



## Harris County, Texas

1001 Preston St., Suite 934  
Houston, Texas 77002

### Commissioners Court

#### Request for Court Action

File #: 23-1541

Agenda Date: 3/14/2023

Agenda #: 279.

**Department:** Purchasing**Department Head/Elected Official:** DeWight Dopslauf

YES	NO	ABSTAIN
-----	----	---------

Judge Lina Hidalgo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------	-------------------------------------	--------------------------	--------------------------

Comm. Rodney Ellis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------	-------------------------------------	--------------------------	--------------------------

Comm. Adrian Garcia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---------------------	-------------------------------------	--------------------------	--------------------------

Comm. Tom S. Ramsey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---------------------	-------------------------------------	--------------------------	--------------------------

Comm. Lesley Briones	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
----------------------	-------------------------------------	--------------------------	--------------------------

**Regular or Supplemental RCA:** Regular RCA**Type of Request:** Financial Authorization**Project ID** (if applicable): N/A**Vendor/Entity Legal Name** (if applicable): Motorola Solutions, Inc.**MWDBE Contracted Goal** (if applicable): N/A**MWDBE Current Participation** (if applicable): N/A**Justification for 0% MWDBE Participation Goal:** N/A - Goal not applicable to request**Request Summary (Agenda Caption):**

Request that the County Judge execute an amendment to a sole source exemption agreement with Motorola Solutions, Inc. in the additional amount of \$6,051,122 to add an additional scope of work for system enhancement and upgrade for the Texas Wide Area Radio Network (TxWARN) Astro P25 System for Universal Services for the corrected period through August 31, 2023.

**Background and Discussion:**

Harris County needs qualified vendors to provide mobile and portable Project P25 (P25) single and multi-band subscriber radios for operation on Harris County's P25 "TXWARN" radio system. These subscribers will be purchased by and used by all of Harris County's first responders as well as various other Harris County Departments in the course of their duties. The Subscribers acquired will be provisioned and maintained by Universal Services.

**Expected Impact:**

This will allow Harris County communication by user Departments. This includes the ability of first responders to have command and control of incidents, as well as interoperate with surrounding jurisdictions.

**Alternative Options:**

Purchase new radio subscribers through an alternate contract, such as the State of Texas DIR contract.

**Alignment with Goal(s):**

Presented to Commissioners Court

- Justice and Safety
- Economic Opportunity
- Housing
- Public Health

March 14, 2023

Approve: G/R

**File #: 23-1541****Agenda Date: 3/14/2023****Agenda #: 279.**

- Transportation
- Flooding
- Environment
- Governance and Customer Service

**Prior Court Action (if any):**

Date	Agenda Item #	Action Taken
11/30/2021	231 283	Request for approval of a sole source exemption from the competitive bid requirements and a renewal option with Motorola Solutions, Inc. in the amount of \$2,112,000 for system enhancement and upgrade for the Texas Wide Area Radio Network (TxWARN) Astro P25 System for Universal Services through November 9, 2022. Request for approval of a sole source exemption from the competitive bid requirements and the second of four (4) renewal options with Motorola Solutions, Inc. in the amount of \$2,138,801 for system enhancement and upgrade for the Texas Wide Area Radio Network (TxWARN) Astro P25 System for Universal Services through November 9, 2023, MWDBE Participation Goal: Exempt - Sole Source.
11/15/2022		

**Location: N/A**

Address (if applicable): N/A

Precinct(s): Choose an item.

<b>Fiscal and Personnel Summary</b>			
Service Name	FY 23	FY 24	Next 3 FYs
<b>Incremental Expenditures (do NOT write values in thousands or millions)</b>			
Labor Expenditures	\$	\$	\$
Non-Labor Expenditures	\$	\$	\$
<b>Total Incremental Expenditures</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
<b>Funding Sources (do NOT write values in thousands or millions)</b>			
<b>Existing Budget</b>			
1000 - General Fund	\$6,051,121	\$	\$
Choose an item.	\$	\$	\$
Choose an item.	\$	\$	\$
<b>Total Current Budget</b>	<b>\$6,051,121</b>	<b>\$</b>	<b>\$</b>
<b>Additional Budget Requested</b>			
Choose an item.	\$	\$	\$
Choose an item.	\$	\$	\$

---

**File #: 23-1541****Agenda Date: 3/14/2023****Agenda #: 279.**

---

Choose an item.	\$	\$	\$
Total Additional Budget Requested	\$	\$	\$
<b>Total Funding Sources</b>	<b>\$6,051,121</b>	<b>\$</b>	<b>\$</b>
<b>Personnel</b> (Fill out section only if requesting new PCNs)			
Current Position Count for Service	-	-	-
Additional Positions Requested	-	-	-
<b>Total Personnel</b>	<b>-</b>	<b>-</b>	<b>-</b>

**Anticipated Court Date:** March 14, 2023**Anticipated Implementation Date (if different from Court date):****Emergency/Disaster Recovery Note:** Not an emergency, disaster, or COVID-19 related item**Contact(s) name, title, department:** Robert Howard, Sr. Manager Public Safety Communications; Diandra Singleton, Senior Buyer, Purchasing**Attachments** (if applicable): Letter



**DeWight Dopslauf, C.P.M., CPPO  
Harris County Purchasing Agent**

March 1, 2023

Commissioners Court  
Harris County, Texas

**RE: Sole Source Exemption – Local Government Code § 262.024 (a)(7)**

Members of Commissioners Court:

Please approve the attached Order(s) authorizing the County Judge to execute the attached First Amendment to the Agreement(s) for the following:

**Description:** System Enhancement and Upgrade for the Texas Wide Area Radio Network (TxWARN) Astro P25 System for the Harris County Universal Services

**Vendor:** Motorola Solutions, Inc.

**Amount:** \$2,138,801 previously approved funds for the term through 11/09/2023 (as approved)  
\$6,051,122 additional funds for the corrected term through 08/31/2023 (corrected)  
\$8,189,923

**Reviewed by:** X Universal Services - Technology X Harris County Purchasing

The First Amendment adds an additional Scope of Work related to the system enhancement and upgrade for the Texas Wide Area Radio Network (TxWAN) Astro P25 System, funding and corrects the term. Purchase order(s) will be issued upon Commissioners Court approval.

Sincerely,

*DeWight Dopslauf*

DeWight Dopslauf  
Purchasing Agent

DRS  
Attachment(s)  
cc: Vendor

**FOR INCLUSION ON COMMISSIONERS COURT AGENDA MARCH 14, 2023**

**FIRST AMENDMENT TO THE AGREEMENT BETWEEN  
HARRIS COUNTY AND MOTOROLA SOLUTIONS, INC.**

THE STATE OF TEXAS      §  
                                §  
COUNTY OF HARRIS      §

This First Amendment to the Agreement is made and entered into by and between Harris County (the “County”), acting through Harris County Universal Services (the “Department”), and Motorola Solutions, Inc. (“Contractor”). The County and the Contractor are referred to herein collectively as “Parties” and individually as a “Party.”

***Recitals***

On November 10, 2020, the County and the Contractor entered into a Master Agreement (the “Agreement”) for system enhancement and upgrade for the Texas Wide Area Radio Network (TxWAN) Astro P25 System the Department (“Services”), reference number 00000592 (SUAII Contract).

The Parties desire to amend the agreement for the first time (“First Amendment”) for the purpose of adding a Scope of Work associated with the Services.

***Terms***

I.

This First Amendment shall be governed by the Master Agreement, which is incorporated herein by reference as though fully set forth word for word.

II.

The Scope of Work attached hereto as Exhibit A shall be added to the Master Agreement. The total additional amount appropriated for the additional Scope of Work will be Six Million Fifty-One Thousand One Hundred Twenty-One and 67/100 Dollars (\$6,051,121.67).

III.

The Parties agree that the current renewal term shall be modified to end on August 31, 2023. Subsequent annual renewal terms shall begin on September 1<sup>st</sup> each year.

IV.

The following language shall be added to Section 13 (“Limitation of Liability”) of the Agreement:

Motorola shall not be entitled to payment for unperformed work or materials not provided and shall not be entitled to damages or compensation for termination of

work or supply of materials. Within thirty (30) days after receipt of Notice of Termination whether for cause or convenience, Motorola shall provide Customer with a refund of any unused, prepaid extended warranty fees.

**Reimbursement; Damages.** Customer shall be entitled to reimbursement for any compensation paid in excess of work rendered or materials provided and shall be entitled to withhold compensation for defective work or other damages caused by Contractor's performance of the work.

All other terms and provisions of the Master Agreement shall remain in full force and effect as originally written.

V.

It is expressly understood and agreed that the Master Agreement is incorporated herein by reference. In the event of any conflict between the terms and provisions of this First Amendment, or any portion thereof, and the terms and provisions of any other part or portion of the Master Agreement, or any other terms and conditions, this First Amendment shall control.

VI.

**Execution. Multiple Counterparts:** This First Amendment may be executed in several counterparts. Each counterpart is deemed an original. All counterparts together constitute one and the same instrument. Each Party warrants that the undersigned is a duly authorized representative with the power to execute this First Amendment.

MOTOROLA SOLUTIONS, INC.

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

Clay Cassard  
Motorola Solutions, Inc.  
Territory Vice President

HARRIS COUNTY

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

DocuSigned by:  
  
266C1B1FCB5A4DC...  
LINA HIDALGO  
COUNTY JUDGE

APPROVED AS TO FORM:  
CHRISTIAN D. MENEFEET  
COUNTY ATTORNEY

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

T. Scott Petty  
Assistant County Attorney  
C.A. File 23GEN0546

Exhibit A

Scope of Work

(follows behind)

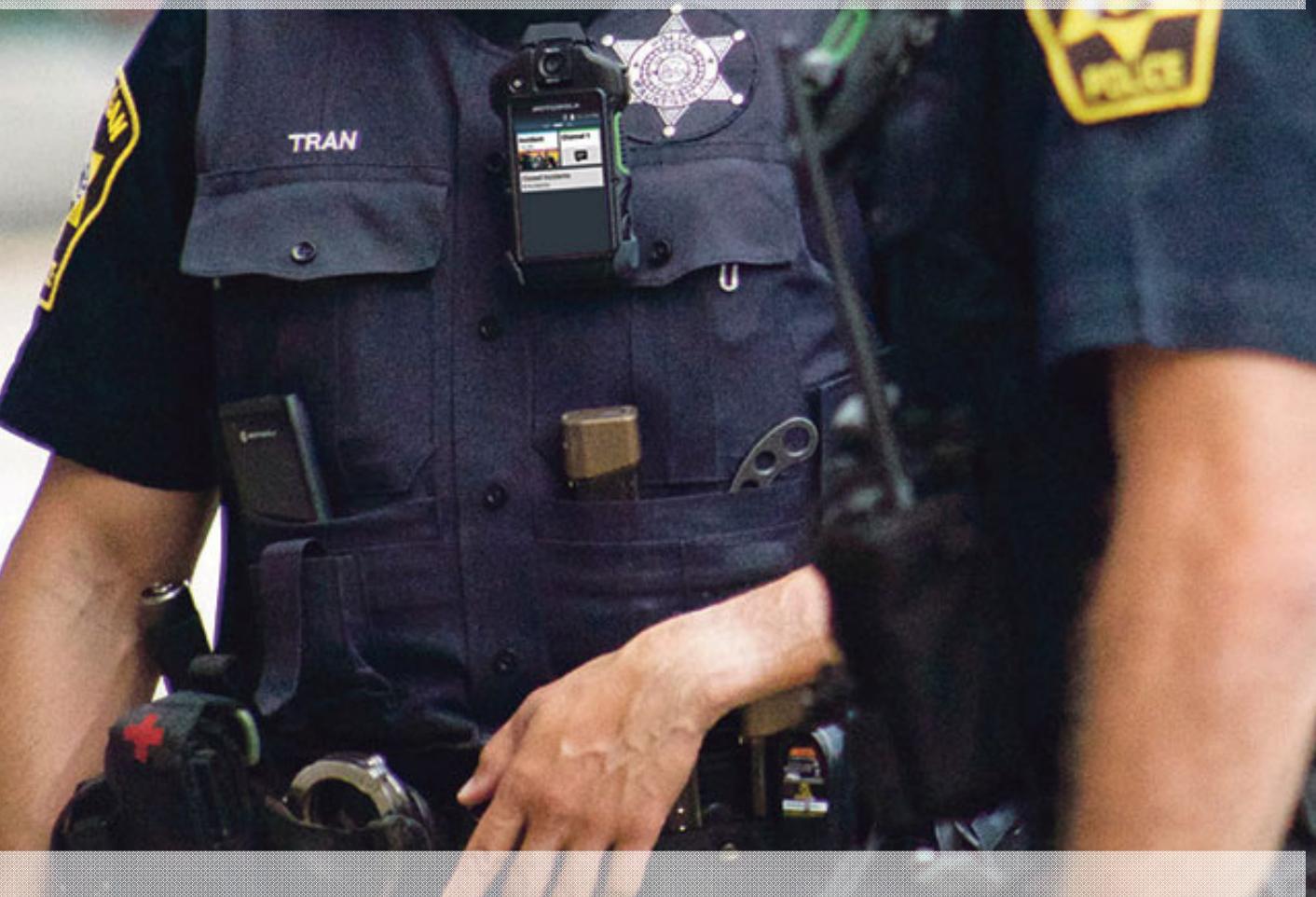


MOTOROLA SOLUTIONS

# HARRIS COUNTY, TX

DETENTION CENTER AND TUNNEL RADIO COVERAGE

FEBRUARY 1, 2023



The design, technical, pricing, and other information ("Information") furnished with this submission is proprietary and/or trade secret information of Motorola Solutions, Inc. ("Motorola Solutions") and is submitted with the restriction that it is to be used for evaluation purposes only. To the fullest extent allowed by applicable law, the Information is not to be disclosed publicly or in any manner to anyone other than those required to evaluate the Information without the express written permission of Motorola Solutions.

