CSM").
- Notify the CMSO when the Customer performs any activity that impacts the system. Activity that impacts the system may include, but is not limited to: installing software or hardware upgrades, performing upgrades to the network, renaming elements or devices within the network, and taking down part of the system to perform maintenance.
- Send system configuration change requests to Motorola Solutions' CSM via MyView Portal.
- Allow Motorola Solutions' field service technician, if designated in the CSP, access to equipment, including any connectivity or monitoring equipment, if remote service is not possible.
- Allow Motorola Solutions' field service technician, if designated in the CSP, access to remove Motorola Solutions-owned monitoring equipment upon cancellation of service.
- Provide Motorola Solutions with all Customer-managed passwords required to access the Customer's system upon request, when opening a request for service support, or when needed to enable response to a technical issue.
- Pay additional support charges above the contracted service agreements that may apply if it is determined that system faults were caused by the Customer making changes to critical system parameters without written agreement from Motorola Solutions.
- In the event that Motorola Solutions agrees in writing to provide supplemental monitoring for third-party elements provided by the Customer, the Customer agrees to obtain third party consents or licenses required to enable Motorola Solutions to provide the monitoring service.
- Cooperate with Motorola Solutions and perform reasonable or necessary acts to enable Motorola Solutions to provide these services.



- Contact Motorola Solutions to coordinate transition of monitoring when the responsibility for monitoring needs to be transferred to or from Motorola Solutions, as specified in pre-defined information provided in the Customer's CSP. An example of a transfer scenario is transferring monitoring from Motorola Solutions for network monitoring after normal business hours.
  - Upon contact, the Customer must provide Motorola Solutions with customer name, site ID, status on any open incidents, priority level of any open incidents, brief descriptions of any ongoing incident, and action plan for resolving those incidents.
- Acknowledge that incidents will be handled in accordance with the times and priorities as defined in Section 8.4.1.7: Engagement Matrix.

#### 8.4.1.7 Engagement Matrix

Motorola Solutions responds to events based on the defined priority levels in Table 8-2.

**Table 8-2: Priority Levels**

Incident Priority	Definition	Engagement Times
<b>Critical</b>	<b>Core:</b> <ul style="list-style-type: none"> <li>▪ Core server failures.</li> <li>▪ Core link failure.</li> </ul> <b>Sites/Subsites:</b> <ul style="list-style-type: none"> <li>▪ Entire simulcast not wide trunking.</li> <li>▪ <math>\geq 33\%</math> of sites/subsites down.</li> </ul> <b>AXS:</b> <ul style="list-style-type: none"> <li>▪ Cluster site - two or more redundant server loss.</li> </ul>	Response provided <b>24 hours, 7 days a week</b> , including US Holidays.
<b>High</b>	<b>Consoles:</b> <ul style="list-style-type: none"> <li>▪ Console positions down (<math>\geq 33\%</math>).</li> <li>▪ Console site link down.</li> </ul> <b>Sites/Subsites:</b> <ul style="list-style-type: none"> <li>▪ <math>&lt; 33\%</math> of sites/subsites down.</li> <li>▪ <math>\geq 33\%</math> of channels down.</li> </ul> <b>Conventional Channels:</b> <ul style="list-style-type: none"> <li>▪ <math>\geq 50\%</math> of conventional channels (CCGW) down.</li> </ul> <b>AXS:</b> <ul style="list-style-type: none"> <li>▪ Cluster site - one server down but redundancy available.</li> </ul> <b>Devices:</b> <ul style="list-style-type: none"> <li>▪ Site router/switch, GPS server down.</li> </ul>	Response provided <b>24 hours, 7 days a week</b> , including US Holidays.
<b>Medium</b>	<b>Consoles:</b> <ul style="list-style-type: none"> <li>▪ Console positions down (<math>&lt; 33\%</math> at a site).</li> </ul> <b>Sites/Subsites:</b> <ul style="list-style-type: none"> <li>▪ <math>&lt; 33\%</math> of channels down.</li> </ul> <b>Conventional Channels:</b> <ul style="list-style-type: none"> <li>▪ Less than 50% of conventional channel down.</li> </ul>	Response provided Monday through Friday <b>8 a.m. to 5 p.m.</b> local time, excluding U.S. Holidays.

Incident Priority	Definition	Engagement Times
<b>Low</b>	Minor events and warnings in the system.	Response provided Monday through Friday <b>8 a.m. to 5 p.m.</b> local time, excluding U.S. Holidays.

#### 8.4.1.8 Connectivity Matrix

Request connectivity eight weeks in advance of service start date (Table 8-3).

**Table 8-3: Available Connectivity**

System Type	Available Connectivity	Set up and Maintenance
ASTRO® 25	Internet VPN	Motorola Solutions
ASTRO® 25	Ethernet	Motorola Solutions

#### 8.4.1.9 Motorola Solutions Owned and Supplied Equipment

This table identifies equipment that Motorola Solutions will supply to support the network monitoring service for the duration of the service.

**Table 8-4: Motorola Solutions Owned and Supplied Equipment**

Equipment Type	Location Installed
Firewall/Router	Master Site
Service Delivery Management Server	Master Site for each Zone

#### 8.4.1.10 Monitored Elements

This table identifies the elements that can be monitored by the service. The specific quantities of each element to be monitored on the Customer's system will be inventoried in the CSP.

**Table 8-5: Monitored Elements**

Monitored Elements		
Active Directory	Enrichment Testing	Probe
Agent	Environmental	QUANTAR
AIS	ESX	Radio Interface
AMB	Exit Router	RDM
Application Server	Firewall	RFDS
APX Cloud Application	GAS Server	RGU
ATR	Gateway	RNG
AUC	Gateway Router	Router
Backup Server	Gateway Unit	RTU
Base Radio	GIS Server	SCOM Server
Call Processor	HSS	Short Data Router
CAM	Infrastructure (CHI CAM)	Site



Monitored Elements		
Camera	Install Server	Statistical Server
CBSD	LAN Switch	Storage Networking
CCGW	Licensing Service	Switch
CEB	Link	Telephony
Channel	Load Balancer	TENSR
Client Station	Logging Recorder	Terminal Server
CommandCentral AXS dispatch console	Logging Replay Station	Time Keeper
Controller	MGE	Training App
Conventional	Microwave	Training Database
Core	MME	TRAK
Core Router	MOSCAD Server	Trap Forwarder
Data Processing	Network Address	UCS
Database Server	Network Device	UEM
Data Warehouse Server	NTP	Virtual Machine
Device Configuration Server	OP	VMS
DIU	OSP	VPM
DNS	Packet Data Gateway	WSGU
Domain Controller	Physical Host Environmental	ZDS
DSC 8000 Site Controller	Physical Host Power and Network	Zone Controller
eNodeB	Power Distribution Unit	

## 8.4.2 Remote Technical Support

Motorola Solutions' Remote Technical Support service provides telephone consultation for technical issues that require a high level of ASTRO 25 network knowledge and troubleshooting capabilities. Remote Technical Support is delivered through the Motorola Solutions Centralized Managed Support Operations ("CMSO") organization by a staff of technical support specialists skilled in diagnosis and swift resolution of infrastructure performance and operational issues.

Motorola Solutions applies leading industry standards in recording, monitoring, escalating, and reporting for technical support calls from its contracted customers to provide the support needed to maintain mission-critical systems.

### 8.4.2.1 Description of Service

The CMSO organization's primary goal is Customer Issue Resolution ("CIR"), providing incident restoration and service request fulfillment for Motorola Solutions' currently supported infrastructure. This team of highly skilled, knowledgeable, and experienced specialists is an integral part of the support and technical issue resolution process. The CMSO supports the Customer remotely using a variety of tools, including fault diagnostics tools, simulation networks, and fault database search engines.



Calls requiring incidents or service requests will be logged in Motorola Solutions' Customer Relationship Management ("CRM") system, and Motorola Solutions will track the progress of each incident from initial capture to resolution. This helps ensure that technical issues are prioritized, updated, tracked, and escalated as necessary, until resolution. Motorola Solutions will advise and inform Customer of incident resolution progress and tasks that require further investigation and assistance from the Customer's technical resources.

The CMSO Operations Center classifies each technical support request based on the Remote Technical Support priority level definitions outlined in Section 8.4.2.7. The response to a Remote Technical Support request is based on the Remote Technical Support priority level response goals outlined in Section 8.4.2.8.

This service requires the Customer to provide a suitably trained technical resource that delivers maintenance and support to the Customer's system, and who is familiar with the operation of that system. Motorola Solutions provides technical consultants to support the local resource in the timely closure of infrastructure, performance, and operational issues.

#### 8.4.2.2 Scope

The CMSO Service Desk is available via telephone 24 hours per day, 7 days per week, and 365 days per year to receive and log requests for technical support. Remote Technical Support service is provided in accordance with the assigned priority.

#### 8.4.2.3 Inclusions

Remote Technical Support service will be delivered for Motorola Solutions sold infrastructure, including integrated third-party products.

#### 8.4.2.4 Motorola Solutions Responsibilities

- Maintain availability of the Motorola Solutions CMSO Service Desk via telephone (800-MSI-HELP) 24 hours per day, 7 days per week, and 365 days per year to receive, log, and classify Customer requests for support.
- Respond to incidents and technical service requests in accordance with the response times set forth in Section 8.4.2.8: Remote Technical Support Priority Level Response Goals and the incident priority levels defined in the Section 8.4.2.7: Remote Technical Support Priority Level Definitions.
- Provide caller a plan of action outlining additional requirements, activities, or information required to achieve restoral/fulfillment.
- Maintain communication with the Customer in the field as needed until resolution of the incident.
- Coordinate technical resolutions with agreed upon third-party vendors, as needed.
- Escalate support issues to additional Motorola Solutions technical resources, as applicable.
- Determine, in its sole discretion, when an incident requires more than the Remote Technical Support services described in this SOW and notify the Customer of an alternative course of action.

#### 8.4.2.5 Limitations and Exclusions

The following activities are outside the scope of the Remote Technical Support service:

- Customer training.



- Remote Technical Support for network transport equipment or third-party products not sold by Motorola Solutions.
- Any maintenance and/or remediation required as a result of a virus or unwanted cyber intrusion.

#### 8.4.2.6 Customer Responsibilities

- Prior to contract start date, provide Motorola Solutions with pre-defined information necessary to complete Customer Support Plan (“CSP”).
- Submit timely changes in any information supplied in the CSP to the Customer Support Manager (“CSM”).
- Contact the CMSO Service Desk to engage the Remote Technical Support service when needed, providing the necessary information for proper entitlement services. This information includes, but is not limited to, the name of contact, name of Customer, system ID number, site(s) in question, and a brief description of the problem that contains pertinent information for initial issue classification.
- Maintain suitably trained technical resources familiar with the operation of the Customer’s system to provide field maintenance and technical maintenance services for the system.
- Supply suitably skilled and trained on-site presence when requested.
- Validate issue resolution in a timely manner prior to close of the incident.
- Acknowledge that incidents will be addressed in accordance with the response times and priorities defined in Section 8.4.2.7: Remote Technical Support Priority Level Definitions and Section 8.4.2.8: Remote Technical Support Priority Level Response Goals.
- Cooperate with Motorola Solutions, and perform all acts that are reasonable or necessary to enable Motorola Solutions to provide Remote Technical Support.
- In the event that Motorola Solutions agrees in writing to provide supplemental Remote Technical Support to third-party elements provided by the Customer, the Customer agrees to obtain all third-party consents or licenses required to enable Motorola Solutions to provide the service.

#### 8.4.2.7 Remote Technical Support Priority Level Definitions

The following priority level definitions will be used to determine the maximum response times of the incidents:



Incident Priority	Definition
<b>Critical</b>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>- Core server failures.</li> <li>- Core link failure.</li> </ul> <p><b>Sites/Subsites:</b></p> <ul style="list-style-type: none"> <li>- Entire simulcast not wide trunking.</li> <li>- <math>\geq 33\%</math> of sites/subsites down.</li> </ul> <p><b>AXS:</b></p> <ul style="list-style-type: none"> <li>- Cluster site - two or more redundant server loss.</li> </ul>
<b>High</b>	<p><b>Consoles:</b></p> <ul style="list-style-type: none"> <li>- Console positions down (<math>\geq 33\%</math>).</li> <li>- Console site link down.</li> </ul> <p><b>Sites/Subsites:</b></p> <ul style="list-style-type: none"> <li>- <math>&lt; 33\%</math> of sites/subsites down.</li> <li>- <math>\geq 33\%</math> of channels down.</li> </ul> <p><b>Conventional Channels:</b></p> <ul style="list-style-type: none"> <li>- <math>\geq 50\%</math> of conventional channels (CCGW) down.</li> </ul> <p><b>AXS:</b></p> <ul style="list-style-type: none"> <li>- Cluster site - one server down but redundancy available.</li> </ul> <p><b>Devices:</b></p> <ul style="list-style-type: none"> <li>- Site router/switch, GPS server down.</li> </ul>
<b>Medium</b>	<p><b>Consoles:</b></p> <ul style="list-style-type: none"> <li>- Console positions down (<math>&lt; 33\%</math> at a site).</li> </ul> <p><b>Sites/Subsites:</b></p> <ul style="list-style-type: none"> <li>- <math>&lt; 33\%</math> of channels down.</li> </ul> <p><b>Conventional Channels:</b></p> <ul style="list-style-type: none"> <li>- Less than 50% of conventional channel down.</li> </ul>
<b>Low</b>	Minor events and warnings in the system.

### 8.4.2.8 Remote Technical Support Priority Level Response Goals

Response times are based on the following incident priority level definitions:

Incident Priority	Response Time
<b>Critical</b>	Motorola Solutions' CMSO will contact the Customer's technical representative within <b>one hour</b> of the request for support being logged in the issue management system. Continual effort will be maintained to restore the system or provide a workaround resolution. Response provided <b>24 x 7</b> .
<b>High</b>	Motorola Solutions' CMSO will contact the Customer's technical representative within <b>four hours</b> of the request for support being logged in the issue management system. Continual effort will be maintained to restore the system or provide a workaround resolution. Response provided <b>24 x 7</b> .
<b>Medium</b>	Motorola Solutions CMSO will contact the Customer's technical representative within <b>one business day</b> of the request for support being logged in the issue management system. Response provided Monday through Friday <b>8 a.m. to 5 p.m.</b> local time, excluding U.S. Holidays.
<b>Low</b>	Motorola Solutions CMSO will contact the Customer's technical representative by <b>the next business day</b> after the request for support being logged in the issue management system. Response provided Monday through Friday <b>8 a.m. to 5 p.m.</b> local time, excluding U.S. Holidays.

## 8.4.3 Network Hardware Repair with Advanced Replacement

Motorola Solutions will provide hardware repair for Motorola Solutions and select third-party infrastructure equipment supplied by Motorola Solutions. A Motorola Solutions authorized repair depot manages and performs the repair of Motorola Solutions supplied equipment, and coordinates equipment repair logistics.

### 8.4.3.1 Description of Service

Infrastructure components are repaired at Motorola Solutions-authorized Infrastructure Depot Operations ("IDO"). At Motorola Solutions' discretion, select third-party infrastructure may be sent to the original equipment manufacturer or third-party vendor for repair.

Network Hardware Repair is also known as Infrastructure Repair.

### 8.4.3.2 Scope

Repair authorizations are obtained by contacting the Centralized Managed Support Operations ("CMSO") organization Service Desk, which is available 24 hours a day, 7 days a week. Repair authorizations can also be obtained online by contacting the Customer Support Manager ("CSM").

### 8.4.3.3 Inclusions

This service is available on Motorola Solutions-sold infrastructure components, including integrated third-party products.

Motorola Solutions will make a commercially reasonable effort to repair Motorola Solutions manufactured infrastructure products after product cancellation. The post-cancellation support period of the product will be noted in the product's end-of-life ("EOL") notification.



### 8.4.3.4 Motorola Solutions Responsibilities

- Provide the Customer access to the CMSO Service Desk, operational 24 hours a day and 7 days per week, to request repair service.
- Provide repair return authorization numbers when requested by the Customer.
- Receive malfunctioning infrastructure components from the Customer and document its arrival, repair, and return.
- Conduct the following services for Motorola Solutions infrastructure:
  - Perform an operational check on infrastructure components to determine the nature of the problem.
  - Replace malfunctioning components.
  - Verify that Motorola Solutions infrastructure components are returned to applicable Motorola Solutions factory specifications.
  - Perform a box unit test on serviced infrastructure components.
  - Perform a system test on select infrastructure components.
- Conduct the following services for select third-party infrastructure:
  - When applicable, perform pre-diagnostic and repair services to confirm infrastructure component malfunctions and prevent sending infrastructure components with No Trouble Found (“NTF”) to third-party vendor for repair.
  - When applicable, ship malfunctioning infrastructure components to the original equipment manufacturer or third-party vendor for repair service.
  - Track infrastructure components sent to the original equipment manufacturer or third-party vendor for service.
  - When applicable, perform a post-test after repair by original equipment manufacturer or third-party vendor to confirm malfunctioning infrastructure components have been repaired and function properly in a Motorola Solutions system configuration.
- Reprogram repaired infrastructure components to original operating parameters based on software and firmware provided by the Customer, as required in Section 8.4.3.6. If the Customer’s software version and configuration are not provided, shipping will be delayed. If the repair depot determines that infrastructure components are malfunctioning due to a software defect, the repair depot reserves the right to reload these components with a different but equivalent software version.
- Properly package repaired infrastructure components.
- Ship repaired infrastructure components to Customer-specified address during normal operating hours of Monday through Friday from 7:00 a.m. to 7:00 p.m. Central Standard Time (“CST”), excluding holidays. Infrastructure component will be sent using two-day air shipping unless the Customer requests otherwise. Motorola Solutions will pay for shipping unless the Customer requests shipments outside of the above mentioned standard business hours or carrier programs, such as next flight out (“NFO”). In such cases, the Customer will be responsible for paying shipping and handling charges.

### 8.4.3.5 Limitations and Exclusions

Motorola Solutions may return infrastructure equipment that is no longer supported by Motorola Solutions, the original equipment manufacturer, or a third-party vendor without repairing or replacing it. The following items are excluded from this service:

- All Motorola Solutions infrastructure components over the post-cancellation support period.
- All third-party infrastructure components over the post-cancellation support period.
- All broadband infrastructure components over the post-cancellation support period.
- Physically damaged infrastructure components.

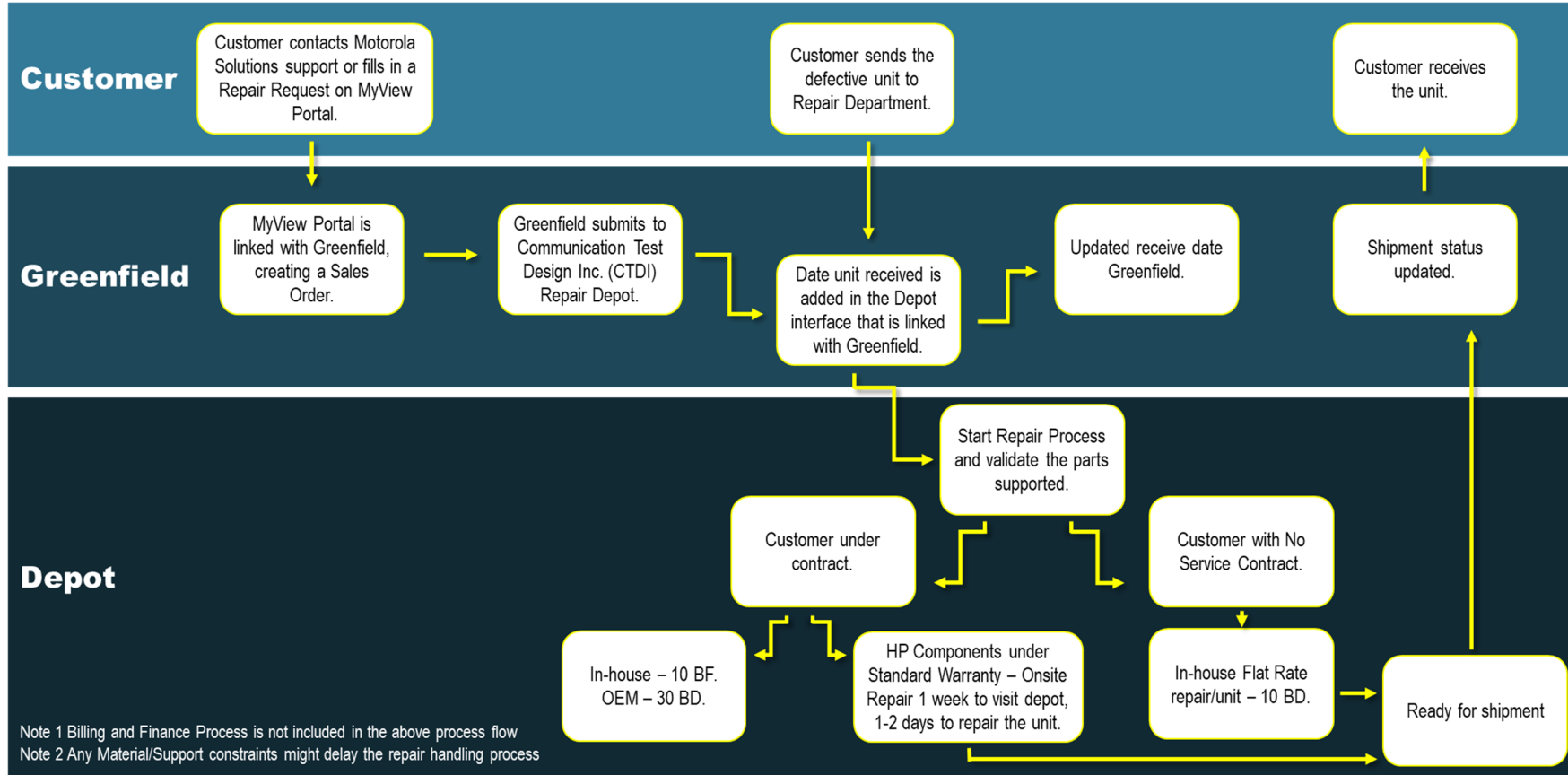


- Third-party equipment not shipped by Motorola Solutions.
- Consumable items including, but not limited to, batteries, connectors, cables, toner or ink cartridges, tower lighting, laptop computers, monitors, keyboards, and mouse.
- Video retrieval from digital in-car video equipment.
- RF infrastructure and backhaul components, including but not limited to, antennas, transmission lines, antenna dehydrators, microwave, line boosters, amplifiers (such as tower top amplifiers and bi-directional amplifiers), logging recorders, data talker wireless transmitters, short haul modems, combiners, multicouplers, duplexers, shelters, shelter HVAC, generators, UPS's, and test equipment.
- Racks, furniture, and cabinets.
- Non-standard configurations, customer-modified infrastructure, and certain third party infrastructure.
- Firmware or software upgrades.

