

Memorandum



Date: June 21, 2023

To: Honorable Chairman Oliver G. Gilbert, III
and Members, Board of County Commissioners

From: Daniella Levine Cava
Mayor *Daniella Levine Cava*

Subject: Recommendation for Approval of a Designated Purchase to Authorize Additional Expenditure Authority to Contract for L3Harris Radio Communication System Upgrade

Agenda Item No. 8(P)(6)

Resolution No. R-534-23

Summary

This item is requesting approval of a designated purchase to authorize additional expenditure authority to allow the Information Technology Department (ITD) to obtain a L3/Harris Radio Communication System Upgrade on behalf of the Miami-Dade Corrections and Rehabilitation Department (MDCR). This upgrade is necessary to ensure the radio system infrastructure in the Miami-Dade Metro West Detention Center (Metro West) and Turner Guilford Knight Correctional Center (TGK) remain at the highest level of service for the safety of the correctional officers and inmates. The Enterprise Miami-Dade County L3/Harris/Project 25 (P25) Radio Communication System (System) network infrastructure is proprietary system and supports over 33,000 radios.

As the Original Equipment Manufacturer (OEM), L3Harris Technologies, Inc. (L3/Harris) is uniquely qualified to continue the mission critical development and enhancements of MDCR's Radio System to meet the standards required. This is a public safety system and moving the system to another vendor could create interoperability issues when the majority of the County is on the Harris system. This project is intended to implement more modern technology from the existing vendor for improved functionality. The only department that uses a different system (Motorola) is Miami-Dade Fire Rescue.

Recommendation

It is recommended that the Board of County Commissioners (Board) approve this request for a designated purchase under Contract No. L9203-0/30, L3Harris Radio Communication System Upgrade for ITD on behalf of MDCR. Approval of a designated purchase, by a two-thirds vote of the Board members present, is being requested pursuant to Section 2-8.1(b)(3) of the Miami-Dade County Code to authorize \$2,390,000 in additional expenditure authority to upgrade the existing MDCR System infrastructure and obtain maintenance and support services for the System. The Board awarded this contract to Harris Corporation (presently L3Harris) through Resolution No. R-1188-20 for a 10-year term with an allocation of \$20,715,017.

The MDCR System infrastructure is end of life and parts for repairs are no longer available. As a result, it is critical for MDCR's correctional facilities' operations to upgrade their systems. If the System fails within the facilities, MDCR would not have any communications with or between the correctional officers, placing them and inmates at a higher security risk.

To avoid any communication system failure, upgrading the MDCR System via the current Legacy contract is in the best interest of the County. Further, the proposed project is considered a legacy radio system upgrade to MDCR's facilities and will connect to the County's P25 system to service the 2,850 MDCR radios.

Background

Miami-Dade County operates a countywide L3/Harris/Project 25 (P25) system which is a suite of standards for interoperable digital two-way radio products. This allows digital radio communications for federal, state and local public safety organizations, first responders and utilities to have interoperable multi-agency communications during emergency situations. Additionally, the radio system supports local government activities within Miami-Dade County and approximately 33,000 radios across County agencies. The infrastructure software and upgrade equipment proposed for MDCR is needed to connect to the Enterprise P25 system and ensure continued services. All software and hardware must be on a warranty agreement by the OEM, for the continued life of the system. L3/Harris' proprietary simulcast radio system has a coverage umbrella that spans the County, utilizing 11 transmit/receive tower sites, which are strategically located to ensure proper radio coverage across the County.

Competition is not practicable at this time as the current Radio system design and architecture is the product of years of collaboration between the County and L3/Harris including OEM services for the radio system and accessories utilized by user agencies for calls for service. The ITD Radio Division staff has over 12 years of experience and are fully trained and certified on the L3/Harris Radio system and repairing L3/Harris radios. Accordingly, it is in the County's best interest to approve this designated purchase pursuant to Section 2-8.1(b)(3) of the Miami-Dade County Code.

Scope

The impact of this item is countywide in nature.

Delegated Authority

The County Mayor or the County Mayor's designee will have the authority to execute Supplemental Agreement No. 1 and exercise all provisions of the contract, including any cancellation or extensions, pursuant to Section 2-8.1 of the County Code and Implementing Order 3-38.

Fiscal Impact/Funding Source

The fiscal impact for the upgrade is \$2,390,000 and will provide software and hardware upgrade to enhance communication for MDCR within the Metro West and TGK facilities. The contract is currently valued \$20,715,017 for a 10-year term which expires on December 9, 2030. If this request is approved the modified cumulative allocation will be \$23,105,017.

Department	Existing Allocation	Additional Allocation Requested	Modified Cumulative Allocation	Funding Source	Contract Manager
ITD	\$20,715,017	\$2,390,000	\$23,105,017	Internal Service Funds	Martin Rose
Total:	\$20,715,017	\$2,390,000	\$23,105,017		

Track Record/Monitor

Angela Mathews-Tranumn of the Strategic Procurement Department (SPD) is the Procurement Contracting Manager.

Awarded Vendor

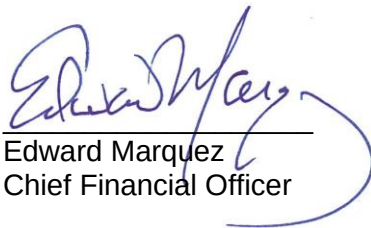
Vendor	Principal Address	Local Address	Principal
L3Harris Technologies, Inc.	1025 W NASA Boulevard Melbourne, FL	7508 NW 54 Street Miami, FL	William Mitchell Brown

Due Diligence

Pursuant to Resolution No. R-187-12, due diligence was conducted in accordance with SPD's Procurement Guidelines to determine contractor responsibility, including verifying corporate status and review of performance and compliance issues through various vendor responsibility lists and a keyword internet search. The lists referenced include convicted vendors, debarred vendors, delinquent contractors, suspended vendors, and federal excluded parties. There were no adverse findings relating to contractor responsibility.

Applicable Ordinances and Contract Measures

- The two percent User Access Program provision applies.
- The Small Business Enterprise measures and Local Preference did not apply.
- The Living Wage does not apply as the services to be procured are not covered under the Ordinance.



Edward Marquez
Chief Financial Officer



MEMORANDUM

(Revised)

TO: Honorable Chairman Oliver G. Gilbert, III
and Members, Board of County Commissioners

DATE: June 21, 2023

FROM: 
Gen Bonzon-Keenan
County Attorney

SUBJECT: Agenda Item No. 8(P)(6)

Please note any items checked.

- ☐ "3-Day Rule" for committees applicable if raised
- ☐ 6 weeks required between first reading and public hearing
- ☐ 4 weeks notification to municipal officials required prior to public hearing
- ☐ Decreases revenues or increases expenditures without balancing budget
- ☐ Budget required
- ☐ Statement of fiscal impact required
- ☐ Statement of social equity required
- ☐ Ordinance creating a new board requires detailed County Mayor's report for public hearing
- ☐ No committee review
- ☒ Applicable legislation requires more than a majority vote (i.e., 2/3's present ☒, 2/3 membership ____, 3/5's ____, unanimous ____, CDMP 7 vote requirement per 2-116.1(3)(h) or (4)(c) ____, CDMP 2/3 vote requirement per 2-116.1(3)(h) or (4)(c) ____, or CDMP 9 vote requirement per 2-116.1(4)(c)(2) ____ to approve
- ☒ Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required

Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 8(P)(6)
6-21-23

RESOLUTION NO. R-534-23

RESOLUTION AUTHORIZING DESIGNATED PURCHASE PURSUANT TO SECTION 2-8.1(B)(3) OF THE COUNTY CODE BY A TWO-THIRDS VOTE OF THE BOARD MEMBERS PRESENT; AUTHORIZING ADDITIONAL EXPENDITURE AUTHORITY IN AN AMOUNT NOT TO EXCEED \$2,390,000.00 FOR A TOTAL MODIFIED CONTRACT AMOUNT OF \$23,105,017.00 FOR CONTRACT NO. L9203-0/30 FOR L3HARRIS RADIO COMMUNICATION SYSTEM UPGRADE FOR THE INFORMATION TECHNOLOGY DEPARTMENT; AND AUTHORIZING THE COUNTY MAYOR OR COUNTY MAYOR'S DESIGNEE TO EXECUTE THE AGREEMENT AND EXERCISE ALL PROVISIONS OF THE CONTRACT, INCLUDING ANY CANCELLATION OR EXTENSION PROVISIONS, PURSUANT TO SECTION 2-8.1 OF THE COUNTY CODE AND IMPLEMENTING ORDER 3-38

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that:

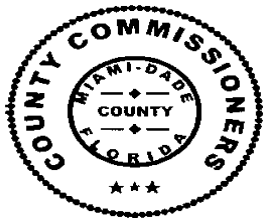
Section 1. This Board finds it is in the best interest of Miami-Dade County to authorize a designated purchase in an amount not to exceed \$2,390,000.00 for a total modified contract amount of \$23,105,017.00 for Contract No. RFP-00200 for L3Harris Radio Communication System Upgrade for the Information Technology Department pursuant to section 2-8.1(b)(3) of the Code of Miami-Dade County, by a two-thirds vote of the Board members present.