MOTOROLA, MOTO, MOTOROLA SOLUTIONS, and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. © 2023 Motorola Solutions, Inc. All rights reserved.

## TABLE OF CONTENTS

### Contents

<b>Section 1.....</b>	<b>1-1</b>
<b>System Description.....</b>	<b>1-1</b>
1.1    Project Overview.....	1-1
1.2    DAS Solution Design.....	1-1
1.3    Proposed RADIO System Architecture .....	1-2
1.4    Radio System Coverage .....	1-3
1.5    DAS COEE Equipment List.....	1-6
1.6    ASR P25 Trunking Repeater Site .....	1-7
<b>Section 2.....</b>	<b>2-1</b>
<b>Statement of Work.....</b>	<b>2-1</b>
2.1    Introduction .....	2-1
2.2    System Implementation.....	2-1
2.3    Coverage Demonstration Approach.....	2-3
2.3.1    COVERAGE DEMONSTRATION PLAN .....	2-3
2.4    Heat Maps.....	2-4
2.5    Frequency List.....	2-4
2.6    Motorola Responsibilities .....	2-4
2.6.1    BDA Installation.....	2-5
2.6.2    Astro P25 Trunking Repeater Site .....	2-6
2.7    Harris County, TX Responsibilities.....	2-6
2.8    Project Assumptions .....	2-7
2.9    Contract.....	2-9
2.9.1    Contract Administration and Project Kick-off Meeting .....	2-9
2.10    Contract Design Review (CDR) .....	2-10
2.10.1    Review Contract Design.....	2-10
2.11    Order Processing .....	2-11
2.11.1    Process Equipment List.....	2-11
2.12    Manufacturing .....	2-12
2.12.1    Manufacture and Shipment of Fixed Network Equipment .....	2-12
2.13    Civil Work for Harris County Jail - Provided Facilities .....	2-12
2.14    System Installation.....	2-13
2.14.1    Install Fixed Network Equipment.....	2-13
2.15    System Optimization .....	2-14
2.15.1    Optimize System FNE .....	2-14
2.16    Audit and Acceptance Testing .....	2-14
2.16.1    Perform R56 Audit.....	2-14



2.16.2	Perform Equipment Testing.....	2-15
2.16.3	Perform Functional Testing .....	2-15
2.16.4	Perform Coverage Acceptance Test Plan .....	2-16
2.16.5	System Acceptance Test Procedures (Milestone) .....	2-17
2.17	Finalize.....	2-17
2.17.1	Cutover / Go-Live Event.....	2-17
2.17.2	Resolve Punch List.....	2-17
2.17.3	Transition to Service/Project Transition Certificate .....	2-18
2.17.4	Finalize Documentation.....	2-18
2.17.5	Final Acceptance.....	2-18
2.18	Project Administration .....	2-20
2.18.1	Project Schedule .....	2-20
2.18.2	Change Order Process.....	2-20
<b>Section 3</b>	.....	<b>3-1</b>
<b>Support Plan</b>	.....	<b>3-1</b>
3.1	Preventative Maintenance.....	3-1
<b>Section 4</b>	.....	<b>4-1</b>
<b>DAS Product Specifications</b>	.....	<b>4-1</b>
Over-the-Air Public Safety Centric DAS (758-869 MHz)	.....	4-1
HONBDA Series Product Features.....	.....	4-1
APPlications.....	.....	4-1
<b>Section 5</b>	.....	<b>5-1</b>
<b>Pricing</b>	.....	<b>5-1</b>
<b>Section 6</b>	.....	<b>6-1</b>
<b>Payment Terms</b>	.....	<b>6-1</b>
<b>Terms and Conditions</b>	.....	<b>6-1</b>
<b>Section 7</b>	.....	<b>7-1</b>
<b>Our Commitment</b>	.....	<b>7-1</b>





**MOTOROLA SOLUTIONS**

---

Motorola Solutions, Inc.  
1303 E. Algonquin Rd.  
Schaumburg, IL 60196  
USA

Tel. + 1 847 576 5000  
Fax + 1 847 538 6020

February 1, 2023

Greg Jurrens  
Director – Public Safety Operations  
2318 Greens Rd.  
Houston, TX 77032

Subject: Detention Center and Tunnel Radio Coverage

Dear Greg,

Motorola Solutions, Inc. (“Motorola Solutions”) is pleased to have the opportunity to provide Harris County, TX with quality communications equipment and services. The Motorola Solutions 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. The goal of this solution is to provide reliable public safety communications for the Harris County Jail system. Specifically, the scope of the proposal provides an ASTRO 25 radio coverage extension system to cover three of the Harris County jail facilities located in downtown Houston, tunnels as specified in the proposal. In addition, the radio coverage extension system will be fed by a 6 channel ASTRO 25 repeater site located at Harris County’s CJC building. This solution supports a partnership between the Harris County jail, Harris County Universal Services, and Motorola Solutions.

This proposal consists of this cover letter, System Description, Statement of Work, Project Assumptions, and Pricing. Motorola Solutions would be pleased to review the details of the design and customer responsibilities of the proposal and address any concerns you may have. Any questions can be directed to your Motorola Account Executive, Lynn Anto at 330-289-4387 or [lynn.anto@motorolasolutions.com](mailto:lynn.anto@motorolasolutions.com).

This proposal is subject to the terms and conditions of the existing Harris County and Motorola Solutions SUAII Contract, executed on 11/10/2020, reference number 00000592. Harris County may accept the proposal by delivering to Motorola a purchase order in the amount of the proposal that specifically references “subject to the terms and conditions of Motorola’s Proposal, dated 2-1-23 and the SUAII Contract executed on 11/10/2020, reference number 00000592.” This pricing shall remain valid until 3-17-2023. If a PO is not received by this date with information described above, pricing is subject to increase.



---

Motorola Solutions, Inc.  
1303 E. Algonquin Rd.  
Schaumburg, IL 60196  
USA

Tel. + 1 847 576 5000  
Fax + 1 847 538 6020

We thank you for the opportunity to furnish Harris County, TX 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,

Motorola Solutions, Inc.

A handwritten signature in black ink, appearing to read "Clay Cassard".

Clay Cassard  
MSSSI Vice President & Director Sales

**SECTION 1**

# SYSTEM DESCRIPTION

## 1.1 PROJECT OVERVIEW

Motorola is pleased to offer Harris County a 700/800MHz public safety DAS solution for the Harris County Jail Complex. This system solution will provide 700/800 MHz two-way communications as required by Harris County Jail for the buildings that currently has insufficient RF signal for adequate two-way communication. These buildings include:

- Harris County Jail
- Harris County/City of Houston Joint Processing Center
- Harris County Sheriff's Office Detention Facility
- Tunnel from Sheriff Office Detention Facility to CJC that passes through the 2<sup>nd</sup> floor of IBC and under the old jail at 1301 Franklin.
- Tunnel from CJC to Sheriff Office Detention Facility that passes under the old jail at 1301 Franklin.
- Tunnel from CJC to the Jury Selection Area entrance.

Motorola utilized RF propagation models to determine the most feasible solution for providing supplemental, in-building RF coverage to the specified building. The proposed in-building DAS will enhance coverage provided by the radio system to be utilized in the Harris County Jail. This system solution will provide 700/800 MHz two-way communications as required by Harris County for the Harris County Jail (HCJ), Joint Processing Center (JPC) and the Harris County Sheriff's Office that currently has insufficient RF signal for adequate two-way communication.

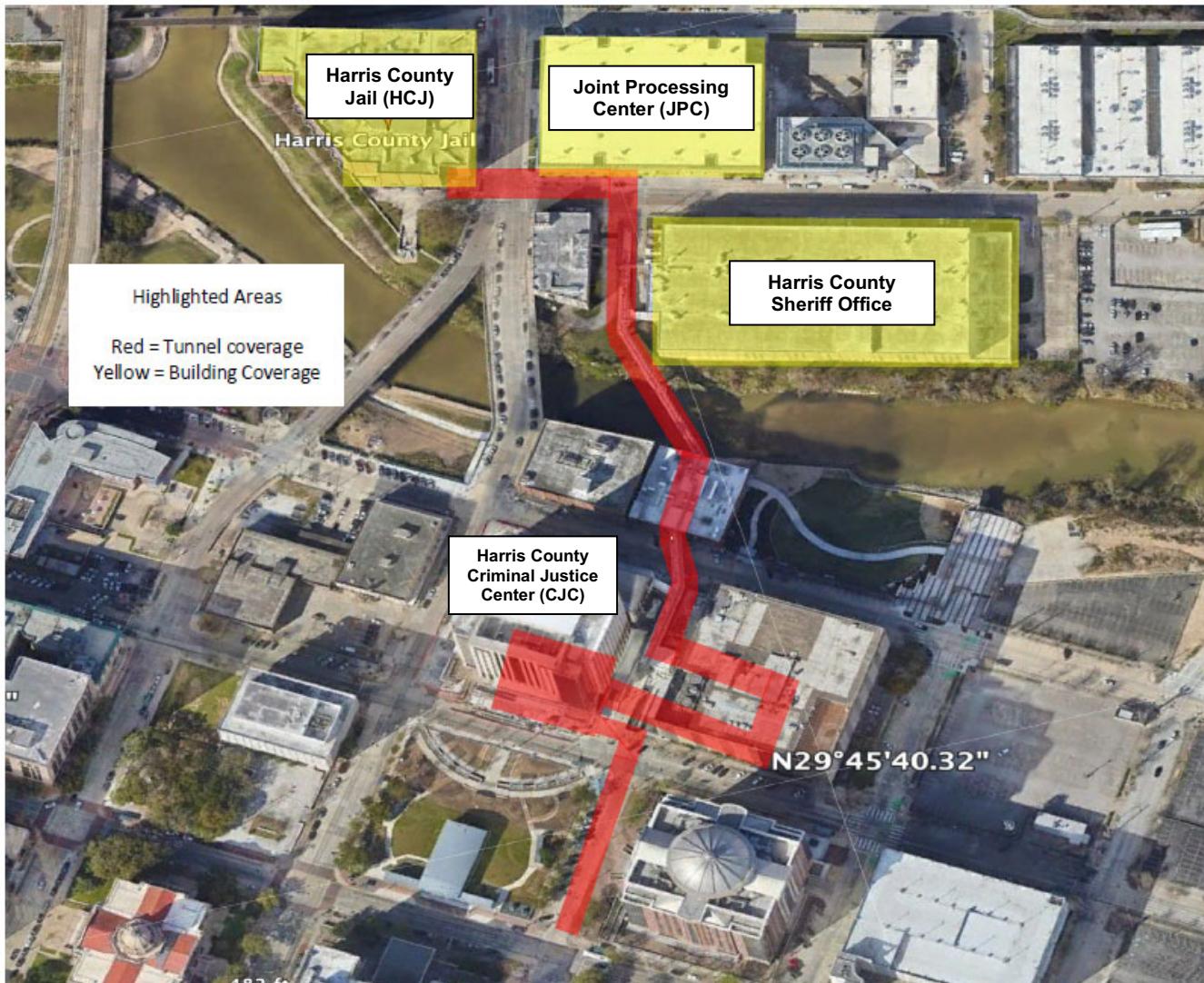
A network of passive splitters and cabling will deliver the signal to the passive antenna network to produce coverage. Motorola Solutions will collect signal readings post installation to validate the designed coverage intended for inside Harris County Jail project area.

