

SECTION 1

# COVER LETTER



Motorola Solutions, Inc.  
10680 Treena Street, Suite #200  
San Diego, CA. 92131  
USA

February 13, 2019

Don Ryan  
Emergency Services Manager  
County of Solano  
500 Clay Street  
Fairfield, CA 94533

Subject: Astro Core Expansion and WAVE

Dear Mr. McDonald:

Motorola Solutions, Inc. ("Motorola Solutions") is pleased to have the opportunity to provide the County of Solano with quality communications equipment and services. The Motorola Solutions project team has taken great care to propose an upgrade of their existing L2 Core and WAVE Solution.

To best meet the functional and operational specifications of this solicitation, Motorola Solution response includes a combination of hardware, software, and services. Specifically, this solution provides:

- ASTRO 25 L2 Core Expansion to M2 Core
- Upgrade Existing WAVE Solution:
  - (3) WAVE Communication Channels – With Radio System Integration
  - (50) WAVE Mobile Communicators – Android & IOS
  - (1) WAVE Server license
  - (1) ASTRO25 to WAVE Interface License
  - (1) WAVE Radio Gateway Software
  - (1) CryptR for AES 256 encryption
- Motorola professional services to provide a complete deployment

This proposal is subject to the terms and conditions of the Communications System Agreement (CSA), entered into between the County of Solano and Motorola dated March 24, 2016, together with its Exhibits and any additional terms contained in this proposal. This proposal shall remain valid for a period of 120 days from the date of this cover letter. The County of Solano may accept the proposal by delivering to Motorola a purchase order referencing the CSA. Alternatively, Motorola would be pleased to address any concerns County of Solano may have regarding the proposal. Any questions can be directed to your Motorola Account Executive, Mike Marraccini, at (916) 201-5670.

We thank you for the opportunity to furnish County of Solano with "best in class" solutions and we hope to continue 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 blue ink, appearing to read 'Micah Applewhite'.

Micah Applewhite  
MSSI Vice President

Motorola Solutions Inc. ("Motorola") and the customer named in this Agreement ("Customer") hereby agree as follows:

### **Section 1. APPLICABILITY**

These Maintenance Service Terms and Conditions apply to service contracts whereby Motorola will provide to Customer either (1) maintenance, support, or other services under a Motorola Service Agreement, or (2) installation services under a Motorola Installation Agreement.

### **Section 2. DEFINITIONS AND INTERPRETATION**

2.1. "Agreement" means these Maintenance Service Terms and Conditions; the cover page for the Service Agreement or the Installation Agreement, as applicable; and any other attachments, all of which are incorporated herein by this reference. In interpreting this Agreement and resolving any ambiguities, these Maintenance Service Terms and Conditions take precedence over any cover page, and the cover page takes precedence over any attachments, unless the cover page or attachment states otherwise.

2.2. "Equipment" means the equipment that is specified in the attachments or is subsequently added to this Agreement.

2.3. "Services" means those installation, maintenance, support, training, and other services described in this Agreement.

### **Section 3. ACCEPTANCE**

Customer accepts these Maintenance Service Terms and Conditions and agrees to pay the prices set forth in the Agreement. This Agreement becomes binding only when accepted in writing by Motorola. The term of this Agreement begins on the "Start Date" indicated in this Agreement.

### **Section 4. SCOPE OF SERVICES**

4.1. Motorola will provide the Services described in this Agreement or in a more detailed statement of work or other document attached to this Agreement. At Customer's request, Motorola may also provide additional services at Motorola's then-applicable rates for the services.

4.2. If Motorola is providing Services for Equipment, Motorola parts or parts of equal quality will be used; the Equipment will be serviced at levels set forth in the manufacturer's product manuals; and routine service procedures that are prescribed by Motorola will be followed.

4.3. If Customer purchases from Motorola additional equipment that becomes part of the same system as the initial Equipment, the additional equipment may be added to this Agreement and will be billed at the applicable rates after the warranty for that additional equipment expires.

4.4. All Equipment must be in good working order on the Start Date or when additional equipment is added to the Agreement. Upon reasonable request by Motorola, Customer will provide a complete serial and model number list of the Equipment. Customer must promptly notify Motorola in writing when any Equipment is lost, damaged, stolen or taken out of service. Customer's obligation to pay Service fees for this Equipment will terminate at the end of the month in which Motorola receives the written notice.

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

4.6. If Equipment cannot, in Motorola's reasonable opinion, be properly or economically serviced for any reason, Motorola may modify the scope of Services related to that Equipment; remove that Equipment from the Agreement; or increase the price to Service that Equipment.

4.7. Customer must promptly notify Motorola of any Equipment failure. Motorola will respond to Customer's notification in a manner consistent with the level of Service purchased as indicated in this Agreement.

### **Section 5. EXCLUDED SERVICES**

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

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

#### **Section 6. TIME AND PLACE OF SERVICE**

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

#### **Section 7. CUSTOMER CONTACT**

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

#### **Section 8. INVOICING AND PAYMENT**

8.1 Customer affirms that a purchase order or notice to proceed is not required for the duration of this service contract and will appropriate funds each year through the contract end date. Unless alternative payment terms are stated in this Agreement, Motorola will invoice Customer in advance for each payment period. All other charges will be billed monthly, and Customer must pay each invoice in U.S. dollars within twenty (20) days of the invoice date.

8.2 Customer will reimburse Motorola for all property taxes, sales and use taxes, excise taxes, and other taxes or assessments that are levied as a result of Services rendered under this Agreement (except income, profit, and franchise taxes of Motorola) by any governmental entity. The Customer will pay all invoices as received from Motorola. At the time of execution of this Agreement, the Customer will provide all necessary reference information to include on invoices for payment in accordance with this Agreement.

8.3 At the end of the first year of the Agreement and each year thereafter, a CPI percentage change calculation shall be performed. Should the annual inflation rate increase greater than 5% during the previous year, Motorola shall have the right to increase all future maintenance prices by the CPI increase amount exceeding 5%. The Midwest Region Consumer Price Index ([https://www.bls.gov/regions/mountain-plains/news-release/consumerpriceindex\\_midwest.htm](https://www.bls.gov/regions/mountain-plains/news-release/consumerpriceindex_midwest.htm)), All items, Not seasonally adjusted shall be used as the measure of CPI for this price adjustment. Measurement will take place once the annual average for the new year has been posted by the Bureau of Labor Statistics

#### **Section 9. WARRANTY**

Motorola warrants that its Services under this Agreement will be free of defects in materials and workmanship for a period of ninety (90) days from the date the performance of the Services are completed. In the event of a breach of this warranty, Customer's sole remedy is to require Motorola to re-perform the non-conforming Service or to refund, on a pro-rata basis, the fees paid for the non-conforming Service. MOTOROLA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

#### **Section 10. DEFAULT/TERMINATION**

10.1. If either party defaults in the performance of this Agreement, the other party will give to the non-performing party a written and detailed notice of the default. The non-performing party will have thirty (30) days thereafter to provide a written plan to cure the default that is acceptable to the other party and begin implementing the cure plan immediately after plan approval. If the non-performing party fails to provide or implement the cure plan, then the injured party, in addition to any other rights available to it under law, may immediately terminate this Agreement effective upon giving a written notice of termination to the defaulting party.

10.2. Any termination of this Agreement will not relieve either party of obligations previously incurred pursuant to this Agreement, including payments which may be due and owing at the time of termination. All sums owed by Customer to Motorola will become due and payable immediately upon termination of this Agreement. Upon the effective date of termination, Motorola will have no further obligation to provide Services.

10.3 If the Customer terminates this Agreement before the end of the Term, for any reason other than Motorola default, then the Customer will pay to Motorola an early termination fee equal to the discount applied to the last three (3) years of Service payments for the original Term.

#### **Section 11. LIMITATION OF LIABILITY**

Except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of twelve (12) months of Service provided under this Agreement. **ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT.** No action for contract breach or otherwise relating to the transactions contemplated by this Agreement may be brought more than one (1) year after the accrual of the cause of action, except for money due upon an open account. This limitation of liability will survive the expiration or termination of this Agreement and applies notwithstanding any contrary provision.

#### **Section 12. EXCLUSIVE TERMS AND CONDITIONS**

12.1. This Agreement supersedes all prior and concurrent agreements and understandings between the parties, whether written or oral, related to the Services, and there are no agreements or representations concerning the subject matter of this Agreement except for those expressed herein. The Agreement may not be amended or modified except by a written agreement signed by authorized representatives of both parties.

12.2. Customer agrees to reference this Agreement on any purchase order issued in furtherance of this Agreement, however, an omission of the reference to this Agreement will not affect its applicability. In no event will either party be bound by any terms contained in a Customer purchase order, acknowledgement, or other writings unless: the purchase order, acknowledgement, or other writing specifically refers to this Agreement; clearly indicate the intention of both parties to override and modify this Agreement; and the purchase order, acknowledgement, or other writing is signed by authorized representatives of both parties.

#### **Section 13. PROPRIETARY INFORMATION; CONFIDENTIALITY; INTELLECTUAL PROPERTY RIGHTS**

13.1. Any information or data in the form of specifications, drawings, reprints, technical information or otherwise furnished to Customer under this Agreement will remain Motorola's property, will be deemed proprietary, will be kept confidential, and will be promptly returned at Motorola's request. Customer may not disclose, without Motorola's written permission or as required by law, any confidential information or data to any person, or use confidential information or data for any purpose other than performing its obligations under this Agreement. The obligations set forth in this Section survive the expiration or termination of this Agreement.

13.2. Unless otherwise agreed in writing, no commercial or technical information disclosed in any manner or at any time by Customer to Motorola will be deemed secret or confidential. Motorola will have no obligation to provide Customer with access to its confidential and proprietary information, including cost and pricing data.

13.3. This Agreement does not grant directly or by implication, estoppel, or otherwise, any ownership right or license under any Motorola patent, copyright, trade secret, or other intellectual property, including any intellectual property created as a result of or related to the Equipment sold or Services performed under this Agreement.

#### **Section 14. FCC LICENSES AND OTHER AUTHORIZATIONS**

Customer is solely responsible for obtaining licenses or other authorizations required by the Federal Communications Commission or any other federal, state, or local government agency and for complying with all rules and regulations required by governmental agencies. Neither Motorola nor any of its employees is an agent or representative of Customer in any governmental matters.

#### **Section 15. COVENANT NOT TO EMPLOY**

During the term of this Agreement and continuing for a period of two (2) years thereafter, Customer will not hire, engage

on contract, solicit the employment of, or recommend employment to any third party of any employee of Motorola or its subcontractors without the prior written authorization of Motorola. This provision applies only to those employees of Motorola or its subcontractors who are responsible for rendering services under this Agreement. If this provision is found to be overly broad under applicable law, it will be modified as necessary to conform to applicable law.

#### **Section 16. MATERIALS, TOOLS AND EQUIPMENT**

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

#### **Section 17. GENERAL TERMS**

17.1. If any court renders any portion of this Agreement unenforceable, the remaining terms will continue in full force and effect.

17.2. This Agreement and the rights and duties of the parties will be interpreted in accordance with the laws of the State in which the Services are performed.

17.3. Failure to exercise any right will not operate as a waiver of that right, power, or privilege.

17.4. Neither party is liable for delays or lack of performance resulting from any causes that are beyond that party's reasonable control, such as strikes, material shortages, or acts of God.

17.5. Motorola may subcontract any of the work, but subcontracting will not relieve Motorola of its duties under this Agreement.

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

17.7. THIS AGREEMENT WILL RENEW, FOR AN ADDITIONAL ONE (1) YEAR TERM, ON EVERY ANNIVERSARY OF THE START DATE UNLESS EITHER THE COVER PAGE SPECIFICALLY STATES A TERMINATION DATE OR ONE PARTY NOTIFIES THE OTHER IN WRITING OF ITS INTENTION TO DISCONTINUE THE AGREEMENT NOT LESS THAN THIRTY (30) DAYS OF THAT ANNIVERSARY DATE. At the anniversary date, Motorola may adjust the price of the Services to reflect its current rates.

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

17.9 This Agreement may be executed in one or more counterparts, all of which shall be considered part of the Agreement. The parties may execute this Agreement in writing, or by electronic signature, and any such electronic signature shall have the same legal effect as a handwritten signature for the purposes of validity, enforceability and admissibility. In addition, an electronic signature, a true and correct facsimile copy or computer image of this Agreement shall be treated as and shall have the same effect as an original signed copy of this document.