Section 2. This Board authorizes the County Mayor or County Mayor's designee to execute Supplemental Agreement No. 1, in substantially the form attached and made a part hereof, and exercise all provisions of the contract, including any cancellation or extension provisions, pursuant to section 2-8.1 of the County Code and Implementing Order 3-38.

The foregoing resolution was offered by Commissioner **Juan Carlos Bermudez**, who moved its adoption. The motion was seconded by Commissioner **Danielle Cohen Higgins** and upon being put to a vote, the vote was as follows:

Oliver G. Gilbert, III, Chairman	absent		
Anthony Rodríguez, Vice Chairman	aye		
Marleine Bastien	aye	Juan Carlos Bermudez	aye
Kevin Marino Cabrera	absent	Sen. René García	aye
Roberto J. Gonzalez	aye	Keon Hardemon	absent
Danielle Cohen Higgins	aye	Eileen Higgins	absent
Kionne L. McGhee	aye	Raquel A. Regalado	aye
Micky Steinberg	aye		

The Chairperson thereupon declared this resolution duly passed and adopted this 21st day of June, 2023. This resolution shall become effective upon the earlier of (1) 10 days after the date of its adoption unless vetoed by the County Mayor, and if vetoed, shall become effective only upon an override by this Board, or (2) approval by the County Mayor of this resolution and the filing of this approval with the Clerk of the Board.



MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

JUAN FERNANDEZ-BARQUIN, CLERK

By: **Basia Pruna**
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

MBV

Michael B. Valdes

SUPPLEMENTAL AGREEMENT NO. 1

Contract Number: L9203-0/30

Contract Title: L3harris Radio Communication System Upgrade

Contractor: L3harris Technologies Inc.
221 Jefferson Ridge Parkway
Lynchburg, VA 24501

In accordance with the above referenced Contract, this Supplemental Agreement, when properly executed, shall become part of the Contract, as follows:

Whereas, the County and Contractor desire to modify the Agreement to add additional hardware, software, and services to be provided by the Contractor to the County; and

Whereas, Article 48 (Additional Hardware and Services Purchases) of the Agreement allows for the purchase of additional licenses, hardware, software, and/or services and Article 4(a) of the Agreement provides that the Agreement may only be modified in a written amendment duly executed by both parties; and

Whereas, this Supplemental Agreement No. 1 sets forth the terms and conditions that are in addition to and/or modify those terms and conditions set forth in the original Agreement.

Now, therefore, in consideration of the premises and mutual promises contained herein, the parties hereto agree to the following modification to the Agreement:

1. Incorporate Exhibit A-1 to Exhibit "A" as additional services, Appendix A and B as equipment list, and Exhibit C-4 to Exhibit "C" as additional compensation for those services in addition to the provisions already contained in those Exhibits.

All other terms, covenants and conditions of the original Contract and Supplemental Agreement No. 1 shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement No. 1 to County Contract No. L9203-0/30 for L3harris Radio Communication System Upgrade.

Contractor

Miami-Dade County

By: Lori A. Rodriguez

By: _____

Name: Lori A. RodriguezName: Daniella Levine CavaTitle: Director, ContractsTitle: MayorDate: 3/22/23

Date: _____

Attest: Patricia K. Harpiny
Corporate Secretary/NotaryAttest: _____
Clerk of the Board

Miami-Dade County, FL

Supplemental Agreement No. 1 to Contract No. L9203-0/30

Corporate Seal/Notary

Approved as to form
and legal sufficiency

PATRICIA K. HARPRING
NOTARY PUBLIC
REG. #7728703
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES 08/31/2025

Assistant County Attorney



EXHIBIT A-1
MIAMI-DADE COUNTY CORRECTIONS
RADIO COMMUNICATIONS UPGRADE

1. System Upgrade

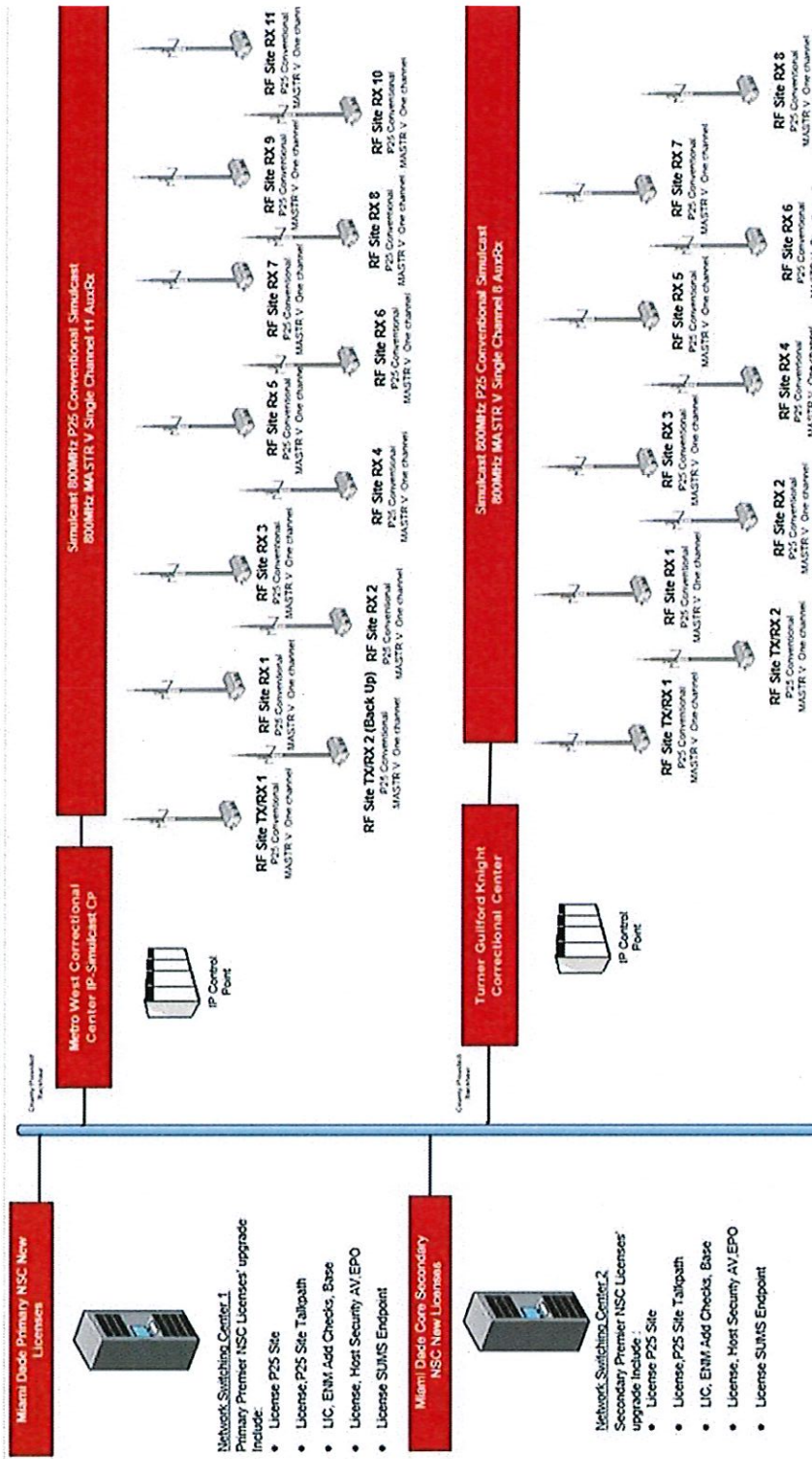
L3Harris Technology ("L3Harris") shall provide an upgrade to the existing Miami-Dade Corrections Department ("Corrections") facilities communications equipment to P25 conventional operations ("Upgrade"). L3Harris will deliver a unified emergency communication services to users via a highly reliable system with improved performance over the current system. The network solution shall utilize the latest technologies, including IP-based network switching, centralized network management, and Voice, Interoperability, Data and Access (VIDA) to provide one highly integrated, highly available system, offering Miami-Dade Corrections Department a single unified architecture for linking the various technologies present in the system today with the technologies of tomorrow. The 800 MHz P25 Conventional Simulcast solution shall be integrated into the existing Miami-Dade County geographically redundant VIDA network switching centers. This architecture shall provide redundancy in TxRx site equipment in the event of equipment failure (no user intervention required) and shall allow the Corrections facilities to operate in the event of loss of communications with the VIDA core against power failures.

Major Components of the Upgrade

The following equipment and services are included as part of the Upgrade.

- Single channel P25 conventional simulcast/voted sites with redundant TX/RX RF Sites at Metro West and Turner Guilford Knight Correctional Centers.
- Integration with the Miami-Dade County's system core for monitoring, management, and administration.
- New RF Site Licenses at County's core to support new Corrections Department P25 Conventional RF Sites
- Professional implementation services

FIGURE 1 SYSTEM DIAGRAM



2. System Design

The Upgrade solution to be provided by L3Harris shall include new P25 conventional simulcast/voted sites with redundant TX/RX RF Sites at Metro West and Turner Guilford Knight correctional Centers, new RF Site Licenses at VIDA primary and secondary core.

