Public Communication Equipment and Services

CTR046830

Motorola Solutions Inc.

This contract is for public communication equipment and services for all State of Arizona Agencies, Boards and Commissions including members of the State of Arizona Purchasing Cooperative. The sections awarded include:

- **2-Way Radios**
- **Digital Microwave Terminals**
- **LMR Base Station Antennas, Microwave Antennas**
- **Radio Dispatch Consoles**
- **Back-up Batteries**
- **Prefab Communications Shelter**
- **Service**

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The solicitation for this contract was ADSPO19-00008376 and was started in ProcureAZ. The solicitation file can be found in APP under BPM001941.

Attachment 1

Offer and Acceptance Form

SUBMISSION OF OFFER: Undersigned hereby offers and agrees to provide Biometric Products and Services to in compliance with the Solicitation indicated above and our Offer indicated by the latest dated version below:

Initial Offer:	1. **September 4, 2018** (date)	LM (initial)						
Revised Offers:	2. x (date #1)	(initial)	3. x (date #1)	(initial)	4. x (date #1)	(initial)		
	5. x (date #4)	(initial)	6. x (date #5)	(initial)	7. x (date #6)	(initial)		
Best and Final Offer:	8. **September 16, 2019** (date)	LM (initial)						

Motorola Solutions, Inc. (Offeror company name)	(Signature of person authorized to sign Offer) LM (Initials)
2900 S. Diablo Way Ste 150 (Address)	Larry Mabry MSSSI Vice President & Director Sales (Printed name and title)
Tempe, AZ 85282 (City | State | ZIP)	Walter Whatley Senior Account Executive (Contact name and title)
36-1115800 (Federal tax identifier (EIN or SSN))	Walter.whatley@motorolasolutions.com 520-457-8604 (Contact Email Address / Contact phone number)

CERTIFICATION: By signature in the above, Offeror certifies that it:

1. will not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11246, [Arizona] State Executive Order 2009-9 or A.R.S. §§ 41−1461 through 1465;
2. has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the submitted offer. Failure to provide a valid signature affirming the stipulations required by this clause will result in rejection of the Offer. Signing the Offer with a false statement will void the Offer, any resulting contract, and may be subject to legal penalties under law;
3. complies with A.R.S. § 41-3532 when offering electronics or information technology products, services, or maintenance; and
4. is not debarred from, or otherwise prohibited from participating in any contract awarded by federal, state, or local government.

ACCEPTANCE OF OFFER: State hereby accepts the initial Offer, Revised Offer, or Best and Final Offer identified by number **#** at the top of this form, and which was dated **date** (the Accepted Offer). Offeror is now bound (as Contractor) to carry out the Work under the attached Contract, of which the Accepted Offer forms a part. Contractor is cautioned not to commence any billable work or to provide any material or perform any service under the Contract until Contractor receives the applicable Order or written notice to proceed from Procurement Officer.

State's Contract No. is: CTR046830 **The effective date of the Contract is: 10-09-2019** **Contract awarded: 10-09-2019**

(Procurement Officer signature)	Procurement Officer, James Atkins

Part 2: Scope, Pricing and Terms and Conditions (Rev 2)

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1.0 Background

1.1 The intent of this Solicitation is to provide both public communications equipment and services to support the State of Arizona's Agencies, Boards and Commissions including members of the State of Arizona Purchasing Cooperative.

1.2 The Solicitation shall describe the State's requirement and minimum technical specifications for the equipment and services the State wishes to purchase under the resultant contract(s).

1.3 This is a multi-award contract with Offeror ability to provide proposal's on one or more sections of this Scope of Work. Award will be made by Scope of Work Sub-section(s) two (2) through nine (9) independently.

2.0 2-Way Radios

2.1 **Analog & Digital Vehicular Mounted Mobile Radio Equipment**: Various types of vehicular-mounted mobile radio equipment for VHF, UHF, and 700/800 MHz trunked and conventional, analog and digital radio equipment

2.2 **Mobile Data Radio Vehicular Mounted Equipment**: UHF or 700/800 MHz mobile digital data link radios.

2.3 **Desk-top Analog &Digital Base Station Radio Equipment:** High-quality VHF, UHF, and 700MHz, 806-869 MHz, conventional, and 700/800 MHz trunked, multi-channel base/control stations using phase/frequency or digital modulation.

2.4 **Analog & Digital Personal/Portable Radio Equipment:** Various types VHF, UHF, and 700/800 MHz, conventional and trunked personal/portable radio transceivers.

2.5 **Analog & Digital Motorcycle Rear-mounted Radios:** 160+ channel, two-piece, VHF High-band, UHF, and 700/800 MHz, all solid-state motorcycle radio.

2.6 **Low Power Vehicular Repeater:** VHF, UHF, and 700/800 MHz in-vehicle mounted repeater, for attachment to the vehicle's mobile radio and extending the range of the user's portable radio.

2.7 **Multi Band Radios:** Mobile and potables capable of operating on more than one public safety band.

2.8 **Base/Mobile Relay Station Fixed Radio Equipment:** VHF High-band, UHF, 700/800 MHz continuous duty, mobile relay/base station equipment using phase, frequency, or digital modulation.

2.9 **Fixed Link Base Radios:** VHF, UHF, and 700/800 MHz fixed radios for site to site linking.

2.10 **Communications Service Monitors:** Communications Service Monitors for use in the maintenance of Arizona's Radio Communications Systems.

The following are definitions of terminology as they apply to the State's requirements as stated in this solicitation:

- ***VHF (High-band):*** means 150-174 MHz, additional coverage desirable but not required
- ***UHF***: means 450-470 MHz, additional coverage desirable but not required.
- ***700/800***: means radios capable of operation across the complete 700 and 800 MHz public safety band (769-869)

- ***800***: means radios capable of operating on FCC designated Public Safety LMR channels above 806 MHz
- ***Narrowband***: radios meeting FCC 12.5 KHz channel widths and meeting the mask requirements of FCC Part 90.210d.
- ***FDMA***: Frequency Division Multiple Access as applies to P25 or DMR.
- ***TDMA***: Time Division Multiple Access as applies to P25 Phase II, or Open Sky.
- ***P25*:** Project 25 per TIA standards AA102 etal
- ***High Tier Subscriber Equipment***: means radios designed for Public Safety applications with the highest transmitter and receiver performance specifications: Frequency Stability, Hum and Noise, Spurious Emissions, High Power; Receive Adjacent Channel Selectivity, Spurious and Intermodulation Rejection. Available features like: P25 conventional and trunking operations FDMA – TDMA, high channel / talk group count (1000+), AES / DES encryption, MultiKey, OTAR, OTAP, multiple display options, including multi–line alpha-numeric, keypad; Meets Mil Spec 810 C/D/E/F.
- ***Mid-Tier Subscriber Equipment***: means radios designed for Public Safety applications with good transmitter and receiver performance specifications: Frequency Stability, Hum and Noise, Spurious Emissions, Mid Power; Receive Adjacent Channel Selectivity, Spurious and Intermodulation Rejection. May include features like: P25 trunk and conventional operations, reduced channel / talk group count (100+), Encryption; Meets Mil Spec 810 C/D/E/F. High-Tier performance specifications apply unless otherwise listed.
- ***Low Tier Subscriber Equipment***: means radios designed for Business & Industry applications with good transmitter and receiver performance specifications for: Hum and Noise, Spurious Emissions; Receive Adjacent Channel Selectivity, Spurious and Intermodulation Rejection, Mid Power & reduced channel count; Meets Mil Spec 810 C/D/E/F.

2.11 **Radio Standards** - The radio equipment provided by the contractor shall meet or exceed EIA, TIA, FCC, IEEE and NEMA requirements, standards, specifications, practices and/or procedures current at the time of contract award. All equipment will be FCC Type Approved for class of service specified. The measurement procedures and performance standards for land mobile radio equipment specified herein shall comply with the TIA/EIA-603 standards. Standards for equipment employing digital C4FM or CQPSK modulation shall comply with the TIA/EIA-102 standards. Where the State's specification are more stringent than those of EIA/TIA, the State's specification shall apply.

2.12 **Transmitter Characteristics** - Transmitter shall use only solid-state active components. Synthesizing techniques of frequency generation are required for all but the Low-Tier models. Each Low-Tier unit will have a solid state sub-audible tone encoder.

2.12.1 Operating Frequency: The transmitter shall be factory supplied and aligned to the specific RF frequencies given in the purchase order.

2.12.2 Transmitter Standards: The transmitter shall meet or exceed the minimum standards as set forth in EIA/TIA Standard RS152B. Where the requirements of the State's specifications are more stringent than those of the EIA, the State's specifications shall apply. The transmitter shall comply with all FCC Rules and Regulations in effect on the date of issuance of the purchase order.

2.12.3 System Modulation, Narrowband:

2.12.3 (a) High-Tier: VHF/UHF/700/800: Analog - 11K2F3E / (800 -16K0F3E); Digital - 8K11F1E, and others in compliance with FCC efficiency standards

2.12.3 (b) Low-Tier: VHF or UHF: +/-2.5 KHz (11K2F3E)

2.12.4 Audio Frequency Harmonic Distortion:

High-Tier: All Bands: Less than 3% at 1000 Hz and 60% maximum deviation

Low Tier: All Bands: Less than 5% at 1000 Hz and 60% maximum deviation.

2.12.5 Carrier Frequency Stability: Radios offered under this contract shall meet or exceed the FCC stability requirements listed under 47CFR90.213 and 47CFR90.539. High-Tier radios are expected to exceed these specifications as applicable. All units will be priced and sold meeting these specifications.

2.12.6 Frequency Spread: Per Band definition; with no degradation in power output.

2.12.7 RF Output Impedance: 50 ohms.

2.12.8 Time-out Circuit: The transmitter shall be equipped with an adjustable time-out timer circuit that will turn off the transmitter after continuous transmitting. An audio tone shall be provided that will alert the operator that the transmitter has been timed out. Releasing the microphone push-to-talk button shall instantly reset the timer.

2.12.9 Continuous Toner Encoder: The conventional (non-trunked) transmitter shall be supplied with the capability to generate up to 32 sub-audible tones to modulate the transmitter for the full duration of all transmissions. The tone generators shall be designed for continuous operation with total harmonic distortion less than 10%. The tone encoder shall conform to all standards of EIA/TIA Standard RS-220A. There shall be available twenty (20) narrow band tone channels between 100.0 and 192.8 Hz inclusive (of Groups A and B) in accordance with EIA/TIA Standard RS-220A for continuous tone-controlled squelch system.

The frequency of the sub-audible tone generator shall be controlled by a solid-state tone network or be software based and shall be maintained within +/- 0.5% of its specified frequency over the temperature range of -30 degrees C to +60 degrees C.

The transmitter unit shall transmit a special sub-audible tone burst upon release of the push-to-talk switch. This burst shall last 160 +/- 40 msec. and be the same frequency as the regular tone supplied for a particular channel but out of phase by 180 +/-60 degrees from the previously transmitted tone. This circuitry shall be explicitly designed for the elimination of receiver "squelch tail."

2.12.10 Final Amplifier Protection: The transmitter output stage shall be protected from burnout due to excessive antenna VSWR. No damage shall result when the transmitter is subjected to a short or open circuit antenna output during continuous keying for a one minute period.

2.13 **Receiver Characteristics -** The receiver shall be completely solid-state, utilizing only high-quality transistors, integrated circuits, diodes, and other solid-state devices. The receiver shall be rated for continuous operation. A channel scanning feature with selectable priority may be listed as a separate option.

2.13.1 Operating Frequency: Per the band definitions.

2.13.2 Receiver Standards: The receiver shall meet or exceed the "minimum standards" as set forth in EIA/TIA Standard RS204C. Where the requirements of the State's specification are more stringent than those of the EIA/TIA, the State's specifications shall apply.

Definitions, standards, and methods of measurements shall conform to EIA/TIA Standard RS204C, unless specifically described otherwise.

2.13.2 (a) EIA 12 dB SINAD Sensitivity:

- High-Tier: All Bands: 0.25 microvolt or better, Analog
- Mid-Tier: All Bands: 0.3 microvolt or better, Analog
- Low-Tier: All Bands: 0.35 microvolt or better, Analog

2.13.2 (b) RF Input Impendence: 50 ohms

2.13.3 Squelch Circuitry: The conventional analog (non-trunked) receiver shall be supplied with carrier squelch and tone-coded squelch capability for a minimum of 32 CTCSS tone frequencies. The tone frequencies will be specified in the State purchase order. Tone decode circuitry shall be the sub-audible CTCSS type as described in EIA/TIA Standard RS-220A and shall meet all specifications of RS-220A.

There shall be two modes of operation, to be selected at the will of the operator. These are:

- Carrier squelch operation - The receiver squelch opens for any sufficiently strong on-frequency RF carrier; and
- Tone-coded squelch and carrier squelch operation- The receiver is muted until the incoming on-frequency RF carrier is modulated by the proper continuous sub-audible tone and the on frequency RF carrier is sufficiently strong to break squelch as determined by the carrier squelch adjustment control. This "and" squelch condition shall remain continuous for the duration of carrier reception. Selection of the mode of operation shall be made by manual switch control.

2.13.4 Carrier Actuated Squelch Circuit: The carrier actuated squelch shall be of the adjustable sensitivity type with a continuously variable control. The squelch circuit shall be designed to not respond to noise bursts.

2.13.5 Tone Actuated Squelch Circuits: The tone actuated squelch circuit shall conform to all standards of EIA/TIA Standard RS-220A. Continuous presence of the proper modulating tone shall be required to keep the squelch open when in the carrier squelch and tone-coded squelch mode of operation.

2.13.6 Tone Squelch Characteristics:

- Tone deviation shall not exceed 10% of the peak system deviation. A tone signal 3% removed from the frequency of the proper tone shall not operate the squelch circuit, regardless of the level recovered at the discriminator.
- The tone modulation shall be filtered from the voice signal such that with tone deviation set at 20% of the peak system deviation, the tone fundamental frequency shall be at least 30 dB below the level of a 1000 Hz tone transmitted at 2/3 rated system deviation with the receiver adjusted for maximum rated audio output.
- The tone squelch circuit shall respond by squelching the receiver within 160 +/-40 msec. of a tone burst 180 +/-60 degrees out of phase with the previous tone. This circuitry shall be explicitly designed to eliminate receiver "squelch tail."

2.14 Transceiver Unit Specifications:

2.14.1 Antenna Switching. Antenna switching must be accomplished by a hermetically sealed relay switch or some other reliable mechanical or electrical means.

2.14.2 Environmental Standards. All equipment provided under this specification shall be tested to, and conform to, the requirements of Mil Std. 810C/D/E for shock, vibration, humidity, dust, salt, fog, and other weather conditions.

2.15 Trunking Operation Option:

2.15.1 High Tier: Trunked radio options will be considered. Any such analog trunked radio shall meet the same technical RF specifications as the conventional model. Analog trunked radios shall conform to APCO 16 protocols. Digitally trunked radios should be of the same model line as the conventional radio, and shall be fully compatible with the P25 TIA/EIA Phase I Standard for FDMA, or the TDMA P25 Phase II or Open Sky Public Safety Trunking.

2.15.2 Low Tier: Trunked radio options will be considered. Any such trunked radio shall meet the same technical RF specifications as the conventional model.

2.15.3 Auxiliary Test Equipment: Associated test equipment such as plug-in service meters, computer interface cables/boxes, and test bench control set-ups may be offered. Any designated service meter should be compatible with the transceiver metering socket(s) and have scale calibrations consistent with the readings called for in the service manual. The test-bench control set-up shall include the proper style control heads, speaker, microphone, metering panel, and interconnecting cabling at least 6 feet in length. A price shall be included for an optional frequency programmer and software.

2.16 ANALOG & DIGITAL VEHICULAR MOUNTED MOBILE RADIO EQUIPMENT

2.16.1 **Model Specifications**

2.16.1 (a) **High-Tier, Mid-Tier:** The following specification describes various types of vehicular-mounted mobile radio equipment. These radios may be either one-piece (dash mount) or two-piece (remote mount). These radios are: VHF High-band, UHF and 700/800 MHz radios capable of analog conventional and trunked; and digital conventional and trunked radio operation.

2.16.1 (b) **Low-Tier:** The following specification describes various types of vehicular-mounted mobile radio equipment; High-band VHF, UHF, and 800 MHz. These radios may be either one-piece (dash mount) or two-piece (remote mount).

2.17 Electrical Specifications:

The equipment shall be designed to operate from a nominal 12 volt negative ground vehicle electrical system. Adequate overload and reverse polarity protection shall be provided. Control circuits shall be arranged so that the vehicle ignition switch will disable both the transmitter and receiver when in the OFF position, but allow operation when in the ACCESSORY position.

2.18 Transmitter Characteristics:

The transmitter shall be of modern solid-state design.

2.18.1 **Carrier Power Output Rating: (all minimum intermittent power at 20% duty cycle)**

2.18.2 **High Tier VHF:** 40 watts or, 50-110 watts, adjustable UHF: 40 watts or 50-100 watts, adjustable 700-800 MHz Trunked: 10-30 Watts

2.18.3 **Low-Tier VHF**: 25 Watts minimum, adjustable UHF: 25 Watts minimum, adjustable 700-800 MHz: 15 Watts minimum, adjustable.

2.18.4 Conducted and Radiated Spurious Emission Attenuation:

2.18.5 **High-Tier** -75 dB or greater

2.18.6 **Mid-Tier** -70 dB or greater

2.18.7 **Low Tier** -55 dB or greater

2.18.8 **Audio Frequency Harmonic Distortion:**

2.18.8 (a) High-Tier - All Bands: Less than 3% at 1000 Hz and 60% maximum deviation

2.18.8 (b) Low Tier - All Bands: Less than 5% at 1000 Hz and 60% maximum deviation

2.18.9 **FM Hum and Noise Attenuation:**

2.18.9 (a) **High-Tier** -40 dB (12.5 KHz)

2.18.9 (b) **Low Tier** -35 dB (12.5 KHz)

2.19 Receiver Standards

The receiver shall meet or exceed the "minimum standards" as set forth in EIA/TIA Standard RS-204C. Where the requirements of the State's specification are more stringent than those of the EIA/TIA, the State's specifications shall apply. Definitions, standards, and methods of measurements shall conform to EIA/TIA Standard RS-204C, unless specifically described otherwise.

2.19.1 **Adjacent Channel Selectivity Desensitization**

2.19.1 (a) High-Tier -70 dB or better (12.5 KHz)

2.19.1 (b) Mid-Tier -65dB or better (12.5 KHz)

2.19.1 (c) Low-Tier -60 dB or better (12.5 KHz)

2.19.2 **Spurious Response Attenuation:**

2.19.2 (a) High-Tier -80 dB, or better (12.5 kHz)

2.19.2 (b) Low-Tier -70 dB, or better (12.5 kHz)

2.19.3 **Intermodulation Spurious Attenuation:**

2.19.3 (a) High-Tier -80 dB, or better (12.5 kHz)

2.19.3 (b) Low-Tier -70 dB, or better (12.5 kHz)

2.19.4 **Audio Power Output:**

2.19.4 (a) High-Tier 10 watts minimum, 3% maximum distortion

2.19.4 (b) Low-Tier 7.5 watts minimum, 5% max. dist., external speaker

2.20 Transceiver Unit Specifications:

2.20.1 **Power Requirements.** The unit shall draw less than 1.0 amp of current with the receiver and transmitter in a quiescent "ON" condition. The transmitter/receiver shall be a complete integral unit with all previously specified items, including AF or RF power amplifier built internally into the transceiver unit.

2.20.2 **Physical Construction**

- The complete transmitter and receiver combination shall be mounted in a single housing.

- The housing shall be furnished in enamel or lacquer over a non- ferrous plating of A-N standard chrome type metal primer or equal.
- The housing shall be of steel or equivalent construction and not louvered, to inhibit the entrance of dust and other foreign matter. A locking device shall be used to prevent the unit from being removed from its mounting by unauthorized personnel.
- All interconnection cabling between the transmitter, receiver, and power supply shall be accomplished internally in the equipment housing. With exception of the power, control, and antenna cabling, there shall be no external connections or cabling on the equipment housing.
- All frequency determining elements in the transmitter and receiver shall have a locking or clamping device to ensure permanent connection during operation.
- The maximum transmitter/receiver dimensions shall not exceed 2.5" x H x 7.0" W x 13.0" L. All but the High-Tier Model must weigh less than 8.5 lbs. The complete mobile unit shall be capable of normal operation when mounted in any physical position.

2.20.3 **Interconnecting Cables.** All cables and wires shall be furnished to interconnect the radio set with its accessories and the vehicle's electrical system. Cables shall be insulated, waterproofed and equipped with appropriate connectors. All plug-in connectors shall be of the heavy-duty type and shall be provided with threaded coupling rings or other substantial fool proof locking devices to prevent accidental disconnect.

2.21 **Supplied Components:** The vendor shall supply all necessary components such as cased permanent magnet type loud speaker, combination transmitter/receiver, separate control head, a palm -type microphone, all ROMS, necessary control, power and cables, and all required mounting hardware as part of the Low-Tier transceiver package.