**MOTOROLA SOLUTIONS**

## SERVICE AGREEMENT

1299 E Algonquin Road  
Schaumburg, IL 60196  
(800) 247-2346

Contract Number:

Contract Modifier:

Date: 25-JUNE-2019

Company Name: County of Solano

Attn.:

Billing Address: 530 Clay St

City, State, Zip Code: Fairfield, CA 94533

Customer Contact: Robyn Rains

Phone: 707-784-7033

P.O.#:

Customer #: 1000819542

Bill to Tag#: 0019

Contract Start Date: 01-JUL-2019

Contract End Date: 30-JUN-2029

Payment Cycle: ANNUALLY

Currency: USD

QTY	MODEL/OPTION	SERVICES DESCRIPTION	MONTHLY EXT	EXTENDED AMT
		<u>Recurring Services</u>		
	<b>LSV01S00516A</b>	<b>ADVANCED SERVICES</b>		
	Centralized Service	Network Monitoring		
	Centralized Service	Technical Support		
	Centralized Service	Dispatch Service		
	Field Services	Onsite - Regular		
	Field Services	Preventive Maintenance Level 1		
	Repair Management	Infrastructure Repair		
	Security Management	Security Update Service		
	Security Management	Remote Security Update Service Management		
	3PV Maintenance	Nice Post Warranty Maintenance - GOLD LITE		
		<b>SYSTEM UPGRADE AGREEMENT (SUA) II</b>		
	Network Updates	SUA II - SMA		
	Network Updates	SUA II - Hardware		
	Network Updates	SUA II - UO Labor		
	Network Updates	SUA II - Field Labor		
	Network Updates	SUA II - Impact Training		
	Network Updates	SUA II - Implementation Training		

**YEAR 1 MAINTENANCE AND SUAI PRICING**

ADVANCED SERVICES	110,893.00
SUAI	141,087.00

**YEAR 2 MAINTENANCE AND SUAI PRICING**

ADVANCED SERVICES	158,039.00
SUAI	141,087.00

**YEAR 3 MAINTENANCE AND SUAI PRICING**

ADVANCED SERVICES	162,780.00
SUAI	142,793.00

**YEAR 4 MAINTENANCE AND SUAI PRICING**

ADVANCED SERVICES	167,664.00
SUAI	144,550.00

**YEAR 5 MAINTENANCE AND SUAI PRICING**

ADVANCED SERVICES	172,694.00
SUAI	146,360.00

		<b><u>YEAR 6 MAINTENANCE AND SUAI PRICING</u></b>	
		ADVANCED SERVICES	177,875.00
		SUAI	148,223.00
		<b><u>YEAR 7 MAINTENANCE AND SUAI PRICING</u></b>	
		ADVANCED SERVICES	183,211.00
		SUAI	150,144.00
		<b><u>YEAR 8 MAINTENANCE AND SUAI PRICING</u></b>	
		ADVANCED SERVICES	188,707.00
		SUAI	152,122.00
		<b><u>YEAR 9 MAINTENANCE AND SUAI PRICING</u></b>	
		ADVANCED SERVICES	194,368.00
		SUAI	154,158.00
		<b><u>YEAR 10 MAINTENANCE AND SUAI PRICING</u></b>	
		ADVANCED SERVICES	200,199.00
		SUAI	156,256.00
		Total Maintenance	1,761,430.00
		Total SUA II	1,476,780.00
SPECIAL INSTRUCTIONS - ATTACH STATEMENT OF WORK FOR PERFORMANCE DESCRIPTIONS		Grand Total	\$3,193,210.00



Chief Information Officer

AUTHORIZED CUSTOMER SIGNATURE

TITLE

DATE

Timothy P. Flanagan

CUSTOMER (PRINT NAME)



Cust. Sup Manager

7/3/19

MOTOROLA REPRESENTATIVE (SIGNATURE)

TITLE

DATE

WAYNE WAHLGREN / RON HARMAN

916-605-9544

MOTOROLA REPRESENTATIVE (PRINT NAME)

PHONE

Company Name : Solano County  
Contract Number :  
Contract Modifier :  
Contract Start Date : 01-JUL-2019  
Contract End Date : 30-JUN-2029

Approved as to Content:



Don Ryan, Emergency Services Manager

Approved as to Form:



Bernadette Curry, County Counsel

Motorola Solutions Inc. ("Motorola") and the customer named in this Agreement ("Customer") hereby agree as follows:

### **Section 1. APPLICABILITY**

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10.2. Any termination of this Agreement will not relieve either party of obligations previously incurred pursuant to this Agreement, including payments which may be due and owing at the time of termination. All sums owed by Customer to Motorola will become due and payable immediately upon termination of this Agreement. Upon the effective date of termination, Motorola will have no further obligation to provide Services.

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12.2. Customer agrees to reference this Agreement on any purchase order issued in furtherance of this Agreement, however, an omission of the reference to this Agreement will not affect its applicability. In no event will either party be bound by any terms contained in a Customer purchase order, acknowledgement, or other writings unless: the purchase order, acknowledgement, or other writing specifically refers to this Agreement; clearly indicate the intention of both parties to override and modify this Agreement; and the purchase order, acknowledgement, or other writing is signed by authorized representatives of both parties.

#### **Section 13. PROPRIETARY INFORMATION; CONFIDENTIALITY; INTELLECTUAL PROPERTY RIGHTS**

13.1. Any information or data in the form of specifications, drawings, reprints, technical information or otherwise furnished to Customer under this Agreement will remain Motorola's property, will be deemed proprietary, will be kept confidential, and will be promptly returned at Motorola's request. Customer may not disclose, without Motorola's written permission or as required by law, any confidential information or data to any person, or use confidential information or data for any purpose other than performing its obligations under this Agreement. The obligations set forth in this Section survive the expiration or termination of this Agreement.

13.2. Unless otherwise agreed in writing, no commercial or technical information disclosed in any manner or at any time by Customer to Motorola will be deemed secret or confidential. Motorola will have no obligation to provide Customer with access to its confidential and proprietary information, including cost and pricing data.

13.3. This Agreement does not grant directly or by implication, estoppel, or otherwise, any ownership right or license under any Motorola patent, copyright, trade secret, or other intellectual property, including any intellectual property created as a result of or related to the Equipment sold or Services performed under this Agreement.

#### **Section 14. FCC LICENSES AND OTHER AUTHORIZATIONS**

Customer is solely responsible for obtaining licenses or other authorizations required by the Federal Communications Commission or any other federal, state, or local government agency and for complying with all rules and regulations required by governmental agencies. Neither Motorola nor any of its employees is an agent or representative of Customer in any governmental matters.

#### **Section 15. COVENANT NOT TO EMPLOY**

During the term of this Agreement and continuing for a period of two (2) years thereafter, Customer will not hire, engage

on contract, solicit the employment of, or recommend employment to any third party of any employee of Motorola or its subcontractors without the prior written authorization of Motorola. This provision applies only to those employees of Motorola or its subcontractors who are responsible for rendering services under this Agreement. If this provision is found to be overly broad under applicable law, it will be modified as necessary to conform to applicable law.

#### **Section 16. MATERIALS, TOOLS AND EQUIPMENT**

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

#### **Section 17. GENERAL TERMS**

17.1. If any court renders any portion of this Agreement unenforceable, the remaining terms will continue in full force and effect.

17.2. This Agreement and the rights and duties of the parties will be interpreted in accordance with the laws of the State in which the Services are performed.

17.3. Failure to exercise any right will not operate as a waiver of that right, power, or privilege.

17.4. Neither party is liable for delays or lack of performance resulting from any causes that are beyond that party's reasonable control, such as strikes, material shortages, or acts of God.

17.5. Motorola may subcontract any of the work, but subcontracting will not relieve Motorola of its duties under this Agreement.

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

17.7. THIS AGREEMENT WILL RENEW, FOR AN ADDITIONAL ONE (1) YEAR TERM, ON EVERY ANNIVERSARY OF THE START DATE UNLESS EITHER THE COVER PAGE SPECIFICALLY STATES A TERMINATION DATE OR ONE PARTY NOTIFIES THE OTHER IN WRITING OF ITS INTENTION TO DISCONTINUE THE AGREEMENT NOT LESS THAN THIRTY (30) DAYS OF THAT ANNIVERSARY DATE. At the anniversary date, Motorola may adjust the price of the Services to reflect its current rates.

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

17.9 This Agreement may be executed in one or more counterparts, all of which shall be considered part of the Agreement. The parties may execute this Agreement in writing, or by electronic signature, and any such electronic signature shall have the same legal effect as a handwritten signature for the purposes of validity, enforceability and admissibility. In addition, an electronic signature, a true and correct facsimile copy or computer image of this Agreement shall be treated as and shall have the same effect as an original signed copy of this document.



**MOTOROLA SOLUTIONS**

## SERVICE AGREEMENT

1299 E Algonquin Road  
Schaumburg, IL 60196  
(800) 247-2346

Contract Number:

Contract Modifier:

Date: 25-JUNE-2019

Company Name: County of Solano

Attn.:

Billing Address: 530 Clay St

City, State, Zip Code: Fairfield, CA 94533

Customer Contact: Robyn Rains

Phone: 707-784-7033

P.O.#:

Customer #: 1000819542

Bill to Tag#: 0019

Contract Start Date: 01-JUL-2019

Contract End Date: 30-JUN-2029

Payment Cycle: ANNUALLY

Currency: USD

QTY	MODEL/OPTION	SERVICES DESCRIPTION	MONTHLY EXT	EXTENDED AMT
		<u>Recurring Services</u>		
	<b>LSV01S00516A</b>	<b>ADVANCED SERVICES</b>		
	Centralized Service	Network Monitoring		
	Centralized Service	Technical Support		
	Centralized Service	Dispatch Service		
	Field Services	Onsite - Regular		
	Field Services	Preventive Maintenance Level 1		
	Repair Management	Infrastructure Repair		
	Security Management	Security Update Service		
	Security Management	Remote Security Update Service Management		
	3PV Maintenance	Nice Post Warranty Maintenance - GOLD LITE		
		<b>SYSTEM UPGRADE AGREEMENT (SUA) II</b>		
	Network Updates	SUA II - SMA		
	Network Updates	SUA II - Hardware		
	Network Updates	SUA II - UO Labor		
	Network Updates	SUA II - Field Labor		
	Network Updates	SUA II - Impact Training		
	Network Updates	SUA II - Implementation Training		

**YEAR 1 MAINTENANCE AND SUAI PRICING**

**ADVANCED SERVICES**

110,893.00

**SUAI**

141,087.00

**YEAR 2 MAINTENANCE AND SUAI PRICING**

**ADVANCED SERVICES**

158,039.00

**SUAI**

141,087.00

**YEAR 3 MAINTENANCE AND SUAI PRICING**

**ADVANCED SERVICES**

162,780.00

**SUAI**

142,793.00

**YEAR 4 MAINTENANCE AND SUAI PRICING**

**ADVANCED SERVICES**

167,664.00

**SUAI**

144,550.00

**YEAR 5 MAINTENANCE AND SUAI PRICING**

**ADVANCED SERVICES**

172,694.00

**SUAI**

146,360.00

		<b><u>YEAR 6 MAINTENANCE AND SUAII PRICING</u></b>		
		ADVANCED SERVICES		177,875.00
		SUAII		148,223.00
		<b><u>YEAR 7 MAINTENANCE AND SUAII PRICING</u></b>		
		ADVANCED SERVICES		183,211.00
		SUAII		150,144.00
		<b><u>YEAR 8 MAINTENANCE AND SUAII PRICING</u></b>		
		ADVANCED SERVICES		188,707.00
		SUAII		152,122.00
		<b><u>YEAR 9 MAINTENANCE AND SUAII PRICING</u></b>		
		ADVANCED SERVICES		194,368.00
		SUAII		154,158.00
		<b><u>YEAR 10 MAINTENANCE AND SUAII PRICING</u></b>		
		ADVANCED SERVICES		200,199.00
		SUAII		156,256.00
			Total Maintenance	1,761,430.00
			Total SUA II	1,476,780.00
SPECIAL INSTRUCTIONS - ATTACH STATEMENT OF WORK FOR PERFORMANCE DESCRIPTIONS			Grand Total	\$3,193,210.00





AUTHORIZED CUSTOMER SIGNATURE

Chief Information Officer

TITLE

7/24/19

DATE

Timothy P. Flanagan

CUSTOMER (PRINT NAME)



MOTOROLA REPRESENTATIVE (SIGNATURE)

Cust. Sup. Manager

TITLE

7/3/19

DATE

WAYNE WAHLGREN / RON HARMAN

MOTOROLA REPRESENTATIVE (PRINT NAME)

916-605-9544

PHONE

Company Name : Solano County  
Contract Number :  
Contract Modifier :  
Contract Start Date : 01-JUL-2019  
Contract End Date : 30-JUN-2029

Approved as to Content:



Don Ryan, Emergency Services Manager

Approved as to Form:



Bernadette Curry, County Counsel

SECTION 1

# COVER LETTER



Motorola Solutions, Inc.  
10680 Treena Street, Suite #200  
San Diego, CA. 92131  
USA

February 13, 2019

Don Ryan  
Emergency Services Manager  
County of Solano  
500 Clay Street  
Fairfield, CA 94533

Subject: Astro Core Expansion and WAVE

Dear Mr. McDonald:

Motorola Solutions, Inc. ("Motorola Solutions") is pleased to have the opportunity to provide the County of Solano with quality communications equipment and services. The Motorola Solutions project team has taken great care to propose an upgrade of their existing L2 Core and WAVE Solution.

To best meet the functional and operational specifications of this solicitation, Motorola Solution response includes a combination of hardware, software, and services. Specifically, this solution provides:

- ASTRO 25 L2 Core Expansion to M2 Core
- Upgrade Existing WAVE Solution:
  - (3) WAVE Communication Channels – With Radio System Integration
  - (50) WAVE Mobile Communicators – Android & IOS
  - (1) WAVE Server license
  - (1) ASTRO25 to WAVE Interface License
  - (1) WAVE Radio Gateway Software
  - (1) CryptR for AES 256 encryption
- Motorola professional services to provide a complete deployment

This proposal is subject to the terms and conditions of the Communications System Agreement (CSA), entered into between the County of Solano and Motorola dated March 24, 2016, together with its Exhibits and any additional terms contained in this proposal. This proposal shall remain valid for a period of 120 days from the date of this cover letter. The County of Solano may accept the proposal by delivering to Motorola a purchase order referencing the CSA. Alternatively, Motorola would be pleased to address any concerns County of Solano may have regarding the proposal. Any questions can be directed to your Motorola Account Executive, Mike Marraccini, at (916) 201-5670.

We thank you for the opportunity to furnish County of Solano with "best in class" solutions and we hope to continue 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 blue ink, appearing to read 'Micah Applewhite'.

Micah Applewhite  
MSSI Vice President



# SOLANO COUNTY

M2 UPGRADE AND WAVE

FEBRUARY 13, 2019

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.

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SECTION 2

# SYSTEM DESCRIPTION

## 2.1 SYSTEM DESCRIPTION

Motorola Solutions is pleased to offer the Solano County our firm proposal that includes upgrading the Solano County's L2 ASTRO 25 Core to M2 (Figure 2-1) and upgrading the existing WAVE™ Communications interoperability solution.

The current 7.16 Solano County ASTRO® 25 L Core was positioned as a smaller P25-compliant system that enabled Solano County to meet their technical challenges and position themselves for future growth. ASTRO® 25 Master Site configurations are designed with all core hardware necessary to support the full operational benefits and functionality of ASTRO® 25 systems. As such the The ASTRO® 25 product line offers a single zone Master Site with reduced capacity to satisfy the needs of ASTRO® 25 customers. In Release 7.16, the Simplified Expansions for ASTRO® 25 Trunking Systems feature was introduced. This feature allows L-core systems to be easily expanded to M-core tiers via software licenses without any hardware changes.