Figure 2 summarizes the functional components and equipment layout as shown in Miami-Dade Corrections Dept. system block diagram as outlined above.

Figure 2. Functional Components Provided by L3Harris

LOCATION	VIDA EQUIPMENT	DESCRIPTION
New Licenses at Primary VIDA Core/NSC,	- License P25 Site - License,P25 Site Talkpath - License, ENM Checks, Base - License, Host Security AV,EPO - License SUMS Endpoint	RF Site Licenses added to County NSC to support new P25 Conventional Simulcast system at County Correctional Facilities
New Licenses at Secondary VIDA Core/NSC	- License P25 Site - License,P25 Site Talkpath - License, ENM Checks, Base - License, Host Security AV,EPO - License SUMS Endpoint	RF Site Licenses added to County NSC to support new P25 Conventional Simulcast system at County Correctional Facilities
Metro West Correctional Center P25 Conventional Simulcast System	- Single Channel 800 MHz P25 Conventional RF equipment - o 2 Simulcast Tx/Rx sites for Tx site redundancy with automatic failover - o 11 Receive Only sites - o Antenna system (including Tx Cavity Filters, RF cables, splitters, connectors, antennas) - o Network cables - o Equipment grounding - IP Control Processing Point (IPCP) - Spares - o Power supplies, router, switch, MASTR V modules, power amplifiers, fan tray	RX/TX RF Site and voted Sites
Turner Guilford Knight Correctional Center P25 Conventional Simulcast System)	- Single Channel 800 MHz P25 Conventional RF equipment - o 2 Simulcast Tx/Rx sites for Tx site redundancy with automatic failover - o 8 Receive Only sites - o Antenna system (including Tx Cavity Filters, RF cables, splitters, connectors, antennas) - o Network cables - o Equipment grounding - IP Control Processing Point (IPCP)	RX/TX RF Site and voted Sites

LOCATION	VIDA EQUIPMENT	DESCRIPTION
	- Spares - o Power supplies, router, switch, MASTR V modules, power amplifiers, fan tray	
Implementation Testing and Acceptance Services	- RF Site Integration into system core for monitoring, management, and administration; call processing within the jail continues to function if core connection is lost - Radio Programming - Functional and Coverage Characterization Testing	System implementation services including, as applicable: Program Management, Systems Engineering, Factory Staging, Installation, and As-Built Documentation

3. VIDA Network WAN Requirements

To guarantee the quality of voice through the VIDA network, all WAN links will need to strictly adhere to the requirements provided in the following sections. Conformance with these design requirements is a necessary condition for L3Harris to meet the overall performance needs of the VIDA system. These requirements are necessary to provide a guaranteed level of service for voice quality. Miami-Dade County shall ensure that all associated WAN links adhere to the following requirements:

PACKET LOSS REQUIREMENTS

Due to the connectionless nature of UDP used in transmitting voice packets, minimal packet loss is tolerable in the VIDA network. However, any packet loss could result in degraded voice quality or loss of voice. L3Harris will not be held responsible for degraded voice quality that comes from the result of packet loss in the customer provided transport network.

Performance testing to be measured based on the following:

- RFC 2544 standard to be used
- Length of test per link shall be 12hrs
- Frame loss shall be less than .01%
- Out-of-Order packets shall be less than .01%

MULTI-SITE JITTER (ONE-WAY)

Jitter is the variability of packet delays within the same voice packet stream (talk spurt). The requirement is for the overall jitter to average to zero and to never build up to more than 60 msec one-way. Any streams with excessive jitter will be considered to have packet loss and L3Harris will not be responsible for voice quality issues.

For example, if a voice packet were 60 milliseconds late, then it would be optimal for the next few voice packets to be early to get the average jitter back to zero. This will allow the voice buffer to build back to a stable point. For allowable Simulcast Jitter, refer to the IP Simulcast Latency and Jitter section.

LATENCY REQUIREMENTS (ONE-WAY)

Some degree of latency, such as satellite links, can be supported within the VIDA network. Harris will not be held responsible for voice latency requirements if the provided WAN connection has more latency than the requirement. Any latency within the system will need to stay constant to avoid jitter. Latency requirement differ based on the site type and traffic patterns. This section defines latency requirements for Multisite to NSC, NSC to NSC, Simulcast Site to Control Point, and Control Point to NSC.

Latency is measured one-way. Asymmetric latency is permitted if one-way measurements meet specifications below. Satellite links can be supported after system timers are modified to account for satellite delay.

- NSC Latency
 - NSC to NSC latency must be less than (150ms)
- Multisite Latency
 - Multisite to NSC latency must be less than (150ms - NSC Latency)
- Simulcast Latency
 - Simulcast Tx/Rx site to Control Point
 - Refer to the diagram and instruction in IP Simulcast Latency and Jitter section
 - Latency must be less than (35ms)
- Control Point Latency
 - Control Point to NSC latency must be less than (150ms - Simulcast Latency_{max} - NSC Latency).

4. P25 Conventional Simulcast Solution Hardware Deliverables to be Provided by L3Harris

Following is a brief description of the major hardware components of system upgrade solution to be provided by L3Harris. L3Harris shall provide a P25 simulcast conventional RF Site is equipped with a base station linked via IP/Ethernet to form a local area network. Sites are linked through switches or routers by an IP backbone. For time synchronization, each Tx site and IP Control Point contains dual GPS timing units. The base stations across physical sites are grouped together to form channel groups. The IP Control Point provides the Transmit Simulcast functionality and the Receive Voter Comparator Functionality to the RF sites.

The System to be provided by L3Harris consists of a P25 conventional simulcast system for which simulcast operation must be synchronized, which means the transmitters all transmit exactly in unison with each other, with slight adjustments to the launch times depending on the overlap zone. The IP control point timestamps the voted voice signal to be transmitted and sends it to all channel group members. The timestamp tells members when to transmit each voice packet. **Figure 1** illustrates the simulcast solution being proposed for Miami-Dade Corrections Department.

A transmit site contains the base station equipment which provides over-the-air communications for subscriber radios in the system. Each transmit site includes a receiver and transmitter for each frequency (channel) used by the system.

Sites within a simulcast cell or zone operate on the same set of RF frequencies. What makes simulcast unique is the ability for each site to transmit the same message, on the same frequency, with exact (precision) timing; thereby minimizing interference generally caused by two or more transmitters operating on the same frequency in close proximity. Outbound voice and data intended for subscribers simultaneously transmit from each transmit site in the simulcast cell. Simulcast systems must consider delay spread restrictions that are not addressed in the analog system.

The L3Harris simulcast system shall not require manual alignment to maintain the specified system-level performance. The simulcast equipment, including transmitters, timing elements, and other system components, shall support long-term stability and maintainability and shall operate without the need for frequent manual optimization and system/subsystem alignment.

The L3Harris IP simulcast solution provided to Corrections shall use an all-digital (non-mechanical) setup and alignment verification procedure. Specifically, there shall be no mechanical controls or switches to adjust during system alignment verification. Coupled with the all-IP-based network design, system test and alignment shall be able to be performed from anywhere that an IP network connection is available and the transmit sites can be received by the test receiver. Required test equipment, provided by L3Harris, includes a test receiver, an oscilloscope, and a GPS receiver with a 1 pps output (such as a GPS receiver at one of the sites), and a laptop PC.

Unlike non-IP-based simulcast systems, the The L3Harris IP si from a location other than one of the system's sites, with the e from a GPS receiver.



MASTR V BASE STATION

L3Harris will provide the MASTR V base station, which operates in both the simulcast and multicast system environments. The MASTR V base station powers secure P25 digital voice and data communications. Its functionality and architecture meet public safety requirements and set it apart from other base stations in the P25 industry:

- Compact and integrated hardware supports up to eight channels in a single cabinet or rack. Multiple RF channels sharing a rack lower costs, minimize the amount of supporting hardware, reduces maintenance, necessary floor space, and the burden on other site resources such as HVAC systems.
- Digital-signal processing routes voice and data calls as IP packets to the network, resulting in economical routing and backhaul.
- The distributed architecture results in high-fault tolerance, minimizing the effects of hardware failure. For example, unlike other vendors' architectures that use a single or redundant site controller computer, each MASTR V base station has a built-in traffic controller that controls call-processing functions. An Ethernet switch in the repeater chassis connects each traffic controller to two local area networks (LANs) for network management and call processing. This distributed architecture allows all channels to operate as a control or working (voice) channel, which results in a greater level of reliability than that of other systems.
- The flexible hardware platform supports P25 Conventional, P25 Trunked Phase 1 (FDMA), and P25 Trunked Phase 2 (TDMA) operation, reducing migration costs. Linear simulcast produces improved audio quality and enhanced coverage compared to legacy simulcast systems. The native IP operation simplifies data integration with wireless IP data applications.
- Remote programming of the MASTR V base station allows the system administrator to perform software upgrades, firmware upgrades, or individual parameter changes without traveling to the site and manually connecting to the stations.
- The hardened design allows the MASTR V to operate in rugged environments, with an operating ambient temperature range of -30 °C to +60 °C and to operational altitudes of 15,000 feet above sea level. These base stations currently operate in harsh environments, such as the blazing sands of the Middle East, the frigid extremes of northern Saskatchewan, and the towering peaks of the Sierra Nevada Mountains.
- Modular boards simplify maintenance procedures