2.21.1 **Microphone and Control Head**

- A palm-type dynamic low impedance microphone with preamplifier and spring clip shall be supplied with each mobile unit. The microphone shall be ruggedly constructed to withstand the severe usage of mobile operations and shall have a push-to-talk switch mounted on the microphone housing. The microphone shall be provided with a nominal 4 ft. length self-retracting coil type cord. A separate matching control head (not part of the microphone) including all controls required for operation of the transmitter/receiver equipment shall be furnished as part of the equipment.
- The control head for a 2-piece control unit shall be capable of mounting on the vehicle dash or floorboard and a suitable inter-cabling kit shall be provided to interconnect the control head and the transmitter/receiver equipment. The control cable to be supplied shall be at least 20 feet in length and shall not have any intermediate junction boxes or barrier strips.
- The control head shall incorporate as a minimum:
  1. An ON and OFF switch.
  2. An indicator lamp to indicate that the radio is on.
  3. A squelch sensitivity control.
  4. Tone squelch disable switch, which may be located on the microphone hang-up brackets.

5. A volume control button or knob. (Clockwise Volume increase)
6. A red light that illuminates when the transmitter push-to-talk switch is activated.
7. Channel (Talk Group) selection control switch or knob.
8. Scan switch with channel priority select.
9. (**High-Tier/ Mid-Tier Requirement only**) A LCD alphanumeric readout display for channel information.

- All indicator lights shall be LED or LCD, or some other proven long-life illumination device (30,000 hour average life or better for High-Tier, 10,000 hour average life or better for all other models). All background lighting shall be diffused and non-glaring, with intensity sufficient for high ambient daytime lighting.
- The alphanumeric display control head shall be factory preprogrammed to the customer's channel labeling requirements. Radio frequency channeling shall also be preprogrammed at the factory.

2.21.2 **Loud Speaker.**
A heavy-duty permanent magnet loud speaker rated for a minimum of 10 watts and mounted in a heavy metal or high impact plastic case with mounting brackets shall be provided.

2.21.3 **Power Cable**.
One battery cable (hot) of at least 22 feet in length shall be supplied with each unit.

2.22 Optional Accessories:

The following accessories to the mobile unit are desired:

- **(High-Tier, Mid-Tier,)** Digital voice encryption, including AES and DES.
- **(High-Tier, Mid-Tier, Low-Tier)** Digitally controlled remote control head with alpha/numeric readout.
- (**High-Tier, Mid-Tier, or Low-Tier)** Analog or digital voice encryption, DTMF tone generator from microphone.

2.23 Servicing:

Transmitter/receiver equipment shall be readily removable from the mount for routine servicing. There shall be provisions for convenient metering of all essential transmitter and receiver circuits from multi-pin metering socket(s). All metering points shall be properly decoupled and connected to the metering socket(s). Provision for automated test set radio analysis is acceptable. All circuit modules shall be easily accessible plug-in printed circuit type fiberglass boards. Easy access shall be provided to all other portions of the unit.

2.24 <u>MOBILE, DATA RADIO, VEHICULAR MOUNTED EQUIPMENT</u>

This specification describes the minimum requirements for a UHF or 700/800 MHz mobile digital data link radio. The radio shall operate on a 25 KHz bandwidth channel at various data speeds from 19.2 Kb/sec to 44.3 Kb/sec, or 9.6 Kb/sec to 22 Kb/sec on a 12.5 KHz channel, or greater, depending upon signal conditions and BER conditions. Diversity receiver technology is encouraged, but not mandatory. Specifications shall meet voice radio specification unless otherwise listed.

2.24.1 **Transmitter Characteristics:**

2.24.1 (a) Operating Frequency. The transmitter shall be capable of operating on at least 16 separate conventional frequencies. The transmitter shall be factory supplied and aligned to the specific RF frequencies given in the purchase order.

Carrier Power Output Rating: (all minimum intermittent power at 20% duty cycle)
UHF: 10-40 Watts
800 MHz: 10-35 Watts
900 MHz: 10-25 Watts

- **System Modulation:**

  UHF/800 MHz: Digital (8K6DF1D, 15K3F1D, 15K0F1D, 15K6F1D

- **Conducted and Radiated Spurious Emission Attenuation:**

  UHF/800 MHz: -75 dBc

- **Harmonic Emission Attenuation**:

  UHF/800 MHz: -80 dB

- **FM Hum and Noise Attenuation:**

  UHF/800 MHz: -40 dB below 60% max deviation

2.25 Receiver Characteristics:

2.25.1 **Operating Frequency**

The receivers shall be capable of receiving on a minimum of 16 channels at UHF 450 MHz, and at 800 MHz.

2.25.2 **Receiver Standards:**

- **EIA 12 dB SINAD Sensitivity:**

  All Bands: 0.35 microvolts

- **Adjacent Channel Selectivity Desensitization:**

  UHF/800/900 MHz: 65 dB (12.5 KHz narrowband digital)

  UHF/800 MHz: 75 dB (wideband 25 KHz)

- **Spurious Response Attenuation:**

  UHF: -80 dB

  800/900 MHz: -80 dB

- **Intermodulation Spurious Attenuation:**

  UHF/800 MHz: -75 dB

- **Frequency Stability:**

  UHF/800/900 MHz: 1.5 ppm

2.26 DESK-TOP ANALOG & DIGITAL BASE STATION RADIO EQUIPMENT:

This specification describes low and mid power radios, for desktop or wall mount, for use either as a local base or as a control station for a repeater or trunked network.

2.26.1 This device has an integrated housing with the AC power supply and the radio.

2.26.2 An option for this class is a remote line interface.

2.26.3 Offerings shall meet the corresponding mobile radio applications.

2.27 ANALOG & DIGITAL PERSONAL /PORTABLE RADIO EQUIPMENT

2.27.1 **Model Specifications**

2.27.1 (a) High-Tier

This specification describes various types VHF, UHF, and 700-800 MHz, narrow band, conventional and trunked personal/portable radio transceivers.

Specifications for battery charging units and jerk-and-run mobile radio converter consoles are also included.

2.27.1 (b) Mid-Tier

This specification describes various types VHF, UHF, and 700/800 MHz analog, digital, conventional and trunked personal/portable radio transceivers.

2.27.1 (c) Low-Tier

This specification describes various types VHF, UHF, and 800 MHz analog conventional and trunked personal/portable radio transceivers

2.28 Transmitter Standards

Definitions, standards, and methods of measurement shall conform to EIA Standard RS-316B, unless otherwise noted.

2.28.1 (a) Carrier Power Output

- High-Tier

VHF: 5 watts minimum

800 MHz: 3 watts minimum

- Low-Tier

2 watts minimum

2.28.1 (b) Spurious and Harmonic Emission

- High-Tier -75 dBc
- Low-Tier -60 dBc

2.28.1 (c) FM Hum and Noise

- High-Tier -40 dB or better (12.5 kHz)
- Low-Tier -35 dB or better (12.5 kHz)

2.28.1 (d) Transmit Audio Distortion

- High-Tier Less than 3%
- Low-Tier Less than 5%

2.29 Receiver Characteristics

2.29.1 Adjacent Channel Selectivity

• High-Tier -61 dB or better (12.5 kHz)

• Low-Tier -50 dB or better (12.5 kHz)

2.29.2 Intermodulation

- High-Tier -75 dB or better (12.5 kHz)
- Low-Tier -60 dB or better (12.5 kHz)

2.29.3 Spurious and Image Rejection

- High-Tier -75 dB or better (12.5 kHz)
- Low-Tier -60 dB or better (12.5 kHz)

2.29.4 Audio Power Output

- High-Tier 500 mw at less than 3% distortion
- Low-Tier 500 mw at less than 5% distortion

2.30 General Electric and Mechanical Characteristics:

2.30.1 **Components Included:**

The vendor shall supply all necessary components, such as transceiver, battery, and flexible antenna.

The radio shall effectively have the following exterior controls: Power on/off, volume, channel selector, and push-to-talk switch. The radio shall be supplied with an integral microphone and loud-speaker. The push-to-talk switch shall be located on the side of the transceiver so it may be conveniently depressed while speaking into the microphone.

2.30.2 **Programming:**

- Each unit under this section except for the Low-Tier model shall be completely Field programmable. All channel information such as transmit and receive RF frequencies; CTCSS tone frequencies, and anything else which would be functionally tied to the channel selector of the radio, shall be fully field programmable and reprogrammable utilizing a single programming unit.
- Field Programmer - Each Vendor shall provide as an option, a field programming unit which is designed to fully program the channel personality of each radio under this section. The programmer may either be a self-contained programming unit, or the programmer may consist of an interface unit and software to convert a personal computer to a field programmer.

2.31 Battery Cycle

The rechargeable battery supplied with each radio shall have the capacity to provide at least 8 hours of service when used in a 5% transmit, 5% receive, 90% standby duty cycle.

2.32 Battery Chargers

2.32.1 **High-Tier:** Single and multiple (minimum 5 unit) battery chargers shall be available and priced separately on the price pages. The chargers shall recharge a completely discharged battery within 3 hours; thereafter a low (trickle) charge rate shall be available.

The chargers shall be UL approved and operate from a 120-volt A.C., 60 Hz power source. Protection shall be provided to prevent battery damage by over-charging or over-heating.

2.32.2 **Low-Tier:** A single unit battery charger shall be available and priced separately on the price pages. The charger shall recharge a completely discharged battery within 14 hours; thereafter a low (trickle) charge rate shall be available. The charger shall be UL approved and operate from a 120-volt A.C., 60 Hz power source. Protection shall be provided to prevent battery damage by over-charging or over-heating.

2.33 Mobile Radio Converter Console and Charger (High-Tier Model Only):

2.33.1 **Availability**: There should be available, as an extra option, a mobile charger/converter console. The charger/converter console shall conform to the following criteria:

1. The vehicular chargers shall accept both VHF, UHF, 700/800 portables.

2. Circuitry shall be incorporated in the charger which will prevent over charging the battery if it is left on charge indefinitely.

3. The unit shall completely recharge either low or high capacity batteries in three hours or less.

4. A temperature sensing logic circuit shall be provided that prevents charging a battery that is too hot or cold for reliable safe charging.

5. When the portable is in the vehicular charger, the battery shall be electrically disconnected and the portable shall be powered from the vehicle battery. Operation of the portable in the charger shall not drain or prevent the portable battery from charging. It shall be possible to use the portable in the charger even if its battery is dead.

6. Audio power amplifier and charger circuitry shall be turned on by insertion of the portable in the charger and turned off by removal of the portable from the charger.

7. The charger/converter shall provide the vehicle enclosure for the radio and shall provide for the following items:

- Connects the radio to the external antenna.
- Connects the radio to the vehicle microphone.
- Connects the radio to the vehicle audio amplifier and speaker.
- Connects the radio to the charging circuit.

2.33.2 A key locking assembly shall be furnished to provide for locking the radio in the charger unit. The charger/converter mounting shall meet applicable federal safety standards for automotive accessories. A red LED "Transmit" indicator.

2.33.3 Accessories - Each charger/converter shall include the following accessories: • Microphone with coiled cord and connector.

- A 12 watt amplifier and speaker.
- Mounting brackets and hardware to mount the charger and its accessories.
- If a special calibrator is required to adjust the chargers, one shall be furnished.
- Special 12 watt speaker volume control or pad. Each 12 watt speaker amplifier, or the vehicle charger, shall incorporate a variable pad or volume control to allow for

presetting the portable volume control to a normal listening level, and then when the portable is inserted into the vehicular charger, the volume level will be correct for vehicular use without further adjustment.

2.33.4 Power Requirements: The charger/converter shall be designed to operate from a normal 12 volt negative ground automotive electrical system. The reference voltage shall be established at 13.6 volts DC.

2.33.5 Mechanical Adjustment: The vehicular charger shall be mechanically adjusted by the factory before delivery and shall not require further adjustment by the buyer prior to being placed into service. All mechanical adjustments shall have locking devices to ensure their continued alignment during operation. Proper operation of the vehicular charger includes the unit's ability to lock in and release the portable radio in a smooth and easy manner without binding. All electrical functions of the unit shall be operational with the portable radio properly locked in. The pins contacting the portable radio shall be a heavy-duty type, capable of withstanding multitudinous insertions and removals of the radio from the charger.

2.34 ANALOG & DIGITAL MOTORCYCLE REAR-MOUNT RADIO:

This specification describes low and mid power radios, for motorcycle use. Offerings shall meet the corresponding mobile radio applications.

2.34.1 **Installation:**
The radio unit shall be designed for two-piece rear fender/handlebar control head mounting on Kawasaki, Honda, BMW, or Harley Davidson motorcycles, and shall meet Federal safety requirements.

2.34.2 **Interconnecting Cables:**

2.34.2 (a) All cables and wires shall be furnished to connect the unit to its associated control head and to interconnect the mobile unit with its accessories and the vehicle electrical system. Cables shall be well insulated, waterproofed and equipped with appropriate connectors.

2.34.2 (b) Connectors shall have a screw fastener to mechanically secure the connectors.

2.34.3 **Control Panel:**

The control panel shall be functional, attractive and include all facilities for operating the radio. Controls shall include on-off switch, volume control and squelch disable switch, a red light indicator for transmitter operating, a frequency selection switch for multifrequency requirements, an alpha/numeric channel indicator display, and a Priority Scan enable switch. The control panel shall be weather proof.

2.34.4 **Microphone:**

2.34.4 (a) A military palm-type, noise-canceling microphone shall be supplied as part of the equipment. The microphone shall be a dynamic or magnetic type, and shall include a convenient push-to-talk button for transmitter control. Option helmet (head set) microphones are encouraged to be listed.

2.34.4 (b) The microphone cord shall be a retractable type, with conductors of tinned metallic stranded wire not smaller than AWG size 30. The microphone cord

shall be terminated with a separate screw-on male connector or telephone type modular connector, for mating with the receptacle supplied on the radio.

2.34.5 **Optional Weatherproof Housing:**

2.34.5 (a) Housing shall provide a weatherproof seal to the elements and shall be capable of preventing unauthorized access to the radio by some type of key lock mechanism. Housing should also be capable of supporting an antenna mount.

2.34.5 (b) Weatherproof Housing shall be included as a purchase option of the radio.

2.34.6 **Power Supply:**

2.34.6 (a) The power supply shall be designed to operate from a normal 12 volt negative ground motorcycle electrical system. The reference voltage shall be established at 13.6 VDC. DC input to the radio shall be adequately filtered to exclude all alternator noise.

2.34.6 (b) The power supply, and associated transmitter and receiver, shall be designed so that no degradation shall result (except for a 3 dB loss in transmitter power) in the receiver audio output, squelch sensitivity and SINAD sensitivity if the power supply voltage is varied +/-10% from 13.6 VDC.

2.34.6 (c) The power supply, transmitter, and receiver shall be adequately protected by replaceable type fuses or circuit breakers.

2.35 FIXED LINK BASE RADIOS

The following items are system specifications and shall be determined on a per channel basis, as appropriate, for two link transceivers and associated equipment.

2.35.1 **Power Requirements**

Each low power transceiver shall operate from a negative ground +12.6 volt supply. The transmitter current drain shall be adjustable to less than 1.0 amps when transmitting (at reduced power). The complete transceiver shall operate in an idle condition with a current draw of:

2.35.1 (a) Category 1- Less than 150 ma.

2.35.1 (b) Category 2- Greater than 150 ma., but less than 800 ma

2.35.2 **Environmental**

The transceivers shall operate and meet the specifications herein set forth over an ambient temperature range of 0 to +50 degrees Celsius, with a maximum humidity of 95% at altitudes from sea level to 10,000 feet. The equipment shall remain operational over an ambient temperature range of -20 to +55 degrees Celsius.

2.36 Duplexer, BP & BP/BR

The vendor shall list an optional duplexer. A duplexer, pre-tuned to the frequencies specified in the purchase order, shall be available with each link transceiver. It shall be included as a separate priced unit for each transceiver package. Both Pass and Band Pass / Band Reject duplexers should be offered.

- Insertion Loss shall be 1.5 dB maximum

- Connectors - Type N Female

2.36.1 **Option A -** UHF Option shall satisfy the following requirements

- Transmitter Noise Suppression an Receive Frequency / 75 dB
- Receiver isolation at Transmitter Frequency / 75 dB

2.36.2 **Option B -** 700-800 MHz Option shall satisfy the following requirements

- Transmitter Noise Suppression an Receive Frequency / 65 dB
- Receiver isolation at Transmitter Frequency / 65 dB

2.37 Re-Radiation Loss

The vendor shall list an optional isolator with no more than 0.5 dB total insertion loss and shall be capable of dissipating at least 10 watt of reflected power. Re-radiation of intermodulation products shall be no greater than -50 dBm from the duplexer antenna port when a spurious signal within the duplexer's pass band arrives at that port at 0 dBm (EMR model numbers 7540/2 / 7640/2 or equal). It shall be included as part of each transceiver package as a separate unit.

2.38 Common Circuitry

The transceiver shall be made with removable modular card construction and fit in a standard 19-inch rack mount. The transceiver shall have interfacing circuitry that provides a common point for external control (PTT, COR, power, and 600 Ohm audio connections) to the transmitter and receiver.

2.39 Audio Requirements

The transceiver shall have a 600 ohm balanced 4-wire audio interface. Transmitter and Receiver audio levels shall be adjustable from 16 to +1 dBm. The overall frequency response of the link (end to end) shall exceed a 3002 grade line with type C2 conditioning and be capable of passing industry standard function tones.

2.40 Physical Size/Form Factor

The physical size of the transceiver shall be such that it will fit in a 19-inch equipment rack (width) while not occupying more than 4 rack units (7 inches) vertically. The unit's depth shall not exceed 15 inches. The transceiver should be modular with individual modules plugging into the backplane via a card edge connector.

2.41 Transmitter Characteristics

The transmitter shall meet or exceed the following minimum specifications:

2.41.1 **Carrier Power Output**

- Category 1 / 6 watt minimum VHF, UHF, 3W minimum 700/800 MHz.
- Category 2 / 12 watt minimum VHF, UHF, 700/800 MHz

2.41.2 Spurious and Harmonic Emission Attenuation / 70 dB below carrier

2.41.3 Audio Frequency Total Harmonic Distortion / 5% maximum

2.41.4 Key-Up Time to Full Output / 40 milliseconds, maximum

2.42 Receiver Characteristics

2.42.1 Spurious Response Rejection (Attenuation) / 90 dB Minimum

2.42.2 Intermodulation Spurious Rejection (Attenuation) / 75 dB Minimum

2.42.3 Adjacent Channel Selectivity / - 45dB (12.5KHz)

2.42.4 Audio Output / -16 dBm to +1 dBm (600 Ohms).

2.42.5 Buffered discriminator output

2.42.6 External Mute - The receiver shall have an external mute input which while actively prevent any audio signal from passing through the 600 Ohm receive output port.

2.43 LOW POWER VEHICULAR REPEATERS EQUIPMENT

This specification describes VHF, UHF, and 700/800 MHz in-vehicle mounted repeater, for attachment to the vehicle's mobile radio and used to extending the range of the user's portable radio.

2.44 MULTI-BAND RADIOS

This section describes radios capable of operating in multiple public safety radio bands. For the purposes of this contract the 700 MHz and 800 MHz bands are considered a single band. Specifically, these radios are capable of operating in any two or more of the VHF, UHF, or the 700/800 MHz bands. Otherwise specifications are controlled by the class and tier of the offered product.

2.45 ANALOG & DIGITAL BASE/MOBILE RELAY STATION FIXED RADIO EQUIPMENT

Model Specifications

2.45.1 **Basic Operations**

The following specification describes, VHF High-band, UHF, 700 MHz, and 800 MHz continuous duty, mobile relay/base station equipment using phase, frequency, or digital modulation. Must be FCC type accepted to meet the modulation mask described in FCC Part 90.210.d. Trunked stations must meet the APCO 16, P25, or Open Sky system requirements. All 700 MHz stations shall be capable of P25 operation. Stations shall be capable of the following three modes of operation:

- Mode 1 - The station operates as a mobile relay only
- Mode 2 - The station operates as a tone and/or E&M remote controlled base station and mobile relay
- Mode 3 - The station operates as a tone and/or E&M remote controlled simplex or duplex base station

Digitally trunked base/repeaters shall be of the same model line as the conventional radios.

2.46 Electrical Specification:

The equipment shall be designed to operate from a primary power source of 117 volts AC, 60 Hz. Adequate overload protection shall be provided. All power supplies shall use only high-quality, long-life, solid-state components as active devices. The equipment shall also be capable of operating from an external DC power source.

2.47 Transmitter Characteristics:

2.47.1 The transmitter shall use solid-state components throughout. The use of vacuum tubes in any stage is not acceptable.

2.47.2 Each station offered shall be capable of normal, continuous duty operation.

2.47.3 The transmitter shall be supplied for single frequency operation at any frequency within the VHF, UHF, 700 MHz (745-805 MHz) or 806-869 MHz bands. An alternate option for two or more frequency stations shall also be an option. The transmitter shall be factory aligned to the frequency specified in the purchase order.

2.47.4 Transmitter Standards:

- Carrier Power Output Rating:

  High-Tier 40-100 watts, continuous duty.

- Conducted and Radiated Spurious Emissions:

  High-Tier / -85 dB (12.5 kHz)

  Mid-Tier / -70 dB (12.5 kHz)

- Audio Frequency Harmonic Distortion:

  High-Tier / All Bands: 2% Max.

  Mid-Tier / 3% maximum

- FM Hum and Noise Level: High-Tier / -45 dB (12.5 kHz)

  Mid-Tier / -34 dB (12.5 kHz)

2.47.5 **Reradiated Loss:**

Re-radiation of intermodulation products shall be at least -50 dBm VHF (-30dBm) all other bands) from the transmitter antenna port or at the external isolator output port (if provided) when a spurious signal arrives at the port at 0 dBm. Any isolators used to accomplish this, shall be capable of dissipating at least 50 watts of

2.48 Receiver Characteristics:

The receiver shall be completely solid-state, utilizing only high-quality, long-life, solid-state components as active devices. The receiver shall be rated for continuous operation.