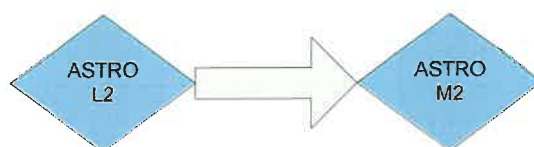


Figure 2-1: L2 ASTRO 25 Core to M2

Solano County is positioning its ASTRO® 25 L Core for regional system use. The cities of Fairfield, Suisun, and Vacaville will be connecting their Simulcast system and Dispatch locations to the Solano County ASTRO Core. To facilitate the additional capacity and Geo-Prime functionality required for the regional system, Solano County will need to upgrade to M-2. Notable M-Core capabilities include:

- Trunked Prime Site Geo-redundancy
- 300 Total Channels (28 per Trunked Repeater Site)
- 24 Total Sites (50 Operators per Dispatch Site)
- 4,000 Talkgroups
- 16,000 Radio IDs

The second part of this proposal includes an upgrade to the existing Solano County WAVE solution. The WAVE solution enables the creation of common Talkgroups between WAVE and ASTRO 25 radio users on smartphones, tablets, and PCs. It extends the reach of the Solano County P25 network to radio users who cannot or do not carry a P25 radio, but who still need occasional interoperability with radio users via secure PTT communications (Figure 2-2).



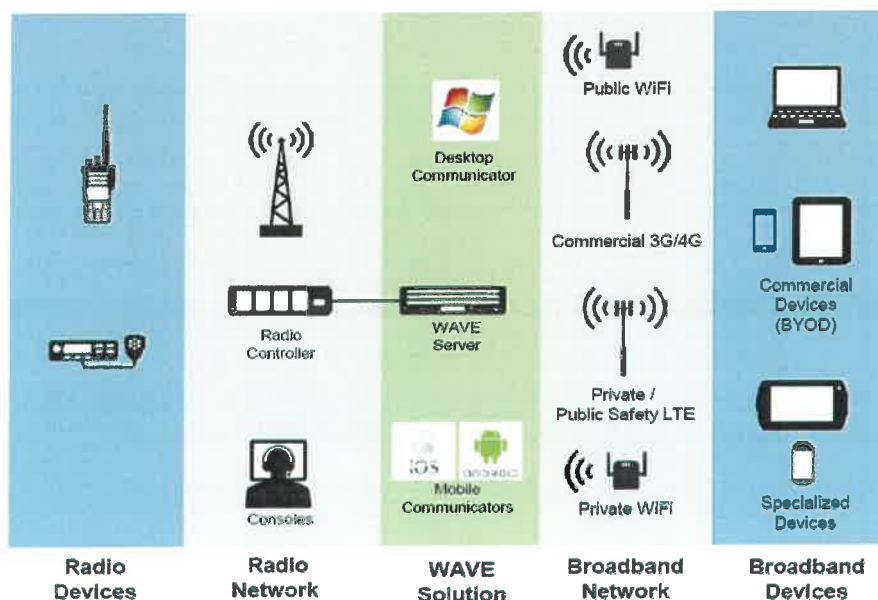


Figure 2-2: WAVE Capabilities and Benefits

- WAVE supports individual one-on-one PTT communications (private calls) between WAVE devices on any 3G/4G/LTE or WiFi network, group calls between P25 and WAVE devices, late call entry into in-progress talkgroup calls, and location-finding capability for all WAVE users.
- Installation and configuration of WAVE Mobile Communicator is as easy as downloading the app from the Google Play or Apple app stores and signing in to the service with a pre-provisioned user ID and password.
- Using PC-based clients, users can perform a variety of dispatch-type functions to gain full situational awareness and maintain command and control of field and office teams regardless of location, network connection, or device.

Motorola Solutions recognizes the intense devotion and dedication that your organization has in providing mission critical service and we have done our best to address your needs with our submittal.

## 2.2 ASSUMPTIONS & RESPONSIBILITIES

This is a working document, and will be revised as needed to incorporate any changes associated within the realm of contract negotiations, Design Review (DR), and any other changes that may occur during the execution of the project. Should any of Motorola's assumptions be deemed incorrect or are otherwise not agreeable to the Solano County, an updated proposal with necessary changes will be presented.

- This proposal assumes that Solano County's L2 Core is at ASTRO 25 release 7.16 and will be upgraded to 7.18 release.
- Motorola will perform the software update to expand the L2 core to M2.
- Motorola will update the existing Wave server currently in place.



- Solano County will update any deployed personal computers, smartphones, or tablets with WAVE Communicator Client software.
- Motorola has made an assumption that the Customer Enterprise Network (CEN) is already in place.
- Any site/location upgrades or modifications are the responsibility of Solano County.
- Any NEPA and EHPs, along with approved local, State or Federal permits, as may be required for the installation and operation of the proposed equipment, are the responsibility of the Solano County.
- Proposal does not include any new server hardware or spare equipment.
- Motorola assumes that current WAVE server meets the minimum requirements for the provided WAVE server software release.
- Motorola assumes the Solano County will perform any hardware changes/upgrades required.

## 2.3 SYSTEM SUMMARY & COMPONENTS

### 2.3.1 L2 Core Expansion to M2

Motorola proposes to expand the current ASTRO 7.16 L2 Core to M2. This expansion is done via software only without any hardware modifications. The timing of the L-to-M expansion will likely occur after the next system release update. Motorola will work with Solano County to coordinate the timing of the L-to-M expansion.

### 2.3.2 WAVE Upgrade

Motorola proposes to upgrade the existing Solano County WAVE solution. The proposed offering includes the software licenses and services for following components:

- (3) Wave Communication Channels – With Radio System Integration
- (50) Wave Mobile Communicators – Android & IOS
- (1) Wave Server license
- (1) ASTRO25 to WAVE Interface License
- (1) WAVE Radio Gateway Software
- (1) CryptR for AES 256 encryption

**WAVE Server (existing hardware provided by Solano County)**, the WAVE server software, and supporting components create the WAVE communications environment. These interface to the ASTRO 25 network to provide interoperable communications between radio users and WAVE users using shared talkgroups.

WAVE supports wireline interface with the Motorola ASTRO® 25 network via the WAVE radio gateway. This Land Mobile Radio (LMR) interface leverages the protocols of Project 25 ISSI and the unique value added features of Motorola's ISSI 8000 platform.

**WAVE Mobile Communicator**, a mobile application that allows mobile users on their smart device (iOS or Android) to access any authorized talkgroups using a data connection from their Apple or Android device.

A Smartphone equipped with the WAVE Mobile Communicator application acts like a multichannel radio handset that sends and receives secure audio as well as presence and location data. WAVE works over any IP wireless provider networks (i.e. cellular carriers, Wi-Fi networks etc.), using encryption (up to AES-256) to protect the integrity of the transmissions over public and private networks. The WAVE Mobile Communicator architecture minimizes any security risks, because no audio, data or significant application content is resident on the device. If a device falls into the wrong hands, there is no opportunity for reverse engineering of the application to produce a security threat to the user or system.

Mobile users using a Smartphone can have access from wherever they are as long as they have internet connectivity. The functionality that is accessible to these mobile users will be based on the configuration that administrators have set.

### 2.3.3 WAVE Network Bandwidth Requirements

Network bandwidth is the rate of data transferred to and from a network device. An estimate of the network bandwidth is required to size the network connection appropriately. Network data usage is the amount of data transferred over a given amount of time.

For the WAVE Mobile Communicator, the network bandwidth reserved should accommodate the worst case call loading. Each WAVE Mobile Communicator will create a single stream of traffic in Transmit and receive using a GSM codec. Appropriate network connections include 3G cellular connections, 4G cellular connections, or wireless local area network (WLAN) connections (i.e. Wi-Fi). The use of 2.5 G cellular connections such as EDGE/EGPRS is discouraged as poor audio performance will be experienced by the user (Table 2-1).

Table 2-1: WAVE Network Bandwidth Requirements

Mode of Operation	Data Usage per Second
Idle	0.144 kb
Receive	13 kb
Transmit	13 kb

For the WAVE Server and Wave Communicator, the network bandwidth reserved should accommodate the worst case call loading plus additional bandwidth for system maintenance and monitoring activities. The WAVE Server attempts to dynamically compensate for variations in network delay, jitter, and packet loss.

- **Bandwidth:** The bandwidth required between the WAVE Communicator to WAVE Server is approximately 64 kbps per ongoing call.
- **Network Delay:** For optimal performance, the network delay should not exceed 250 milliseconds.
- **Jitter:** For optimal performance, the jitter should not exceed 100 milliseconds. Jitter exceeding this level will affect audio quality.
- **Packet Loss:** Packet loss is expected but should be minimized in the system.

Network Link requirement for the WAVE Server to ASTRO25 InterSystem Gateway (ISGW):

- **Bandwidth:** Each ongoing call requires approximately 40 kbps between the WAVE Server and an ASTRO25 InterSystem Gateway.

- **Network Delay:** For optimal performance, the network delay should not exceed 60 milliseconds. Networking delay should not be higher than 180 milliseconds.
- **Jitter:** The jitter should not exceed of 60 milliseconds. Jitter exceeding this level will affect audio quality.
- **Packet Loss:** Packet loss is expected but should be minimized in the system

## 2.4 HARDWARE AND NETWORK REQUIREMENTS

Table 2-2 identifies the minimum certified requirements of WAVE 5000 R5.14 by component. Installation Size refers to the amount of hard drive space consumed by the component after installation. The Media Server and Management Server may require additional hard drive space for the storage of audio recordings and audit logs (if enabled).

Table 2-2: WAVE 5000 R5.14 Requirements By Component

Hardware and Network Requirements		
	Wave 5000 Management Server	Virtualization Breakdown
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center)	4 2vCPU 1 Core
	<b>CPU:</b> 2.0 GHz Dual Core i5 or Xeon x-86 based processor	4 4GB Memory
	<b>Internal Memory:</b> 4 GB RAM	4 80GB Disk space Thin Provisioned
	<b>Minimum Storage:</b> 40 GB (for recording and audit logs)	
	<b>Installation Size:</b> 3 GB	
	<b>Network Interface Controller:</b> 100 Mbps	
	<b>Run Time Environment:</b> .NET Framework 4.6.2	
	<b>Web Server:</b> Microsoft Internet Information Server (IIS) 6 or higher installed	
	<b>Web Client:</b> Microsoft Internet Explorer 11	
	<b>Security:</b> TLS 1.2 required for WTC connection.	
	<b>SQL:</b> Microsoft SQL Server 2014 Enterprise Edition (Required for Redundancy) or Microsoft SQL 2014 Express (available and installed with WAVE)	
	Wave 5000 Media Server	Virtualization Breakdown
	<b>Small Media Server</b> - up to 20 audio streams	4 2vCPU 2 Cores
	<b>CPU:</b> 2.0 GHz Dual Core i5 or Xeon x-86 based processor	4 4GB Memory
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center)	4 80GB Disks pace Thin Provisioned

Hardware and Network Requirements		
	<b>Internal Memory:</b> 4 GB RAM	
	<b>Installation Size:</b> 550MB	
	<b>Network Interface Controller:</b> 100 Mbps	
	<b>Medium Media Server</b> - PC Class - up to 200 audio streams	
	<b>CPU:</b> Intel i7 2 GHz, Quad core, Hyper-threading	
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center)	
	<b>Internal Memory:</b> 8 GB RAM	
	<b>Installation Size:</b> 550MB	
	<b>Network Interface Controller:</b> 1 Gbps	
	<b>Large Media Server</b> - Server Class - up to 200 audio streams	
	<b>CPU:</b> Intel Xeon; 3 GHz dual processor, 8 cores, Hyper-threading enabled	
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center)	
	<b>Internal Memory:</b> 8 GB RAM	
	<b>Installation Size:</b> 550MB	
	<b>Network Interface Controller:</b> 1 Gbps	
<b>Wave 5000 Proxy Server</b>		<b>Proxy Server (&amp; WRG?)</b>
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center)	4 8vCPU 4 Cores
	<b>CPU:</b> Intel i7 2GHz, Quad Core, Hyper-threading	4 16GB Memory
	<b>Memory:</b> 4GB RAM minimum	4 80GB Disk space Thin Provisioned
	<b>Installation Size:</b> 250MB hard disk space	WAVE Software Load Balancer (WSLB)
	<b>Security:</b> TLS 1.2 required for WTC connection.	
	<b>NIC:</b> 100Mbps	
	(for Single Server Configuration) or 1Gbps for multi-server configuration.	
<b>Wave 5000 WRG Server</b>		<b>Virtualization Breakdown</b>
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center)	

Hardware and Network Requirements		
	<b>CPU:</b> Intel Xeon; 2.0 GHz Dual Core i5 or Xeon 2.0 GHz processor	
	<b>Internal Memory:</b> 2 GB RAM Minimum	
	<b>Installation Size:</b> 450MB	
	<b>Network Interface Controller:</b> 100 Mbps	
	<b>.NET:</b> .NET Framework 4.6.2 (supplied by installer)	
<b>Wave 5000 MNIS Server</b>		
	MOTOTRBO Capacity Plus Single-Site & Multi-Site, Capacity Max Same as WRG (The MNIS Server requires a 64bit host machine. Do not deploy an MNIS Server on 32bit operating systems.)	
<b>Wave 5000 OpenSIPs Server (RHEL 6.5)</b>		
	Linux based SIP server - pre-configured VM to enable Private Calling in WAVE. (1.11.3-tls)	
	<a href="http://www.thegeekstuff.com/2013/10/change-hostname-ip-address/">http://www.thegeekstuff.com/2013/10/change-hostname-ip-address/</a>	
<b>Wave Software Load Balancer (RHEL 7.3)</b>		<b>Virtualization Breakdown</b>
	RHEL 7.3 Virtual Machines (VM) hosted on VMware ESXi 6.0 Update 2 .	4 1vCPU 1 Core
	<b>CPU:</b> 1 vCPU @ 2.4GHz	4 4GB Memory
	<b>Memory:</b> 2GB RAM minimum	4 32GB Disk space Thin Provisioned
	<b>Storage:</b> 16GB	
<b>Microsoft SQL Server 2014 Enterprise Edition</b>		<b>Virtualization Breakdown</b>
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center) AD Domain Joined	4 2vCPU 2 Cores
	.NET Framework 3.5 SP1	4 4GB Memory
		4 300GB Disk space Thin Provisioned
<b>Microsoft Active Directory / DNS Server</b>		
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center)	
<b>Wave Desktop Communicator</b>		<b>Capacity</b>

