

COLUMBIA COUNTY BOARD OF COUNTY COMMISSIONERS

AGENDA ITEM REQUEST FORM

Department: Communications

Meeting Date: 10/1/2026

BUDGETED

PROJECT: EXISTING

GRANT

1. Nature and purpose of agenda item:

The purpose of this agenda item is for the Board to review and approve the negotiated terms for the Suwannee Valley Tower site communications addition (dressing of the tower). The addition will include a harden communication building, 5-Nine microwave equipment, and the D-Series multicarrier RF site with associated equipment. This contract is funded through an existing grant.

2. Recommended Motion/Action:

Approve Contract with Motorola Solutions for \$1,956,753

3. Fiscal impact on current budget:

This item is currently budgeted. The account number to be charged is 302-2626-525.60-63



Proposal

Columbia County

Suwannee Valley RF site Add

USFL25P225

September 23, 2026

PS-000235038

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Motorola Solutions, Inc.
500 W Monroe Street, Ste 4400
Chicago, IL 60661-3781
USA

September 23 2026

Lawrence Wilson
Columbia County Board of County Commissioners
263 NW Lake City Avenue
Lake City, FL 32055

Dear Mr. Wilson,

Motorola Solutions, Inc. ("Motorola") is pleased to have the opportunity to provide the Columbia County Board of County Commissioners with quality communications equipment and services. The Motorola project team has taken great care to propose a solution that will meet your needs and provide unsurpassed value.

To best meet the functional and operational specifications of this solicitation, our solution includes a combination of hardware, software, and services. Specifically, this solution is Suwannee Valley RF Site-Add.

Motorola Solutions' proposal is subject to the terms and conditions of the Sourcewell Contract #020626-MOT. This proposal shall remain valid through October 23, 2026. The Columbia County Board of County Commissioners may accept this proposal by delivering to Motorola the executed documents attached.. Any questions can be directed to your Motorola Account Executive. Eric Lazo, at (239) - 776-8143.

We thank you for the opportunity to furnish the Columbia County Board of County Commissioners with "best in class" solutions and we hope to strengthen our relationship by implementing this project. Our goal is to provide you with the best products and services available in the communications industry.

Sincerely,

A handwritten signature in black ink, appearing to read 'DS' followed by a stylized flourish.

Daniel Sanchez
Territory Vice President - Florida and Georgia
Motorola, Solutions, Inc.

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For Group Services, there are a number of features that work in tandem with Infrastructure, user radios, and the Radio Management tool. These software features have common names, but are unique in both the ASTRO system, as well within the firmware features of the subscriber radio device. This quote includes only upgrades to the ASTRO Infrastructure system licenses. Details explaining what each option includes are listed below..... 23

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1. System Description

1.1 Executive Summary

Columbia County's public safety and essential services rely on dependable, mission-critical communications. This proposal outlines a strategic investment in a new Suwannee Valley RF Simulcast Subsite utilizing the D-Series DBR M-12 Radio Site technology. This modern, integrated solution will establish a highly resilient and efficient communication hub, initially supporting five (5) TDMA/FDMA channels. The DBR M-12 is specifically designed to maximize uptime, minimize operational costs, and provide advanced cybersecurity, thereby ensuring secure and seamless communications for the community. Microwave connectivity to the new RF site will be achieved via a 6 GHz backhaul by placing the new Suwannee Valley site within the existing microwave ring topology, inserted between the current EOC and Deep Creek pathlink. Powering the new RF and Microwave equipment is an Eltek DC Battery plant, featuring the TRILOGY Power System with Smartpack S controller, Enersys PowerSafe SBS XL battery strings, monitoring kits with temperature probes, and the FLATPACK2 HE Rectifier for high power efficiency. This proposal also incorporates an MC-EDGE Network Fault Management (NFM) Remote Terminal Unit (RTU) at the new RF site, modernizing oversight by replacing the legacy SDM 3000 device for similar detection applications. A SmartConnect License is included to prepare the infrastructure for future Subscribers enabled with SmartConnect functionality and capability. Lastly, a Thermo Bond Shelter is quoted to contain all the Suwannee Valley site equipment, with an electrical transfer switch, rated to operate with the customer's provided existing generator. For the Master Site, a Key Management Facility (KMF) server, web client, and CRYPTR are included, along with multiple encryption protocols, to enable a centralized key management for encrypted voice, via subscriber options such as Over The Air Rekeying (OTAR). A Touchless Key Provisioning feature is included as well. This solution has been designed for compatibility with the 300 foot tower being supplied by Columbia County, located at the Suwannee Valley site.

1.2 The Communication Challenge

Modern radio communication demands uncompromised reliability and efficiency for mission-critical operations. Columbia County requires a robust and scalable radio infrastructure capable of supporting its current needs while providing flexibility for future growth and evolving technological landscapes. Traditional radio sites often struggle with space constraints, complex maintenance, and vulnerability to cyber threats, leading to increased operational costs and potential service disruptions.

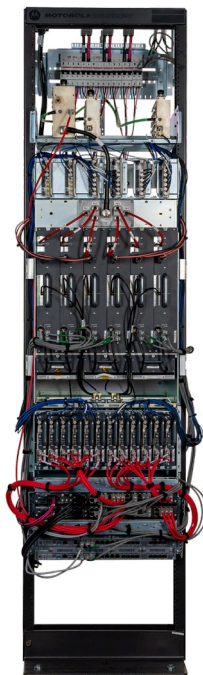


1.3 Proposed Solution

D-Series DBR M-12 Radio Site

Mission-critical communications is paramount to your needs and modern radio sites are a key component to delivering on that need. Available in either an open rack or cabinet configuration, the DBR M12 Radio Site integrates the key ASTRO radio site components into a single, easy to deploy unit. Built on the flexibility of modern hardware and software architectures, the DBR M12 is designed to minimize downtime, and provide ease of operation while allowing for cybersecurity updates.

The DBR M12 contains the site processors, transceivers, RF distribution systems and DC power distribution for growth up to 12 carriers (up to 11 FDMA and 22 TDMA talkpaths excluding the FDMA control channel) in a single rack. Multiple racks of up to three (3) can create a site with up to 28 site repeater carriers or 30 simulcast carriers. DBR M12 sites can support up to 12 carriers per transmit antenna and up to 30 carriers per receive antenna.



Improving Uptime

The DBR M12 is designed to minimize downtime from failure, maintenance or site updates. The DBR M12 can dynamically allocate resources across available hardware, thereby improving resiliency and

overall uptime. Critical functions are deployed in pairs so that a redundant component can take over functions if needed. The major hardware components of the DBR M12 are hot swappable to ensure repairs cause minimum disruptions.

The multicarrier amplifier bank amplifies all channels simultaneously from a pool of amplifier resources. Upon a Power Amplifier (PA) module failure, the remaining PA modules can continue to service the channels. And depending on the configuration and transmit power requirements, this can be with no loss in channel capacity or no more than one (1) channel lost.

Simplifying Ownership

Offering up to 12 carriers per rack, the DBR M12 can reduce the impact on space-constrained sites and ease channel expansions within the capacity of the unit. The built-in Radio Frequency Distribution System (RFDS) of multicouplers, preselectors and filters connects the DBR M12 to the receive and transmit antennas. With a narrow adjacent frequency spacing requirement of only 50 kHz, the DBR M12 offers greater flexibility than typical 150 kHz equipment, easing frequency acquisition where spectrum availability is an issue.

The DSC 8500 Site Processor provides a single point of connectivity for all of the DBR M12 components at the site. Configuration, fault management, and software upgrades are managed at the site level, rather than addressing each component individually. This provides a streamlined, intuitive user experience.

Modernizing Cybersecurity

The DBR M12 is designed to offer protection against an ever-evolving threat landscape following recommendations of the NIST Cybersecurity Framework guidelines to help identify and detect cyber-attacks, and then how to respond, prevent and recover from such events.

Key DBR M12 Components

DSC 8500 Site Processor – The site processor contains and runs the software used throughout the radio site, including the site controller and base radios. Connections to the base radio transceivers and PAs are provided via the integrated IP switch which has additional capacity for connecting external RF equipment at the site such as conventional stations. The site processor can be optionally equipped with integrated redundant GPS references for the ability to maintain timing for a minimum of four (4) hours without a GNSS signal. The optional rubidium module is included for extended holdover time of 72 hours.

Multicarrier Amplifier Bank – The DBR M12 pools PA resources into a multicarrier amplifier bank. PA resources within this bank can be sized to provide ample power for the active carriers as well as additional capacity to cover for a PA failure in many channel configurations. The bank dynamically



amplifies all channels simultaneously. The multicarrier amplifier bank eliminates the need for traditional cavity combiners. The overall result is a small and power efficient system, resilient to failure without the need for periodic combiner tuning.

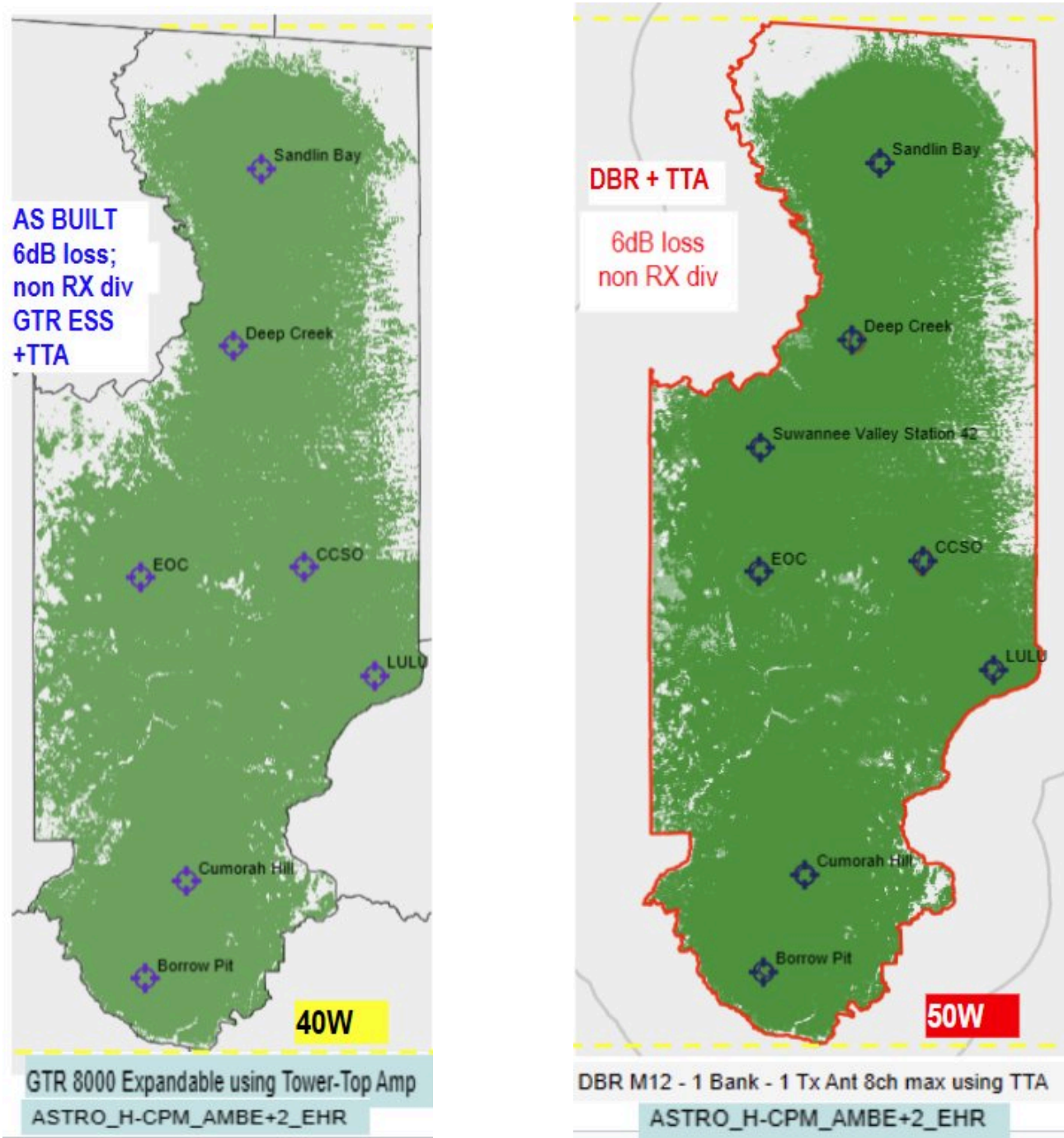
DC Power System – The DBR M12 offers integrated DC power as standard (+/- 48 VDC) throughout. Designed to be powered by a site DC power system, the DBR M12 rack includes multiple breakers to distribute power to the various components, ensuring a single breaker trip won’t disable the entire site.

1.4 Existing Customer Licensed RF Frequencies for Suwannee Valley Site:

Channel	Tx Frequency	Rx Frequency
1	774.131250	804.131250
2	772.856250	802.856250
3	772.156250	802.156250
4	771.306250	801.306250
5	770.556250	800.556250

1.5 Simulated RF Coverage improvement with Suwannee Valley Site addition:

The addition of the DBR M12 RF equipment at Suwannee Valley should improve the overall RF coverage of Columbia County. While no coverage guarantee or CATP is provided in this quote, a simulation is shown below to provide a visualization of the simulated expected coverage improvement.