2.48.1 **Receiver General Characteristics:**

- Adjacent Channel Selectivity: High-Tier / -75 dB at 12.5 KHz

  Mid-Tier / -60 dB at 12.5 KHz

- Spurious Response Attenuation: High-Tier / -95 dB at 12.5 KHz

  Mid-Tier / -70 dB at 12.5 KHz

- Intermodulation Spurious Attenuation:

  High-Tier / -80 dB at 12.5 KHz

  Mid-Tier / -70 dB at 12.5 KHz

2.48.2 **Carrier Operated Relay:**

A carrier operated relay (COR) shall be provided. Upon receipt of an on-frequency RF carrier signal and the required squelch activating sub-audible tone, this relay shall provide closure of a pair of normally open dry relay contacts.

2.48.3 **Mobile Relay Operation:**

The receiver repeat audio shall be connected to the transmitter modulator input through a gain control to permit independent adjustment of transmitter modulation level. The repeat level shall be independent of line input/output levels. A carrier control timer shall be provided. This will limit the duration of any continuous mobile relay transmission to a pre-selected interval of from 30 seconds to 5 minutes**.**

2.49 Station Control and Operation:

2.49.1 **Station Audio Control:**

The station shall be designed to accept two-line, 4-wire audio; 0 dB in/0 dB out.

2.49.2 **Tone Control Scheme:**

The base station shall be controlled by in-band tones for the remote controlled transmit function and the repeater enable/disable function.

2.49.2 (a) **Transmit Tone Control:**

- Transmit tone control shall be by tone intervals of the following sequence:

  A = Guard Tone (2175 Hz) for 125 msec. nominal

  B = Transmit Tone (1950 Hz; 10 dB down from (A) for 40 msec. nominal

  C = Low Level Guard Tone (2175 Hz for the duration of the message; 30 dB down from A)

- The "B" function tone shall activate the transmit function of a single frequency base station with the "C" tone continuing throughout the message.
- The station decoders shall not respond (false) to voice peaks up to test tone levels or noise up to -10 dBm.
- The tone decoder overload (talk-down level for voice peaks shall be greater than the test tone level; the overload level for noise shall be such that overload does not occur with levels as high as 10 dB below test tone.

2.49.2 (b) **Tone Squelch Disable:**

The receiver sub-audible tone squelch unit shall be disabled by the short tone sequence indicated below:

A= Guard Tone (2175 Hz) for 125 msec. nominal

B= CTCSS Disable Tone (2050 Hz); 10 dB down from (A) for 40 msec. nominal

2.49.3 **Repeater Enable/Disable Function:**

The mobile function of the station shall be enabled and disabled by the tone sequence indicated below:

A= Guard Tone (2175 Hz) for 125 msec. is nominal

B= Function Tones (10 dB down from A, 1550 Hz for enable, 1440 Hz for disable) for 40 msec. nominal

2.49.4 **E&M / DC Control**

The station shall provide a contact point, which when grounded, will key the station and allow the transmission of line audio. When the station is keyed by grounding the contact point, the remote control function shall have priority over the repeater function. Also, tone remote keying shall have priority over DC contact keying.

2.49.5 **Microphone and Speaker**

A palm-type microphone with push-to-talk switch and hang-up bracket shall be supplied with each unit for local control. A permanent magnet loud speaker with volume control shall also be supplied. The volume to the monitoring speaker shall be independent of the transmitter repeat and line output levels. The local PTT and microphone audio functions shall override repeater or line PTT and audio.

2.50 Optional Duplexer:

For the UHF & 800 MHz stations only, an optional duplexer, pre-tuned to the frequencies specified in the purchase order, shall be considered separately. It shall be capable of being mounted horizontally in a standard 19" rack. Models determined to meet the requirements of this section include the EMR 65534/ENC, SBC-2 for UHF, and the Celwave PD898 for 800 MHz, or approved equivalents. Because of random Tx/Rx frequency splits, VHF duplexing equipment is not a requirement of this RFP.

2.50.1 Frequency Separation: UHF MHz: 5 MHz minimum
700 MHz: 30 MHz minimum
800 MHz: 45 MHz minimum

2.50.2 Maximum Power Input: (Continuous duty) / 100 Watts

2.50.3 Insertion Loss:

UHF: at 5.0MHz Separation: 1.0dB Max.

700 MHz: at 30 MHz Separation: 1.0 dB Max.

800 MHz: at 45 MHz Separation: 1.0 dB Max.

2.50.4 Transmitter Noise Suppression at Receive Frequency:

UHF: : 75 dB minimum

700/800 MHz: 65 dB minimum

2.50.5 Receiver Isolation at Transmit Frequency:

UHF: : 75 dB minimum

700/800 MHz: 65 dB minimum

2.50.6 Maximum VSWR: 1.5:1 or less; both bands

2.50.7 Connectors: Type N Female or 7/16 DIN

2.51 General Electrical and Mechanical Characteristics:

2.51.1 Basic Components:

- The radio equipment shall be installed in a standard, indoor cabinet enclosure, or an optional heavy-duty, aluminum, 19-inch, open relay rack of a nominal 90-inch height, meeting EIA Standard RS310C (Harris -Dracon 46055-005 or approved equivalent). All station chassis shall be mounted near the middle of the rack. The maximum height of the mobile relay/base station equipment shall be 37 inches.
- All RF input/output connectors on major station assemblies shall be Type N, BNC, or TNC, or some other approved locking RF connector.

2.51.2 Special Tools:

One complete set of any specialized hand tools shall be provided with each base/mobile relay station ordered. Tools shall include all necessary tuning tools, cables, card and/or module extenders, etc., to locate defective parts, trace equipment malfunctions, and perform routine maintenance.

2.51.3 Service Meters:

Panel mounted meters with associated selector switches or similar means may be optional with all units to measure all transmitter and receiver circuits essential to tuning and servicing. Such meters or fixtures shall be separately priced. If a computer interface is required for routine maintenance, the software shall be provided.

2.51.4 Wiring:

Wiring shall be color coded or marked in an acceptable manner for ease of maintenance. All inter-chassis wiring shall be clamped, laced or tied to prevent undue mechanical strain on connectors and terminals. When subjected to an open flame, hot soldering iron, or short circuit, the wire used in this equipment shall not support combustion for more than five seconds after the heat source is removed.

2.52 COMMUNICATION SERVICE MONITORS

These specifications describe a Communications Service Monitors for use in the maintenance of public safety land mobile radio communications system. These systems will be primarily conventional narrowband FM, conventional P25, trunked P25 or Astro 25 systems.

2.52.1 **Physical Construction**:

The complete monitor, including any and all modules, shall be contained in the mainframe. All switches, controls, inputs and outputs normally used during operation should be accessible from the front of the instrument. The mainframe cabinet shall be provided with a cover to protect the controls and oscilloscope from damage. The monitor shall operate over a temperature range of 0 to 40 degrees Celsius and weigh less than 35 pounds, including all plug-in modules and batteries.

2.52.2 **Electrical Specifications:**

The monitor shall be all solid-state. The monitor shall be capable of accepting operating power from one of two sources. No internal modifications or adjustments shall be required by the operator to change from one power source to another.

2.52.2 (a) A.C. Power / 120 VAC, 60 Hz; the unit shall be supplied with a 6-foot grounding power cord.

2.52.2 (b) D.C. Power / 12 VDC to 15 VDC; the unit shall be supplied with the required connector to supply D.C. power to the monitor for specific classifications.

2.52.3 **Service Monitor Operating Sections:**

The following functions shall be provided by the monitor, as defined by instrument class:

- R.F. Signal Generator
- R.F. Receiver
- Duplex R.F. Signal Generator
- General Purpose Oscilloscope
- R.F. Spectrum Analyzer
- Tracking Generator
- High Stability Oscillator (0.01 ppm - 0.1 ppm)
- Frequency Counter
- Power Meter
- Audio Generator
- Distortion Meter
- General Purpose Oscilloscope

2.52.4 Signal Generator - Signal output(s) shall be provided to allow servicing and alignment of FM communications receivers.

2.52.5 Frequency Generation - Continuous from 1 MHz to 1000 MHz .

2.52.6 Output Level - 0.1 microvolt to 20 millivolts

2.52.7 Output Level Accuracy: <+/- 2Db

2.52.8 Time Base Aging and Stability: 1.0 PPM/year after the first month

2.52.9 Frequency Step Resolution: 10 Hz or better

2.52.10 Modulation: AM & FM

2.52.11 Audio Generator: 1 KHz fixed, & variable frequency tone

2.53 Receiver Monitor/Display:

The receiver/monitor shall display demodulated signals on the LCD display/meter and allow audible monitoring via a self-contained speaker.

2.53.1 Frequency Range & Accuracy: Same as for Signal Generator

2.53.2 Input Sensitivity: 2 microvolt maximum for 10 dB SINAD

2.53.3 Input Impedance: 50 ohm, nominal

2.53.4 Deviation Measurement Range: <+/- 2.0 KHz to >+/- 10 KHz peak for full scale display

2.53.5 Deviation Measurement Accuracy: +/- 5%

2.53.6 Demodulated Output Distortion: < 10%

2.53.7 Frequency Meter Error Resolution: 1 Hz/10 sec. gate time

2.54 Oscilloscope

The receiver LCD display should be made available for use as a general purpose oscilloscope to 50 KHz or 500 KHz, depending upon classification/model.

2.55 Spectrum Analyzer

2.55.1 Frequency Range: 400 KHz to 1000 MHz

2.55.2 Dynamic Range: -90 dBm to -30 dBm

2.55.3 Display Range: >70 dB calibrated in dBm

2.55.4 Horizontal Display Calibration: Shall have selectable per-division sweep calibration.

2.55.5 Calibration: A reference signal should be available from the instrument to be used for level calibration.

2.56 Duplex RF Signal Generator

2.56.1 Offset Frequency Range: +/- 10 KHz to +/- 45 MHz

2.56.2 Output Level: >100 microvolt

2.57 Accessories

The monitor shall be provided with a whip antenna designed to make off-the-air measurements, an output cable assembly, and a service manual.

2.58 Operational Considerations

It is the intent of these specifications to buy a dependable communications service monitor to service government-owned communications equipment. The monitor must be ruggedly constructed to withstand severe vibration and shock encountered during travel to remote transmitter sites.

The instrument will be used daily and must be a reliable standard under the specified extremes of temperature and other conditions experienced during routine service procedures. The monitor shall be portable and completely self-contained. The service monitor shall be so constructed and labeled for easy use. Protection should be provided to minimize damage to the instrument by an inadvertent keying of a transmitter into the generator output(s). The generator's output(s) shall withstand a minimum of 100 watts for up to 30 seconds.

2.59 Configurations

Three configurations of monitors shall be proposed separately, depending upon option level and vendor product line. These shall include the following:

2.59.1 Maximum Feature Test Set with Extended Range Duplex Signal Generator (no offset limit within 1-1000 MHz range), Spectrum Analyzer with full span (1-1000 MHz) sweep, Tracking Generator, High Stability Oscillator, & Computer control interface. Must list options required to meet specifications. It requires P25 digital trunking, Smartnet trunking capability. Options may include extended RF range, automatic test and tuning software, additional digital modes including LTE, BER testing (List all trunking modes and other additional options as offered by vendor.)

2.59.2 Full Feature Portable Service Monitor with Duplex Signal Generator (1000 MHz), Spectrum Analyzer (1000 MHz), Tracking Generator (1000 MHz), and High Stability Oscillator (0.5 ppm), with internal Battery Power (List trunking and other additional options as offered by vendor). Units determined to meet the intent of this specification include the Freedom 8000 series and Aeroflex 8800 series**.**

2.60 GENERAL SPECIFICATIONS:

2.60.1 Non-Proprietary Specifications

2.60.1 (a) These specifications describe electronic radio equipment to be used in various Arizona State, VHF High-band, UHF 450 MHz and 700- 800 MHz (Conventional and Trunked) radio communications systems. This document will describe separately, the requirements for fifteen (15) different classes of electronic equipment.

2.60.1 (b) Only the VHF (150-174 MHz) model in all radio lines will be evaluated on technical specifications. If a VHF conventional product qualifies for an award in a product line, then the vendor may add their conventional UHF Band, and qualification of a conventional 800 MHz product will allow a 700 MHz product in the same radio line to be added to the contract, providing the discount percentage is the same as for the VHF or 800 MHz model.

2.60.1 (c) The specifications do not include any proprietary items, components, circuits, or devices which would preclude any communications equipment manufacturer from producing equipment to meet these specifications. All technical tolerances, ratings, power outputs, or any technically specified criteria contained within these specifications are considered to be within the current state of the art and are currently being met by commercially available electronic equipment. The fact that a manufacturer chooses not to produce equipment to meet these specifications is not sufficient cause to adjudge these specifications as restrictive.

2.61 CONTRACTOR SUPPORT (Installation and Maintenance):

2.61.1 Instruction Books, User Guide and Product Literature

The contractor will make available the following equipment documentation to purchasers in any quantity specified by the purchaser over and above the quantity required to be included with the unit price. Manuals will accompany the equipment at time of delivery or may be delivered prior to equipment delivery.

- OPERATORS MANUAL One (1) operators manual will be furnished with each equipment unit. This manual will provide an operational description of the equipment and all other pertinent operational details. This manual must include illustrations or photographs displaying the location and details of the various devices and controls. This manual will be a volume separate from all other manuals.
- INSTALLATION MANUAL the installation manual will consist of printed and illustrated sections that describe the mechanical, electrical and electronic details of assembly sufficient to assure proper operation at completion. This manual may be a section of the service manual. Installation manuals **will be included** with each lot of purchase for example: a) one (1) manual for each base/repeater unit b) one (1) manual for each of the mobile or portable radio units, up to a maximum of ten (10) manuals for each lot of mobile or portable radios. The purchaser will specify additional manuals required with each purchase.
- SERVICE MANUAL The service manual must contain circuit descriptions in verbal and illustrative form which are concise and all inclusive. Sections of the manual will include theory of operation to the component level, parts lists, troubleshooting flow diagrams and charts, instructions for alignment programming, adjustment and/or setup, schematics with normal operating voltages, plus wiring, interface, interconnection and printed circuit layout and assembly diagrams. Also included will be a list of maintenance and test equipment required for equipment maintenance prescribing make, model, description, manufacturer and alternatives. Service

manuals will be included with each lot of purchase in the same manner as described above for the installation manual. The purchaser will specify additional manuals required with each purchase.

2.61.2 Warrantee (additional requirements):

It Contractors shall warrantee all equipment for one (1) year following the equipment's Acceptance.

2.61.3 Parts Support:

All equipment covered by these specifications and any resultant contracts will have a minimum service life of seven (7) years from date of delivery to the purchaser and the contractor will guarantee replacement parts stocking by the contractor and/or authorized distributor for this service life period.

2.62 WORKMANSHIP

All the various types of equipment supplied under this Contract shall be of the latest, most improved model, past the development state and in factory production. Such equipment shall have a satisfactory production performance record as evidenced by product literature supplied by the Contractor and as determined by the State. Equipment without performance data will be subject to a technical evaluation for acceptability. If requested, Contractor shall supply a sample unit to the State within ten (10) days of the request. The sample unit will be returned within sixty (60) days. Components used in the equipment shall be only those specified in Contractor's equipment literature. Contractor shall provide a name and telephone number list of users/agencies that have purchased and installed the proposed equipment for the State's use during the evaluation process.

2.63 PROGRAMMING

Each model of radio shall have a Radio Programming Device available if one is required to program the radio. This software shall be for the highest level and revision of software available, including all maintenance software. The vendor shall agree that purchase of a single software package constitutes a "user" license per-site and may make necessary copies for internal use as required at a site. The vendor shall also offer at a reasonable additional cost, a "system" license for use at up to 10 agency service shops.

3.0 Digital Microwave Terminals

3.1.1 Offer(s) shall be the manufacturer or distributers of the products requested and specified;

3.1.2 Standards and specifications from the following shall be used unless otherwise specified;

3.1.3 Federal Communications Commission (FCC) Title 47 Parts 2, 15, and 101 as applicable;

3.1.4 Bellcore Technical References;

3.1.5 International Telecommunications Union – Telecommunications Standardization Sector (ITU-T), formerly know as CCITT;

3.1.6 International Telecommunications Union Radio Communication Sector (ITU-R), formerly known as CCIR;

3.1.7 Institute of Electrical and Electronic Engineers (IEEE);

3.1.8 MIL-HDBK-217, Reliability Prediction of Electronic Equipment;

3.1.9 Underwirters laboratory (UL);

3.1.10 American National Standards Institute (ANSI);

3.1.11 Electronic Industries Association (EIA);

3.1.12 Telecommunications Industries Association (TIA);

3.1.13 In case of conflicting requirements of standards, they apply in the sequence in which they are listed above. The complete apparatus shall also comply with the applicable codes, laws, and regulations of all governmental agencies having jurisdiction.

3.2 General Requirements

3.2.1 Equipment to be furnished complete:

3.2.1 (a) When requested a fully functional assembly with standard industry interfaces for the signal payload, power connections, alarm I/O connections and any required data or service channel interfaces. All other accessories would be priced separately in the vendors catalogs at a discount off listed price and in as much as these materials may be provided by the purchaser or already exist.

3.2.1 (b) Equipment supplied under this contract shall be new and provided with the latest hardware and software revisions currently being shipped. The Contractor shall notify the Purchaser when any hardware or software revision is incompatible with previously shipped equipment. The Contractor shall identify the incompatibility and shall provide a method to resolve the incompatibility.

3.2.1 (c) Equipment supplied under this contract shall be standard production, identified by model numbers as listed in supplier's catalogs and price pages. All equipment supplied under this contract shall be in full production status. Equipment still in testing phases shall not be accepted.

3.2.2 Instruction Manuals - A complete, comprehensive set of instructions, block diagrams, and operating manuals shall be furnished for each piece of equipment supplied. Manuals shall be provided in the form of printed copy and available on CD Rom at no cost. The intent is for documentation at a level sufficient for maintenance to the lowest replaceable unit. Each instruction manuals shall contain the following as a minimum:

3.2.2 (a) Complete block diagrams including information outlining method of operation, supply voltages, etc. for all equipment.

3.2.2 (b) Circuit diagrams showing internal interconnect wiring of all equipment.

3.2.2 (c) Complete instructions covering operation, theory of operation, and maintenance of all equipment and accessories.

3.2.2 (d) Servicing manuals, instructions, and procedures shall be of sufficient detail in order to perform detailed maintenance down to the sub-assembly level.

3.2.2 (e) Diagrams showing inter-equipment wiring and cabling including terminal block connections.

3.2.2 (f) Normal point-to-point operating voltages, current, and power levels for test and adjustment purposes.

3.2.2 (g) Detailed installation instructions.

3.2.2 (h) Detailed list of all replacement spare parts.

3.2.2 (i) Block and level diagrams.

3.3 As-Built Drawings

Two sets of as-built drawings for the whole system plus one set for each site shall be supplied to the Purchaser indicating the location of the equipment, exterior equipment wiring, cabling, block and level diagrams, and any other details that are either different or omitted from the instruction books supplied. If only equipment has been ordered and not a complete system, the as-built drawings shall show the equipment interconnection details and specific frequencies for each piece of equipment.

3.4 Contractor's Guarantee

Contractor guarantees that the equipment furnished under the contract meets all of the requirements contained within this specification. Product shall meet or exceeds the manufacturers published performance specifications, as well as all equipment furnished shall fully meet all applicable Federal Communications Commission (FCC) rules and Electronic Industries Association (EIA) specifications.

3.5 Warranty Service and Maintenance Contracts

Contractor shall repair or replace without charge to the Purchaser, any equipment or part that which fails in operation during normal use within 24 months from the date of receipt of the equipment. This shall not apply to failures caused by acts of God or extraordinary circumstances beyond the control of the Contractor.

3.5.1 Contractor shall support the following:

3.5.1 (a) maintenance

3.5.1 (b) servicing

3.5.1 (c) removal and replacement of defective parts

3.5.1 (d) adjustments and measurements

3.5.2 In order to maintain the equipment supplied under this contract to the manufacturer's specifications and requirements of the FCC for a period of 2 years from the date of the receipt of the equipment. This shall be at no additional cost for those services requested for malfunctions reported during a normal working day. A normal working day is considered to be Monday through Friday, 0800 to 1700 hours, holidays excepted.

3.5.3 Contractor shall have a technician (at a fee) that has been trained and is competent to maintain the supplied equipment on 24-hour call at all times. Phone numbers and addresses shall be provided of the people to contact in an emergency. If the Purchaser elects to maintain the equipment themselves, the Contractor shall provide 24- hour call-in technical support 7 days a week. Contractor shall provide at time and expense price list for onsite maintenance services which may be purchased on an as needed basis.

3.5.4 When a malfunction is reported and service is requested, the Contractor's technician shall be able to provide technical support within 60 minutes after the Contractor or their representative was notified by the Purchaser.

3.5.5 Contractor shall provide the names of the persons who shall be the primary contact point for service, complaints, and general inquiries. Their names, addresses, and telephone numbers shall be submitted in Section 3 Personnel section.

3.5.6 Contractor shall quote when requested, charges for malfunctions reported, service requested, and maintenance performed as follows:

3.5.6 (a) After 1700 and before 2400 hours, Monday through Friday.

3.5.6 (b) After 2400 and before 0800 hours, Monday through Friday.

3.5.6 (c) Saturday, Sunday, and holidays.