#### 8.4.3.6 Customer Responsibilities

- Contact or instruct servicer to contact the Motorola Solutions CMSO organization, and request a return authorization number prior to shipping malfunctioning infrastructure components.
- Provide model description, model number, serial number, type of system, software and firmware version, symptom of problem, and address of site location for spare infrastructure components.
- Indicate if Motorola Solutions or third-party infrastructure components being sent in for service were subjected to physical damage or lightning damage.
- Follow Motorola Solutions instructions regarding including or removing firmware and software applications on infrastructure components being sent in for service.
- In the event that the Customer requires repair of equipment that is not contracted under this service at the time of request, the Customer acknowledges that charges may apply to cover shipping, labor, and parts. Motorola Solutions and the Customer will collaborate to agree on payment vehicle that most efficiently facilitates the work, commensurate with the level of urgency that is needed to complete the repair.
- Properly package and ship the malfunctioning component, at the Customer's expense. The Customer is responsible for properly packaging the malfunctioning infrastructure component to ensure it is not damaged in-transit and arrives in repairable condition.
  - Clearly print the return authorization number on the outside of the packaging.
- ◆ Maintain versions and configurations for software, applications, and firmware to be installed on repaired equipment.
- Provide Motorola Solutions with proper software and firmware information to reprogram equipment after repair, unless current software has caused this malfunction.
- Cooperate with Motorola Solutions and perform reasonable or necessary acts to enable Motorola Solutions to provide hardware repair services to the Customer.
- At the Customer's cost, obtain all third-party consents or licenses required to enable Motorola Solutions to provide the service.

### 8.4.3.7 Repair Process



**Figure 8-1: Repair Decision Process**

### 8.4.3.8 Advanced Replacement

As an addition to Hardware Repair service, Advanced Replacement is a repair exchange service for Motorola Solutions and select third-party infrastructure components supplied by Motorola Solutions. When available, Motorola Solutions will provide the Customer with advanced replacement units or Field Replacement Units (“FRU”) in exchange for the Customer’s malfunctioning equipment. A Motorola Solutions-authorized repair depot will evaluate and repair malfunctioning equipment, and add that equipment to the depot’s FRU inventory after completing repairs.

Customers who prefer to maintain their own FRU inventory may request a “Loaner” FRU while their unit is being repaired. Refer to Figure 8-2 for details on the unit loan process.

#### 8.4.3.8.1 Added Motorola Solutions Responsibilities for Advanced Replacement

- Use commercially reasonable efforts to maintain FRU inventory on supported platforms.
- Provide new or reconditioned FRU’s to the Customer upon request, subject to availability. The FRU will be an equipment type and version similar to the Customer’s malfunctioning component, and will contain equivalent boards and chips.
- Load firmware and software for equipment that requires programming. The Customer’s software version information must be provided for the replacement FRU to be programmed accordingly. If the Customer’s software version and configuration are not provided, shipping will be delayed.
- Package and ship FRU from the FRU inventory to Customer-specified address.
  - Motorola Solutions will ship FRU as soon as possible, depending on stock availability and requested configuration. FRU will be shipped during normal operating hours of Monday through Friday from 7:00 a.m. to 7:00 p.m. CST, excluding holidays. Motorola Solutions will pay for the shipping to the Customer, unless the Customer requests shipments outside of standard business hours or carrier programs, such as weekend or next flight out (“NFO”) shipment. In such cases, the Customer will be responsible for paying shipping and handling charges.
  - When sending FRU to the Customer, provide a return air bill in order for the Customer to send the Customer’s malfunctioning component. The Customer’s malfunctioning component will become property of the Motorola Solutions repair depot or select third party replacing it, and the Customer will own the FRU.
  - For loaner equipment, Motorola Solutions will ship repaired infrastructure components to Customer-specified address during normal operating hours, Monday through Friday from 7:00 a.m. to 7:00 p.m. CST, excluding holidays. FRU will be sent using two-day air shipping unless the Customer requests otherwise. Motorola Solutions will pay for shipping unless the Customer requests shipments outside of the above mentioned standard business hours or carrier programs, such as NFO. In such cases, the Customer will be responsible for paying shipping and handling charges.
  - When sending a loaner FRU to the Customer, Motorola Solutions will pay for outbound shipping charges. Inbound shipping to Motorola Solutions for repair will be the Customer’s responsibility. Motorola Solutions will repair and return the Customer’s component, and provide a return air bill for the Customer to return the loaner FRU. Refer to Figure 8-2 for the loaner process, and Table 8-6 for shipping charge details.

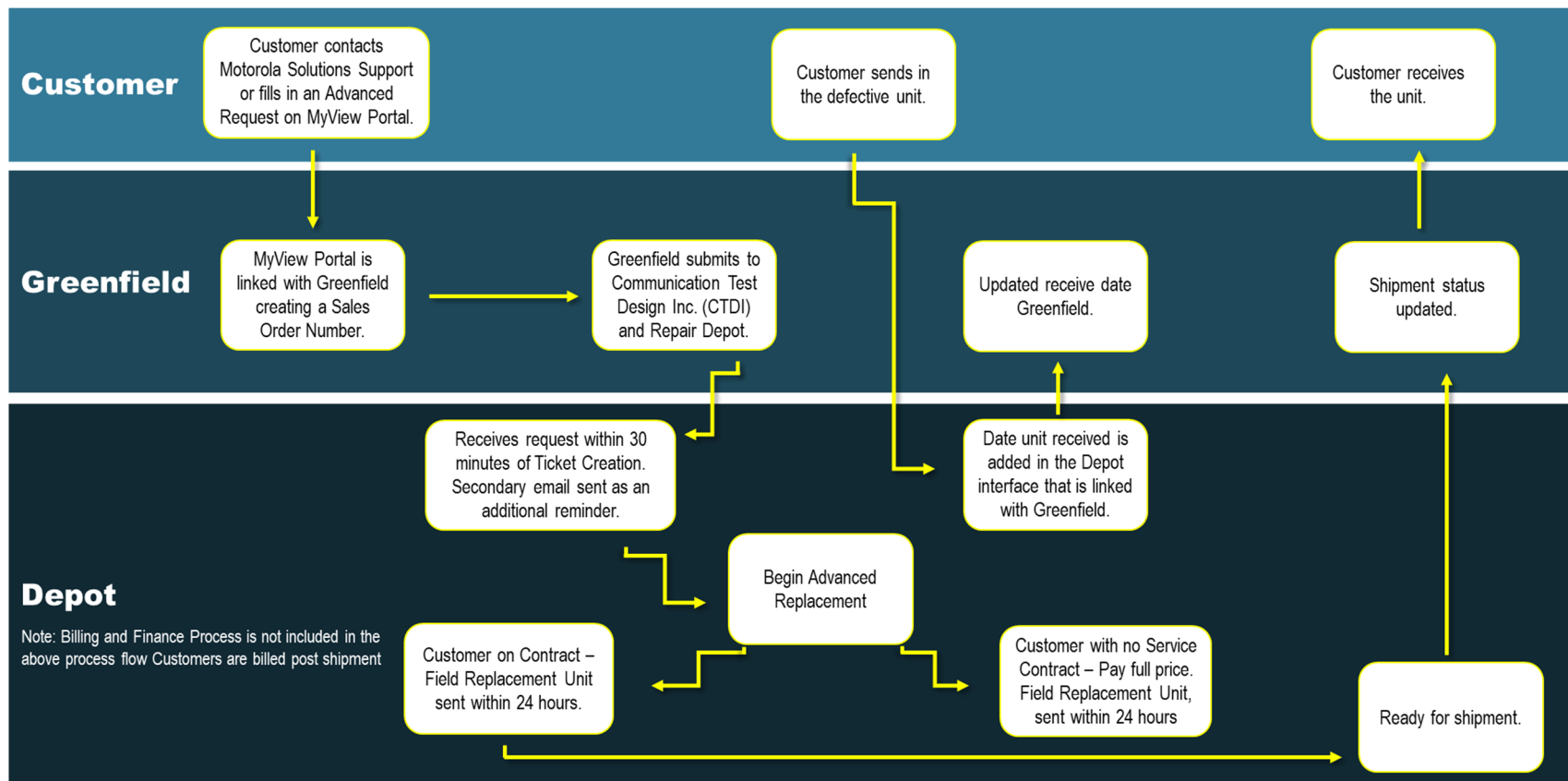
- Provide repair return authorization ("RA") number upon Customer request to replace infrastructure components that are not classified as an advanced replacement or loaner FRU.
- Provide a repair RA number so that returned components can be repaired and returned to FRU stock.
- Receive malfunctioning components from the Customer, carry out repairs and testing, and return it to the FRU stock

#### 8.4.3.8.2 Added Customer Responsibilities for Advanced Replacement

- Pay for Advanced Replacement or Loaner FRU shipping from Motorola Solutions repair depot if the Customer requested shipping outside of standard business hours or carrier programs set forth in Section 8.4.3.8.1. See **Table 8-6** for shipping charge details.
- Properly package and ship the malfunctioning component using the pre-paid air-bill that arrived with the FRU. The Customer is responsible for properly packaging the malfunctioning infrastructure component to ensure that it is not damaged in transit and arrives in repairable condition. The Customer will be subject to a replacement fee for malfunctioning components returned improperly.
- Within five business days of receipt of the advanced replacement FRU from Motorola Solutions' FRU inventory, properly package the Customer's malfunctioning FRU and ship the malfunctioning Infrastructure to Motorola Solutions' repair depot for evaluation and repair. The Customer must send the return air bill back to the repair depot in order to facilitate proper tracking of the returned infrastructure. The Customer will be subject to a full replacement fee for FRU's not returned within five business days.
- At the Customer's expense and risk of loss, the Customer may send a malfunctioning Motorola Solutions or third-party infrastructure component for repairs before a replacement has been sent. In such cases, the malfunctioning component should be properly packaged and shipped to Motorola Solutions.
- Clearly print the return authorization number on the outside of the packaging.



### 8.4.3.8.3 Replacement Process for Advanced Replacement



**Figure 8-2: Advanced Replacement or Loaner Decision Process**

**Table 8-6: Shipping Charges and Default Mail Service:**

Service	Advanced Replacement Charges Responsibility
Advanced Replacements (Normal Business Hours) Shipped FedEx Overnight or equivalent	Motorola Solutions
Loaner Shipping Outbound to Customer	
Loaner Repair and Return Shipping Outbound to Customer	
Advanced Replacements (Next Flight Out or Other)	Customer
Exchanges or Loaners Shipped Outbound to Customer by Non-Motorola Carrier*	
Loaner Repair Shipping Inbound to Motorola Solutions	
Loaner Installation Labor	

\*Motorola Solutions shipping carrier – FedEx



## 8.4.4 Remote Security Update Service

To verify compatibility with the Customer's ASTRO 25 system, Motorola Solutions' Remote Security Update Service ("RSUS") provides pre-tested software security updates. In addition to testing the security updates, RSUS includes remote update installation.

### 8.4.4.1 Description of Service

Motorola Solutions shall maintain a dedicated vetting lab for each supported ASTRO 25 release for the purpose of pre-testing security updates. In some cases, when appropriate, Motorola Solutions will make the updates available to outside vendors, allow them to test, and then incorporate those results into this offering. Depending on the specific ASTRO 25 release and customer options, these may include antivirus definition updates, Original Equipment Manufacturer ("OEM") vendor supported Windows Workstation and Server updates, Red Hat Linux ("RHEL") operating system patches, VMware ESXi hypervisor patches, Oracle database patches, PostgreSQL patches, and patches for other third-party Windows applications such as Adobe Acrobat and Flash.

Motorola Solutions has no control over the schedule of releases. The schedule for update releases is determined by the OEMs, without consultation with Motorola Solutions. Antivirus definitions are released every week. Microsoft patches are released on a monthly basis. Motorola Solutions obtains and tests these updates as they are released. Other products have different schedules or are released "as-required." Motorola Solutions will obtain and test these updates on a quarterly basis.

### 8.4.4.2 Scope

RSUS supports the currently shipping Motorola Solutions ASTRO 25 System Release, and aligns with established [Software Support Policy \("SwSP"\)](#). Motorola Solutions reserves the right to adjust which releases are supported as business conditions dictate. Contact Motorola Solutions' assigned Customer Support Manager ("CSM") for the latest supported releases.

#### Security Update Installation

Motorola Solutions remotely pushes tested security updates. The timing and coordination with the Customer of each update depends on the updates themselves, as described in the following sections.

##### Antivirus Signature Update Installation

Motorola Solutions collects and tests updates weekly. Antivirus updates are non-intrusive, with no reboots or manual configuration changes required. Therefore, antivirus signature updates will be automatically implemented within a week, without coordination with the Customer.

##### Microsoft Windows Security Update Installation

Microsoft typically releases security updates every second Tuesday of the month (known as "Patch Tuesday").

Depending on Microsoft's schedule, security updates are sometimes released on other days, or there may be no security updates released during a month. Security updates for some third-party Windows software, including non-Motorola Solutions and non-Microsoft applications that run on Windows (such as Adobe Reader and Flash), are also released on Patch Tuesday. Motorola Solutions will acquire the most recent Windows and third-party Windows security updates available on each Patch Tuesday. Motorola Solutions may hold patches back if they are found to cause any feature, performance, or functionality problems. These patches will only be released when the issues are fully resolved.

It is important to note that after security updates are installed, Microsoft often requires the patched computer to be rebooted before the security updates take full effect and vulnerabilities are mitigated. The clients include dispatch consoles and there is no way for Motorola to know when it is safe to reboot. The customer must reboot at a time chosen by them so as to not impact operations.

Once the security updates are vetted, Motorola Solutions will start implementing the updates without Customer coordination or notification. Once complete, Motorola Solutions will send an email requesting that the clients be rebooted. When preparing for the next month's push of security updates, Motorola Solutions will first scan to ensure that the previous updates were implemented and check if any computer has not been rebooted. Motorola Solutions will send an email requesting that the remaining computers be rebooted before implementing new updates.

### Microsoft Windows Security Updates Outside ASTRO 25 Firewalls

The following elements are outside the ASTRO 25 radio network firewalls: Key Management Facility ("KMF"), Text Messaging Service, and Advanced Messaging Service, and MCC 7100 consoles.

Connections to other networks, referred to as the Customer Enterprise Network ("CEN") must be delineated by firewalls. The KMF, Text Messaging Service, and Advanced Messaging Service are all outside ASTRO 25 Radio Network, so sending updates to them requires opening the firewall. The default for RSUS is that these functions are included.

The MCC 7100 console may be directly on the radio network or in the CEN. Any MCC 7100 on the radio network would simply be included in RSUS as normal. If the MCC 7100 is located in the CEN and connected through a VPN to a firewall at a dispatch location, the default for RSUS is to not update these consoles.

For these elements, the Customer can choose to include them in RSUS, or include them in the Customer's IT security patch procedures. Customer and CSM will document the preferred approach in the CSP.

If the Customer requires inclusion for the CEN based MCC 7100 consoles, then they must contact the CSM and make a formal request. The Customer must also consent to allow Motorola Solutions to open the firewall to access the CEN to provide updates.

### Quarterly Security Update Installation

Quarterly patch updates are provided for RHEL operating systems and VMWare ESXi hypervisor (virtualization). They are tested and released on a calendar quarterly basis, at the end of March, June, September, and December. Motorola Solutions will schedule installation of the updates with the Customer in the first weeks of the following quarter. For each quarterly patch, Motorola Solutions will send the Customer an Impact TimeLine (“ITL”) with details on the updates and schedule.

These updates are intrusive and require Customer coordination. Examples of how they affect the customer include reboots to implement the patches and rolling of the zone controllers (switching from one zone controller to the other). Systems with redundant zone controllers (L2, M2, M3) have low downtime (minutes) as the zone controllers are rolled, but systems with single zone controllers (L1, M1) will be down for longer periods. During these times, the system will be in “Site trunking” mode.

Quarterly update installation will be carried out during standard business hours, or 8 a.m. to 5 p.m. Central Standard Time (“CST”). Customers requesting that downtime be during non-standard hours must submit an official request through their CSM. The ITL will display work being done during standard hours, such as prep work or downloading patches to memory. Reboots or zone controller rollover will be initiated when requested. Additional remote work will proceed the next day during standard hours.

### **Connectivity**

To accommodate remote installation of security updates, a reliable connection is required from Motorola Solutions to the Customer ASTRO 25 network. RSUS will use the same connection established for Network Event Monitoring.

#### **8.4.4.3 Inclusions**

RSUS is available for any L, M, or Simplified Core system in a supported release.

- Antivirus updates - Antivirus updates are released weekly. The target release for these updates is by close of business each Tuesday. While the release often occurs early, this is the time and date committed to by vetting.
- Windows - Updates are downloaded on Microsoft Patch Tuesday (second Tuesday of the month). Updates are incorporated, tested, and vetted, with the release targeted for the last day of the month.
- Windows Third-Party updates - for Adobe Reader and Adobe Flash follow the Windows patching schedule.
- RHEL - Security updates are downloaded the last week of the first month of the quarter. Updates include any updates that are available at that time. Motorola Solutions prepares, tests, and vets RHEL updates, and targets to release them by the last day of the quarter.
- VMware - Security updates are downloaded the last week of the first month of the quarter for ESXi. These updates are downloaded from HP directly. Motorola Solutions then prepare, test and vet the ESXi updates and target to release the updates by the last day of the quarter.

- PostgreSQL - Security updates are downloaded the last week of the first month of the quarter. The updates that are available at that time are used. Updates are prepared, tested, and vetted. The PostgreSQL update target release is by the last day of the quarter. This applies to PostgreSQL 7.14 and later major releases.
- McAfee Patch Updates - Security patches are downloaded from McAfee the last week of the first month of the quarter. Whatever updates that are available at that time are used. The updates are then prepared, tested, and vetted. The McAfee update target release is by the last day of the quarter.
- DOT HILL DAS Firmware disk - Security patches are downloaded from DOT HILL the last week of the first month of the quarter. Whatever updates that are available at that time are used. The updates are then prepared, tested, and vetted, with a release targeted for the last day of the quarter.

#### 8.4.4.4 Motorola Solutions Responsibilities

- Obtain relevant third-party security updates as made available and supported from the OEMs. This includes antivirus definitions, OEM vendor available and supported operating systems patches, VMWare patches, database patches, and selected other third-party patches covered by RSUS. Motorola Solutions does not control when these updates are released, but current release schedules are listed for reference:
  - McAfee Antivirus definitions– Weekly.
  - Microsoft PC and Server OS patches – Monthly.
  - RHEL OS and VMware ESXi hypervisor patches – Quarterly.
  - Other third-party patches – Quarterly.
- Evaluate the impact each update has on the system.
- Test updates to verify whether they degrade or compromise system functionality on a dedicated ASTRO 25 test system with standard supported configurations.
- Address any issues identified during testing by working with Motorola Solutions-selected commercial supplier and Motorola Solutions' product development engineering team. If a solution for the identified issues cannot be found, the patch will not be installed. ASTRO 25 Product Engineering will continue to work with vendor to resolve.
- Pre-test Security Technical Implementation Guide ("STIG") recommended remediation when applicable.
- In the event that no updates are released by the OEM's during the usual time period, Motorola Solutions will send a notice that no new patches were sent.
- When Windows security updates are vetted, Motorola Solutions will start pushing the updates to the Customer without Customer coordination or notification.
- After the updates have been sent, send an email requesting that the clients be rebooted for security updates to take full effect and mitigate vulnerabilities.
- Maintain a supported SUS ASTRO 25 release matrix that will be kept on the extranet site for reference.

#### 8.4.4.5 Limitations and Exclusion

Remote SUS is not available for K cores.

Systems that have non-standard configurations that have not been certified by Motorola Systems Integration and Testing (“SIT”) are specifically excluded from this Service unless otherwise agreed in writing by Motorola Solutions.

Service does not include pre-tested intrusion detection system (“IDS”) signature updates for IDS solutions as part of RSUS. However, Motorola Solutions will make vendor updates available via the secure SUS website. Customer is responsible for all IDS licensing.

Certain consoles, MOTOBRIDGE, MARVLIS, InfoVista, AVL, Genesis, WAVE, and Radio Site Security products are excluded. Motorola Solutions will determine, in its sole discretion, the third party software that is supported as a part of this offering.

Motorola Solutions Technical Notifications (“MTN”) are not part of this service. In some instances, these fixes must be completed to allow the latest security patches. If it is possible for the specific required MTN to be installed remotely, then Motorola Solutions will include it as part of RSUS. Otherwise, Motorola Solutions will communicate this to the Customer as patches that cannot be delivered. It will be up to the Customer and their CSM to determine how to install MTNs. Once the MTN is in place on the system, RSUS will then install the affected patches.

The Customer should coordinate any maintenance or other updates, such as MTNs, with Motorola Solutions to ensure minimal downtime and redundant efforts.

Disclaimer: Motorola Solutions disclaims any and all warranties with respect to pre-tested antivirus definitions, database security updates, hypervisor patches, operating system software patches, intrusion detection sensor signature files, or other third-party files, express or implied. Further, Motorola Solutions disclaims any warranty concerning the non-Motorola Solutions software and does not guarantee that the Customer's system will be error-free or immune to security breaches as a result of these services.

#### 8.4.4.6 Customer Responsibilities

- Prior to contract start date, provide Motorola Solutions with pre-defined information necessary to complete a Customer Support Plan (“CSP”).
- Submit timely changes in any information supplied in the CSP to the CSM.
- Upgrade system to a supported system release as necessary to continue service.
- Refrain from making uncertified changes of any type to the system.
- Adhere closely to the Centralized Managed Support Operations (“CMSO”) organization troubleshooting guidelines provided upon system acquisition. Failure to do so may cause the Customer and Motorola Solutions unnecessary or overly burdensome remediation efforts. In such case, Motorola Solutions reserves the right to charge an additional service fee for the remediation effort.
- Comply with the terms of the applicable license agreement between the Customer and the non-Motorola Solutions software copyright owner.
- Reboot all updated Windows clients before the next set of updates is sent.
- Understand the operational impacts of quarterly updates, which are intrusive and require coordination, and coordinate update actions with users.

## 8.4.5 On-site Infrastructure Response

Motorola Solutions' On-site Infrastructure Response service provides incident management and escalation for on-site technical service requests. The service is delivered by Motorola Solutions' Centralized Managed Support Operations ("CMSO") organization in cooperation with a local service provider.