1.6 Existing Customer Site locations:

Site Name	Borrow Pit (RF)		1
Latitude	29°52'50.3" N	29.880639	
Longitude	82°41'47.2" W	-82.696444	
Site Name	CCSO (RF)		2
Latitude	30°11'29.3" N	30.191472	
Longitude	82°33'26.5" W	-82.557361	
Site Name	Cumorah Hill (RF)		3
Latitude	29°57'15.02" N	29.954172	
Longitude	82°39'36.84" W	-82.660233	
Site Name	Deep Creek (DSR + GEO PRIME + RF):		4
Latitude	30°21'30.4" N	30.35844444	
Longitude	82°37'8" W	-82.6188889	
Site Name	EOC (CORE + PRIME + DISPATCH)		5
Latitude	30°11'1" N	30.183611	
Longitude	82°41'59" W	-82.699722	
Site Name	LULU (RF)		6
Latitude	30°6'35.12" N	30.109756	
Longitude	82°29'43.49" W	-82.495414	
Site Name	Sandlin Bay (RF)		7
Latitude	30°29'31.07" N	30.491964	
Longitude	82°35'38.6" W	-82.594056	
Site Name	Suwannee Valley site (RF)		8
Latitude	30°16'40.1" N	30.277806	
Longitude	82°41'54.4" W	-82.698444	
Site Name	Franklin (MW Relay)		9
Latitude	30°11'37.9" N	30.193861	
Longitude	82°38'4.8" W	-82.634667	

1.7 Backhaul: Microwave & Network

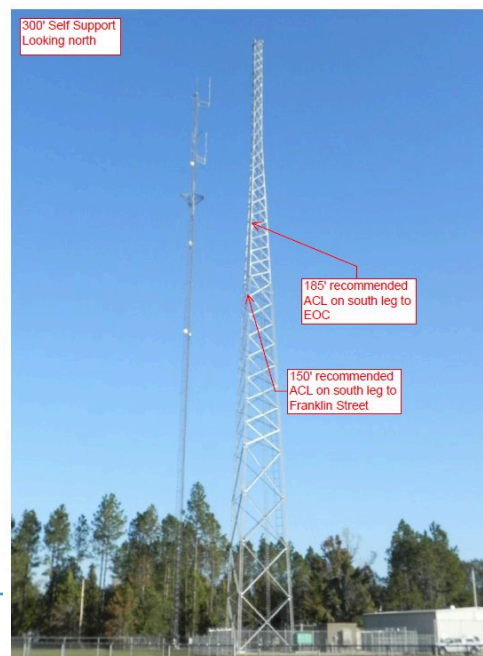
This proposal includes microwave links that will connect the new Suwannee Valley site tower into the existing RING topology, between the existing sites of Deep Creek and EOC. The new microwave equipment will operate in the 6GHZ frequency range, and operate at an adaptive code modulation (ACM) bandwidth of 256QAM which is equivalent to approximately 180mbps bandwidth. The new Microwave antennas to be mounted on Suwannee Valley will be 6 feet in diameter, and utilize waveguide connecting to indoor microwave units inside the new nearby shelter. This design presumes the ability to repurpose the existing microwave antennas and equipment at both EOC and Deep Creek, in that their existing links will be realigned such that EOC will change alignment from Deep Creek, and instead align to Suwannee Valley site. Also, Deep Creek will change alignment from EOC, and instead align to the Suwannee Valley site. This allows the customer to leverage existing equipment in a new optimal configuration. This proposal includes decommissioning of the existing waveguides at EOC and Deep Creek and the installation of new ones at those locations, should it be determined during implementation phase and after a physical survey has taken place.

The connection to the existing ring would be designed to meet at least 99.999% (i.e. 5-nines) for two-way availability. Since the proposed additional microwave links would connect to the existing RING architecture, there would be no additional SPURS in this proposal.

No MPLS networking equipment is quoted in this proposal.

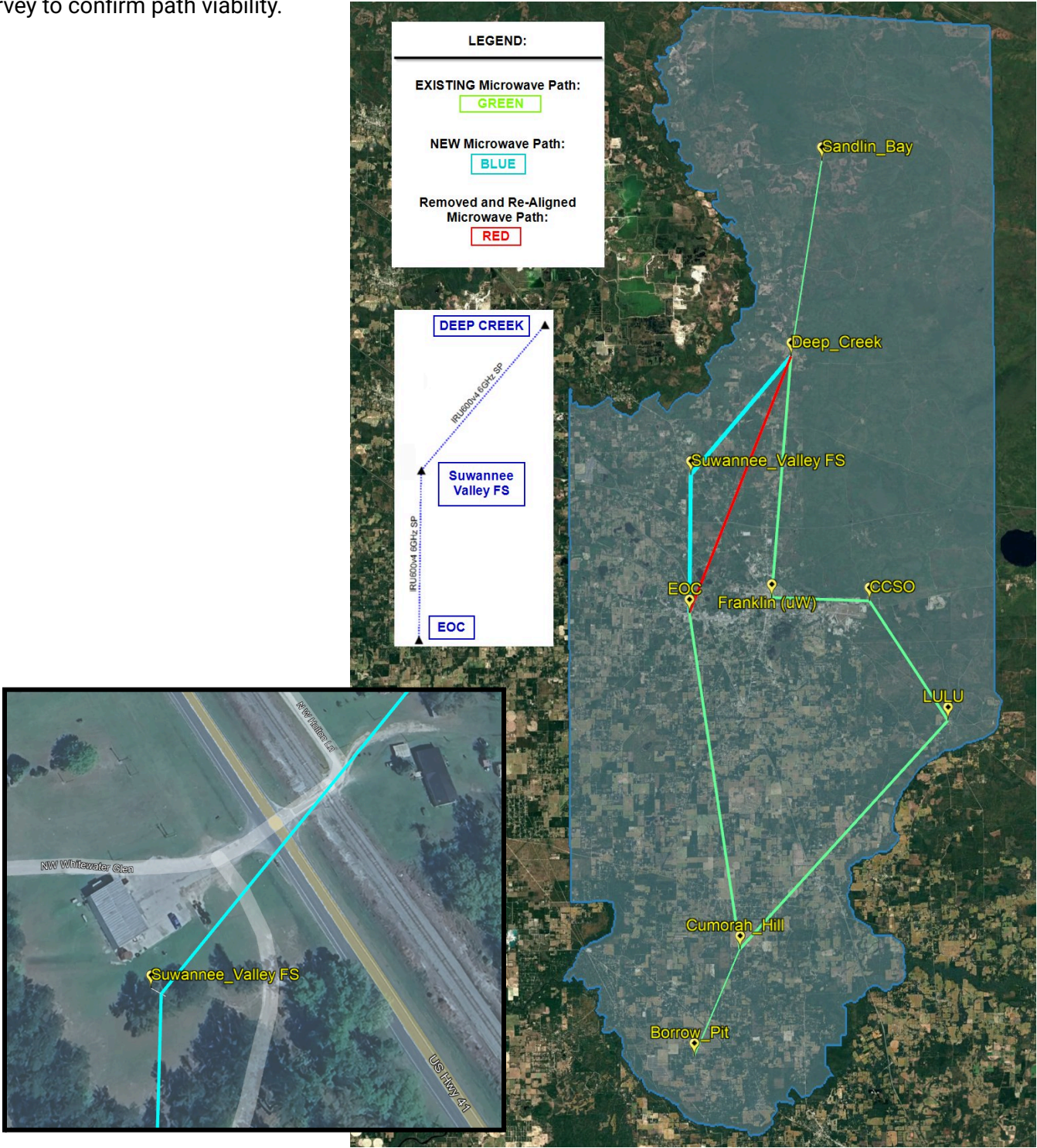
The microwave frequency coordinator will request from the FCC a total of 4 frequencies (bi-directional to Suwannee Valley site, for all four (4) of the new proposed MW paths. The existing bi-directional paths between Deep Creek and EOC will require new FCC frequencies, at the proposed heights and azimuths, as is standard practice in the industry for any design that changes height, azimuth, or both.

EOC tower and Deep Creek Tower (Aviat physical site walk report in 2020)



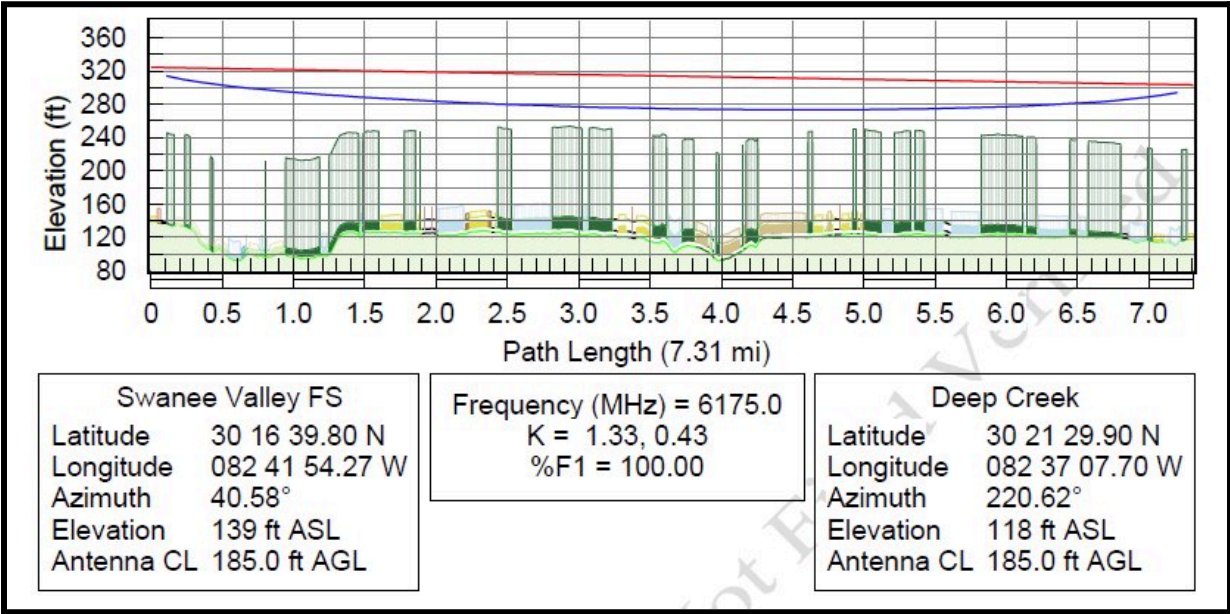
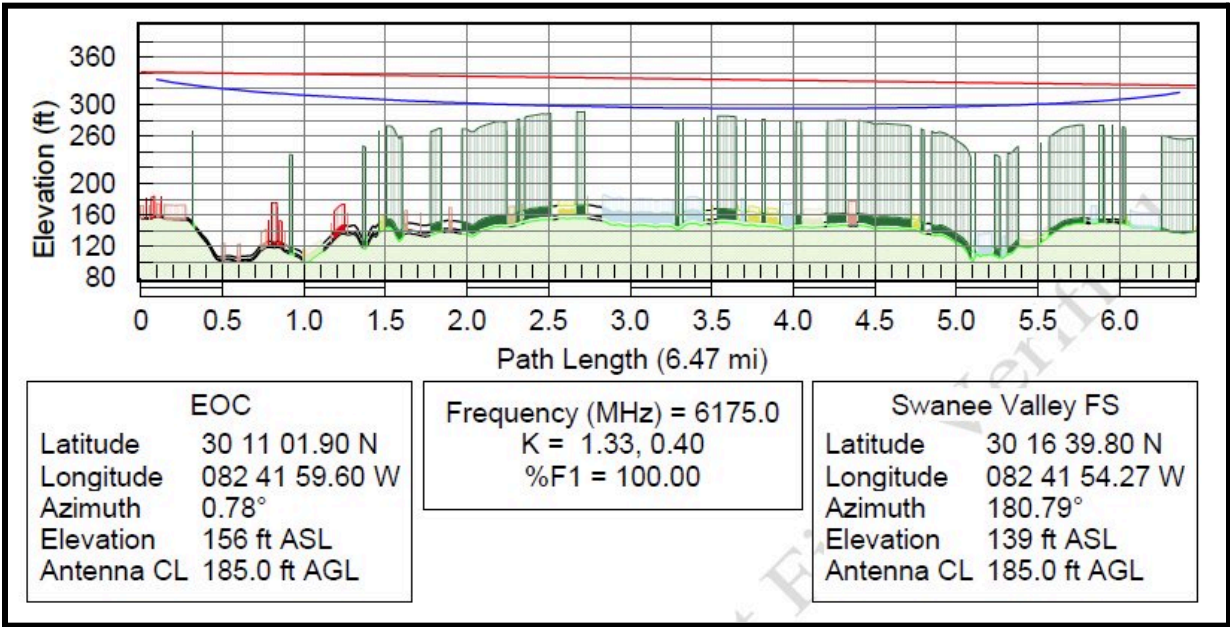
Suwannee Valley site location and Path Changes

The following location for Suwannee Valley site is shown below and dependent upon a physical site survey to confirm path viability.



Preliminary Simulated Microwave Path Calculations

Preliminary Path Loss and Fade Margin Calculations have been prepared using the Vigants reliability models. The paths meet or exceed 99.999% Annual 2 way multipath availability (%) for Ring hops. The path calculations are only confirmed after a physical site walk and survey has been performed post-sale. The system design and associated RF frequency plan as proposed is preliminary, subject to path survey verification, frequency coordination / FCC licensing and path engineering results.