3.5.7 Equipment or part replaced under the provisions of this warranty becomes the property of the Contractor. If the Contractor desires the defective equipment or part returned all

transportation charges shall be the responsibility of the Contractor. If the Contractor does not specifically request return of such replaced parts within the 30 days from date of replacement, the equipment or parts become property of the Purchaser. Contractor shall provide repair and return service for two years at no charge.

3.5.8 Replacement parts shall be regularly stocked by the Contractor and/or authorized distributor. Delay in the Purchaser's receipt of replacement parts shall not exceed ten calendar days from Contractor's or distributor's receipt of order.

3.5.9 Contractor shall guarantee deliver of emergency orders within 48 hours from receipt of order. Emergency orders shall be transported by the most expedient manner available with the transportation cost borne by the Purchaser less normal shipping cost.

3.6 Failure to Meet Requirements of Specifications

3.6.1 Should any of the inspections, tests, or operation of the equipment under service conditions show that the system or equipment does not meet the requirements of the specifications, the Purchaser shall reject the equipment and direct the Contractor to immediately furnish such new equipment or parts thereof, as may be necessary to bring it up to the requirements of the specifications.

3.6.2 Material and equipment furnished shall be subject to approval by the Purchaser(s), including engineers selected to review the products with regard to design, operation, performance and requirements of this specification. The acceptance of equipment or parts thereof shall in no way relieve the vendor of responsibility for furnishing equipment that meets this specification in all detail.

3.7 Detailed Specifications of Equipment

3.7.1 Contractor shall submit a complete description of the operation of the quoted equipment when requested. The description shall include detailed specifications, photographs, panel layouts with labeled controls, model numbers, and, in general, show all phases of the quoted equipment. These specifications must be complete and cover in detail all requirements set forth herein. Any deviation from these specifications shall be fully explained. No quote shall be considered that does not fulfill these requirements.

3.7.2 Differences may exist in physical arrangements and mechanical construction of standard products of various manufacturers. However, the requirements as stated in this section describe a state-of-the-art microwave radio system concept as related to the operation, expansion, maintenance, and requirements. Equipment offered that does not meet these requirements must have a detailed statement of where deviations exist. A description describing exactly how the equipment differs and the reasons the equipment is equivalent to the requirements of the specification.

3.8 Maintenance and Test Equipment List

3.8.1 Contractor shall if provide when requested, a list of recommended spare parts and test equipment deemed necessary to maintain the equipment.

3.9 Material and Workmanship

3.9.1 Material and workmanship shall conform as specified to the latest standardizing bodies as the IEEE, EIA, NEMA, NEC, FCC, etc. Applicable EIA standards shall be fully met, including all panel and equipment mounting rails, except as required by special circumstances. All material shall be free from defects, corrosion, and scratches.

3.10 Test Procedures

3.10.1 Test procedures shall be conducted as outlined in the EIA standards and IEEE specifications.

3.11 Identification

3.11.1 Operational controls and adjustments, plug-in-cards, sockets, and terminal strips shall have suitable nameplates or stamps for the identification of function or purpose. All cables, plugs, and sockets shall be marked to provide correct mating.

3.12 Servicing

3.12.1 Units shall be readily available for routine servicing. If module or card extenders are required for servicing, then one of each required type shall be furnished.

3.13 Factory Testing

3.13.1 Each unit and assembly shall undergo extensive testing prior to shipment from the factory. These tests shall encompass all aspects and functions of the equipment from the component to the unit entirety. Each delivered unit shall be accompanied by a printed record of the dynamic functional test results for that particular unit.

3.13.2 Equipment purchased shall be system tested at the factory prior to shipment to insure proper operation, alignment, and compatibility.

3.13.3 Contractor shall allow the Purchaser to witness the factory testing. The Contractor shall notify the Purchaser a minimum of 30 days prior to factory testing to allow the Purchaser to make travel arrangements. The Purchaser has the right to decline. Equipment purchased under this contract shall have a minimum service life of 10 years from the date of delivery to the Purchaser. Contractor shall maintain replacement parts for this service period. Should parts or equipment purchased becomes nonfunctional within the 10-year service life period; the Contractor shall find approved replacement equipment or new equipment to the Purchaser for the same price as the original equipment.

3.14 Training

3.14.1 Contractor shall provide training to the Purchaser's personnel in the operation of all of the equipment supplied under this contract. The training shall be supplied at the Contractor's training facility and shall be provided at no cost based on the amount equipment purchased as follows:

3.14.1 (a) 1 to 2 hops of equipment Purchaser pays full cost of training class.

3.14.1 (b) 3 to 5 hops of equipment Contractor provides one seat of training at no cost.

3.14.1 (c) 5 to 7 hops of equipment Contractor provides two seats of training at no cost.

3.14.1 (d) 8 and above Contractor provides three seats of training at no cost plus one additional seat at no cost for every two hops above 11 hops.

3.14.2 In all cases, the Purchaser shall be responsible for travel, lodging, and per diem costs for the people they send to training.

3.14.3 Contractor shall provide technical training in the operation of all of the user equipment supplied. This training shall include:

3.14.3 (a) Training in the operation of the equipment and basic troubleshooting techniques. This may include basic board replacement repair where appropriate.

3.14.3 (b) The Contractor shall provide factory training in the repair and maintenance of the equipment as applicable. This training shall be at the technician level and shall detail the maintenance, operation, level setting, and repair of any electronic equipment being provided.

3.14.4 Contractor shall set forth the cost for optional additional hours of training and for any optional or additional factory or field classes available.

3.14.5 Contractor shall coordinate any training schedule with the Purchaser 45 days prior to starting any training. The Contractor shall provide a training compendium at that time for Purchaser approval.

3.15 System Options

3.15.1 Options listed below shall be provided if requested by the State. The prices for these options are to be quoted in single unit quantities. The Purchaser may order any of the following features without any requirement to order any other option. All optional equipment shall meet the requirements of this specification as applicable.

3.15.2 Frequency coordination services as required to comply with FCC rules and licensing instructions. This shall include services required by the FCC at the time the frequency coordination is requested. Provide the cost on a “per-hop” basis.

3.15.3 Field Engineering Work: Provide a quotation for optional field engineering services for the microwave paths. These services shall include but are not limited to:

3.15.3 (a) Path engineering, including coordinating with the frequency coordinator to determine the correct frequency band considering interference as well as the physical characteristics of the path.

3.15.3 (b) Physical inspection of the sites and verification of the microwave paths.

3.15.3 (c) Providing written documentation showing photographs of the sites, site drawings, and equipment installation locations.

3.15.3 (d) Provide the cost on a per-hour basis.

3.15.4 Installation Services: A quotation for optional field installation services for the microwave equipment, antennas, waveguide, and ancillary equipment. Provide this price on an hourly basis.

3.15.5 No DS1 Multiplex: A deduct option shall be provided to remove the DS1 multiplex for all microwave radio equipment with channel capacities of 28 DS1s and above.

3.15.6 Encryption: Provide a quotation for available encryption options for the microwave equipment.

3.16 <u>Non-Frequency Specific Requirements</u>

3.16.1 Equipment is required to comply with these requirements unless specified elsewhere. These specifications apply to three (3) classes of microwave systems: TDM (DS1s/DS3s), Hybrid (supporting both TDM and Packet on their native modes), and Packet only radios.

3.16.2 Component Ratings: Each and every component part of the equipment shall be operated within the manufacturer's continuous commercial-duty rating under any combination of operating conditions specified. Relays and switches shall be hermetically sealed and rated for a minimum of 2 million operations.

3.16.3 Overload Protection: Adequate fuses, circuit breakers, or other electronic devices shall be included to protect the equipment from internal and external faults. In the event these fusing devices are employed in circuits exhibiting false operation and yet protect the equipment from a sustained overload.

3.17 Printed Circuit Connections

3.17.1 Panel-end cable connections are necessary to extend and interconnect the circuits to other module panels, wire cables may be used, but they shall be made with stranded wire and of sufficient gage and secured so as to equal the quality and reliability achieved from the printed circuit inter-module connections within a panel. Solid-wire cables shall not be used where cables shall be flexed.

3.17.2 Electrostatic Protection: The Contractor shall provide electrostatic protection device, one per unit.

3.17.3 Electromagnetic Susceptibility and Spurious Radiation

3.17.4 As a minimum, the equipment shall meet or exceed the spurious radiated signal requirements of FCC Rules, Title 47, Part 15, Subpart J for Class B computing devices.

3.17.5 Microwave equipment supplied under this specification and contract shall be capable of operating normally when located in a rack adjacent to Part 90 LMR base stations, and not less than 3 meters from high-power TV and FM broadcast transmitters.

3.17.6 Equipment when all covers are installed shall operate normally if a portable radio transmitter operating at 5 watts or less in the 136 to 174 MHz band, 4 watts or less in the 450 to 470 MHz band, and 3 watts or less in the 746 to 806 / 806 to 869 MHz band, is keyed not less than 2 meters from the closest point on the equipment.

3.17.7 Should equipment fail to operate properly under the conditions described above in this section, the Contractor shall be responsible for making any repairs or modifications to the equipment supplied at the Contractor's expense. The Purchaser shall be responsible for making sure any non-Contractor-supplied equipment is operating within specification.

3.18 Mechanical Requirements

3.18.1 Indoor mounted equipment shall be supplied in EIA standard, 7-foot or 7 1/2-foot, 19-inch or 23-inch racks. These racks shall be equipped with standard 1-3/4" rack spacing and drilled and tapped for standard 12-24 NF screws. The rack shall be included in the equipment pricing.

3.18.2 RF units and other equipment designed to be mounted outdoors shall be capable of optionally installing the equipment indoors in a standard EIA equipment rack.

3.18.3 Equipment shall be supplied that shall allow for two complete RF and multiplex equipment assemblies to be mounted in the same rack space to allow for a complete hot-standby repeater or hot-standby terminal to be installed in a single rack space.

3.18.4 Outdoor mounted equipment shall be provided in weatherproof housing including a sun shield as an option available to reduce the amount of heating due to solar isolation.

3.18.5 Equipment shall not be susceptible to bit errors, false alarms, or other abnormal operation when subjected to shock and vibration normally anticipated to be received during normal maintenance actions such as pulling and removing circuit cards, replacing covers, or connecting test equipment either in the immediate rack or an adjacent rack.

3.18.6 Parts requiring service or maintenance must be accessible during normal operation. If covers, shields, or assemblies have to be removed for service, special tools other than a screwdriver and pliers shall not be required. The fasteners holding items that are removed during service must be a captive type, designed for frequent use. All chassis shall be designed to be physically and electrically detached conveniently from the rack for replacement or bench service. All inter-chassis and interrack cabling or wiring shall have connectors designed for rapid connection and disconnection. All cable connectors shall have cable clamps.

3.18.7 Wiring and cabling shall be supported such that the weight of the cable or pressure from bending is not transferred to the connector pins, wire-wrap point, or solder connection.

3.18.8 Any piece of equipment or contact area on the equipment that is capable of inflicting an electrical shock or causing mechanical damage to a person working on the equipment shall have protective covers and shall have appropriate warning labels.

3.18.9 No liquid cooling systems shall be allowed as part of this equipment.

3.19 Environmental

3.19.1 Indoor mounted equipment shall operate as specified under the following room ambient environmental conditions:

3.19.1 (a) Operating Temperature -10 degrees C to +50 degrees C

3.19.1 (b) Relative Humidity 5% to 95%, non-condensing at all operating temperatures

3.19.1 (c) Operating Altitude 4,000 meters

3.19.2 Outdoor mounted equipment shall operate as specified under the following outside ambient environmental conditions:

3.19.2 (a) Operating Temperature -30 degrees C to +55 degrees C

3.19.2 (b) Relative Humidity 5% to 95%, non-condensing at all operating temperatures

3.19.2 (c) Operating Altitude 4,000 meters

3.20 Multiplex Equipment

3.20.1 Terminal and repeater equipment shall be supplied with multiplex equipment to convert the signaling speeds and formats internal to the microwave equipment to industry standard interfaces. These interfaces may include DS0/DS1/DS3, OC3/SONET, Ethernet, and MPLS. Support of these interfaces may be by both internal and/or external hardware.

3.20.2 Multiplex equipment shall be provided for the maximum capacity of the radio equipment being provided.

3.20.3 Multiplex equipment shall mount in the same rack as the microwave radio equipment.

3.20.4 Multiplex equipment shall report equipment and transmission alarms and shall provide an interface into the microwave radio alarm system so a single alarm interface is presented to the technician or person using the alarm system.

3.20.5 Multiplexers shall be capable of performing looping back, as appropriate, on any DS-1, DS-3, or OC-3 signal levels.

3.20.6 T1 digital channel banks should be offered with standard audio and data interfaces. Options that enhance the users flexibility are encouraged.

3.21 Alarm and Control

3.21.1 Alarms shall be available for display and metering locally as well as from any other terminal or repeater connected in the system to the same alarm and control system.

3.21.2 System including multiplex shall provide alarm and control capabilities via Simple Network Management Protocol (SNMP). Any applicable private vendor MIB shall be provided to Purchaser upon request without cost to the Purchaser.

3.21.3 Microwave equipment shall be equipped with front panel system status or a small handheld unit with displays and controls. A computer interface port should be provided for access to more detailed information or advanced features. However, all historical alarm events shall be available to the operator through a laptop port.

3.22 DC Power Requirements

3.22.1 Equipment supplied under this contract shall operate as specified with either a positive or negative ground over a voltage range from 21 to 28 VDC and 42 to 56 VDC with a 200 mV (RMS) ripple.

3.22.2 Radio assembly shall contribute no more that 30 mV RMS ripple to the DC bus, assuming a 400 amp-hour (AH) battery with the system bus rating of 100 A.

3.22.3 Radio rack assembly shall be equipped with a DC distribution facility including power bus, ground bus, and fuse or circuit breaker panel. This DC distribution facility shall provide main DC power for all the equipment installed in the rack. The DC distribution facility shall be equipped with an alarm system to provide an alarm contact whenever a fuse or circuit breaker has opened.

3.22.4 Systems shall provide “fail-safe” operation when the input voltages are outside the required operating range above. This means the radios shall not be subjected to damage or random operation. When the voltage returns to the normal operating limits, the

equipment shall restore normal operation without operator or technician intervention or requiring power to be removed to "reset" the equipment.

3.22.5 Radio equipment configured two or more to a rack shall be individually fused. A power supply failure in one radio assembly shall not affect any other path or hop. This includes the repair or replacement of the failed unit.

3.23 Service Channel and Orderwire

3.23.1 Radio terminal or repeater assembly shall be equipped with a minimum of two service channels capable of the following:

3.23.1 (a) One two-wire audio channel with a 600 ohm input.

3.23.1 (b) A data channel that interfaces at the RS-232 level

3.23.2 Service channels shall not decrease the traffic capacity of the system.

3.23.3 Service channels shall automatically be switched when installed in a radio network using a protected configuration (e.g., loop protection, hot-standby).

3.24 Redundancy and Protection

3.24.1 Microwave equipment shall be designed for reliable operation through the use of redundant power supplies and other common equipment.

3.24.2 Alarm condition shall be generated any time any equipment, with the exception of diversity receive, is operating in a protection mode.

3.24.3 Switching times, including maximum manual switching time, for all equipment shall be stated. Maximum bit errors incurred and transmitter failure confirmation time shall also be included.

3.24.4 Equipment shall provide both manual and automatic error free switching, receive only (and does not apply to 18 and 23GHz).

3.24.5 Complete or partial failure of the protection control or switching shall not render the microwave link inoperable. Any failure of the protection control or switching equipment shall generate a major alarm.

3.24.6 Equipment shall be designed so that protection circuits and units not in service can be tested and repaired without affecting the online system operation.

3.24.7 Amplitude of the digital output signal shall not change more than 2 dB as a result of a transmitter protection switching action.

3.24.8 If both receivers in a hot-standby configuration indicated a received signal level of less than the threshold, the protection circuits shall cause a reverse channel signal to be transmitted to command the standby transmitter to switch on at the far end. This requirement only applies to 6GHz, and 11Ghz systems.

3.25 Space Diversity

3.25.1 Equipment supplied with space diversity receive capability shall provide errorless switching between the transition from one receiver to the other.

3.26 Adaptive Equalization

3.26.1 Adaptive equalization shall be included in all radio receivers. The dispersive fade margin shall be greater than or equal to:

3.26.1 (a) 60 dB for radios operating at DS-3 rates and below

3.26.1 (b) 46 dB for radios operating at 2 DS-3 rates and above

3.26.1 (c) 39 dB for radios operating at OC3-3 rates and above

3.26.1 (d) 50 dB for radios operating 18GHz

3.26.1 (e) 40 dB for radios operating 23GHz

3.26.2 If Co-Channel Cross-Polarization Interference Correction (XPIC) Equalization is offered, the Contractor should so indicate.

3.27 General Radio Digital Performance

This section describes the general performance requirements for bit error rates. Reframe time and frame-lost seconds (FLS). A frame-lost second (FLS) is defined as a 1 second interval during which an out-of-frame condition exists or when the BER is 1x10E-3 or less. No FLS seconds shall be recorded in any consecutive 7-day test period when there are no radio fading effects. The recovery time of the radio from out-of-frame and out-of-synchronization conditions to reframed and resynchronized conditions shall nominally be 0.25 second or less. No more than 5 percent of the recovery times shall exceed 0.5 second. The maximum recovery time shall be 2 seconds or less. The reframe time (search time plus time to establish frame alignment) shall not exceed 7 ms for the level 2 (DS-2 with additional overhead bits) to the DS-1 stage of multiplexing.

3.28 DS-1 Digital Performance and Interface

3.28.1 DS-1 low-speed interface shall be as per Bellcore TR-NWT-000499 and ANSI T1.102 as applicable.

3.28.2 Basic specification shall be as follows:

3.28.2 (a) Data Rate: 1.544M bps ± 32 ppm

3.28.2 (b) Line Impedance: 100 ohms, ± 5 percent, balanced

3.28.2 (c) Line Code: User-selectable bipolar AMI or B8ZS

3.28.2 (d) Jitter Accommodation: per TR-NWT-000499 and TR-NWT-00499

3.28.3 Residual bit error rate shall not be greater than 1 in 10-12.

3.28.4 Loss of synchronization of any DS-1 signal shall cause an Alarm Indication Signal (AIS) of all ones to be transmitted. This AIS signal shall be repeated throughout the system as applicable.

3.29 DS-3 Digital Performance ad Interface

3.29.1 DS-3 high-speed interfaces shall be per Bellcore TR-NWT-000499 and ANSI T1.102.

3.29.2 Basic interface specification is as follows:

3.29.2 (a) Data Rate: 44.736M bps, ± 20 ppm

3.29.2 (b) Line code: B3ZS

3.29.2 (c) Line Impedance: 75 ohms, unbalanced

3.29.2 (d) Jitter Accommodation: per TR-TSY-000499 and TR-NWT-00499.

3.30 OC-3 Digital Performance and Interface

3.30.1 OC-3 interface shall comply with ANSI T1.106/88, T1.105a/90, and T1.105/90 specifications.

3.31 General Transmitter Specifications

3.31.1 Frequency tolerance shall meet or exceed FCC Part 101.107. Frequency stability is expected to be ±0.0025 percent or greater over the full operating range of the equipment.

3.31.2 Failure of a redundant amplifier in hot-standby configurations shall not reduce the power output from the radio.

3.31.3 Replacement of a failed redundant (standby) amplifier shall not cause a system outage.

3.31.4 Transmitter shall be equipped with ability to monitor output power and frequency on an in-service basis.

3.32 Regulatory Compliance

3.32.1 Radio equipment supplied under this contract shall meet the requirement of the current Sub-Sections of Volume 47 of the Federal Code of Regulations.

3.33 Outdoor Mounted RF Unit

3.33.1 Outdoor mounted RF unit when supplied shall comply with the requirements of this section.

3.33.2 Operating temperature range shall be -30 degrees C to +55 degrees C.

3.33.3 Unit shall be weatherproof.

3.33.4 Outdoor RF unit shall connect to the indoor IF and control unit using a 50-ohm coaxial cable. The coaxial cable shall transport signals and DC power to the RF unit.

3.33.5 It shall be possible to install the remote unit with up to 1,000 feet of cable between it and the indoor control unit.

3.33.6 Outdoor unit shall have a rack-mounting option so the outdoor unit may be collocated with the indoor unit.

3.34 RF Performance Characteristics for Radio Equipment Operating in the 900 MHz Microwave Radio Band

3.35 For the Band of 928 to 960 MHz with bandwidths of 100 and 200 KHz

3.35.1 Contractor shall provide other bandwidths as options. These shall be fully compliant with the current FCC Part 101 technical requirements.

3.36 Frequency Tolerance

3.36.1 Frequency tolerance shall meet or exceed FCC Part 101.107. Frequency stability is expected to be 2.5 ppm or greater over the full operating range of the equipment.

3.37 Feed Connection

3.37.1 Type “N” connectors are the expected feedline terminations.

3.38 RF Power Levels

3.38.1 Power levels shall be user adjustable up to a +29 dBm output.

3.39 Receiver Thresholds

3.39.1 Receivers shall have the following guaranteed receive thresholds as a maximum level to obtain a BER 1x10E-6 Guaranteed capacity at minimum Received Signal Level (RSL) in dBm as listed below.

3.39.1 (a)	Bandwidth	Received Signal Level (RSL) in dBm
3.39.1 (b)	100 KHz	-94 96
3.39.1 (c)	200 KHz	-90 91

3.39.2 Contractors may provide other bandwidths as options. These shall be fully compliant with the current FCC Part 101 technical requirements.