On-site Infrastructure Response may also be referred to as On-site Support.

### 8.4.5.1 Description of Service

The Motorola Solutions CMSO Service Desk will receive the Customer's request for on-site service.

The CMSO Dispatch Operations team is responsible for opening incidents, dispatching on-site resources, monitoring issue resolution, and escalating as needed to ensure strict compliance to committed response times.

The dispatched field service technician will travel to the Customer's location to restore the system based on priority levels defined in the Section 8.4.5.6: On-site Infrastructure Response Priority Level Definitions and response times defined in Section 8.4.5.7: On-site Infrastructure Response Priority Level Response Time Goals.

Motorola Solutions will manage incidents as described in this SOW. The CMSO Service Desk will maintain contact with the field service technician until incident closure.

### 8.4.5.2 Scope

On-site Infrastructure Response is available 24 hours a day, 7 days a week in accordance with Section 8.4.5.6: On-site Infrastructure Response Priority Level Definitions and Section 8.4.5.7: On-site Infrastructure Response Priority Level Response Time Goals.

### 8.4.5.3 Inclusions

On-site Infrastructure Response is provided for Motorola Solutions-sold infrastructure.

### 8.4.5.4 Motorola Solutions Responsibilities

- Receive service requests.
- Create an incident when service requests are received. Gather information to characterize the issue, determine a plan of action, and assign and track the incident to resolution.
- Dispatch a field service technician, as required by Motorola Solutions' standard procedures, and provide necessary incident information.
- Provide the required personnel access to relevant Customer information, as needed.
- Motorola Solutions field service technician will perform the following on-site:

- Run diagnostics on the infrastructure component.
- Replace defective infrastructure component, as supplied by the Customer.
- Provide materials, tools, documentation, physical planning manuals, diagnostic and test equipment, and any other material required to perform the maintenance service.
- If a third-party vendor is needed to restore the system, the vendor can be accompanied onto the Customer's premises.
- If required by the Customer's repair verification in the Customer Support Plan ("CSP"), verify with the Customer that restoration is complete or system is functional. If verification by the Customer cannot be completed within 20 minutes of restoration, the incident will be closed and the field service technician will be released.
- Escalate the incident to the appropriate party upon expiration of a response time.
- Close the incident upon receiving notification from the Customer or Motorola Solutions field service technician, indicating the incident is resolved.
- Notify the Customer of incident status, as defined in the CSP and Service Configuration Portal ("SCP"):
  - Open and closed.
  - Open, assigned to the Motorola Solutions field service technician, arrival of the field service technician on-site, delayed, or closed.
- Provide incident activity reports to the Customer, if requested.

#### 8.4.5.5 Customer Responsibilities

- Contact Motorola Solutions, as necessary, to request service.
- Prior to start date, provide Motorola Solutions with the following pre-defined Customer information and preferences necessary to complete CSP:
  - Incident notification preferences and procedure.
  - Repair verification preference and procedure.
  - Database and escalation procedure forms.
  - Submit timely changes in any information supplied in the CSP to the Customer Support Manager ("CSM").
- Provide the following information when initiating a service request:
  - Assigned system ID number.
  - Problem description and site location.
  - Other pertinent information requested by Motorola Solutions to open an incident.
- Provide field service technician with access to equipment.
- Supply infrastructure spare or FRU, as applicable, in order for Motorola Solutions to restore the system.
- Maintain and store software needed to restore the system in an easily accessible location.
- Maintain and store proper system backups in an easily accessible location.
- If required by repair verification preference provided by the Customer, verify with the CMSO Service Desk and dispatch that restoration is complete or system is functional.
- Cooperate with Motorola Solutions and perform reasonable or necessary acts to enable Motorola Solutions to provide these services.

- In the event that Motorola Solutions agrees in writing to provide supplemental On-site Infrastructure Response to Customer-provided third-party elements, the Customer agrees to obtain and provide applicable third-party consents or licenses to enable Motorola Solutions to provide the service.

#### 8.4.5.6 On-site Infrastructure Response Priority Level Definitions

The following priority level definitions will be used to determine the maximum response times:

Incident Priority	Definition
<b>Critical</b>	<b>Core:</b> <ul style="list-style-type: none"> <li>▪ Core server failures.</li> <li>▪ Core link failure.</li> </ul> <b>Sites/Subsites:</b> <ul style="list-style-type: none"> <li>▪ Entire simulcast not wide trunking.</li> <li>▪ <math>\geq 33\%</math> of sites/subsites down.</li> </ul> <b>AXS:</b> <ul style="list-style-type: none"> <li>▪ Cluster site - two or more redundant server loss.</li> </ul>
<b>High</b>	<b>Consoles:</b> <ul style="list-style-type: none"> <li>▪ Console positions down (<math>\geq 33\%</math>).</li> <li>▪ Console site link down.</li> </ul> <b>Sites/Subsites:</b> <ul style="list-style-type: none"> <li>▪ <math>&lt; 33\%</math> of sites/subsites down.</li> <li>▪ <math>\geq 33\%</math> of channels down.</li> </ul> <b>Conventional Channels:</b> <ul style="list-style-type: none"> <li>▪ <math>\geq 50\%</math> of conventional channels (CCGW) down.</li> </ul> <b>AXS:</b> <ul style="list-style-type: none"> <li>▪ Cluster site - one server down but redundancy available.</li> </ul> <b>Devices:</b> <ul style="list-style-type: none"> <li>▪ Site router/switch, GPS server down.</li> </ul>
<b>Medium</b>	<b>Consoles:</b> <ul style="list-style-type: none"> <li>▪ Console positions down (<math>&lt; 33\%</math> at a site)</li> </ul> <b>Sites/Subsites:</b> <ul style="list-style-type: none"> <li>▪ <math>&lt; 33\%</math> of channels down</li> </ul> <b>Conventional Channels:</b> <ul style="list-style-type: none"> <li>▪ Less than 50% of conventional channel down</li> </ul>
<b>Low</b>	Minor events and warnings in the system

### 8.4.5.7 On-site Infrastructure Response Priority Level Response Time Goals

Customer's Response Time Classification is designated in the Customer Support Plan.

Incident Priority Level	Standard Response Time
<b>Critical</b>	Within 4 hours from receipt of notification continuously
<b>High</b>	Within 4 hours from receipt of notification continuously
<b>Medium</b>	Within 8 hours from receipt of notification Standard Business Day, Hours (8 a.m. - 5 p.m. local time)
<b>Low</b>	Within 12 hours from receipt of notification Standard Business Day, Hours (8 a.m. - 5 p.m. local time)

## 8.4.6 Annual Preventive Maintenance

Motorola Solutions personnel will perform a series of maintenance tasks to keep network equipment functioning correctly.

### 8.4.6.1 Description of Service

Annual Preventative Maintenance provides annual operational tests on the Customer's infrastructure equipment to monitor its conformance to specifications.

### 8.4.6.2 Scope

Annual Preventive Maintenance will be performed during standard business hours, unless otherwise agreed to in writing. After the service starts, if the system or Customer requirements dictate that the service must occur outside of standard business hours, an additional quotation will be provided. The Customer is responsible for any charges associated with unusual access requirements or expenses.

Motorola Solutions will provide level 1 Preventive Maintenance.

### 8.4.6.3 Inclusions

Annual Preventive Maintenance service will be delivered for Motorola Solutions-sold infrastructure, including integrated third-party products, per the level of service defined in Section 8.4.6.7: Preventive Maintenance Tasks.

### 8.4.6.4 Motorola Solutions Responsibilities

- Notify the Customer of any planned system downtime needed to perform this service.
- Maintain communication with the Customer as needed until completion of the Annual Preventive Maintenance.
- Determine, in its sole discretion, when an incident requires more than the Annual Preventive Maintenance services described in this SOW, and notify the Customer of an alternative course of action.



- Provide the Customer with a report in MyView Portal, or as otherwise agreed in the Customer Support Plan (“CSP”), comparing system performance with expected parameters, along with any recommended actions. Time allotment for report completion is to be mutually agreed.
- Provide trained and qualified personnel with proper security clearance required to complete Annual Preventive Maintenance services.
- Field service technician will perform the following on-site:
  - Perform the tasks defined in Section 8.4.6.7: Preventive Maintenance Tasks.
  - Perform the procedures defined in Section 8.4.6.8: Site Performance Evaluation Procedures for each site type on the system.
  - Provide diagnostic and test equipment necessary to perform the Preventive Maintenance service.
  - As applicable, use the Method of Procedure (“MOP”) defined for each task.

#### 8.4.6.5 Limitations and Exclusions

The following activities are outside the scope of the Annual Preventive Maintenance service.

- Preventive maintenance for third-party equipment not sold by Motorola Solutions as part of the original system.
- Network transport link performance verification.
- Verification or assessment of Information Assurance.
- Any maintenance and/or remediation required as a result of a virus or unwanted cyber intrusion.
- Tower climbs, tower mapping analysis, or tower structure analysis.

#### 8.4.6.6 Customer Responsibilities

- Provide preferred schedule for Annual Preventative Maintenance to Motorola Solutions.
- Authorize and acknowledge any scheduled system downtime.
- Maintain periodic backup of databases, software applications, and firmware.
- Establish and maintain a suitable environment (heat, light, and power) for the equipment location as described in equipment specifications, and provide Motorola Solutions full, free, and safe access to the equipment so that Motorola Solutions may provide services. All sites shall be accessible by standard service vehicles.
- Submit timely changes in any information supplied in the CSP to the Customer Support Manager (“CSM”).
- Provide site escorts, if required, in a timely manner.
- Provide Motorola Solutions with requirements necessary for access to secure facilities.
- In the event that Motorola Solutions agrees in writing to provide supplemental Annual Preventive Maintenance to third-party elements provided by Customer, the Customer agrees to obtain any third-party consents or licenses required to enable Motorola Solutions field service technician to access the sites to provide the service.

### 8.4.6.7 Preventive Maintenance Tasks

The Preventive Maintenance service includes the tasks listed in this section.

MASTER SITE CHECKLIST	
Servers	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Network Management ("NM") Client Applications	Review Unified Event Manager ("UEM") events and verify backhaul links are reported as operational. Review event log for persistent types. Verify all NM client applications are operating correctly.
Verify System software physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to Customer server.
Complete Backup	Verify backups have been completed or scheduled, and that data has been stored in accordance with the Customer's backup plan. Check that adequate storage space is available for backups.
Network Time Protocol ("NTP")	Verify operation and syncing all devices.
Data Collection Devices ("DCD") check (if present)	Verify data collection.
Anti-Virus	Verify anti-virus is enabled and that definition files on core security management server were updated within two weeks of current date.
Routers	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on router type. Capture available diagnostic logs.
Verify Redundant Routers	Test redundancy in cooperative WAN routers. Carry out core router switchover in coordination with Customer.
Switches	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on switch type. Capture available diagnostic logs.
Verify Redundant Switches	Test redundancy in backhaul switches. Carry out core router switchover in coordination with Customer.
Domain Controllers (non-Common Server Architecture)	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.

MASTER SITE CHECKLIST	
Verify System software physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to Customer server.
<b>Firewalls</b>	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
<b>Logging Equipment</b>	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Server CPU Health	Check memory, HDD, CPU, and disk space utilization.

PRIME SITE CHECKLIST	
<b>Software</b>	
Verify System software physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to Customer server.
<b>Switches</b>	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on switch type. Capture available diagnostic logs.
Clean Fans and Equipment	Use antistatic vacuum to clean cooling pathways.
<b>Routers</b>	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on router type. Capture available diagnostic logs.
Clean Fans and Equipment	Use antistatic vacuum to clean cooling pathways.
<b>Miscellaneous Equipment</b>	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.



PRIME SITE CHECKLIST	
Site Frequency Standard Check (Timing Reference Unit)	Check LEDs for proper operation.
<b>Site Controllers</b>	
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Clean Fans and Equipment	Use antistatic vacuum to clean cooling pathways.
Site Controller Redundancy (Trunking)	Roll site controllers with no dropped audio.
<b>Comparators</b>	
Equipment Alarms	Verify no warning/alarm indicators.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Clean Fans and Equipment	Use antistatic vacuum to clean cooling pathways.

DISPATCH SITE CHECKLIST	
<b>General</b>	
Inspect all Cables	Inspect all cables and connections to external interfaces are secure.
Mouse and Keyboard	Verify operation of mouse and keyboard.
Configuration File	Verify each operator position has access to required configuration files.
Console Operator Position Time	Verify console operator position time is consistent across all operator positions.
Screensaver	Verify screensaver set as Customer prefers.
Screen Performance	Verify screen operational and is not suffering from dead pixels or image burn-in that prevent user operation.
Touchscreen	Verify touchscreen operation, if present.
Cabling/Lights/Fans	Visual inspection of all equipment cabling, lights, and fans
Filters/Fans/Dust	Clean all equipment filters and fans and remove dust.



DISPATCH SITE CHECKLIST	
Monitor and Hard Drive	Confirm monitor and hard drive do not "sleep".
DVD/CD	Verify and clean DVD or CD drive.
Time Synchronization	Verify console time is synchronized with NTP server
Anti-Virus	Verify anti-virus is enabled and that definition files have been updated within two weeks of current date.
<b>Headset Unplugged Testing</b>	
Speakers	Test all speakers for audio quality, volume, static, drop-outs, and excess hiss when turned up.
Channel Audio in Speaker	Verify selected channel audio in select speaker only.
Footswitch Pedals	Verify both footswitch pedals operational.
Radio On-Air Light	Verify radio on-air light comes on with TX (if applicable).
<b>Headset Plugged In Testing</b>	
Radio TX and RX	Verify radio TX/RX from both headset jacks. Verify levels OK. Check volume controls for noise, static, or drop-outs.
Speaker Mute	Verify speaker mutes when muted.
Telephone Operation	Verify telephone operational through both headset jacks. Check volume controls for noise, static, or drop-outs.
Audio Switches	Verify audio switches to speaker when phone off-hook if interfaced to phones.
Radio Takeover in Headset	Verify radio-takeover in headset mic when phone is off-hook, with mic switching to radio and muting phone during push-to-talk.
<b>Other Tests</b>	
Phone Status Light	Verify phone status light comes on when phone is off-hook (if applicable).
Desk Microphone Operation	Confirm desk mic operation (if applicable).
Radio Instant Recall Recorder ("IRR") Operation	Verify radio IRR operational on Motorola Solutions dispatch (if applicable).
Telephone IRR Operation	Verify telephone IRR operational on Motorola Solutions dispatch, if on radio computer.
Recording	Verify operator position being recorded on long term logging recorder, if included in service agreement
<b>Computer Performance Testing</b>	
Computer Reboot	Reboot operator position computer.

DISPATCH SITE CHECKLIST	
Computer Operational	Confirm client computer is fully operational (if applicable).
<b>Audio Testing</b>	
Conventional Resources	Confirm all conventional resources are functional, with adequate audio levels and quality.
Secure Mode	Confirm any secure talkgroups are operational in secure mode.
Trunked Resources	Confirm all trunked resources on screen are functioning by placing a call in both directions, at the Customer's discretion, and at a single operator position
Backup Resources	Confirm backup resources are operational.
<b>Logging Equipment Tests</b>	
Recording - AIS Test	Verify audio logging of trunked calls.
Recording	With Customer assistance, test operator position logging on recorder.
System Alarms	Review alarm system on all logging equipment for errors.
Capture Diagnostics	Perform recommended diagnostic tests based on equipment, and capture available diagnostic logs.
Verify System software Physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to Customer server.
<b>Playback Station (Motorola Solutions Provided)</b>	
Capture Diagnostics	Perform recommended diagnostic tests based on equipment, and capture available diagnostic logs.
Recall Audio	Verify that radio and telephone audio can be recalled.

RF SITE CHECKLIST	
<b>RF PM Checklist</b>	
Equipment Alarms	Verify no warning or alarm indicators.
Clean Fans and Equipment	Use an antistatic vacuum to clean cooling pathways.
Site Frequency Standard Check	Check LEDs for proper operation.
Basic Voice Call Check	Voice test each voice path, radio to radio.
Trunking Control Channel Redundancy	Roll control channel, test, and roll back.

RF SITE CHECKLIST	
Trunking Site Controller Redundancy, ASTRO 25 Site Repeater only	Roll site controllers with no dropped audio.
PM Optimization Workbook (See Section 8.4.6.8 Site Performance Evaluation Procedures for GTR tests)	Complete Base Station Evaluation tests - Frequency Error, Modulation Fidelity, Forward at Set Power, Reverse at Set Power, and Gen Level Desense no TX. Update station logs.

MOSCAD CHECKLIST	
MOSCAD Server	
Equipment Alarms	Verify no warning or alarm indicators.
Check Alarm/Event History	Review MOSCAD alarm and events to find if there are chronic issues.
Windows Event Logs	Review Windows event logs. Save and clear if full.
Password Verification	Log in to site devices to verify passwords. Document changes if any found.
Verify System software Physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to Customer server.
MOSCAD Client	
Equipment Alarms	Verify no warning or alarm indicators.
Check Alarm / Event History	Review MOSCAD alarm and events to find if there are chronic issues.
Windows Event Logs	Review Windows event logs. Save and clear if full.
Password Verification	Site devices to verify passwords. Document changes if any found.
Verify System software Physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to Customer server.
MOSCAD RTU's	
Equipment Alarms	Verify no warning or alarm indicators.
Verify Connectivity	Verify connectivity
Password Verification	Site devices to verify passwords. Document changes if any found.



MOSCAD CHECKLIST	
Check Alarm/Event History	Review MOSCAD alarms and events to find if there are chronic issues.
Verify System software Physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to Customer server.

FACILITIES CHECKLIST	
Visual Inspection Exterior	
Antenna Site Registration Sign	Verify that the Antenna Site Registration sign is posted.
Warning Sign - Tower	Verify that a warning sign is posted on the tower.
Warning Sign - Gate	Verify that a warning sign is posted at the compound gate entrance.
10 Rule Sign	Verify that a 10 rules sign is posted on the inside of the shelter door.
Outdoor Lighting	Verify operation of outdoor lighting and photocell.
Exterior of Building	Check exterior of building for damage and disrepair.
Fences / Gates	Check fences and gates for damage and disrepair.
Landscape / Access Road	Check landscape and access road for accessibility.
Visual Inspection Interior	
Electrical Surge Protectors	Check electrical surge protectors for alarms.
Emergency Lighting	Verify emergency lighting operation.
Indoor Lighting	Verify indoor lighting.
Equipment Inspection	Visually inspect that all hardware, including equipment, cables, panels, batteries, and racks, is in acceptable physical condition for normal operation.
Regulatory Compliance (License, ERP, Frequency, Deviation)	Check for site and station FCC licensing indicating regulatory compliance.
Clean Fans and Equipment	Use antistatic vacuum to clean cooling pathways.



FACILITIES CHECKLIST	
UPS	
Visual inspection (condition, cabling)	Check for damage, corrosion, physical connections, dirt and dust, and error indications.
Generator	
Visual Inspection	Check panel housing for cracks, rust, and weathering. Check physical connections for corrosion, dirt and dust, or other abnormal conditions.
Fuel	Verify fuel levels in backup generators, document date of last fuel delivered from fuel service provider.
Oil	Check the oil dipstick for proper level. Note condition of oil.
Verify operation (no switchover)	Verify generator running and check ease or difficulty of start. Is generator "throttling" or running smooth? Any loud unusual noise? Document any concerns or abnormal conditions.
Motorized Dampers	Check operation
HVAC	
Air Filter	Check air filter and recommend replacement if required.
Coils	Check coils for dirt and straightness.
Outdoor Unit	Check that outdoor unit is unobstructed.
Wiring	Check wiring for insect and rodent damage.
Cooling / Heating	Check each HVAC unit for cooling/heating.
Motorized Dampers	Check operation.

MICROWAVE CHECKLIST	
General	
Transport Connectivity	Confirm transport performance by viewing UEM for site link warnings or errors.
Backhaul Monitoring	Monitor UEM status, including alarms, logs, and events, for all links. If UEM not used to monitor microwave, then use approved vendor-provided microwave alarm management server.
Radio	
Alarms	Check alarm and event history.
Software	Verify version of application.
TX Frequency	Verify transmit frequency.
TX Power	Verify transmit power.
RX Frequency	Verify receive frequency.
RX Signal Level	Verify receive signal level and compare with install baseline documentation.



MICROWAVE CHECKLIST	
Save configuration	Save current configuration for off-site storage.
<b>Waveguide</b>	
Visual Inspection	Inspect for wear or dents from ground using binoculars.
Connection Verification	Verify all connections are secured with proper hardware from ground using binoculars.
<b>Dehydrator</b>	
Visual Inspection	Inspect moisture window for proper color.
Pressure Verification	Verify pressure of all lines.
Re-Pressurization	Bleed lines temporarily to verify the dehydrator re-pressurizes.
Run Hours	Record number of hours ran.

TOWER CHECKLIST	
<b>Structure Condition</b>	
Rust	Check structure for rust.
Cross Members	Check for damaged or missing cross members.
Safety Climb	Check safety climb for damage.
Ladder	Verify that ladder system is secured to tower.
Welds	Check for cracks or damaged welds.
Outdoor lighting/photocell	Test outdoor lighting and photocell.
Drainage Holes	Check that drainage holes are clear of debris.
Paint	Check paint condition.
<b>Tower Lighting</b>	
Lights/Markers	Verify all lights and markers are operational.
Day/Night Mode	Verify day and night mode operation.
Power Cabling	Verify that power cables are secured to tower.
<b>Antennas and Lines</b>	
Antennas	Visually inspect antennas for physical damage from ground using binoculars.
Transmission Lines	Verify that all transmission lines are secure on the tower.
<b>Grounding</b>	
Structure Grounds	Inspect grounding for damage or corrosion
<b>Guy Wires</b>	
Tower Guys	Visually inspect guy wires for fraying, loss of tension, or loss of connection.
Guy Wire Hardware	Check hardware for rust.



TOWER CHECKLIST	
Concrete Condition	
Tower Base	Check for chips or cracks.

#### 8.4.6.8 Site Performance Evaluation Procedures

The Preventive Maintenance service includes the site performance evaluation procedures listed in this section.