Hardware and Network Requirements		
	<b>OS:</b> Windows 7 SP1 / 8.1 / 10 (Creator/Anniversary, Enterprise 32bit or 64bit)	Max active Channels: 100
	<b>CPU:</b> 1.6GHz x86 based processor	Max Channels receiving continuous audio: 30
	<b>Memory:</b> 4GB RAM	Max simultaneous Telephony or Private Calls = max Lines (8)
	<b>Installation Size:</b> 500MB (See Microsoft for .NET hard drive space requirements) <b>NIC:</b> 100Mbps	You can assign each user up to 8 lines. Each line may be active at the same time.
	<b>.NET:</b> .NET Framework 4.6.2 (supplied by installer)	
	<b>Peripherals:</b> Speakers and Microphone	
	<b>Graphics:</b> 3D Accelerated, GPU with DirectX 9.0 with 64MB RAM	
<b>Wave Advanced Desktop Communicator</b>		<b>Capacity</b>
	<b>OS:</b> Windows 7 SP1 / 8.1 / 10 (Creator/Anniversary, Enterprise 32bit or 64bit)	Max active Channels: 200
	<b>CPU:</b> 2GHz x86 based processor	Max Channels receiving continuous audio: 60
	<b>Memory:</b> 4GB RAM	Max simultaneous Telephony or Private Calls = max Lines (8)
	<b>Installation Size:</b> 600MB	You can assign each user up to 8 lines.
	<b>.NET:</b> .NET Framework 4.6.2 (supplied by installer)	
	<b>NIC:</b> 100Mbps	
	<b>JAVA:</b> JRE 1.8 (with SSL Certificates IM/Root Installed)	
	<b>Peripherals:</b> Speakers and Microphone	
	<b>Resolution:</b> 1024x768 minimum	
<b>Wave Web Communicator</b>		<b>Capacity</b>
	<b>Web Client:</b> Chrome and Firefox	Max active Channels: 16
	<b>Peripherals:</b> Speakers and Microphone	Max Channels receiving continuous audio: 16
	The new WAVE Web Communicator operates in Firefox and Chrome only.	
<b>Wave Mobile Communicator</b>		<b>Capacity</b>
	<b>Web Client:</b> Chrome and Firefox	Max active Channels: 16



Hardware and Network Requirements		
	<b>Peripherals:</b> Speakers and Microphone	Max Channels receiving continuous audio: 16
	<b>Supernode Monitor (Server &amp; Client)</b>	
	<b>OS:</b> Windows Server 2012 R2 (Standard/Data Center)	
	<b>CPU:</b> 2GHz x86 based processor	
	<b>Memory:</b> 4GB RAM	
	<b>Installation Size:</b> 50MB (See Microsoft for .NET hard drive space requirements) <b>NIC:</b> 100Mbps	
	<b>.NET:</b> .NET Framework 4.6.2 (supplied by installer)	

SECTION 3

# STATEMENT OF WORK

## 3.1 OVERVIEW

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

- A summary of the phases and tasks to be completed within the project lifecycle.
- A list of the deliverables associated with the project.
- A description of the responsibilities for both Motorola and Customer.
- The qualifications and assumptions taken into consideration during the development of this project.

This SOW provides the most current understanding of the work required by both parties to ensure a successful project implementation. It is understood that this SOW is a working document, and that it will be revised as needed to incorporate any changes associated with contract negotiations, Contract Design Review (CDR), and any other change orders that may occur during the execution of the project.

Motorola will implement the following for Solano County as part of this project:

- ASTRO 25 L2 Core Expansion to M2 Core
- Upgrade Existing Wave Solution:
  - (3) Wave Communication Channels – With Radio System Integration
  - (50) Wave Mobile Communicators – Android & IOS
  - (1) Wave Server license
  - (1) ASTRO25 to WAVE Interface License
  - (1) WAVE Radio Gateway Software
  - (1) CryptR for AES 256 encryption

## 3.2 ASSUMPTIONS

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

- All work is to be performed during normal work hours, Monday through Friday 8:00 a.m. to 5:00 p.m.
- This proposal assumes that Solano County is at ASTRO 25 L2 release 7.16 and will be upgraded to 7.18 release.
- Motorola will perform the software update to expand the L2 core to M2.





- Motorola will update the existing Wave server currently in place.
- Solano County will update any deployed personal computers, smartphones, or tablets with WAVE Communicator Client software.
- Motorola has made an assumption that the Customer Enterprise Network (CEN) is already in place.
- Any site/location upgrades or modifications are the responsibility of the Customer.
- Any NEPA and EHPs, along with approved local, State or Federal permits, as may be required for the installation and operation of the proposed equipment, are the responsibility of the Customer.
- Proposal does not include any new server hardware or spare equipment.
- Motorola assumes that current WAVE server meets the minimum requirements for the provided WAVE server software release.
- Motorola assumes the Solano County will perform any hardware changes/upgrades required.

## 3.3 CONTRACT

### 3.3.1 Contract Award (Milestone)

- Solano County and Motorola execute the contract and both parties receive all the necessary documentation.

### 3.3.2 Contract Administration

#### Motorola Responsibilities:

- Assign a Project Manager, as the single point of contact with authority to make project decisions.
- Assign resources necessary for project implementation.
- Set up the project in the Motorola information system.
- Schedule the project kickoff meeting with Solano County.

#### Customer Responsibilities:

- Assign a Project Manager, as the single point of contact responsible for Solano County-signed approvals.
- Assign other resources necessary to ensure completion of project tasks for which Solano County is responsible.

#### Completion Criteria:

- Motorola internal processes are set up for project management.
- Both Motorola and Solano County assign all required resources.
- Project kickoff meeting is scheduled.

### 3.3.3 Project Kickoff

#### Motorola Responsibilities:

- Conduct a project kickoff meeting during the CDR phase of the project.
- Ensure key project team participants attend the meeting.

- Introduce all project participants attending the meeting.
- 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 Solano County.
- Review the resource and scheduling requirements with Solano County.
- Review the Project Schedule with Solano County to address upcoming milestones and/or events.
- Review the teams' interactions (Motorola and Solano County), meetings, reports, milestone acceptance, and Solano County's participation in particular phases.

**Customer Responsibilities:**

- Solano County's key project team participants attend the meeting.
- Review Motorola and Solano County's responsibilities.

**Completion Criteria:**

- Project kickoff meeting completed.
- Meeting notes identify the next action items.

## 3.4 CONTRACT DESIGN REVIEW

### 3.4.1 Review Contract Design

**Motorola Responsibilities:**

- Meet with the Solano County 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 the System Design, Statement of Work, and Acceptance Test Plans, create project schedule and update the contract documents accordingly.
- Discuss and create a mutually agreed to Cutover Plan and methods to document a detailed procedure.
- Submit design documents to Solano County for approval. These documents form the basis of the system, which Motorola will manufacture, assemble, stage, and install.
- Establish demarcation point (supplied by the Motorola system engineer) to define the connection point between the Motorola-supplied equipment and the Solano County-supplied link(s) and external interfaces.

**Customer Responsibilities:**

- Solano County's key project team participants attend the meeting.
- Make timely decisions, according to the Project Schedule.

**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.

### 3.4.2 Design Approval (Milestone)

- Solano County executes a Design Approval milestone document.

## 3.5 ORDER PROCESSING

### 3.5.1 Process Equipment List

#### Motorola Responsibilities:

- Validate Equipment List by checking for valid model numbers, versions, compatible options to main equipment, and delivery data.
- Enter order into Motorola’s Customer Order Fulfillment (COF) system.
- Create Ship Views, to confirm with Solano County 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.
- Procure third-party equipment if applicable.

#### Customer Responsibilities:

- Approve shipping location(s).

#### 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 facility.

### 3.5.2 Ship Equipment to Field

#### Motorola Responsibilities:

- Arrange for shipment to the field.

#### Customer Responsibilities:

- None.

#### Completion Criteria:

- Equipment ready for shipment to the field.
- Equipment received by Motorola and Solano County Project Managers in the field.



#### **Equipment Acceptance (Milestone)**

- Solano County will accept the equipment shipped from Motorola Solutions.

## **3.6 SYSTEM INSTALLATION**

### **3.6.1 Install Fixed Network Equipment**

#### **Motorola Responsibilities:**

- Motorola will be responsible for the installation of all equipment/software contained in the equipment list and outlined in the System Description.
- Removal or relocation of the existing equipment is not part of this project.
- Upgrade L2 Core from 7.16 to 7.18 Release.
- Verify that the existing L2 Core is ready to be expanded to M2.
- Apply the L2 to M2 expansion licenses.
- Perform the L2 to M2 Expansion.

#### **Customer Responsibilities:**

- Provide secure storage for the Motorola-provided equipment.
- Provide access to the site.

#### **Completion Criteria:**

- Equipment/Software installation completed and ready for optimization.

### **3.6.2 Fixed Network Equipment Installation Complete**

- All equipment/software installed and accepted by Solano County.

### **3.6.3 Existing WAVE Solution Expansion Installation**

#### **Motorola Responsibilities:**

- Perform system verifications in preparation for install.
- Verify that the existing WAVE server hardware and OS platforms and IP addressing are ready for the software applications.
- Perform the WAVE server software upgrade install.
- Install (3) WAVE Communications Channels – with Radio System Integration.
- Install (50) WAVE Mobile Communicators – Android & IOS (Motorola will install first 5 and show Solano County Personnel how to install remaining)
- Configure the WAVE interfaces to the RF system.
- Configure WAVE Users, Profiles, Groups to meet the Solano County demands (up to 10 users and Solano County personnel will perform the remaining).
- Provide knowledge transfer to the end user.
- Confirm proper operation of the new WAVE system.

#### **Customer Responsibilities:**

- Provide demarcation point located within 25 feet of the interface.



**Completion Criteria:**

- WAVE Solution Expansion completed.

### **3.6.4 WAVE Solution Expansion Installation Complete**

- WAVE Solution Expansion installation completed and accepted by Solano County.

### **3.6.5 System Installation Acceptance (Milestone)**

- All equipment/software installations are completed and accepted by Solano County.

## **3.7 SYSTEM OPTIMIZATION**

### **3.7.1 Optimize System FNE**

**Motorola Responsibilities:**

- Motorola will Program the L2 Core to release 7.18 and then to M2 Core.
- Verify that all audio and data levels are at factory settings.
- Verify communication interfaces between devices for proper operation.
- Test features and functionality are in accordance with manufacturers' specifications and that they comply with the final configuration established during the CDR/system staging.
- Verify the operation of the M2 Core.
- Provide guidance on radio and radio gateway programming to connect to WAVE Solution.
- Configure the Wave Server.
- Provide general radio Engineering resources to assist with the audio tuning for interfacing the radios with WAVE Solution.

**Customer Responsibilities:**

- Provide access/escort to the site and to the L2 Core and Wave Server.

**Completion Criteria:**

- M2 Core and WAVE Solution optimization is complete.

### **3.7.2 Link Verification**

**Motorola Responsibilities:**

- Perform test to verify site link performance, prior to the interconnection of the Motorola-supplied equipment to the link equipment.

**Customer Responsibilities:**

- Make available the required links which meet the specifications supplied by Motorola at the CDR.

### **3.7.3 Completion Criteria:**

- Link verification successfully completed.

### 3.7.4 Optimization Complete

- System optimization is completed. Motorola and Solano County agree that the equipment is ready for acceptance testing.

## 3.8 AUDIT AND ACCEPTANCE TESTING

### 3.8.1 Perform Functional Testing

#### Motorola Responsibilities:

- Verify the operational functionality and features of the individual subsystems and the system supplied by Motorola, as contracted.
- If any major task as contractually described fails, repeat that particular task after Motorola 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 Solano County for review.
- Resolve any minor task failures before Final System Acceptance.

#### Customer Responsibilities:

- Witness the functional testing.

#### Completion Criteria:

- Successful completion of the functional testing.
- Solano County approval of the functional testing.

### 3.8.2 System Acceptance Test Procedures (Milestone)

- Solano County approves the completion of all the required tests.

## 3.9 FINALIZE

### 3.9.1 Cutover

#### Motorola Responsibilities:

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

#### Customer Responsibilities:

- Attend cutover meetings and approve the cutover plan.
- Notify the user group(s) affected by the cutover (date and time).

- Conduct a roll call of all users working during the cutover, in an organized and methodical manner.
- Ensure that all Subscriber users are trained and the Subscribers have been activated on the system by Solano County.

**Completion Criteria:**

- Successful migration to the M2 Core and successful operation of the WAVE Solution.

### 3.9.2 Resolve Punchlist

**Motorola Responsibilities:**

- Work with Solano County to resolve punchlist items, documented during the Acceptance Testing phase, in order to meet all the criteria for final system acceptance.

**Customer Responsibilities:**

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

**Completion Criteria:**

- All punchlist items resolved and approved by Solano County.

### 3.9.3 Transition to Service/Project Transition Certificate

**Motorola Responsibilities:**

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

**Customer Responsibilities:**

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

**Completion Criteria:**

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

### 3.9.4 Finalize Documentation

**Motorola Responsibilities:**

- Provide an electronic as-built system manual on a Compact Disc (CD). The documentation will include the following:
  - System-Level Diagram
  - Site Block Diagrams
  - ATP Test Checklists
  - Functional Acceptance Test Plan Test Sheets and Results
  - Equipment Inventory List

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 on the System Manual CD.





**Customer Responsibilities:**

- Receive and approve all documentation provided by Motorola.

**Completion Criteria:**

- All required documentation is provided and approved by Solano County.

### **3.9.5 Final Acceptance (Milestone)**

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

## **3.10 PROJECT ADMINISTRATION**

### **3.10.1 Project Status Meetings**

**Motorola Responsibilities:**

- Motorola Project Manager, or designee, will attend all project status meetings with Solano County, as frequently as determined during the CDR.
- Record the meeting minutes and supply the report.
- The agenda will include the following:
  - Overall project status compared to the Project Schedule.
  - Product or service related issues that may affect the Project Schedule.
  - Status of the action items and the responsibilities associated with them, in accordance with the Project Schedule.
  - Any miscellaneous concerns of either Solano County or Motorola.