Microwave Structural Analysis with respect to Tower(s) Loading

The two existing sites, Deep Creek and EOC, are not anticipated to require structural analysis, presuming no new equipment is added during this proposal. The existing microwave antennas on both Deep Creek and EOC towers are only scoped to be readjusted/realigned azimuth, not moved either higher or lower on the existing towers, nor moved to a different tower leg, nor are any waveguides scoped to be removed or replaced. The documented centerline (antenna mount) at EOC to Deep Creek, and Deep Creek to EOC, are both mounted at 185 feet. The paper path study simulation has maintained the centerlines at those same heights, now directed to Suwannee Valley site.

The site development tower drawings provided by the customer indicate that Microwave antennas were simulated around the 180 foot height, with future expansion for additional microwave antennas mounted at lower levels. Therefore the tower design should accommodate the Suwannee Valley design, presuming physical site walks and FCC frequency coordination do not require a relocation much higher on the tower. Should site-walks require the movement of either microwave antenna, then those towers would require structural analysis to be performed. Current microwave practices and site development standard protocols do not perform structural analysis prior to a sold system design. Quotes can be included at no cost to provide an estimate as to the cost to perform a structural analysis of a tower(s). Note that the cost to PERFORM a structural analysis by a tower vendor is independent of their additional costs to FIX any issues discovered, or a need to remediate a tower to strengthen it due to additions of antennas onto a tower, changes in vertical location of antennas onto a tower, structural aging, grounding, foundation concerns, changes in code, changes in wind speed standards, current insurability requirements dependent upon actual vs total percent of tower loading, etc. There is no ability to approximate the costs to repair a tower, only to perform the analysis. The costs to perform a structural analysis are per tower. Lastly, if any tower is leased rather than owned, it is up to the tower owner to permit vertical location changes or additions to their tower, and that is determined on a tower by tower case.

Regarding potential changing paths so as to not have to reinforce towers is ultimately a customer decision, and is dependent upon multiple financial limitations, calendar deadlines, frequency license ability, and environmental factors. That is why we encourage the customer to order the necessary technical analysis data for: frequency coordination to confirm the site links are available; perform physical site walks to confirm paths are viable, and then order and perform tower structural reports, to ensure the towers can support additional loads, even if some microwave antennas are removed from an older path, to free-up more room, since it is not often that the removal of a microwave antenna from an old path will align perfectly in vertical height but at a different azimuth related to the new microwave path. Often, a higher centerline is required, and so again, structural must be performed, both for permitting, as well as insurability of the tower with the new equipment.

1.8 ELTEK DC Battery Plant Solution

The Eltek DC solution will supply -48VDC power for the Suwannee Valley site. This system consists of a charger-rectifier and battery plant that will provide the requested 30 minutes of reserve power to the RF

equipment, assuming 100% transmit time for base repeaters. In addition, the system will provide an additional 7.5 hours of reserve power for the Microwave system. The customer provided generator should carry the load after a power outage, but this DC plant would provide the electrical power in the specified runtime required should the generator not activate prior to the 30 minutes for RF, and 7.5 hours for the Microwave. These runtime values were chosen based upon the prior requirements used at the existing RF sites.

The EnerSys PowerSafe SBS XL battery series comes from a respected lineage – the industry-leading, EnerSys Thin Plate Pure Lead (TPPL) technology found in the PowerSafe SBS battery. SBS XL takes SBS performance to the next level, providing a 10-year service life for back-up applications in high temperatures. The value of this innovative new line is a true cost savings to the operator for both cooling and maintenance.

The FLATPACK2 HE (High Efficiency) Rectifier 2000W 48V is a state-of-the-art modular power conversion solution, engineered to deliver extremely reliable and energy-efficient 48V DC power for critical applications in telecom, broadband, and industrial settings. Utilizing patented High Efficiency technology, this rectifier achieves an exceptional efficiency of up to 96.5%, significantly reducing operational costs and minimizing heat dissipation compared to standard rectifiers. Its compact, hot-pluggable design allows for simple, rapid expansion from 2kW to multi-megawatt systems and ensures easy maintenance (MTTR < 5 minutes), maximizing network uptime.



1.9 MC-EDGE Intelligent Gateway

The MC-EDGE® is an intelligent gateway designed for IoT applications. It is a general-purpose Remote Terminal Unit (RTU) enabling users to remotely control and monitor end node devices.

It can be used as an Auxiliary Input/Output (I/O) Server at ASTRO dispatch sites and as a Network Fault Management (NFM) Remote Terminal Unit (RTU) at ASTRO RF sites. The MC-EDGE replaces the legacy SDM 3000 device for similar applications.

The MC-EDGE device comprises a CPU Host board, a plug-in board and supports up to 16 SPE I/O modules while five out of them can be CAN bus I/O expansion modules. The device is enclosed in a compact, protective plastic housing. The CPU front panel provides easy access to connectors and ports. It includes a power LED, status LEDs for onboard DIs/DOs, and status LEDs on the communication ports.



The I/O module front panel includes terminal block connectors for sensor/device wire connection. There are 5 plug-in board options for each MC-EDGE configuration. Each plug-in board has a panel with different entrances.

The MC-EDGE can be ordered with an external AC/DC power supply. If the supply input power is 12 or 24 V, then no power supply is needed and only a DC power cable is required. If an AC power input is required, an external power supply can be ordered.

The MC-EDGE provides support in many protocols: DNP, Modbus, MQTT, and more SCADA protocols.

The MC-EDGE can be used to report remote site digital sensor states and analog sensor values to the ASTRO Unified Event Manager (UEM) fault management application. The UEM can control digital outputs to activate equipment at remote sites. The MC-EDGE is able to monitor analog inputs, useful for applications such as monitoring fuel tank levels or making analog environmental measurements.

Up to five modules in total (DI/AI, Mixed I/O, Digital Mix I/O) can be ordered in any combination. Various module types are available based on customer needs. Each module provides different input and output capabilities.

No special UEM license is required for basic UEM operation with MC-EDGE. However, some UEM functionality for monitoring MC-EDGE is only enabled when UEM Enhanced Navigation option is purchased.

1.10 SmartConnect

SmartConnect requires both infrastructure licensing and subscriber enablements/subscriptions. This proposal provides only for the infrastructure side of the licensing.

Status of requirements for enabling SmartConnect functionality on an ASTRO system:

1. **Internetworking Firewall:** already added during a prior system upgrade.
2. **LMR Multicast Proxy (LMP):** already added during a prior system upgrade.
3. **Core Server Requirements:** already installed Four (4) virtual machines (VMs) on existing servers during a prior system upgrade.
4. **SmartConnect INFRA license HKVN4852A:** included in this proposal at no cost.
5. **Enablement and provisioning of the system services:** occurs only during the purchase of the subscriber feature and associated subscriber subscriptions, and therefore is not quoted as part of infrastructure.

In order to provide an acceptable audio quality the following guidelines are recommended for the service level agreement for the Internet connection used between the ASTRO system (LMP) and the SmartConnect Gateway:

- 6/6 Mbps symmetric connection
- 99.99% or higher availability to/from ISP
- 0.5% Packet Loss introduced by the Internet Service Provider
- 20 ms Max. Average Delay introduced by the Internet Service Provider
- 10 ms Max. Average Jitter introduced by the Internet Service Provider
- Static IP, Mask, & Gateway - The InterNetworking Firewall requires configuration of a Static IP, mask, and gateway on the WAN side of the InterNetworking Firewall. The provided Internet link needs to provide this so that TNCT can properly configure the InterNetworking Firewall
- Traffic delay or congestion causing packet delays of more than 2.9 seconds will cause the SmartConnect links to drop

1.11 Shelter

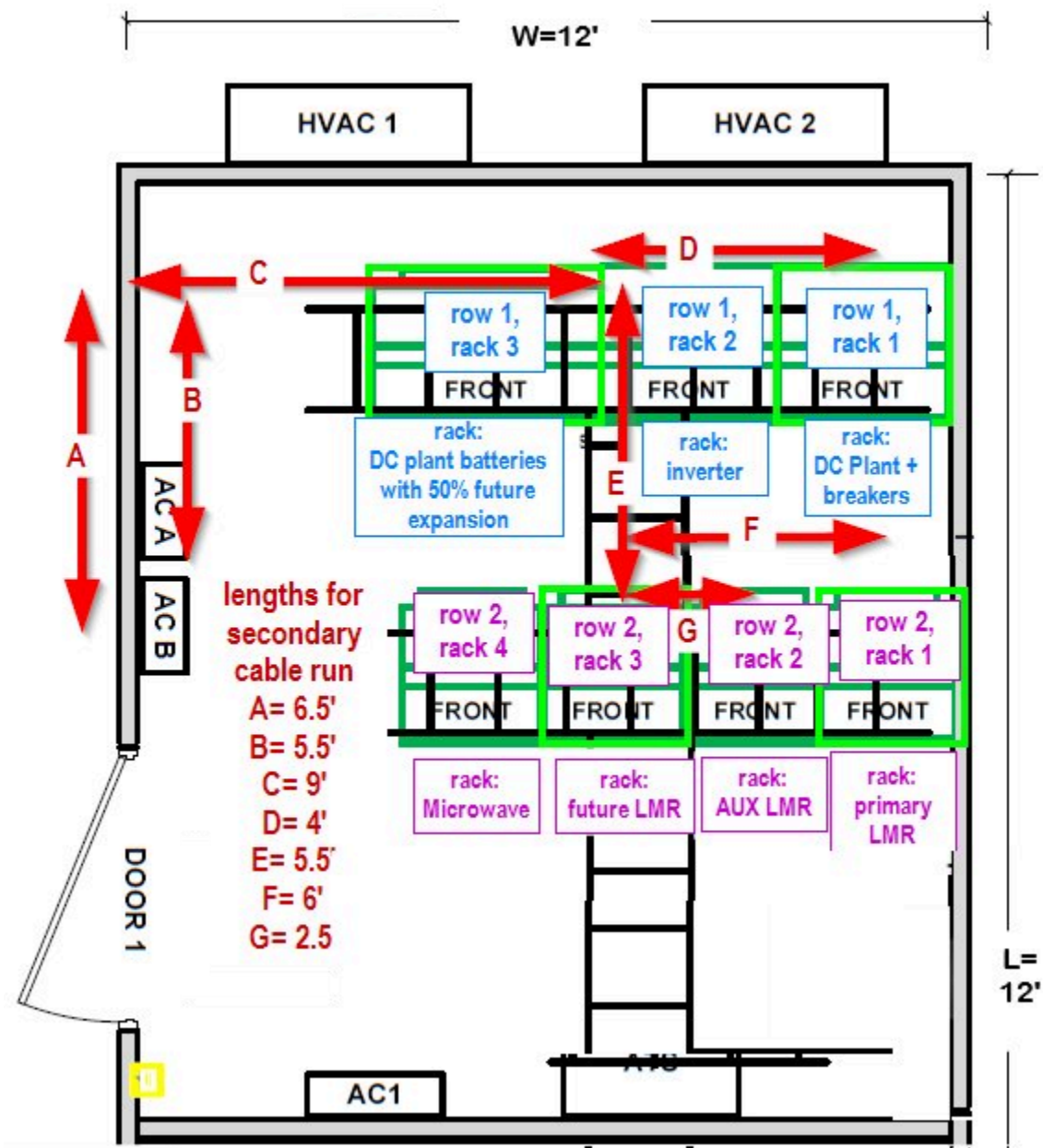
Thermo Bond Buildings has quoted a 12'x12', pre-cast concrete equipment shelter for Columbia County's Suwannee Valley site, including an electrical transfer switch rated to operate with the customer's provided existing generator.

Shelter specifications



•Floor load: 300 psf.	•Walls: 4" Solid concrete.
•Roof load: 100 psf. std	•Roof: Solid concrete 4" at eave and 5" at ridge.
•Walls: 150 mph	•Design: Step-joint design.
•Outside: (Eaves) 12'-0" W x 12'-0" L x 10'-5" H	• Tie down: (4) Tie down Plates with bolts
•Outside: (Base) 12'-0" W x 12'-0" L x 10'-5" H •Equipment Room: 11'-0" W x 11'-0" L x 9'-0" H	•Concrete: 5000 psi lightweight concrete.
•Estimated Module Weight: 49,000 lbs.	•Reinforcing: Steel #4 and #6 bars, 60,000 psi (Grade 60 ASTM-615).
•Floor: 6-3/4" solid concrete floor.	•Ratings: Walls to be 2 hr. fire rated.
•Seismic Rating: Class "D"	•Ballistics: Shell- - Tested for UL-752, Level 4 (HPR - 30.06 - point blank range)

Floorplan guide (subject to change)



1.12 Encryption

1.12.1 Key Management Facility



Motorola Solutions proposes our Key Management Facility solution to allow for the centralized key management for encrypted voice, including:

- A Key Management Facility (KMF) server with AES 256, DES OFB, DES XL, DEVI, DVP
- A CryptR for providing encryption services for the KMF
- One (1) KMF web client
- One (1) KMF Server
- One (1) Z2 mini Workstation
- One (1) KVM display with HDMI and VGA
- Touchless Key Provisioning

In order to use OTAR, subscriber units must be enabled for both IV&D and OTAR. Subscriber units (e.g., digital conventional voice-only subscribers) that are not capable of both IV&D and OTAR can be rekeyed using the KMF's "Store and Forward" feature in combination with a KVL.

The KMF Server, Client, and CryptR will be installed in the county's existing CEN and connected to the existing CEN switch.

1.12.2 KMF

The Key Management Facility (KMF) is a robust encryption key management solution that supports Motorola Solutions specific and P25 features, including Over-the-Air-Rekeying (OTAR). Utilizing the KMF, information can be created, inventoried, and distributed to encrypted endpoints including consoles and radios.