3.40 RF Performance Characteristics for Radio Equipment Operating in the 5.9-7.1 GHz Microwave Radio Band.

3.41 6 GHz Frequency Range and Bandwidth

3.41.1 Equipment supplied for this band shall comply with the following requirements, with payload capacities in compliance with FCC Part 101.141:

3.41.2 Desired capacities are from 8xDS1 to 3DS3/OC3 (and equivalent Ethernet data rates) and bandwidths from 3.75 to 30 MHz.

3.41.3 Contractor may provide other bandwidths as options. These shall be fully compliant with the current FCC Part 101 technical requirements.

3.42 Feedline Connection

3.42.1 Antenna connection shall be a CPR-137G. If an adapter is required to convert from the standard flange on the radio unit, it shall be supplied and included in the unit price.

3.42.2 System shall operate with an antenna system with a peak return loss of 18 dB or greater.

3.42.3 Feedline connection point shall be at the top of the radio, clear of any obstructions. In cases where the radios are mounted two or more to a rack, the feedline connection may exit perpendicular to the back of the radio. However, in those cases, the Contractor shall supply a rigid waveguide right-angle section to allow the connection to be made vertically.

3.42.4 Antenna coupling unit shall have an option to accommodate the interconnection of additional analog or digital microwave radios to a common waveguide antenna feeder system.

3.42.5 Systems with ODU mounted outdoors at the antenna port, there shall be options to connect to antenna directly or remotely.

3.43 RF Power Levels

3.43.1 Equipment shall have a minimum output High power level of +26dBm and Low Power level of less than or equal to +21dBm

3.43.2 Power levels shall be measured at the top of the waveguide flange and shall include all branching losses. Hot-standby configurations may have power levels reduced from the levels listed above to account for switching losses.

3.43.3 Automatic transmitter power control (ATPC) shall be available as an option. It shall be capable of being disabled in the field by operator programming.

3.44 Receiver Thresholds

3.44.1 Receivers shall have the following guaranteed receive thresholds as a maximum level to obtain a BER 1x10E-6 in a nonprotected configuration. Guaranteed capacity at minimum Received Signal Level (RSL) in dBm as listed below.

3.44.1 (a)	8- DS-1/ 3.75 MHz	-77	77	83	83
3.44.1 (b)	16 - DS-1/ 5 MHz	-75	77	76	78
3.44.1 (c)	28 - DS-1/ 10 MHz	-74	77	74	77 78
3.44.1 (d)	84 - DS-1/ 30 MHz	-70	73	70	71 75

3.44.2 Received threshold levels shall be measured at the top of the flange and shall include all branching losses.

3.45 <u>RF Performance Characteristics for Radio Equipment Operating in the 10-11 GHz Microwave Radio Band.</u>

3.46 10-11 GHz Frequency Range and Bandwidth

3.46.1 Equipment supplied for this band shall comply with the following requirements, with payload capacities in compliance with FCC Part 101.141:

3.46.2 Desired capacities are from 8xDS1 to 3DS3/OC3 (and equivalent Ethernet data rates) and bandwidths from 3.75 to 30 MHz.

3.46.3 Contractor may provide other bandwidths as options. These shall be fully compliant with the current FCC Part 101 technical requirements.

3.47 Feedline Connection

3.47.1 Antenna connection shall be a CPR-90G. If an adapter is required to convert from the standard flange on the radio unit, it shall be supplied and included in the unit price.

3.47.2 System shall operate with an antenna system with a peak return loss of 23 dB or greater.

3.47.3 A single feedline connection point shall be provided for all radio configurations except space diversity. Space diversity configurations shall have two feedline connection points—one for one receiver and any transmitters and the other for the diversity receiver.

3.47.4 Feedline connection point shall be at the top of the radio, clear of any obstructions. In cases where the radios are mounted two or more to a rack, the feedline connection may

exit perpendicular to the back of the radio. However, in those cases, the Contractor shall supply a rigid waveguide right-angle section to allow the connection to be made vertically.

3.47.5 Antenna coupling unit shall have an option to accommodate the interconnection of additional analog or digital microwave radios to a common waveguide antenna feeder system.

3.48 RF Power Levels

3.48.1 Equipment shall have a minimum output High power level of +27dBm and Low Power level of less than or equal to +20dBm.

3.48.2 Automatic transmitter power control (ATPC) shall be available as an option. It shall be capable of being disabled in the field by operator programming.

3.49 Receiver Thresholds

3.49.1 Receivers shall have the following guaranteed receive thresholds as a maximum level to obtain a BER 1x10E-6 in a nonprotected configuration. Guaranteed capacity at minimum Received Signal Level (RSL) in dBm as listed below.

	Capacity	**Received Signal Level (RSL) in dBm**				
3.49.1 (a)	8 - DS-1 / 3.75 MHz	-76	76			82
3.49.1 (b)	16 - DS-1 / 5 MHz	-75	76			76
3.49.1 (c)	28 - DS-1 / 10 MHz	-73	76	73	76	77
3.49.1 (d)	84 - DS-1 / 30 MHz	-68	72	69	71	73

3.49.2 Received threshold levels shall be measured at the top of the flange and shall include all branching losses.

3.50 RF Performance Characteristics for Radio Equipment Operating in the 18 GHz Microwave Radio Band

3.51 Frequency Range and Bandwidth

3.51.1 Equipment supplied for this band shall comply with the following requirements, with payload capacities in compliance with FCC Part 101.141:

3.51.2 Desired capacities are from 16xDS1 to 3DS3/OC3 (and equivalent Ethernet data rates) and bandwidths from 5 to 30 MHz.

3.51.3 Contractor may provide other bandwidths as options. These shall be fully compliant with the current FCC Part 101 technical requirements.

3.52 Feedline Connection

3.52.1 Antenna connection shall be a UG-595/U. If an adapter is required to convert from the standard flange on the radio unit, it shall be supplied and included in the unit price.

3.52.2 System shall operate with an antenna system with a peak return loss of 15 dB or greater.

3.52.3 A single feedline connection point shall be provided for all radio configurations except space diversity. Space diversity configurations shall have two feedline connection points—one for one receiver and any transmitters and the other for the diversity receiver. In lieu of this arrangement, two antennas and two RF units may be used with one RF unit operating at a time. If space diversity is not commonly deployed, nor useful at these frequencies, fully describe in your answer.

3.52.4 Feedline connection point shall be clear of any obstructions.

3.52.5 RF unit and antenna is to be mounted outdoors, then options shall be provided to integrate them.

3.53 RF Power Levels

3.53.1 Equipment shall have a minimum output power level of +16dBm for 16 QAM and 20dBm for QPSK. Bidders may provide additional power level options.

3.53.2 Power levels shall be measured at the top of the waveguide flange and shall include all branching losses. Hot-standby configurations may have power levels reduced from the levels listed above to account for switching losses.

3.54 Receiver Thresholds

3.54.1 **Receivers shall have the following guaranteed receive thresholds as a maximum level to obtain a BER 1x10E-6 in a non-protected configuration.**

3.54.2 **Guaranteed capacity at minimum Received Signal Level (RSL) in dBm as listed below.**

Capacity	Received Signal Level (RSL) in dBm		
3.54.2 (a)	Power16 - DS-1 / 5 MHz		-77
3.54.2 (b)	28 - DS-1 / 10 MHz	-80	
3.54.2 (c)	84 - DS-1 / 30 MHz	-67	73

3.54.3 Received threshold levels shall be measured at the top of the flange and shall include all branching losses.

3.55 RF Performance Characteristics for Radio Equipment Operating in the 23 GHz Microwave Radio Band

3.56 Frequency Range and Bandwidth

3.56.1 Equipment supplied for this band shall comply with the following requirements, with payload capacities in compliance with FCC Part 101.141:

3.56.2 Desired capacities are from 16xDS1 to 3DS3/OC3 (and equivalent Ethernet data rates) and bandwidths from 5 to 50 MHz.

3.56.3 Contractor may provide other bandwidths as options. These shall be fully compliant with the current FCC Part 101 technical requirements.

3.57 Feedline Connection

3.57.1 Antenna connection shall be a UG-595/U. If an adapter is required to convert from the standard flange on the radio unit, it shall be supplied and included in the unit price.

3.57.2 System shall operate with an antenna system with a peak return loss of 15 dB or greater.

3.57.3 Single feedline connection point shall be provided for all radio configurations except space diversity. Space diversity configurations shall have two feedline connection points—one for one receiver and any transmitters and the other for the diversity receiver. (In lieu of this arrangement, two antennas and two RF units may be used with one RF unit operating at a time. If space diversity is not commonly deployed, nor useful at these frequencies, fully describe in your quote.)

3.57.4 Feedline connection point shall be clear of any obstructions.

3.57.5 RF unit and antenna is to be mounted outdoors, then options shall be provided to integrate them.

3.58 Receivers Thresholds

3.58.1 Receivers shall have the following guaranteed receive thresholds as a maximum level to obtain a BER 1x10E-6 in a nonprotected configuration.

3.58.2 Guaranteed capacity at minimum Received Signal Level (RSL) in dBm as listed below.

Capacity	Received Signal Level (RSL) in dBm

3.58.2 (a)	16 - DS-1	-78	
3.58.2 (b)	28 - DS-1	-78	
3.58.2 (c)	84 - DS-1	-68	73

3.58.3 Received threshold levels shall be measured at the top of the flange and shall include all branching losses.

4.0 LMR Base Station Antennas, Microwave Antennas

4.1 Offer(s) and Product Qualifications

4.1.1 Offer(s) shall be the manufacturer or distributers of the products requested and specified;

4.1.2 This solicitation describes Base Station Antennas for use in public safety land mobile systems. Antennas should provide selection of operating frequency, bandwidth, gain, antenna style, and construction format. The public safety frequency bands specifically requested for this section include: VHF (150 to 160 MHz), UHF (450 to 474 MHz), 700 (758 to 806 MHz), and 800 (806 to 869MHz). Additional bands and broader bandwidths, than those listed, is desirable but not specifically required; and

4.1.3 Antennas need to be designed for durability and reliability. Designed for the heat, cold, ice and wind conditions. Arizona's record high temperature was 122 degrees and had a record low of -40 degrees. Mountain top wind speeds can be in access of 100 MPH. While not typical, wind speeds in access of 140 MPH have been reported. VSWR shall be 1.5:1 or better at the rated frequency/bandwidth, nominal impendence of 50 ohms. Low PIM performance may be a consideration for some agencies.

4.2 Type(s) of LMR Antennas

4.2.1 The following antennas shall operate in the bands listed above.

4.2.1 (a) Fiberglass collinear antennas;

4.2.1 (b) Exposed dipole antennas - User adjustable patterns shall be a consideration for some users;

4.2.1 (c) Directional antennas; yagi, log periodic, and corner reflector antennas;

4.2.1 (d) Flat panel antennas; and

4.2.1 (e) Ground plane, discone, and other unity gain antennas.

4.3 Microwave Antennas (Dishes)

4.3.1 Microwave Antenna (Dishes) shall be the latest state of the art Microwave Antennas and Associated Equipment of use in specified frequency bands to meet the needs of the Eligible Agencies.

4.3.2 All equipment selected as suitable for purchase shall be given classification within the frequency band groups as follows:

Frequency Band

4.3.2 (a) 5.925-7.125 GHz

4.3.2 (b) 10.70-11.70 GHz

4.3.2 (c) 17.70-19.70 GHz

4.3.2 (d) 21.8-23.60 GHz

4.3.3 Federal Communications Commission (FCC) Rules and Regulations and amendments; E.I.A. Standards and amendments, RS222. (Latest Version)

4.3.4 All material and workmanship shall be of the type and grade most suitable for the application. All material shall be new and free from defects.

4.3.5 Unless specifically excepted by the terms of these specifications, any part or accessories ordinarily furnished or required to make the equipment, herein specified, a complete operating unit shall be furnished by the Vendor.

4.3.6 The contractor shall make available equipment documentation to The State's as specified herein. This documentation shall accompany the equipment at the time of delivery. Documentation costs for State's specified manuals shall be included as separate bid items. A copy of radiation patterns shall be provided at no cost if requested.

4.4 Service, Installation and Operations Manuals

4.4.1 Installation and or operation manuals shall be furnished with each order; each manual shall contain the following:

4.4.1 (a) Detailed drawings or clear photographs showing location of parts and hardware associated with antenna or connector assembly or mounting.

4.4.1 (b) Complete diagrams including information outlining method of operation, supply voltages, currents, and power requirements for each model of dehydrators.

4.5 Equipment Service Life

4.5.1 All equipment covered by these specifications and any resultant contracts shall have a minimum service life of ten (10) years from date of delivery to the State. The contractor shall guarantee replacement parts stocking for this service life period.

4.5.2 Each shall guarantee repair or replacement of any equipment or part thereof that fails in operation during normal and proper use within two (2) years from the date of State's receipt due to defects in design, material or workmanship, consummation of final acceptance and payment notwithstanding. These replacements shall be provided with no charge to the State.

4.5.3 Any equipment or part replaced under the provisions of this warranty becomes the property of the. If the vendor desires the defective equipment or part returned, The contractor shall pay all transportation charges and make all arrangements for the return. If the does not specifically request return of such replaced parts within thirty (30) days from the date of replacement, the equipment for parts become property of the State.

4.5.4 Replacement parts shall be regularly stocked by the manufacturer and/or authorized distributor. Delay in State's receipt of replacement parts shall not exceed thirty (30) consecutive days from manufacturer or distributor's receipt of order.

4.5.5 Emergency orders shall be transported by the most expedient manner available as agreed upon with the transportation cost born by the State less normal shipping cost.

4.6 General Equipment Characteristics

4.6.1 **Environmental** - All antennas shall survive wind velocities of one hundred (100) miles per hour with one (1) inch of radial ice and no more than 0.1 degree of deflection in seventy (70) mile per hour wind.

4.6.2 **Environmental** - All antennas shall remain operational within the temperature range of (-40 to 135 degree F)

4.6.3 **Environmental** - All antennas and associated hardware shall be non-corrosive, non-rust material. This can be accomplished by supplying Hot Dipped Galvanized or Stainless Steel hardware. Plated steel shall not be accepted. Aluminum antennas shall be painted with corrosion resistant paint.

4.6.4 **Environmental** - Field assembly of all antennas shall only be between antenna parabola, feed, antenna mount and fixed and/or slide assemblies. Antenna mount assembly is permitted.

4.6.5 **Environmental** - Parabolic solid antennas shall be equipped to include mounting hardware for a 4.5" vertical O.D. mounting pipe. Parabolic grid antennas shall be equipped to include mounting hardware for either a 1.9" – 3.5" or a 4.5" vertical O.D.(Outside Diameter) mounting pipe.

4.6.6 **Environmental** - Parabolic solid antennas shall have a reflector surface tolerance designed so that antenna feeds could be interchanged between 6GHz and 11 GHz without loss to antenna gain. Antenna feeds should also be interchangeable in the 18GHz and 23GHz dishes.

4.6.7 **Operational** - Material and workmanship shall be of the type and grade most suitable for the application and shall conform as a minimum unless otherwise specified to the latest applicable standards, specifications, recommended practices and procedures of such standardizing bodies as the I.E.E.E(Institute of Electrical and Electronics Engineers), N.E.M.A.(National Electrical Manufacturers Association), F.C.C.(Federal Communications Commission).

4.7 Microwave Antennas

4.7.1 The specifications listed herein are minimum requirements. These dish examples are for evaluation of the offered product lines. Frequencies listed represent the basic band of operation, which may consist of operational sub-bands. *A range variance of up to a maximum of -1 DB has been identified as acceptable. # VSWR is for standard bandwidths, a wide-bandwidth dish in the same product time with lesser VSWR performance is expected and acceptable.

Standard Performance, 5.925-7.125 GHz Band, Single Polarization , CPR 137G Input Flange

Diameter in Feet	Gain–DB Bottom	Gain-DB Mid Band	Gain-DB Top	FCC Category	Beam Width Degrees	Cross Pol Disc. DB	F/B Ratio DB	VSWR
6	38.4	38.7	39.1	A	1.9	30	55	1.3
8	40.1	41.2	40.3	A	1.5	30	55	1.3
10	42.8	43.2	43.5	A	1.2	30	61	1.3

High Performance, 5.925-7.125 GHz Band, Single Polarization, CPR137G Input

Diameter in Feet	Gain–DB Bottom	Gain-DB Mid Band	Gain-DB Top	FCC Category	Beam Width Degrees	Cross Pol Disc. DB	F/B Ratio DB	VSWR
6	38.4	39.	39.3	A	1.9	30	62	1.08
8	41.2	41.6	42	A	1.5	30	66	1.08
10	43	43.4	43.7	A	1.2	30	69	1.08

Ultra High Performance, 5.925-7.125 GHz, Super High Cross Polarization, CPR137G Input

Diameter in Feet	Gain–DB Bottom	Gain-DB Mid Band	Gain-DB Top	FCC Category	Beam Width Degrees	Cross Pol Disc. DB	F/B Ratio DB	VSWR
6	38.3	38.7	39	A	1.9	40	69	1.08
8	40.9	41.3	41.7	A	1.5	40	71	1.08
10	43	43.2	43.5	A	1.2	40	74	1.08

Standard Performance, 10.5-11.7 GHz, Single Polarization , CPR 90G Input Flange								
Diameter in Feet	Gain–DB Bottom	Gain-DB Mid Band	Gain-DB Top	FCC Category	Beam Width Degrees	Cross Pol Disc. DB	F/B Ratio DB	VSWR
4	40.1	40.5	40.9	A	1.7	30	46	1.08
6	43.2	43.3	43.4	A	1.2	30	60	1.08
8	45.8	46.0	46.2	A	0.9	30	62	1.08

High Performance, 10.5-11.7 GHz Single Polarization, CPR90G – PBR 100 Input								
Diameter in Feet	Gain–DB Bottom	Gain-DB Mid Band	Gain-DB Top	FCC Category	Beam Width Degrees	Cross Pol Disc. DB	F/B Ratio DB	VSWR
4	39.7	39.8	39.9	A	1.7	30	61	1.08
6	43.5	43.6	43.7	A	1.1	30	68	1.08
8	45.7	45.9	46	A	0.8	30	68	1.08

Ultra High Performance, 10.5-11.7 GHz, Super High Cross Polarization, CPR90G – PBR 100 Input								
Diameter in Feet	Gain–DB Bottom	Gain-DB Mid Band	Gain-DB Top	FCC Category	Beam Width Degrees	Cross Pol Disc. DB	F/B Ratio DB	VSWR
4	39.7	39.8	39.9	A	1.7	40	64	1.10
6	43.2	43.3	43.4	A	1.1	40	72	1.08
8	45.6	45.8	45.9	A	0.8	40	75	1.08

Ultra High Performance, 17.7-19.7 GHz, Super High Cross Polarization, UG595/U – PBR220 Input								
Diameter in Feet	Gain–DB Bottom	Gain-DB Mid Band	Gain-DB Top	FCC Category	Beam Width Degrees	Cross Pol Disc. DB	F/B Ratio DB	VSWR
2	38	38.4	38.8	A	1.9	36	64	1.2
4	44	44.4	44.8	A	1.0	36	67	1.2
6	47.5	48	48.4	A	0.7	36	72	1.2

Parabolic Antenna, 21.2-23.6 GHz, Single Polarization, UG-595/U – PBR220 Input Flange								
Diameter in Feet	Gain–DB Bottom	Gain-DB Mid Band	Gain-DB Top	FCC Category	Beam Width Degrees	Cross Pol Disc. DB	F/B Ratio DB	VSWR
2	39.7	40.2	40.7	A	1.7	30	65	1.4
3	43.1	43.6	44.1	A	1.1	30	71	1.4
4	49.0	46	46.6	A	.8	30	72	1.4

4.8 Radomes

4.8.1 High Performance Antennas shall have flexible planar Radomes supplied with antenna.

4.8.2 All Standard Antennas shall have molded fiberglass Radomes, parabolic or conical in shape available.

4.9 Dehydrators

4.9.1 Dry air pressurization equipment for waveguide transmission lines. Low-pressure systems to pressurize waveguides with dry air. Systems should provide alarm monitoring of a low presure condition and excessive run time. Systems shall be rack or wall mounted. Power options shall be AC or DC power. Accessories shall include Distribution Manifolds and tubing.

1.	½", 7/8", 1-¼"	Diameter Foam Dielectric Coaxial Cable
2.	7/8"	Diameter Air Dielectric Coaxial Cable
3.	1 5/8"	Diameter Foam Dielectric Coaxial Cable
4.	½"	Diameter Super Flexible Foam Dielectric Coaxial Cable

4.10 Transmission Lines

4.10.1 Transmission line or COAXIAL cable shall be available according to the sizes listed below:

4.10.2 Elliptical, Flex and Rigid waveguide components shall be supplied according to the sizes and/or frequency bands listed below:

1.	Waveguide for	5.925 – 7.125 GHz
2.	Waveguide for	10.50 – 11.70 GHz
3.	Waveguide for	17.70 – 19.70 GHz
4.	Waveguide for	21.20 – 23.60 GHz

4.11 Connectors

4.11.1 **LMR Connectors**

	½" Connector	7/8" Connector	1-¼' Connector	1-5/8 connector	½" Super Flexible Connector
1.	"N" Male	"N" Male	"N" Male	"N" Male	"N" Male
2.	"N" Female	"N" Female	"N" Female	"N" Female	"N" Female
3.	UHF Male	UHF Male			UHF Male
4.	UHF Female	UHF Female			UHF Female
5.	7-16 DIN Male	7-16 DIN Male	7-16 DIN Male	7-16 DIN Male	7-16 DIN Male & Right Angle
6.	7-16 DIN Female	7-16 DIN Female	7-16 DIN Female	7-16 DIN Female	7-16 DIN Female
7.	7/8" EIA	7/8" EIA			

4.12 Waveguide Connectors

1.	EW63-E65, Tunable, Fixed Tuned, CPR and CPR 137G
2.	EW90-E105, Tunable, Fixed Tuned, CPR and, CPR 90G, PBR100
3.	EW180-E185, Fixed Tuned, UG595/U, PDR180
4.	EW220-E220, Fixed Tuned, UG595/U, PBR220

5.0 Radio Dispatch Consoles

5.1 General

5.1.1 This specification contains sections that describe various types of radio dispatch consoles to be utilized in State and Municipal public safety radio communications systems. These sections include (1) Single/dual channel desk top remote control handset controllers; (2) 8-12 channel desk-top dispatch consoles; (3) 96 channel, high capability radio dispatch consoles; (4) 450 channel remote electronics high-capability expandable radio dispatch consoles. Analog, TDM and RoIP/VoIP based options to be separately priced. It is not necessary for a vendor to bid all sections.