ASTRO 25 GTR ESS SITE PERFORMANCE
<b>Antennas</b>
Transmit Antenna Data
Receive Antenna System Data
Tower Top Amplifier Data
<b>FDMA Mode</b>
Base Radio Transmitter Tests
Base Radio Receiver Tests
Base Radio Transmit RFDS Tests
Receive RFDS Tests with TTA (if applicable)
Receive RFDS Tests without TTA (if applicable)
<b>TDMA Mode</b>
Base Radio TDMA Transmitter Tests
Base Radio TDMA Receiver Tests
TDMA Transmit RFDS Tests
TDMA Receive RFDS Tests with 432 Diversity TTA
TDMA Receive RFDS Tests with 2 Independent TTA's (if applicable)
TDMA Receive RFDS Tests without TTA (if applicable)

### 8.4.7 Network Updates

#### 8.4.7.1 Description of Service

The ASTRO 25 Network Updates service periodically provides updates to system software, with associated implementation services and hardware changes, to keep the overall ASTRO 25 system in a supportable state for maintenance, repair, overall network health, and security.

### 8.4.7.2 Scope

As system releases become available, Motorola Solutions agrees to provide the Customer with the software updates and implementation services necessary to maintain the ASTRO 25 system. If needed to perform the software updates, Motorola Solutions will provide updated and/or replacement hardware for covered components. System release updates, when executed, will provide an equivalent level of functionality as that originally purchased and deployed by the Customer.

At Motorola Solutions' option, new system releases may introduce new features or enhancements that Motorola Solutions may offer for purchase. These new features, available separately for purchase, are not part of the Network Update service.

As system releases become available, Motorola Solutions agrees to provide the Customer with the software, hardware, and implementation services required to execute up to one system infrastructure upgrade in each eligible update window over the term of this agreement. The term of the Network Updates service is listed in Table 8-7. The eligible update windows, and their duration, are illustrated in Table 8-8.

**Table 8-7: Network Updates Term**

<b>Duration:</b>	5 Years
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**Table 8-8: Eligible Update Windows**

First Eligible Update Window	Second Eligible Update Window	Third Eligible Update Window
<b>Duration:</b>	<b>Duration:</b>	<b>Duration:</b>
Years 1 OR 2	Years 3 OR 4	Year 5

To be eligible for recurring ASTRO 25 Network Updates, the ASTRO 25 system must be in the Standard Support Period as defined in Motorola Solutions' [Software Support Policy \("SwSP"\)](#).

The methodology for executing each Network Update is described in Section 8.4.7.4: Update Planning and Preparation through Section 8.4.7.7: Update Completion.

ASTRO 25 Network Updates pricing is based on the system configuration outlined in Section 8.4.7.11: System Pricing Configuration. This configuration is to be reviewed annually from the contract effective date. Any change in system configuration may require an ASTRO 25 Network Updates price adjustment.

The price quoted for Network Updates requires the Customer to choose a certified system update path from the system release update chart referenced in Section 8.4.7.10: ASTRO 25 System Release Update Paths. Should the Customer elect an update path other than one listed in Section 8.4.7.10: ASTRO 25 System Release Update Paths, the Customer agrees that additional fees may be incurred to complete the implementation of the system update. In this case, Motorola Solutions agrees to provide a price quotation for any additional materials and services necessary.

### 8.4.7.3 Inclusions

ASTRO 25 Network Updates entitles the Customer to eligible past software versions for the purpose of downgrading product software to a compatible release version. Past versions from within the Standard Support Period will be available.

ASTRO 25 Network Updates makes available the subscriber radio software releases that are shipping from the factory during the Network Updates coverage period.

The Network Updates service covers ASTRO 25 certified software releases for the following products:

- Servers.
- Workstations.
- Firewalls.
- Routers.
- LAN switches.
- MCC 7100 Dispatch Consoles.
- MCC 7500 Dispatch Consoles.
- MCC 7500E Dispatch Consoles.
- GTR 8000 Base Stations.
- GCP 8000 Site Controllers.
- DSC 8000 Site Controllers.
- GCM 8000 Comparators.
- Motorola Solutions logging interface equipment.
- PBX switches for telephone interconnect.
- NICE and Verint IP logging solutions (if purchased).

The following hardware components, if originally provided by Motorola Solutions, are eligible for full product replacement when necessary to support the system release update:

- Firewalls.
- Servers.
- Workstations.
- CommandCentral AXS Hub.
- Routers.
- LAN switches.
- PBX switches for telephone interconnect.

The following hardware components, if originally provided by Motorola Solutions, are eligible for board-level replacement when necessary to support the system release update. A “board-level replacement” is defined as any Field Replaceable Unit (“FRU”) for the products listed below:

- GTR 8000 Base Stations.
- GCP 8000 Site Controllers.
- GCM 8000 Comparators.
- MCC 7500 Dispatch Console Voice Processing Module.

The ASTRO 25 Network Updates does not cover all products. Refer to Section 8.4.7.8: Limitations and Exclusions for exclusions and limitations.



The ASTRO 25 Network Updates applies only to system release updates within the ASTRO 25 7.x platform.

#### 8.4.7.4 Update Planning and Preparation

All items listed in this section are to be completed at least 6 months prior to a scheduled update.

##### 8.4.7.4.1 Motorola Solutions Responsibilities

- Obtain and review infrastructure system audit data as needed.
- If applicable, identify additional system hardware needed to implement a system release, and determine if the Customer has added hardware that is not covered under this agreement.
- Identify the equipment requirements and the installation plan.
- Advise the Customer of probable impact to system users during the actual field update implementation.
- If applicable, advise the Customer on the network connection specifications necessary to perform the system update.
- Assign program management support required to perform the certified system update. Prepare an overall project schedule identifying key tasks and personnel resource required from Motorola Solutions and Customer for each task and phase of the update. Conduct a review of this schedule and obtain mutual agreement of same.
- Assign installation and engineering labor required to perform the certified system update.
- Deliver release impact and change management training to the primary zone core owners, outlining the changes to their system as a result of the update path elected. This training needs to be completed at least 12 weeks prior to the scheduled update. This training will not be provided separately for user agencies who reside on a zone core owned by another entity. Unless specifically stated in this document, Motorola Solutions will provide this training only once per system.

##### 8.4.7.4.2 Customer Responsibilities

- Contact Motorola Solutions to schedule and engage the appropriate Motorola Solutions resources for a system release update and provide necessary information requested by Motorola Solutions to execute the update. Review update schedule and reach mutual agreement of same.
- If applicable, provide network connectivity at the zone core site(s) for Motorola Solutions to use to download and pre-position the software that is to be installed at the zone core site(s) and pushed to remote sites from there. Motorola Solutions will provide the network connection specifications, as listed in Section 8.4.7.4.1: Motorola Solutions Responsibilities. Network connectivity must be provided at least 12 weeks prior to the scheduled update. In the event access to a network connection is unavailable, the Customer may be billed additional costs to execute the system release update.
- Assist in site walks of the system during the system audit when necessary.

- Provide a list of any FRUs and/or spare hardware to be included in the system release update when applicable. Upon reasonable request by Motorola Solutions, Customer will provide a complete serial and model number list of the equipment.  
The inventory count of Customer FRUs and/or spare hardware to be included as of the start of the Network Updates service is included in Section 8.4.7.11: System Pricing Configuration.
- Acknowledge that new and optional system release features or system expansions, and their required implementation labor, are not within the scope of the Network Updates service. The Customer may purchase these under a separate agreement.
- Participate in release impact training at least 12 weeks prior to the scheduled update. This applies only to primary zone core owners. It is the zone core owner's responsibility to contact and include any user agencies that need to be trained, or to act as a training agency for those users not included.

### 8.4.7.5 System Readiness Checkpoint

All items listed in this section must be completed at least 30 days prior to a scheduled update.

#### 8.4.7.5.1 Motorola Solutions Responsibilities

- Perform appropriate system backups.
- Work with the Customer to validate that all system maintenance is current.
- Work with the Customer to validate that all available security patches and antivirus updates have been updated on the Customer's system.

#### 8.4.7.5.2 Customer Responsibilities

- Validate that system maintenance is current.
- Validate that all available security patches and antivirus updates to the Customer's system have been completed.

### 8.4.7.6 System Update

#### 8.4.7.6.1 Motorola Solutions Responsibilities

- Perform system infrastructure update for the system elements outlined in this Statement of Work ("SOW").

#### 8.4.7.6.2 Customer Responsibilities

- Inform system users of software update plans and scheduled system downtime.
- Cooperate with Motorola Solutions and perform all acts that are reasonable or necessary to enable Motorola Solutions to provide software update services.



## 8.4.7.7 Update Completion

### 8.4.7.7.1 Motorola Solutions Responsibilities

- Validate all certified system update deliverables are complete as contractually required.

### 8.4.7.7.2 Customer Responsibilities

- Cooperate with Motorola Solutions in efforts to complete any post update punch list items as needed.

## 8.4.7.8 Limitations and Exclusions

The Customer and Motorola Solutions agree that systems that have non-standard configurations that have not been certified by Motorola Solutions Systems Integration Testing are specifically excluded from the ASTRO 25 Network Updates service unless otherwise agreed in writing by Motorola Solutions and included in this SOW.

Customer acknowledges that if the system has a Special Product Feature, that it may be overwritten by the software update. Restoration of that feature is not included in the coverage of this SOW.

The parties acknowledge and agree that the ASTRO 25 Network Updates does not cover the following products:

- MCC5500 Dispatch Consoles.
- MIP5000 Dispatch Consoles.
- E911 systems.
- MOTOBRIDGE solutions.
- ARC 4000 systems.
- Motorola Solutions Public Sector Applications Software ("PSA").
- Custom software, Computer-aided Dispatch ("CAD"), Records Management Software.
- Data radio devices.
- Mobile computing devices such as laptops.
- Non-Motorola Solutions two-way radio subscriber products.
- Genesis products.
- Point-to-point products, such as MPLS equipment, microwave terminals, and associated multiplex equipment.

ASTRO 25 Network Updates does not cover any hardware or software supplied to the Customer when purchased directly from a third party, unless specifically included in this SOW.

ASTRO 25 Network Updates service does not include repair or replacement of hardware or software that is due to defects that are not corrected by the system release, nor does it include repair or replacement of hardware defects resulting from any nonstandard, improper use or conditions; or from unauthorized installation of software; or excessive wear and tear; or accidental damage, power surges, neglect, acts of God or other force majeure events.



Updates for equipment add-ons or expansions during the term of this ASTRO 25 Network Updates service are not included in the coverage of this SOW unless otherwise agreed to in writing by Motorola Solutions.

Items that are consumed in the normal operation of the hardware are excluded, such as accessories. The Network Updates service excludes repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola Solutions has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or worldwide web, or for hardware malfunction caused by the transmission medium.

Any updates to hardware versions and/or replacement hardware required to support new features or those not specifically required to maintain existing functionality are not included. Platform migrations are the replacement of a product with the next generation of that product. Unless otherwise stated, platform migrations such as, but not limited to, stations, comparators, site controllers, consoles, backhaul, and network changes are not included.

New subscriber radio options and features not previously purchased by the Customer are excluded from ASTRO 25 Network Updates coverage. Additionally, subscriber software installation and reprogramming are excluded from the ASTRO 25 Network Updates coverage.

Any implementation services that are not directly required to support the certified system update are not included. Unless otherwise stated, implementation services necessary to provide system expansions, platform migrations, and/or new features or functionality that are implemented concurrently with the certified system update are not included.

#### 8.4.7.9 Special Provisions

Any Motorola Solutions software, including any system releases, is licensed to Customer solely in accordance with the applicable Motorola Solutions Software License Agreement. Any non-Motorola Solutions Software is licensed to Customer in accordance with the standard license, terms, and restrictions of the copyright owner unless the copyright owner has granted to Motorola Solutions the right to sublicense the Non-Motorola Solutions Software pursuant to the Software License Agreement, in which case it applies and the copyright owner will have all of Licensor's rights and protections under the Software License Agreement. Motorola Solutions makes no representations or warranties of any kind regarding non-Motorola Solutions Software. Non-Motorola Solutions Software may include Open Source Software.

ASTRO 25 Network Updates coverage and the parties' responsibilities described in this SOW will automatically terminate if Motorola Solutions no longer supports the ASTRO 25 7.x software version in the Customer's system or discontinues the ASTRO 25 Network Updates program. In either case, Motorola Solutions will refund to Customer any prepaid fees for ASTRO 25 Network Updates services applicable to the terminated period.



If the Customer cancels a scheduled update within less than 12 weeks of the scheduled on site date, Motorola Solutions reserves the right to charge the Customer a cancellation fee equivalent to the cost of the pre-planning efforts completed by the Motorola Solutions Upgrade Operations Team.

The Network Updates annualized price is based on the fulfillment of the system release update in each eligible update window. If the Customer terminates, except if Motorola Solutions is the defaulting party, the Customer will be required to pay for the balance of payments owed in that eligible update window if a system release update has been taken prior to the point of termination.

#### 8.4.7.10 ASTRO 25 System Release Update Paths

The update paths for standard ASTRO 25 system releases are listed in **Table 8-9**.

**Table 8-9: Certified Standard ASTRO 25 System Release Update Paths**

ASTRO 25 System Release	Certified Upgrade Paths
Pre-7.16	Upgrade to Current Shipping Release
7.16	7.18
7.17.X*	A2019.2; A2020.1
7.18	A2021.1
A2019.2	A2021.2
A2020.1	A2021.2

The update paths for high security ASTRO 25 system releases for federal deployments are described in **Table 8-10**.

**Table 8-10: Certified High Security ASTRO 25 System Release Update Paths**

ASTRO 25 High Security System Release	Certified Upgrade Paths
7.17.X*	A2020.HS
A2020.HS	A2022.HS

\* Includes planned incremental releases.

The release taxonomy for the ASTRO 25 7.x platform is expressed in the form “ASTRO 25 7.x release 20YY.Z”. In this taxonomy, YY represents the year of the release, and Z represents the release count for that release year.

A20XX.HS enhances the ASTRO 25 System release with support for Public key infrastructure (“PKI”) Common Access Card/Personal Identity Verification (CAC/PIV) and with Cyber Security Baseline Assurance.

- The most current system release update paths can be found in the most recent SMA bulletin.
- The information contained herein is provided for information purposes only and is intended only to outline Motorola Solutions’ presently anticipated general technology direction.



The information in the roadmap is not a commitment or an obligation to deliver any product, product feature or software functionality and Motorola Solutions reserves the right to make changes to the content and timing of any product, product feature, or software release.

#### 8.4.7.11 System Pricing Configuration

This configuration is to be reviewed annually from the contract effective date. Any change in system configuration may require an ASTRO 25 Network Updates price adjustment.

**Table 8-11: System Configuration**

System Configuration	
Master Site Configuration	
# of Master Sites	0
# of DSR Sites	0
System Level Features	
ISSI 8000 / CSSI 8000 - Total # of Servers (2 if redundant and/or DSR)	0
MOSCAD NFM RTU (typically 1 per site location)	0
MOSCAD NFM / SDM Clients	0
Network Management Clients	0
Unified Network Services (UNS) ex: POP25, Presence Notifier, Text Messaging, Outdoor Location, KMF/OTAR	0
Telephone Interconnect	0
InfoVista - Transport Network Performance Service (One per system)	0
Security Configuration	
Firewalls	0
Intrusion Detection Sensor (IDS)	0
Centralized Event Logging (SysLog)	0
Zone Core Protection (ZCP)	0
Radio Authentication	0
RF Site Configuration	
# of RF Sites	0
Simulcast Prime Sites (including co-located/redundant)	0
RF Sites (includes Simulcast sub-sites, ASR sites, HPD sites)	1
GTR 8000 Base Stations	6
HPD Base Stations	0
QUANTAR Base Stations	0
STR 3000 Base Stations	0
SmartX Site Converters	0
Dispatch Site Configuration	
# of Dispatch Sites	0
Gold Elite Consoles	0
MCC7500 Dispatch Consoles	0
MCC7100 Dispatch Consoles	0
MIP 5000 Dispatch Consoles	0



System Configuration	
AIS	0
Third Party Elements	
NICE Logging recorders (IP, Telephony, or Analog)	0
Verint Logging recorders (IP, Telephony, or Analog)	0
MACH Alert FSA	0
Genesis Applications	0

## 8.4.8 Security Monitoring

Motorola Solutions' ASTRO 25 Security Monitoring provides radio network security element monitoring by experienced, specialized security technologists with extensive experience working with ASTRO 25 mission-critical networks. For highly complex or unusual security events, Motorola Solutions' technologists have rapid direct access to Motorola Solutions engineers for rapid resolution.

### 8.4.8.1 Description of Service

Security Monitoring provides continuous monitoring of authentication logs and monitors for potential introduction of malware software into the ASTRO 25 network.

### 8.4.8.2 Scope

Security Monitoring is available 24 hours a day, 7 days a week. The service is delivered by the Motorola Solutions Secure Operations Center ("SOC"). The SOC is part of Motorola Solutions' Centralized Managed Support Operations ("CMSO"), and is staffed by highly trained and experienced security professionals. When a security event is detected, the security specialists will run remote diagnostics and initiate an appropriate response. This response may consist of continuing to monitor the event for further development, attempting to remotely restore the system, or opening a case for dispatch of a field service technician.

Motorola Solutions will respond to events based on pre-determined priority levels provided in Section 8.4.8.8: Security Monitoring Priority Levels and Response Times.

### 8.4.8.3 Inclusion

- **Anti-malware Monitoring** – ASTRO 25 comes installed with Anti-malware software. Motorola Solutions will remotely monitor ASTRO 25 anti-malware software for activity such as deletion, quarantine, and alerting of suspicious software.
- **Authentication Monitoring** – ASTRO 25 may be accessed by users by way of Windows and RSA logins. Motorola Solutions will remotely monitor such logins for repeated failures and locked accounts.
- **Firewall Monitoring** – ASTRO 25 systems may be deployed with certain firewalls, as described in Section 8.4.8.7: Potential ASTRO 25 Firewalls, which may or may not support remote monitoring. Motorola Solutions will remotely monitor those firewalls that support such monitoring.



- **Intrusion Detection System (“IDS”) Monitoring.** – An IDS is an option for ASTRO 25 that may be deployed between the ASTRO 25 firewall and the CEN. Motorola Solutions will remotely monitor an IDS for the Customer where applicable.
- **Centralized Event Logging** – ASTRO 25 has provided the ability to forward device syslogs to a single virtual server called Centralized Syslog Server. This allows monitoring of Linux components for authentication events. Motorola Solutions will remotely monitor syslog data elements forwarded by the centralized event logging server specific to the monitored ASTRO 25 system. Not all elements within the network will be supported for forwarding in every ASTRO 25 system release. The Customer and CSM will document the specific supported elements in the Customer Support Plan (“CSP”).

#### 8.4.8.4 Motorola Solutions Responsibilities

- Provide, maintain, and when necessary replace, hardware and software required to monitor ASTRO 25 security elements. Hardware may include a firewall, router, or physical server. Software may include virtual servers either on the ASTRO 25 core or a separate physical server, as well as related OS, SIEM collectors, and software that support update distribution and remote diagnostics.
- Verify connectivity and monitoring is active prior to start of service.
- Coordinate with the Customer to maintain Motorola Solutions service authentication credentials.
- Maintain trained and accredited technicians. Monitor the Customer’s system 24/7/365 for malicious or unusual activity.
- Post security reports to MyView Portal.

#### 8.4.8.5 Customer Responsibilities

- Security Monitoring requires a connection from the Customer’s ASTRO 25 system to Motorola Solutions’ SOC. Motorola Solutions offers either a T1 or a Virtual Private Network (“VPN”) link through a Customer-supplied internet connection. Connectivity needs to be established before service commences.
- Permit Motorola Solutions continuous remote access to monitor the ASTRO 25 system. This includes keeping the connection plugged-in, providing passwords, and working with Motorola Solutions to understand and maintain proper administration privileges.
- Provide continuous utility service to any Motorola Solutions equipment installed or utilized at the Customer’s premises to support service delivery.
- Provide Motorola Solutions with contact information necessary to complete the CSP. Notify the Customer’s Customer Support Manager (“CSM”) within two weeks of any contact changes.
- Validate that Motorola Solutions is monitoring the components defined in the CSP and notify Motorola Solutions if any new components need to be incorporated in Security Monitoring.
- As necessary, upgrade the ASTRO 25 system to supported releases.
- Allow Motorola Solutions dispatched field service technicians physical access to the equipment when required.
- Comply with the terms of the applicable license agreements between Customer and the non-Motorola Solutions software copyright owners.

- Cooperate with Motorola Solutions and perform all acts that are reasonable or necessary to enable Motorola Solutions to provide the services described in this SOW.
- Ensure that all monitored devices within the network have a properly configured Syslog agent, which is forwarding events to the centralized event log server.
- Obtain any third party consents required to enable Motorola Solutions to provide the monitoring service.

#### 8.4.8.6 Disclaimer

Disclaimer: **“AS IS”**. MOTOROLA SOLUTIONS’ ASTRO 25 SECURITY MONITORING SERVICES ARE PROVIDED “AS IS”. MOTOROLA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. Motorola Solutions does not guarantee that the Customer’s system will be error-free or immune to security breaches as a result of these services.

#### 8.4.8.7 Potential ASTRO 25 Firewalls

**Table 8-12: Potential ASTRO Firewalls**

Firewall	Description
Customer Network Interface (“CNI”)	This firewall separates the ASTRO 25 Radio Network from the Customer’s IT network, which is often referred to as the CEN or Customer Enterprise network. There are single and redundant (high-availability) options for the CNI. The redundant option includes two firewalls. Both firewalls must be monitored in the redundant case.
Dynamic System Resilience (“DSR”)	This is an ASTRO 25 option where a geographically separated backup master site is implemented as a “hot-standby” in case the primary becomes inoperable due to a failure. This option potentially doubles the number of firewalls in the system.
Zone Core Protection (“ZCP”)	This ASTRO 25 option places firewalls at the master site where the RF and console sites connect. This prevents a compromised site from being used to attack the core or other sites. For redundancy, there are always 2 firewalls in this option.
Telephone Interconnect (“TI”)	This ASTRO 25 option allows calls to be made to and from ASTRO 25 subscribers. One firewall is required to protect the RNI. The TI firewall may also be used to protect ISSI connections.
Inter RF Subsystem Interface (“ISSI”)	This option allows connectivity to a separate system. This connection can be to another P25 system, or to non-P25 systems through an additional interface, such as WAVE. In both cases, one firewall is necessary to protect the RNI. The ISSI firewall may also be used to protect TI connections.
MCC 7100 Dispatch Console	The MCC 7100 Dispatch Console may be configured so that it can connect via Virtual Private Network (“VPN”) through an internet connection. A firewall is required to terminate on the ASTRO 25 side of that connection. This firewall may be physically located at either a console site or the master site, and there may be multiple firewalls for this purpose.