The KMF also includes a Store-and-Forward feature, in combination with a Key Value Loader (KVL) for subscriber units that are not provisioned for OTAR.

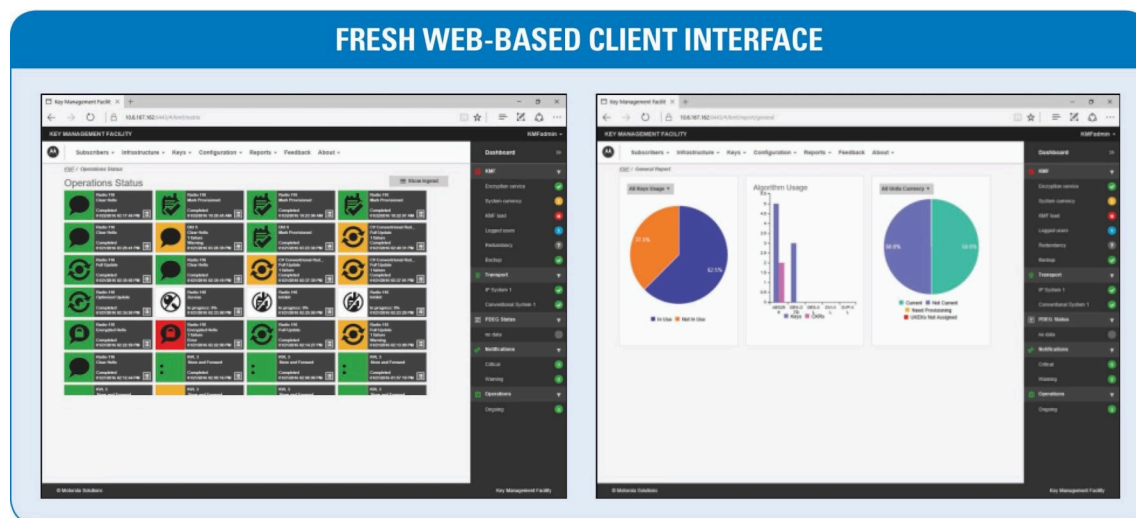
OTAR employs encryption keys to keep communications secure, and updates those keys automatically without the delays, inconvenience, and administrative cost of having radio users bring their radios into the shop for manual reprogramming. Any subscriber units that require OTAR must be provisioned for IV&D and OTAR via a flash update. Digital conventional resources connected through the CCGW cannot be used with OTAR. Subscriber units that are not OTAR and IV&D-capable can be rekeyed using the Store-and-Forward feature of the KMF and the Key Value Loader (KVL) if flash updates are not possible. In this scenario the KMF is used to manage the keys. These KMF-managed keys are then forwarded to the KVL. The KVL is then used to load the key onto the subscriber unit the next time the KVL is connected to the subscriber unit.

KMF Web-Based Thin Client

The KMF Web-Based Thin Client application provides KMF users with a modern, web-based client interface with improvements to installation, network traffic, and graphical reporting capabilities. This

application enables personnel to generate detailed reports, receive at-a-glance status updates via a web-based interface, and monitor data visualizations to analyze system key material information.

The below figure provides examples of the at-a-glance status and data visualization screens.



KMF Web Based Thin Client Sample Screens

Over-The-Air Rekeying

Motorola Solutions' P25-compliant Over-the-Air Rekeying (OTAR) solution allows key administrators to securely rekey radios from the KMF client. OTAR eliminates the need for radios to be physically rekeyed using a Key Variable Loader (KVL) and cable. To realize this feature, a Key Management Facility (KMF) server/client is included in this estimate. Once a rekeying update is activated, encrypted radios anywhere within the radio coverage area will automatically receive updated encryption keys without any disruption to ongoing communication.

Training: ASTRO 25 IV&D Secure Communications Workshop



This workshop content describes planning, installation, configuration, operations, and troubleshooting of Secure Communications within the ASTRO® 25 IV&D System, for 1 individual, at a Motorola designated training location.

Objectives

After completing the course the participant will be able to:

- Plan, organize, and implement Secure Communications in an ASTRO® 25 IV&D system.
- Install and configure a Key Management Facility (KMF) system and related components.
- Demonstrate centralized key management using Over-the-Air-Rekeying (OTAR).
- Perform System Administrator functions using the KMF server and KMF client.
- Troubleshoot installation and configuration problems for the KMF server, KMF client, and KMF database.

Target Audience

System Technicians, System Administrators, Technical System Managers

Requisite Knowledge

Completion of the following courses or equivalent knowledge:

- Bridging the Knowledge Gap – Technicians (ACT100E)
- Networking Essentials in Communication Equipment (NST762)

1.13 New Site Services and hardware

FDMA operational license, TDMA operational license, and Dynamic Talkgroup Assignment are included in this quote, for parity with the existing ASTRO system.

While the existing UNC (UNIFIED NETWORK CONFIGURATOR) application is already present in the existing ASTRO system, additional licenses (UNC ADD DEVICE LIC) are required for items at the new location (i.e. base radio, routers, etc). This is sold in bundle of 10 devices (total of 2 bundles). Smart Assurance Network Configuration Manager Device Licenses are required by the UNC for all objects in the ASTRO system. An object is any logical component of the system that is managed, such as a server, base radio, console operator position or router. Device Licenses are included where required quantities are known. For areas of the system that require variable quantities of Device Licenses such as RF or console sites, this option is required.

Note: UNC is not the same as the UEM (UNIFIED EVENT MANAGER), which already exists in the ASTRO system operational today, and is not quoted for upgrade or expansion. A second UEM would only be quoted if adding another network management client with additional software licenses.

1.14 Group Services

MISSION CRITICAL DATA DELIVERY FROM ONE TO MANY

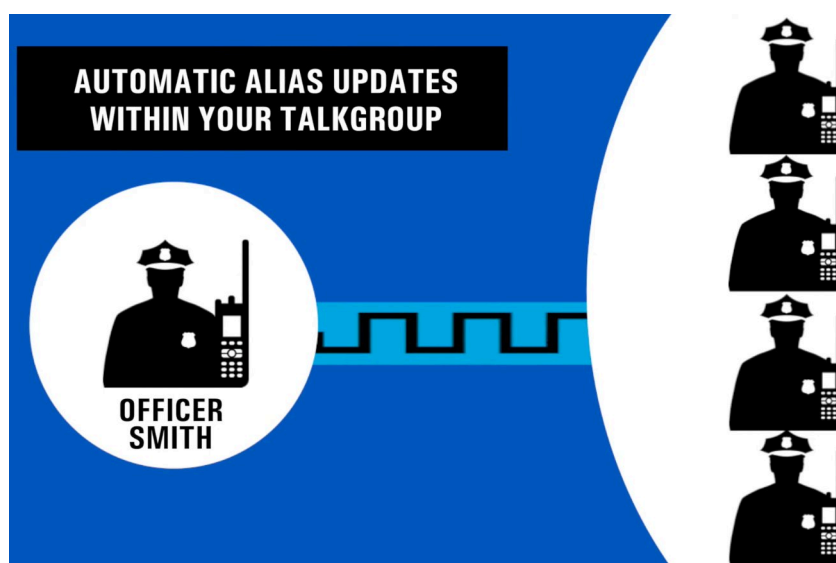
Traditional data messaging services operate in a unicast fashion, where one message is replicated and then sent individually to every targeted receiver. LMR continues to be widely accepted because of its very efficient one-to-many voice communications. Group Services leverage the inherent talkgroup service of LMR to make it available for sending data. This enables the transmission of data over ASTRO 25 radio systems, from one-to-many users. This is a much more efficient method to disseminate information to a large group.

For Group Services, there are a number of features that work in tandem with Infrastructure, user radios, and the Radio Management tool. These software features have common names, but are unique in both the ASTRO system, as well within the firmware features of the subscriber radio device. This quote includes only upgrades to the ASTRO Infrastructure system licenses. Details explaining what each option includes are listed below.

Alias Group Download

Provides radio system administrators with the ability to utilize the Provisioning Manager application to update the Push-To-Talk (PTT) ID alias information for APX radios utilizing group services. The updated radio PTT ID alias is sent to a voice talkgroup upon radio user pressing PTT. The Alias Group Download feature eliminates the need to do a radio code plug update in order to change the radio PTT ID alias, saving time and eliminating errors caused by manually entering the alias information in two places.

note: Requires Group Services firmware



feature inside Subscribers. Additional IMW presence licenses are required for each user that needs to use the Alias ID, beyond the existing presence licenses existing to detect radio devices.

User Login Alias Update

Combined with Alias Group Download automatically updates the alias IDs when a user logs in to a radio, associating his alias to that radio. Everyone in a talkgroup can see who is talking when passing a radio to another radio user. APX customers or users who regularly pass radios to other users for shift changes or incidents. Allows customers who want to use aliases but do

not due to the maintenance effort required. Radio managers no longer need to touch a radio or update an alias database when radios change users. Ensures that everyone sees the current PTT ID. This feature associates a user's alias to a radio upon login. When a user logs into a radio, their predefined alias will be associated to that radio ID. The ASTRO P25 system can now distribute this alias ID to other radios and applications within the system. Requires IMW 5.2 or later, and Subscriber radios with R15 or later and keypad, as the Alias can only be changed through the IMW..

- 500 Radio Alias Update Licenses for 500 subscribers
- 200 Radio Alias Update-per user (HKVN4915) simultaneous licenses
- 200 IMW presence licenses (1 per user)

note: requires Requires Group Services firmware feature inside Subscribers

USER RADIO LOGIN

Option 1 - Select from up to 100 preconfigured user names from the list of names in the radio

Option 2 - Enter your user ID, up to 20 ASCII characters, using the radio keypad

USER RADIO LOGOUT

Option 1 – Manual user logout

Option 2 - New user login will logout the existing user

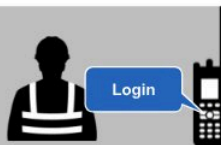
Option 3 - Turn radio off

Option 4 – Configurable system time out (Default = 12 hours)



USER PROFILES CREATED

User profiles are entered into Intelligent Middleware.



USER LOGIN

Upon receiving a radio, the user logs in to the radio with their unique user ID.



PTT ID UPDATED

The Provisioning Manager matches the radio ID to the current user profile.

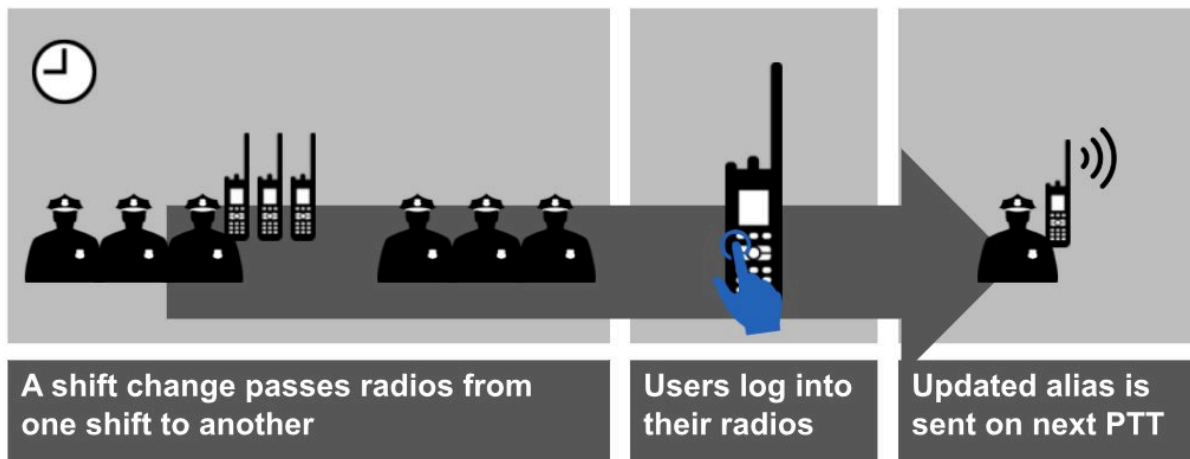


ALIAS BROADCASTED

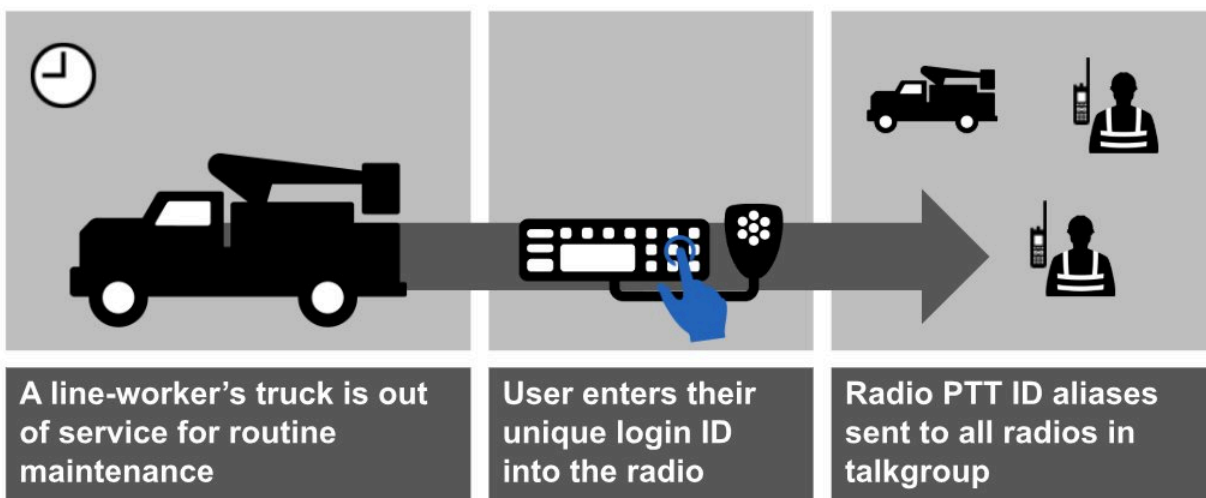
On the next PTT, the new alias is sent to all radios in the talkgroup.