In addition, Motorola has also included equipment and services for a new P25 Trunking ASTRO Repeater Site (ASR). The ASR site consists of a 6-channel TDMA ESS rack to be installed in the 12<sup>th</sup> Floor equipment room and an antenna system consisting of four antennas residing on the rooftop at each of the four corners of the Criminal Justice Center.

## 1.2 DAS SOLUTION DESIGN

The system is designed to maintain a level of -95 dbm RSSI over 95% of the requested coverage area.

The BDA system will be fed six channels from a P25 ASTRO 25 Repeater site located at the Harris County Criminal Justice Center. The ASTRO 25 site will be programmed for TDMA to allow a maximum of 10 talkpaths available for use by the jail system. The Harris County Jail project manager should work with Harris County Universal services to determine the number of talk groups required.



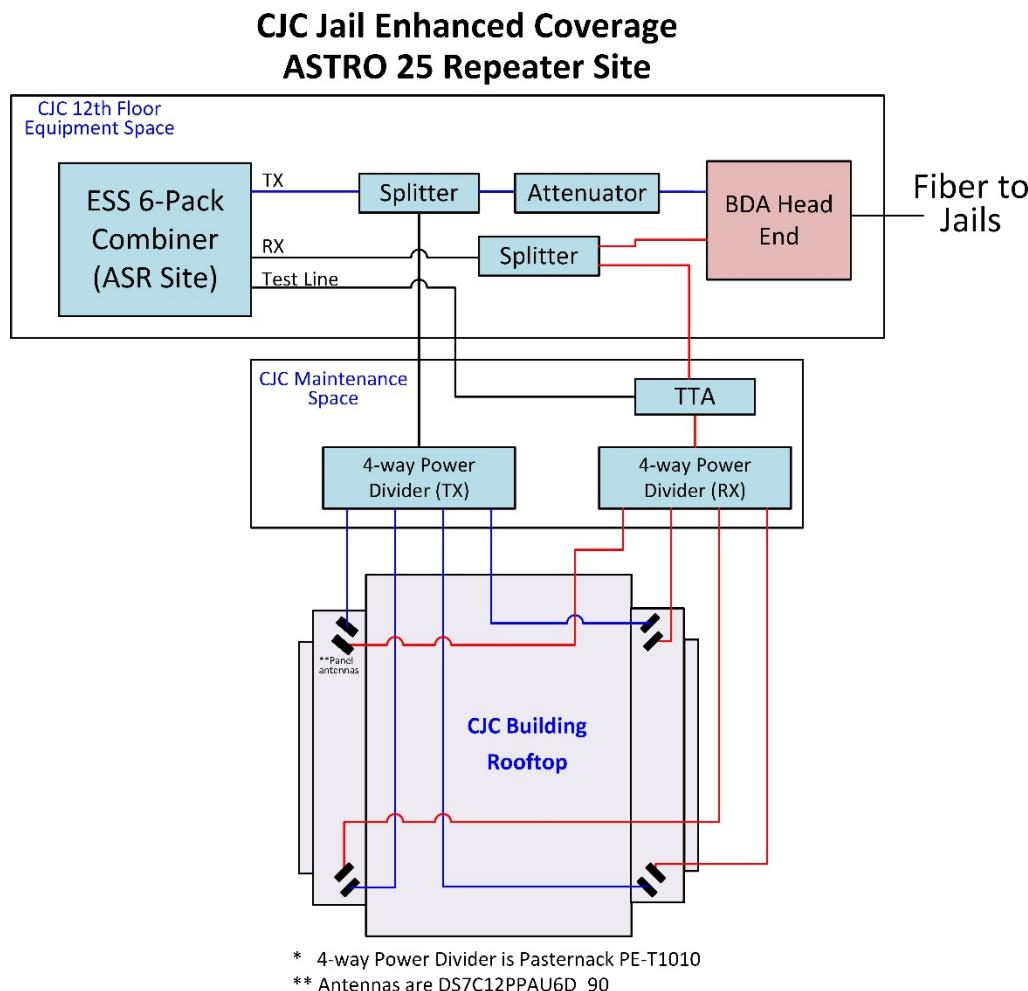
## 1.3 PROPOSED RADIO SYSTEM ARCHITECTURE

The proposed ASTRO 25 solution will provide an adaptable and affordable platform for mission critical wireless communications around the Harris County Jail and downtown geographic area. The proposed system consists of a 6-channel ASTRO 25 standalone repeater site (ASR) that connects to the existing Harris County Zone Core. The ASR site provides a direct connection into the DAS Solution.

The proposed ASTRO 25 Standalone Repeater (ASR) Sites provide base radios to route Harris County Jail voice traffic to the system for distribution to other sites. The base radios also repeat each transmission to support other local user radios. ASR sites support packet data and route data traffic to the site controller. The site controller then routes these data

packets upstream to the zone controller for further processing and routing. The ASR site includes a rooftop antenna system with panel antennas of 90 degree beamwidth placed at each corner of the Criminal Justice Center.

The system architecture of the Enhanced Coverage Jail System ASR site is shown in the figure below:



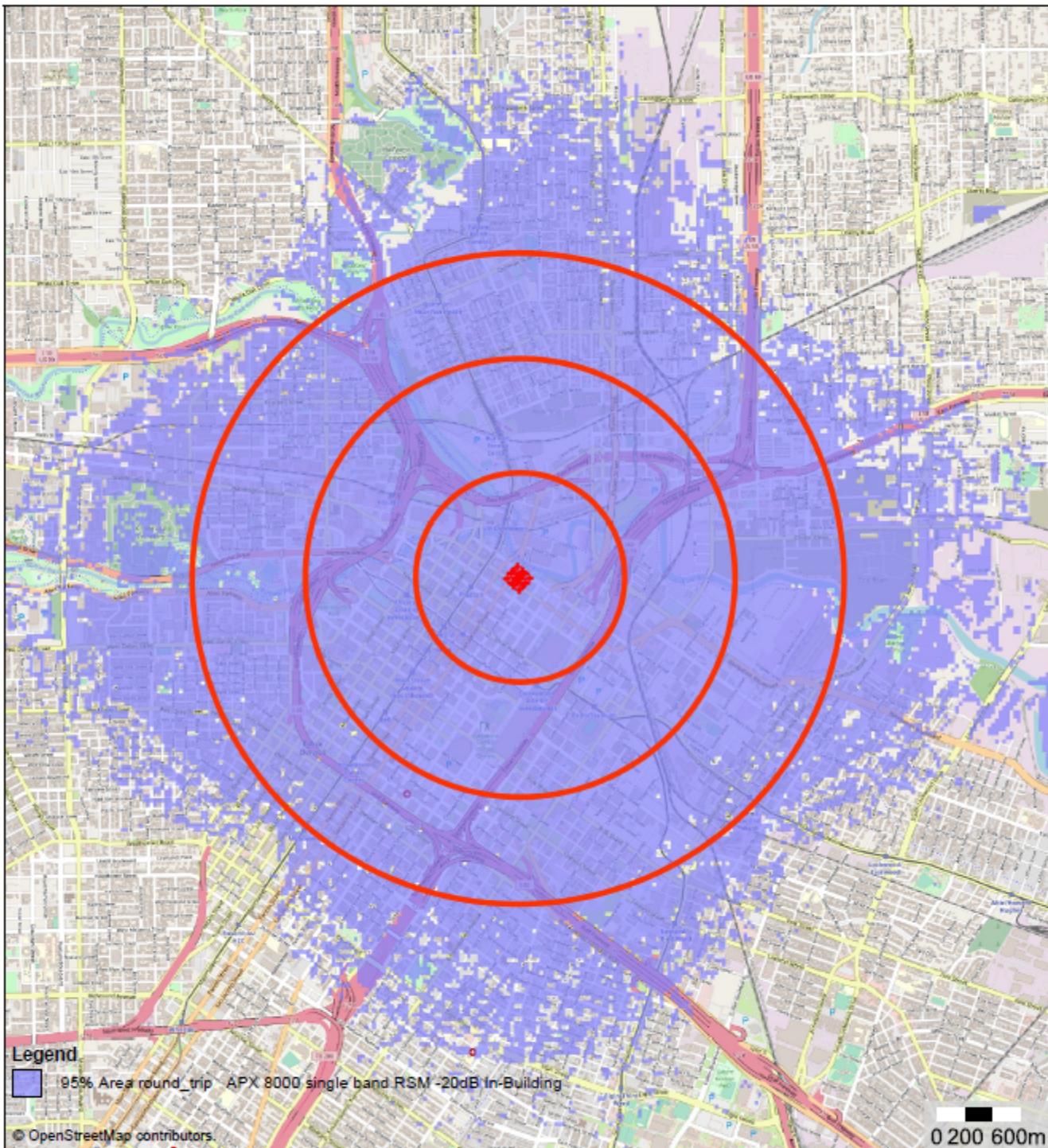
## 1.4 RADIO SYSTEM COVERAGE

The figures below provide a graphical view of -20 db and -30 dB in-building coverage for the proposed system utilizing four 11 dB 6° downtilt 90° beamwidth panel antennas at each corner of the CJC building rooftop. This is approximate coverage as there is no way to model the shading due to the penthouse structure. Each ring is at 0.5 mi radius from the center (e.g. at 0.5, 1.0 and 1.5 miles).

Harris County, TX  
February 1, 2023MOTOROLA  
SOLUTIONS

## CJC New ASR Site for Jail BDA with 11 dB 6 DT TX and RX panel antennas on corners

For Information Only

APX 20 dB In-building Roundtrip Coverage - 1.5 mile radius  
TX - dbSpectra DS7C12PPAU6D\_90 antenna w 5 W power/corner

Printed: 12/05/2022

System version: 2.9.11.0

APX 8000 single band portable w RSM

Solution: TXWARN

Project: HC\_TDMA\_All\_Current\_Bruce

Design: Design 22 CJC ASR all antennas 5w  
pxfb47

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

Detention Center and Tunnel Radio Coverage

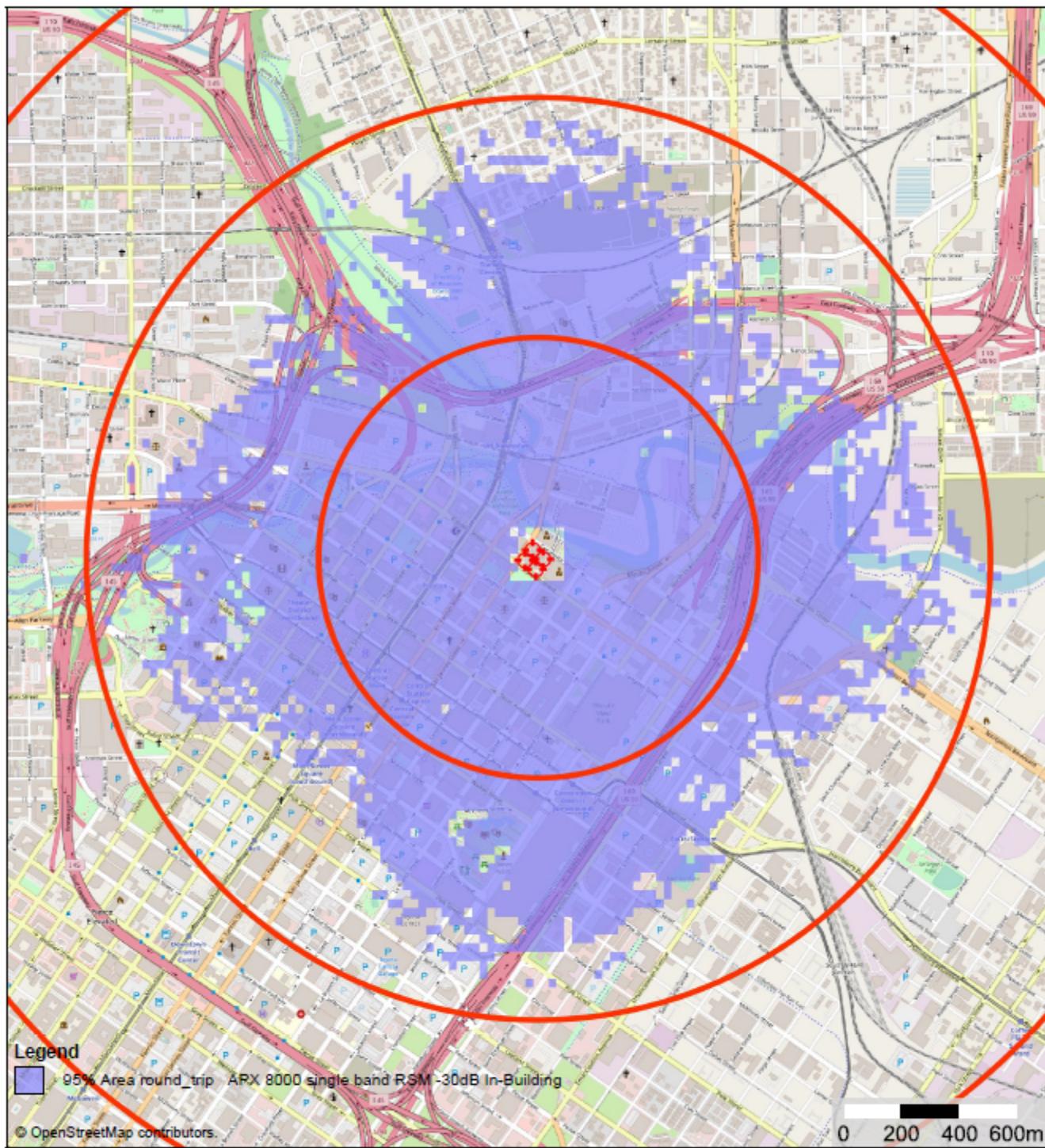
Use or disclosure of this proposal is subject  
to the restrictions on the cover page.