5.1.2 It is the intent of these specifications to ensure the purchase of highly reliable radio dispatch control console equipment. These specifications are minimum standards and are intended to ensure reliable, high quality, readily available and repairable equipment. These specifications may not list all necessary equipment beyond that needed to complete the electronic package and it shall be the responsibility of the contractor to verify completeness of the material list and the suitability of the devices to meet the total requirements of these specifications. Subsequent to award, any additional equipment, charges, or services required to meet the specifications, even if not specifically enumerated herein, shall be provided by the vendor without claim for additional payment or compensation.

5.1.3 The Type 2, 3, & 4 Flat Panel Display (FPD) communications control console electronic design criteria shall be based on the need for maximum reliability, flexibility, and ease of operation and service. To meet these criteria, the electronic equipment should be of the latest design. The design shall reflect state-of-the-art concepts in communications command and control console design.

5.1.4 The FPD based communications control consoles shall provide monitoring and control facilities for remotely located two-way radio base stations. The consoles shall also provide certain ancillary functions such as repeater enable and disable of each channel, simultaneous transmit, alert tone transmit, instant patching, and multiple frequency base station control. It is desired that all console functions be accomplished using a Touch-Screen and Trackball/Mouse combination. Other methods of console control will be evaluated and compared against this style of system control.

5.1.5 The ability of the vendor's FPD communications control consoles to remotely operate separately from the common control equipment over telephone lines, LAN, or digital and analog microwave channels is a requirement. Equipment that does not meet this requirement will not be evaluated.

5.1.6 The Type 3 & 4 common electronics shall be designed to remain fully operational during the loss of AC power for a minimum of one hour via either an internal or external

uninterruptible power supply (UPS). Each dispatch position shall have an available UPS option which will allow full operation during the loss of AC power for a minimum of thirty minutes.

5.1.7 The unique requirements of the console electronic packages may not readily lend themselves to standard contractor product lines. However, contractors shall propose equipment meeting the technical and operational requirements and make maximum use of the standard product line equipment.

5.1.8 Make and model numbers given in this specification are for reference only, and do not imply that they are the only acceptable equipment.

5.2 Electrical Requirements

5.2.1 Each console bid shall be equipped with sufficient power supply capabilities, common electronic modules, cabling, etc to accommodate the channel requirements. All consoles shall be capable of operating from a 120 VAC source. Backup power should ideally be from a DC source of 12 to 48 VDC, with all necessary power regulation built into console electronics.

5.3 Technical Specifications - Each console offered should meet the following technical specifications, as a minimum:

5.3.1 Individual channel 2W, 4W, Tone/DC/E&M selection

5.3.2 Line Impedance: 600 or >5K ohm (4-wire) or, 600 ohm Tx (2-wire)

5.3.3 Operating Temperature: 0 to +50 degrees C

5.3.4 Audio Response: +/- 3 dB from 300 to 3000 Hz

5.3.5 Tx & Rx Hum and Noise: -50 dB below rated output

5.3.6 Distortion: Tx & Rx - Less than 3% THD

5.3.7 Compression: Variable compression knee

5.3.8 Receive Audio: -25 to +10 dBm; 600 ohm or 5K ohm; w/ less than -60 dB crosstalk

5.3.9 Transmit Audio: -20 to +10 dBm; 600 ohm; w/ 70 dB line balance

5.3.10 Tone Control: A minimum of (7) industry standard function tones with 2175 Hz Hi/Lo Guard Tone; including 1250/1350/1450/1550, 1850 and 1950 Hz function tones (Repeater control, Aux Function control, CTCSS Monitor, F1/F2 Transmit)

5.3.11 DC Control Functions: Transmit - F1 +5.5 ma.; F2 +12.5 ma.; Monitor +2.5 ma.

5.3.12 Unit ID Functions: (Optional) Motorola MDC1200 system decode/display

5.3.13 Speaker Output: 500 mw minimum, 3% distortion, into a 4 ohm or 8 ohm load

5.4 DESK-TOP REMOTE CONTROL CONSOLES (TYPE I price category)

5.4.1 **General -** The following specification describes various switch-based, desk-top radio controllers, including fully self-contained Tone, DC & RoIP based single-channel and dual-channel telephone-type handset controllers (optionally expandable) known as Type 1; and 8-channel (expandable to at least 12 channel), self-contained desk-top consoles, known as Type 2. The multichannel desk-top units also allow for local remoting of the control electronics to a small desk or wall mounted electronic box up to 100' away from the dispatch control unit. Optional IP control for both type units may also be proposed.

5.4.2 Tone & DC Single/Dual-channel Handset Type Controllers (Type 1) - This specification is for a solid-state, 120 VAC powered, desk-top, handset type, Tone or DC controller for a single channel station. A selectable two-channel, expandable, model may also be offered as an option, which may also be optionally expandable to more channels. Models which have been determined to meet the general intent of this specification include the IDA 24-10, 24-15, 24-20, 24-66, and 24-30; The Telex-Vega IP-2002, and C-2000 and C-2000SF

units. (These models are only given as examples, and alternate models meeting the specifications may be proposed).

5.4.3 Technical Specifications

5.4.3 (a) On-hook monitor disable

5.4.3 (b) Weight: Less than 5 pounds (Desk-top unit)

5.4.3 (c) Size (Remote Box): Less than 12"X12"X6", including battery back-up

5.4.3 (d) Programmability: Fully field adjustable/programmable without a computer

5.4.3 (e) Transmit indicator light

5.4.3 (f) The units shall allow for on-hook receiver operation through a loudspeaker, and off-hook operation through the handset.

5.4.3 (g) An RoIP based remote, single-line handset controller, that does not require a separate computer for operation, is also acceptable. These handsets shall be fully compatible for direct connection to a 10/100 baseT internal Ethernet network connection, and shall allow for parallel operation of any number of controllers.

5.4.3 (h) Optional two-line controllers do not require the ability to independently select either 2W/4W operation by channel, Tone or DC control by channel, or simultaneous receiver monitoring of both channels. These may all be fixed (hard-wired) functions.

5.5 (8)-Channel Desk-Top Tone/DC Consoles (Required to be Expandable to 12 Channels) (Type ll price category)

5.5.1 This section defines the minimum requirements for a desk-top radio control console with a minimum 6 individual channel (line) capability, with optional expansion to at least 12 channels on a channel-by-channel basis. Each console channel shall be capable of controlling either a 4-wire channel or 2 wire channel on an individual basis, and shall be individually programmable for either Tone, DC (current), or E&M radio control. Local remote control of a radio is not required. Optionally, the manufacturer may offer an RoIP based console which can control a remote radio through an IP data circuit, but must still provide two-way analog audio capability on all channels.

5.5.2 Parallel operation of up to 4 separate units shall be available with supervisory override control.

5.5.3 The dispatch operator position shall be a single unit, except for the microphone and footswitch, or an outboard third-party provided paging encoder. No external attachments, including power supplies, loudspeakers, touch-tone pads, line splitter boxes to increase channel count, etc. will be acceptable.

5.5.4 It is required that the vendor offer switch-based control functions for their console. However, optional computer-based, Flat Panel Display (FPD) consoles offering mouse-controlled on-screen function switches will be evaluated if offered. Models of equipment which have been determined to meet the intent of this section of the specification include the Gai-tronics ICP9000 Series, and the Telex-Vega C1616/C6200, IP-1616, C-Soft series, for various channel configurations.

5.5.5 Operational Features Require, each dispatch console operator position offered must include the following:

5.5.5 (a) Individual audio speakers and volume controls for select and unselected channels

5.5.5 (b) Individual channel 2W, 4W, Tone/DC/E&M selection, with 4-frequency Tone control

5.5.5 (c) Desk-mic with PTT bar and mute switch

5.5.5 (d) Dual-plug type headset interface jacks

5.5.5 (e) Combined select/unselect/transmit audio combined output jack for recording

5.5.5 (f) Jack for external PTT footswitch

5.5.5 (g) (2)-channel cross-patch capability

5.5.5 (h) Multi-channel transmit select

5.5.5 (i) DTMF encoder

5.5.5 (j) Internal or external pager capability

5.5.5 (k) Controls/Indicators

5.5.6 Each dispatch console operator position offered must include the following:

5.5.6 (a) Console transmit indicator

5.5.6 (b) Console channel busy (receiving) green indicator

5.5.6 (c) Individual channel instant-transmit light

5.5.6 (d) Channel labels (fixed or electronic)

5.5.6 (e) Transmit audio level meter (Vu meter)

5.5.6 (f) Channel select indicator

5.5.6 (g) Console Technical Specifications

5.5.7 Each console offered should also meet the following technical specifications, as a minimum:

5.5.7 (a) Alert Tones: Optional continuous, hi/lo, warble; -30 to 0 dBm, independently adjustable

5.5.7 (b) Speaker Output: 500 mw minimum, 3% distortion, into a 4 ohm or 8 ohm load

5.6 Full Featured – Remote Electronics Consoles (Type III Price Category)

5.6.1 General - It is the intent of this specification to ensure the purchase of highly reliable communications control consoles. This includes a spectrum of console systems ranging from single 96 (minimum) channel remote units (Type III), to advanced Flat Panel Display (FPD) based, high 450 (minimum) channel, 20 operator position systems (Type IV). These specifications are minimum standards and are intended to ensure reliable, high quality, readily available and repairable equipment. These specifications may not list all necessary equipment beyond that needed to complete the electronic package and it shall be the responsibility of the contractor to verify the completeness of the material list and the suitability of the devices to meet the total requirements of these specifications. Subsequent to proposal award, any additional equipment, charges, or services required to meet the specifications, even if not specifically enumerated herein, shall be provided by the vendor without claim for additional payment or compensation.

5.6.2 The communications control console electronic design criteria shall be based on the need for maximum reliability, flexibility, ease of operation and service. The design shall reflect state-of-the-art concepts in communications command and control console design.

5.6.3 The communications control console shall provide monitoring and control facilities for remotely located two-way radio base stations. The console shall also provide certain ancillary functions such as repeater enable and disable of each channel, simultaneous transmit, alert tone transmit, instant transmit, supervisory override, cross channel patching with up to three separate but simultaneous patches possible, phone patching, and multiple frequency base station control. It is desired that all FPD-Type console functions be

accomplished using a Touch Screen and Trackball/Mouse combination. Other methods of console control will be evaluated and compared against this style of system control.

5.6.4 The ability of the vendor's FPD communications control consoles in Category III and IV to remotely operate separately from the common electronic control equipment over telephone lines, microwave channels or fiber optic lines is a requirement. Equipment that does not meet this requirement will not be evaluated.

5.6.5 Each Type III and IV console shall have both receive voter (like JPS SNVs) and auxiliary interfaces. Both RoIP and P25 interfaces are a requirement for both classes. In addition, at least one of the following trunking protocols MUST be supported as an option: Project 25, Astro P25, Open Sky, Smartnet/Smartzone. In addition, each console should be compatible with either a T1 or a WAN/LAN interface.

5.6.6 The common electronics and FPD operator positions shall be designed to remain fully operational during the loss of AC power for a minimum of one-half hour via either an internal or external uninterruptible power supply (UPS) or a battery backup system. Each FPD dispatch position shall have an available UPS option which will allow full operation during the loss of AC power for a minimum of one hour.

5.6.7 The unique requirements of the console electronic packages may not readily lend themselves to standard contractor product lines. However, contractors shall propose equipment meeting the technical and operational requirements that make maximum use of the standard product line equipment.

5.6.8 The specifications do not include any proprietary items, components, circuits, or devices which would preclude any communications equipment manufacturer from producing equipment to meet these specifications. All technical tolerances, ratings, power outputs, or any technically specified criteria contained within these specifications are considered to be within the current state of the electronic art and are currently being met by commercially available equipment.

5.7 Electrical Specifications

5.7.1 Both Type III and IV consoles shall operate from a primary power source of 120/240 VAC, with battery powered UPS backup required. AC current consumption on the primary side of the line for the central electronics shall not exceed 5 watts/channel for a 50 channels system. Each operator position electronics shall not consume more than 250 watts, including the FPD.

5.8 Full-Feature Console – Type III

5.8.1 The Type III communications control console shall provide the facilities for the operation and control of remotely located two-way radio base stations and other specialized equipment. The console shall be equipped with sufficient power supply capabilities, common electronic modules, cabling, etc. to accommodate these channel requirements. Each console electronic package shall be equipped with common control equipment to provide the capability to operate and control any one, any selected group, or all channels simultaneously. Each console electronic package shall comply with all FCC Rules and Regulations, where applicable.

5.8.2 The console shall be expandable to a minimum of 96 radio control channels and 6 operators' positions. There shall be receive voter (like JPS SNV-12s) and auxiliary control interfaces. In addition to the 96 radio channels, the console electronics shall be able to support 6 operator positions, and up to ten receiver voter groups with up to 24 base stations per voter group. The ability of a manufacturer's equipment to accommodate this future requirement will be a major consideration in the proposal evaluation. In addition to controlling conventional non-trunked channels, at least one of the following protocols must be supported as an option: RoIP, Project-25, Trunking (EDACS, Smartnet, Smartzone,

OpenSky). T1, or Lan/Wan interfaces may be optionally added. The console shall have extended remote capability to allow an operator position to be remoted from the central electronics bank by way of commercial telephone lines, Ethernet, fiber optic, or microwave.

5.9 Large Full-Feature Console – Classification (Type IV Price Category)

5.9.1 General Specifications same as Type III above. The console shall be expandable to a minimum of 450 radio control channels and 20 operators positions. There shall be receiver voter (like JPS SNV-12s) and auxiliary interfaces. In addition to controlling conventional non-trunked channels, at least one of the following protocols must be supported as an option: RoIP, Project-25, Trunking (EDACS, Smartnet, Smartzone, OpenSky). Additionally, optional T1, or Lan/Wan interfaces may be added. The console shall have extended remote capability to allow an operator position to be remote from the central electronics bank by way of commercial telephone lines, fiber optic, or microwave. In addition to the 450 radio channels and/or trunked talk groups, the console electronics shall be able to support twenty operator positions and up to twenty receiver voter groups with an average of six base stations per voter group. The ability of a manufacturer's equipment to accommodate this future requirement will be a major consideration in the proposal evaluation.

5.10 Control Functions & Status Indicators

5.10.1 Both Class III and Class IV configurations shall meet all of the following specifications, and have two dual-jack inputs and have select and unselect speakers for audio output. In addition, there shall be a selected audio output jack and a summed unselect audio port available.

5.11 Radio Channel Control Functions

5.11.1 The radio control channels shall have the functions listed below:

5.11.1 (a) Channel Select - Shall engage the selected channel in the transmit/receive, fully operational, ready condition. The channel select function should be capable of selecting of more than one channel up to all channels simultaneously.

5.11.1 (b) Repeater Enable and Disable - consoles shall enable and disable the repeat function of a tone controlled base station.

5.11.1 (c) Squelch Disable - Shall disable receiver continuous tone coded squelch operation of a tone controlled base station.

5.11.1 (d) Instant Transmit - Shall allow transmitting on a channel without placing the channel in a selected mode first. This function shall not override supervisory control.

5.11.1 (e) Channel Crosspatch - Shall allow audio received on one radio channel or phone line to be automatically repeated on one or more of the other channels. Class III and IV consoles shall be capable of supporting at least three simultaneous but separate crosspatches. (Desktop consoles should be capable of doing at least one crosspatch.) This function shall be independent of other console activities.

5.11.1 (f) Two Frequency Control - Shall allow frequency selection of a two-frequency tone controlled base station.

5.11.1 (g) Supervisory Control B Class III and IV consoles shall provide the capability for one operator position (the supervisor's position) to take over a channel from all other operator positions. All parallel operator positions on the same channel shall receive an indication that supervisory control has been initiated.

5.11.1 (h) Supervisory Monitor B Class III and IV consoles shall allow the transmit and receive audio from one console operator position to be monitored on another console position.

5.11.1 (i) Channel Mute - shall completely mute the channel receive audio.

5.11.1 (j) Auxiliary Enable and Disable B consoles shall enable and disable an auxiliary function of a tone controlled base station.

5.12 Status Indicator

5.12.1 All switching functions shall have an associated indicator to clearly display function and channel status, i.e. on-off, activated-not activated, in use-not in use. The FPD system shall display complete status for a minimum of eight channels and limited status for the optional eight additional channels at each operator position. This limited status information shall include the following: channel selected, instant transmit activated, channel cross patch activated, channel muted, channel receiving a call, and channel busy.

5.12.2 To simplify the operation of the console, it shall be possible to physically group channels on the console in any order to facilitate operations.

5.12.3 Status Indicators shall illuminate with the following functions:

5.12.3 (a) Channel Selected

5.12.3 (b) Repeater Enabled

5.12.3 (c) Squelch Disabled

5.12.3 (d) Instant Transmit activated

5.12.3 (e) Channel Crosspatch activated

5.12.3 (f) Frequency One selected

5.12.3 (g) Frequency Two selected

5.12.3 (h) Channel Muted

5.12.3 (i) Channel receiving a call - this shall be a flashing type indicator

5.12.3 (j) Channel busy - parallel wired console transmitting

5.13 Console Position-wide Functions

5.13.1 In addition to the individual channel functions and indicators specified under paragraph 5.5, the communications control console shall also provide the following functions. These functions are common to all radio channels.

5.13.1 (a) Simultaneous Selection - Shall enable the selection of any combination of channels for simultaneous operation. The capability shall also be provided to automatically unselect all channels by depressing a single button.

5.13.1 (b) Transmit - Shall activate the transmit condition and route dispatcher audio to all selected channels. This transmit switch shall be electrically paralleled to the console footswitch.

5.13.1 (c) Master Mute - Shall mute all receive audio except the selected channels to a preset level.

5.13.1 (d) Automatic Selection - Shall automatically select a group of channels by action of a single switch. All automatically selected channels shall be unselected by action of a single switch. The particular group of channels to be selected shall include any combination up to all of the console channels.

5.13.1 (e) Intercom - consoles shall allow communication on the selected channels without keying the base station transmitter. This function shall allow communications between dispatchers or between dispatchers and remotely located technicians.

5.13.1 (f) Alert Tones - consoles shall activate one of three different alert tones that shall be transmitted on the selected channel, the simultaneously selected channels, or the automatically selected channels. The alert tones shall be continuous, hilo, or warbled between two different audio frequencies.

5.13.1 (g) Priority Tone – consoles shall activate an intermittent tone on individually selected channels to indicate priority traffic on that channel. The tone will not cover voice traffic.

5.13.1 (h) Radio/Telephone Audio - consoles shall allow the dispatcher's headset to be used for both telephone and radio communications. The telephone audio shall be transferred to the headset by action of a single switch. The party on the opposite end of the phone line shall not hear the dispatcher's radio transmissions (any console PTT shall mute the dispatcher's voice from the telephone line). Transfer of telephone audio to the headset shall switch the selected channel audio back out to the selected audio speaker. During the time that the headset telephone operation mode is activated, the console operator shall retain the ability to instantaneously transmit on the selected channel by use of the footswitch or master control panel transmit switch with no degradation to the transmit functions, transmit audio quality and/or signal strength. The dispatcher shall also retain the ability to instantaneously transmit on the unselected channels as well.

5.14 Status Indicators

5.14.1 All switching functions and the following status indication capabilities shall have an associated indicator on the FPD to clearly display function and status, i.e. on-off, activated-not activated, in use-not in use.

5.14.2 The status indicators shall illuminate with the following functions:

5.14.2 (a) Simultaneous Selection in use.

5.14.2 (b) Transmit function activated.

5.14.2 (c) Master Mute activated.

5.14.2 (d) Automatic Selection in use.

5.14.2 (e) Intercom in use.

5.14.2 (f) Alert Tone being transmitted.

5.15 Ancillary Equipment

5.15.1 The communications control console shall include the following ancillary equipment: speakers for selected audio and unselected audio, paging encoder, and displayed on the console's FPD, a VU meter, and clock system.

5.15.2 Speakers - The capability of monitoring selected and unselected audio shall be provided via two separate console speakers. Each speaker shall be provided with a separate volume control to allow for individual adjustment. The volume controls shall provide sufficient attenuation to decrease the associated speaker audio to an inaudible level. These two volume controls, along with the headset volume controls, are the only ones required. Separate volume controls for each of the radio channels are not required. The dispatcher shall still have the capability to completely mute individual channels if desired. The selected and unselected audio speakers shall be separated a minimum of 12 inches center to center. The dispatcher shall also have the capability to turn off either or both speakers without turning down the volume controls.