ALIAS ID UPDATED IN RADIOS

Having received the new alias, the radios automatically update their local contact list.



- **Problem:** When you share radios due to shift change or a joint operation, updating all the radios with new PTT ID aliases is an arduous task.
- **Solution:** With User Login Alias Update, logging in to the new radio updates the radio PTT ID alias which is transmitted to every radio in the talkgroup.



- **Problem:** When you change radios due to a equipment change, shift change or storm clean up, updating all the radios with new aliases is an arduous task.
- **Solution:** With User Login Alias Update, logging into the new radio updates the radio PTT ID alias which is transmitted to every radio in the talkgroup.

Over-The-Air Software Update to APX Radios

An efficient method to distribute APX™ radio software (firmware, flashcode, and codeplug) as a background service over the ASTRO® 25 Trunking radio system without interrupting day to day operations. The update process is managed (and requires) the Radio Management application to deliver files using a broadcasted programming talkgroup and POP25.

note: requires Requires Group Services firmware feature inside Subscribers and Radio Management tool.



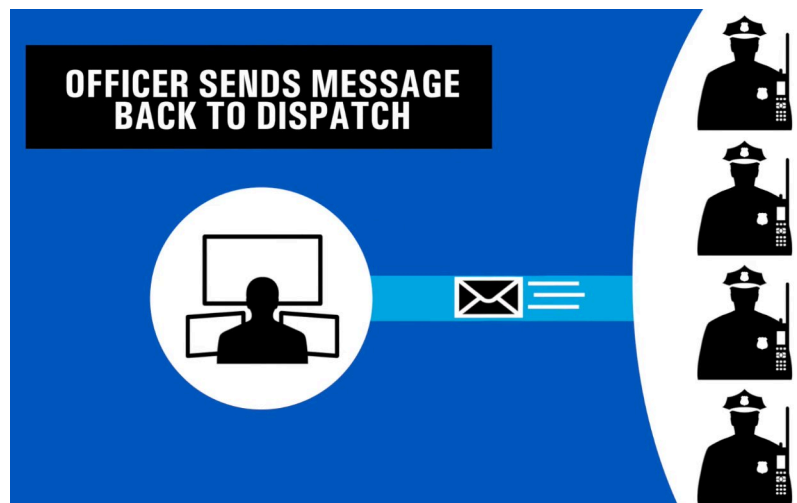
Talkgroup Text Message

enables dispatchers with the ability to quickly send a text message to a specific voice talkgroup reaching all APX radios simultaneously utilizing group services.

note: requires Requires Group Services firmware feature inside Subscribers

- 500 Talk Group Text Licenses (50 @ QTY 10 bundle= 500 total)
- 10 MCC7500 Console Group Text Licenses

note: requires Requires Group Services firmware feature inside Subscribers



2. Statement of Work – Implementation

2.1 Overview

This Statement of Work (SOW) describes the deliverables to be furnished to Columbia County. The tasks described herein will be performed by Motorola Solutions, Inc., its subcontractors, and the Customer to implement the solution described in the System Description. It describes the actual work involved in installation, identifies the installation standards to be followed, and clarifies the responsibilities for Motorola Solutions and the Customer during the project implementation. Specifically, this SOW provides:

- A description of the responsibilities for Motorola Solutions, and the Customer.
- The assumptions taken into consideration during the development of this project.

This SOW provides the most current understanding of the work required by all parties to ensure a successful project implementation.

In particular, Motorola Solutions has made assumptions of the sites to be used for the new system. Should any of the sites change, a revision to the SOW and associated pricing will be required. It is understood that this SOW is a working document, and that it will be revised as needed to incorporate any changes associated with contract negotiations, and any other change orders that may occur during the execution of the project.

2.2 Responsibility Matrix

Motorola will use a phased approach for successfully implementing the proposed equipment.

These phases are broken down by:

- Project Initiation
- Site Preparation And Development
- System Installation
- System Optimization And Testing



Tasks	Motorola Solutions	Customer
PROJECT INITIATION		
Contract Finalization and Team Creation		
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
Deliverable: Signed contract, defined project team, and scheduled project kickoff meeting.		
Project Administration		
Ensure that project team members attend all meetings relevant to their role on the project.	X	X
Set up the project in the Motorola Solutions information system.	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 within 7 to 10 business days.		X
Conduct all project work Monday thru Friday, 8 a.m. to 5:00 p.m. local time with the exception of Motorola Solutions' and the Customer's holidays.	X	
Deliverable: Completed and approved project milestones throughout the project.		
Project Kickoff		
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. Customer Design Review will take place within 14 days of contract execution.	X	X
Deliverable: Completed project kickoff and scheduled Design Review.		
Design Review		

Tasks	Motorola Solutions	Customer
Review the Customer's operational requirements.	X	X
Present the system design and operational requirements for the solution.	X	
Present the preliminary installation plan.	X	
Present preliminary cutover plan and methods to document final cutover process.	X	
Present configuration and details of sites required by system design.	X	
Validate that Customer sites can accommodate proposed equipment.		X
Provide all approvals required to add the proposed equipment at the proposed 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	
Provide information on existing system interfaces.		X
Provide RF frequency and radio information for each site.		X
Assume liability and responsibility for providing all information necessary for complete installation.		X
Assume responsibility for issues outside of Motorola Solutions' control.		X
Complete the required forms required for frequency coordination and licensing.	X	
Ensure that frequency availability and licensing meet project requirements.	X	X
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.		



Tasks	Motorola Solutions	Customer
SITE PREPARATION AND DEVELOPMENT		
Site Access		
Provide site acquisition for the proposed sites.		X
Deliverable: Access at each site.		
Site Planning		
Provide Suwannee Valley tower for installation of RF and MW equipment.		X
Ensure that required rack space is available for installation of the new equipment.		X
Ensure that required space is available on the tower or antenna mounting structure at the proposed height.		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 backup power, as required (generator)		X
Confirm that there is adequate utility service to support the new equipment and ancillary equipment.		X
Provide power to the top of each proposed rack.	X	
Provide Secondary Cable run from the DC plant to each rack	X	
Provide appropriately sized breakers in the AC panel at sites to support the needs of the proposed system including the installation of conduit and outlets at each location, as needed.	X	
Perform structural analysis of towers, rooftops, or other structures to confirm that they are capable of supporting proposed and future antenna loads, if existing towers require equipment centerline changes.		X
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 (with contractors) 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
Deliverable: Information and permitting requirements completed at each site.		

Tasks	Motorola Solutions	Customer
General Facility Improvements		
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., antenna coaxial cables, waveguide for microwave radios, control station antennas etc.).	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	
Correct any R56 deficiencies.		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.		
SYSTEM INSTALLATION		
Equipment Order and Manufacturing		
Create equipment order and reconcile to contract.	X	
Manufacture Motorola Solutions-provided equipment necessary for the system based on equipment order.	X	
Procure non-Motorola Solutions equipment necessary for the system.	X	
Deliverable: Equipment procured and ready for shipment.		
System Staging (NOT customer witnessed)		
Ship all equipment needed for staging to Motorola Solutions' factory for staging.	X	



Tasks	Motorola Solutions	Customer
Provide information on existing system interfaces, room layouts, or other information necessary for the assembly to meet field conditions.		X
Set up and rack the solution equipment on a site-by-site basis, as it will be configured in the field at each of the sites.	X	
Cut and label the cables with to/from information to specify interconnection for field installation and future servicing needs.	X	
Complete the cabling/connecting of the subsystems to each other ("connectorization" of the subsystems).	X	
Assemble required subsystems to assure system functionality.	X	
Power up, load application parameters, program, and test all staged equipment.	X	
Confirm system configuration and software compatibility with the existing system.	X	
Inventory the equipment with serial numbers and installation references.	X	
Review and approve proposed Factory Acceptance Test Plan.		X
Perform factory functional acceptance tests of system features	X	
Conduct site and system level testing.	X	
Pack and ship the racked equipment to the field to finalize staging of equipment. Field staging will be completed at the facility.	X	
Deliverable: System staged and ready for shipment.		
Equipment Shipment and Storage		
Provide a secure, temperature-controlled 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		
General Installation		
Deliver solution equipment to installation location.	X	
Coordinate receipt of and inventory solution equipment with designated contact.	X	

Tasks	Motorola Solutions	Customer
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	
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	
Ensure that Type 1 and Type 2 AC suppression is installed to protect installed equipment.		X
Connect the installed equipment to the provided ground system within 15 feet.	X	
Label Motorola-supplied equipment, racks, and cables.	X	
Note any required changes to the installation for inclusion in the "as-built" system documentation.	X	
Deliverable: Equipment installed.		
Antenna and Transmission Line Installation		
Install antennas, including supplying and installing new side arm mounts. Unless otherwise noted, standard antenna mounts are included.	X	
Install tower top amplifiers.	X	
Install transmission lines required for the system. • Install 2 antenna(s) for the RF system. • Install 1 tower top amplifier(s). • Install up to 350 linear feet of 1/2-inch transmission line. • Install up to 350 linear feet of 7/8-inch transmission line. • Install up to 350 linear feet of 1-1/4-inch transmission line.	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 bus bar at the bottom of each antenna support structure.		X
Deliverable: Antenna and Transmission Line installed.		
D-Series Remote Site Installation and Configuration		
Install fixed equipment contained in the equipment list and system description.	X	
Verify backhaul connectivity and associated equipment (such as MPLS) for all sites to meet latency, jitter, and capacity requirements. These may include dedicated phone circuits, microwave links, or other types of connectivity.	X	
Provision and wiring of additional AC circuits/feeds/breakers/receptacles, and cover any upgrade of the amperage of the utility service into the proposed facility, where needed.	X	
Install and terminate all network cables between site routers and network demarcation points, including microwave, leased lines, and Ethernet.	X	
Prepare drawings showing the layout of new and existing equipment.	X	
Configure the ASTRO 25 system to support the new RF sites.	X	
Integrate the new RF equipment into the system to ensure proper operation.	X	
Install and Integrate the MC Edge equipment.	X	
Perform functionality test of the RF site as described in the FATP section.	X	
Document and provide test results.	X	
Review and approve test results.		X
Antenna and Transmission Line Testing		
Perform an antenna system performance assessment through sweeping the lines in their current installed configuration. Provide a written report on antenna sweeps.	X	
Perform improvements or modifications to antenna systems, as required by the MSI evaluation	X	
Deliverable: Antenna and Transmission Line Sweep Report.		

Tasks	Motorola Solutions	Customer
Once a line sweep report is generated, Both customer and Motorola Solutions will receive and retain a copy for future records.	X	X
Microwave Installation		
Tower		X
Antenna system	X	
Antenna Alignment	X	
Transmission line	X	
Indoor rack and equipment	X	
DC power equipment	X	
Grounding	X	
Product / Network integration test	X	
Microwave equipment integration	X	
Dehydrator integration	X	
Station Test	X	
Hop Test	X	
System Test	X	
Traffic cutover	X	
RF cutover	X	
Storage of all Microwave equipment until deployed to site		X
Transport of Microwave supplied equipment to sites		X
Provide and install standard tower leg pipe mounts		X
Provide and install any required steel support members for side braces		X
All RF/microwave antenna mounting brackets	X	



Tasks	Motorola Solutions	Customer
Antennas and radomes at specified centerlines	X	
Provide and install transmission lines	X	
Provide and install hanger kits and ground kits	X	
Provide and install waveguide or coax boots at entry plates	X	
Provide and install lightning protector at entry points	X	
Deliverable: Microwave Equipment installation completed and ready for optimization.		
DC Power System		
Install the DC Power System rack and secure it to the floor per the agreed-upon Floor Plan.	X	
Install the string of DC batteries.	X	
Ground the DC Power System to the existing Master Ground Bar. The Grounding Cable length is not to exceed 25 feet total.	X	
Install the Inverter in the DC Power System Rack.	X	
Install the AC conduit feeds from the existing AC Distribution Panel to the DC Rectifiers.	X	
Install the AC conduit feeds from the existing AC Distribution Panel to the Inverter.	X	
Connect the DC-powered proposed equipment to the DC Power System.	X	
Connect the AC-powered proposed equipment to the Inverter or the Inverter-fed AC distribution panel.	X	
Turn up and commission the DC Power system; Adjust/verify proper settings, operation, and record initial conductance readings of each battery string.	X	
Provide Soft Copy Report to Customer. Both parties keep a copy for future records.	X	X
Deliverable: DC Power System Installation and Optimization completed.		
SYSTEM OPTIMIZATION AND TESTING		

Tasks	Motorola Solutions	Customer
R56 Site Audit		
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.		
Solution Optimization		
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	
Reconfigure and optimize 3rd party equipment that is not part of the Motorola Solutions scope of work.		X
Deliverable: Completion of System Optimization.		
Functional Acceptance Testing		
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.		
Cutover		
Finalize Cutover Plan.	X	X



Tasks	Motorola Solutions	Customer
Calibrate and tune existing mobile and portable radios to ensure good working order.		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 a 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 the cutover.		X
Provide ongoing communication with users regarding the project and schedule.	X	X
Cutover users and ensure that user radios are operating on the system.		X
Resolve punch list 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 punch list items by providing support, such as access to the sites, equipment and system, and approval of the resolved punch list items.		X
Deliverable: Migration to new system completed, and punch list items resolved.		
Transition to Warranty		
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	
Participate in the Transition Service/Project Transition Certificate (PTC) process.		X
Deliverable: Service information delivered and approved by Customer		
Finalize Documentation and System Acceptance		
Provide manufacturer's installation material, part list and other related material to Customer upon project completion.	X	

Tasks	Motorola Solutions	Customer
Post-install, provide an electronic as-built system including the following: ■ Site Block Diagrams. ■ Site Floor Plans. ■ Site Equipment Rack Configurations. ■ Antenna Network Drawings for RF Sites (where applicable). ■ ATP Test Checklists. ■ Functional Acceptance Test Plan Test Sheets and Results. ■ Equipment Inventory List. ■ Console Programming Template (where applicable). ■ 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.		