Motorola Solutions Confidential Restricted

System Description 1-4

Harris County, TX  
February 1, 2023MOTOROLA  
SOLUTIONS

For Information Only

**CJC New ASR Site for Jail BDA with 11 dB 6 DT TX and RX panel antennas on corners**APX 30 dB In-building Roundtrip Coverage - 1 mile radius  
TX - dbSpectra DS7C12PPAU6D\_90 antenna w 5 W power/corner

Printed: 12/05/2022

System version: 2.9.11.0

APX 8000 single band portable w RSM

Solution: TXWARN

Project: HC\_TDMA\_All\_Current\_Bruce

Design: Design 22 CJC ASR all antennas 5w

pxfb47

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

Detention Center and Tunnel Radio Coverage

Use or disclosure of this proposal is subject  
to the restrictions on the cover page.

Motorola Solutions Confidential Restricted

System Description 1-5

## 1.5 DAS COEE EQUIPMENT LIST

ITEM	Manufacturer	Moto Number	PRODUCT DESCRIPTION	QTY
1	Fiplex	DH7S-D-7S33AR1	Flex DAS. OTA Public Safety Centric DAS Remote Unit. 758-869MHz. PS800 + PS700 + FIRSTNET, Dual Band, +33dBm per band, 64 Channels per band, 1 optical port, DC	15
2	Fiplex	DH7S-A-M	Flex DAS. OTA Public Centric DAS Master Unit. 758-869MHz. PS800 + PS700 + FIRSTNET, Dual Band, 64 Channels per band, 8 optical ports, AC & DC	2
3	Fiplex	BTTY-100100	Battery Backup Unit, 24 VDC, 100W / 24hs or 200W / 12hs	1
4	Fiplex	BTTY-100055	Battery Backup Unit, 24 VDC, 100W / 12hs	15
5	Comba	CO-FS20-ON300C(I)	(N.America)(Passive) Wideband Tapper CO-FS20-ON300C(I), Low PIM (-161dBc), 340-5850 MHz, N type Female, 300W, Wideband design covering 340-520 MHz, 550-960 MHz, 1710-2700 MHz, 3500-4500 Mhz, 4900-5850 MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss	5
6	Comba	CO-FS15-ON300C(I)	(N.America)(Passive) Wideband Tapper CO-FS15-ON300C(I), Low PIM (-161dBc), 340-5850 MHz, N type Female, 300W, Wideband design covering 340-520 MHz, 550-960 MHz, 1710-2700 MHz, 3500-4500 Mhz, 4900-5850 MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss	18
7	Comba	CO-FS13-ON300C(I)	(N.America)(Passive) Wideband Tapper CO-FS13-ON300C(I), Low PIM (-161dBc), 340-5850 MHz, N type Female, 300W, Wideband design covering 340-520 MHz, 550-960 MHz, 1710-2700 MHz, 3500-4500 Mhz, 4900-5850 MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss	21
8	Comba	CO-FS10-ON300C(I)	(N.America)(Passive) Wideband Tapper CO-FS10-ON300C(I), Low PIM (-161dBc), 340-5850 MHz, N type Female, 300W, Wideband design covering 340-520 MHz, 550-960 MHz, 1710-2700 MHz, 3500-4500 Mhz, 4900-5850 MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss	33
9	Comba	CO-FS08-ON300C(I)	(N.America)(Passive) Wideband Tapper CO-FS08-ON300C(I), Low PIM (-161dBc), 340-5850 MHz, N type Female, 300W, Wideband design covering 340-520 MHz, 550-960 MHz, 1710-2700 MHz, 3500-4500 Mhz, 4900-5850 MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss	26
10	Comba	CO-FS07-ON300C(I)	(N.America)(Passive) Wideband Tapper CO-FS07-ON300C(I), Low PIM (-161dBc), 340-5850 MHz, N type Female, 300W, Wideband design covering 340-520 MHz, 550-960 MHz, 1710-2700 MHz, 3500-4500 Mhz, 4900-5850 MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss	24
11	Comba	CO-FS06-ON300C(I)	(N.America)(Passive) Wideband Tapper CO-FS06-OD300C(I), Low PIM (-161dBc), 340-5850 MHz, N type Female, 300W, Wideband design covering 340-520 MHz, 550-960 MHz, 1710-2700 MHz, 3500-4500 Mhz, 4900-5850 MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss	31
12	Comba	CO-FS05-	(N.America)(Passive) Wideband Tapper CO-FS05-ON300C(I), Low	78



Harris County, TX  
February 1, 2023

ITEM	Manufacturer	Moto Number	PRODUCT DESCRIPTION	QTY
		ON300C(I)	PIM (-161dBc), 340-5850 MHz, N type Female, 300W, Wideband design covering 340-520 MHz, 550-960 MHz, 1710-2700 MHz, 3500-4500 MHz, 4900-5850 MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss	
13	Comba	IXD-360V03N0-54	(N.America)(Passive) Indoor Omni-directional Ceiling Mounted Antenna IXD-360V03N0-54, 698-2700MHz, N-Female, Omni antenna wideband covering 698-2700MHz (700/800 Public Safety Band, 2G/3G/4G Network), Suitable for Indoor application, Non-PIM rating, Compact ceiling mount and cost-effective design	236
14	Comba	HC-K2-ON300L(I)	(N.America)(Passive) Hybrid Coupler 2x2 555-2700MHz, N type Female Connectors. 300W. -161 dBc. Includes mounting hardware.	1
15	Comba	PS-K2-ON50M(XH)	(N.America)(Passive) 2-Way Wideband In-line Wilkinson Power Splitter, PS-R2-ON50M(XH), 555-2700MHz, N-Female, 50W, Wilkinson power splitter, Wideband design covering 555-2700MHz, Suitable for indoor/outdoor environment, High reliability and low insertion loss, High reliability, Suitable for both indoor and outdoor application	188
16	Comba	JS-NMNF1.5F-R141	(N.America)(Passive) 1.5ft 0.141 jumper cable. PIM rated -158 dBc. N Male to N Female. Plenum rated with red jacket.	243
17	Eupen	EC4-50-PL-WHT	1/2" Plenum Coax Cable, VSWR up to 6 GHz	34000
18	Motorola	DASCARE	Extended 5 Years Repair/Replacement on Active Equipment	1

## 1.6 ASR P25 TRUNKING REPEATER SITE

The ASR Site Equipment will consist of the following:

LIM	O	QTY	NOMENCLATURE	DESCRIPTION
1	-	1	T8492	SITE ROUTER & FIREWALL- AC
1	a	1	CA03445AA	ADD: MISSION CRITICAL HARDENING
1	b	1	CA03448AA	ADD: STATEFUL FIREWALL
2	-	1	T8492	SITE ROUTER & FIREWALL- AC
2	a	1	CA03445AA	ADD: MISSION CRITICAL HARDENING
2	b	1	CA03448AA	ADD: STATEFUL FIREWALL
3	-	1	SQM01SUM7054	GTR 8000 EXPANDABLE SITE SUBSYSTEM
3	a	1	CA00719AA	ADD: ASTRO SYSTEM RELEASE 2019.2
3	b	1	CA00855AA	ADD: 700/800 MHZ
3	c	1	X306AC	ADD: QTY (6) GTR 8000 BASE RADIOS
3	d	5	CA01842AA	ADD: P25 TDMA SOFTWARE
3	e	5	CA01902AA	ADD: P25 DYNAMIC CHANNEL SOFTWARE
3	f	1	CA02684AA	ADD: AC ONLY POWER DISTRIBUTION
3	g	1	CA00861AA	ADD: CABINET RMC W/ CAPABILITY OF 6 BRS
3	h	1	CA00879AA	ADD: PRIMARY 6 PORT CAVITY COMBINER



Harris County, TX  
February 1, 2023

LIM	O	QTY	NOMENCLATURE	DESCRIPTION
3	i	1	CA00883AA	ADD: 800 MHZ TX FILTER W/PMU
3	j	2	CA03736AA	ADD: DSC 8000 REPEATER SITE CONTROLLER
3	k	2	CA03745AA	ADD: DSC 8000 REPEATER SITE CONTROLLER SW
3	l	1	X882AH	ADD: 7.5 FT OPEN RACK, 48RU
4	-	6	DS3500072	NEMA 5-20 TO IEC C15 CORD, 10 FT FOR GTR RACKS
5	-	3	0784469Y02	BRKT, CBL SUPPORT
6	-	1	3182602Y06	GROUNDING BUS BAR
7	-	1	DS1101990	SPD, SHIELDED RJ-45 JACK, SINGLE LINE GBE (1000MBPS) R56 COMPLIANT
8	-	1	DSTSJADP	RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS
9	-	1	T8343	GSERIES SOFTWARE LICENSING
9	a	6	UA00401AA	ADD: GSERIES BR-P25 TRNK ST RPTR
9	b	2	UA00406AA	ADD: GSERIES SC-P25 TRNK ST RPTR
10	-	1	DSSGG005P	700/800 MHZ, TTA SYSTEM, ESS, N-TYPE, NON-DIVERSITY, DUAL PWR SUPPLY,
11	-	1	DSPSU000001P	POWER SUPPLY ADAPTER, 110V AC TO 48V DC, SINGLE OUTPUT
12	-	1	DS1101990	SPD, SHIELDED RJ-45 JACK, SINGLE LINE GBE (1000MBPS) R56 COMPLIANT
13	-	1	DSTSJADP	RACK MOUNT GROUND BAR, 19 IN FOR TSJ AND WPH SERIES DATA SPDS
14	-	1	F0016A	MC IOT MAIN MODEL
14	a	1	VA01370AA	ADD: MC-EDGE
14	b	1	VA00973AA	ADD: IOT MC-EDGE ENHANCED COMM PLUG-IN BOARD
14	c	1	VA00989AA	ADD: 8DO EE 16DI 5-18 V /DRY
14	d	1	VA00009	ADD: AC POWER SUPPLY UNIT 12V / 5A DC OUTPUT
14	e	1	VA00147	ADD: FRONT CABLE COVERS
15	-	1	DSIABDIN4	PANDUIT IABDIN4 4 RACK UNIT DIN RAIL FOR EIA 19" MOUNT
16	-	1	FKN0044A	MC_EDGE AUX IO MIGRATION CABLE
17	-	1	FHN0057	DIN RAIL STOPPER
18	-	4	DSDS7C12PPAU6D	764-869 MHZ 8 DB GAIN 4' PANEL ADJ GAIN, LOW-PIM/PIP, DIN, 6-DEG DT
19	-	15	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE,500OHM,BLACK POLYETHYLENE JKCT PER FT
20	-	2	DSDMA01250B	7/16 DIN MALE FOR 1/2 CABLE (USE WITH CT01250AIO-2)
21	-	2	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT
22	-	1	DSTSXDFMBF	RF SPD, 698-2700MHZ DC BLOCK HIGH PWR, DIN FEM/MALE BI-DIR W/ BRACKET
23	-	1	DGS SAKITD	GROUND STRAP KIT - DIN
24	-	25	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE,500OHM,BLACK POLYETHYLENE JKCT PER FT
25	-	1	DSNMA01250B	N MALE FOR 1/2 CABLE (USE WITH CT01250AIO-2)
26	-	1	DSDMA01250B	7/16 DIN MALE FOR 1/2 CABLE (USE WITH CT01250AIO-2)
27	-	4	DSDS7C12PPAU6D	764-869 MHZ 8 DB GAIN 4' PANEL ADJ GAIN, LOW-PIM/PIP, DIN, 6-DEG DT
28	-	15	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE,500OHM,BLACK POLYETHYLENE JKCT PER FT