**Customer Responsibilities:**

- Attend meetings.
- Respond to issues in a timely manner.

**Completion Criteria:**

- Completion of the meetings and submission of meeting minutes.

### **3.10.2 Progress Milestone Submittal**

**Motorola Responsibilities:**

- Submit progress (non-payment) milestone completion certificate/documentation.

**Customer Responsibilities:**

- Approve milestone, which will signify confirmation of completion of the work associated with the scheduled task.

**Completion Criteria:**

- Solano County approval of the Milestone Completion document(s).



### 3.10.3 Change Order Process

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

#### 3.10.3.1 Example - Change Order Form

Motorola Solutions has provided the Example-Change Order Form below.



SECTION 4

# ACCEPTANCE TEST PLAN

## 4.1 WIDE AREA TRUNKING - FDMA ONLY SITES

### 4.1.1 Talkgroup Call

#### 1. DESCRIPTION

The Talkgroup is the primary level of organization for communications on a trunked radio system. Radios with Talkgroup call capability will be able to communicate with other members of the same Talkgroup. This provides the effect of a private channel down to the Talkgroup level.

This test will demonstrate that a Talkgroup transmission initiated by a radio user will only be heard by system users, which have, the same Talkgroup selected. As with other types of calls, Talkgroup calls can take place from anywhere in the system.

#### SETUP

RADIO-1 - SITE 1 - TALKGROUP 1  
RADIO-2 - SITE 2 - TALKGROUP 1  
RADIO-3 - SITE 1 - TALKGROUP 2  
RADIO-4 - SITE 2 - TALKGROUP 2

VERSION #1.040

#### 2. TEST

- Step 1. Initiate a Wide Area Call with RADIO-1 in TALKGROUP 1.
- Step 2. Observe that only RADIO-2 will be able to monitor and respond to the call.
- Step 3. Initiate a Wide Area Call with RADIO-3 in TALKGROUP 2.
- Step 4. Observe that only RADIO-4 will be able to monitor and respond the call.

Pass\_\_\_\_ Fail\_\_\_\_



## Wide Area Trunking - FDMA Only Sites

### 4.1.2 Call Alert

#### 1. DESCRIPTION

Call Alert is a tone page that allows a user to selectively alert another radio unit. The initiating radio will receive notification from the trunked system as to whether or not the page was received by the target radio. Units receiving a Call Alert will sound an alert tone. As with other types of calls, Call Alerts can take place from anywhere in the system.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 2  
RADIO-3 - TALKGROUP 3

#### VERSION #1.010

#### 2. TEST

- Step 1. Using RADIO-1, press the page button.
- Step 2. Enter the unit ID of RADIO-2 with the keypad, or scroll to the location where this ID is stored
- Step 3. Press the PTT to initiate the call alert. Verify that the RADIO-1 user receives audible indication that the Call Alert was sent.
- Step 4. Verify that RADIO-2 user receives an audible indication of an incoming Call Alert was sent but RADIO-3 does not.
- Step 5. Verify RADIO-1 gets an audible indication that the Call Alert was successfully received at the target radio.
- Step 6. Turn off RADIO-2. Send a Call Alert from RADIO-1 to RADIO-2.
- Step 7. Verify that the RADIO-1 user receives audible indication that the Call Alert was sent.
- Step 8. Verify RADIO-1 receives a "No Acknowledgement" indication that the Call Alert was not received at the target radio.

Pass\_\_\_\_ Fail\_\_\_\_



## Wide Area Trunking - FDMA Only Sites

### 4.1.3 Private Call

#### 1. DESCRIPTION

Private Call is a selective calling feature that allows a radio user to carry on one-to-one conversation that is only heard by the 2 parties involved. Subscriber units receiving a private call will sound an alert tone. As with other types of calls, Private Calls can take place from anywhere in the system.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-2 - TALKGROUP 1  
RADIO-3 - TALKGROUP 1

#### VERSION #1.020

#### 2. TEST

- Step 1. Using RADIO-1, press the Private Call (Call) button.
- Step 2. Enter the unit ID of RADIO-2 with the keypad, or scroll to the location where this ID is stored.
- Step 3. Press the PTT to initiate the Private Call.
- Step 4. Verify that RADIO-2 hears tones and the display indicates that a Private Call has been received, but RADIO-3 receives no indications.
- Step 5. Answer the call at RADIO-2 by pressing the Private Call (Call)/Respond button. If RADIO-2 has a display, verify it shows the ID number or Alias of the calling unit.
- Step 6. Press the PTT switch on RADIO-2 and respond to the Private Call. Note that if you do not press the Private Call button before pressing PTT, your audio will be heard by all members of the talkgroup, and not just by the radio initiating the Private Call.
- Step 7. Verify that RADIO-2 can communicate with RADIO-1.
- Step 8. Verify that RADIO-3 does not monitor the Private Call.
- Step 9. End the Private Call by pressing the "home" key and return to normal talkgroup operation.

Pass\_\_\_\_ Fail\_\_\_\_

## 4.2 SYSTEM RELIABILITY FEATURES

### 4.2.1 Failure of Prime Site LAN Switch 1 at GEO- Prime Site - Automatic Activation of Controller 3

#### 1. DESCRIPTION

The primary objective of this prime site configuration is to provide a highly available trunked simulcast subsystem where the failure or total destruction of a prime site location will not result in the loss of wide area radio communications for any significant period time.

This test will show that in the event of a failure or loss of both the active and redundant multisite controllers at the primary prime site, the site controller at the secondary prime site (multisite controller 3) will be automatically activated to restore the system back to wide area operation. This particular event can occur due to a failure of both multisite controllers at the primary prime site or due to a failure of the prime site LAN switch they are connected to.

#### SETUP

RADIO-1 - TALKGROUP 1 - SITE 1  
RADIO-2 - TALKGROUP 1 - SITE 2  
Multisite Controller 1: Active  
Multisite Controller 2: Standby  
Multisite Controller 3: Standby  
UEM Session running on NM Client  
UNC Session running on NM Client

#### VERSION #1.120

#### 2. TEST

- Step 1. Initiate a talkgroup call from RADIO-1.  
Observe that RADIO-2 receives the audio.
- Step 2. Disconnect the AC power cord from the Prime Site LAN Switch at the primary prime site.
- Step 3. Observe that the call is dropped and appropriate alarms occur in the UEM.
- Step 4. Observe that SITE 1 returns to the Wide Area Trunking mode of operation after a brief outage.
- Step 5. Initiate a talkgroup call from RADIO-1.  
Observe that RADIO-2 receives the audio.
- Step 6. Dekey RADIO-1.
- Step 7. Reconnect the AC power cable disconnected in step 2.
- Step 8. Observe that SITE 1 returns to the Wide Area Trunking mode of operation after a brief transition to Site Trunking.
- Step 9. Initiate a talkgroup call from RADIO-1.  
Observe that RADIO-2 receives the audio.
- Step 10. Dekey RADIO-1.

Pass\_\_\_\_ Fail\_\_\_\_



## System Reliability Features

### 4.2.2 Failure of the Ethernet Backhaul Switch at the Primary GEO Prime Site

#### 1. DESCRIPTION

This test shows that in the event the Ethernet Backhaul Switch at the primary prime site fails, the voice traffic from the remote subsites are rerouted through the secondary prime site to the primary prime site.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-1 - SITE - SITE 1  
RADIO-2 - TALKGROUP 1  
RADIO-2 - SITE - SITE 2

#### VERSION #1.040

#### 2. TEST

- Step 1. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1. Observe that RADIO-2 receives the audio. Dekey RADIO-1.
- Step 2. Disconnect the AC power cord from the Ethernet Backhaul Switch at the primary prime SITE 1.
- Step 3. Observe that appropriate alarms occur in the UEM and that SITE 1 is still in Wide Area Trunking mode of operation.
- Step 4. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1. Observe that RADIO-2 receives the audio. Dekey RADIO-1.
- Step 5. Reconnect the AC power cable disconnected in step 2.
- Step 6. Observe that SITE 1 continues to operate in Wide Area Trunking.
- Step 7. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1. Observe that RADIO-2 receives the audio.

Pass\_\_\_\_ Fail\_\_\_\_



## System Reliability Features

### 4.2.3 Primary Prime Site Link Failure – Simulcast GEO Prime Site to Zone Core Ethernet Link

#### 1. DESCRIPTION

This test shows that in the event of a failure of the link between the primary prime site and the zone core, the voice traffic from the primary prime site is rerouted through the secondary prime site to the zone core.

#### SETUP

RADIO-1 - TALKGROUP 1  
RADIO-1 - SITE - SITE 1  
RADIO-2 - TALKGROUP 1  
RADIO-2 - SITE - SITE 2

#### VERSION #1.040

#### 2. TEST

- Step 1. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1. Keep the radio keyed up until instructed to dekey. Observe that RADIO-2 receives the audio.
- Step 2. Create a site link failure (prime site to zone core) by disconnecting the Ethernet LAN cable from the Prime Site Router at the primary prime SITE 1.
- Step 3. Worst case, observe an audio hole in from RADIO-1 to RADIO-2, but that the call continues.
- Dekey RADIO-1.
- Step 4. Observe, in the Unified Event Manager, that the site link has failed.
- Step 5. Observe that the SITE 1 continues to operate in Wide Area Trunking.
- Step 6. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1. Keep the radio keyed up until instructed to dekey. Observe that RADIO-2 receives the audio.
- Step 7. Reconnect the Ethernet LAN cable to the Prime Site Router at the primary prime SITE 1.
- Step 8. Observe that SITE 1 continues to operate in Wide Area Trunking.
- Step 9. Observe that RADIO-2 receives the audio from RADIO-1.
- Step 10. Dekey RADIO-1.

Pass\_\_\_\_ Fail\_\_\_\_



## System Reliability Features

### 4.2.4 Single Comparator Failure at Primary GEO-Prime Site

#### 1. DESCRIPTION

This test shows that in the event of a failure of any comparator at the primary prime site, channel capacity will be restored via the redundant comparator at the secondary prime site. Simulcast remote site audio for that channel is rerouted to the corresponding comparator at the secondary prime site and that comparator assumes voting functionality for that channel.

#### SETUP

NOTE: If there are a large number of channels, you may want to reduce the number of available channels.

RADIO-1 TALKGROUP 1 - SITE 1  
RADIO-2 TALKGROUP 1 - SITE 1

#### VERSION #1.040

#### 2. TEST

- Step 1. Initiate a talkgroup call from RADIO-1 on TALKGROUP 1 on the channel to be demonstrated. Keep the radio keyed until instructed to release. Observe that RADIO-2 receives the audio.
- Step 2. Create a comparator failure at the primary prime site by disconnecting the Ethernet LAN cable between the comparator and the corresponding Prime Site LAN Switch.
- Step 3. Observe the call is dropped.
- Step 4. Observe, in the Unified Event Manager, that the comparator has failed.
- Step 5. Observe that the channel returns to service after a brief outage.
- Step 6. Using RADIO-1, initiate talkgroup calls until the test channel is assigned. Observe that RADIO-2 receives the audio.
- Step 7. Dekey RADIO-1.
- Step 8. Reconnect the Ethernet LAN cable between the comparator and the Prime Site LAN switch at the primary prime site. Observe that the comparator is brought back online and that any alarms are cleared in the UEM.
- Step 9. Observe that the channel remains in service
- Step 10. Using RADIO-1, initiate talkgroup calls until the test channel is assigned. Observe that RADIO-2 receives the audio. Dekey RADIO-1.

Pass\_\_\_\_ Fail\_\_\_\_





## 4.3 WAVE

### 4.3.1 WAVE Only Talkgroup Call

#### 1. DESCRIPTION

The WAVE Talkgroup represents a call to a group of WAVE users associated and defined as part of WAVE "Channel(s)" in the WAVE System. Talkgroups (or as referred to in the WAVE System as "Channels") is the most basic communication element in WAVE and are used to create communication streams to join multiple users. Devices with assigned Talkgroup in their profiles, have capability to be able to communicate with other members of the same Talkgroup. This provides the effect of a private channel down to the Talkgroup level.

This test will demonstrate that a Talkgroup transmission initiated by a Smartphone user will only be heard by system users, which have, the same Talkgroup selected.

(This test does not demonstrate WAVE's capability to integrate with the Radio System. It simply shows communication between different WAVE users on the WAVE System Only).

#### SETUP

Smartphone-1 - WAVE TG 01  
Smartphone-2 - WAVE TG 01

Note: The WAVE System must be preconfigured to allow the use of its system via Internet and/or Cellular Data.

#### VERSION #1.020

#### 2. TEST

- Step 1. Login to the WAVE Mobile Communicator PTT App on the Smartphone with the correct credentials.
- Step 2. Initiate a Talkgroup Call with Smartphone-1 in WAVE TG 01.
- Step 3. Observe that only Smartphone-2 will be able to monitor and respond to the call.
- Step 4. Verify that the Radio System does not receive any audio since the WAVE TG 01 Talkgroup is NOT associated with any other Radio System besides WAVE Only.

Pass\_\_\_\_ Fail\_\_\_\_

## Wave

### 4.3.2 WAVE – Text Messaging

#### 1. DESCRIPTION

The WAVE App has the capability for Group Smartphone-to-Smartphone Text Messaging. Devices with assigned Talkgroup in their profiles, have capability to send Group-Text Messages to other members of the same Talkgroup. This test will demonstrate that Group-Text Messages sent on a WAVE Talkgroup by a Smartphone will be sent to all other WAVE users that have the same Talkgroup in their profiles. (This test does not demonstrate WAVE's capability to integrate with the Radio System Text Messaging capabilities. It simply sends Group-Text Messaging between different WAVE users on the WAVE System Only).

#### SETUP

Smartphone-1 - WAVE TG 01  
Smartphone-2 - WAVE TG 01

Note: The WAVE System must be preconfigured to allow the use of its system via Internet and/or Cellular Data.

OpenSIPs Registrar must be configured to allow Texting and Private Calling between WAVE users ONLY.