Firewall	Description
Custom	The Customer may opt to install their own firewalls and request that Motorola Solutions monitor them. The most common location is at console sites. The Customer will have to work with Motorola Solutions to determine if and how custom firewalls can be monitored. Monitoring these firewalls may require an additional fee.

#### 8.4.8.8 Security Monitoring Priority Levels and Response Times

**Table 8-13: Priority Levels and Engagement Times**

Incident Priority	Definition	Response Times
<b>Critical</b>	Security incidents that have caused, or are suspected to have caused significant and/or widespread damage to the functionality of the Customer's ASTRO 25 system or information stored within it. Effort to recover from the incident may be significant. Examples: <ul style="list-style-type: none"> <li>Malware that is not quarantined by anti-virus</li> <li>Evidence that a monitored component has communicated with suspected malicious actors.</li> </ul>	Response provided <b>24 hours, 7 days</b> a week, including US Holidays.
<b>High</b>	Security incidents that have localized impact, but have the potential to become more serious if not quickly addressed. Effort to recover from the incident may be moderate to significant. Examples: <ul style="list-style-type: none"> <li>Malware that is quarantined by antivirus.</li> <li>Multiple behaviors observed in the system that are consistent with known attacker techniques.</li> </ul>	Response provided <b>24 hours, 7 days</b> a week, including US Holidays.
<b>Medium</b>	Security incidents that potentially indicate an attacker is performing reconnaissance or initial attempts at accessing the system. Effort to recover from the incident may be low to moderate. Examples include: <ul style="list-style-type: none"> <li>Suspected unauthorized attempts to log into user accounts.</li> <li>Suspected unauthorized changes to system configurations, such as firewalls or user accounts.</li> <li>Observed failures of security components.</li> </ul>	Response provided Monday through Friday <b>8 a.m. to 5 p.m.</b> local time, excluding US Holidays.

Incident Priority	Definition	Response Times
<b>Low</b>	<p>Routine, informational events that are expected to be benign, but are captured and tracked to provide context in case of future incidents.</p> <p>Examples include:</p> <ul style="list-style-type: none"> <li>▪ User account creation or deletion.</li> <li>▪ Privilege change for existing accounts.</li> </ul>	Response provided Monday through Friday <b>8 a.m. to 5 p.m.</b> local time, excluding US Holidays.

## 8.5 STATEMENT OF WORK FOR DEVICE MANAGEMENT SERVICES – ESSENTIAL

### 8.6 OVERVIEW

Device Management Services - Essential ("DMS Essential") for APX™ subscriber radios provides the Customer with Subscriber Radio Technical Support and Hardware Repair services. DMS Essential is structured as a per-unit, fixed-fee multi-year service in order to mitigate the likelihood of unexpected subscriber radio repair expenses.

This Statement of Work ("SOW") is subject to the terms and conditions of the Motorola Solutions Services Agreement or other applicable agreement in effect between the parties ("Agreement"). The terms of this SOW are an integral part of an Agreement with the Customer to which this SOW is appended and is made a part thereof by this reference. In the event of a conflict between the terms and conditions of an Agreement and the terms and conditions of this SOW, this SOW will control as to the inconsistency only. The SOW applies to the Device specifically named in the Agreement.

## 8.7 HARDWARE REPAIR

### 8.7.1 Scope

Hardware Repair provides repair coverage for internal and external subscriber radio components that do not work in accordance with published specifications. Repair services are performed at a Motorola Solutions-operated or supervised facility. The subscriber radio will be repaired to bring it to compliance with its specifications, as published by Motorola Solutions at the time of delivery of the original subscriber radio.

### 8.7.2 Motorola Solutions Responsibilities

- Repair or replace malfunctioning device, as determined by Motorola Solutions.

- Complete repair or replacement with a turnaround time of four business days in-house, provided the device is delivered to the repair center by 9:00 a.m. (local repair center time). Turnaround time represents the time a product spends in the repair process, and does not include time in transit to and from the Customer's site. Business days do not include US holidays or weekends.
- If applicable, apply periodically-released device updates, in accordance with an Engineering Change Notice.
- Provide two-way air shipping when a supported Motorola Solutions electronic system, such as MyView Portal, is used to initiate a repair. A shipping label will be generated via the electronic system.

### 8.7.3 Limitations and Exclusions

- Replacement of consumable parts or accessories, as defined by product, including batteries, cables, antennas, and carrying cases.
- In the case of mobile radios, repair of a single mobile control head that is required for normal operation of the subscriber radio is included, provided the control head was supplied at the original point of purchase of the mobile radio.
- Repair of problems caused by:
  - Internal or external damage resulting from natural or manmade disasters, including fire, theft, and floods.
  - Third-party software, accessories, or peripherals not approved in writing by Motorola Solutions for use with the device.
  - Using the device outside of the product's operational and environmental specifications, including improper handling, carelessness, or reckless use.
  - Unauthorized alterations, attempted repair, repair by a third party.
- Non-remedial work, including administration and operator procedures, reprogramming, and operator or user training.
- Problem determination and/or work performed to repair or resolve issues with non-covered products. For example, hardware or software products not specifically listed on the service order form are excluded from service.
- Cosmetic imperfections that do not affect the functionality of the device.
- Software support for unauthorized modifications or misuse of the device.
- File backup or restoration.
- Completion and test of incomplete application programming or system integration, if not performed by Motorola Solutions and covered by Motorola Solutions' services.
- Software Release updates.
- Accidental damage, chemical or liquid damage, or other damage caused outside of normal device operating specifications.
- Motorola Solutions is not obligated to provide support for any device that has been subject to the following:
  - Repaired, tampered with, altered, or modified (including the unauthorized installation of any software) — except by Motorola Solutions authorized service personnel.
  - Subjected to unusual physical or electrical stress, abuse, or forces or exposure beyond normal use within the specified operational and environmental parameters set forth in the applicable product specification.



- If the Customer fails to comply with the obligations contained in the product purchase agreement and/or the applicable software license agreement and/or Motorola Solutions terms and conditions of service.
- DMS Essential is quoted on a per-unit basis, is prepaid, non-cancellable and non-refundable for the purchased service term.

## 8.7.4 Customer Responsibilities

- For non-contiguous renewals and services purchased separately from APX subscriber radios, Customer must provide a complete list, preferably in electronic format, of all hardware serial numbers to be covered under the Agreement to Motorola Solutions.
- Initiate subscriber radio repairs, as needed.
  - When initiating a repair via a supported Motorola Solutions electronic system, label each package correctly with the shipping label and Return Material Authorization (“RMA”) number generated by the electronic system.
  - When initiating a repair via paper Return Material Form (“RMF”), the RMF must be completed for each device, included in the package with the device, and shipped to the Motorola Solutions depot specified on the RMF.
- Remove any data or other information from the device that the Customer wishes to destroy or retain prior to sending the device for repair.

## 8.8 SUBSCRIBER RADIO TECHNICAL SUPPORT

### 8.8.1 Scope

Motorola Solutions’ Subscriber Radio Technical Support service provides telephone consultation for subscriber radio and accessory issues. Support is delivered through the Motorola Solutions Centralized Managed Support Operations (“CMSO”) organization by a staff of technical support specialists.

The Customer may contact the CMSO Call Management Center (800-MSI-HELP) at any time (24 hours a day / 7 days a week / 365 days per year) and a Motorola Solutions representative will log a technical request in the Case Management System on the Customer’s behalf. In addition, the Customer may send email to [portal.support@motorolasolutions.com](mailto:portal.support@motorolasolutions.com) to address any portal specific questions or concerns.

Motorola Solutions will then respond to the Customer case within two hours of case creation, during support hours. Support hours are 7am to 7pm CST, Monday through Friday, excluding US holidays.

### 8.8.2 Motorola Solutions Responsibilities

- Provide technical support for subscriber radios, assessing and troubleshooting reported issues.
- Receive and log Customer support requests, and assign a technical representative to respond to a Customer Case per the defined timeframes.



### 8.8.3 Limitations and Exclusions

- Land Mobile Radio (“LMR”) network, Wi-Fi, and LTE network troubleshooting.

### 8.8.4 Customer Responsibilities

- Use the provided methods to contact Motorola Solutions technical support.
- Provide sufficient information to allow Motorola Solutions technical support agents to diagnose and resolve Customer issues.
- Provide contact information for on-site technicians in the event that Motorola Solutions has to follow up.

## 8.9 MYVIEW PORTAL ACCESS

MyView Portal is a tool available for customers to track order, RMA, and tech support ticket status, and serves as a consolidated download site for software and documentation.

### 8.9.1 Motorola Solutions Responsibilities

- Provide a web accessible, secure portal to view the Customer’s data.
- Provide MyView Portal technical support to answer end user questions between the hours of 7am to 7pm CST Monday through Friday, excluding US holidays. In addition the Customer may send email to [portal.support@motorolasolutions.com](mailto:portal.support@motorolasolutions.com) to address any portal specific questions or concerns.
- Keep the site updated with the latest Customer information.
- Motorola Solutions’ Customer Support Manager (“CSM”) will assist the Customer in establishing a MyView Portal account.

### 8.9.2 Customer Responsibilities

- Create a MyView Portal account if the Customer does not have an existing account.
- During the DMS Essential onboarding process, provide Motorola Solutions with contact information for administrative users.
- Administer user access.
- Provide Internet access for users to access the site.
- Protect login information against unauthorized use.
- Work with Motorola Solutions’ CSM to update information as needed.



## SECTION 9

# PRICING

## 9.1 EQUIPMENT AND SERVICES SUMMARY

Equipment and Systems Integration	Price
Equipment Discounted per KY Contract Master Agreement MA 758-1800000118	\$485,890
Systems Integration	\$610,108
<b>TOTAL SYSTEM PRICE</b>	<b>\$1,095,998</b>
15% KY Interoperability Discount	\$164,400
2021 Contract On Or Before 12/10/2021	\$75,000
Additional System Discount with Contract signature by 8/27/2021	\$54,198
<b>TOTAL SYSTEM PRICE WITH DISCOUNT</b>	<b>\$802,400</b>

Motorola Solutions has included a structural analysis for the Draffenville tower to determine if the existing towers can support the proposed antennas and dishes. In the event that tower remediation is required, any costs required to modify the towers and and/or associated costs such as re-engineering or relocation services would be executed through the Change Order process. Motorola Solutions suggests that Marshall County additionally budget around 5% of System Price in allowance for potential tower modifications.

## 9.2 POST WARRANTY SERVICES AND LIFECYCLE

Advanced Plus and SUAll	Price
Advanced Plus Services and SUAll Year 2	\$31,205
Advanced Plus Services and SUAll Year 3	\$31,828
Advanced Plus Services and SUAll Year 4	\$33,695
Advanced Plus Services and SUAll Year 5	\$34,353
Advanced Plus Services and SUAll Year 6	\$35,154
<b>Subtotal</b>	<b>\$166,235</b>

This pricing assumes a local service shop will provide the On Site response and preventative maintenance services.

SECTION 10

# CONTRACTUAL DOCUMENTATION

This proposal is subject to the terms and conditions of the enclosed Communications System and Services Agreement, including the Maintenance, Support and Lifecycle Management Addendum and remains valid for 90 days from the date on this cover letter.

## 10.1 COMMUNICATION SYSTEM AND SERVICES AGREEMENT



## Communications System and Services Agreement

Motorola Solutions, Inc. ("Motorola") and \_\_\_\_\_ ("Customer") enter into this "Agreement," pursuant to which Customer will purchase and Motorola will sell the System and Services, as described below. Motorola and Customer may be referred to individually as a "Party" and collectively as the "Parties." For good and valuable consideration, the Parties agree as follows:

### Section 1 ATTACHMENTS

1.1. EXHIBITS. The Exhibits listed below are exhibits related to the System sale and implementation. These Exhibits are incorporated into and made a part of this Agreement.

Exhibit A "Motorola Software License Agreement"

Exhibit B "Payment"

Exhibit C Technical and Implementation Documents

C-1 "System Description" dated \_\_\_\_\_

C-2 "Pricing Summary & Equipment List" dated \_\_\_\_\_

C-3 "Implementation Statement of Work" dated \_\_\_\_\_

C-4 "Acceptance Test Plan" or "ATP" dated \_\_\_\_\_

C-5 "Performance Schedule" dated \_\_\_\_\_

Exhibit D "System Acceptance Certificate"

1.2. ADDENDUM (ADDENDA). Customer may elect to purchase professional or subscription services in addition to the System and related services. Any such services will be governed by the terms in the main body of the Agreement and an applicable Addendum containing terms specific to such service. Such Addenda will be labeled with the name of the service being purchased.

1.3 ORDER OF PRECEDENCE. In interpreting this Agreement and resolving any ambiguities: 1) the main body of this Agreement takes precedence over the exhibits (unless otherwise specified in an exhibit), and any inconsistency between Exhibits A through D will be resolved in their listed order, and 2) The applicable service Addendum will take precedence over the main body of the Agreement and the Exhibits.

### Section 2 DEFINITIONS

Capitalized terms used in this Agreement have the following meanings:

**"Acceptance Tests"** means those tests described in the Acceptance Test Plan.

**"Addendum (Addenda)"** is the title of the document(s) containing a specific set of terms and conditions applicable to a particular service or other offering beyond the Communication System and System implementation services. The terms in the Addendum are applicable only to the specific service or offering described therein.

**"Administrative User Credentials"** means an account that has total access over the operating system, files, end user accounts and passwords at either the System level or box level. Customer's personnel with access to the Administrative User Credentials may be referred to as the Administrative User.

**"Beneficial Use"** means when Customer first uses the System or a Subsystem for operational purposes (excluding training or testing).

**"Confidential Information"** means all information consistent with the fulfillment of this Agreement that is (i) disclosed under this Agreement in oral, written, graphic, machine recognizable, and/or sample form, being clearly designated, labeled or marked as confidential or its equivalent or (ii) obtained by examination, testing or analysis of any hardware, software or any component part thereof provided by discloser to

recipient. The nature and existence of this Agreement are considered Confidential Information. Confidential Information that is disclosed orally must be identified as confidential at the time of disclosure and confirmed by the discloser by submitting a written document to the recipient within thirty (30) days after such disclosure. The written document must contain a summary of the Confidential Information disclosed with enough specificity for identification purpose and must be labeled or marked as confidential or its equivalent.

**“Contract Price”** means the price for the System and implementation Services, excluding applicable sales or similar taxes and freight charges. Further, unless otherwise stated in Exhibit B, “Payment” or the pricing pages of the proposal, recurring fees for maintenance, SUA, or subscription services are not included in the Contract Price.

**“Deliverables”** means all written information (such as reports, specifications, designs, plans, drawings, analytics, Solution Data, or other technical or business information) that Motorola prepares for Customer in the performance of the Services and is obligated to provide to Customer under this Agreement. The Deliverables, if any, are more fully described in the Statement of Work.

**“Derivative Proprietary Materials”** means derivatives of the Proprietary Materials that Motorola may from time to time, including during the course of providing the Services, develop and/or use and/or to which Motorola provides Customer access.

**“Effective Date”** means that date upon which the last Party executes this Agreement.

**“Equipment”** means the hardware components of the Solution that Customer purchases from Motorola under this Agreement. Equipment that is part of the System is described in the Equipment List.

**“Feedback”** means comments or information, in oral or written form, given to Motorola by Customer in connection with or relating to Equipment or Services, during the term of this Agreement.

**“Force Majeure”** means an event, circumstance, or act that is beyond a Party’s reasonable control, such as an act of God, an act of the public enemy, an act of a government entity, strikes, other labor disturbances, supplier performance, hurricanes, earthquakes, fires, floods, epidemics, embargoes, war, riots, or any other similar cause.

**“Motorola Software”** means software that Motorola or its affiliated companies owns.

**“Non-Motorola Software”** means software that a party other than Motorola or its affiliated companies owns.

**“Open Source Software”** (also called “freeware” or “shareware”) means software with either freely obtainable source code, license for modification, or permission for free distribution.

**“Proprietary Materials”** means certain software tools and/or other technical materials, including, but not limited to, data, modules, components, designs, utilities, subsets, objects, program listings, models, methodologies, programs, systems, analysis frameworks, leading practices and specifications which Motorola has developed prior to, or independently from, the provision of the Services and/or which Motorola licenses from third parties.

**“Proprietary Rights”** means the patents, patent applications, inventions, copyrights, trade secrets, trademarks, trade names, mask works, know-how, and other intellectual property rights in and to the Equipment and Software, including those created or produced by Motorola under this Agreement and any corrections, bug fixes, enhancements, updates or modifications to or derivative works from the Software whether made by Motorola or another party.

**“Services”** means system implementation, maintenance, support, subscription, or other professional services provided under this Agreement, which may be further described in the applicable Addendum

and/or SOW.

**“Software”** (i) means proprietary software in object code format, and adaptations, translations, de-compilations, disassemblies, emulations, or derivative works of such software; (ii) means any modifications, enhancements, new versions and new releases of the software provided by Motorola; and (iii) may contain one or more items of software owned by a third party supplier. The term "Software" does not include any third party software provided under separate license or third party software not licensable under the terms of this Agreement.

**“Software License Agreement”** means the Motorola Software License Agreement (Exhibit A).

**“Software Support Policy” (“SwSP”)** means the policy set forth at [https://www.motorolasolutions.com/content/dam/msi/secure/services/software\\_policy.pdf](https://www.motorolasolutions.com/content/dam/msi/secure/services/software_policy.pdf) describing the specific technical support that will be provided to Customers under the Warranty Period and during any paid maintenance support period for Motorola Software. This policy may be modified from time to time at Motorola’s discretion.

**“Solution”** means the combination of the System(s) and Services provided by Motorola under this Agreement.

**“Solution Data”** means Customer data that is transformed, altered, processed, aggregated, correlated or operated on by Motorola, its vendors or other data sources and data that has been manipulated or retrieved using Motorola know-how to produce value-added content to data consumers, including customers or citizens which is made available to Customer with the Solution and Services.

**“Specifications”** means the functionality and performance requirements that are described in the Technical and Implementation Documents.

**“SUA” or “SUA II”** means Motorola’s Software Upgrade Agreement program.

**“Subsystem”** means a major part of the System that performs specific functions or operations. Subsystems are described in the Technical and Implementation Documents.

**“System”** means the Equipment, including incidental hardware and materials, Software, and design, installation and implementation services that are combined together into an integrated system; the System(s) is (are) described in the Technical and Implementation Documents.

**“System Acceptance”** means the Acceptance Tests have been successfully completed.

**“System Data”** means data created by, in connection with or in relation to Equipment or the performance of Services under this Agreement.

**“Warranty Period”** for System Hardware, Software, or services related to system implementation means one (1) year from the date of System Acceptance or Beneficial Use, whichever occurs first. Unless otherwise stated in the applicable Addendum, Warranty Period for other Services means ninety (90) days from performance of the Service.

### **Section 3 SCOPE OF AGREEMENT AND TERM**

3.1. **SCOPE OF WORK.** Motorola will provide, install and test the System(s), and perform its other contractual responsibilities to provide the Solution, all in accordance with this Agreement. Customer will perform its contractual responsibilities in accordance with this Agreement.

3.2. **CHANGE ORDERS.** Either Party may request changes within the general scope of this Agreement. If a requested change causes an increase or decrease in the cost or time required to perform

this Agreement, the Parties will agree to an equitable adjustment of the Contract Price or applicable subscription fees, Performance Schedule, or both, and will reflect the adjustment in a change order or Addendum. Neither Party is obligated to perform requested changes unless both Parties execute a written change order.

3.3. **TERM.** Unless terminated in accordance with other provisions of this Agreement or extended by mutual agreement of the Parties, the term of this Agreement begins on the Effective Date and continues until the date of Final Project Acceptance or expiration of the Warranty Period, or completion of the Services, whichever occurs last. The term and the effective date of recurring Services will be set forth in the applicable Addendum.

3.4. **ADDITIONAL EQUIPMENT OR SOFTWARE.** For three (3) years after the expiration date of the Agreement, Customer may order additional Equipment or Software, if it is then available. Each purchase order must refer to this Agreement, the expiration date of the Agreement, and must specify the pricing and delivery terms. The Parties agree that, notwithstanding expiration of the Agreement, the applicable provisions of this Agreement (except for pricing, delivery, passage of title and risk of loss to Equipment, warranty commencement, and payment terms) will govern the purchase and sale of the additional Equipment or Software. Additional or contrary terms in the purchase order will be inapplicable, unless signed by both parties. Title and risk of loss to additional Equipment will pass at shipment, warranty will commence upon delivery, and payment is due within thirty (30) days after the invoice date. Motorola will send Customer an invoice as the additional Equipment is shipped or Software is licensed. Alternatively, Customer may register with and place orders through Motorola Online ("MOL"), and this Agreement will be the "Underlying Agreement" for those MOL transactions rather than the MOL On-Line Terms and Conditions of Sale. MOL registration and other information may be found at <https://businessonline.motorolasolutions.com> and the MOL telephone number is (800) 814-0601.

3.5. **MOTOROLA SOFTWARE.** Any Motorola Software, including subsequent releases, is licensed to Customer solely in accordance with the Software License Agreement. Customer hereby accepts and agrees to abide by all of the terms and restrictions of the Software License Agreement.

3.6. **NON-MOTOROLA SOFTWARE.** Any Non-Motorola Software is licensed to Customer in accordance with the standard license, terms, and restrictions of the copyright owner on the Effective Date unless the copyright owner has granted to Motorola the right to sublicense the Non-Motorola Software pursuant to the Software License Agreement, in which case it applies and the copyright owner will have all of Licensor's rights and protections under the Software License Agreement. Motorola makes no representations or warranties of any kind regarding Non-Motorola Software. Non-Motorola Software may include Open Source Software.

3.7. **SUBSTITUTIONS.** At no additional cost to Customer, Motorola may substitute any Equipment, Software, or services to be provided by Motorola, if the substitute meets or exceeds the Specifications and is of equivalent or better quality to the Customer. Any substitution will be reflected in a change order.

3.8. **OPTIONAL EQUIPMENT OR SOFTWARE.** This paragraph applies only if a "Priced Options" exhibit is shown in Section 1, or if the parties amend this Agreement to add a Priced Options exhibit. During the term of the option as stated in the Priced Options exhibit (or if no term is stated, then for one (1) year after the Effective Date), Customer has the right and option to purchase the equipment, software, and related services that are described in the Priced Options exhibit. Customer may exercise this option by giving written notice to Seller which must designate what equipment, software, and related services Customer is selecting (including quantities, if applicable). To the extent they apply, the terms and conditions of this Agreement will govern the transaction; however, the parties acknowledge that certain provisions must be agreed upon, and they agree to negotiate those in good faith promptly after Customer delivers the option exercise notice. Examples of provisions that may need to be negotiated are: specific lists of deliverables, statements of work, acceptance test plans, delivery and implementation schedules, payment terms, maintenance and support provisions, additions to or modifications of the Software License Agreement, hosting terms, and modifications to the acceptance and warranty provisions.