Harris County, TX  
February 1, 2023

LIM	O	QTY	NOMENCLATURE	DESCRIPTION
29	-	2	DSDMA01250B	7/16 DIN MALE FOR 1/2 CABLE (USE WITH CT01250AIO-2)
30	-	5	DSWKU	WK-U, UNIVERSAL WEATHERPROOFING KIT
31	-	5	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE, 50OHM, BLACK POLYETHYLENE JKCT PER FT
32	-	2	DSDMA01250B	7/16 DIN MALE FOR 1/2 CABLE (USE WITH CT01250AIO-2)
33	-	1	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG
34	-	1	DS1090501WA	RF SPD, 700-1000MHZ BROADBAND 15 VDC PASS NM ANT, NF EQUIP PIP, ASIG
35	-	25	DSACC014J50	1/4" ULTRA FLEXIBLE, 50 OHM, CORRUGATED, COPPER OUTER CONDUCTOR, LOW S
36	-	1	DSNMA01450	N MALE FOR 1/4" ACC SERIES CABLE
37	-	1	DSDMA01450	CONNECTOR 7/16 DIN MALE FOR 1/4" ACC SERIES CABLE
38	-	25	DSAT012J50	AT012J50, 1/2" TRANSMISSION LINE, 50OHM, BLACK POLYETHYLENE JKCT PER FT
39	-	1	DSNMA01250B	N MALE FOR 1/2 CABLE (USE WITH CT01250AIO-2)
40	-	1	DSDMP01250	DMP01250, DIN MALE FOR 1/2" CABLE
41	-	2	DSPT1010	Paternack 4 Way N equal-tapper High Power From 700 MHz to 2.7 GHz Rated at 500 Watts
42	-	2	DSPE20DV1041	Paternack Low PIM 2 Way 7/16 DIN Power Divider from 376 MHz to 2.5 GHz Rated at 300 Watts
43	-	1	DSSA3NMM300W20	Fairview 20 dB Fixed Attenuator N Male (Plug) to N Female (Jack) Directional Up to 3 GHz Rated to 300 Watts, Heatsink Body, 1.4 VSWR
44	-	1	SQM01SUM0323	ASTRO MASTER SITE
44	a	1	CA03517AC	ADD: CORE EXPANSION
44	b	1	UA00153AB	ADD: P25 FDMA TRUNKING OPERATION SITE
44	c	1	UA00159AB	ADD: P25 PHASE 2 TDMA TRKNG OP SITE LIC
44	d	1	UA00160AA	ADD: PHASE 2 DYNAMIC TG ASGNMT SITE LIC
44	e	5	UA00161AA	ADD: P25 PHASE 2 TDMA SW BASE RADIO LIC
44	f	5	UA00162AA	ADD: PHASE 2 DYNAMIC CH BASE RADIO LIC



## SECTION 2

# STATEMENT OF WORK

## 2.1 INTRODUCTION

This Statement of Work (SOW) describes the deliverables to be furnished for Harris County Jail project, and the tasks to be performed by Motorola Solutions, its subcontractors, and by Harris County Jail in order to implement the solution detailed in this proposal. This SOW provides the most current understanding of the work required by both parties to ensure a successful project implementation.

Motorola Solutions (“Motorola”) is proposing the design and implementation of an In-Building Wireless Coverage System to cover Harris County Jail project. The distributed antenna system (DAS) will provide enhanced coverage for the 700/800 MHz Public Safety radio systems.

The DAS solution will be designed for the following structures:

- Harris County Jail
- Harris County/City of Houston Joint Processing Center
- Harris County Sheriff's Office Detention Facility
- Tunnel from Sheriff Office Detention Facility to CJC that passes through the 2<sup>nd</sup> floor of IBC and under the old jail at 1301 Franklin.
- Tunnel from CJC to Sheriff Office Detention Facility that passes under the old jail at 1301 Franklin.
- Tunnel from CJC to the Jury Selection Area entrance.

This document delineates the general responsibilities between Motorola and Harris County Jail, as agreed to by contract.

It is understood that this SOW may be revised during contract negotiations or during the Contract Design Review (CDR), and through any other Change Orders that may occur during the execution of the project. If there are changes to the Scope of Work, those changes must be reflected in this SOW before becoming binding on either party. This SOW will be an Exhibit to the Contract negotiated between Motorola Solutions and Harris County Jail. After contract execution, changes to the SOW must be made through the formal contract Change Order process as set forth in the Contract.

## 2.2 SYSTEM IMPLEMENTATION

Upon contract signature, Motorola Solutions will perform a Contract Design Review (CDR) of the proposed DAS system with all appropriate Harris County Jail team members. The goal of the Contract Design Review process is to verify and finalize the design and incorporate any changes that may be required since the timing of the presale design completion. As part of this review, Motorola Solutions will provide the following documents to Harris County Jail for review and approval at CDR:

- Project Schedule

Harris County, TX  
February 1, 2023

- Equipment Installation Elevation Drawing (rack or wall installation)
- Block Diagram
- Frequency Plan
- Coverage Maps (if available)
- Coverage Acceptance Test Plan

Upon approval of the implementation plan, equipment will be purchased according to the project schedule. Harris County will need to provide the required frequencies before the equipment can be ordered by Motorola.

During field installation of the equipment, any required changes to the installation will be noted and assembled with the final as-built documentation of the system. The as-built documents will be provided at the end of the project along with the maintenance and operator manuals. Once equipment is installed, Motorola Solutions will perform final site quality audits to verify proper physical installation and operational configurations for the DAS system.

Upon completion of the installation process, the RF equipment will be powered up and optimized by Motorola Solutions and its subcontractor. Signal strength levels will be checked to verify performance against design parameters, and inbound and outbound audio quality will be optimized.

System Acceptance of the proposed solution will occur upon successful completion of a Coverage Acceptance Test Plan (CATP), which will test the features, functions, and failure modes for the installed equipment. This plan will validate that Harris County Jail DAS solution will operate according to design, and increase the efficiency and accuracy of the final installation activities. A detailed CATP will be developed and finalized during the Contract Design Review.

## Summary of DAS Specific Tasks

- Designed to meet IFC 2021/ 2019
- 200 Horizontal Cores
- 1000' of 2" EMT installed
- Provide and install coaxial cable between the Splitter's and the designated locations for each distribution antenna as specified in the system design.
- Install distribution antennas that will be secured to ceiling or wall structure.
- Document antenna locations
- Install all the cable terminations, signal splitters, cable securing hardware.
- Sweep all cable runs and document readings
- Apply power to the system and perform system optimization that will include recording all signal levels at each antenna site.
- Once the system has been completely implemented and fully tested by MCA, Mobile Communications America, a close out package will be generated to show documented coverage and as built paperwork.



## 2.3 COVERAGE DEMONSTRATION APPROACH

The Coverage Acceptance Test Procedure (CATP) described below will be followed for the verification of indoor coverage and is based on the evaluation of RSSI, and voice quality at the specified reliability level. The CATP defines the coverage testing method and procedure, the acceptance criterion, the test documentation, and the responsibilities of Motorola Solutions.

The test process is in agreement with the Delivered Audio Quality (DAQ) definitions set forth in the Telecommunications Industry Association (TIA) Telecommunications Systems Bulletin TSB-88.

These DAQ definitions are provided in the following table:

Table 1: Delivered Audio Quality Definitions

DAQ Delivered Audio Quality	Grade of Circuit Performance
1	Unusable. Speech present but unreadable.
2	Understandable with considerable effort. Frequent repetition due to Noise/Distortion.
3	Speech understandable with slight effort. Occasional repetition required due to noise/distortion.
3.4	Speech understandable with repetition only rarely required. Some noise/distortion.
4	Speech easily understood. Occasional noise/distortion.
5	Speech easily understood.

The test will verify the performance of the installed DAS system by evaluating the voice quality of test calls placed between a radio user inside of the building under test and a dispatch console.

The test will verify the performance of the installed DAS system by monitoring spectrum on a continual basis measuring in real time documenting the data every 2 to 3 feet.

Received Signal Strength Indicators (RSSI) readings will be collected and compared against committed design specifications. A map of the facility(s) tested will be provided showing testing results at every test point location collected.

Portable radios and dispatch consoles required for the test will be provided by Harris County Jail for the duration of the test. All other required test equipment (including spectrum analyzers) will be provided by Motorola Solutions and/or its subcontractor and will be properly lab calibrated prior to test commencement.

### 2.3.1 COVERAGE DEMONSTRATION PLAN

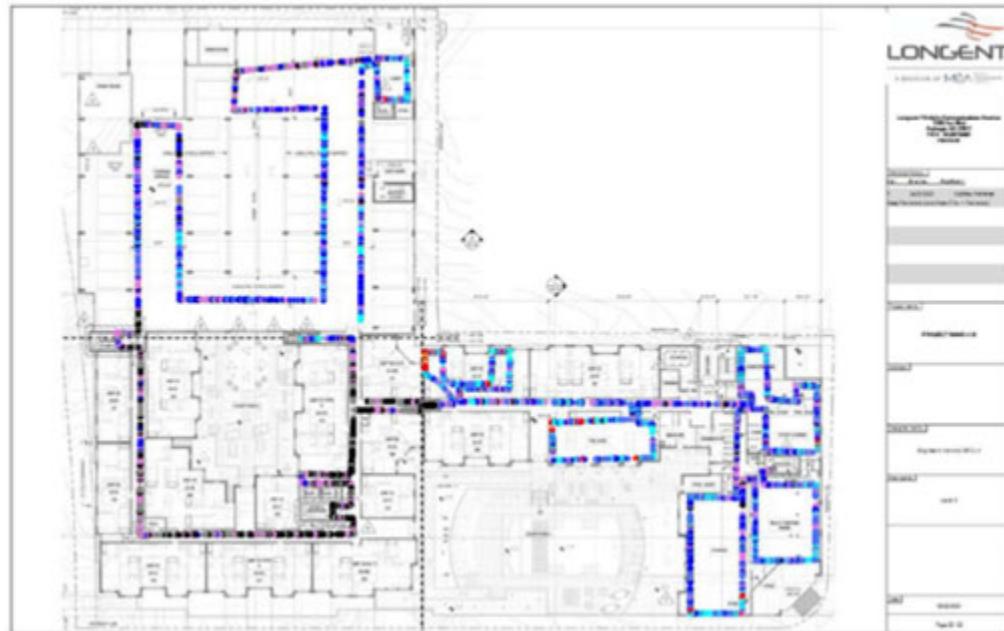
The demonstration plan will be submitted to Harris County Jail for approval prior to the start of the tests. The detailed demonstration plan will outline the physical testing that will be performed to validate coverage and operation. Detailed explanation of the testing procedure will be provided. A map of the building floor plan with the test path and the collected data for

Harris County, TX  
February 1, 2023

all test locations will be provided. Testing will not commence until the system is considered stable and ready for operational use.

The test plan shall ensure testing throughout the facility and meet local fire code as well.

### Sample Testing Map



## 2.4 HEAT MAPS

The Heat Map document has been released to Harris County personnel with an approved NDA.

## 2.5 FREQUENCY LIST

Harris County to obtain frequencies for project as required. Harris County is responsible for all the frequency licensing tasks associated with the new P25 RF site. Frequencies must be known before BDA equipment will be ordered.

## 2.6 MOTOROLA RESPONSIBILITIES

Motorola's general responsibilities include the following:

## 2.6.1 BDA Installation

Motorola Solutions has based the system design on information provided by Harris County Jail and an analysis of system requirements. All assumptions have been listed below for review. Should Motorola Solutions' assumptions be deemed incorrect or not agreeable to Harris County Jail, a revised proposal with the necessary changes and adjusted costs may be required, for mutual agreement between Motorola Solutions and Harris County Jail. Changes to the equipment or scope of the project after contract may require a change order.

1. 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.
2. Any site/location upgrades or modifications are the responsibility of the customer.
3. Any required system interconnections not specifically outlined here will be provided by Motorola Solutions.
4. The Demarcation point for alarms if required is the BDA.
5. No external annunciator panel is included
6. No Dust containment is included.
7. If a debris collection device is necessary for ceiling tile removal, additional labor charges will apply
8. The quotation is based on the scope of work and drawings provided by the Customer.
9. Mechanical lift, and/or ladders in excess of 10' are not required.
10. The facility has built-in ladders/stairs for accessing the roof and pulley/mechanical lift will be provided to place materials on roof.
11. Freight elevator service will be available to all levels.
12. J-hooks will be used to support coaxial cable above ceiling.
13. Riser Space between floors is available.
14. Design provides 1000 feet of 2" EMT to be installed for coax and/or fiber that is required to be installed in conduit. Additional Conduit will be a change order.
15. Design doesn't include installation of cable tray nor raceway.
16. Patching and painting not included in quotation- assumes access panels will be available for access to ceiling.
17. All indoor coax & fiber installed in plenum space is plenum rated.
18. Facility Owner is responsible for all cabling & conduit between DAS and Fire Alarm Panel as required and is excluded from this quotation.
19. Fire Alarm interface and programming provided by others and is not included in quotation. Dry contacts for Public Safety DAS equipment provided only.
20. Design assumes -95 dBm RSSI over 95% of the coverage area.
21. Design assumes -95 dBm RSSI over 99% of critical areas as defined by local NFPA requirements.
22. Design assumes bread crumb and DAQ test testing per floor will be acceptable for final inspection results per NFPA requirements.
23. Dry contacts will be available for Fire Alarm interface per IFC section 510- Any additional contacts will result in a change order
24. Phasing is included in quotation. Quote assumes work will be completed in up to a maximum of 3 deployments.