Figure 3. MASTR V Base Station Modules

MODULE	BENEFITS
Tx Module	- Provides a highly stable RF output to drive the high-power amplifier (HPA) module. - Uses a Direct Digital Synthesizer (DSS) that optimizes its modulation characteristics. The DSS can digitally create a precision waveform or modulation scheme from a single on-board oscillator.
Rx Module	- The MASTR V Rx modules are dual-IF conversion receivers. The receiver uses a sigma-delta-analog-to-digital converter to process the incoming IF signal. The output of this analog-to-digital converter is a complex pair of I/Q baseband digital signals. - Supports a wide range of modulation waveforms required for current and next generation public safety two-way radio communications.
Baseband Processor Module	- Generates all receive, transmit, and control processing for one or more RF channels. - Provides a data interface between the Traffic Controller and the Tx and Rx modules. - Generates a heartbeat message to monitor the health of base station modules.
Traffic Controller Module	- Manages data and control information for one Tx and one Rx channel module. It interprets and directs inbound calls and issues appropriate control commands to and from the Tx and Rx modules. These include how to handle data between the base station and the control point. - Processes decoded radio information received from the baseband processor module and handles all aspects of subscriber unit validation, assigned channels, queuing - Implements P25 call control, network management, and remote channel management. P25 features (e.g., radio registration, authentication, mobility management) are available on a channel-by-channel basis. - Encapsulates P25 clear and encrypted voice and data calls into IP packets for routing throughout the network. The packets contain P25 user and talk group IDs, allowing the network to operate with seamless end-to-end IP functionality. - Handles IP connectivity of each channel with the P25 network. It monitors repeater communications while providing routing for multi-site voice and data calls. The Traffic Controller replicates key P25 database information at the site to allow uninterrupted channel operation. - All the controllers share database and dynamic call processing information from the Network Switching Center (NSC) to avoid having a single point of failure.
High Power Amplifier (HPA) Module	- Continuous duty, solid state, and wideband RF power amplifier. - Amplifies the exciter output to the rated station output power level. - Equipped with an RF linearizer circuit to improve RF performance. The RF linearizer samples the RF output of the HPA and provides waveform correction to the RF input signal relative to its RF output characteristics. This improves waveform distortion and enhances simulcast operation.
Power Supply Module	- Provides continuous duty-switching power supply. - Includes front-panel LED status indicators for each DC output, an AC Power input LED, and a front-panel on/off switch used to disable the power supply and built-in cooling fan.
Ethernet Switch	Enable Ethernet communications to pass voice and data transmissions as well as management and control data between the Traffic Controller and supporting MASTR V modules.

SITE NETWORKING EQUIPMENT

As part of this offer, L3Harris will provide Commercial-off-the-Shelf (COTS) routers and Ethernet switches that perform the following functions:

- Move information across a network from source to destination
- Recognize all the different network layer protocols used on the network
- Provide more than one path to a destination network

- Switch voice packets and arbitrate cross-site voice access

Unlike other systems that use proprietary operating systems on non-standard networking equipment, L3Harris P25 systems deploys routers and switches that utilize their native operating systems. This ensures the full benefits of COTS networking equipment.

**L3Harris uses COTS equipment for site switch and routing.
These devices utilize non-proprietary operating systems.**

The Site Ethernet Switch

It provides a LAN interface for site equipment and a LAN port for the site router. The Cisco C1000 Ethernet switch includes FlexStack switch stacking capability with fast Ethernet access connectivity and power over Ethernet (PoE) capabilities.

Figure 4. Cisco C1000 Ethernet Switch



RF Site Router

It provides an interface handling all the IP network voice, data, and management traffic between the network switch and the RF site. It provides the following:

- Media Conversion – This converts the Ethernet to the selected transport medium.
- Quality of Service (QoS) – This applies a prioritization marking to each packet to ensure real-time services (e.g., voice) receive its required bandwidth.

VIDA VIRTUAL SITE (VVS)

The VIDA Virtual Site (VVS) is a powerful, compact computer (VIDA Edge) that hosts Site Management Services as part of L3Harris' total Site Management System. It provides a full array of digital communications capabilities for fast, accurate, and efficient relay of critical information.

The VVS monitors the site call processing local area network (LAN) for call activity and fault messages. The VVS ensures that data such as user, group, and channel configurations is reliably transferred to configured site devices. The fault monitoring services take input from the site call processing of LAN, RF Power, Digital Input/ Output (I/O), Channel Test services and current alarms. It uses this information to identify potential problems and their severity, status, and reason for the most recent failure. This will increase the operator awareness, improve response time for maintaining vital communication links, and decrease repair time and system downtime.

- The VVS will be custom configured with optional modular Input/ Output (IO) adapters for analog and digital input alarms and outputs for remote control of site equipment. Alarms are sent to VIDA network management systems to highlight the location of potential problems or provide detailed information about the severity, status, and reason for failures.
- The VIDA Virtual Site's various optional I/Os will be configured to indicate faults in remotely controlled and monitored devices including tower beacons, doors and temperature alarms. Each installation can be independently configured for the unique I/O requirement of each site and scaled to add additional modules if requirements grow over time.

IP CONTROL POINT

The IP Control Point is the central processing point of an IP Simulcast system. The IP Control Point provides the necessary interfacing between two or more Transmit Sites and dispatcher locations communicating over the VIDA® network. The following are the primary functions of the IP Control Point:

- Control Point call processing
- Inbound voting of received signals
- Outbound call management and distribution to all Transmit Sites

The IP Control Point design is based on the MASTR® V base station's hardware platform. The hardware footprint of the IP Control Point is significantly smaller than legacy Control Points. Installation of the IP Control Point equipment can be accomplished in one (1) 86-inch high open equipment rack.

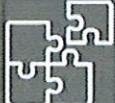
MASTR V P25 IP Simulcast systems utilize the VIDA network, an all IP-based communications network providing communications between the IP Control Point, Transmit Sites, and the Regional Network Manager (RNM). All inbound calls from mobiles or portables received by the Transmit sites and Auxiliary Receiver sites are sent to the IP Control Point for voting and processing and sent back to the transmit Sites for retransmission. Calls from dispatch consoles and other traffic such as data are sent to the IP Control Point where outbound call assignments and transmissions are initiated sent over the VIDA network to all Transmit Sites.

5. Implementation

The County will coordinate with L3Harris implementation project manager and systems engineer to review the contractual obligations, key milestones, and other important issues during the Implementation phases. The process concludes with a hand-off of all necessary documentation from the L3Harris implementation team to the County.

This document details the scope of work required for the project, through the following implementation phases:

- Design
- Production
- Installation/Optimization
- Testing
- Cutover
- Final Acceptance
- Responsibility Matrices

1	2	3	4	5	6
DESIGN	PRODUCTION	INSTALLATION/ OPTIMIZATION	ACCEPTANCE TESTING	CUTOVER	FINAL ACCEPTANCE
					

DESIGN**KICK-OFF MEETING AND PRELIMINARY DESIGN REVIEW**

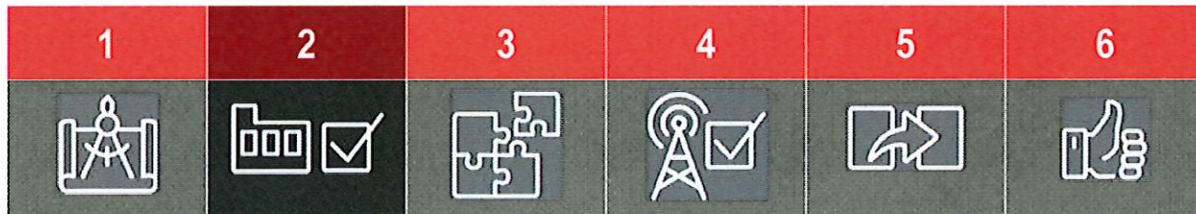
The L3Harris Team, and Miami-Dade County, will mutually agree on the timing of these meetings. The objectives of the meeting include:

- Introduction of all project participants
- Review the roles of the project participants
- Review the overall project scope, objectives, and deliverables
- Review the current site status
- Review customer owned site documentation
- Review the current frequency plan
- Review the preliminary project schedule
- Conduct site surveys with Miami-Dade County, and/or site owner designated representatives

CUSTOMER DESIGN REVIEW (CDR)

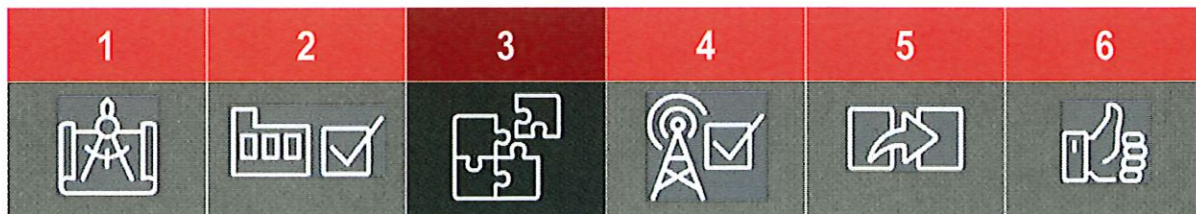
The L3Harris Team will use the information obtained during the kick-off meeting, preliminary design review, and site surveys, along with regulatory and engineering documentation, to deliver the final system design at the CDR. The design drawings and documentation are presented during the CDR with Miami-Dade County.