## **Section 4 SERVICES**

4.1. If Customer desires and Motorola agrees to continue Services beyond the Term, Customer's issuance and Motorola's acceptance of a purchase order for Services will serve as an automatic extension of the Agreement for purposes of the continuing Services. Only the terms and conditions applicable to the performance of Services will apply to the extended Agreement.

4.2. During the Warranty Period, in addition to warranty services, Motorola will provide maintenance Services for the Equipment and support for the Motorola Software pursuant to the applicable maintenance and support Statements of Work. Support for the Motorola Software will be in accordance with Motorola's established Software Support Policy. Copies of the SwSP can be found at [https://www.motorolasolutions.com/content/dam/msi/secure/services/software\\_policy.pdf](https://www.motorolasolutions.com/content/dam/msi/secure/services/software_policy.pdf) and will be sent by mail, email or fax to Customer upon written request. Maintenance Services and support during the Warranty Period are included in the Contract Price. Unless already included in the Contract Price, if Customer wishes to purchase 1) additional maintenance or software support services during the Warranty Period; or 2) continue or expand maintenance, software support, installation, and/or SUA services after the Warranty Period, Motorola will provide the description of and pricing for such services in a separate proposal document. Unless otherwise agreed by the parties in writing, the terms and conditions in this Agreement applicable to maintenance, support, installation, and/or SUA Services, will be included in the Maintenance and Support Addendum, SUA Addendum, the applicable Statements of Work, and the proposal, (if applicable). These collective terms will govern the provision of such Services.

To obtain any such additional Services, Customer will issue a purchase order referring to this Agreement and the separate proposal document. Omission of reference to this Agreement in Customer's purchase order will not affect the applicability of this Agreement. Motorola's proposal may include a cover page entitled "Service Agreement" or "Installation Agreement", as applicable, and other attachments. These cover pages and other attachments are incorporated into this Agreement by this reference

4.3. **PROFESSIONAL AND SUBSCRIPTION SERVICES.** If Customer purchases professional or subscription Services as part of the Solution, additional or different terms specific to such Service will be included in the applicable Addendum and will apply to those Services. Customer may purchase additional professional or subscription services by issuing a purchase order referencing this Agreement and Motorola's proposal for such additional services.

4.4. Any information in the form of specifications, drawings, reprints, technical information or otherwise furnished to Customer in providing Services under this Agreement or Motorola data viewed, accessed, will remain Motorola's property, will be deemed proprietary, Confidential Information. This Confidential Information will be promptly returned at Motorola's request.

4.5. **TOOLS.** All tools, equipment, dies, gauges, models, drawings or other materials paid for or furnished by Motorola for the purpose of providing Services under this Agreement will be and remain the sole property of Motorola. Customer will safeguard all such property while it is in Customer's custody or control, be liable for any loss or damage to this property, and return it to Motorola upon request. This property will be held by Customer for Motorola's use without charge and may be removed from Customer's premises by Motorola at any time without restriction. Upon termination of the contract for any reason, Customer shall return to Motorola all equipment delivered to Customer.

4.6. **COVENANT NOT TO EMPLOY.** During the term of this Agreement and continuing for a period of two (2) years thereafter, Customer will not hire, engage on contract, solicit the employment of, or recommend employment to any third party of any employee of Motorola or its subcontractors without the prior written authorization of Motorola. This provision applies only to those employees of Motorola or its subcontractors who are responsible for rendering Services under this Agreement. If this provision is found to be overly broad under applicable law, it will be modified as necessary to conform to applicable law.

4.7. **CUSTOMER OBLIGATIONS.** If the applicable Statement of Work or Addendum contains assumptions that affect the Services or Deliverables, Customer will verify that they are accurate and complete. Any information that Customer provides to Motorola concerning the Services or Deliverables will be accurate and complete in all material respects. Customer will make timely decisions and obtain any required management approvals that are reasonably necessary for Motorola to perform the Services and its other duties under this Agreement. Unless the Statement of Work states the contrary, Motorola may rely upon and is not required to evaluate, confirm, reject, modify, or provide advice concerning any assumptions and Customer-provided information, decisions and approvals described in this paragraph.

4.8. **ASSUMPTIONS.** If any assumptions or conditions contained in this Agreement, applicable Addenda or Statements of Work prove to be incorrect or if Customer's obligations are not performed, Motorola's ability to perform under this Agreement may be impacted and changes to the Contract Price, subscription fees, project schedule, Deliverables, or other changes may be necessary.

4.9. **NON-PRECLUSION.** If, as a result of the Services performed under this Agreement, Motorola recommends that Customer purchase products or other services, nothing in this Agreement precludes Motorola from participating in a future competitive bidding process or otherwise offering or selling the recommended products or other services to Customer. Customer represents that this paragraph does not violate its procurement or other laws, regulations, or policies.

4.10. **PROPRIETARY MATERIALS.** Customer acknowledges that Motorola may use and/or provide Customer with access to Proprietary Materials and Derivative Proprietary Materials. The Proprietary Materials and the Derivative Proprietary Materials are the sole and exclusive property of Motorola and Motorola retains all right, title and interest in and to the Proprietary Materials and Derivative Proprietary Materials.

4.11. **ADDITIONAL SERVICES.** Any services performed by Motorola outside the scope of this Agreement at the direction of Customer will be considered to be additional Services which are subject to additional charges. Any agreement to perform additional Services will be reflected in a written and executed change order, Addendum or amendment to this Agreement.

## **Section 5      PERFORMANCE SCHEDULE**

The Parties will perform their respective responsibilities in accordance with the Performance Schedule. By executing this Agreement, Customer authorizes Motorola to proceed with contract performance.

## **Section 6      CONTRACT PRICE, PAYMENT AND INVOICING**

6.1. Customer affirms that a purchase order or notice to proceed is not required for contract performance or for subsequent years of service, if any, and that sufficient funds have been appropriated in accordance with applicable law. The Customer will pay all invoices as received from Motorola and any changes in scope will be subject to the change order process as described in this Agreement. At the time of execution of this Agreement, the Customer will provide all necessary reference information to include on invoices for payment in accordance with this Agreement.

6.2. **CONTRACT PRICE.** The Contract Price in U.S. dollars is \$\_\_\_\_\_. If applicable, a pricing summary is included with the Payment schedule in Exhibit B. Motorola has priced the Services, Software, and Equipment as an integrated System. A change in Software or Equipment quantities, or Services, may affect the overall Contract Price, including discounts if applicable. Fees for professional, SUA, and/or subscription services which are not included in the Contract Price may be listed in Exhibit B, the pricing pages of the proposal, or the applicable Addendum.

6.3. **INVOICING AND PAYMENT.** Motorola will submit invoices to Customer according to the Payment

schedule in Exhibit B. Invoices will be mailed or emailed to Customer pursuant to Section 6.5, Invoicing and Shipping Addresses. Except for a payment that is due on the Effective Date, Customer will make payments to Motorola within thirty (30) days after the date of each invoice. Customer will make payments when due in the form of a wire transfer, check, or cashier's check from a U.S. financial institution. Overdue invoices will bear simple interest at the maximum allowable rate. For reference, the Federal Tax Identification Number for Motorola is 36-1115800.

6.4. FREIGHT, TITLE, AND RISK OF LOSS. Motorola will pre-pay and add all freight charges to the invoices. Title and risk of loss to the Equipment will pass to Customer upon shipment. Title to Software will not pass to Customer at any time. Motorola will pack and ship all Equipment in accordance with good commercial practices.

6.5. INVOICING AND SHIPPING ADDRESSES. Invoices will be sent to the Customer at the following address:

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_

E-INVOICE. To receive invoices via email:

Customer Account Number: \_\_\_\_\_  
Customer Accounts Payable Email: \_\_\_\_\_  
Customer CC(optional) Email: \_\_\_\_\_

The address which is the ultimate destination where the Equipment will be delivered to Customer is:

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

The Equipment will be shipped to the Customer at the following address (insert if this information is known):

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_

Customer may change this information by giving written notice to Motorola.

## **Section 7 SITES AND SITE CONDITIONS**

7.1. ACCESS TO SITES. In addition to its responsibilities described elsewhere in this Agreement, Customer will provide a designated project manager; all necessary construction and building permits, zoning variances, licenses, and any other approvals that are necessary to develop or use the sites and mounting locations; and access to the worksites or vehicles identified in the Technical and Implementation Documents as reasonably requested by Motorola so that it may perform its duties in accordance with the Performance Schedule and Statement of Work. If the Statement of Work so indicates, Motorola may assist Customer in the local building permit process.

7.2. SITE CONDITIONS. Customer will ensure that all work sites it provides will be safe, secure, and in compliance with all applicable industry and OSHA standards. To the extent applicable and unless the Statement of Work states to the contrary, Customer will ensure that these work sites have adequate: physical space; air conditioning and other environmental conditions; adequate and appropriate electrical power outlets, distribution, equipment and connections; and adequate telephone or other communication lines (including modem access and adequate interfacing networking capabilities), all for the installation, use and maintenance of the System. Before installing the Equipment or Software at a work site, Motorola may inspect the work site and advise Customer of any apparent deficiencies or non-conformities with the requirements of this Section. This Agreement is predicated upon normal soil conditions as defined by the version of E.I.A. standard RS-222 in effect on the Effective Date.

7.3. SITE ISSUES. If a Party determines that the sites identified in the Technical and Implementation Documents are no longer available or desired, or if subsurface, structural, adverse environmental or latent conditions at any site differ from those indicated in the Technical and Implementation Documents, the Parties will promptly investigate the conditions and will select replacement sites or adjust the installation plans and specifications as necessary. If change in sites or adjustment to the installation plans and specifications causes a change in the cost or time to perform, the Parties will equitably amend the Contract Price, Performance Schedule, or both, by a change order.

## **Section 8 TRAINING**

Any training to be provided by Motorola to Customer will be described in the applicable Statement of Work. Customer will notify Motorola immediately if a date change for a scheduled training program is required. If Motorola incurs additional costs because Customer reschedules a training program less than thirty (30) days before its scheduled start date, Motorola may recover these additional costs.

## **Section 9 SYSTEM ACCEPTANCE**

9.1. COMMENCEMENT OF ACCEPTANCE TESTING. Motorola will provide to Customer at least ten (10) days notice before the Acceptance Tests commence. System testing will occur only in accordance with the Acceptance Test Plan.

9.2. SYSTEM ACCEPTANCE. System Acceptance will occur upon successful completion of the Acceptance Tests. Upon System Acceptance, the Parties will memorialize this event by promptly executing a System Acceptance Certificate. If the Acceptance Test Plan includes separate tests for individual Subsystems or phases of the System, acceptance of the individual Subsystem or phase will occur upon the successful completion of the Acceptance Tests for the Subsystem or phase, and the Parties will promptly execute an acceptance certificate for the Subsystem or phase. If Customer believes the System has failed the completed Acceptance Tests, Customer will provide to Motorola a written notice that includes the specific details of the failure. If Customer does not provide to Motorola a failure notice within thirty (30) days after completion of the Acceptance Tests, System Acceptance will be deemed to have occurred as of the completion of the Acceptance Tests. Minor omissions or variances in the System that do not materially impair the operation of the System as a whole will not postpone System Acceptance or Subsystem acceptance, but will be corrected according to a mutually agreed schedule.

9.3. BENEFICIAL USE. Customer acknowledges that Motorola's ability to perform its implementation and testing responsibilities may be impeded if Customer begins using the System before System Acceptance. Therefore, Customer will not commence Beneficial Use before System Acceptance without Motorola's prior written authorization, which will not be unreasonably withheld. Motorola is not responsible for System performance deficiencies that occur during unauthorized Beneficial Use. Upon commencement of Beneficial Use, Customer assumes responsibility for the use and operation of the System.

9.4. FINAL PROJECT ACCEPTANCE. Final Project Acceptance will occur after System Acceptance when all deliverables and other work have been completed. When Final Project Acceptance occurs, the parties will promptly memorialize this final event by so indicating on the System Acceptance Certificate.

## **Section 10 REPRESENTATIONS AND WARRANTIES**

10.1. SYSTEM FUNCTIONALITY. Motorola represents that the System will perform in accordance with the Specifications in all material respects. Upon System Acceptance or Beneficial Use, whichever occurs first, this System functionality representation is fulfilled. Motorola is not responsible for System performance deficiencies that are caused by ancillary equipment not furnished by Motorola which is attached to or used in connection with the System or for reasons or parties beyond Motorola's control, such as natural causes; the construction of a building that adversely affects the microwave path reliability or radio frequency (RF) coverage; the addition of frequencies at System sites that cause RF interference or intermodulation; or Customer changes to load usage or configuration outside the Specifications.

10.2. EQUIPMENT WARRANTY. During the Warranty Period, Motorola warrants that the Equipment under normal use and service will be free from material defects in materials and workmanship. If System Acceptance is delayed beyond six (6) months after shipment of the Equipment by events or causes beyond Motorola's control, this warranty expires eighteen (18) months after the shipment of the Equipment.

10.3. SOFTWARE WARRANTY. Except as described in the SwSP and unless otherwise stated in the Software License Agreement, during the Warranty Period, Motorola warrants the Software in accordance with the warranty terms set forth in the Software License Agreement and the provisions of this Section that are applicable to the Software. If System Acceptance is delayed beyond six (6) months after shipment of the Motorola Software by events or causes beyond Motorola's control, this warranty expires eighteen (18) months after the shipment of the Motorola Software. **Nothing in this Warranty provision is intended to conflict or modify the Software Support Policy. In the event of an ambiguity or conflict between the Software Warranty and Software Support Policy, the Software Support Policy governs.**

10.4. EXCLUSIONS TO EQUIPMENT AND SOFTWARE WARRANTIES. These warranties do not apply to: (i) defects or damage resulting from: use of the Equipment or Software in other than its normal, customary, and authorized manner; accident, liquids, neglect, or acts of God; testing, maintenance, disassembly, repair, installation, alteration, modification, or adjustment not provided or authorized in writing by Motorola; Customer's failure to comply with all applicable industry and OSHA standards; (ii) breakage of or damage to antennas unless caused directly by defects in material or workmanship; (iii) Equipment that has had the serial number removed or made illegible; (iv) batteries (because they carry their own separate limited warranty) or consumables; (v) freight costs to ship Equipment to the repair depot; (vi) scratches or other cosmetic damage to Equipment surfaces that does not affect the operation of the Equipment; and (vii) normal or customary wear and tear.

10.5. SERVICE WARRANTY. During the Warranty Period, Motorola warrants that the Services will be provided in a good and workmanlike manner and will conform in all material respects to the applicable Statement of Work. Services will be free of defects in materials and workmanship for a period of ninety (90) days from the date the performance of the Services are completed. Customer acknowledges that the Deliverables may contain recommendations, suggestions or advice from Motorola to Customer (collectively, "recommendations"). Motorola makes no warranties concerning those recommendations, and Customer alone accepts responsibility for choosing whether and how to implement the recommendations and the results to be realized from implementing them.

10.6. WARRANTY CLAIMS. To assert a warranty claim, Customer must notify Motorola in writing of the claim before the expiration of the Warranty Period. Upon receipt of this notice, Motorola will investigate the warranty claim. If this investigation confirms a valid Equipment or Software warranty claim, Motorola will (at its option and at no additional charge to Customer) repair the defective Equipment or Motorola Software, replace it with the same or equivalent product, or refund the price of the defective Equipment or Motorola Software. These actions will be the full extent of Motorola's liability for the warranty claim. In the event of a valid Services warranty claim, Customer's sole remedy is to require Motorola to re-perform the non-conforming Service or to refund, on a pro-rata basis, the fees paid for the non-conforming Service. If this investigation indicates the warranty claim is not valid, then Motorola may invoice Customer for responding to the claim on a time and materials basis using Motorola's then current labor rates. Repaired or replaced product is warranted for the balance of the original applicable warranty period. All replaced products or parts will become the property of Motorola.

10.7. ORIGINAL END USER IS COVERED. These express limited warranties are extended by Motorola to the original user purchasing the System or Services for commercial, industrial, or governmental use only, and are not assignable or transferable.

10.8. DISCLAIMER OF OTHER WARRANTIES. THESE WARRANTIES ARE THE COMPLETE WARRANTIES FOR THE EQUIPMENT AND MOTOROLA SOFTWARE PROVIDED UNDER THIS AGREEMENT AND ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES. MOTOROLA DISCLAIMS ALL

OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE.

## **Section 11 DELAYS**

11.1. **FORCE MAJEURE.** Neither Party will be liable for its non-performance or delayed performance if caused by a Force Majeure. A Party that becomes aware of a Force Majeure that will significantly delay performance will notify the other Party promptly (but in no event later than fifteen days) after it discovers the Force Majeure. If a Force Majeure occurs, the Parties will execute a change order to extend the Performance Schedule or applicable Addenda for a time period that is reasonable under the circumstances.

11.2. **PERFORMANCE SCHEDULE DELAYS CAUSED BY CUSTOMER.** If Customer (including its other contractors) delays the Performance Schedule, it will make the promised payments according to the Payment schedule as if no delay occurred; and the Parties will execute a change order to extend the Performance Schedule and, if requested, compensate Motorola for all reasonable charges incurred because of the delay. Delay charges may include costs incurred by Motorola or its subcontractors for additional freight, warehousing and handling of Equipment; extension of the warranties; travel; suspending and re-mobilizing the work; additional engineering, project management, and standby time calculated at then current rates; and preparing and implementing an alternative implementation plan.

## **Section 12 DISPUTES**

The Parties will use the following procedure to address any dispute arising under this Agreement (a "Dispute").

12.1. **GOVERNING LAW.** This Agreement will be governed by and construed in accordance with the laws of the State in which the System is installed.

12.2. **NEGOTIATION.** Either Party may initiate the Dispute resolution procedures by sending a notice of Dispute ("Notice of Dispute"). The Parties will attempt to resolve the Dispute promptly through good faith negotiations including 1) timely escalation of the Dispute to executives who have authority to settle the Dispute and who are at a higher level of management than the persons with direct responsibility for the matter and 2) direct communication between the executives. If the Dispute has not been resolved within ten (10) days from the Notice of Dispute, the Parties will proceed to mediation.

12.3. **MEDIATION.** The Parties will choose an independent mediator within thirty (30) days of a notice to mediate from either Party ("Notice of Mediation"). Neither Party may unreasonably withhold consent to the selection of a mediator. If the Parties are unable to agree upon a mediator, either Party may request that American Arbitration Association nominate a mediator. Each Party will bear its own costs of mediation, but the Parties will share the cost of the mediator equally. Each Party will participate in the mediation in good faith and will be represented at the mediation by a business executive with authority to settle the Dispute.

12.4. **LITIGATION, VENUE and JURISDICTION.** If a Dispute remains unresolved for sixty (60) days after receipt of the Notice of Mediation, either Party may then submit the Dispute to a court of competent jurisdiction in the state in which the System is installed. Each Party irrevocably agrees to submit to the exclusive jurisdiction of the courts in such state over any claim or matter arising under or in connection with this Agreement.

12.5. **CONFIDENTIALITY.** All communications pursuant to subsections 12.2 and 12.3 will be treated as compromise and settlement negotiations for purposes of applicable rules of evidence and any additional confidentiality protections provided by applicable law. The use of these Dispute resolution procedures will not be construed under the doctrines of laches, waiver or estoppel to affect adversely the rights of either Party.

## **Section 13      DEFAULT AND TERMINATION**

13.1. **DEFAULT BY A PARTY.** If either Party fails to perform a material obligation under this Agreement, the other Party may consider the non-performing Party to be in default (unless a Force Majeure causes the failure) and may assert a default claim by giving the non-performing Party a written and detailed notice of default. Except for a default by Customer for failing to pay any amount when due under this Agreement which must be cured immediately, the defaulting Party will have thirty (30) days after receipt of the notice of default to either cure the default or, if the default is not curable within thirty (30) days, provide a written cure plan. The defaulting Party will begin implementing the cure plan immediately after receipt of notice by the other Party that it approves the plan. If Customer is the defaulting Party, Motorola may stop work on the project until it approves the Customer's cure plan.

13.2. **FAILURE TO CURE.** If a defaulting Party fails to cure the default as provided above in Section 13.1, unless otherwise agreed in writing, the non-defaulting Party may terminate any unfulfilled portion of this Agreement. In the event of termination for default, the defaulting Party will promptly return to the non-defaulting Party any of its Confidential Information. If Customer is the non-defaulting Party, terminates this Agreement as permitted by this Section, and completes the System through a third Party, Customer may as its exclusive remedy recover from Motorola reasonable costs incurred to complete the System to a capability not exceeding that specified in this Agreement less the unpaid portion of the Contract Price. Customer will mitigate damages and provide Motorola with detailed invoices substantiating the charges. In the event Customer elects to terminate this Agreement for any reason other than default, Customer shall pay Motorola for the conforming Equipment and/or Software delivered and all services performed.

## **Section 14      INDEMNIFICATION**

14.1. **GENERAL INDEMNITY BY Motorola.** Motorola will indemnify and hold Customer harmless from any and all liability, expense, judgment, suit, cause of action, or demand for personal injury, death, or direct damage to tangible property which may accrue against Customer to the extent it is caused by the negligence of Motorola, its subcontractors, or their employees or agents, while performing their duties under this Agreement, if Customer gives Motorola prompt, written notice of any claim or suit. Customer will cooperate with Motorola in its defense or settlement of the claim or suit. This Section sets forth the full extent of Motorola's general indemnification of Customer from liabilities that are in any way related to Motorola's performance under this Agreement.

14.2. **GENERAL INDEMNITY BY CUSTOMER.** Customer will indemnify and hold Motorola harmless from any and all liability, expense, judgment, suit, cause of action, or demand for personal injury, death, or direct damage to tangible property which may accrue against Motorola to the extent it is caused by the negligence of Customer, its other contractors, or their employees or agents, while performing their duties under this Agreement, if Motorola gives Customer prompt, written notice of any the claim or suit. Motorola will cooperate with Customer in its defense or settlement of the claim or suit. This Section sets forth the full extent of Customer's general indemnification of Motorola from liabilities that are in any way related to Customer's performance under this Agreement.