Harris County, TX  
February 1, 2023

25. Union and prevailing wages have not been included in this proposal. If required, MSI will re-quote the labor required for this proposal.

## 2.6.2 Astro P25 Trunking Repeater Site

- Install qty four (4) DSDS7C12PPAU6D TX antennas and four (4) DSDS7C12PPAU6D RX antennas with TTA.
  - Install antennas and tower top amplifiers
  - Install transmission lines required for the system
  - Perform sweep tests on transmission lines
  - Customer to provide structure penetrations for transmission equipment
  - Supply and Install a ground bus bar at the bottom of each antenna support structure
- Install qty. one (1) ESS rack and combiner and six (6) TDMA GTR8000 radios
  - Install fixed equipment contained in the equipment list and system description for the ASR Site
- Install all master site licenses to support the new site
- Configure repeater site
- Perform R56 site-installation quality-audits, verifying proper physical installation and operational configurations

## 2.7 HARRIS COUNTY, TX RESPONSIBILITIES

Harris County, TX will assume responsibility for the installation and performance of all other equipment and work necessary for completion of this project that is not provided by Motorola. General responsibilities for Harris County include the following:

- Provide all buildings, equipment shelters, and towers required for system installation
- Provide adequate power (120 VAC/15A) and grounding to be identified by Harris County within 6' of active equipment locations.
- Ensure communications sites meet space, grounding, power, and connectivity requirements for the installation of all equipment.
- Provide structural report for the existing tower to support the proposed loading.
- Harris County to obtain frequencies for project as required. Harris County is responsible for all the frequency licensing tasks associated with the new P25 RF site
- Harris County to provide connection to the Harris County Core.
- Harris County to program all subscribers
- Obtain all licensing, site access, or permitting required for project implementation.
- Harris County is responsible to provide the fiber from the 12<sup>th</sup> floor of the CJC into each of the jail buildings. The quantity of fiber pairs required for each building is shown below. It is recommended that an additional pair be included for each building in case of failure.
  - IPC – qty 1 fiber pair
  - JPC – qty 2 fiber pair
  - Sheriff Office – qty 6 fiber pair
  - HCJ – qty 5 fiber pair
- Customer will provide a dedicated delivery point, such as a warehouse, for receipt, inventory and storage of equipment prior to delivery to the site(s).



Harris County, TX  
February 1, 2023

- As per site walks, existing cable pathways will be used for running cables, and existing vertical access will be used for running cables between floors. If any obstructions are discovered in existing pathways, it will be a customer responsibility to clear or provide an alternate path.
- Coordinate the activities of all Harris County, TX vendors or other contractors.
- Harris County is responsible for all codeplug, fleetmapping and programming of new and existing subscribers to incorporate the new CJC ASR site into the TXWARN system.
- Harris County to provide existing 7/8" transmission lines and 1/2" TTA test line for use for the Jail ASR site.
- Harris County is responsible for all mounting structures & loading analysis, zoning and other permitting.
- Provide all authorizations to perform the installation services.
- Provide single point Ground within 6' of Master and Remote installation.
- Provide 15A AC Circuit within 6' of Master and Remote unit installation.
- Provide point of contact to monitor and answer questions related to project.
- Sign "Installation Completion Form" upon satisfactory completion of project.
- Coordinate the activities of all Motorola Solutions vendors or other contractors.

## 2.8 PROJECT ASSUMPTIONS

Motorola has made several assumptions in preparing this proposal, which are noted below. Motorola will need to verify all assumptions or seek alternate solutions in the case of invalid assumptions.

- This quote assumes 2 hour fire rating for all backbone cabling components only in accordance with NFPA 1221 2019.
- This quote uses UL-2196 approved RFS DragonSkin 2-hour burn rated coax where applicable.
- Harris County Jail to get a waiver to the NFPA-1221-2019 for non-backbone cabling. All indoor non-backbone coax & fiber installed in plenum space is not burn rated.
- This quote uses non UL-2196 approved Prysmian Draka Lifeline 3-hour burn rated fiber. This fiber meets a similar European burn standard IEC-60331-25. NO fiber meets the UL-2196 standard due to the force of the water used in the last stage of the cooling test.
- Facility Owner is responsible for all cabling & conduit between DAS and Fire Alarm Panel and is excluded from this quotation.
- All proposed cable paths are accessible via drop ceiling tiles, crawl space, access panels. J-hooks will be used to support coaxial cable above ceiling.
- Freight elevator service will be available to all levels.
- Tenting/HEPA carts, mechanical lift, and/or ladders in excess of 10' are not required.
- Riser Space between floors is available. Coring between floors and/or vertical roof penetrations are not required and is excluded from the quotation.
- Fire Alarm interface and programming provided by others and is not included in quotation. Dry contacts for Public Safety DAS equipment provided only.



Harris County, TX  
February 1, 2023

- Venue is responsible to have Fire Alarm Control Panel Relay delivered to within 3' of the PS Repeater and BBU.
- Design is based on a goal of -95 dBm RSSI over 95% of non-cell areas. Due to the construction of cells, coverage inside individual cells with closed doors is not practically possible.
- Dry contacts will be available for Fire Alarm interface per IFC section 510- Any additional contacts will result in a change order.
- Quotation includes GROL certified Engineers and installation staff as required by local jurisdiction.
- Quote assumes equipment will be connected to building emergency generators.
- Union labor, prevailing wages and/or asbestos monitoring/abatement are not required nor included in the quotation.
- Installation services will be conducted during normal business hours (8 am to 5 pm, Monday through Friday).
- Patching and painting not included in quotation- assumes access panels will be available for access to ceiling.
- Any damage after installation caused by other trades will result in a change order.
- As-builts and submittal package including benchmark results will be provided to owner at completion of project.
- This quote requires a pre-construction site walk.
- The quotation is based on the scope of work and drawings provided by the Customer. The customer will coordinate implementation approval from the Facility Owner.
- Motorola will provide new antennas and a TTA for the CJC site. These antennas will be connected to existing transmission lines already in place and repurposed for this endeavor. New jumpers will be provided by Motorola to connect the new equipment to the existing transmission lines.
- Motorola to sweep the existing transmission lines provided by Harris County. Replacement of defective transmission lines to be the responsibility of Harris County.
- All existing sites or equipment locations will have sufficient space available for the system described as required/specify 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.
- Any site/location upgrades or modifications are the responsibility of the customer.
- Approved FCC licensing provided by the customer.
- Frequencies must be known before BDA equipment will be ordered.
- Approved local, State or Federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of Harris County.
- Any required system interconnections not specifically outlined here will be provided by Harris County. These may include dedicated phone circuits, microwave links or other types of connectivity.
- No coverage guarantee is included in this proposal for the downtown area that is covered by the ASR site rooftop antennas.



- Harris County is responsible for all fleetmapping and programming of new and existing subscribers to incorporate the new CJC ASR site into the TXWARN system.
- Motorola is not responsible for interference caused or received by the Motorola provided equipment except for interference that is directly caused by the Motorola provided transmitter(s) to the Motorola provided receiver(s). Should the Customer's system experience interference, Motorola can be contracted to investigate the source and recommend solutions to mitigate the issue.
- Union and prevailing wages have not been included in this proposal. If required, MSI will requote the labor required for this proposal.

## 2.9 CONTRACT

### 2.9.1 Contract Administration and Project Kick-off Meeting

#### **Motorola Solutions Responsibilities**

- Assign a Project Manager, as the single point of contact with authority to make project decisions.
- Assign resources necessary for project implementation.
- Create and manage the project in the Motorola Solutions information system.
- Schedule and conduct a Project Kick-off Meeting with the appropriate Harris County Jail representatives.
- Review the roles of the project participants to identify communication flows and decision-making authority between project participants.
- Review the overall project scope and objectives with Harris County Jail.
- Review the resource and scheduling requirements with Harris County Jail.
- Review the Project Schedule with Harris County Jail to address upcoming milestones and/or events.

#### **Harris County Jail Responsibilities**

- Assign a Project Manager, as the single point of contact responsible for Harris County Jail signed approvals.
- Assign other resources necessary to ensure completion of project tasks for which Harris County Jail is responsible.
- Designate POC or other persons that will be required to notify or be in touch with during the scope of the project.
- Harris County Jail's key project team participants attend the Project Kick-off Meeting.
- Coordinate the activities of all Harris County Jail vendors or other contractors.
- Any loading and/or structural analyses or facility upgrade requirements to support the proposed DAS solution and associated antenna mounting structures will be the responsibility of Harris County Jail. County will be responsible for doing a structural analysis for the CJC bulding to support the proposed loading.
- Harris County Jail will be responsible to ensure that the equipment site(s) has adequate utility service, grounding, and adequate HVAC to support the proposed equipment.
- Harris County Jail will be responsible to ensure that the existing sites or equipment locations will have adequate AC electrical power in the proper phase and voltage, along



- with site grounding to support the requirements of the system described, adhering to local codes and ordinances to include Public Safety codes.
- Harris County Jail will provide building access and escorts as required to Motorola, Motorola contractor(s), and Motorola Service Partners, as applicable to complete the scope of the project.

#### **Completion Criteria**

- Motorola Solutions internal processes are established for project management.
- Both Motorola Solutions and Harris County Jail assign all required resources.
- A project kickoff meeting is scheduled and completed.

## **2.10 CONTRACT DESIGN REVIEW (CDR)**

### **2.10.1 Review Contract Design**

#### **Motorola Solutions Responsibilities**

- Meet with Harris County Jail project team.
- Review the operational requirements and the impact of those requirements on various equipment configurations.
- Establish a defined baseline for the system design and identify any special product requirements and their impact on system implementation.
- Review/ create the System Design, Statement of Work, Project Schedule, and Acceptance Test Plans, and update the contract documents accordingly.
- Discuss the proposed Cutover Plan, as applicable, and methods to document a detailed procedure. Motorola will work with Harris County Jail to create a mutually agreed upon cut over process to achieve minimal disruption to Harris County Jail operations.
- Submit design documents to Harris County Jail for approval. These documents form the basis of the DAS system, of which Motorola Solutions will be responsible for the manufacture, install, and optimization.
- Provide minimum acceptable performance specifications for connectivity, fiber, or links, as applicable.
- Establish demarcation point to define the connection point between the Motorola Solutions-supplied equipment and Harris County Jail -supplied link(s) and external interfaces.
- Determine the site's ability to accommodate proposed equipment based upon physical capacity.
- Work with Harris County Jail to identify any potential radio interference between the DAS system and other existing radio systems.

#### **Restrictions:**

- Motorola Solutions assumes no liability or responsibility for inadequate frequency availability or frequency licensing issues.
- Motorola Solutions is not responsible for issues outside of its immediate control. Such issues include, but are not restricted to, improper frequency coordination by other entities and non-compliant operation of radios outside of the Motorola scope of work.
- Motorola Solutions is not responsible for co-channel interference due to errors in frequency coordination by APCO, nor any other unlisted frequencies, or the improper design, installation, or operation of systems installed or operated by others.



- If, for any reason, any of the proposed sites cannot be utilized due to reasons beyond Motorola Solutions' control, the costs associated with site changes or delays including, but not limited to, re-engineering, frequency re-licensing, site zoning, site permitting, schedule delays, site abnormalities, re-mobilization, etc., will be paid for by Harris County Jail and documented through the change order process.
- No outdoor coverage guarantee (external of Harris County Jail project) is part of this proposal.

### **Harris County Jail Responsibilities**

- Harris County Jail's key project team participants attend the meeting.
- Make timely decisions, according to the Project Schedule.
- Frequency Licensing and Interference:
  - As mandated by FCC, License Holder, as the licensee, has the ultimate responsibility for providing all required radio licensing or licensing modifications for the system prior to system installation. This responsibility includes paying for FCC licensing and frequency coordination fees.
  - Provide the FCC "call sign" station identifier for each site prior to system installation.