The addition of Corrections' new RF Sites will utilize the available IP space for the Miami Dade SR10A.7 upgrade IP plan, taking into consideration the already reserved spaces for the Simulcast systems' expansion.

**Production****SYSTEM INTEGRATION AND TEST - FACTORY STAGING**

Immediately following approval of the CDR, the L3Harris Team procures material and schedules system integration and test using its material requirements planning (MRP) system. Our Eagle Focus Factory assembles the RF equipment, integrates it with the key supplier components, and then tests each rack of equipment.

After assembly and test, the system equipment will be shipped to our local partner, Cooper General, for staging, configuration and test.



Installation/Optimization

SITE DEVELOPMENT

No site development is anticipated on this project. It is assumed that adequate floorspace, antenna mounting locations, grounding, electrical and HVAC are present at the existing sites. At the completion of site surveys, the L3Harris team will notify Miami-Dade County of any site or facility remediation that is required.

INFRASTRUCTURE INSTALLATION

The L3Harris Team develops the installation plan during the detailed design phases of the project and presents it to Miami-Dade County for review and approval. The installation plan includes floor plan drawings, equipment rack-up drawings, antenna location details, and installation procedures based on site surveys the team or designated subcontractors conduct. The installation plan helps drive the activities of the project team, minimizing installation conflicts, and ensures that system implementation proceeds efficiently. The project team takes great care to ensure there is minimal disruption in service when installing the new P25 system in existing equipment locations.

Site equipment installations follow industry standards, including L3Harris Grounding and Lightning Protection. We review the installation work after it is complete to ensure we followed these standards.

INFRASTRUCTURE EQUIPMENT

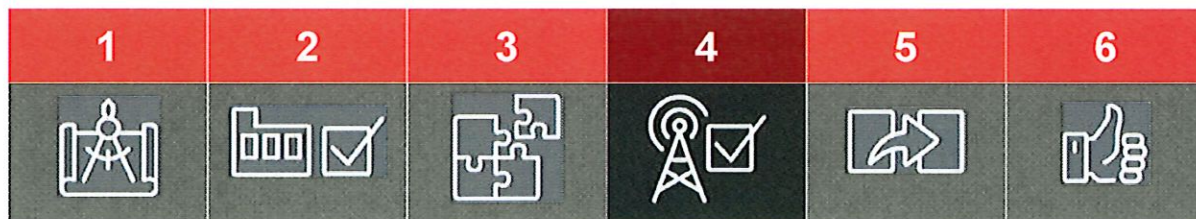
Installation crews install the base-stations, and associated equipment. The equipment typically mounts in 86-inch standard aluminum EIA 19-inch open-frame racks or EIA 19-inch enclosed cabinets. The RF connections extend to the coaxial cables using appropriately sized jumper cables.

L3Harris assumes that Miami-Dade County-provided shelters will accommodate the height of these racks and allow them to position the desired 36 inches of free aisle space (in front and in the rear). Racks and cabinets are anchored to the floor using at least four anchor points.

Once the infrastructure racks are secured, we ground and connect them to power, and technicians verify proper levels and settings, preparing the site for optimization.

OPTIMIZATION

Upon installation of infrastructure equipment, the system engineer(s) works with the on-site technicians to optimize the equipment in preparation for acceptance testing.



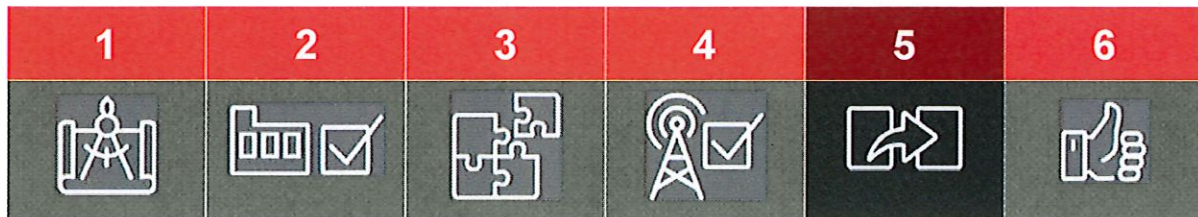
Acceptance Testing & Coverage Characterization

L3Harris will perform system acceptance testing per the acceptance test plan (ATP) that will be agreed upon at CDR. The L3Harris Team notifies Miami-Dade County when installation and optimization are complete, and the system is ready for testing.

The system engineer provides documentation defining each of the test areas. The ATP procedures contain a short description, test methodology, and a record form for logging results and acceptance signatures for each test. A

punch list is used to document any issues found, so the team can quickly resolve them. Follow-up documents will show the correction of open items. Upon satisfactory completion of each testing phase, the project manager will present the system acceptance documentation for signature by Miami-Dade County's project manager(s). With Miami-Dade County's approval, the Miami-Dade County proceed with cutover.

In addition to system acceptance testing, a coverage characterization will be completed at each correctional facility to document the overall level of coverage provided by the newly installed system.

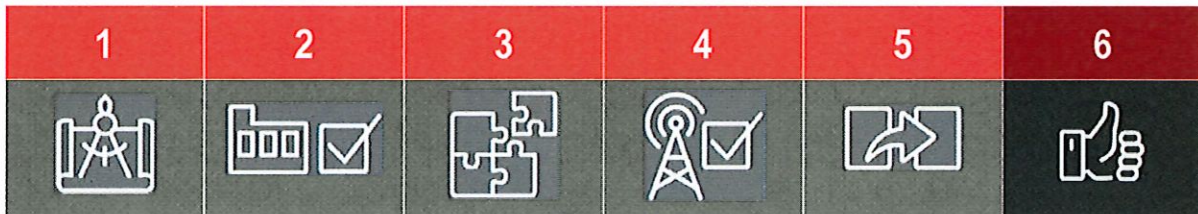


Cutover Approach

L3Harris and Miami-Dade County will work together to prepare the cutover plan prior to user integration.

L3Harris is certain that Miami-Dade County and L3Harris share the same overarching goals in the process – that there are no missed calls, and that the facilities maintain adequate departmental communications during the cutover process.

It is anticipated that cutover will be a straightforward process, with the legacy system being switched off as the new system is switched on. The L3Harris team will work with Miami-Dade County to coordinate with the users on how and when to switch their radios onto the new system.



Final Acceptance

DECOMMISSIONING

No decommissioning is anticipated as part of this project.

FINAL ACCEPTANCE

Upon the successful completion of acceptance tests, cutover, and submission of the final drawing package, L3Harris submits the final system acceptance letter for Miami-Dade County to sign. With the final acceptance, the project manager arranges a meeting with the field service team to review maintenance support during the warranty period. The L3Harris Team provides the contact information and procedures used to obtain service during the warranty period.

Responsibility Matrices

The following responsibility matrices provides the project activities for which the L3Harris Team is responsible, and those activities that are Miami-Dade County's responsibility.

Figure 6. Customer Design Review Responsibility Matrix

TASKS	L3HARRIS	MIAMI-DADE COUNTY
PREPARE FOR CUSTOMER DESIGN REVIEW		
Assemble project team and complete handoff from proposal team	X	
Assemble customer team for kick-off meeting		X
FCC licensed frequencies that meet contour limits and fulfill the frequency plan in accordance with the project schedule		X
Provide a team to complete site surveys	X	
Arrange access to sites and confirm site survey schedule		X
Provide site-knowledgeable personnel (customer and site owner reps, as appropriate) to accompany the project team on site surveys		X
Conduct site survey(s) and provide recommendations	X	
Submit to FCC any required license applications and pay requisite fees for regulatory approval of frequency licensing modifications required for the design		X
CUSTOMER DESIGN REVIEW DELIVERABLES		
System block diagrams	X	

TASKS	L3HARRIS	MIAMI-DADE COUNTY
List of deliverable equipment for each site	X	
Network connection plan and backhaul requirements	X	
Antenna system drawings	X	
Rack elevation drawings	X	
AC power and BTU requirements	X	
Preliminary cutover plan	X	
Acceptance Test Plan (ATP)	X	
Project schedule	X	
CUSTOMER DESIGN REVIEW		
Present design	X	
Approve the design following CDR meeting (within 5 business days)		X

Figure 7. General Responsibility Matrix

TASKS	L3HARRIS	MIAMI-DADE COUNTY
Coordinate with federal, state, and local government agencies, as required		X
Provide access to all buildings and sites, including temporary ID badges for L3Harris project team		X
Provide parking permits for L3Harris project team for any restricted parking areas		X
Provide adequate road access for delivery vehicles		X
Arrange for temporary parking to off-load equipment at all buildings and sites		X
Clean up site and remove all installation debris	X	
Ensure that no utility transformers additions or upgrades will be required to provide the adequate AC power needed for each site		X
All customer furnished elements must meet L3Harris requirements for compatibility, functionality, and performance, as well as meet required local codes		X
Provide final backhaul requirements to the Miami-Dade County	X	
Provide backhaul which meets the final backhaul requirements provided by L3Harris		X
Complete all tower analysis, mapping and structural remediation or strengthening of antenna support structures prior to antenna installation		X