NOTE: Final Project Acceptance shall be deemed successful when the ATP tests pass. Customer and Motorola Solutions mark the event by signing and dating the Final System Acceptance milestone certificate.

3. Assumptions

The following assumptions remain in need of review and verification as of the submission of this proposal. These assumptions affect the scope of responsibilities to ensure ancillary systems and facilities are fully prepared to support the solution contained in this proposal. Motorola will work with the customer to determine the validity of these assumptions and determine the increased scope for which Motorola and/or the customer is responsible. Should the customer prefer Motorola to assume responsibility for the increased scope, Motorola will prepare and submit to the customer a revised proposal or change order reflecting the revised scope, cost, and project implementation.

- This design is based on Columbia's current ASTRO 25 system release, 2022.1
- All existing sites or equipment locations will have sufficient power, HVAC systems, and space available for the system described as required/specified by R56.
- All existing sites or equipment locations will have adequate electrical power in the proper phase and voltage, and site grounding to support the requirements of the system described.



- All existing towers will have adequate space and size to support the antenna network requirements of the system described.
- Any site/location upgrades or modifications are the responsibility of Columbia County beyond the equipment and site improvements stated in this proposal.
- Columbia County will be responsible for removing any old or damaged equipment and shelter.
- Any tower stress analysis or tower upgrade requirements are the responsibility of Columbia County.
- Site preparations and all civil implementation work will be the responsibility of Columbia County. Motorola Solutions requires all site and civil work to be completed prior to shipping the proposed equipment to the site. The following parameters were assumed for the site location:
 - Tower structure including all required R56 specific grounding and site documentation required for FCC licensure and Antenna Structure Registration (ASR).
 - Equipment shelter with adequate HVAC, space, and electrical wiring for the proposed equipment.
 - Motorola Solutions is not responsible for any delays or costs associated with site development, or architecture and engineering.
- Microwave (6 GHZ) FCC frequency coordination is accomplished by the Microwave contractor retained by Motorola. The Microwave contractor will obtain only the microwave frequencies for the new antennas, at the heights and azimuths determined after a physical site walk. And future changes to any microwave heights (i.e. center lines), azimuths, power levels, or microwave radio models, require new Microwave FCC frequency coordination.
- Approved local, state, or federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of Columbia County.
- The customer will be responsible for providing accessibility to the site during installation.
- This proposal assumes all re-used and existing antenna and transmission line equipment is in good working condition. Motorola Solutions recommends replacing the antenna and transmission line to optimize performance and provide the best design. Motorola Solutions is not responsible for any issues caused by re-using old equipment.
- Mounting heights for antennas, transmission line, and TTA are preliminary. Final mounting locations will need to be determined by tower survey and desired location of the customer and/or tower owner.
 - **Note:** Any change in antenna height will affect the modeling of the Motorola Solutions provided coverage maps.
- All Communication Sites can be accessed with a 4-wheel drive vehicle. Anything beyond the use of a 4-wheel drive vehicle will require a change order to capture the additional cost.
- Interfacing with 3rd party equipment or applications is not a part of this proposal.
- Any required system interconnections not specifically outlined here will be provided by the Customer. This may include dedicated phone circuits, microwave links, or other types of connectivity.
- Training is not included in this proposal, except for ASTRO 25 IV&D Secure Communications Workshop, for 1 individual, at a Motorola designated training location.

- Motorola Solutions is not responsible for interference caused or received by the Motorola Solutions-provided equipment except for interference that is directly caused by the Motorola Solutions-provided transmitter(s) to the Motorola Solutions-provided receiver(s). Should the Customer's system experience interference, Motorola Solutions can be contracted to investigate the source and recommend solutions to mitigate the issue.
- Motorola Solutions will not perform any work on non-Motorola Solutions owned equipment.
- There is no coverage guarantee, nor any coverage measurements (CATP) included in this proposal.
- Motorola Solutions will collaborate with the customer to properly configure the VLAN for the Suwannee Valley site and overall system architecture.

3.1 Change Order Process

Either Party may request changes within the general scope of this Agreement. If a requested change causes an increase or decrease in the cost, change in system configuration or adds time to the project's timeline required to perform this Agreement, the Parties will agree to an equitable adjustment of the Contract Price, Performance Schedule, or both, and will reflect the adjustment in a change order. Neither Party is obligated to perform requested changes unless both Parties execute a written change order.



4. Site Development Statement of Work

4.1 Civil Scope High Level Summary

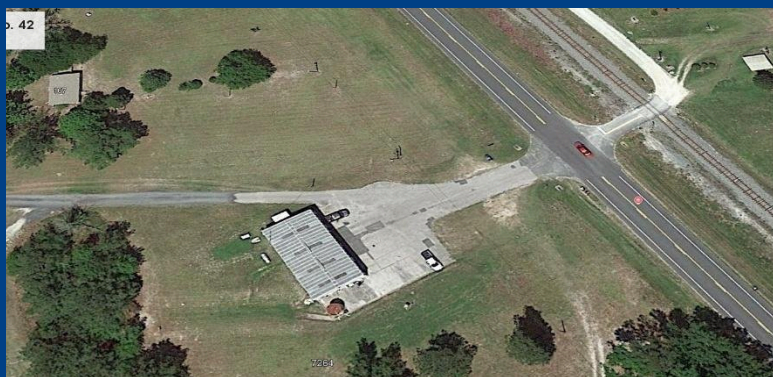
Site Name	Suwannee Fire Sta. 42
Site Acquisition	Customer Responsibility
A&E, Drawings, Regulatory	Customer Responsibility
Permitting	Customer Responsibility
Zoning	Not Included
Existing or New Tower Type/Height	Existing – 300' Self Supported
Existing or New Shelter Type/Size	New – MSB/12x12
Existing or New Fuel Tank Type/Size	Subbase, 132 Gal
Existing or New Generator Type/Size	New – Diesel 35 Kw Customer Supplied
RF Antenna Installation	2 Sticks, 1 TTA
MW Dish Installation	AVIAT

4.2 Proposed A/E (civil design) Services

A/E Scope Proposed	Suwannee Fire Sta. 42
Site design visit to collect pertinent information from the sites	X
Prepare record drawings of the site showing the as-built information	X



Suwannee Valley Fire Station 42



Site Information

Ground Elevation (Ft.)	Latitude	Longitude	Site Owner	EXISTING Tower Ht. (Ft.)	EXISTING Tower Type
135 ft	30°16'41.24" N	82°41'54.79" W	Columbia County	300 ft	Self Supported Tower

Site Improvements

Ice Bridge		NEW Shelter		Fuel Tank	
Length (Ft.)	Type	Width (Ft.)	Length (Ft.)	Gal.	Type
20 (Customer)	Concrete	12	12	132	Sub Base
Generator (Customer Supplied)		Electrical Circuits			
Transfer Switch	Type	Amps/Volts	Type	Cable (Ft.)	
225 Amp/1 PH	35KW	200-amp - 120/240-volt, single-phase	Underground	50	
Antenna: RF		Antenna: TTA			MW Dish:
2 Stick,		1			NA
RF Lines (Linear Ft.)					
1/2-inch	7/8-inch	1-1/4-inch	1-5/8-inch	EW63	
385	385	385			

Site Information

Ground Elevation (Ft.)	Latitude	Longitude	Site Owner	EXISTING Tower Ht. (Ft.)	EXISTING Tower Type
135 ft	30°16'41.24" N	82°41'54.79" W	Columbia County	300 ft	Self Supported Tower



4.3 Site Specific Requirements

Customer developed site: Offload and install one (1) new 12' x 12' concrete shelter and one (1) customer provided 35 kw generator on existing foundations. Bond shelter and generator to customer provided ground whips located within 3' of shelter and generator. Supply and install wire and materials to connect shelter service disconnect to utility meter outside fence line. Mount and cable two (2) antennas, one (1) Tower Top Amp on existing tower.

Motorola Solutions Responsibilities

Site Engineering

- Perform inspection of the site and the work performed by the Contractor to document that the site is built in accordance with the "Site Plans" and document any deviations or violations.

Site Preparation

- Utility coordination, Local permits and inspections required for site work (Construction, electrical etc.)
- Provide one-time mobilization costs for the construction crews. Any remobilization due to interruptions/delays that are out of Motorola's control will result in additional costs.

Site Components Installation

- Offload and install one (1) customer provided standby power generator on existing foundation located within 20 feet of the ATS, including interconnection wiring between the generator, transfer switch, and site electrical service mains.
- Provide all wire and materials necessary for underground hook-up of power to the shelter from nearby utility termination located within 50 cable feet of the shelter. Assumes customer provided underground conduit between utility service and shelter.
- Using customer supplied above ground conductors, located within 3' of equipment, bond shelter and generator to existing site grounding system to meet Motorola R56 Standards.

Miscellaneous Work

- Private Utility locates prior to construction.
- Post installation third party inspections.



Columbia County Responsibilities

General Responsibilities

- Provide personnel to observe construction progress and testing of site equipment according to the schedule provided by Motorola.
- As applicable (based on local jurisdictional authority), the Customer will be responsible for any installation or up-grades of the electrical system in order to comply with NFPA 70, Article 708
- As required, provide property deed or lease agreement, and boundary survey, along with existing as-built drawings of the site and site components to Motorola for conducting site engineering.
- Provide a right of entry letter from the site owner for Motorola to conduct field investigations.
- Maintain existing access road in order to provide clear and stable entry to the site for heavy-duty construction vehicles, cement trucks and cranes. Sufficient space must be available at the site for these vehicles to maneuver under their own power, without assistance from other equipment.
- Provide effectively bonded site ground system conductors within 3 feet of both shelter and generator locations to facilitate connection to site ground.

Existing Structure Responsibilities

- Arrange for space on the structure for installation of new antennas at the proposed heights on designated existing antenna-mounting structures.

Assumptions

General Assumptions

- All work is assumed to be done during normal business hours as dictated by time zone (Monday thru Friday, 7:30 a.m. to 5:00 p.m.).
- All recurring and non-recurring utility costs [including, but not limited to, generator fuel (except first fill), electrical, Telco] will be borne by the Customer or site owner.
- All utility installations shall be coordinated and paid for by the site owner and located at jointly agreed to location within or around the new communications shelter or equipment room.
- Site will have adequate electrical service. Utility transformer, transformer upgrades, line, or pole extensions have not been included.
- Pricing has been based on National codes such IBC or BOCA. Local codes or jurisdictional requirements have not been considered in this quote.



- Hazardous materials are not present at the work location. Testing and removal of hazardous materials, found during site investigations, construction or equipment installation will be the responsibility of the customer.
- No access road or staging area improvements are required for the heavy construction equipment which could include concrete trucks, drill rigs, semi tractors and trailers, and crane.
- If extremely harsh or difficult weather conditions delay the site work for more than a week, Motorola will seek excusable delays rather than risk job site safety.
- Motorola's quote is conditioned upon the ability of Motorola to complete the project at the prices set forth herein. Due to significant market volatility and material price fluctuations in raw materials such as steel, copper, finished wood, crushed stone and concrete, Motorola reserves the right to review all material pricing prior to placing any order for materials or equipment required for new towers or shelters and related civil materials at each site in order to verify price validity. In the event of a significant cost increase in material or equipment occurring during performance of the project through no fault of Motorola, the contract price, time of completion and/or contract requirements shall be equitably adjusted by Change Order in accordance with the procedures of the contract documents.
- Customer is going to deliver generator the same day as shelter

Existing Tower Assumptions

- The existing ground system and soil resistivity at the site is sufficient to achieve resistance of 10 ohms or less. Communication site grounding will be designed and installed per Motorola's R56 standards.
- The existing site has adequate room to expand and install the shelter, including lay-down and staging areas, without encroaching on wetlands, easements, setbacks, right-of-ways, or property lines.
- AM detuning or electromagnetic emission studies will not be required.
- Protective grating over the communications shelter and generator have not been included in this proposal.
- Lead paint testing of existing painted towers has not been included.
- On the existing tower, the antenna locations for the proposed antenna system design will be available at the time of installation.
- The new shelter can be located within 20 feet of the existing tower location and the generator/fuel tank can be located within 25 feet of the shelter.
- Restoration of the site surroundings by fertilizing, seeding, and strawing the disturbed areas will be adequate.