#### VERSION #1.020

#### 2. TEST

- Step 1. Login to the WAVE Mobile Communicator PTT App on the Smartphone with the correct credentials.
- Step 2. Select WAVE TG01 with Smartphone-1.
- Step 3. Using Smartphone-1 select Messages on the WAVE App top Menu. Send a Text Message "Hello".
- Step 4. Verify that Smartphone-2 receives a blue text bubble indicating that a Text Message has been sent on WAVE TG 01. Reply back with a Text Message from Smartphone-2 on WAVE TG 01.
- Step 5. Verify that both Smartphones can send and receive Text Messages on WAVE TG 01.
- Step 6. Verify that the Radio System does not receive any Text Messages since the WAVE TG 01 Talkgroup is NOT associated with any other Radio System besides WAVE.

Pass\_\_\_\_ Fail\_\_\_\_

## Wave

### 4.3.3 WAVE - ISSI Talkgroup Call

#### 1. DESCRIPTION

The WAVE Talkgroup represents a call to a group of WAVE users associated and defined as part of WAVE "Channel(s)" in the WAVE System. Talkgroups (or as referred to in the WAVE System as "Channels") is the most basic communication element in WAVE and are used to create communication streams to join multiple users. WAVE has the capability to tie Talkgroups in an Astro P25 System to their profiles. WAVE ties talkgroups with Astro P25 Systems via ISSI. The Astro P25 System sees WAVE as a foreign system. This test will demonstrate that a Talkgroup transmission initiated by a radio user will only be heard by system users, which have, the same Talkgroup selected in their Smartphone App. The same thing applies vice versa between the SMARTPHONE and radio user.

#### SETUP

Smartphone-1 - Astro TG01  
Radio-1 - Astro TG01  
Radio-2 - Astro TG02

Note: The WAVE System must be preconfigured to allow the use of its system via Internet and/or Cellular Data.

Astro TG01 must be tied from the WAVE System with the same Talkgroup ID as Astro TG01 in the Astro System.

#### VERSION #1.020

#### 2. TEST

- Step 1. Login to the WAVE Mobile Communicator PTT App on the Smartphone with the correct credentials.
- Step 2. Initiate a Talkgroup Call with Radio-1 on Astro TG01.
- Step 3. Observe that Smartphone-1 will be able to monitor and respond to the call.
- Step 4. Verify that the Radio-1 receives the audio on Astro TG 01 from Smartphone-1.
- Step 5. Respond with RADIO-1 and verify that Smartphone-1 receives the response audio but Radio-2 cannot since it is on a different Talkgroup.
- Step 6. Verify that both Radio-1's and Smartphone WAVE User ID's are displayed correctly on both devices during communication.

Pass\_\_\_\_ Fail\_\_\_\_



## 4.4 WAVE MOBILE COMMUNICATOR

### 4.4.1 Log In and Channel (Talk Group) Access

#### 1. DESCRIPTION

The WAVE Mobile Communicator provides WAVE Thin Client (WTC) access to the WAVE Channels via a mobile carrier's network once the user logs in. The WTC access's WAVE Channels assigned to that specific logon users' profile through the Proxy Server.

This test will verify that WTC users can log in to the application, transmit and receive audio signal on the assigned WAVE Channels.

#### SETUP

Access to an Android or Apple iOS device.

WAVE Mobile Communicator PTT needs to be installed from the Google Play Store or Apple App Store.

Access to a WAVE Proxy Server from a WTC via mobile carrier network

User with a profile assignment needs to previously created on the WAVE system

Successfully logged into WAVE Mobile Communicator.

#### VERSION #1.000

#### 2. TEST

- Step 1. Launch the WAVE Mobile Communicator application from your Smart device
- Step 2. Enter a WAVE username in the "User Name:" field
- Step 3. Enter the user's password in the "Password:" field
- Step 4. Enter the Public IP Address of the WAVE Management Server in the "Server:" field
- Step 5. Toggle/Check the "Secure Connection" option
- Step 6. Click the [Sign In] button
- Step 7. Select a Profile... if you only have access to a single profile or have already chosen a profile previously, please proceed to step 9
- Step 8. Click the [Next] button
- Step 9. (Conditional) A message window may appear requesting location access: click the [Allow] button
- Step 10. Verify the correct channels are listed... if you only have logged in and chosen channels previously, you may need to access all of the user's channels through settings

Pass\_\_\_\_ Fail\_\_\_\_



## WAVE Mobile Communicator

### 4.4.2 Two Way Communication WAVE Mobile Endpoints

#### 1. DESCRIPTION

WAVE is designed to support PTT communications between LTE running the same version of the WTC application.

This test will verify that the WAVE Management Server, Media Server, Proxy Server and WTC application are configured properly to support two way communications between mobile devices.

#### SETUP

Access to an Android or Apple iOS device

WAVE Mobile Communicator PTT needs to be installed from the Google Play Store or Apple App Store

Access to a WAVE Proxy Server from a WTC via mobile carrier network

User with a profile assignment needs to previously created on the WAVE system

Successfully logged into WAVE Mobile Communicator

#### VERSION #1.000

#### 2. TEST

- Step 1. Launch the WAVE Mobile Communicator application from your Smart device.
- Step 2. Enter a WAVE username in the "User Name:" field. Enter the user's password in the "Password:" field. Enter the Public IP Address of the WAVE Management Server in the "Server:" field. Toggle/Check the "Secure Connection" option and click the [Sign In] button.
- Step 3. Select a Profile... if you only have access to a single profile or have already chosen a profile previously, please proceed to step 9. Click the [Next] button
- Step 4. (Conditional) A message window may appear requesting location access: click the [Allow] button. Select the channels you are interested in joining.
- Step 5. After selecting the channels, access the main application Interface (e.g., PTT button on the bottom of the screen with a navigation bar on top).
- Step 6. Repeat Steps 1 – 5 from a different WAVE Mobile Communicator
- Step 7. Select the test channel on the first WAVE Mobile Communicator.
- Step 8. Hold the test channel's [Push To Talk] button down and talk into the microphone.
- Step 9. Release the [Push To Talk] button, once the voice message is complete and verify the delivery of the voice message through the remote Mobile.
- Step 10. Repeat Steps 7 – 9 from the second WAVE Mobile Communicator.

Pass\_\_\_\_ Fail\_\_\_\_

## WAVE Mobile Communicator

### 4.4.3 Mobile Communicator Status and Presence

#### 1. DESCRIPTION

WAVE Mobile Communicator users can verify the WTC Status and presence of other WTC users on the WAVE system.  
This test will verify a WTC user's ability to look up the presence and then status of other WTC users on the WAVE system.

#### SETUP

Access to an Android or Apple iOS device  
WAVE Mobile Communicator PTT needs to be installed from the Google Play Store or Apple App Store.  
Access to a WAVE Proxy Server from a WTC via mobile carrier network  
User with a profile assignment needs to previously created on the WAVE system  
Successfully logged into WAVE Mobile Communicator.

#### VERSION #1.000

#### 2. TEST

- Step 1. Launch the WAVE Mobile Communicator application from your Smart device.
- Step 2. Enter a WAVE username in the "User Name:" field. Enter the user's password in the "Password:" field. Enter the Public IP Address of the WAVE Management Server in the "Server:" field. Toggle/Check the "Secure Connection" option and click the [Sign In] button.
- Step 3. Select the Profile... if you only have access to a single profile or have already chosen a profile previously, please proceed to step 5.
- Step 4. Click the [Next] button.
- Step 5. Open the People tab (located at the top of the screen).
- Step 6. Repeat Steps 1 – 5 from a different WAVE Mobile Communicator.
- Step 7. Verify both user names appear in the presence list within both WAVE Mobile Communicators.

Pass\_\_\_\_ Fail\_\_\_\_

## 4.5 WAVE RADIO GATEWAY SERVER

### 4.5.1 WAVE Radio Gateway Server Status

#### 1. DESCRIPTION

The WAVE system requires each system component to run the latest configuration published. Each WAVE component reports its operational status to the Management Server.

This test will verify that the WAVE Radio Gateway (WRG) Server has retrieved its latest configuration update and is operational.

#### SETUP

WAVE Management server installed

WAVE WRG server installed

Successful log into the WAVE Management server web UI.

**VERSION #1.000**

#### 2. TEST

- Step 1. In your browser, click Radio Systems>WRG Servers (located on left side of the window).
- Step 2. Confirm the "Last Status" column displays OK for each WRG server listed.
- Step 3. Verify the "Has Latest Config" column displays Yes for each WRG server listed.

Pass\_\_\_\_ Fail\_\_\_\_

## WAVE Radio Gateway Server

### 4.5.2 WRG Port Forwarding/Network Configuration

#### 1. DESCRIPTION

The WRG server requires a specific port to be open on the firewall between the WAVE network and ISGW on the RNI. This test will be used to validate the port is open from the internet to the server. If telnet client is successfully able to connect to the port on the server the window will appear blank. If the port is blocked "Connect Failed" will be displayed within the telnet window.

#### SETUP

Access to a Windows 7+ client system

Access credentials with the ability to install Windows features

Client requires an unblocked (direct) Internet connection (Wired or tethered to a phone)

#### VERSION #1.000

#### 2. TEST

- Step 1. Log in to the WRG with an account that has administrative privileges  
\*\*\* If you have the Microsoft Windows Telnet client installed, please proceed to Step 5\*\*\*
- Step 2. From Windows, click the [Start] button and open the Control Panel. Then click the Programs and Features item.
- Step 3. Click the "Turn Windows features on or off" option (located on the left side of the Window). If prompted, enter your Admin credentials, then click the [Yes] button.
- Step 4. Scroll down, place a check mark next to the "Telnet Client" feature and click the [OK] button.
- Step 5. From Windows, click the [Start] button, type "cmd" then hit "Enter".
- Step 6. Using the NAT IP address of the ISGW, type the following command into the prompt:  
"telnet <ISGW NAT IP Address> 5060"  
example: telnet 192.168.1.10 5060
- Step 7. Verify the black window goes blank, indicating the port is open through the firewall.

Pass\_\_\_\_ Fail\_\_\_\_





## 4.6 WAVE MANAGEMENT SERVER

### 4.6.1 Management Server Access

#### 1. DESCRIPTION

The WAVE App must be installed on a host that is accessible via public or private network from a web browser.

This test will demonstrate that the WAVE Management Server is accessible from a web browser.

#### SETUP

OS container installed on host

Windows installed in OS Container(s) and license activated

WAVE Management Server installed and operational

Network access to Management Server from either browser or Proxy Server

Note: The WAVE Management Server must be accessible from the web browser host. It is also important to remember the WAVE Management Server logs you out after a period of inactivity. No notice occurs when you are logged out. The WAVE Management Server prompts you to log back in as soon as you attempt to change pages or perform an action.

#### VERSION #1.000

#### 2. TEST

- Step 1. In your browser, type in the IP address of the server where the WAVE management server resides. Then append the address with "/wave/".
- Step 2. In the left hand margin click the "Login" button. The "Login" page should appear.
- Step 3. In the "User ID" box, type in your user ID.
- Step 4. In the "Password" box, type in your Password.
- Step 5. Verify the appropriate browser screen appears.

Pass\_\_\_\_ Fail\_\_\_\_



## WAVE Management Server

### 4.6.2 WAVE License Installation

#### 1. DESCRIPTION

The WAVE App requires a license key to operate, the license key will also provide the system with the correct number and type of features. This test will demonstrate that the WAVE System license has been correctly applied.

#### SETUP

WAVE Management Server installed and operational

Network access to Management Server

Note: The WAVE System license is issued by Motorola to the customer via email

**VERSION #1.000**

#### 2. TEST

- Step 1. Login to the WAVE Management Server application.
- Step 2. In your browser, click System and then System Settings on left side of the window.
- Step 3. Navigate down to the section labeled Licensing.
- Step 4. Validate "Licensing is enabled on this system" is displayed under the Serial Number input field.
- Step 5. Validate "WAVE has been activated on this system" is displayed under the Activation Code input field.
- Step 6. Navigate to the Licensing Details... section.
- Step 7. Validate the Licensed Components match the expected licensed materials.

Pass\_\_\_\_ Fail\_\_\_\_



## 4.7 WAVE MEDIA SERVER

### 4.7.1 Media Server Status

#### 1. DESCRIPTION

The WAVE system requires each system component to run the latest configuration published. Each WAVE component reports its operational status to the Management Server.

This test will verify that the WAVE Media Server has retrieved its latest configuration update and is operational.

#### SETUP

WAVE Management server installed

WAVE Media server installed.

Successful log into the WAVE Management server web UI.

VERSION #1.000

#### 2. TEST

- Step 1. In your browser, click Media Servers and then Media Servers on left side of the window.
- Step 2. Validate the Last Status displays "OK" for each of the media servers listed.
- Step 3. Validate the Has Latest Config displays "Yes" for each of the media servers listed.

Pass\_\_\_\_ Fail\_\_\_\_

## WAVE Media Server

### 4.7.2 WAVE Channel (Talk Group) Configuration

#### 1. DESCRIPTION

The WAVE system requires all Channel, or Talk Groups, be setup with the properly assigned Codec's and IP Address/Port to facilitate communication between multiple end users, users and Media Servers, or multiple Media Servers. This test will verify that the WAVE System's Standard Channels have been correctly configured and are operational.

Note: This test applies to Standard Channels only

#### SETUP

Channel (Talk Group) listing

WAVE system logical design document

**VERSION #1.000**

#### 2. TEST

- Step 1. Log into the WAVE Management server web application.
- Step 2. In your browser, click Channels and then Channels on left side of the window.
- Step 3. Verify the Transmit Codec is set to "G711-uLaw 64K/2" for each with the Type labeled "Standard".
- Step 4. Verify the Receive "Multicast IP address and Port number" (Ex. 239.1.1.0:39110) match the latest WAVE Architecture.

Pass\_\_\_\_ Fail\_\_\_\_



## WAVE Media Server

### 4.7.3 Trunks or Radio Gateway Configuration

#### 1. DESCRIPTION

This test will verify the WAVE System Trunks or Radio Gateway(s) have been properly configured.