Figure 8. Existing Customer-Owned Sites Responsibility Matrix

TASKS	L3HARRIS	MIAMI-DADE COUNTY
CUSTOMER-OWNED SITE TASKS		
Obtain any necessary approval for site changes		X
Provide existing site plans		X
Conduct site survey(s) and provide recommendations	X	
Complete Grounding/Electrical/HVAC/facilities remediation as needed		X
ANTENNA MOUNTING		
Identify specific attachment points to mount new antennas per the system design	X	
Confirm availability and suitability of antenna attachment points for L3Harris antennas		X
Provide space to mount new system antennas at L3Harris specified locations		X
EXISTING SHELTER		
Provide floor space in existing RF shelter for new equipment racks used in the new design		X

Provide adequate shelter/equipment room utility AC electrical power, single-point ground system HVAC, and backup generator power		X
Install new electrical branch circuits including receptacles to new equipment positions. Complete service upgrades and/or panel replacements (if required)		X
Provide additional cable ladder and/or entry ports for new equipment row if needed		X

Figure 9. System Infrastructure Installation Responsibility Matrix

TASKS	L3HARRIS	MIAMI-DADE COUNTY
Deliver equipment to each site	X	
Install equipment, connect to existing single point ground system and apply power	X	
Provide network connectivity from a central location (ex: one of the IP control point equipment rooms) in the correctional facilities to the VIDA core, including necessary MPLS routers / router modules		X
Connect all RF cables	X	
Interface to network, verify network connectivity	X	
Set all P25 system levels and parameters	X	

Figure 10. System Optimization Responsibility Matrix

TASKS	L3HARRIS	MIAMI-DADE COUNTY
Prepare all installed sites for site inspections	X	
Verify backhaul system is functional and meets reliability specifications	X	

TASKS	L3HARRIS	MIAMI-DADE COUNTY
Complete any required backhaul remediation		X
Provide frequencies to use for optimization and testing (if frequencies are currently in use in existing system)		X
Verify P25 system levels and parameters are set	X	
Verify system database is installed and operating correctly	X	
Verify proper P25 system functional operation	X	
Complete all tasks related to logging recorder upgrade/integration with the new system, including purchase of any additional system licenses for IP logging recorder expansions from the Logging recorder manufacturer		X

Figure 11. Acceptance Testing Responsibility Matrix

TASKS	L3HARRIS	MIAMI-DADE COUNTY
Provide appropriate team members to participate in acceptance tests		X
Inspect each site noting discrepancies on a punch list	X	
Submit site inspection results	X	
Approve site inspection results		X
Perform functional ATP on radio system	X	
Submit functional ATP results	X	
Sign approval of functional ATP results (within 5 business days)		X
Submit letter of system acceptance	X	
Sign letter of system acceptance		X
Approve cutover plan		X
Coverage characterization (manual voice quality) will be performed to document coverage performance at each facility	X	
Notify users of system cutover date		X
Proceed with system cutover according to cutover plan	X	
Remove legacy antennas and antenna systems		X

Figure 12. User Equipment Matrix

TASKS	L3HARRIS	MIAMI-DADE COUNTY
Program existing radios for use on new system	X	
Provide access to all radios in need of reprogramming according to the project schedule		X
Provide cost and schedule relief for crew demobilization and remobilization for non-continuous supply of radios or for installations requested outside of the schedule		X

Figure 13. Final Acceptance Responsibility Matrix

TASKS	L3HARRIS	MIAMI-DADE COUNTY
Removal of decommissioned legacy network, console, or site infrastructure equipment if desired		X
Submit final drawing package	X	
Submit letter of final system acceptance	X	

Provide warranty and contact information	X	
Meet with L3Harris to review warranty contact procedures		X
Meet with L3Harris to outline system support and services requirements		X
Accept final drawing package (within 5 business days)		X
Sign letter of final system acceptance (within 5 business days)		X

6. Warranty

Warranty Support

L3Harris shall provide a two-year warranty on all infrastructure equipment ("Warranty"). Such warranty shall commence upon the final system acceptance by Corrections. All subscriber radios provided by L3Harris shall come with a standard two-year warranty commencing upon acceptance by Corrections.

Equipment

Warranty ensures that the hardware and installation services furnished by L3Harris shall be free from defects in material and workmanship. During the Warranty if any Hardware component or portion of the installation Services fails to meet the Warranty, L3Harris will remedy by: (1) repairing any defective component of the Hardware, or (2) by furnishing any necessary repaired, refurbished, or replacement parts, or (3) by correcting the faulty installation.

L3Harris may perform, at its discretion, all warranty labor at a L3Harris location. Where L3Harris has determined it is not feasible to ship fixed equipment for repair, L3Harris will repair on premise. Standard warranty response times are standard business days, 8:00 a.m. to 5:00 p.m. Eastern. For additional levels of support, premium services are available.

Software

During the Warranty, if the L3Harris licensed software does not successfully operate, the error or defect will be corrected free of charge or make available a substitute program.

Warranty provides corrections to software defects and known errors reported to L3Harris' Technical Assistance Center (TAC) during the warranty period at no additional cost to the Customer. Installation of corrections to software defects reported to TAC during the warranty period is not included in the Warranty.

Third-Party Warranties

L3Harris will ensure that warranty on any third-party Original Equipment Manufacturer (OEM) equipment and services sold by L3Harris meets the same warranty requirements and we will act on behalf of the Customer to coordinate and settle all warranty issues with any integrated third-party equipment or software companies throughout the warranty period.

L3Harris will transfer third-party warranties provided directly from equipment manufacturers to the Customer as part of the final acceptance.

Warranty Returns Process

The following procedure describes the returns process for equipment under warranty:

1. L3Harris creates a support case number, verifies product part numbers, serial numbers, reasons for return and then forwards the approved request for processing.
2. L3Harris reviews the request and provides a return merchandise authorization number (RMA) to Miami-Dade County, along with instructions for return of the equipment.
3. The customer ships the equipment back to L3Harris Depot Repair and Return.
4. L3Harris repairs or replaces any equipment free of charge unless there is evidence of abuse or damage beyond the terms of the service
5. L3Harris ships the repaired or replacement unit back to Miami-Dade County.
6. L3Harris closes the RMA and updates the tracking database.

Requests for repairs out of Warranty will require a purchase order unless a service agreement exists. Any repairs out of Warranty are subject to a flat rate, per-unit fee, regardless of fault found with the equipment. If the item for repair does not have a flat rate fee listed, a time and material charge applies. The turn-around time for equipment repair or replacement is typically ten business days.

Depot Level Repair and Return

The Depot Repair and Return service covers the cost to fix covered equipment at L3Harris or other third-party manufacturer's factories. This service is part of our standard warranty and is a premium service during the maintenance periods. The L3Harris Depot Repair and Return facility is ISO 9001:2015, UL, and Factory Mutual certified. Master technicians using state-of-the-art test equipment verify that all repairs meet or exceed prescribed specifications.

The Depot Repair and Return Facility utilize a stockroom of common repair parts to reduce repair time. Our technicians can repair over 95% of radio and infrastructure equipment on-site, decreasing turn-around time. Customers are encouraged to call in advance regarding equipment returns to verify inventory and serviceability.

Demand Services

Demand services are available when an unexpected event or situation occurs outside the scope of work and requires repairs from L3Harris, its agents, or partners. For demand services, Miami-Dade County will receive an invoice on a time and materials basis. Examples may include the following:

- Installation, updating, upgrading, maintaining, or removing software, hardware, or non-L3Harris infrastructure after initial installation.
- Repair of equipment damaged by vandalism, abuse, neglect, or noncompliance to L3Harris recommended practices, to the extent such equipment damage is not caused by L3Harris or any of its agents.
- Damages due to acts of God or other uncontrollable events
- Any other repair or service not outlined in the Scope of Work