- The site has adequate utility service to support the proposed equipment loading. Utility transformer upgrades or step-up or down transformers will not be required.
- Underground utilities are not present in the construction area and as such no relocation will be required.
- The existing antenna support structure is structurally capable of supporting the new antenna, cables, and ancillary equipment proposed and will not need to be removed or rebuilt at the existing site. The tower or supporting structure meets all applicable EIA/TIA-222 structural, foundation, ice, wind, and twist and sway requirements. Motorola has not included any cost for structural or foundation upgrades to the antenna support structure.
- Structural analyses for towers or other structures that have not been performed by Motorola will relinquish Motorola from any responsibility for the analysis report contents and/or recommendation therein.
- Customer provided foundations for the shelter and generator/fuel tank are sufficient to support the loads presented. Motorola Solutions assumes no responsibility in the event of foundation failure.

Completion Criteria

- Site development completed per issued for construction (IFC) construction drawings, project requirements, contractual obligations (including any customer/Motorola approved changes) and approved by Columbia County.
 - This shall be confirmed by contractor and reviewed with Motorola construction manager and project manager before inspections occur.
- All jurisdictional and contractual required testing and inspections to be performed by the contractor. (Contractual testing and inspections defined and agreed to with project team and customer prior to project kick off; vendor solely responsible for conducting, coordinating and paying for all jurisdictional testing and inspections).
- Motorola site development checklist shall be completed and signed off by contractor prior to customer inspection. (Review with project team and customer and amend checklist as required at project kick off or before work begins).
- Site turn-over package completed and turned over to Motorola (As defined and agreed to with project team and customer).
- All punch list and deficiencies shall be completed prior to customer and Motorola inspections.
-



5. 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 Columbia County 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.

No RF coverage acceptance test plan (CATP) or RF coverage guarantee is included in this proposal.

6. Service/Warranty

Motorola provides a one-year standard warranty for all proposed equipment. Following this, coverage transitions to the existing service agreement for Columbia County, FL. The proposal incorporates SUA costs for post-warranty year 2028, aligning with the Columbia County, FL SUA contract (Motorola Service Agreement USC000263020), which concludes on May 31st, 2034. The DBR site will require inclusion in the SUA renewal agreement effective June 1st, 2028.



7. Equipment List

This section lists the equipment necessary for the proposed solution.

APC	QTY	Part #	Description	Unit List	Ext List	Disc	Unit Disc	Ext Disc
877	1	SQM01SUM032 3A	ASTRO MASTER SITE	\$0.00	\$0.00	20.00%	\$0.00	\$0.00
877	1	CA03517AE	ADD: CORE EXPANSION	\$0	\$0	\$0	\$0	\$0
877	1	UA00153AB	ADD: ASTRO 25 FDMA SITE LICENSE	\$33,600	\$33,600	\$0	\$26,880	\$26,880
877	1	UA00159AB	ADD: P25 PHASE 2 TDMA TRKNG OP SITE LIC	\$33,600	\$33,600	\$0	\$26,880	\$26,880
877	1	UA00407AA	ADD: CLASSIC DATA-P25 TRNK SITE	\$12,675	\$12,675	\$0	\$10,140	\$10,140
877	1	UA00160AA	ADD: PHASE 2 DYNAMIC TG ASGNMT SITE LIC	\$20,160	\$20,160	\$0	\$16,128	\$16,128
877	2	CA01316AA	ADD:UNC ADDTL DEVICE LIC (QTY 10)	\$1,680	\$3,360	\$0	\$1,344	\$2,688
351	1	DSDS7C12P36 U4M	764-869MHZ ANTENNA, OMNIDIRECTIONAL 11.5 DBD, LOW-PIM/HI-PIP, 4-DEG DT, 4.3-10 FEMALE	\$6,679	\$6,679	\$0	\$5,677	\$5,677
351	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$4	\$60	\$0	\$3	\$51
351	2	DS4310M50V1 2N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	\$40	\$80	\$0	\$34	\$68
351	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	\$100	\$201	\$0	\$85	\$171

351	350	DSEC650A	COAXIAL CABLE, "A" SERIES 1-1/4" 50 OHM CORRUGATED COPPER	\$16	\$5,600	\$0	\$14	\$4,760
351	2	DS4310F50V11 4N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC6-50-A	\$173	\$346	\$0	\$147	\$294
351	7	DSGKN114C2	STANDARD GROUND KIT FOR 1-1/4", INCLUDES 2' LEAD WITH ATTACHED 3/8" 2-HOLE LUG	\$56	\$392	\$0	\$48	\$333
351	2	DSHG114L	PRE-LACED HOISTING GRIP FOR 1-1/4 AIRCELL COAX	\$129	\$258	\$0	\$110	\$219
207	12	DSBH114	BH-114 BUTTERFLY HANGER FOR 1-1/4 AIRCELL COAX,PKG OF 10	\$95	\$1,139	\$0	\$85	\$1,025
207	1	DSTSX4310FM P	4.3-10 M/F BULKHEAD COAX RF SURGE PROTECTOR, 698MHZ - 2.7GHZ PIM	\$275	\$275	\$0	\$248	\$248
351	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$4	\$60	\$0	\$3	\$51
351	2	DS4310M50V1 2N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	\$40	\$80	\$0	\$34	\$68
351	1	DSDS7C12P36 U4M	764-869MHZ ANTENNA, OMNIDIRECTIONAL 11.5 DBD, LOW-PIM/HI-PIP, 4-DEG DT, 4.3-10 FEMALE	\$6,679	\$6,679	\$0	\$5,677	\$5,677
351	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$4	\$60	\$0	\$3	\$51
351	2	DS4310M50V1 2N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	\$40	\$80	\$0	\$34	\$68
351	5	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT	\$100	\$502	\$0	\$85	\$427
351	15	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH	\$4	\$60	\$0	\$3	\$51



			BLACK PE JACKET					
351	2	DS4310M50V1 2N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	\$40	\$80	\$0	\$34	\$68
351	350	DSEC550A	COAXIAL CABLE, "A" SERIES 7/8 IN 50 OHM CORRUGATED COPPER W/ BLACK PE	\$8	\$2,800	\$0	\$7	\$2,380
351	2	DS4310F50V78 N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC5-50-A	\$56	\$112	\$0	\$48	\$95
207	7	DSGKNM	STANDARD GROUND KIT FOR 5/8", 7/8" (21.3- 28.7MM) EW85, EW90, WE108, EW127, WE130, E130, EW132 AND WE150 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2- HOLE LUG	\$73	\$511	\$0	\$66	\$460
207	2	DSHG78L	HOISTING GRIP, PRE-LACED, 7/8 IN CORRUGATED COAX	\$117	\$234	\$0	\$105	\$210
351	350	DSEC450	COAXIAL CABLE, 1/2" 50 OHM CORRUGATED COPPER WITH BLACK PE JACKET	\$4	\$1,400	\$0	\$3	\$1,190
351	1	DS4310M50V1 2N1	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50	\$40	\$40	\$0	\$34	\$34
351	1	DS4310F50V12 N1	CONNECTOR, 4.3-10 FEMALE INTERFACE FOR EC4-50	\$40	\$40	\$0	\$34	\$34
351	7	DSGKNS	STANDARD GROUND KIT FOR 1/2" (15.5-16.5MM) EW180,WE191 & E185 CABLE, INCLUDES 5' LEAD WITH UNATTACHED 3/8" 2-HOLE LUG	\$72	\$504	\$0	\$61	\$428
351	2	DSHG12L	PRE-LACED HOISTING GRIP FOR 1/2" STANDARD CABLES, EACH	\$41	\$82	\$0	\$35	\$70
351	12	DSBH12	BH-12 BUTTERFLY HANGER FOR 1/2 AIRCELL COAX,PKG OF	\$95	\$1,139	\$0	\$81	\$968

			10					
351	12	DSBH78	BH-78 BUTTERFLY HANGER FOR 7/8 AIRCELL COAX,PKG OF 10	\$95	\$1,139	\$0	\$81	\$968
351	2	DSTXDC4310F M	DC PASS, BIDIRECTIONAL FEMALE/MALE 698MHZ - 2.7GHZ, PIM RATED	\$318	\$636	\$0	\$270	\$541
351	15	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$5	\$75	\$0	\$4	\$64
351	2	DS4310M50B1 2X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	\$59	\$118	\$0	\$50	\$100
351	15	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$5	\$75	\$0	\$4	\$64
351	2	DS4310M50B1 2X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	\$59	\$118	\$0	\$50	\$100
351	25	DSEC450HF	COAXIAL CABLE, 1/2" HIFLEX, 50 OHM WITH BLACK PE JACKET	\$5	\$125	\$0	\$4	\$106
351	2	DS4310M50B1 2X	CONNECTOR, 4.3-10 MALE INTERFACE FOR EC4-50-HF	\$59	\$118	\$0	\$50	\$100
675	1	SQM01SUM033 8A	7/800 DBR M12 MULTI-CARRIER SITE	\$8,990	\$8,990	\$0	\$7,642	\$7,642
675	1	CA04069AA	ADD: NEW DBR SITE	\$0	\$0	\$0	\$0	\$0
675	1	CA03872AA	ADD: SYSTEM RELEASE A2022.X	\$0	\$0	\$0	\$0	\$0
675	1	CA03875AA	ADD: DBR M12 PRIMARY RACK	\$7,865	\$7,865	\$0	\$6,685	\$6,685
675	5	CA03887AA	ADD: ANTENNA 1 CHANNELS	\$6,854	\$34,270	\$0	\$5,826	\$29,130
675	5	CA03890AA	ADD: 700 MHZ POWER AMPLIFIER	\$7,865	\$39,325	\$0	\$6,685	\$33,426
675	2	CA03895AA	ADD: INTEGRATED GNSS	\$13,485	\$26,970	\$0	\$11,462	\$22,925



			TIMING REF W/ RB					
675	1	CA03906AA	ADD: 7.5 FOOT OPEN RACK	\$1,685	\$1,685	\$0	\$1,432	\$1,432
675	1	CA03878AA	ADD: 700 MHZ TX ANTENNA 1 FILTER	\$3,370	\$3,370	\$0	\$2,865	\$2,865
675	1	CA04172AA	ADD: RMC AND PRESELECTOR	\$2,332	\$2,332	\$0	\$1,982	\$1,982
675	1	CA03899AA	ADD: RMC EXPANSION PRE-WIRE	\$2,023	\$2,023	\$0	\$1,720	\$1,720
675	2	UA00866AA	ADD: SIMULCAST SUB-SITE CONTROLLER SW	\$9,215	\$18,430	\$0	\$7,833	\$15,666
675	5	UA00868AA	ADD: SIMULCAST SUB-SITE BR SOFTWARE	\$38,765	\$193,825	\$0	\$32,950	\$164,751
675	4	UA00869AA	ADD: P25 TDMA SOFTWARE	\$17,980	\$71,920	\$0	\$15,283	\$61,132
675	4	UA00870AA	ADD: DYNAMIC CHANNEL ASSIGNMENT SOFTWARE	\$13,485	\$53,940	\$0	\$11,462	\$45,849
675	2	UA00871AA	ADD: DSC 8500 RUBIDIUM SW LICENSE	\$5,056	\$10,112	\$0	\$4,298	\$8,595
675	2	CA03902AA	ADD: SRX345 SITE ROUTER	\$0	\$0	\$0	\$0	\$0
675	2	CA03902AA-P	ADD: SRX345 SITE ROUTER PRICE	\$8,277	\$16,554	\$0	\$7,035	\$14,071
207	2	DSIX2L1M1DC4 8IG	SITE EQUIPMENT,PD, HPD GPS DATA LINE, 48VDC, HARD WIRE WITH ISOLATED GROUNDING	\$247	\$494	\$0	\$222	\$445
675	1	DLN8062A	FRU: DBR MCPA 700 MHZ	\$16,854	\$16,854	\$0	\$14,326	\$14,326
291	2	DSP04268	ALUMINUM 6061-T6. PIPE 1 INCH SCHED 40	\$16	\$33	\$0	\$14	\$28
291	2	DSWM4	HEAVY DUTY W STYLE WALL MOUNT WITH 4 INCH STAND-OFF	\$92	\$184	\$0	\$78	\$156
675	1	DLN8042A	FRU: DBR FAN FILTER REPLACEMENT KIT	\$280	\$280	\$0	\$238	\$238

675	1	DLN8065A	FRU: XCVR 7/800 MHZ	\$3,146	\$3,146	\$0	\$2,674	\$2,674
780	2	CB001133A05	CABLE,ASTRO: 125' REMOTE GPS CABLE	\$867	\$1,733	\$0	\$780	\$1,560
895	2	PMUG1018A	GNSS REMOTE RECEIVER ASSY	\$1,066	\$2,132	\$0	\$959	\$1,919
275	1	F0016A	MC IOT MAIN MODEL	\$1,119	\$1,119	\$0	\$951	\$951
275	1	VA01946AA	ADD: MC EDGE AS NFM	\$535	\$535	\$0	\$455	\$455
275	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD	\$177	\$177	\$0	\$150	\$150
275	1	VA01973AA	ADD: DIN RAIL STOPPER	\$17	\$17	\$0	\$14	\$14
469	4	V592AB	AAD TERM BLCK & CONN WI	\$90	\$360	\$0	\$81	\$324
275	1	VA00148AA	ADD: WALL MOUNT INSTALLATION KIT	\$59	\$59	\$0	\$50	\$50
275	1	VA01982AA	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT	\$392	\$392	\$0	\$333	\$333
275	1	VA00147AA	ADD: FRONT CABLE COVERS	\$12	\$12	\$0	\$10	\$10
275	1	VA00150AA	ADD:12DI-8AI HW ONLY	\$642	\$642	\$0	\$546	\$546
275	1	VA00151AA	ADD:0 - 5V DI-AI	\$0	\$0	\$0	\$0	\$0
275	3	VA00989AA	ADD: MIXED DIGITAL _ 8DO EE 16DI 5-18 V -DRY	\$642	\$1,926	\$0	\$546	\$1,637
275	1	VA00991AA	ADD: DC-DC - [48 >>24] PS W-O HOUSING	\$530	\$530	\$0	\$451	\$451
275	1	VA00155AA	ADD:DC POWER CABLE 5A	\$59	\$59	\$0	\$50	\$50
275	1	VA00153AA	ADD:I-O MODULE EXTRACTOR TOOL	\$12	\$12	\$0	\$10	\$10
275	1	VA01957AA	ADD: CAN BUS I-O CONNECTION CABLE_ RJ50_700MM	\$40	\$40	\$0	\$34	\$34
275	1	VA01967AA	INC: MC_EDGE CPU PACKING	\$0	\$0	\$0	\$0	\$0