#### SETUP

Access to at least two WAVE Communicator clients

Windows 7+ client system

Access credentials with the ability to install Windows features

#### VERSION #1.000

#### 2. TEST

- Step 1. Log into the WAVE Management server web application.
- Step 2. In your browser, click Media Servers and then Interfaces on left side of the window. Select the appropriate interface for your Radio Gateway.
- Step 3. Alternatively, if the appropriate interface is not present in the Media Servers-Interfaces menu, browse to Channels and then Channels on left side of the window.
- Step 4. Select the appropriate channel - either Multicast (e.g., when using Cisco router with E&M interface) or Point-to-Point (e.g., when using Vocality Radio Gateway) channel for your Radio Gateway.
- Step 5. Verify the Transmit Codec is set consistent with the Radio Gateway configuration and matches the WAVE Architecture.
- Step 6. Verify the Transmit IP address and Port number (Ex. 239.1.1.0:39110) is set consistent with the Radio Gateway configuration and matches the WAVE Architecture.
- Step 7. Verify the Receive IP address and Port number (Ex. 239.1.1.0:39110) is set consistent with the Radio Gateway configuration and matches the WAVE Architecture.

Pass\_\_\_\_ Fail\_\_\_\_



## 4.8 SIGNOFF CERTIFICATE

By their signatures below, the following witnesses certify they have observed the system Acceptance Test Procedures.

Signatures

WITNESS:

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

Please Print Name: \_\_\_\_\_

\_\_\_\_\_  
Initials:

Please Print Title: \_\_\_\_\_

WITNESS:

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

Please Print Name: \_\_\_\_\_

\_\_\_\_\_  
Initials:

Please Print Title: \_\_\_\_\_



SECTION 5

# SERVICE PLAN

## 5.1 ADVANCED PLUS SERVICES FOR M2 CORE

### 5.1.1 Advanced Plus Services Overview

In order to ensure that Solano County has immediate access to Motorola's onsite and technical support teams for both unforeseen issues and ongoing maintenance, Motorola proposes our Advanced Plus Services offering to Solano County for the Motorola proposed L2 to M2 Master Core and existing Dispatch centers. Appropriate for customers who want to minimize their system's downtime, Advanced Plus Services provide a reliable service response and restoral process remote assistance to address unforeseen network events, effect onsite repairs to network components, and deliver patches to keep Solano County's system secure.

Motorola has included the below services for Solano County ASTRO P25 M2 Master Core and existing Dispatch Centers. Motorola has proposed 10 years post warranty and 10 years Life Cycle Network Update services port warranty to keep Solano County's Network at the latest release.

Motorola has included ARUS Services for the offered Wave Solution. Motorola has included 10 years ARUS maintenance services for the Wave Solution. The life cycle services mentioned above will include the Wave Solution. Motorola has included the description of the ARUS services for the Wave Solution offering in this document. The services offered for the Wave Solution are a subset of the services offered for the ASTRO P25 M2 Core.

During the warranty and 10 years post warranty Maintenance period, Motorola will provide the following services for the ASTRO P25 M2 Core and existing Dispatch Centers:

- Service Desk.
- Technical Support.
- Network Event Monitoring.
- Onsite Support.
- Annual Preventative Maintenance.
- Network Hardware Repair.
- Network Hardware Repair with Advanced Replacement.
- Security Management.
- Network Updates

These services will be delivered to the County through the combination of local service personnel either dedicated to the network or engaged as needed; a centralized team within Motorola's Solutions Support Center (SSC), which operates on a 24 x 7 x 365 basis; and our Repair Depot, which will ensure that equipment is repaired to the highest quality standards. The collaboration between these service resources, all of who are experienced in the maintenance of mission-critical networks, will enable a swift analysis of any network issues, an accurate diagnosis of root causes, and a timely resolution and return to normal network operation.



## 5.2 ADVANCED PLUS SERVICES DESCRIPTION

### 5.2.1 Centralized Service Delivery

Centralized support will be provided by Motorola's support staff, located at our Service Desk and Solutions Support Center (SSC). These experienced personnel will provide direct service and technical support through a combination of Service Desk telephone support, technical consultation and troubleshooting through the SSC, and ongoing network monitoring of the County's system.

Motorola will provide **Service Desk** response as a single point of contact for all support issues, including communications between the County, third-party subcontractors and manufacturers, and Motorola. When County personnel call for support, the Service Desk will record, track, and update all Service Requests, Change Requests, Dispatch Requests, and Service Incidents using Motorola's Customer Relationship Management (CRM) system. The Service Desk is responsible for documenting the County inquiries, requests, concerns, and related tickets; tracking and resolving issues; and ensuring timely communications with all stakeholders based on the nature of the incident.

As tickets are opened by the Service Desk, issues that require specific technical expertise and support will be routed to our Solutions Support Center (SSC) system technologists for **Technical Support**, who will provide telephone consultation and troubleshooting capabilities to diagnose and resolve infrastructure performance and operational issues. Motorola's recording, escalating, and reporting process applies ISO 90001 and TL 9000-certified standards to the Technical Support calls from our contracted customers, reflecting our focus on maintaining mission-critical communications for the users of our systems.

The same SSC staff that provide direct telephone support to Solano County will also provide **Network Event Monitoring** to Solano County's network in real-time, ensuring continuous management of the system's operational functionality. The SSC's technicians will utilize sophisticated tools to remotely monitor Solano County's Network, often identifying and resolving anomalous events before they might affect user communications.

#### Field Service Delivery

Onsite repairs and network preventative maintenance will be provided by authorized local field services delivery personnel, who will be dispatched from and managed by the Solutions Support Center.

**OnSite Support** provides local, trained and qualified technicians who will arrive at the location upon a dispatch service call to diagnose and restore the communications network.

This involves running diagnostics on the hardware or FRU (Field Replacement Unit) in order to identify defective elements, and replacing those elements with functioning ones. The system technician will respond to the location in order to remedy equipment issues based on the impact of the issue to overall system function.

**Annual Preventive Maintenance Service** provides proactive, regularly scheduled operational testing and alignment of infrastructure and network components to ensure that they continually meet original manufacturer specifications. Certified field technicians perform hands-on examination and diagnostics of network equipment on a routine and prescribed basis.



## Network Hardware Repair

**Network Hardware Repair** – Motorola’s authorized Repair Depot will repair the equipment provided by Motorola, as well as select third-party infrastructure equipment supplied as part of the proposed solution. The Repair Depot will manage the logistics of equipment repair (including shipment and return of repaired equipment), repair Motorola equipment, and coordinate the repair of third-party solution components.

Motorola also proposes **Network Hardware Repair with Advanced Replacement** to the County. With this additional service, Motorola will exchange malfunctioning components and equipment with advanced replacement units or Field Replacement Units (FRUs) as they are available in the Repair Depot’s inventory. Malfunctioning equipment will be evaluated and repaired by the infrastructure repair depot and returned to the Repair Depot’s FRU inventory upon repair completion. If the County prefers to maintain their existing FRU inventory, County will be able to request a “loaner” FRU while their unit is being repaired.

## Security Management Operations

The proposed **Self-Installed Security Patches Service** will provide County with security updates that are pre-tested by Motorola and installed by the County’s personnel. Motorola’s dedicated vetting lab will pre-test security updates for the proposed ASTRO 25 system release. When appropriate, Motorola will make these updates available to outside vendors in order to enable them to test each patch, and will incorporate the results of those third-party tests into the updates provided to the County. Once an update is fully tested and ready for deployment in the County’s system, Motorola will post it to a secured extranet website and send an email notification to the County. If there are any recommended configuration changes, warnings, or workarounds, Motorola will provide detailed documentation for the County along with the updates on the website.

## Network Updates

With our proposed **Network Updates Service**, Motorola commits to sustain County’s ASTRO 25 M2 Core, existing Dispatch and Wave Solution through a program of software and hardware updates aligned with the ASTRO 25 platform lifecycle. This comprehensive approach to technology sustainment will ensure that County has access to the latest available standard features, as well as the opportunity to incorporate optional features through the purchase of hardware and/or software licenses. Updates and expansion of system components will optimize the availability of repair services, and will enable the County to add RF sites, dispatch positions, data subsystems, network management positions, and other elements to increase capacity and processing capability. The Network Updates Service will provide one upgrade every two years throughout the life of the service agreement. Motorola will minimize any interruption to system operation during each network update, with minimal reliance on the County’s personnel.

## 5.3 SERVICES PROVIDED UNDER ARUS FOR WAVE SOLUTION

When purchasing a WAVE solution, customers purchase Annual Release and Update Subscription (ARUS) to protect their investment. MSI provides the following services for customers with active ARUS policies:

- **Software Upgrades** – Upgrades are indicated by a change in the major or minor revision number of the software. Solano County with an active ARUS policy has access to the latest version of the WAVE software suite at no additional charge. Software upgrades do not include separately priced new WAVE components as presented on the official WAVE price list.
- **Bug Fixes** – Bug fixes are provided to resolve issues in the product. Customers who are current on ARUS will have access to the bug fixes.
- **Technical Support** – MSI provides telephone and email technical support. Solano County must submit all support requests through the MSI technical support team (contact information listed below).

**Note:** WAVE engineers only speak English and will provide support accordingly.

In the event that Solano County is unable to rectify any Program the matter shall be escalated to MSI for resolution. In connection with any such escalation to MSI, Solano County will provide sufficient information to enable MSI to duplicate the Program Error before any MSI support obligations will commence. MSI will use commercially reasonable efforts to respond to Program Errors identified by Solano County. Technical Support Contacts according to the anticipated response times set forth below with respect to the various Category levels and will use commercially reasonable efforts to resolve each significant Program Error by providing a correction, workaround or object code patch within a reasonable period of time. Where a resolution is not promptly available, MSI shall determine an action plan for how MSI will address the problem and an estimate of how long it will take to rectify it. MSI recognizes that Priority One and Priority Two Program Errors may have a significant impact on the business operations of Solano County. Accordingly, MSI will provide expedited services to resolve such errors as soon as possible. MSI reserves the right to charge Customer additional fees at its then-standard reasonable rates for services performed in connection with reported Program Errors which are later determined to have been due to hardware or software not supplied by MSI.

### 5.3.1 Communications

Technical support issues can be submitted by telephone or email. Each method will result in the creation of a support ticket within MSI's help desk software suite.

- **Telephone:** +1 (800) 927-2744, prompt #3, prompt #5
  - Standard business hours for support are 5:00am to 5:00pm Pacific Time. A support representative is available 24 x 7 for emergency support for Category 1 cases (as defined in the Support Request Categories below).
- **Email:** [wavesupport@motorolasolutions.com](mailto:wavesupport@motorolasolutions.com)
  - Sending an email to this address will open up a support ticket and provide an auto-reply entailing how to check the status of the ticket via the Customer Support Portal.

Requests for technical support shall be handled generally on a "first-come, first-served" basis among all MSI's licensees, taking into reasonable account the urgency and nature of each such request and the availability of staff resources.

## 5.3.2 Support Methodology

For the purposes of this document, a Support Request is generally defined as a request for support to fix a Program Error, provide configuration or troubleshooting assistance, provide assistance with fault isolation or answer WAVE related questions.

Support is provided by a MSI Technical Support Engineer, Technical Leader or Enterprise Architect as appropriate. In the event that a code modification is necessary, the case will be escalated to Software Development.

## 5.3.3 Support Request Categories

As support requests are received, the Technical Support Engineer (TSE) will determine in what category the case should be assigned, and then place the ticket in the appropriate queue. A case may be downgraded if an acceptable work-around is applied to allow further troubleshooting without escalation. The following characteristics are used to identify the severity of a support request:

- Operational exposure
- Work outage
- Number of clients affected

Categorization is subjective, so it is not necessary for a support request to match every characteristic of a given category to be assigned to that queue. Categorization is summarized in Table 5-1.

Table 5-1: Support Categories

Category 1 ( Critical)	Category 2 (High)	Category 3 (Medium)	Category 4 (Low)
<b>Operational Exposure</b>			
The application creates a critical operational exposure. The system is down or inoperable.	The application creates a serious operational exposure. The system is experiencing a significant loss in functionality.	The application creates a low operational exposure. Loss of functionality is minimal and does not impact operations.	The application creates a minimal operational exposure. No functional loss and does not impact operations.
<b>Work Outage</b>			
The application failure causes the system to be inoperable or prevents the Customer from performing critical job functions.	The application failure prevents the Customer from performing significant job functions.	The application failure prevents the Customer from performing a small portion of their job, but most tasks are able to be completed.	The application failure prevents the Customer from performing a minor portion of their job, but most tasks are able to be completed.
<b>Number of Clients Affected</b>			
The application failure affects a large number of clients.	The application failure affects a large number of clients.	The application failure affects a small number of clients.	The application failure affects one or two clients.

### 5.3.4 Levels of Service

The levels of service offered by MSI are outlined below. It is the goal of MSI to meet, and exceed when possible, these levels of service. However, in order for MSI to provide timely resolution in accordance with defined levels of service, Solano County must provide adequate personnel to assist in troubleshooting and respond with timely technical information requests. In cases where it is not feasible to provide such resources, the resolution timeline will adjust in accordance with Solano County's availability. Mandatory escalation times begin after the ticket has been received and the TSE has assigned a priority.

#### **Category 1 Support Requests**

MSI support available 24 x 7

Initial MSI response within 2 hours

Mandatory escalation within MSI at 4 hours if not resolved

#### **Category 2 Support Requests**

MSI support during regular support desk hours

Initial MSI response within 2 hours

Mandatory escalation within MSI at 8 hours if not resolved

#### **Category 3 Support Requests**

MSI support during regular support desk hours

Initial MSI response within one business day

Escalation within MSI at 2 days if not resolved

#### **Category 4 Support Requests**

MSI support during regular support desk hours

Initial MSI response within one business day

Escalation within MSI at 5 days if not resolved

**\*If a significant Program Error is uncovered MSI will provide an estimated resolution timeline.**

### 5.3.5 Third Party Support

Motorola Solution's Wave services do not include support for third party programs.

### 5.3.6 Excluded Items

Support Services do not include Professional Services, or any other services not described in this document or services for problems that are subsequently determined by MSI to be not caused by the WAVE Software, including problems with the third party software and hardware or matters generally beyond the control of MSI, such as: (a) use or operation of the WAVE Software except in accordance with the applicable and current documentation and license rights; (b) errors, omissions, damages or wrongful acts, by an operator, user or third party personnel; (c) repairs, maintenance, alterations, relocation, copying, tampering or other conduct not duly authorized in writing by MSI; (d) operation on or in association with hardware or software not recommended by MSI for the WAVE Software; and (e) external causes such as electrostatic or environmental conditions, and accidents including fire, water and lightning.