5.15.3 VU Meter - A VU meter, located on the FPD console's display in such a way as to give optimum visibility to the operator, shall be provided. The meter shall indicate the transmit audio level and selected receive audio level.

5.15.4 Digital Clock - The console shall include a 24-hour digital clock display in the FPD console's display. The clock display shall give optimum visibility to the operator. The clock display shall be an integral part of the console system. The clock shall be a master/slave system capable of being set from the master, which is to be calibrated by an external time base via RS232 protocol or USB interface.

5.15.5 DTMF Paging Encoder - The console(s) shall incorporate DTMF capability. These must be an integral part of the console electronics installed in the console furniture and wired into the console electronics. Single button paging functions shall be available which send preselected DTMF strings of at least 3 numbers to either a predetermined radio channel or on the selected channel(s).

5.15.6 Receivers - The radio control channels will not only be routed to the console as separate channels but may also be routed to a separate system of up to ten receiver voter groups. The console shall have the capability to control and display the status of these voted channels. The dispatcher shall be able to force vote or disable a particular voter module by engaging switches or keying in a function which will operate a) Two form C dry contacts or b) Open collector outputs or c) Communicate with the system via RS-232 or Ethernet cabling. The enable/disable status of a particular voter module shall be displayed at the operator position. The console shall also provide an indication of which channel is currently being voted. It also should be capable of automatic transmit steering and indicate on the FPD which transmitter will be keyed if the master PTT is activated. The voted channels shall support voting systems manufactured by JPS Communications.

5.15.7 Headset - Each operator position shall be compatible with the Plantronics Encore Monaural Ultra Headset, model H91N, or approved equivalent.

5.15.7 (a) Headset Jack

5.15.7 (b) Each operator position shall be equipped with a dual phone plug type headset jack. The jack shall be compatible with dual phone plugs used on the Plantronics model SHS1890-251N headset jack plugs. The headset jack shall have an associated receive volume control. The external microphone shall be disabled when the headset is inserted into the headset jack. Audio to the select speaker shall be removed when the headset is inserted. The dispatcher shall have the option of applying audio to the select speaker and the headset simultaneously if desired. The headset jack shall have an easily accessible talk/training switch which will allow the dispatcher to talk and listen or listen only with the headset=s transmit mouthpiece disabled. Disabling the transmit mouthpiece shall not prevent a headset with an amplified ear piece from functioning correctly. The headset jack must also have a 4 wire/6 wire switch for operating either a 4 wire headset (talk and listen) or a 6 wire headset (talk, listen, and a transmit push to talk button).

5.15.8 External Microphone - Each operator position shall be equipped with an External Microphone mounted on a Flexible Gooseneck Boom.

5.15.9 Footswitch - Each operator position shall be provided with a dual footswitch to activate transmit and/or mute operations. The dual footswitch shall activate two functions within the console:

5.15.9 (a) Activate transmitter control.

5.15.9 (b) Activate the Master Mute function.

5.15.9 (c) The right half of the footswitch shall operate in the same manner as the Master Control Panel transmit push button switch. The left half shall mute all unselected channels when depressed and unmute these channels when

released. If the console system requires modification to implement these functions, the modifications shall be completed by the console manufacturer and shall be fully documented in the maintenance manual(s).

5.15.10 Logging Recorder Interfaces - Each operator position shall be provided with a logging recorder output that contains the dispatch position microphone audio and select audio combined onto one 600-Ohm output port. An optional second logging recorder interface for telephone audio is desirable.

5.15.11 Remote Control of Base Stations - The communications control console shall be capable of providing D.C. keying, tone sequence keying, or "M Lead" dry contact keying for each radio channel as well as tone sequence control of repeater, frequency, and squelch disable functions.

5.15.12 D.C. Keying – CRT and Desktop Consoles - Each radio channel shall have available regulated D.C. keying currents of 15 ma and 6 ma. The D.C. control currents shall be provided for a loop resistance up to 10K ohms. Although as a default all channels shall not be supplied with DC keying capability, but pricing to add DC control on a per channel basis shall be provided.

5.15.13 Tone Keying- FPD and Desktop consoles - Each radio channel shall have available a tone sequence keying scheme that provides a High Level Guard Tone followed by a Function Tone followed by a Low Level Guard Tone.

5.15.14 "M Lead" Keying- FPD and Desktop consoles - Each radio channel shall be capable of providing Form A (normally open) dry contacts for transmitter keying.

5.15.15 One Sequence Tolerances - FPD and Desktop consoles - Tolerances for tone sequence control shall be within the following limits:

5.15.15 (a) All tone frequencies as specified within +/-1 Hz.

5.15.15 (b) All tone durations as specified within +/-5 ms or adjustable from 25 ms to 150 ms.

5.15.15 (c) High Level Guard Tone - 0dBm to -10 dB adjustable to meet line conditions

5.15.15 (d) Function Tone - 10 dBm +/-1 dB adjustable to meet line conditions.

5.15.15 (e) Low Level Guard Tone - 30 dBm +/-1 dB adjustable to meet line conditions.

5.15.16 Radio Channel Terminations - Each radio channel shall be capable of 2 wire or 4 wire operation. The type of termination shall be readily selectable on a per channel basis.

5.15.17 Parallel Operator Position Control of Radio Channels - The console common electronics shall be capable of parallel operator position control of common radio channels. All channel control switches and indicators shall be paralleled. Parallel operation shall be readily selectable on a per channel basis.

5.16 Design Criteria

5.16.1 The console electronic package design criteria are based upon the need for maximum reliability, expandability, and ease of service. To meet these criteria, the electronic packages described in the subsequent paragraphs must be totally solid-state, completely modular, and reflect state-of-the-art concepts in communication control design. Each operator position shall include applicable switches, status indicators, amplifiers, tone circuits, power supplies, meters, clocks, speakers, and hardware to perform the functions.

5.16.2 Panel Wiring/Remote Electronic Circuitry- FPD consoles

5.16.2 (a) The console electronic package shall have the capability of allowing the electronic circuitry (transmit/receive, amplifier, tone control, power supply, etc. modules) to be remoted at least 1000 feet from the operator position over standard 600 ohm twisted pairs. The interconnecting cable shall be at most an eight pair cable. The Vendor will supply all cabling and connectors

between the console common electronics and the punch blocks in the equipment room housing these electronics.

5.16.2 (b) The remoting of the electronic circuitry up to 1000 feet from the operator position shall not degrade the console performance outside the minimum standards specified herein. All console functions shall be operable as specified herein regardless of remoting up to 1000 feet.

5.16.2 (c) In addition to hard wired remoting of the electronic circuitry, the console electronic package shall also allow remoting of the electronic circuitry over standard telephone lines or multiplex channels on a fiber network or a microwave system. No more than three multiplex channels shall be required to perform this function. All remote data and audio paths shall be automatically monitored to ensure the continuous integrity of the paths. If a path is lost, both the dispatch position and any diagnostic printer and/or terminal shall receive a report.

5.16.2 (d) The remoting of the electronic circuitry over microwave channels shall not degrade the console performance outside the minimum standards set forth in these specifications. All console functions shall remain operable regardless of remoting the operator position.

5.16.3 Electronic Circuitry

5.16.3 (a) The electronic circuitry shall be contained on printed circuit modules which plug into a module rack or mother board. The plating material at the printed circuit module where plug-in contact is made shall be gold to provide maximum reliability.

5.16.3 (b) A transmit/receive module shall be provided with each operational channel. This module shall contain all of the circuits necessary to perform the functions described on a per channel basis.

5.16.3 (c) Sufficient modules shall be provided with each console electronic package to perform the functions that are common to the transmit/receive channels and all other functions.

5.16.4 Expandability - Options shall be easily expanded by the addition of plug-in printed circuit modules, programming, and control switches.

5.16.5 Maintainability

5.16.5 (a) The transmit/receive circuitry shall include one plug-in T/R module for each channel. All T/R modules shall be interchangeable between channels. The only T/R module changes required to exchange T/R modules between channels or electronic packages shall be the selection of options by means of programming switches mounted on the modules or PROM exchanges.

5.16.5 (b) The remainder of the console electronic package printed circuit modules shall be interchangeable between electronic packages.

5.16.5 (c) Each type of plug-in printed circuit module shall be keyed to be inserted only into the correct location in the module rack or mother board. Guide rails shall be used to ensure proper alignment of plug-in printed circuit modules. Each plug-in printed circuit module shall be equipped with an extractor to allow easy removal.

5.16.5 (d) It shall not be necessary to remove power from the console electronic package to change a plug-in module.

5.16.5 (e) All printed circuit modules shall be plainly marked with the module's function. All components shall be plainly identified on the printed circuit

modules. The module rack or motherboard position shall be plainly marked with the module's function. It shall not be necessary to use a drawing to locate components on printed circuit modules or printed circuit module positions.

5.16.6 Standards

5.16.6 (a) All equipment contained in the proposal shall meet or exceed the latest applicable standards of the Electronic Industries Association, Federal Communications Commission, and Underwriters Laboratory, and must conform to the OSHA of 1973 requirements for safe operation. In addition, where applicable, the equipment must satisfy the requirements of the local telephone company and input requirements of a Microwave System with respect to audio levels and control voltages.

5.16.6 (b) The console electronic equipment shall be rated for continuous operation. The console electronic package shall operate over an ambient temperature range of 0 degrees C. to +50 degrees C. without degradation in performance.

5.16.7 Power Supply

5.16.8 Input Voltage - 105 to 125 volts AC at 60 Hz, 120 volts AC nominal.

5.16.9 Noise - less than 120 millivolts peak to peak output.

5.16.10 Overload Protection - overload protection shall be provided such that variations in input voltage or output current shall not damage or degrade the operation of any console modules or components.

5.16.11 On-Off Switch - shall have a switch to turn input voltage on and off and have a power-on indicator.

5.17 Mechanical Requirements - The following specifications concern the mechanical aspects of the communications control console. The mechanical requirements of both the optional operator position furniture as well as the back-room common electronics are as follows.

5.17.1 Operator Position – Console Furniture - State supplied equipment may be installed in the operator position furniture along with the vendor's equipment. The State assumes the responsibility of installing the equipment in State supplied furniture. The vendor may bid the option to install the console. (All operator position furniture will be purchased separately.)

5.17.2 Labeling - All channels, controls and indicators shall be identified on the FPD screen. Keyboard switches which are used to control functions on the FPD should be clearly engraved to indicate their function. The identification shall show the purpose of the channel, control or indicator and be easily associated with the control or indicator. The legends or labels shall be designated by the user at the time of order.

5.17.3 Radio Channel and Receiver Voter Names - Each radio channel and or receiver voter channel shall be identified with an appropriate name - normally an abbreviation of the base station mountain top name and/or call sign which will be designated at the time of order. The FPD system shall be capable of displaying abbreviated names on the screen of at least eight characters in length. Merely giving a number to a radio channel or voter group is not acceptable.

5.17.4 Common Electronics- FPD Consoles - All common electronics shall be remoted from the console operator position. This equipment should be capable of remoting up to 1000 ft. from the operator position. The design of the common electronics package shall reflect a heavy reliance on modularity of construction. This modularity shall permit the console to be expanded, diminished, or reconfigured in future years depending on increased functions or consolidation of hardware based on system modernization. All equipment

supplied shall either be mounted in 19 inch wide EIA standard 90 inch tall aluminum equipment racks which are drilled and tapped to EIA standards (RS-310C) or supplied in seven foot enclosed equipment cabinets. (Racks or cabinet mounting will be specified with each purchase order) All equipment shall be supplied with all the necessary mounting hardware. Access to electronics for maintenance and service shall be accomplished through sliding rail arrangements, hinged mounting racks or circuit board extenders. Where the use of circuit board extenders is required, two extenders per console shall be supplied.

5.18 Training

5.18.1 Technician Training - the successful Vendor shall provide separate pricing for comprehensive training on the equipment proposed. The training shall include discussion of the following subjects as a minimum:

5.18.1 (a) Theory of operation and circuit analysis of each equipment module, a complete console electronic package, and parallel operation of multiple consoles.

5.18.1 (b) Troubleshooting procedures including fault isolation, terminal diagnostics, stage gain measurements, voltage tests, and other procedures to locate and replace faulty components.

5.18.1 (c) Level setting and other adjustment procedures for each equipment module, a complete console electronic package, and parallel operation of up to eight consoles.

5.18.1 (d) Programming of the central electronics cards and CRT positions.

5.18.2 Training Type and Location

5.18.2 (a) The training may be presented by either a resident instructor or a self-tutored training course.

5.18.2 (b) If an instructor is used, he must be intimately familiar with the design, operation, and maintenance of the equipment model proposed.

5.18.2 (c) The instructor shall present a training session in State supplied facilities at Phoenix, Arizona of at least 8 hours in duration. Actual dates for the class will be established by the purchasing agent. The training shall be completed within 130 days of receipt of purchase order.

5.18.2 (d) If the successful vendor elects to supply a self-tutored training course, one such course shall be provided and will become property of the State. The course shall make use of textbooks, film strips, video tapes or other means to provide comprehensive self-training of the equipment model proposed.

5.18.3 Dispatcher Training - The successful vendor shall also provide 1-day training to the dispatchers of any purchasing agencies. This training shall cover the operational aspects of the equipment. In situations where the communications center is a twenty-four hour operation, it will be necessary to repeat the training for each shift during the day(s).

5.18.4 Instruction Books - the instruction books to be furnished by the vendor shall be complete with all pages securely fastened together. The instruction books shall incorporate as a minimum the following:

5.18.4 (a) Complete description and ordering information of each individual unit and/or sub-assembly. A material guide shall contain the replacement part numbers and description of all components used. The parts lists shall be associated with their respective chassis, module, or kit wherein they are found. A total listing of parts without such groupings will not be acceptable.

5.18.4 (b) Complete intercabling diagram between each unit and/or sub-assembly.

5.18.4 (c) Complete outline and drawings and dimensions as well as mounting dimensions of all equipment.

5.18.4 (d) Voltage and resistance diagrams or tables of all units and/or sub-assemblies.

5.18.4 (e) Complete level setting instructions in step by step tabular form for entire assembly and all components capable of being adjusted.

5.18.4 (f) Parts location, drawings or pictorial, detailed top view of individual parts, units and/or sub-assemblies.

5.18.4 (g) Operational block diagrams of individual units and/or sub-assemblies.

5.18.4 (h) Complete schematic diagrams of individual units and/or sub-assemblies.

5.18.4 (i) In addition to schematics, etc., the manual shall contain the theory of operation of all active devices and circuits in sufficient detail to facilitate servicing.

5.18.4 (j) Drawings which are supplied must be reproduced by such means as to preclude fading to the point of illegibility if exposed to normal illumination for extended periods of time. A developed and fixed process or one of the various forms of printing by actual ink transfer are acceptable types.

5.18.4 (k) In order to provide a complete manual containing all schematics, level setting information, and operating instructions, the contractor shall prepare all of the information in book form with no drawings larger than the page size of the book. Drawings, which must be larger than a single sheet for legibility may be photographically reduced so that they are no larger than 11 inches high or printed on fold-out sections. This manual shall contain an index of all schematics, charts, and diagrams to insure that pages have not been removed. Sufficient information shall be contained in the index to permit reordering lost or mutilated pages.

5.18.4 (l) Two instruction manuals shall be furnished for every unit supplied and costs shall be included in the proposal price.

5.18.4 (m) One typical instruction manual shall be supplied with the proposal.

5.19 Recommended Maintenance Equipment

5.19.1 Any special meters, unique/non-standard test equipment, test cables, harnesses, circuit board extenders, or hand tools required for monitoring and/or maintenance of the communications control console electronic packages shall be listed separately with their itemized cost and shall be included in the total initial cost of the equipment.

5.20 Recommended Replacement Parts

5.20.1 Because of the critical function the communications control console serves, vendors must be capable of supplying all electronic package parts, including individual components and mechanical and electrical assemblies used in the equipment supplied, within 48 hours. The vendor shall supply a list of recommended spares in his proposal response. The vendor shall include a complete set of these recommended spare modules as well as a spare of all other modules and power supplies with the initial console purchase. The cost for this spare module set shall also be priced as a separate line item in the proposal response.

6.0 Generators

6.1 AC/DC power generators operating with diesel, gasoline or propane fuel. Indoor and Outdoor installations systems capable of handling extreme temperature of -50 degrees F up to 150 degrees

F. This includes but is not limited to Transfer Switches, panels, monitoring services, and controlling accessories inclusive of timing and sensing functions with associated hardware and software.

6.2 Requirements

6.2.1 Proposed product(s) must be rated for industrial use, home-use styles of generators will not be considered.

6.2.2 The proposal should include product(s) options from 10kw up to 400kw.

6.2.3 Product(s) offered must include all alarming equipment and software for remote monitoring.

6.2.4 Product(s) offered must be able to supply simple network management protocol (SNMP) and contact closure alarms.

6.2.5 Product(s) offered must have programmable exercise timers that can be set to transfer load capability.

7.0 Back-up Batteries (Including Solar)

7.1 Specifications

7.1.1 Telecom Applications – the State and/or Co-op Agencies require long life batteries (both voltage and solar) to support Agency efforts for providing power in multiple public communications applications, including but not limited to data centers, network operation centers, wireless, Microwave and mobile centers.

7.1.2 Product types for procurement:

7.1.2 (a) Modular Flooded Lead Acid

7.1.2 (b) Modular Flooded Lead Acid

7.1.2 (c) Mono-Block Valve Regulated Lead Acid

7.1.2 (d) Portable Radio

7.1.3 Renewable/ Solar Energy Product offerings must include the following:

7.1.3 (a) Benchmark data of Offeror's product to Industry Leading Life Cycle Data

7.1.4 Power Systems, DC Conversion

7.1.4 (a) Inclusive of AC/DC converters, battery chargers, DC/DC converters, along with low voltage disconnect DC breakers, power distribution panels and any additional associated hardware and software needed to operate.

7.1.5 The proposal must include float rates for the products being offered.

7.1.6 Offeror proposal to include system and module configuration requirements.

7.1.7 Must meet all UL industry requirements

7.1.8 Must withstand Operating temperature beyond 150 degrees F and temperature that drop below -50 degrees F.

7.1.9 Must provide performance data to support product viability.

8.0 Prefab Communications Shelters

8.1 General

8.1.1 Equipment shelters of various sizes specifically designed and constructed for extreme installation locations and to be installed with minimal soil disruption and without site-build foundation. This includes all required accessories and appurtenances, including antenna mast, RF shielding and grounding systems.

8.1.2 Vendor shall submit descriptive catalog product description to include all specifications.

8.2 Requirements

8.2.1 Prefab Communications shelters must meet State and National regulations.

8.2.2 Offeror to submit proposal for multiple dimensions that are offered to State and local public safety Agencies.

8.2.3 Offeror's proposal must address recommendations for transportation and off-loading.

8.2.4 HVAC system requirements should be detailed in the proposal submitted.

8.2.5 Electrical requirement for each prefab communication shelter offering should be listed in the proposal.

8.2.6 Proposed lighting systems should be included in the offer.

8.3 Installation and service

8.3.1 Offeror must provide on-site installation and set-up service as part of the proposal. This pricing should be included as separate line item within the pricing proposal.

8.3.2 R-56 standards must be followed in the proposed construction of any prefab communications shelters.

8.3.3 If on-site installation is required, Contractor(s) must be able to pass a background check.

8.4 Pricing

8.4.1 Pricing should include discount off list catalog pricing plus additional options on an individual list item basis for upgrades that might add to discounted price listed in catalog.

8.5 Warranty

8.5.1 All offerings must include a minimum five (5) year warranty period.

9.0 Service

9.1 The services that may be offered in correlation with the equipment listed above are categorized as follows:

9.2 Design/Engineering

9.2.1 The Contractor(s) shall clearly define and communicate to the State what is specifically included in their Design Services.

9.3 Managed Services - considered a service subscription.

9.3.1 The Contractor(s) shall clearly define and communicate to the State what is specifically included in their Managed Services. Examples of Managed Services include: 24x7x365 technical support, network monitoring, alarm monitoring, service ticket generation, performance management, system provisioning, system updates, end-to-end event monitoring, security monitoring, software maintenance and updates, annual preventative maintenance, and onsite support.

9.3.2 The Contractor(s) shall clearly define and communicate qualifications for any system or equipment being considered for Managed Services.

9.4 Field Service Repair and Maintenance – considered as needed, or one-time services.

9.4.1 The Contractor(s) shall clearly define and communicate guaranteed time of repair or restoration and qualifications for any system or equipment being considered for maintenance support.

9.4.2 The Contractor(s) shall perform work in accordance with the manufacturer's recommendation to ensure it is performing to all defined technical and environmental specifications for the system.

9.4.3 In addition to maintenance of new equipment purchases, the Contractor(s) shall also offer maintenance of legacy equipment. Legacy equipment defined as any existing public communications equipment and its associated supplies and/or accessories that have been purchased prior to the RFP issuance and resulting Contract Award.

9.5 Installation

9.5.1 Time of Purchase of new equipment

9.5.2 Previously purchased equipment

9.5.3 The Contractor(s) shall also conduct initial preventative maintenance ensuring performance begins at the optimal level.

9.6 Integration

9.6.1 Integration Services shall be offered at an hourly rate by the Contractor(s) unless otherwise specified in the SOW defined above as part of the equipment installation. The Contractor(s) shall clearly list and communicate to the State what is specifically included in their integration services, if applicable.