14.3. **PATENT AND COPYRIGHT INFRINGEMENT.**

14.3.1. Motorola will defend at its expense any suit brought against Customer to the extent it is based on a third-party claim alleging that the Equipment manufactured by Motorola or the Motorola Software ("Motorola Product") directly infringes a United States patent or copyright ("Infringement Claim"). Motorola's duties to defend and indemnify are conditioned upon: Customer promptly notifying Motorola in writing of the Infringement Claim; Motorola having sole control of the defense of the suit and all negotiations for its settlement or compromise; and Customer providing to Motorola cooperation and, if requested by Motorola, reasonable assistance in the defense of the Infringement Claim. In addition to Motorola's obligation to defend, and subject to the same conditions, Motorola will pay all damages finally awarded against Customer by a court of competent jurisdiction for an Infringement Claim or agreed to, in writing, by Motorola in

settlement of an Infringement Claim.

14.3.2 If an Infringement Claim occurs, or in Motorola's opinion is likely to occur, Motorola may at its option and expense: (a) procure for Customer the right to continue using the Motorola Product; (b) replace or modify the Motorola Product so that it becomes non-infringing while providing functionally equivalent performance; or (c) accept the return of the Motorola Product and grant Customer a credit for the Motorola Product, less a reasonable charge for depreciation. The depreciation amount will be calculated based upon generally accepted accounting standards.

14.3.3 Motorola will have no duty to defend or indemnify for any Infringement Claim that is based upon: (a) the combination of the Motorola Product with any software, apparatus or device not furnished by Motorola; (b) the use of ancillary equipment or software not furnished by Motorola and that is attached to or used in connection with the Motorola Product; (c) Motorola Product designed or manufactured in accordance with Customer's designs, specifications, guidelines or instructions, if the alleged infringement would not have occurred without such designs, specifications, guidelines or instructions; (d) a modification of the Motorola Product by a party other than Motorola; (e) use of the Motorola Product in a manner for which the Motorola Product was not designed or that is inconsistent with the terms of this Agreement; or (f) the failure by Customer to install an enhancement release to the Motorola Software that is intended to correct the claimed infringement. In no event will Motorola's liability resulting from its indemnity obligation to Customer extend in any way to royalties payable on a per use basis or the Customer's revenues, or any royalty basis other than a reasonable royalty based upon revenue derived by Motorola from Customer from sales or license of the infringing Motorola Product.

14.3.4. This Section 14 provides Customer's sole and exclusive remedies and Motorola's entire liability in the event of an Infringement Claim. Customer has no right to recover and Motorola has no obligation to provide any other or further remedies, whether under another provision of this Agreement or any other legal theory or principle, in connection with an Infringement Claim. In addition, the rights and remedies provided in this Section 14 are subject to and limited by the restrictions set forth in Section 15.

## **Section 15      LIMITATION OF LIABILITY**

Except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, indemnification, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of the Equipment, Software, or implementation and other one-time Services with respect to which losses or damages are claimed. With respect to all subscription or other ongoing Services and unless as otherwise provided under the applicable Addenda, Motorola's total liability will be limited to the direct damages recoverable under law, but not to exceed the price of twelve (12) months of Services preceding the incident giving rise to the claim. **ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS, INCONVENIENCE, LOSS OF USE, LOSS TIME, DATA, GOODWILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT, THE SALE OR USE OF THE EQUIPMENT OR SOFTWARE, OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT.** This limitation of liability provision survives the expiration or termination of the Agreement and applies notwithstanding any contrary provision. No action for contract breach or otherwise relating to the transactions contemplated by this Agreement may be brought more than one (1) year after the accrual of the cause of action, except for money due upon an open account.

## **Section 16      CONFIDENTIALITY AND PROPRIETARY RIGHTS**

### **16.1.      CONFIDENTIAL INFORMATION.**

16.1.1. Each party is a disclosing party ("Discloser") and a receiving party ("Recipient") under this

Agreement. All Deliverables will be deemed to be Motorola's Confidential Information. During the term of this Agreement and for a period of three (3) years from the expiration or termination of this Agreement, Recipient will (i) not disclose Confidential Information to any third party; (ii) restrict disclosure of Confidential Information to only those employees (including, but not limited to, employees of any wholly owned subsidiary, a parent company, any other wholly owned subsidiaries of the same parent company), agents or consultants who must be directly involved with the Confidential Information for the purpose and who are bound by confidentiality terms substantially similar to those in this Agreement; (iii) not copy, reproduce, reverse engineer, decompile, or disassemble any Confidential Information; (iv) use the same degree of care as for its own information of like importance, but at least use reasonable care, in safeguarding against disclosure of Confidential Information; (v) promptly notify Discloser upon discovery of any unauthorized use or disclosure of the Confidential Information and take reasonable steps to regain possession of the Confidential Information and prevent further unauthorized actions or other breach of this Agreement; and (vi) only use the Confidential Information as needed to fulfill this Agreement.

16.1.2. Recipient is not obligated to maintain as confidential, Confidential Information that Recipient can demonstrate by documentation (i) is now available or becomes available to the public without breach of this agreement; (ii) is explicitly approved for release by written authorization of Discloser; (iii) is lawfully obtained from a third party or parties without a duty of confidentiality; (iv) is known to the Recipient prior to such disclosure; or (v) is independently developed by Recipient without the use of any of Discloser's Confidential Information or any breach of this Agreement.

16.1.3. All Confidential Information remains the property of the Discloser and will not be copied or reproduced without the express written permission of the Discloser, except for copies that are absolutely necessary in order to fulfill this Agreement. Within ten (10) days of receipt of Discloser's written request, Recipient will return all Confidential Information to Discloser along with all copies and portions thereof, or certify in writing that all such Confidential Information has been destroyed. However, Recipient may retain one (1) archival copy of the Confidential Information that it may use only in case of a dispute concerning this Agreement. No license, express or implied, in the Confidential Information is granted other than to use the Confidential Information in the manner and to the extent authorized by this Agreement. The Discloser warrants that it is authorized to disclose any Confidential Information it discloses pursuant to this Agreement.

16.2. PRESERVATION OF MOTOROLA'S PROPRIETARY RIGHTS. Motorola, the third party manufacturer of any Equipment, and the copyright owner of any Non-Motorola Software own and retain all of their respective Proprietary Rights in the Equipment and Software, and nothing in this Agreement is intended to restrict their Proprietary Rights. All intellectual property developed, originated, or prepared by Motorola in connection with providing to Customer the Equipment, Software, or related services remain vested exclusively in Motorola, and this Agreement does not grant to Customer any shared development rights of intellectual property. Except as explicitly provided in the Software License Agreement, Motorola does not grant to Customer, either directly or by implication, estoppel, or otherwise, any right, title or interest in Motorola's Proprietary Rights. Customer will not modify, disassemble, peel components, decompile, otherwise reverse engineer or attempt to reverse engineer, derive source code or create derivative works from, adapt, translate, merge with other software, reproduce, distribute, sublicense, sell or export the Software, or permit or encourage any third party to do so. The preceding sentence does not apply to Open Source Software which is governed by the standard license of the copyright owner.

16.3 VOLUNTARY DISCLOSURE. Except as required to fulfill its obligations under this Agreement, Motorola will have no obligation to provide Customer with access to its Confidential Information and/or proprietary information. Under no circumstances will Motorola be required to provide any data related to cost and pricing.

#### 16.4 DATA AND FEEDBACK.

16.4.1 To the extent permitted by law, Customer owns all right, title and interest in System Data created solely by it or its agents (hereafter, "Customer Data"), and grants to Motorola the right to use, host, cache,

store, reproduce, copy, modify, combine, analyze, create derivatives from, communicate, transmit, publish, display, and distribute such Customer Data.

16.4.2 Motorola owns all right, title and interest in data resulting from System Data that is or has been transformed, altered, processed, aggregated, correlated or operated on (hereafter, "Derivative Data").

16.4.3 Any Feedback given by Customer is and will be entirely voluntary and, even if designated as confidential, will not create any confidentiality obligation for Motorola. Motorola will be free to use, reproduce, license or otherwise distribute and exploit the Feedback without any obligation to Customer. Customer acknowledges that Motorola's receipt of the Feedback does not imply or create recognition by Motorola of either the novelty or originality of any idea. The parties further agree that all fixes, modifications and improvements made to Motorola products or services conceived of or made by Motorola that are based, either in whole or in part, on the Feedback are the exclusive property of Motorola and all right, title and interest in and to such fixes, modifications or improvements to the Motorola product or service will vest solely in Motorola.

## **Section 17 GENERAL**

17.1. TAXES. The Contract Price does not include any excise, sales, lease, use, property, or other taxes, assessments or duties, all of which will be paid by Customer except as exempt by law. If Motorola is required to pay any of these taxes, Motorola will send an invoice to Customer and Customer will pay to Motorola the amount of the taxes (including any interest and penalties) within thirty (30) days after the date of the invoice. Customer will be solely responsible for reporting the Equipment for personal property tax purposes, and Motorola will be solely responsible for reporting taxes on its income or net worth.

17.2. ASSIGNABILITY AND SUBCONTRACTING. Except as provided herein, neither Party may assign this Agreement or any of its rights or obligations hereunder without the prior written consent of the other Party, which consent will not be unreasonably withheld. Any attempted assignment, delegation, or transfer without the necessary consent will be void. Notwithstanding the foregoing, Motorola may assign this Agreement to any of its affiliates or its right to receive payment without the prior consent of Customer. In addition, in the event Motorola separates one or more of its businesses (each a "Separated Business"), whether by way of a sale, establishment of a joint venture, spin-off or otherwise (each a "Separation Event"), Motorola may, without the prior written consent of the other Party and at no additional cost to Motorola, assign this Agreement such that it will continue to benefit the Separated Business and its affiliates (and Motorola and its affiliates, to the extent applicable) following the Separation Event. Motorola may subcontract any of the work, but subcontracting will not relieve Motorola of its duties under this Agreement.

17.3. WAIVER. Failure or delay by either Party to exercise a right or power under this Agreement will not be a waiver of the right or power. For a waiver of a right or power to be effective, it must be in a writing signed by the waiving Party. An effective waiver of a right or power will not be construed as either a future or continuing waiver of that same right or power, or the waiver of any other right or power.

17.4. SEVERABILITY. If a court of competent jurisdiction renders any part of this Agreement invalid or unenforceable, that part will be severed and the remainder of this Agreement will continue in full force and effect.

17.5. INDEPENDENT CONTRACTORS. Each Party will perform its duties under this Agreement as an independent contractor. The Parties and their personnel will not be considered to be employees or agents of the other Party. Nothing in this Agreement will be interpreted as granting either Party the right or authority to make commitments of any kind for the other. This Agreement will not constitute, create, or be interpreted

as a joint venture, partnership or formal business organization of any kind.

17.6. HEADINGS AND SECTION REFERENCES. The section headings in this Agreement are inserted only for convenience and are not to be construed as part of this Agreement or as a limitation of the scope of the particular section to which the heading refers. This Agreement will be fairly interpreted in accordance with its terms and conditions and not for or against either Party.

17.7. NOTICES. Notices required under this Agreement to be given by one Party to the other must be in writing and either personally delivered or sent to the address provided by the other Party by certified mail, return receipt requested and postage prepaid (or by a recognized courier service, such as Federal Express, UPS, or DHL), or by facsimile with correct answerback received, and will be effective upon receipt.

17.8. COMPLIANCE WITH APPLICABLE LAWS. Each Party will comply with all applicable federal, state, and local laws, regulations and rules concerning the performance of this Agreement or use of the System. Customer will obtain and comply with all Federal Communications Commission ("FCC") licenses and authorizations required for the installation, operation and use of the System before the scheduled installation of the Equipment. Although Motorola might assist Customer in the preparation of its FCC license applications, neither Motorola nor any of its employees is an agent or representative of Customer in FCC or other matters.

17.9 FUTURE REGULATORY REQUIREMENTS. The Parties acknowledge and agree that this is an evolving technological area and therefore, laws and regulations regarding Services and use of Solution may change. Changes to existing Services or the Solution required to achieve regulatory compliance may be available for an additional fee. Any required changes may also impact the price for Services.

17.10. AUTHORITY TO EXECUTE AGREEMENT. Each Party represents that it has obtained all necessary approvals, consents and authorizations to enter into this Agreement and to perform its duties under this Agreement; the person executing this Agreement on its behalf has the authority to do so; upon execution and delivery of this Agreement by the Parties, it is a valid and binding contract, enforceable in accordance with its terms; and the execution, delivery, and performance of this Agreement does not violate any bylaw, charter, regulation, law or any other governing authority of the Party.

17.11. ADMINISTRATOR LEVEL ACCOUNT ACCESS. If applicable to the type of System purchased by Customer, Motorola will provide Customer with Administrative User Credentials. Customer agrees to only grant access to the Administrative User Credentials to those personnel with the training and experience to correctly use them. Customer is responsible for protecting Administrative User Credentials from disclosure and maintaining Credential validity by, among other things, updating passwords when required. Customer may be asked to provide valid Administrative User Credentials when in contact with Motorola System support personnel. Customer understands that changes made as the Administrative User can significantly impact the performance of the System. Customer agrees that it will be solely responsible for any negative impact on the System or its users by any such changes. System issues occurring as a result of changes made using the Administrative User Credentials may impact Motorola's ability to perform Services or other obligations under the Agreement. In such cases, a revision to the appropriate provisions of the Agreement, including the Statement of Work, may be necessary. To the extent Motorola provides assistance to correct any issues caused by or arising out of the use of or failure to maintain Administrative User Credentials, Motorola will be entitled to bill Customer and Customer will pay Motorola on a time and materials basis for resolving the issue.

17.12. SURVIVAL OF TERMS. The following provisions will survive the expiration or termination of this Agreement for any reason: Section 3.5 (Motorola Software); Section 3.6 (Non-Motorola Software); if any payment obligations exist, Sections 6.2 and 6.3 (Contract Price and Invoicing and Payment); Subsection 10.8 (Disclaimer of Implied Warranties); Section 12 (Disputes); Section 15 (Limitation of Liability); and Section 16 (Confidentiality and Proprietary Rights); and all of the General provisions in Section 17.

17.13. ENTIRE AGREEMENT. This Agreement, including all Exhibits, constitutes the entire agreement of the Parties regarding the subject matter of the Agreement and supersedes all previous agreements, proposals, and understandings, whether written or oral, relating to this subject matter. This Agreement may be executed in multiple counterparts, and shall have the same legal force and effect as if the Parties had executed it as a single document. The Parties may sign in writing, or by electronic signature, including by email. An electronic signature, or a facsimile copy or computer image, such as a PDF or tiff image, of a signature, shall be treated as and shall have the same effect as an original signature. In addition, an electronic signature, a true and correct facsimile copy or computer image of this Agreement shall be treated as and shall have the same effect as an original signed copy of this document. This Agreement may be amended or modified only by a written instrument signed by authorized representatives of both Parties. The preprinted terms and conditions found on any Customer purchase or purchase order, acknowledgment or other form will not be considered an amendment or modification of this Agreement, even if a representative of each Party signs that document.

The Parties hereby enter into this Agreement as of the Effective Date.

**Motorola Solutions, Inc.**

**Customer**

By: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

## **Exhibit A**

### **MOTOROLA SOFTWARE LICENSE AGREEMENT**

This Exhibit A Motorola Software License Agreement ("Agreement") is between Motorola Solutions, Inc., ("Motorola"), and \_\_\_\_\_ ("Licensee").

For good and valuable consideration, the parties agree as follows:

#### **Section 1      DEFINITIONS**

1.1      "Designated Products" means products provided by Motorola to Licensee with which or for which the Software and Documentation is licensed for use.

1.2      "Documentation" means product and software documentation that specifies technical and performance features and capabilities, and the user, operation and training manuals for the Software (including all physical or electronic media upon which such information is provided).

1.3      "Open Source Software" means software with either freely obtainable source code, license for modification, or permission for free distribution.

1.4      "Open Source Software License" means the terms or conditions under which the Open Source Software is licensed.

1.5      "Primary Agreement" means the agreement to which this exhibit is attached.

1.6      "Security Vulnerability" means a flaw or weakness in system security procedures, design, implementation, or internal controls that could be exercised (accidentally triggered or intentionally exploited) and result in a security breach such that data is compromised, manipulated or stolen or the system damaged.

1.7      "Software" (i) means proprietary software in object code format, and adaptations, translations, de-compilations, disassemblies, emulations, or derivative works of such software; (ii) means any modifications, enhancements, new versions and new releases of the software provided by Motorola; and (iii) may contain one or more items of software owned by a third party supplier. The term "Software" does not include any third party software provided under separate license or third party software not licensable under the terms of this Agreement.

#### **Section 2      SCOPE**

Motorola and Licensee enter into this Agreement in connection with Motorola's delivery of certain proprietary software or products containing embedded or pre-loaded proprietary software, or both. This Agreement contains the terms and conditions of the license Motorola is providing to Licensee, and Licensee's use of the proprietary software and affiliated documentation.

#### **Section 3      GRANT OF LICENSE**

3.1.      Subject to the provisions of this Agreement and the payment of applicable license fees, Motorola grants to Licensee a personal, limited, non-transferable (except as permitted in Section 7) and non-exclusive license under Motorola's copyrights and Confidential Information (as defined in the Primary Agreement) embodied in the Software to use the Software, in object code form, and the Documentation solely in connection with Licensee's use of the Designated Products. This Agreement does not grant any rights to source code.

3.2. If the Software licensed under this Agreement contains or is derived from Open Source Software, the terms and conditions governing the use of such Open Source Software are in the Open Source Software Licenses of the copyright owner and not this Agreement. If there is a conflict between the terms and conditions of this Agreement and the terms and conditions of the Open Source Software Licenses governing Licensee's use of the Open Source Software, the terms and conditions of the license grant of the applicable Open Source Software Licenses will take precedence over the license grants in this Agreement. If requested by Licensee, Motorola will use commercially reasonable efforts to: (i) determine whether any Open Source Software is provided under this Agreement; and (ii) identify the Open Source Software (or specify where that license may be found).

3.3 TO THE EXTENT, IF ANY, THAT THERE IS A SEPARATE LICENSE AGREEMENT PACKAGED WITH, OR PROVIDED ELECTRONICALLY WITH, A PARTICULAR PRODUCT THAT BECOMES EFFECTIVE ON AN ACT OF ACCEPTANCE BY THE END USER, THEN THAT AGREEMENT SUPERSEDES THE SOFTWARE LICENSE AGREEMENT AS TO THE END USER OF EACH SUCH PRODUCT.

## **Section 4 LIMITATIONS ON USE**

4.1. Licensee may use the Software only for Licensee's internal business purposes and only in accordance with the Documentation. Any other use of the Software is strictly prohibited. Without limiting the general nature of these restrictions, Licensee will not make the Software available for use by third parties on a "time sharing," "application service provider," or "service bureau" basis or for any other similar commercial rental or sharing arrangement.

4.2. Licensee will not, and will not allow or enable any third party to: (i) reverse engineer, disassemble, peel components, decompile, reprogram or otherwise reduce the Software or any portion to a human perceptible form or otherwise attempt to recreate the source code; (ii) modify, adapt, create derivative works of, or merge the Software; (iii) copy, reproduce, distribute, lend, or lease the Software or Documentation to any third party, grant any sublicense or other rights in the Software or Documentation to any third party, or take any action that would cause the Software or Documentation to be placed in the public domain; (iv) remove, or in any way alter or obscure, any copyright notice or other notice of Motorola's proprietary rights; (v) provide, copy, transmit, disclose, divulge or make the Software or Documentation available to, or permit the use of the Software by any third party or on any machine except as expressly authorized by this Agreement; or (vi) use, or permit the use of, the Software in a manner that would result in the production of a copy of the Software solely by activating a machine containing the Software. Licensee may make one copy of Software to be used solely for archival, back-up, or disaster recovery purposes; *provided that* Licensee may not operate that copy of the Software at the same time as the original Software is being operated. Licensee may make as many copies of the Documentation as it may reasonably require for the internal use of the Software.

4.3. Unless otherwise authorized by Motorola in writing, Licensee will not, and will not enable or allow any third party to: (i) install a licensed copy of the Software on more than one unit of a Designated Product; or (ii) copy onto or transfer Software installed in one unit of a Designated Product onto one other device. Licensee may temporarily transfer Software installed on a Designated Product to another device if the Designated Product is inoperable or malfunctioning, if Licensee provides written notice to Motorola of the temporary transfer and identifies the device on which the Software is transferred. Temporary transfer of the Software to another device must be discontinued when the original Designated Product is returned to operation and the Software must be removed from the other device. Licensee must provide prompt written notice to Motorola at the time temporary transfer is discontinued.

4.4 Licensee will maintain, during the term of this Agreement and for a period of two years thereafter, accurate records relating to this license grant to verify compliance with this Agreement. Motorola or an independent third party ("Auditor") may inspect Licensee's premises, books and records, upon reasonable prior notice to Licensee, during Licensee's normal business hours and subject to Licensee's facility and

security regulations. Motorola is responsible for the payment of all expenses and costs of the Auditor. Any information obtained by Motorola and the Auditor will be kept in strict confidence by Motorola and the Auditor and used solely for the purpose of verifying Licensee's compliance with the terms of this Agreement.

## **Section 5 OWNERSHIP AND TITLE**

Motorola, its licensors, and its suppliers retain all of their proprietary rights in any form in and to the Software and Documentation, including, but not limited to, all rights in patents, patent applications, inventions, copyrights, trademarks, trade secrets, trade names, and other proprietary rights in or relating to the Software and Documentation (including any corrections, bug fixes, enhancements, updates, modifications, adaptations, translations, de-compilations, disassemblies, emulations to or derivative works from the Software or Documentation, whether made by Motorola or another party, or any improvements that result from Motorola's processes or, provision of information services). No rights are granted to Licensee under this Agreement by implication, estoppel or otherwise, except for those rights which are expressly granted to Licensee in this Agreement. All intellectual property developed, originated, or prepared by Motorola in connection with providing the Software, Designated Products, Documentation or related services, remains vested exclusively in Motorola, and Licensee will not have any shared development or other intellectual property rights.

## **Section 6 LIMITED WARRANTY; DISCLAIMER OF WARRANTY**

6.1. Unless otherwise stated in the Primary Agreement, the commencement date and the term of the Software warranty will be a period of ninety (90) days from Motorola's shipment of the Software (the "Warranty Period"). If Licensee is not in breach of any of its obligations under this Agreement, Motorola warrants that the unmodified Software, when used properly and in accordance with the Documentation and this Agreement, will be free from a reproducible defect that eliminates the functionality or successful operation of a feature critical to the primary functionality or successful operation of the Software. Whether a defect occurs will be determined by Motorola solely with reference to the Documentation. Motorola does not warrant that Licensee's use of the Software or the Designated Products will be uninterrupted, error-free, completely free of Security Vulnerabilities, or that the Software or the Designated Products will meet Licensee's particular requirements. Motorola makes no representations or warranties with respect to any third party software included in the Software. Notwithstanding, any warranty provided by a copyright owner in its standard license terms will flow through to Licensee for third party software provided by Motorola.