7. APPENDIX A – METRO WEST EQUIPMENT LIST (TO BE PROVIDED BY L3HARRIS)

Part #	Description	Qty
Eq. Group: 0.A Core Licenses (MW)		
NS-SG2N	LICENSE,P25 SITE	2
NS-SG2P	LICENSE,P25 SITE TALKPATH	1
VS-SH9J	LIC, ENM ADD 50 CHECKS, BASE	225
VS-SG3S	LICENSE,HOST SECURITY,AV,EPO,QTY 11-25	13
VSSD03	LICENSE,SUMS,ENDPOINT	13
Eq. Group: 1.A Metro West IPCP		
CP-VCPP25-AC	IP SIM,COMM EQUIP,P25,MASTR V (110 AC)	1
CP-ZN8R	Panel,Blank Module,MASTR V	11
CP-PM1B	Baseband,IP Simulcast,MASTR V, w/ Cables	2
CP-MR1H	Rack,Open,86 in(Xtra Dp) with support	1
CP-RB3B	Power Supply Shelf,1st Position	1
CP-RB3J	Busbar,PS/PS,MASTR V	1
CP-PS2P	Power Supply,110-240V,AC,MASTR V	2
CP-CL9S	Cables,Power Supply-Multichannel Shelf	1
CP-CL7D	Cable,Ethernet,5ft	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
CP-MD7D	CONTROLLER,IP SIMULCAST,MASTR V,W/CABLES	1
CP-RB3G	Shelf,14-Slot,Open Rack	1
Eq. Group: 1.B Metro West TxRx Site 1		
SC-VTXP25	MASTR V IP Simulcast,Tx Site,Comm Equip	1
SCCL7D	Kit,Cable,Ethernet,5ft	1
MASC-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
AW-L1-PNMNM-50	Cable,GPS Antenna,50ft	1
AW-L1-PNMNM-50	Cable,GPS Antenna,50ft	1
SA-KRE1011217/02	ANTENNA,1574-1606 MHZ,WITH MOUNT	2
PT-018602-001	Filter, Surge Protector,800-2500MHz	2
SV-8CXMV-A	STATION,MASTR V,P25C,800 MHZ,799-817 RX	1
SV-AW5R-A	POWER AMPLIFIER,LINEAR,800 MHZ	1
SV-RB3K	Busbar,HPA/PS,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1
SV-SP2U	Programming,IP Simulcast	1
SV-RB3A	Power Supply Shelf,2nd Position	1
SV-RB3B	Power Supply Shelf,1st Position	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1
SV-MN2Z	PANEL,BLANK,PS CHASSIS	1
SV-CA5J	CABLE,DC POWER,48 IN	2
SV-DW1B	Drawings, IP Simulcast/P25 Trunked	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1

SV-AT1B	TERMINATION,50 OHM LOAD	9
MASV-NZN8S	Fan Tray,MASTR V	1
SV-ZN9K	PANEL,XCONNECT,MASTR V	1
SV-CL2D	Cable, Xconnect-Baseband Shelf #1	1
SV-CK4B	CABLE, ETHERNET CAT5 BOOTED, VIOLET, 5FT	1
Part #	Description	Qty
SV-CL9V	Kit,Cable,Ch #1,2,9,10,17,18 MASTR V IP	1
MASV-NZN8R	Panel,Blank Module,MASTR V	10
SV-MN9S	Panel,Blank,1 RU	1
MASV-NMA6Q	Grounding Shim,28RU	1
MASV-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	2
MASV-NCN1Z	Outlet Strip,110 VAC,UL Recognized	1
AS-CB2K	COMBINER,TX,2-4 CH,800MHZ,AC,150KHZ	1
Eq. Group: 1.C Metro West TxRx Site 2		
SC-VTXP25	MASTR V IP Simulcast,Tx Site,Comm Equip	1
SCCL7D	Kit,Cable,Ethernet,5ft	1
MASC-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
AW-L1-PNMNM-50	Cable,GPS Antenna,50ft	1
AW-L1-PNMNM-50	Cable,GPS Antenna,50ft	1
SA-KRE1011217/02	ANTENNA,1574-1606 MHZ,WITH MOUNT	2
PT-018602-001	Filter, Surge Protector,800-2500MHz	2
SV-8CXMV-A	STATION,MASTR V,P25C,800 MHZ,799-817 RX	1
SV-AW5R-A	POWER AMPLIFIER,LINEAR,800 MHZ	1
SV-RB3K	Busbar,HPA/PS,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1
SV-SP2U	Programming,IP Simulcast	1
SV-RB3A	Power Supply Shelf,2nd Position	1
SV-RB3B	Power Supply Shelf,1st Position	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1
SV-MN2Z	PANEL,BLANK,PS CHASSIS	1
SV-CA5J	CABLE,DC POWER,48 IN	2
SV-DW1B	Drawings, IP Simulcast/P25 Trunked	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NZN8S	Fan Tray,MASTR V	1
SV-AT1B	TERMINATION,50 OHM LOAD	9
SV-ZN9K	PANEL,XCONNECT,MASTR V	1
SV-CL2D	Cable, Xconnect-Baseband Shelf #1	1
SV-CK4B	CABLE, ETHERNET CAT5 BOOTED, VIOLET, 5FT	1
SV-CL9V	Kit,Cable,Ch #1,2,9,10,17,18 MASTR V IP	1
MASV-NZN8R	Panel,Blank Module,MASTR V	10
SV-MN9S	Panel,Blank,1 RU	1
MASV-NMA6Q	Grounding Shim,28RU	1
MASV-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	2
MASV-NCN1Z	Outlet Strip,110 VAC,UL Recognized	1
AS-CB2K	COMBINER,TX,2-4 CH,800MHZ,AC,150KHZ	1
Eq. Group: 1.D Metro West Rx Only Site 1		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1

SACN1Z	Outlet Strip, 120VAC	1
MASA-NCN7R	Power Strip, 110VAC, 2X20A Brkr, 2-Cbl, 6Pos	1
MASA-NCL7D	Kit, Cable, Ethernet, 5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver, MASTR V, P25C, 799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast, Aux Rcvr	1
MASV-NMR1H	Rack, Open, 86 in (Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf, 1st Position	1
Part#	Description	Qty
SV-RB3G	Shelf, 14-Slot, Open Rack	1
SV-RB3J	Busbar, PS/PS, MASTR V	1
SV-PM1C	Processor, Baseband Module, MASTR V	1
MASV-NPS2P	Power Supply, 110-240V, AC, MASTR V	2
MASV-NZN8S	Fan Tray, MASTR V	1
MASV-NMA6Q	Grounding Shim, 28RU	1
SV-CL2N	Cable Assembly RF, RG223, BNC/SMA, 5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER, ISR, C1111-4P, SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH, SMARTNET, C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE, LX/H SINGLE/MULTI-MODE, FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.E Metro West Rx Only Site 2		
MASA-SVP25	Site Interface Equipment, P25T MASTR V	1
SACN1Z	Outlet Strip, 120VAC	1
MASA-NCN7R	Power Strip, 110VAC, 2X20A Brkr, 2-Cbl, 6Pos	1
MASA-NCL7D	Kit, Cable, Ethernet, 5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver, MASTR V, P25C, 799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast, Aux Rcvr	1
MASV-NMR1H	Rack, Open, 86 in (Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf, 1st Position	1
SV-RB3G	Shelf, 14-Slot, Open Rack	1
SV-RB3J	Busbar, PS/PS, MASTR V	1
SV-PM1C	Processor, Baseband Module, MASTR V	1
MASV-NPS2P	Power Supply, 110-240V, AC, MASTR V	2
MASV-NZN8S	Fan Tray, MASTR V	1
MASV-NMA6Q	Grounding Shim, 28RU	1
SV-CL2N	Cable Assembly RF, RG223, BNC/SMA, 5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER, ISR, C1111-4P, SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH, SMARTNET, C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE, LX/H SINGLE/MULTI-MODE, FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.F Metro West Rx Only Site 3		
MASA-SVP25	Site Interface Equipment, P25T MASTR V	1
SACN1Z	Outlet Strip, 120VAC	1
MASA-NCN7R	Power Strip, 110VAC, 2X20A Brkr, 2-Cbl, 6Pos	1
MASA-NCL7D	Kit, Cable, Ethernet, 5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver, MASTR V, P25C, 799-817 MHz	1

SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
Part#	Description	Qty
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.G Metro West Rx Only Site 4		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.H Metro West Rx Only Site 5		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1

SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.I Metro West Rx Only Site 6		
Part#	Description	Qty
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.J Metro West Rx Only Site 7		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1

MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.K Metro West Rx Only Site 8		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
Part #	Description	Qty
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.L Metro West Rx Only Site 9		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1

VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.M Metro West Rx Only Site 10		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.N Metro West Rx Only Site 11		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 1.Y.A Metro West Spares		
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1

VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SV-AW5R-A	POWER AMPLIFIER,LINEAR,800 MHZ	2
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
SV-RB3B	Power Supply Shelf,1st Position	1
SV-PM1C	Processor, Baseband Module,MASTR V	2
EA-555007-011	Receiver Module,799-817MHz,MASTR V	3
EA-555004-001	Traffic Control Module,MASTR V	2
EA-555008-012	Transmit Module,851-870MHz,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1