## **5.4 NETWORK UPDATES STATEMENT OF WORK FOR M2 CORE AND WAVE SOLUTION**

### **5.4.1 Life Cycle Services/SUA II**

This Statement of Work ("SOW") is subject to the terms and conditions of the enclosed Communications System and Services Agreement ("Agreement"). Motorola and Customer may be referred to herein individually as a "Party" or together as "Parties"

### **5.4.2 Description of Service**

Motorola agrees to provide the City of Fairfield, Vacaville and Suisun (Cities) with applicable software and hardware updates and implementation services necessary to maintain their shared ASTRO 25 Trunked Simulcast system at an exceptional level of support. ASTRO 25 system software and hardware updates improve system functionality/operation and extend the useful life of the network.

This service includes 3rd party and Motorola software as well as select hardware to maintain supportability. All updates are pre-tested and certified in a dedicated ASTRO 25 test lab to ensure that they are compatible and do not interfere with the ASTRO 25 network functionality. System updates may also include feature enhancements. At Motorola's option, feature enhancements may be offered for purchase.

The ASTRO 25 software covered under this agreement includes:

- Base stations
- Site controllers
- Comparators
- Routers
- LAN switches
- Servers
- Network management Clients
- Network security devices such as firewalls and intrusion detection sensors
- Associated peripheral infrastructure software

Motorola will provide certified hardware version updates necessary to refresh the system with an equivalent level of functionality. Any hardware versions and/or replacement hardware required to support new features or those not specifically required to maintain existing functionality are not included. Unless otherwise stated, platform migrations are not included.

If originally provided by Motorola, the following hardware components are eligible hardware for refresh when necessary to maintain the system functionality in place at the time this agreement was executed:

- Servers
- PC Workstations
- Routers
- LAN Switches



If originally provided by Motorola, the following hardware components are eligible for board-level refreshes when necessary to maintain the system functionality in place at the time this agreement was executed. A “board-level refresh” is defined as any Field Replaceable Unit (“FRU”) for the products listed below:

- GTR 8000 Base Stations
- GCP 8000 Site Controllers
- GCM 8000 Comparators
- NFM/NFM XC/MOSCAD RTU

The parties agree that this agreement only covers those items expressly stated above. There is no coverage on any additional software or hardware products unless specifically described in this agreement. Motorola may, at its sole discretion, choose to include coverage for other items. Refer to section 1.1.5 for exclusions and limitations.

Motorola will provide implementation services necessary to install the system software and hardware updates. Any implementation services that are not directly required to support the system updates are not included. Unless otherwise stated, implementation services necessary for system expansions, platform migrations, and/or new features or functionality that are implemented concurrent with the system refresh are not included.

Motorola agrees to provide the necessary software design and technical resources necessary to complete system updates.

The pricing in this agreement is based on the system configuration outlined in Section 1.10. This configuration is to be reviewed annually from the contract effective date. Any change in system configuration may require a price adjustment to this agreement.

This agreement applies only to system release versions within the ASTRO 25 7.x platform.

Motorola will issue Software Maintenance Agreement (“SMA”) bulletins on an annual basis and post them in soft copy on a designated extranet site for the Cities’ access. Standard and optional features for a given ASTRO 25 system release are listed in the SMA bulletin.

Coverage Continuity: The parties agree that this agreement requires continuous coverage beginning within (90) days after system acceptance. Beyond (90) days from system acceptance or if payments are discontinued, additional payment(s) will be necessary to cover the period for which coverage was discontinued or delayed. The total of payments for lapses in coverage will not exceed 3 years.

### 5.4.3 Responsibilities

Motorola responsibilities

- Identify and communicate with Cities the scope of system updates as they become available.
- Work with Cities to schedule applicable system updates.
- Assign program management support required to perform system updates as necessary.
- Assign field installation resources required to perform system updates as necessary.
- Assign centralized engineering resources required to perform system updates as necessary.
- Install system updates.
- Deliver impact and change management training as necessary.



- Perform appropriate system backups.
- Work with the Cities to validate that all system maintenance is current.
- Deliver post update implementation training to the Cities as needed.
- Validate all system update deliverables are complete.
- Obtain completion sign off from the Cities.

#### **5.4.4 Customer responsibilities**

- Contact Motorola to schedule and engage the appropriate Motorola resources.
- Cities will allow the permanent installation of a server which will be connected to Motorola and will be used for system auditing, software uploads, and software update installation.
- Assist in site walks of the system during the system audit when necessary.
- Provide a list of any FRUs and/or spare hardware to be included in the system updates when applicable.
- Purchase any additional software and hardware necessary to implement optional system features or system expansions.
- Provide or purchase labor to implement optional system features or system expansions.
- Participate in impact and change management training as necessary.
- Inform system users of system update and scheduled system downtime if necessary.
- Cooperate with Motorola to provide post update implementation training as needed.
- Provide Motorola with completion sign off.

#### **5.4.5 Exclusions and Limitations**

The parties agree that Systems that have non-standard configurations that have not been certified by Motorola Systems Integration Testing are specifically excluded from this agreement unless otherwise agreed in writing by Motorola and included in this SOW.

This agreement does not cover any hardware or software supplied to the Cities when purchased directly from a third party, unless specifically included in this SOW.

This agreement does not cover software support for unauthorized modifications or other misuse of the covered software.

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

#### **5.4.6 Special provisions**

The coverage and the parties' responsibilities described in this Statement of Work will automatically terminate if Motorola no longer supports the ASTRO 25 7.x software version in the Cities's ASTRO 25 Trunked Simulcast system or discontinues this agreement; in either case, Motorola will refund to the Cities any prepaid fees for services applicable to the terminated period.



## 5.4.7 SUA Services

- PURCHASE ORDER ACCEPTANCE. Purchase orders for SUA services and software support, during the Warranty Period or after the Warranty Period, become binding only when accepted in writing by Motorola.
- The Software License Agreement included as Exhibit A to the CSA applies to any Motorola Software provided as part of the SUA transactions.
- The term of this SUA is 10 years, commencing on August 1, 2019. The SUA Price for the 10 years of services is \$ 2,633,887, excluding applicable sales or use taxes but including discounts as more fully set forth in the pricing pages. Because the SUA is a subscription service as more fully described in the applicable SUA Statement of Work, payment is due in advance and will not be in accordance with any Payment Milestone Schedule.
- The System upgrade will be scheduled during the subscription period and will be performed when Motorola's system upgrade operation resources are available. Motorola may substitute any of the promised Equipment or Software so long as the substitute is equivalent or superior to the initially promised Equipment or Software.
- Acceptance of a SUA transaction occurs when the Equipment (if any) and Software are delivered and the SUA services are fully performed; there is no Acceptance Testing with a SUA transaction.
- The Warranty Period for any Equipment or Motorola Software provided under a SUA transaction will commence upon shipment and not on System Acceptance or Beneficial Use, and is for a period of ninety (90) days rather than one (1) year. The ninety (90) day warranty for SUA services is set forth in the SUA Statement of Work.
- In addition to the description of the SUA services and exclusions provided in the SUA Statement of Work, the following apply:
  - Upon reasonable request by Motorola, the County will provide a complete serial and model number list of the Equipment.
  - SUA services exclude the repair or replacement of Equipment that has become defective or damaged from use in other than the normal, customary, intended, and authorized manner; use not in compliance with applicable industry standards; excessive wear and tear; or accident, liquids, power surges, neglect, acts of God or other force majeure events.
  - Unless specifically included in this Addendum or the SUA Statement of Work, SUA services exclude items that are consumed in the normal operation of the Equipment; accessories; and repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or the worldwide web, or for Equipment malfunction caused by the transmission medium.
  - The County will provide Motorola with designated points of contact (list of names and phone numbers) that will be available during the performance of the SUA services.





- The SUA annualized price is based on the fulfillment of the two year cycle. If the County terminates this service during a two year cycle, except for Motorola's default, then the County will be required to pay for the balance of payments owed for the two year cycle if a major system release has been implemented before the point of termination.
- If the County terminates this service and contractual commitment before the end of the term, for any reason other than Motorola's default, then the County will pay to Motorola a termination fee equal to the discount applied to the last three years of service payments related to the term commitment.
- **SUA INFLATION ADJUSTMENT.** For multi-year agreements, at the end of the first year of the Agreement and each year thereafter, a CPI percentage change calculation shall be performed using the U.S. Department of Labor, Consumer Price Index, all Items, Unadjusted Urban Areas (CPI-U). Should the annual inflation rate increase greater than 3% during the previous year, Motorola shall have the right to increase all future maintenance prices by the CPI increase amount exceeding 3%. All items, not seasonally adjusted shall be used as the measure of CPI for this price adjustment. Measurement will take place once the annual average for the new year has been posted by the Bureau of Labor Statistics. For purposes of illustration, if in year 5 the CPI reported an increase of 8%, Motorola may increase the Year 6 price by 5% (8%-3% base).

## 5.5 SYSTEM PRICING CONFIGURATION

This configuration is to be reviewed annually from the contract effective date Any change in system configuration may require a price adjustment (Table 5-2).

Table 5-2: System Pricing Configuration

Description	Qty
<b>Core</b>	
▪ M2 Core	1
<b>Network Management and MOSCAD NFM</b>	
▪ Network Management Clients	0
▪ MOSCAD NFM RTUs	1
▪ UNS	1
<b>Dispatch Console Systems</b>	
▪ Dispatch Centers	5
▪ Console Operator Positions MCC7500	12
▪ ECCGWs	10
▪ AIS	1
<b>Wave Solution</b>	
Wave Solution HW and SW	1



SECTION 6

# PRICING SUMMARY

## 6.1 PRICING

### Solano County M2 Core and Wave Pricing

Equipment and Services	Pricing
Solano County Equipment	\$277,460
<b>Solano County Equipment Discount</b>	<b>(\$47,168)</b>
Solano County Discounted Equipment	\$230,292
Solano County System Implementation and Freight	\$181,211
Solano County Tax (Equipment Only)	\$18,654
Solano County Total System	\$430,157
<b>System Incentive</b>	<b>(\$116,142)</b>
Solano County Grand Total with System Incentive	\$314,015

March 5, 2019 separate pricing for M2 and Wave Solution

### Solano County Wave Pricing

Equipment and Services	Pricing
Solano County Equipment	\$127,460
<b>Solano County Equipment Discount</b>	<b>(\$21,668)</b>
Solano County Discounted Equipment	\$105,792
Solano County System Implementation and Freight	\$20,349
Solano County Tax (Equipment Only)	\$8,569
Solano County Total System	\$134,710
<b>System Incentive</b>	<b>(\$36,372)</b>
Solano County Grand Total with System Incentive	\$98,338

### Solano County M2 Core Pricing

Equipment and Services	Pricing
Solano County Equipment	\$150,000
<b>Solano County Equipment Discount</b>	<b>(\$25,500)</b>
Solano County Discounted Equipment	\$124,500
Solano County System Implementation and Freight	\$160,862
Solano County Tax (Equipment Only)	\$10,085
Solano County Total System	\$295,447
<b>System Incentive</b>	<b>(\$79,771)</b>
Solano County Grand Total with System Incentive	\$215,676

M2 Upgrade and WAVE

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



Motorola Solution M2 Core and existing dispatch centers Advanced Plus Maintenance Services Pricing:

**Solano County Master Site M2 Core and Existing Dispatch Centers Maintenance Annual Pricing**

Advanced Plus Support Services	Year 1	Year 2	Year 3	Year 4	Year 5
On Site Response, Remote Monitoring, Technical Support, Dispatch Service, Infrastructure Advanced Replacement, and Security Update Service, Annual Preventative Maintenance	\$153,436	\$158,039	\$162,780	\$167,664	\$172,694

Advanced Plus Support Services	Year 6	Year 7	Year 8	Year 9	Year 10
On Site Response, Remote Monitoring, Technical Support, Dispatch Service, Infrastructure Advanced Replacement, and Security Update Service, Annual Preventative Maintenance	\$177,875	\$183,211	\$188,707	\$194,368	\$200,199

Motorola Solutions' Life Cycle Services for the M2 Core, existing Dispatch Centers and Wave Solution Pricing:

**Solano County M2 Master Core including Wave Life Cycle Services (SUA II) Annual Pricing**

System Upgrade Agreement II	Year 1	Year 2	Year 3	Year 4	Year 5
SUA II Service Costs	\$257,376	\$260,146	\$262,999	\$265,938	\$268,966

System Upgrade Agreement II	Year 6	Year 7	Year 8	Year 9	Year 10
SUA II Service Costs	\$272,084	\$275,295	\$278,603	\$282,010	\$290,470



### Solano County M2 Master Core Life Cycle Services (SUA II) Annual Pricing

System Upgrade Agreement II	Year 1	Year 2	Year 3	Year 4	Year 5
SUA II Service Costs	\$249,376	\$252,146	\$254,999	\$257,938	\$260,966

System Upgrade Agreement II	Year 6	Year 7	Year 8	Year 9	Year 10
SUA II Service Costs	\$264,084	\$267,295	\$270,603	\$274,010	\$282,470

Motorola Solutions' Wave Maintenance Services Pricing:

### Solano County Wave Solution Maintenance Annual Pricing

Advanced Plus Support Services	Year 1	Year 2	Year 3	Year 4	Year 5
Remote Tech Support, Software Updates, Onsite Support	\$6,401	\$6,529	\$6,660	\$6,793	\$6,929

Advanced Plus Support Services	Year 6	Year 7	Year 8	Year 9	Year 10
On Site Response, Remote Monitoring, Technical Support, Dispatch Service, Infrastructure Advanced Replacement, and Security Update Service, Annual Preventative Maintenance	\$7,067	\$7,209	\$7,353	\$7,500	\$7,650

Motorola will submit invoices for the annual ARUS and Advanced Plus Maintenance Services and Life Cycle Services (SUA II) in advance of each year.

## 6.1.1 Payment Terms

Please refer to Exhibit B: "Payment" in the Communications Systems Agreement (CSA).

SECTION 7

# TERMS AND CONDITIONS

This proposal is subject to the terms and conditions of the Communications System Agreement (CSA), entered into between the County of Solano and Motorola dated March 24, 2016, together with its Exhibits and any additional terms contained in this proposal.