### **Completion Criteria**

- Complete Design Documentation, which may include updated System Description, Equipment List, system drawings, or other documents applicable to the project.
- Incorporate any deviations from the proposed system into the contract documents accordingly.
- The system design is "frozen" in preparation for subsequent project phases such as Order Processing and Manufacturing.
- A Change Order is executed in accordance with all material changes resulting from the Design Review to the contract.

## **2.11 ORDER PROCESSING**

### **2.11.1 Process Equipment List**

#### **Motorola Solutions Responsibilities**

- Validate Equipment List by checking for valid model numbers, versions, compatible options to main equipment, and delivery data.
- Enter order into Motorola Solutions' Customer Order Fulfillment (COF) system for applicable components and materials.
- Create Ship Views, to confirm with Harris County Jail the secure storage location(s) to which the equipment will ship. Ship Views are the mailing labels that carry complete equipment shipping information, which direct the timing, method of shipment, and ship path for ultimate destination receipt.
- Create equipment orders.
- Reconcile the equipment list(s) to the Contract.
- Place order for the procurement of all required third-party equipment.

#### **Harris County Jail Responsibilities**

- Provide a dedicated delivery point, such as a warehouse, for receipt, inventory and storage of equipment prior to delivery to the site(s).

- Approve shipping location(s).
- Complete and provide Tax Certificate information verifying tax status of shipping location.

**Completion Criteria**

- Verify that the Equipment List contains the correct model numbers, version, options, and delivery data.
- Trial validation completed.
- Bridge the equipment order to the manufacturing facilities.

## 2.12 MANUFACTURING

### 2.12.1 Manufacture and Shipment of Fixed Network Equipment

**Motorola Solutions Responsibilities**

- Manufacture the Fixed Network Equipment (FNE) necessary for the system, based on the equipment order.
- Coordinate the manufacture of all required third-party equipment.
- Arrange for packing and shipment of equipment to designated customer location.

**Harris County Jail Responsibilities**

- None.

**Completion Criteria**

- FNE shipped to the designated customer location on or near site for installation.
- All equipment shipped to the field.

## 2.13 CIVIL WORK FOR HARRIS COUNTY JAIL - PROVIDED FACILITIES

**Motorola Solutions Responsibilities**

- Provide electrical requirements for the equipment being installed in Harris County Jail facilities.
- Provide heat load for equipment being installed in Harris County Jail provided facilities.

**Harris County Jail Responsibilities**

- Secure site lease/ownership, zoning, permits, regulatory approvals, easements, power, and Telco connections.
- Provide clear and stable access to the site/ facility for transporting electronics and other materials. Sufficient site access must be available for trucks to deliver materials under their own power and for personnel to move materials to the facility without assistance from special equipment.
- Design and construct facilities for housing communications equipment such as climate-controlled equipment room or designated mounting area.
- Supply adequately sized electrical service, backup power (UPS, generator, batteries, etc.) including the installation of conduit, circuit breakers, outlets, etc., at each equipment location. Provide AC power (dedicated 20 Amp AC outlets - simplex with ground) for

- each major piece of equipment within six feet of the location of the Motorola Solutions-supplied equipment, including the associated electrical service and wiring (conduit, circuit breakers, etc.).
- Provide adequate HVAC, grounding, lighting, cable routing, and surge protection (also, among existing and Motorola Solutions-provided equipment) based upon Motorola Solutions' Standards and Guidelines for Communication Sites (R56). Ceiling and cable tray height minimum requirements will be provided during the CDR process, to accommodate system equipment.
  - Provide floor/wall space for the System equipment at Harris County Jail facilities.
  - Relocate existing equipment, if needed, to provide required space for the installation of Motorola Solutions-supplied equipment.
  - Bring grounding system up to Motorola Solutions' Standards and Guidelines for Communication Sites (R56) and supply a single point system ground, of 5 ohms or less, to be used on all FNE supplied under the Contract. Supply grounding tie point within 10 feet from the Motorola Solutions-supplied equipment.
  - Provide all necessary wall or roof penetrations on buildings for antenna coax and antennas.
  - Provide obstruction-free area for the cable run between the demarcation point and the communications equipment.
  - Resolve any environmental issues including, but not limited to, asbestos, structural integrity of the site, and any other building risks. (Resolve environmental or hazardous material issues).
  - Perform structural analysis of existing facility, as required, to confirm that the structure is capable of supporting proposed and future antenna loads.
  - Supply all permits as contractually required.
  - Supply interior building cable trays, raceways, conduits, and wire supports.
  - Complete all Harris County Jail deliverables in accordance within the approved project schedule.

#### **Completion Criteria**

- All sites are ready for equipment installations in compliance with Motorola Solutions' Standards and Guidelines for Communication Sites (R56).

## **2.14 SYSTEM INSTALLATION**

### **2.14.1 Install Fixed Network Equipment**

#### **Motorola Solutions Responsibilities**

- Install system equipment as specified by the Equipment List, System Description, and system drawings.
- Bond the supplied equipment to the site ground system in accordance with Motorola Solutions' Standards and Guidelines for Communication Sites (R56).

#### **Interference:**

- 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 local PSS system experience interference, Motorola Solutions

can be contracted to investigate the source and recommend solutions to mitigate the issue.

#### **Harris County Jail Responsibilities**

- Provide secure storage for the Motorola Solutions-provided equipment, at a location central to the sites. Motorola Solutions coordinates the receipt of the equipment with Harris County Jail designated contact, and inventory all equipment.
- Provide access to the sites, as necessary.

#### **Completion Criteria**

- Fixed Network Equipment installation completed and ready for optimization.
- All fixed network equipment installed and accepted by Harris County Jail.

## **2.15 SYSTEM OPTIMIZATION**

### **2.15.1 Optimize System FNE**

#### **Motorola Solutions Responsibilities**

- Verify that all equipment is operating properly and that all electrical and signal levels are set accurately.
- Motorola Solutions and its subcontractors optimize the DAS system.
- Verify communication interfaces between devices for proper operation.
- ‘Sweep’ or test the antenna system for optimized performance and identify potential anomalies.
- Test features and functionality to ensure that FNE is in accordance with manufacturers' specifications and that they comply with the final configuration established during the CDR.

#### **Harris County Jail Responsibilities**

- Provide access/escort to the sites.
- Provide radio equipment (i.e. loaner radios) as needed for testing and optimization.

#### **Completion Criteria**

- System FNE optimization is complete.
- System optimization is completed. Motorola Solutions and Harris County Jail agree that the equipment is ready for audit and acceptance testing.

## **2.16 AUDIT AND ACCEPTANCE TESTING**

### **2.16.1 Perform R56 Audit**

#### **Motorola Solutions Responsibilities**

- Perform R56 site installation quality audits, verifying proper physical installation and operational configurations.
- Create site evaluation report to verify site meets or exceeds requirements, as defined in Motorola Solutions' Standards and Guidelines for Communication Sites (R56).



**Harris County Jail Responsibilities**

- Provide access/escort to the sites.
- Witness tests. (if desired)

**Completion Criteria**

- All R56 audits completed successfully.

## **2.16.2 Perform Equipment Testing**

**Motorola Solutions Responsibilities**

- Test individual components of the system to verify compliance to the equipment specifications.
- Repeat any failed test(s) once Motorola Solutions (or Harris County Jail) has completed the corrective action(s).
- Prepare documentation of component tests to be delivered as part of the final documentation package.

**Harris County Jail Responsibilities**

- Witness tests, as desired.
- Supply sample subscribers to perform component testing, as needed.

**Completion Criteria**

- Successful completion of equipment testing.

## **2.16.3 Perform Functional Testing**

### **2.16.3.1 Commencement of Acceptance Testing**

Motorola will provide a set of objective criteria designed to test the functionality of the System once the System is implemented and ready for acceptance (Acceptance Test(s)). Acceptance Tests shall commence in accordance with a mutually acceptable schedule (Acceptance Test Plan). System testing will occur only in accordance with the Acceptance Test Plan.

### **2.16.3.2 System Acceptance**

System acceptance will occur upon successful completion of the Acceptance Tests (System Acceptance). Upon System Acceptance, the Parties will memorialize this event by promptly executing a System Acceptance Certificate. If the Acceptance Test Plan includes separate tests for individual subsystems or phases of the System, acceptance of the individual subsystem or phase will occur upon the successful completion of the Acceptance Tests for the subsystem or phase, and the Parties will promptly execute an Acceptance Certificate for the subsystem or phase. If Harris County Jail believes the System has failed the completed Acceptance Tests, Harris County Jail will provide to Seller a written notice that includes the specific details of the failure. If Harris County Jail does not provide to Seller a failure notice within thirty (30) days after completion of the Acceptance Tests, System Acceptance will be deemed to have occurred as of the completion of the Acceptance Tests. Minor omissions or variances in the System that do not materially impair the operation of the System as a whole



Harris County, TX  
February 1, 2023

will not postpone System Acceptance or subsystem acceptance, but will be corrected according to a mutually agreed schedule.

#### 2.16.3.3 Beneficial Use

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

#### 2.16.3.4 Final Project Acceptance

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

##### **Motorola Solutions Responsibilities**

- Verify the operational functionality and features of the solution supplied by Motorola Solutions, as contracted.
- If any major task as contractually described fails, repeat that particular task after Motorola Solutions determines that corrective action has been taken.
- Document all issues that arise during the acceptance tests.
- Document the results of the acceptance tests and present to Harris County Jail for review.
- Resolve any minor task failures before Final System Acceptance.

##### **Harris County Jail Responsibilities**

- Witness the functional testing.

##### **Completion Criteria**

- Successful completion of the functional testing.
- Harris County Jail approval of the functional testing.

### 2.16.4 Perform Coverage Acceptance Test Plan

##### **Motorola Responsibilities:**

- Perform Coverage Acceptance Test Plan. The coverage area will be limited and reflect an agreed upon sampling of Harris County Jail facility service area to validate coverage performance.
- Document all issues that arise during the CATP.
- Submit validation report within the agreed period.

##### **Harris County Jail Responsibilities:**

- Review CATP content for approval prior to the start of the tests.
- Provide the required number of radios and staff resources to participate in and witness the sample coverage validation.
- Review the sample coverage results report in a timely manner.



**Completion Criteria:**

- Successful completion of the CATP validation process.

## **2.16.5 System Acceptance Test Procedures (Milestone)**

- Harris County Jail approves the completion of all the identified tests within the CATP.

## **2.17 FINALIZE**

### **2.17.1 Cutover / Go-Live Event**

**Motorola Solutions Responsibilities**

- Motorola Solutions and Harris County Jail develop a mutually agreed upon cutover / go-live plan based upon discussions held during the CDR.
- During cutover / go-live event, follow a written plan and implement the defined contingencies, if required.
- Conduct meeting(s) with user group representatives to address both how to mitigate technical and communication impact to the users during cutover / go-live, and during the general operation of the system.

**Harris County Jail Responsibilities**

- Attend cutover / go-live meetings and approve the plan.
- Notify the user group(s) affected by the cutover / go-live event (date and time).
- As applicable, conduct a roll call of all users working during and/or after the cutover / go-live event, in an organized and methodical manner.

**Completion Criteria**

- If the new equipment/ system is intended to replace an existing radio system, successful migration from the old system to the new system.

### **2.17.2 Resolve Punch List**

**Motorola Solutions Responsibilities**

- Work with Harris County Jail to resolve punch list items, documented during the CATP phase, in order to meet all the criteria for final system acceptance.

**Harris County Jail Responsibilities**

- Assist Motorola Solutions with resolution of identified punch list items by providing support, such as access to the sites, equipment and system support, and approval of the resolved punch list item(s).

**Completion Criteria**

- All punch list items resolved and approved by Harris County Jail.



## 2.17.3 Transition to Service/Project Transition Certificate

### **Motorola Solutions Responsibilities**

- Review the items necessary for transitioning the project to warranty support and service.
- Provide a Harris County Jail Support Plan detailing the warranty and any post warranty support, if applicable, associated with the Contract equipment.

### **Harris County Jail Responsibilities**

- Participate in the Transition Service/Project Transition Certificate (PTC) process.

### **Completion Criteria**

- All service information has been delivered and approved by Harris County Jail.

## 2.17.4 Finalize Documentation

### **Motorola Solutions Responsibilities**

- Provide an electronic as-built system manual on a Compact Disk (CD). The documentation will include the following:
  - Project Schedule
  - Equipment Installation Elevation Drawing (rack or wall installation)
  - Block Diagram
  - Frequency Plan
  - Coverage Maps
  - Coverage Acceptance Test Plan

Drawings are created utilizing AutoCAD design software and will be delivered in Adobe PDF format. All other system manual documents converted from native format to Adobe PDF format to be included with the system documentation.