275	1	VA00341AA	INC:MC-EDGE MAIN FILE SYSTEM	\$0	\$0	\$0	\$0	\$0
275	1	VA00142AA	INC:EXTREMDB LICENSE	\$0	\$0	\$0	\$0	\$0
275	4	VA00049AA	INC: I-O MODULE CABLE COVER	\$0	\$0	\$0	\$0	\$0
275	1	VA00974AA	INC: IOT MC-EDGE CPU PACKAGE	\$0	\$0	\$0	\$0	\$0
275	2	VA00015AA	INC: DIN RAIL 26 CM KIT	\$0	\$0	\$0	\$0	\$0
275	1	VA00047AA	INC: 12DI-8AI 0-5V	\$0	\$0	\$0	\$0	\$0
275	1	VA00442AA	INC:MC-EDGE SYSTEM SW FILES	\$0	\$0	\$0	\$0	\$0
275	1	VA01383AA	INC: FRONT CABLE COVERS FOR MC EDGE	\$0	\$0	\$0	\$0	\$0
457	1	DS440037635	TTA 440, MOTOROLA CU (ESS), 794-824 MHZ, BYPASS, TEST PORT, 2AC, 4.3-10 TTA CONNECTORS	\$6,741	\$6,741	\$0	\$6,067	\$6,067
457	1	DS440030221	TTA 440, MOTOROLA TOWER TOP UNIT, 794-824 MHZ, 4.3-10 CONNS, AUTOQUAD	\$8,653	\$8,653	\$0	\$7,788	\$7,788
509	1	TRN7343A	RACK 7.5'	\$708	\$708	\$0	\$602	\$602
229	1	DS11231719	CHATSWORTH (19WX6.13HX21.75D INCH) VENTED SHELF- BLACK	\$690	\$690	\$0	\$586	\$586
207	1	DSRGBVKIT145 872A	VERTICAL MOUNTED COPPER GRD BAR (1/4" X 5/8" X 72"), MOUNTING HARDWARE	\$284	\$284	\$0	\$256	\$256
454	3	0784469Y02	BRACKET,BRKT, CBL SUPPORT	\$110	\$329	\$0	\$93	\$280
207	1	DSSBVB72K	B-LINE SYS SBVB72K 72IN VERTICAL GROUND BAR & HARDWARE KIT	\$609	\$609	\$0	\$548	\$548

675	1	DLN1447A	FRE: DSC 8500 W/ RUBIDIUM	\$29,215	\$29,215	\$0	\$24,833	\$24,833
708	1	TT4270B	Z2 MINI G9 WORKSTATION GEN14 PROCESSOR	\$2,857	\$2,857	\$0	\$2,286	\$2,286
708	1	DSKVT417A8U VR2	SERVTRAY 17IN (8 PORT) VGA, USB/PS/2 PORT	\$3,201	\$3,201	\$0	\$2,560	\$2,560
329	1	DQ-TEMP-SHEL TER-CONC	12x12 THERMABOND for DC batteries	\$275,77 0	\$275,770	\$0	\$261,98 2	\$261,982
131	1	DQ-TEMP-MICR OWAVE1	TEMPORARY PLACEHOLDER FOR SITE STRUCTURE: BACKHAUL: MICROWAVE VENDORS - NOKIA & AVIAT	\$266,97 3	\$266,973	\$0	\$240,27 5	\$240,275
207	1	DQ-TEMP-DC-P OWER	TEMPORARY PLACEHOLDER FOR SITE STRUCTURE: DC POWER	\$56,073	\$56,073	\$0	\$50,466	\$50,466
877	1	HKVN4852A	LICENSE,SMARTCONNECT ENABLEMENT - AUS	\$0	\$0	\$0	\$0	\$0
137	1	T8749A	ASTRO KEY MANAGEMENT FACILITY.	\$0	\$0	\$0	\$0	\$0
137	1	ZA01180AA	ADD: KMF SERVER AND WEB CLIENT SW.	\$120,96 0	\$120,960	\$0	\$114,91 2	\$114,912
137	1	CA04100AA	ADD: WINDOWS SERVER 2016 SOFTWARE.	\$0	\$0	\$0	\$0	\$0
137	1	SQM01SUM022 2A	KMF CRYPTR.	\$1,008	\$1,008	\$0	\$958	\$958
137	1	CA03840AA	KMF CRYPTR SW OPTION FOR KMF W VER R10.02.XX OR LATER.	\$4,962	\$4,962	\$0	\$4,714	\$4,714
137	1	CA00182AV	ADD: AES 256 ENCRYPTION KIT.	\$924	\$924	\$0	\$878	\$878
137	1	CA00143AF	ADD:DES OFB ENCRYPTION KIT.	\$924	\$924	\$0	\$878	\$878
137	1	CA00144AE	ADD:DES XL ENCRYPTION KIT.	\$924	\$924	\$0	\$878	\$878



137	1	CA00145AM	ADD:DVI XL ENCRYPTION KIT.	\$924	\$924	\$0	\$878	\$878
137	1	CA00146AN	ADD:DVP XL ENCRYPTION KIT.	\$924	\$924	\$0	\$878	\$878
137	1	CA02066AA	ADD: AC LINE CORD, NORTH AMERICA.	\$0	\$0	\$0	\$0	\$0
811	1	TKN9285A	RACK MOUNT KIT FOR CRYPTR II.	\$166	\$166	\$0	\$166	\$166
137	1	T8754A	KMF UPGRADE LICENSE CD ONLY.	\$0	\$0	\$0	\$0	\$0
137	1	UA00880AA	ADD: ASTRO KMF UPGRADE SOFTWARE ONLINE DELIVERY.	\$0	\$0	\$0	\$0	\$0
137	1	CA03643AA	ADD: TOUCHLESS KEY PROVISIONING.	\$18,480	\$18,480	\$0	\$17,556	\$17,556
137	1	CA03710AA	ADD: PRIORITIZED GROUPS ROTATION.	\$0	\$0	\$0	\$0	\$0
137	1	T8698A	KMF DL360 G10 SERVER.	\$18,676	\$18,676	\$0	\$17,742	\$17,742
137	1	CA04098AA	ADD: WINDOWS SERVER 2016.	\$0	\$0	\$0	\$0	\$0
877	1	SQM01SUM0323A	ASTRO MASTER SITE	\$0	\$0	\$0	\$0	\$0
877	1	CA03517AE	ADD: CORE EXPANSION	\$0	\$0	\$0	\$0	\$0
877	10	UA00245AA	ADD: 50 TALK GROUP TEXT LICENSES	\$3,360	\$33,600	\$0	\$2,688	\$26,880
877	10	UA00235AA	ADD: MCC7500/MCC7100 CONSOLE GROUP TEXT LICENSES	\$280	\$2,800	\$0	\$224	\$2,240
877	1	UA00236AA	ADD: 500 RADIO ALIAS UPDATE LICENSES	\$5,600	\$5,600	\$0	\$4,480	\$4,480
877	200	UA00790AA	RADIO ALIAS UPDATE, PER USER (HKVN4915)	\$13	\$2,600	\$0	\$10	\$2,080
877	1	UA00533AA	ADD: USER LOGIN ALIAS UPDATE	\$5,000	\$5,000	\$0	\$4,000	\$4,000

232	1	T8108A	UNS RESOURCE EXPANSIONS	\$0	\$0	\$0	\$0	\$0
232	200	UA00788AA	IMW PRESENCE (PER USER)	\$22	\$4,400	\$0	\$20	\$3,960

Equipment List Price

\$1,532,614

Equipment with Discount

\$1,356,772

Sourcewell Discount

(\$175,842)



8. Pricing Summary

Motorola is pleased to provide the following equipment and services to Columbia County.

Due to significant market and tariff volatility, as well as fluctuations in the cost of energy and raw materials including, but not limited to, steel, copper, finished wood, and concrete, Motorola Solutions reserves the right to equitably adjust the contract price, completion schedule, and/or contract requirements. Additionally, Motorola Solutions reserves the right to apply a fuel surcharge to quoted freight rates based on the prevailing diesel cost at the time of shipment.

8.1 Equipment and Installation

Description	Price (USD)
System Hardware & Equipment	\$1,532,614
Implementation Services	\$990,624
System Sub-Total:	\$2,523,238
<i>Sourcewell Discount</i>	<i>(\$175,842)</i>
<i>Additional Incentive Purchased as Proposed by 10/23/26</i>	<i>(\$390,643)</i>
Total System	\$1,956,753

Pricing will remain valid through October 23, 2026.

8.2 Maintenance and Lifecycle Services*

*Pricing for Outyears of services is subject to renegotiation if not purchased within the price validity window.

Description	Annual Price
2028	\$36,576
2029	\$12,238
2030	\$14,572
2031	\$15,152
2032	\$15,761

	2033	\$16,399
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8.3 Payment Schedule

Except for a payment that is due on the Effective Date, Columbia County will make payments to Motorola within thirty (30) days after the date of each invoice. Columbia County 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 Columbia County 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

- 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.

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 Columbia County annually in advance of each year of the plan.

INFLATION REVIEW. 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. The adjustment calculation will be based upon the CPI for the most recent twelve (12) month increment beginning from the most current month available as posted by the U.S. Department of Labor (<http://www.bls.gov>) immediately preceding the new maintenance year. 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). Any pricing change would be documented in a change order executed with the Customer.



9. Contractual Documentation

This proposal is governed by the terms and conditions of Sourcewell Agreement #020625-MOT. The parties explicitly agree that the language contained therein shall govern this agreement, and be the prevailing document between the parties. Unless explicitly stated otherwise, and in writing, the parties construe this proposal and that document and the inclusive, complete agreement between the parties. Questions regarding the Sourcewell Agreement can be directed to your dedicated account executive.

Customer affirms they have signatory authority to execute this contract. The contract price of \$1,956,753, excluding taxes, is fully committed and identified, including all subsequent years of contracted services, if applicable. 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.

Motorola acknowledges the Customer may require the issuance(s) of a purchase order or notice to proceed as part of the Customer's procurement process. However, Customer agrees that the issuance or non-issuance of a purchase order or notice to proceed does not preclude the Customer from its contractual obligations as defined in this Agreement

The Parties hereby enter into this agreement and proposal as of the Effective Date.

Motorola Solutions, Inc.

By:  _____

Name: Danny Sanchez

Title: MSSSI FL Territory VP

Date: September 23, 2026

Customer: _____

By: _____

Name: _____

Title: _____

Date: _____

Certificate Of Completion

Envelope Id: E714FA41-31AA-8E72-8327-A9CFA28752B2

Status: Completed

Subject: Complete with Docusign: Columbia Cty - Suwannee Valley Proposal 9-23-26.pdf

Source Envelope:

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Signatures: 2

Envelope Originator:

Certificate Pages: 4

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Danny Sanchez

daniel.sanchez@motorolasolutions.com

MSSSI FL Territory VP

Motorola Solutions, Inc.

Security Level: Email, Account Authentication
(None)

Signature Adoption: Drawn on Device

Using IP Address:

2600:1006:b026:22b3:2455:16d1:3e57:2d23

Signed using mobile

Sent: 9/23/2026 2:17:13 PM

Viewed: 9/23/2026 2:21:34 PM

Signed: 9/23/2026 2:21:46 PM

Electronic Record and Signature Disclosure:

Accepted: 9/23/2026 2:21:34 PM

ID: 605295ec-770b-4283-8ce2-58228026073e

In Person Signer Events

Signature

Timestamp

Editor Delivery Events

Status

Timestamp

Agent Delivery Events

Status

Timestamp

Intermediary Delivery Events

Status

Timestamp

Certified Delivery Events

Status

Timestamp

Carbon Copy Events

Status

Timestamp

Witness Events

Signature

Timestamp

Notary Events

Signature

Timestamp

Envelope Summary Events

Status

Timestamps

Envelope Sent

Hashed/Encrypted

9/23/2026 2:17:13 PM

Certified Delivered

Security Checked

9/23/2026 2:21:34 PM

Signing Complete

Security Checked

9/23/2026 2:21:46 PM

Completed

Security Checked

9/23/2026 2:21:46 PM

Payment Events

Status

Timestamps

Electronic Record and Signature Disclosure

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Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact Motorola Solutions, Inc.:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:

To contact us by email send messages to: bryan.kurzynski@motorolasolutions.com

To advise Motorola Solutions, Inc. of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at bryan.kurzynski@motorolasolutions.com and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

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To request paper copies from Motorola Solutions, Inc.

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to bryan.kurzynski@motorolasolutions.com and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with Motorola Solutions, Inc.

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