6.2 Motorola's sole obligation to Licensee and Licensee's exclusive remedy under this warranty is to use reasonable efforts to remedy any material Software defect covered by this warranty. These efforts will involve either replacing the media or attempting to correct significant, demonstrable program or documentation errors or Security Vulnerabilities. If Motorola cannot correct the defect within a reasonable time, then at Motorola's option, Motorola will replace the defective Software with functionally-equivalent Software, license to Licensee substitute Software which will accomplish the same objective, or terminate the license and refund the Licensee's paid license fee.

6.3. Warranty claims are described in the Primary Agreement.

6.4. The express warranties set forth in this Section 6 are in lieu of, and Motorola disclaims, any and all other warranties (express or implied, oral or written) with respect to the Software or Documentation, including, without limitation, any and all implied warranties of condition, title, non-infringement, merchantability, or fitness for a particular purpose or use by Licensee (whether or not Motorola knows, has reason to know, has been advised, or is otherwise aware of any such purpose or use), whether arising by law, by reason of custom or usage of trade, or by course of dealing. In addition, Motorola disclaims any warranty to any person other than Licensee with respect to the Software or Documentation.

## **Section 7 TRANSFERS**

Licensee will not transfer the Software or Documentation to any third party without Motorola's prior written

consent. Motorola's consent may be withheld at its discretion and may be conditioned upon transferee paying all applicable license fees and agreeing to be bound by this Agreement. If the Designated Products are Motorola's radio products and Licensee transfers ownership of the Motorola radio products to a third party, Licensee may assign its right to use the Software (other than CPS and Motorola's FLASHport® software) which is embedded in or furnished for use with the radio products and the related Documentation; *provided* that Licensee transfers all copies of the Software and Documentation to the transferee, and Licensee and the transferee sign a transfer form to be provided by Motorola upon request, obligating the transferee to be bound by this Agreement.

## **Section 8      TERM AND TERMINATION**

8.1      Licensee's right to use the Software and Documentation will begin when the Primary Agreement is signed by both parties and will continue for the life of the Designated Products with which or for which the Software and Documentation have been provided by Motorola, unless Licensee breaches this Agreement, in which case this Agreement and Licensee's right to use the Software and Documentation may be terminated immediately upon notice by Motorola.

8.2      Within thirty (30) days after termination of this Agreement, Licensee must certify in writing to Motorola that all copies of the Software have been removed or deleted from the Designated Products and that all copies of the Software and Documentation have been returned to Motorola or destroyed by Licensee and are no longer in use by Licensee.

8.3      Licensee acknowledges that Motorola made a considerable investment of resources in the development, marketing, and distribution of the Software and Documentation and that Licensee's breach of this Agreement will result in irreparable harm to Motorola for which monetary damages would be inadequate. If Licensee breaches this Agreement, Motorola may terminate this Agreement and be entitled to all available remedies at law or in equity (including immediate injunctive relief and repossession of all non-embedded Software and associated Documentation unless Licensee is a Federal agency of the United States Government).

## **Section 9      Commercial Computer Software**

9.1 *This Section 9 only applies to U.S. Government end users.* The Software, Documentation and updates are commercial items as that term is defined at 48 C.F.R. Part 2.101, consisting of "commercial computer software" and "computer software documentation" as such terms are defined in 48 C.F.R. Part 252.227-7014(a)(1) and 48 C.F.R. Part 252.227-7014(a)(5), and used in 48 C.F.R. Part 12.212 and 48 C.F.R. Part 227.7202, as applicable. Consistent with 48 C.F.R. Part 12.212, 48 C.F.R. Part 252.227-7015, 48 C.F.R. Part 227.7202-1 through 227.7202-4, 48 C.F.R. Part 52.227-19, and other relevant sections of the Code of Federal Regulations, as applicable, the Software, Documentation and Updates are distributed and licensed to U.S. Government end users: (i) only as commercial items, and (ii) with only those rights as are granted to all other end users pursuant to the terms and conditions contained herein.

9.2      If Licensee is licensing Software for end use by the United States Government or a United States Government agency, Licensee may transfer such Software license, but only if: (i) Licensee transfers all copies of such Software and Documentation to such United States Government entity or interim transferee, and (ii) Licensee has first obtained from the transferee (if applicable) and ultimate end user an enforceable end user license agreement containing restrictions substantially identical to the ones contained in this Agreement. Except as stated in the foregoing, Licensee and any transferee(s) authorized by this subsection 9.2 may not otherwise use or transfer or make available any Motorola software to any third party nor permit any party to do so.

## **Section 10      CONFIDENTIALITY**

Licensee acknowledges that the Software and Documentation contain Motorola's valuable proprietary and Confidential Information and are Motorola's trade secrets, and that the provisions in the Primary Agreement

concerning Confidential Information apply.

## **Section 11      LIMITATION OF LIABILITY**

The Limitation of Liability provision is described in the Primary Agreement.

## **Section 12      NOTICES**

Notices are described in the Primary Agreement.

## **Section 13      GENERAL**

13.1.    COPYRIGHT NOTICES. The existence of a copyright notice on the Software will not be construed as an admission or presumption of publication of the Software or public disclosure of any trade secrets associated with the Software.

13.2.    COMPLIANCE WITH LAWS. Licensee acknowledges that the Software is subject to the laws and regulations of the United States and Licensee will comply with all applicable laws and regulations, including export laws and regulations of the United States. Licensee will not, without the prior authorization of Motorola and the appropriate governmental authority of the United States, in any form export or re-export, sell or resell, ship or reship, or divert, through direct or indirect means, any item or technical data or direct or indirect products sold or otherwise furnished to any person within any territory for which the United States Government or any of its agencies at the time of the action, requires an export license or other governmental approval. Violation of this provision is a material breach of this Agreement.

13.3 FUTURE REGULATORY REQUIREMENTS. The Parties acknowledge and agree that this is an evolving technological area and therefore, laws and regulations regarding Services and use of Solution may change. Changes to existing Services or the Solution required to achieve regulatory compliance may be available for an additional fee. Any required changes may also impact the price for Services.

13.4.    ASSIGNMENTS AND SUBCONTRACTING. Motorola may assign its rights or subcontract its obligations under this Agreement, or encumber or sell its rights in any Software, without prior notice to or consent of Licensee.

13.5.    GOVERNING LAW. This Agreement is governed by the laws of the United States to the extent that they apply and otherwise by the internal substantive laws of the State to which the Software is shipped if Licensee is a sovereign government entity, or the internal substantive laws of the State of Illinois if Licensee is not a sovereign government entity. The terms of the U.N. Convention on Contracts for the International Sale of Goods do not apply. In the event that the Uniform Computer Information Transaction Act, any version of this Act, or a substantially similar law (collectively "UCITA") becomes applicable to a party's performance under this Agreement, UCITA does not govern any aspect of this Agreement or any license granted under this Agreement, or any of the parties' rights or obligations under this Agreement. The governing law will be that in effect prior to the applicability of UCITA.

13.6.    THIRD PARTY BENEFICIARIES. This Agreement is entered into solely for the benefit of Motorola and Licensee. No third party has the right to make any claim or assert any right under this Agreement, and no third party is deemed a beneficiary of this Agreement. Notwithstanding the foregoing, any licensor or supplier of third party software included in the Software will be a direct and intended third party beneficiary of this Agreement.

13.7. SURVIVAL. Sections 4, 5, 6.4, 7, 8, 9, 10, 11 and 13 survive the termination of this Agreement.

13.8. ORDER OF PRECEDENCE. In the event of inconsistencies between this Exhibit and the Primary Agreement, the parties agree that this Exhibit prevails, only with respect to the specific subject matter of this Exhibit, and not the Primary Agreement or any other exhibit as it applies to any other subject matter.

13.9. SECURITY. Motorola uses reasonable means in the design and writing of its own Software and the acquisition of third party Software to limit Security Vulnerabilities. While no software can be guaranteed to be free from Security Vulnerabilities, if a Security Vulnerability is discovered, Motorola will take the steps set forth in Section 6 of this Agreement.

## **Exhibit B**

### **PAYMENT**

Except for a payment that is due on the Effective Date, Customer will make payments to Motorola within thirty (30) days after the date of each invoice. Customer will make payments when due in the form of a check, cashier's check, or wire transfer drawn on a U.S. financial institution. If Customer has purchased additional Professional or Subscription services, payment will be in accordance with the applicable addenda. Payment for the System purchase will be in accordance with the following milestones.

#### **System Purchase (excluding Subscribers, if applicable)**

- 1. 25% of the Contract Price due upon contract execution (due upon effective date);**
- 2. 60% of the Contract Price due upon shipment of equipment from Staging;**
- 3. 10% of the Contract Price due upon installation of equipment; and**
- 4. 5% of the Contract Price due upon Final Acceptance.**

**If Subscribers are purchased, 100% of the Subscriber Contract Price will be invoiced upon shipment (as shipped).**

Motorola shall make partial shipments of equipment and will request payment upon shipment of such equipment. In addition, Motorola shall invoice for installations completed on a site-by-site basis or when professional services are completed, when applicable. The value of the equipment shipped/services performed will be determined by the value shipped/services performed as a percentage of the total milestone value. Unless otherwise specified, contract discounts are based upon all items proposed and overall system package. For invoicing purposes only, discounts will be applied proportionately to the FNE and Subscriber equipment values to total contract price. Overdue invoices will bear simple interest at the maximum allowable rate by state law.

#### **For Lifecycle Support Plan and Subscription Based Services:**

**Motorola will invoice Customer annually in advance of each year of the plan.**

The chart below outlines the hourly labor rates for Motorola System Integration resources to be used. The staffing requirements shall be multiplied by the appropriate rate per resource in the table below. The hourly labor rates are fully burdened. The hourly rates per resource type and level are listed in Table 1.

	<b>Resource Types</b>			
<b>Levels</b>	<b>Project Management</b>	<b>System Engineering</b>	<b>System Technologist</b>	<b>Project Administration</b>
<b>4</b>	\$ 290.00	\$ 300.00	\$ 280.00	\$ 200.00
<b>3</b>	\$ 240.00	\$ 250.00	\$ 240.00	\$ 180.00
<b>2</b>	\$ 220.00	\$ 220.00	\$ 220.00	\$ 170.00
<b>1</b>	\$ 190.00	\$ 210.00	\$ 210.00	\$ 160.00

**Table 1 - Hourly Rates**

These rates apply to ordinary days and times (Monday to Friday during the hours 8am to 5pm). Additional surcharges may apply to work done outside these timeframes. The minimum charge for any resource will be 4 hours. Travel expenses are not included in these rates and may be charged separately. The qualifications of each type and level of resource are defined in the tables found at <https://www.motorolasolutions.com/content/dam/msi/secure/services/labor-rates-exhibit-160408.pdf>. All Motorola System Integration personnel assigned to this project will be classified according to these levels. Project Administrative roles are varied and their specific duties and qualifications will be determined by the complexity and requirements of each project.

## EXHIBIT D

### System Acceptance Certificate

**Customer Name:** \_\_\_\_\_

**Project Name:** \_\_\_\_\_

This System Acceptance Certificate memorializes the occurrence of System Acceptance. Motorola and Customer acknowledge that:

1. The Acceptance Tests set forth in the Acceptance Test Plan have been successfully completed.
2. The System is accepted.

Customer Representative:

Motorola Representative:

Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

#### **FINAL PROJECT ACCEPTANCE:**

Motorola has provided and Customer has received all deliverables, and Motorola has performed all other work required for Final Project Acceptance.

Customer Representative:

Motorola Representative:

Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

## 10.2 MAINTENANCE, SUPPORT AND LIFECYCLE MANAGEMENT ADDENDUM



## **MAINTENANCE, SUPPORT AND LIFECYCLE MANAGEMENT ADDENDUM**

This Addendum to the Communications System and Services Agreement or other previously executed Agreement currently in force, as applicable ("Primary Agreement") provides additional or different terms and conditions to govern the sale of Maintenance, Support and Lifecycle Management services. The terms in this Addendum are integral to and incorporated into the Primary Agreement signed by the Parties.

### **1. DEFINITIONS**

All capitalized terms not otherwise defined herein shall have the same meaning as defined in the Primary Agreement.

"MUA" means Microwave Upgrade Agreement (MUA).

"NUA" means Network Upgrade Agreement (NUA).

"SUA" or "SUA II" means Motorola's Software Upgrade Agreement program for Motorola's P25 radio system.

### **2. SCOPE**

Motorola will provide Maintenance and Support Services and/or Lifecycle Management as further described in the applicable Statement of Work, or attachment to Motorola's proposal for additional services.

### **3. TERMS AND CONDITIONS**

The terms of the Primary Agreement combined with the terms of this Addendum will govern the products and services offered pursuant to this Addendum. To the extent there is a conflict between the terms and conditions of the Primary Agreement and the terms and conditions of this Addendum, this Addendum takes precedence.

#### **3.1 MAINTENANCE AND SUPPORT SERVICES**

3.1.1 PURCHASE ORDER ACCEPTANCE. Purchase orders for additional, continued, or expanded maintenance and software support, during the Warranty Period or after the Warranty Period, become binding only when accepted in writing by Motorola.

3.1.2 START DATE. The "Start Date" for Maintenance and Support Services will be indicated in the proposal or a cover page entitled "Service Agreement".

3.1.3 AUTO RENEWAL. Unless the cover page or SOW specifically states a termination date or one Party notifies the other in writing of its intention to discontinue the Services, this Agreement will renew for an additional one (1) year term on every anniversary of the Start Date. At the anniversary date, Motorola may adjust the price of the Services to reflect the renewal rate.

3.1.4 TERMINATION. Written notice of intent to terminate must be provided thirty (30) days or more prior to the anniversary date. If Motorola provides Services after the termination or

expiration of this Addendum, the terms and conditions in effect at the time of termination or expiration will apply to those Services and Customer agrees to pay for those services on a time and materials basis at Motorola's then effective hourly rates.

3.1.5 EQUIPMENT DEFINITION. For maintenance and support services, Equipment will be defined to mean the hardware specified in the applicable SOW or attachments to the maintenance and support proposal.

3.1.6 ADDITIONAL HARDWARE. If Customer purchases additional hardware from Motorola that becomes part of the System, the additional hardware may be added to this Addendum and will be billed at the applicable rates after the warranty period for that additional equipment expires. Such hardware will be included in the definition of Equipment.

3.1.7 MAINTENANCE. Equipment will be maintained at levels set forth in the manufacturer's product manuals and routine procedures that are prescribed by Motorola will be followed. Motorola parts or parts of equal quality will be used for Equipment maintenance.

3.1.8 EQUIPMENT CONDITION. All Equipment must be in good working order on the Start Date or when additional equipment is added to the Addendum. Upon reasonable request by Motorola, Customer will provide a complete serial and model number list of the Equipment. Customer must promptly notify Motorola in writing when any Equipment is lost, damaged, stolen or taken out of service. Customer's obligation to pay maintenance and support fees for this Equipment will terminate at the end of the month in which Motorola receives the written notice. If Equipment cannot, in Motorola's reasonable opinion, be properly or economically maintained for any reason, Motorola may modify the scope of Services related to that Equipment; remove that Equipment from the Agreement; or increase the price to maintain that Equipment.

3.1.9 EQUIPMENT FAILURE. Customer must promptly notify Motorola of any Equipment failure. Motorola will respond to Customer's notification in a manner consistent with the level of Service purchased as indicated in this Addendum and applicable SOW.

3.1.10 INTRINSICALLY SAFE. Customer must specifically identify any Equipment that is labeled intrinsically safe for use in hazardous environments.

#### 3.1.11 EXCLUDED SERVICES.

a) Service excludes the repair or replacement of Equipment that has become defective or damaged from use in other than the normal, customary, intended, and authorized manner; use not in compliance with applicable industry standards; excessive wear and tear; or accident, liquids, power surges, neglect, acts of God or other force majeure events.

b) Unless specifically included in this Addendum, Service excludes items that are consumed in the normal operation of the Equipment, such as batteries or magnetic tapes.; upgrading or reprogramming Equipment; accessories, belt clips, battery chargers, custom or special products, modified units, or software; and repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or the worldwide web, or for Equipment malfunction caused by the transmission medium.

3.1.12 TIME AND PLACE. Service will be provided at the location specified in this Addendum and/or the SOW. When Motorola performs maintenance, support, or installation at Customer's location, Customer will provide Motorola, at no charge, a non-hazardous work environment with adequate shelter, heat, light, and power and with full and free access to the Equipment. Waivers of liability from Motorola or its subcontractors will not be imposed as a site access requirement. Customer will provide all information pertaining to the hardware and software elements of any system with which the Equipment is interfacing so that Motorola may perform its Services. Unless otherwise stated in this Addendum or applicable SOW, the hours of Service will be 8:30 a.m. to 4:30 p.m., local time, excluding weekends and holidays. Unless otherwise stated in this Addendum or applicable SOW, the price for the Services exclude any charges or expenses associated with helicopter or other unusual access requirements; if these charges or expenses are reasonably incurred by Motorola in rendering the Services, Customer agrees to reimburse Motorola for those charges and expenses.

3.1.13 CUSTOMER CONTACT. Customer will provide Motorola with designated points of contact (list of names and phone numbers) that will be available twenty-four (24) hours per day, seven (7) days per week, and an escalation procedure to enable Customer's personnel to maintain contact, as needed, with Motorola.

## 3.2 **LIFECYCLE MANAGEMENT SERVICES**

3.2.1 The Software License Agreement included as Exhibit A to the Primary Agreement applies to any Motorola Software provided as part of the Lifecycle Management transactions.

3.2.2 The term of this Addendum is [REDACTED] years, commencing on [REDACTED], 201[REDACTED]. The Lifecycle Management Price for the [REDACTED] years of services is \$ [REDACTED], excluding applicable sales or use taxes but including discounts as more fully set forth in the pricing pages. Because the Lifecycle Management is a subscription service as more fully described in the applicable Lifecycle Management Statement of Work, payment from Customer is due in advance and will not be in accordance with any Payment Milestone Schedule.

3.2.3 The System upgrade will be scheduled during the subscription period and will be performed when Motorola's system upgrade operation resources are available. Because there might be a significant time frame between when this Addendum is executed and when a System upgrade transaction is performed, Motorola may substitute any of the promised Equipment or Software so long as the substitute is equivalent or superior to the initially promised Equipment or Software.

3.2.4 Acceptance of a Lifecycle Management transaction occurs when the Equipment (if any) and Software are delivered and the Lifecycle Management services are fully performed; there is no Acceptance Testing with a Lifecycle Management transaction.

3.2.5 The Warranty Period for any Equipment or Motorola Software provided under a Lifecycle Management transaction will commence upon shipment and not on System Acceptance or Beneficial Use, and is for a period of ninety (90) days rather than one (1) year. The ninety (90) day warranty for Lifecycle Management services is set forth in the Lifecycle

## Management Statement of Work.

3.2.6 In addition to the description of the Lifecycle Management services and exclusions provided in the Lifecycle Management Statement of Work, the following apply:

- a) Upon reasonable request by Motorola, Customer will provide a complete serial and model number list of the Equipment.
- b) Lifecycle Management services exclude the repair or replacement of Equipment that has become defective or damaged from use in other than the normal, customary, intended, and authorized manner; use not in compliance with applicable industry standards; excessive wear and tear; or accident, liquids, power surges, neglect, acts of God or other force majeure events.
- c) Unless specifically included in this Addendum or the Lifecycle Management Statement of Work, Lifecycle Management services exclude items that are consumed in the normal operation of the Equipment; accessories; and repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or the worldwide web, or for Equipment malfunction caused by the transmission medium.
- d) Customer will provide Motorola with designated points of contact (list of names and phone numbers) that will be available during the performance of the Lifecycle Management services.

3.2.7 The Lifecycle Management annualized price is based on the fulfillment of the two year cycle. If Customer terminates this service during a two year cycle, except for Motorola's default, then Customer will be required to pay for the balance of payments owed for the two year cycle if a major system release has been implemented before the point of termination.

3.2.8 If Customer terminates this service and contractual commitment before the end of the ■ year term, for any reason other than Motorola's default, then the Customer will pay to Motorola a termination fee equal to the discount applied to the last three years of service payments related to the ■ year commitment.

## 4. PAYMENT

4.1 Unless alternative payment terms are stated in this Agreement, Motorola will invoice Customer in advance for each payment period. All other charges will be billed monthly, and the Customer must pay each invoice in U.S. dollars within thirty (30) days of the invoice date. Customer will reimburse Motorola for all property taxes, sales and use taxes, excise taxes, and other taxes or

assessments that are levied as a result of Services rendered under this Agreement (except income, profit, and franchise taxes of Motorola) by any governmental entity.

4.2 INFLATION ADJUSTMENT. For multi-year agreements, at the end of the first year of the Agreement and each year thereafter, a CPI percentage change calculation shall be performed using the U.S. Department of Labor, Consumer Price Index, all Items, Unadjusted Urban Areas (CPI-U). Should the annual inflation rate increase greater than 3% during the previous year, Motorola shall have the right to increase all future maintenance prices by the CPI increase amount exceeding 3%. All items, not seasonally adjusted shall be used as the measure of CPI for this price adjustment. Measurement will take place once the annual average for the new year has been posted by the Bureau of Labor Statistics. For purposes of illustration, if in year 5 the CPI reported an increase of 8%, Motorola may increase the Year 6 price by 5% (8%-3% base).

5. ENTIRE AGREEMENT. This Addendum, any related attachments, and the Primary Agreement, constitutes the entire agreement of the Parties regarding the subject matter of this Addendum and supersedes all previous agreements, proposals, and understandings, whether written or oral, relating to this subject matter. This Addendum may be amended or modified only by a written instrument signed by authorized representatives of both Parties. The preprinted terms and conditions found on any Customer purchase or purchase order, acknowledgment or other form will not be considered an amendment or modification of this Addendum, even if a representative of each Party signs that document.

END

SECTION 11

# OUR PURPOSE

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

### **An Enduring Partnership Committed to Your Success**

Throughout our history, Motorola Solutions 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 Marshall 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.

We appreciate the opportunity to support your communications needs and look forward to continuing a strong collaboration that achieves your vision.