### **Harris County Jail Responsibilities**

- Receive and approve all documentation provided by Motorola Solutions.

### **Completion Criteria**

- All required documentation is provided and approved by Harris County Jail.

## 2.17.5 Final Acceptance

- All deliverables completed, as contractually required.
- Final System Acceptance received from Harris County Jail.

### 2.17.5.1 System Functionality

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



Harris County, TX  
February 1, 2023

at System sites that cause RF interference or intermodulation; or Harris County Jail changes to load usage or configuration outside the Specifications.

#### **2.17.5.2 Equipment Warranty**

For a period of twelve (12) months from the System Acceptance date or the date of Beneficial Use, whichever occurs first (“Warranty Period”), Seller warrants that the fixed network equipment (“FNE” or “Infrastructure Equipment”) listed on the final equipment list and provided by Motorola (“FNE Equipment”) under normal use and service will be free from material defects in materials and workmanship. If System Acceptance is delayed beyond six (6) months after shipment of the Equipment by events or causes within Harris County Jail’s control, this warranty expires eighteen (18) months after the delivery of the Equipment.

#### **2.17.5.3 Seller Software Warranty**

Unless otherwise stated in the Software Addendum attached to the GTC, during the Warranty Period, Seller warrants the Motorola Software in accordance with the terms of the Software Addendum and the provisions of this Section 8 that are applicable to the Motorola Software. If System Acceptance is delayed beyond six (6) months after shipment of the Motorola Software by events or causes within Harris County Jail’s control, this warranty expires eighteen (18) months after the shipment of the Motorola Software. TO THE EXTENT, IF ANY, THAT THERE IS A SEPARATE LICENSE AGREEMENT PACKAGED WITH, OR PROVIDED ELECTRONICALLY WITH, A PARTICULAR PRODUCT THAT BECOMES EFFECTIVE ON AN ACT OF ACCEPTANCE BY THE END USER, THEN THAT AGREEMENT SUPERCEDES THE SOFTWARE ADDENDUM AS TO THE END USER OF EACH SUCH PRODUCT.

#### **2.17.5.4 Exclusions to Equipment and Motorola Software Warranties**

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

#### **2.17.5.5 Warranty Claims**

To assert a warranty claim, Harris County Jail must notify Seller in writing of the claim before the expiration of the Warranty Period. Upon receipt of this notice, Seller will investigate the warranty claim. If this investigation confirms a valid warranty claim, Seller will (at its option and at no additional charge to Harris County Jail) repair the defective Equipment or Motorola Software, replace it with the same or equivalent product, or refund the price of the defective Equipment or Motorola Software. That action will be the full extent of Seller’s liability for the warranty claim. If this investigation indicates the warranty claim is not valid, then Seller may invoice Harris County Jail for responding to the claim on a time and materials basis using



Harris County, TX  
February 1, 2023

Seller's then current labor rates. Repaired or replaced product is warranted for the balance of the original applicable warranty period. All replaced products or parts will become the property of Seller.

#### 2.17.5.6 Original End User is Covered

These express limited warranties are extended by Seller to the original user purchasing the System for commercial, industrial, or governmental use only, and are not assignable or transferable.

#### 2.17.5.7 Disclaimer of Other Warranties

THESE WARRANTIES ARE THE COMPLETE WARRANTIES FOR THE EQUIPMENT AND MOTOROLA SOFTWARE PROVIDED UNDER THIS AGREEMENT AND ARE GIVEN IN LIEU OF ALL OTHER WARRANTIES. SELLER DISCLAIMS ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

### 2.18 PROJECT ADMINISTRATION

#### 2.18.1 Project Schedule

A detailed project schedule is integral to the management of the project and will be produced by the Motorola Solutions team to provide a timeline analysis for all phases of the project. A preliminary project schedule will be delivered in preparation of the Project Kick-off meeting and/or CDR. This schedule will be refined during the CDR phase of the project. The final project schedule will emphasize all milestones and the critical path, which is essential for the successful completion of the project. Harris County Jail and Motorola Solutions will mutually agree upon the final schedule.

The project schedule assumes no delays in securing any site access, or delays by Harris County Jail completing its responsibilities for this project. Any delays in work to be performed by Harris County Jail (e.g., site improvements) may impact the overall project schedule and may require a Change Order.

The Project Schedule will be drafted once the Kick-off Meeting is scheduled and expectations for project duration and completion are negotiated between Harris County Jail and Motorola.

Expedites, site readiness tasks, and schedule strategy can be discussed between both parties to determine schedules on projects that have a target completion already identified, prior to Purchase Order.

#### 2.18.2 Change Order Process

Change Order Process of the proposal is subject to Section 4.1 of the original Agreement dated 11/10/2020 reference number 00000592.



Harris County, TX  
February 1, 2023

SECTION 3

# SUPPORT PLAN

Motorola Solutions has included DAS Care to supplement the standard factory warranty included with the equipment. For Harris County Jail, Motorola has proposed the following service plan for Harris County Jail project.

DAS Care provides extended coverage for repair or replacement for active DAS components to extend the standard warranty of coverage for a total of five years. Initially, warranty would cover the active components. After the warranty period, with DAS Care, the coverage then will be extended to a total of five years. In both cases, the components that are in need of repair or replacement will be taken out of service by either the customer or the Service Provider and sent back to the manufacturer for remedy and then sent back either to the customer or the Service Provider to be put back into service.

DAS Care provides extra coverage up to five years to ensure timely repair or replacement of the active DAS components to provide the customer assurance during this time frame. The normal terms and conditions for DAS Care follow the manufacturer's warranty for the five years.

## 3.1 PREVENTATIVE MAINTENANCE

In compliance with NFPA 72 Chapter 14, the BDA is required to have annual preventative maintenance event for Harris County Jail Distributed Antenna System. Motorola Solutions can be contracted to provide a preventative maintenance report to be submitted to Harris County Jail and any local authorities having jurisdiction (AHJ) for review.



## SECTION 4

# DAS PRODUCT SPECIFICATIONS

## OVER-THE-AIR PUBLIC SAFETY CENTRIC DAS (758-869 MHZ)

Datasheet can be found here: [https://www.fiplex.com/Datasheets/BD413-P700\\_PS800 OTA\\_Public\\_Safety\\_Centric\\_DAS\\_DH7S\\_series\\_generic-Fiplex.pdf](https://www.fiplex.com/Datasheets/BD413-P700_PS800 OTA_Public_Safety_Centric_DAS_DH7S_series_generic-Fiplex.pdf)

### HONBDA SERIES PRODUCT FEATURES

<ul style="list-style-type: none"> <li>• Specifically designed for 700 MHz and 800 MHz, LMR and Public</li> <li>• Safety Applications</li> <li>• No need of “Front End BDA” or “POI”, reduced infrastructure cost</li> <li>• Channelized</li> <li>• Programmable uplink squelch (per channel and time slot) for reduced UL noise contribution</li> <li>• Software programmable channel selective or band selective operation, suitable for highly congested RF environments</li> <li>• Centralized operation, single point of access</li> <li>• AGC per channel and time slot</li> <li>• Supports Over-the-Air (OTA) operation</li> <li>• Fiber Optic Redundancy features (optional)</li> <li>• Preserves the far end communications and protects BTS Rx sensitivity</li> </ul>	<ul style="list-style-type: none"> <li>• Works with Public Safety Centric DAS Remotes</li> <li>• Country of Origin: USA</li> <li>• 3-year warranty</li> <li>• Buy American Compliant: Meets the definition of Domestic Construction Material under the Buy American Act</li> <li>• FCC (Federal Communications Commission)</li> <li>• IC Approved</li> <li>• IFC 2015, 2018, 2021 Edition Standard</li> <li>• ISO 9001 Approved</li> <li>• NFPA 72 2013 Edition, NFPA 1221 2016 2019 Edition Standard</li> <li>• RoHS Compliant</li> <li>• SGS C-US Compliant</li> <li>• UL2524 2nd Edition Listing with SGS, Nationally Recognized Testing Laboratory (NRTL) approved by OSHA for UL2524</li> </ul>
---	--

### APPLICATIONS

- For P25 Ph1, P25 Ph2, DMR, TETRA, C2000, LTE (up to 960MHz) NXDN and Conventional Systems
- Indoor: tunnels, buildings, subways, airports, among others
- Outdoor: stadiums, canyons, dense urban areas, remote rural towns



Harris County, TX  
February 1, 2023

## SECTION 5

# PRICING

MSI is pleased to present Harris County with the following pricing:

Solution Project Management	\$163,455.00
ASTRO 25 System Installation	\$296,620.04
ASTRO 25 System Hardware	\$351,152.99
Coverage Extension System Hardware	\$1,302,694.33
Coverage Extension System Installation	\$3,446,834.30
System Verification	\$490,365.01
<b>TOTAL</b>	<b>\$6,051,121.67</b>



Harris County, TX  
February 1, 2023

SECTION 6

# PAYMENT TERMS

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

System Purchase (excluding Subscribers):

1. 25% of the Contract Price due upon completion of Contract Design Review (CDR);
2. 60% of the Contract Price due upon delivery of equipment;
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 delivery 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.

If Subscribers are purchased, 100% of the Subscriber Contract Price will be invoiced upon delivery.

Price Adjustment Due to Market volatility: Motorola's proposal 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 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 work at each site in order to verify price validity. In the event of a cost increase in material, equipment or energy 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. The freight rates are estimated. Motorola reserves the right to apply a fuel surcharge to the quoted freight rates on all shipments based on the cost of diesel at the time of shipment.



Harris County, TX  
February 1, 2023

# TERMS AND CONDITIONS

This proposal is subject to the terms and conditions of the existing Harris County and Motorola Solutions SUAll Contract, executed on 11/10/2020, reference number 00000592. Harris County may accept the proposal by delivering to Motorola a purchase order in the amount of the proposal that specifically references "subject to the terms and conditions of Motorola's Proposal, dated 2-1-2023 and the SUAll Contract, executed on 11/10/2020 reference number 00000592."



Harris County, TX  
February 1, 2023

SECTION 7

# OUR COMMITMENT

Motorola Solutions creates innovative, mission-critical communication solutions and services that help public safety and commercial customers build safer cities and thriving communities. You can find our products at work in a variety of industries including law enforcement, fire, emergency medical services, national government security, utilities, mining, energy, manufacturing, hospitality, retail, transportation and logistics, education, and public services.

Founded in 1928, Motorola Solutions has a history of innovation that has revolutionized communications. From pioneering mobile communications in the 1930s and making equipment that carried the first words from the moon in 1969, to supporting modern-day emergency response equipment for disaster relief efforts around the world, Motorola Solutions has a global footprint with products that demonstrate its thought leadership.

Throughout its history, Motorola Solutions has transformed innovative ideas into products that connect people to each other and the world around them. Moving forward, the company strives to keep its commitment of make things better and life easier, to make sound recommendations that will guide you in linking your current and future communication needs and objectives with technology's ever-evolving promise.



**ORDER OF COMMISSIONERS COURT**  
Authorizing execution of an amendment to an agreement

The Commissioners Court of Harris County, Texas, convened at a meeting of said Court at the Harris County Administration Building in the City of Houston, Texas, on the 14th day of March 2023, 2023 with all members present except none.

A quorum was present. Among other business, the following was transacted:

**ORDER AUTHORIZING EXECUTION OF THE FIRST AMENDMENT TO THE  
AGREEMENT BETWEEN  
HARRIS COUNTY AND MOTOROLA SOLUTIONS, INC.**

Commissioner Garcia introduced an order and moved that Commissioners Court adopt the order. Commissioner Ramsey seconded the motion for adoption of the order. The motion, carrying with it the adoption of the order, prevailed by the following vote:

Vote of the Court	<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Judge Hidalgo	✓	□	□
Comm. Ellis	✓	□	□
Comm. Garcia	✓	□	□
Comm. Ramsey	✓	□	□
Comm. Briones	✓	□	□

The County Judge thereupon announced that the motion had duly and lawfully carried and that the order had been duly and lawfully adopted. The order adopted follows:

**IT IS ORDERED** that County Judge Hidalgo be and is hereby authorized to execute for and on behalf of Harris County the First Amendment to the Agreement between Harris County and Motorola Solutions, Inc.; for an additional Scope of Work related to the system enhancement and upgrade for the Texas Wide Area Radio Network (TxWAN) Astro P25 System; for a not to exceed amount of Six Million Fifty-One Thousand One Hundred Twenty-One and 67/100 Dollars (\$6,051,121.67); said First Amendment being incorporated as though fully set forth herein word for word.

All Harris County officials and employees are authorized to do any and all things necessary or convenient to accomplish the purpose of this Order.

Presented to Commissioners Court

March 14, 2023

Approve: G/R