8. APPENDIX B – TURNER GUILFORD KNIGHT EQUIPMENT LIST (TO BE PROVIDED BY L3HARRIS)

Part #	Description	Qty
Eq. Group: 0.A Core Licenses (TGK)		
NS-SG2N	LICENSE,P25 SITE	2
NS-SG2P	LICENSE,P25 SITE TALKPATH	1
VS-SH9J	LIC, ENM ADD 50 CHECKS, BASE	225
VS-SG3S	LICENSE,HOST SECURITY,AV,EPO,QTY 11-25	12
VSSD03	LICENSE,SUMS,ENDPOINT	12
Eq. Group: 2.A Turner Guilford Knight IPCP		
CP-VCPP25-AC	IP SIM,COMM EQUIP,P25,MASTR V (110 AC)	1
CP-ZN8R	Panel,Blank Module,MASTR V	11
CP-PM1B	Baseband,IP Simulcast,MASTR V, w/ Cables	2
CP-MR1H	Rack,Open,86 in(Xtra Dp) with support	1
CP-RB3B	Power Supply Shelf,1st Position	1
CP-RB3J	Busbar,PS/PS,MASTR V	1
CP-PS2P	Power Supply,110-240V,AC,MASTR V	2
CP-CL9S	Cables,Power Supply-Multichannel Shelf	1
CP-CL7D	Cable,Ethernet,5ft	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
CP-MD7D	CONTROLLER,IP SIMULCAST,MASTR V,W/CABLES	1
CP-RB3G	Shelf,14-Slot,Open Rack	1
Eq. Group: 2.B Turner Guilford Knight TxRx Site 1		
SC-VTXP25	MASTR V IP Simulcast,Tx Site,Comm Equip	1
SCCL7D	Kit,Cable,Ethernet,5ft	1
MASC-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
AW-L1-PNMNM-50	Cable,GPS Antenna,50ft	1
AW-L1-PNMNM-50	Cable,GPS Antenna,50ft	1
SA-KRE1011217/02	ANTENNA,1574-1606 MHZ,WITH MOUNT	2
PT-018602-001	Filter, Surge Protector,800-2500MHz	2
SV-8CXMV-A	STATION,MASTR V,P25C,800 MHZ,799-817 RX	1
SV-AW5R-A	POWER AMPLIFIER,LINEAR,800 MHZ	1
SV-RB3K	Busbar,HPA/PS,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1
SV-SP2U	Programming,IP Simulcast	1
SV-RB3A	Power Supply Shelf,2nd Position	1
SV-RB3B	Power Supply Shelf,1st Position	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1
SV-MN2Z	PANEL,BLANK,PS CHASSIS	1
SV-CA5J	CABLE,DC POWER,48 IN	2
SV-DW1B	Drawings, IP Simulcast/P25 Trunked	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
SV-AT1B	TERMINATION,50 OHM LOAD	9
MASV-NZN8S	Fan Tray,MASTR V	1
SV-ZN9K	PANEL,XCONNECT,MASTR V	1
SV-CL2D	Cable, Xconnect-Baseband Shelf #1	1
SV-CK4B	CABLE, ETHERNET CAT5 BOOTED, VIOLET, 5FT	1
SV-CL9V	Kit,Cable,Ch #1,2,9,10,17,18 MASTR V IP	1
Part #	Description	Qty
MASV-NZN8R	Panel,Blank Module,MASTR V	10

SV-MN9S	Panel,Blank,1 RU	1
MASV-NMA6Q	Grounding Shim,28RU	1
MASV-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	2
MASV-NCN1Z	Outlet Strip,110 VAC,UL Recognized	1
AS-CB2K	COMBINER,TX,2-4 CH,800MHZ,AC,150KHZ	1
Eq. Group: 2.C Turner Guilford Knight TxRx Site 2		
SC-VTXP25	MASTR V IP Simulcast,Tx Site,Comm Equip	1
SCCL7D	Kit,Cable,Ethernet,5ft	1
MASC-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
AW-L1-PNMNM-50	Cable,GPS Antenna,50ft	1
AW-L1-PNMNM-50	Cable,GPS Antenna,50ft	1
SA-KRE1011217/02	ANTENNA,1574-1606 MHZ,WITH MOUNT	2
PT-018602-001	Filter, Surge Protector,800-2500MHz	2
SV-8CXMV-A	STATION,MASTR V,P25C,800 MHZ,799-817 RX	1
SV-AW5R-A	POWER AMPLIFIER,LINEAR,800 MHZ	1
SV-RB3K	Busbar,HPA/PS,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1
SV-SP2U	Programming,IP Simulcast	1
SV-RB3A	Power Supply Shelf,2nd Position	1
SV-RB3B	Power Supply Shelf,1st Position	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	1
SV-MN2Z	PANEL,BLANK,PS CHASSIS	1
SV-CA5J	CABLE,DC POWER,48 IN	2
SV-DW1B	Drawings, IP Simulcast/P25 Trunked	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
SV-AT1B	TERMINATION,50 OHM LOAD	9
MASV-NZN8S	Fan Tray,MASTR V	1
SV-ZN9K	PANEL,XCONNECT,MASTR V	1
SV-CL2D	Cable, Xconnect-Baseband Shelf #1	1
SV-CK4B	CABLE, ETHERNET CAT5 BOOTED, VIOLET, 5FT	1
SV-CL9V	Kit,Cable,Ch #1,2,9,10,17,18 MASTR V IP	1
MASV-NZN8R	Panel,Blank Module,MASTR V	10
SV-MN9S	Panel,Blank,1 RU	1
MASV-NMA6Q	Grounding Shim,28RU	1
MASV-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	2
MASV-NCN1Z	Outlet Strip,110 VAC,UL Recognized	1
AS-CB2K	COMBINER,TX,2-4 CH,800MHZ,AC,150KHZ	1
Eq. Group: 2.D Turner Guilford Knight Rx Only Site 1		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1

SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
Part #	Description	Qty
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 2.E Turner Guilford Knight Rx Only Site 2		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF, RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 2.F Turner Guilford Knight Rx Only Site 3		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF, RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 2.G Turner Guilford Knight Rx Only Site 4		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1

SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
Part #	Description	Qty
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 2.H Turner Guilford Knight Rx Only Site 5		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 2.I Turner Guilford Knight Rx Only Site 6		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1

VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Part #	Description	Qty
Eq. Group: 2.J Turner Guilford Knight Rx Only Site 7		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 2.K Turner Guilford Knight Rx Only Site 8		
MASA-SVP25	Site Interface Equipment,P25T MASTR V	1
SACN1Z	Outlet Strip,120VAC	1
MASA-NCN7R	Power Strip,110VAC,2X20A Brkr,2-Cbl,6Pos	1
MASA-NCL7D	Kit,Cable,Ethernet,5ft	1
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
SV-8CRMV	Aux Receiver,MASTR V,P25C,799-817 MHz	1
SV-DW1D	Drawings, IP Simulcast,Aux Rcvr	1
MASV-NMR1H	Rack,Open,86 in(Xtra Dp) with support	1
SV-RB3B	Power Supply Shelf,1st Position	1
SV-RB3G	Shelf,14-Slot,Open Rack	1
SV-RB3J	Busbar,PS/PS,MASTR V	1
SV-PM1C	Processor, Baseband Module,MASTR V	1
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1
MASV-NMA6Q	Grounding Shim,28RU	1
SV-CL2N	Cable Assembly RF,RG223,BNC/SMA,5ft	1
MASV-NCL8Z	Cable, DC Power 60in	1
SV-CL9P	Cable, Router-Switch #1	1
VSVS01	VS PROD GRP, CONFIGURED MODEL NUMBER	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-MN3X	KIT, C1111 ROUTER SITE MTG	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SAMD8E	SITE MANAGER, VIDA EDGE	1
Eq. Group: 2.Y.1 Turner Guilford Knight Spares		
SAMD8F	POWER SUPPLY, AC, VIDA EDGE	1
VS-CR1Y	ROUTER,ISR,C1111-4P,SEC	1
VS-CU9A	SWITCH,SMARTNET,C1000FE-24T-4G-L	1
VS-CU5K	CISCO MODULE,LX/H SINGLE/MULTI-MODE,FIBR	1
SV-AW5R-A	POWER AMPLIFIER,LINEAR,800 MHZ	2
MASV-NPS2P	Power Supply,110-240V,AC,MASTR V	2

SV-RB3B	Power Supply Shelf, 1st Position	1
SV-PM1C	Processor, Baseband Module,MASTR V	2
EA-555007-011	Receiver Module,799-817MHz,MASTR V	3
EA-555004-001	Traffic Control Module,MASTR V	2
EA-555008-012	Transmit Module,851-870MHz,MASTR V	2
MASV-NZN8S	Fan Tray,MASTR V	1

ATTACHMENT C-4 – PAYMENT SCHEDULE

For the services provided in Appendix A-1 the following firm fixed pricing shall apply.

P25 CONVENTIONAL SYSTEM UPGRADE	Quantity	Metro West Price (USD \$)	Turner Guilford Knight Price (USD \$)
Single Channel 800 MHz P25 Conventional RF equipment, licenses at Primary and Secondary VIDA Core/NSC, Installation	Lot	\$1,200,719.00	\$1,001,045.50
Spare Equipment	Lot	\$48,567.75	\$48,567.75
Radio Programming (1,425 existing radios at each facility for a total of 2,850)	Lot	\$44,531.25	\$44,568.75
SYSTEM UPGRADE SUBTOTAL BY FACILITY		\$1,293,818.00	\$1,094,182.00
PROJECT TOTAL			\$2,388,000.00

Milestone Payments	%	Metro West	Turner Guilford Knight
Contract Execution	20%	\$258,763.60	\$218,836.40
Customer Design Review	10%	\$129,381.80	\$109,418.20
Equipment Staging @ Factory	25%	\$323,454.50	\$273,545.50
Infrastructure Equipment Shipment	25%	\$323,454.50	\$273,545.50
Radio Programming	5%	\$64,690.90	\$54,709.10
Installation	10%	\$129,381.80	\$109,418.20
Final System Acceptance	5%	\$64,690.90	\$54,709.10
Total	100%	\$1,293,818.00	\$1,094,182.00