10.0 Consultation and Third-Party Oversight

10.1 The State is also looking to solicit proposals from qualified, vendor independent, full service firms who can provide third party oversight on behalf of the State of Arizona. Any offer of services must comply with the following:

- Demonstrate independence of any manufacturer, software provider, or vendor.
- Demonstrate experience and knowledge of all aspects of public safety operations as they relate to communications and interoperability needs
- Demonstrate mission critical communications system design experience in the public safety arena
- Demonstrate knowledge and experience with contemporary and emerging wireless mission critical communications technologies utilized in the public safety arena including:
    - Mission critical radio systems-infrastructure, subscriber hardware, RF system design, radio propagation, frequency research
    - Microwave and RF control link design and specification
    - Voice logging
    - Paging and Alerting systems
    - Radio interoperability
    - Radio dispatch console systems
- Demonstrate familiarity and expertise in FCC regulations, licensing and frequency availability research
- Demonstrate in-house subject matter experts, telecommunications specialists, state and local policy experts, and project managers with APCO Project 25 implementation experience.
- Demonstrate experience in the identification, evaluation and recommendation of appropriate sites and infrastructure for mission critical communications towers and facilities.

- Demonstrate experience in structured wiring plans and electrical and power system design relative to Public Safety and Mission critical RF systems.
- Demonstrate experience, establishing continuity of operations (COOP) plans, planning, and implementation of disaster recovery solutions, and establishing supporting standard operating procedures (SOPs) and policies that enhance system reliability, resiliency, and redundancy.
- Demonstrate experience with providing consulting, systems engineering and architecture services for both urban and rural mission critical communications systems.
- The firm must have at least one telecommunications specialist certified in industry accepted site standards such as Motorola R56.
- The firm must demonstrate that it follows accepted industry standards (i.e., Project Management Institute) standards and practices for management of projects.
- The firm must demonstrate knowledge in the trends and directions of mission critical radio networks, automated systems, facilities and operations.
- Demonstrate experience and capability of providing ongoing service and support throughout the lifecycle of network and associated devices and peripherals

EXHIBITS TO THE SCOPE DOCUMENT

NO EXHIBITS FOR THIS SOLICITATION

End of section 2-A

SECTION 2-B: Pricing Document

1.0 Compensation

Contractor will be compensated for the satisfactorily carrying out its obligations under the Contract by the method indicated by the "●" mark below:

●	Contracted Labor Rates (refer to paragraph 1.13 below)
●	Discount Off List or Catalog (refer to paragraph 1.25 below)

1.1 CONTRACTED LABOR RATES. The contracted labor rates are the fully-burdened and marked-up billing rates for Contractor's labor scheduled in Exhibit 1 to this Pricing Document.

1.1.1 The rates are deemed to be inclusive of the actual gross wages plus all:

(a) applicable payroll taxes, non-payroll employer burden, workers' compensation contributions and health and welfare benefit contributions;

(b) retirement or other pension contributions, vacation, sick time or other paid leave allowances and the like;

(c) required home office support, corporate or subordinate licenses or registrations, corporate insurance, professional association fees, advertising, time and travel by any of Contractor's personnel other than billable personnel and any bonuses or other incentives for all personnel (including billable Personnel);

(d) insurance coverages to be provided by Contractor under the Contract; and

(e) profit.

1.1.2 The rates are not subject to overtime or other premium time unless expressly stated otherwise in the Pricing Document or a relevant Annex thereto.

1.1.3 The rates include all transaction privilege and other sales/use taxes, including any gross receipts taxes on services, unless expressly stated otherwise in the Pricing Document or a relevant Annex thereto.

1.1.4 Reimbursable items consist of three components:

(a) *Site Services, Logistics, and Utilities*. State and Contractor shall each provide those items of site services, logistics and utilities that are assigned to them in Attachment 4 to this Pricing Document. Excluding only those item expressly indicated as being provided by State, provided by others, or a reimbursable item, Contractor shall provide all services, equipment, tools, and logistics necessary for its personnel and otherwise as required to carry out the Work and compensation for all those is deemed to be included in the contractual fee mark-up (if any applies).

i. For items indicated to be paid on a "unit rate" basis, Contractor shall submit a worksheet with each application for payment showing the actual amount of payment requested for these items, which amount shall not exceed the unit rate multiplied by the total quantity (i.e., Contractor is "at risk" for costs it incurs that are in excess of the extended value unless State has issued a Change Order for the excess.

ii. For items indicated to be paid on a "cost" basis, Contractor shall request reimbursement for the actual cost of such items at least monthly and shall provide the necessary back-up documentation, including receipts or invoices and timesheets (if applicable).

iii. For items indicated to be paid on a "lump sum" basis, Contractor shall request payment for the completed proportion of such items at least monthly.

(b) *Personnel-Related Expenses*. State will only reimburse for those items of personnel-related expense expressly indicated in Attachment 4 to this Pricing Document as a reimbursable item, and it is agreed that the costs of all other such expenses applicable to its personnel and otherwise as required to carry out the Work are adequately compensated in the contractual fee mark-up (if any applies).

i. For items to be paid on a "unit rate" basis, Contractor shall submit a worksheet with each application for payment showing the actual amount of payment requested for these items, which amount shall not exceed the unit rate multiplied by the total quantity (i.e., Contractor is "at risk" for costs it incurs that are in excess of the extended value unless State has issued a Change Order for the excess.

ii. For items to be paid on a "cost" basis, Contractor shall request reimbursement for the actual cost of such items at least monthly and shall provide the necessary back-up documentation, including receipts or invoices (if applicable). All reimbursements shall be strictly subject to State's travel policy, which is available at https://gao.az.gov/travel.

iii. Contractor must obtain State's written approval prior to booking or going on any reimbursable travel.

iv. Contractor will be reimbursed at the current Travel Policy rates.

v. Contractor shall itemize all per diem and lodging charges.

vi. For items to be paid on a "lump sum" basis, Contractor shall request payment for the applicable proportion of such items at least monthly.

1.2 DISCOUNT OFF LIST OR CATALOG. A discount off list or catalog means a percentage discount to be applied to a base price for from one or more contractually-established price lists against published catalogs. The applicable discounts are scheduled in Exhibit 1 to this Pricing Document.

1.2.1 Unless specified otherwise in the Pricing Document, base price is the price that is most widely offered to general customers at the time of the Order.

1.2.2 The catalogs used to establish base price are specified otherwise in the Pricing Document. If nothing is so specified, then the commercially available catalogs published by Contractor or Subcontractor to a dealer or reseller network for the covered materials or services are to be used.

1.2.3 Each catalog must:

(a) bear the applicable State contract number;

(b) list all materials or services Contractor is authorized to sell under the Contract;

(c) not contain any items that are excluded from the Contract;

(d) provide ordering information and contact information for customer support.

1.2.4 Each catalog and its accompanying price list must include for each item:

(a) a part or model number, if applicable;

(b) a complete and accurate description of the item;

(c) the manufacturer's suggested retail price (MSRP) or Contractor's list price;

(d) a stock keeping unit (SKU) number (SKU) , if applicable;

(e) the item's unit of measure (UOM), if applicable; and

(f) the quantity in the unit of measure (QUOM), if applicable.

1.2.5 Contractor shall provide and maintain concurrent and identical electronic and hardcopy versions of all contracted price lists and catalogs.

(a) The electronic versions are to be provided as an Amendment to the Contract.

i. State, at its discretion, may host Contractor's electronic price lists and catalogs directly, or may link through ProcureAZ as a punch-out.

ii. Regardless of the number and types of links to Contractor's electronic price lists and catalogs, Contractor shall ensure that all Eligible Agencies and Co-Op Buyers are only able to access one unified set of data.

(b) Contractor shall supply sufficient, current hardcopy catalogs and price lists price lists to applicable Eligible Agencies at Contract commencement, and provide prompt hardcopy notice of any changes to list/catalog holders as they occur. Contractor shall not change State or any Eligible Agency (or any Co-Op Buyer, if applicable) for lists/catalogs or updates.

2.0 Pricing

2.1 CONTRACTOR'S BEST PRICING. Supplier warrants that, for the term of the Contract, the prices and discounts set out in Exhibit 1 to this Pricing Document, including any subsequent agreed amendment to it (the "Contract Pricing"), will be equal to or better than the lowest prices and largest discounts, both separately and in combination, at which Contractor sells equivalent items of equipment and materials.

2.1.1 That price-plus-discount equivalence ("Contractor's Best Pricing") is intended to be irrespective of whether or not those other sales have special purchase terms, conditions, rebates or allowances.

2.1.2 If Contractor's Best Pricing for equivalent items of equipment and materials is better than the Contract Pricing, then Contractor agrees to adjust the Contract Pricing to match the Contractor's Best Pricing for all sales related to the Contractor made after the date when the Contractor's Best Pricing was first better than the Contract Pricing.

2.1.3 For clarification of intent, that date is intended to be the date when the difference first occurred, which might have been before the difference was first identified. If it was before, then Supplier agrees to charge at less than the Contract Pricing until the extended difference that would have been realized (i.e., if the Contractor's Best Pricing had been applied when it should have been) has been settled.

2.2 PRICING-ALL-INCLUSIVE:

2.2.1 Pricing is all-inclusive, including any ancillary fees and costs required to accomplish the Scope of Work and all aspects of Contractor's offer as accepted by State. Details of service not explicitly stated in the Scope of Work or in Contractor's Offer, but necessarily a part of, are deemed to be understood by Contractor and included herein. All administrative, reporting, or other requirements, all overhead costs and profit and any other costs toward the accomplishment of the requirements in the Contract are included in the pricing provided.

2.3 PRICE INCREASES:

2.3.1 The SPO may review a fully documented request for a price increase. The requested increase shall be in writing and be based upon a cost increase to the contractor that was clearly unpredictable at the time of the offer and is directly correlated to the price of the product concerned. Contractor must provide conclusive evidence of a need for any price increases such as being substantiated by the Producer Price Index, Consumer Price Index, or similar pricing guide.

(a) Initial Contract prices will be honored for one year after award of Contract.

(b) All written requests for price adjustments made by the contractor shall be initiated thirty (30) days in advance of any desired price increase to allow State sufficient time to make a fair and equitable determination to any such requests. This may be waived upon proper documentation demonstrating the urgency of the request.

(c) All price adjustments will be implemented by a formal contract change order. State shall determine whether the requested price increase or an alternate option is in the best interest of State.

2.4 PRICE REDUCTIONS:

2.4.1 Price reductions shall by immediately passed along to State and may be submitted in writing to State for consideration at any time during the Contract period. The contractor shall offer State a price reduction on the Contract product(s) concurrent with a published price reduction made to other customers. State at its own discretion may accept a price reduction. The price reduction request shall be in writing and include documentation showing the actual reduction of cost. Sales promotions requests shall include difference in pricing, begin, and end date of promotion along with the products covered.

2.5 ADDITIONAL CHARGES:

2.5.1 Any charges or fees not delineated in the Contract may not be added, billed, or invoiced under the Contract. All additional work shall be approved by Eligible Agency in advance and be in accordance with the contract rate.

2.6 TRAVEL.

2.6.1 Contractor shall get written approval prior to any travel under the Contract in which reimbursement of expenses will be requested. Contractor will be reimbursed for actual expenses incurred in accordance with the current rates specified in State's Travel Policy. Contractor shall itemize all per diem and lodging charges. State Travel Policy, including State rates, may be located at https://gao.az.gov/travel. The Eligible Agency shall reject any claim for travel reimbursement without prior written approval.

2.7 DELIVERY

2.7.1 Unless stated otherwise in the contract, all prices shall be F.O.B. Destination and shall include all freight delivery and unloading at the destination.

3.0 Funding

No particular funding considerations apart from paragraph 4.3 of the Uniform Terms and Conditions [*Availability of Funds*] have been identified as of the Solicitation date.

4.0 Invoicing

4.1 INVOICES GO TO BUYING ENTITY. Contractor shall submit all billing notices or invoices to the ordering Eligible Agency or Co-Op Buyer at the address indicated on the applicable Order document.

4.2 MINIMUM INVOICE REQUIREMENTS. Every invoice must include the following information:

Item	Required
Bill-to name and address	●
Contractor name and contact information	●
Remit-to address	●
State contract number	●
Order number (typically the ProcureAZ PO #)	●
Invoice number and date	●
Date the items shipped or services performed	●
Applicable payment terms	●
Contract line item number	●
Contract line item description	●
Quantity delivered or performed	●
Line item unit of measure	●
Item price	●
Extended pricing	●
Discount off list or catalog	●
Taxes *(as a separate invoice line item)*	●
Upcharge shipping/freight, etc. *(as a separate invoice line item)*	Materials only
Total invoice amount due	●

4.3 NO INVOICE WITHOUT AUTHORIZATION. Contractor shall not seek payment for any:

1. Materials or Services that have not been authorized on an acknowledged Order;
2. expediting, overtime, premiums, or upcharges absent State's express prior approval; or
3. Materials or Services that are the subject of a Contract Amendment or Change Order that has not been fully signed.

4.4 PRE-INVOICE REVIEW. Upon Eligible Agency request and shortly before Contractor is scheduled to submit each invoice, the parties' representatives shall meet informally to review any issues relevant to that upcoming invoice so that the formal invoice process is thereby facilitated and made more efficient.

4.5 SUBMITTING INVOICES. Contractor shall submit an invoice to the ordering Eligible Agency or Co-Op Buyer using the form provided or required by the ordering Eligible Agency or Co-Op Buyer. Every invoice must be signed by Contractor's authorized representative and accompanied by all supporting information and documentation required by the Contract and applicable laws.

4.6 DEFECTIVE INVOICES. Without prejudice to its other rights under the Contract or further obligation to Contractor, the ordering Eligible Agency or Co-Op Buyer may, at its discretion, reject any materially defective invoice.

4.6.1 The ordering Eligible Agency or Co-Op Buyer shall notify Contractor within 5 (five) business days after receipt if it determines an invoice to be materially defective.

4.6.2 Invoices will be deemed automatically rejected upon delivery if they:

4.6.2 (a) are sent to an incorrect address;

4.6.2 (b) do not reference the correct State contract number; or

4.6.2 (c) are payable to any Person other than the Contractor.

4.6.3 The ordering Eligible Agency or Co-Op Buyer will have no obligation to pay against a defective invoice unless and until Contractor has re-submitted it free of defects.

4.7 INVOICING FOR TASK ORDERS. For task order Services, invoices must include the following information as applicable to the relevant task order being invoiced against:

1. substantiation of hours worked using:
   a. a detailed daily timesheet;
   b. itemization to the task level; and
   c. breakdown by service area (if the Contract covers more than one area) and Contract Amendment (if any apply);
2. authorizations and receipts for all allowable reimbursable items being invoiced; and
3. Contractor's certification that the invoice has been examined and to the best of Contractor's knowledge and belief the invoiced amounts are entitled, correct, and accurate as can be demonstrated by the contractually-required books and records upon State's demand.

5.0 Payments

5.1 PAYMENT. The applicable Eligible Agency or Co-Op Buyer shall pay undisputed amounts due to Contractor within the time period specified in Section 18.1 of the Special Terms and Conditions

5.2 JOINT CHECKS OR DIRECT PAY. applicable Eligible Agency or Co-Op Buyer may, but is under no obligation to, pay by joint check or to pay directly to any Subcontractor or other creditor to whom any portion of Contractor's requested payment is owed.

5.3 RECOVERY OF OVER-PAYMENT. If applicable Eligible Agency or Co-Op Buyer determines that an over-payment has been made to Contractor on any prior invoice, it shall inform Contractor of the amount and date of the over-payment and may deduct the over-paid amount from amounts then or thereafter due to Contractor.

5.4 PAYMENTS TO SUBCONTRACTORS. Contractor shall make payment of all undisputed amounts due to Subcontractors within thirty (30) days of receipt of funds from applicable Eligible Agency or Co-Op Buyer applicable to their services.

5.5 PURCHASING CARD. applicable Eligible Agency or Co-Op Buyer may pay invoices for some or all Orders using a purchasing card. Any and all fees related to payment using a Purchasing Card are the responsibility of Contractor. Unless otherwise stated in the Contract there will be no additional fees or increase in prices associated with this method of payment.

5.6 AUTOMATED CLEARING HOUSE. applicable Eligible Agency or Co-Op Buyer may pay invoices for some or all Orders through an Automated Clearing House (ACH). In order to receive payments in this manner from

Eligible Agencies, Contractor must complete an ACH Vendor Authorization Form (form GAO-618) within 30 (thirty) days after the effective date of the Contract. The form is available online at:

https://gao.az.gov/afis/vendor-information

End of Section 2-B

SECTION 2-C: Special Terms and Conditions

The Special Terms and Conditions modify the Uniform Terms and Conditions and its Appendices. It can modify them by replacing, deleting, appending to, or revising the text of an existing provision or by inserting a new paragraph into an existing article. No other document modifies or adds to the Uniform Terms and Conditions, except as may subsequently be otherwise and expressly agreed and incorporated by Contract Amendment.

1.0 Definition of Terms

As used in the Contract, the terms listed below are defined as follows:

1.1. Co-Op Buyer

"Co-Op Buyer" means a member of the State Purchasing Cooperative that has entered into a "Cooperative Purchasing Agreement" with the Arizona Department of Administration State Procurement Office under A.R.S. § 41-2632. Unless there is an applicable Cooperative Purchasing Agreement in effect at the time, a State Purchasing Cooperative member cannot be a Co-Op Buyer. For reference, "Co-Op Buyer" is to be construed as encompassing "eligible procurement unit" under A.A.C. R2-7-101(23).

NOTE: Membership in the State Purchasing Cooperative is open to all Arizona political subdivisions, including cities, counties, school districts, and special districts. Membership is also available to non-profit organizations, other state governments, the federal government and tribal nations. For reference, "non-profit organizations" are defined in A.R.S. § 41-2631(4) as any nonprofit corporation as designated by the IRS under section 501(c)(3) through 501(c)(6) of the tax code.

1.2. Eligible Agency

If the Special Terms and Conditions indicates that the Contract is a "single-agency" contract, then "Eligible Agency" means the particular State of Arizona agency, university, commission, or board identified therein. If the Special Terms and Conditions indicates that the Contract is a "statewide" contract, then "Eligible Agency" means any State of Arizona department, agency, university, commission, or board.

2.0 Contract Interpretation

No modifications to uniform terms and conditions section

3.0 Contract Administration and Operation

3.1 Term of Contract

The term of the Contract will commence on the date indicated on the Acceptance and continue for five (5) years with an optional additional five (5) year term with annual renewal(s) for a total max term of ten (10) years unless canceled, terminated, or permissibly extended.

3.2 Statewide Contract Provisions

The Contract is a "statewide" contract for multiple purchases, projects, or assignments, and can be purchased against by some or all Eligible Agencies and any Co-Op Buyers that elect to participate. Even if only one Eligible Agency needs or elects to purchase against the Contract, it is to be construed as being a "statewide" contract hereunder.

The Contract is an indefinite delivery, indefinite quantity (ID/IQ) type of contract; it is to be construed as a "delivery order" sub-type of ID/IQ contract to the extent the Work is Materials, and a "task order" sub-type to the extent the Work is Services.

1. Contractor shall verify if an ordering entity is a bona fide Co-Op Buyer before selling Materials to or providing Services for them under the Contract. The current list of Co-Op Buyers is available on the State Procurement Office website:

https://spo.az.gov/procurement-services/cooperative-procurement/coop-usage-report

2. Contractor shall sell to Co-Op Buyers at the same price and on the same lead times and other terms and conditions under which it sells to Eligible Agencies, with the sole exception of any legitimately additional costs for extraordinary shipping or delivery requirements if the Co-Op Buyer is having Materials delivered or installed or Services performed at locations not contemplated in the contracted pricing (e.g. delivery to a location outside Arizona).
3. Contractor shall pay State an administrative fee against all Contract sales to Co-Op Buyers, as provided for under A.R.S. § 41-2633. The fee rate is one (1%) percent. Failure to remit the administrative fees is a material breach of contract, and will entitle State to its remedies under Article 8 and its right to terminate for default under Article 9. Method of calculation, payment procedures, and other details are provided on the State Procurement Office website:

   https://spo.az.gov/contractor-resources/statewide-contracts-administrative-fee
4. Contractor shall submit to State a quarterly usage report documenting all Contract sales to both Eligible Agencies and Co-Op Buyers, itemized separately. Contractor shall further itemize divisions, groups or areas within a given Eligible Agency if they place Purchase Orders independently of each other. Failure to submit the report is a material breach of contract, and will entitle State to its remedies under Article 8 and its right to terminate for default under Article 9. Contractor shall submit the report using the forms and following the instructions on the State Procurement Office website:

   https://spo.az.gov/contractor-resources/statewide-contracts-administrative-fee
5. Contractor shall acknowledge each Purchase Order from Eligible Agencies within 1 (one) business day after receipt by either: (a) "approving" the Purchase Order electronically in ProcureAZ, which will indicate Contractor's unqualified acceptance of the Purchase Order as-issued; or (b) "rejecting" the Purchase Order electronically in ProcureAZ, with a concurrent explanation by email to relevant originator as to the reason for rejecting it. By way of reminder, the only grounds on which Contractor may reject or refuse a Purchase Order are those set out in subparagraph 3.12.3 [*Orders are Obligatory*]. Unless and until Contractor has approved the Purchase Order in ProcureAZ, it will have no effect under the Contract and will not oblige either State or Contractor. If the relevant Eligible Agency explicitly instructs at the time that a verbal acceptance is sufficient because of urgency or other unusual circumstances and Contractor duly gives its verbal acceptance, then Contractor will be deemed to have accepted the Purchase Order immediately upon commencing performance, provided that, Contractor must follow-up its verbal acceptance by accepting the Purchase Order electronically in ProcureAZ within 3 (three) business days. Contractor shall thereafter be barred from subsequently rejecting the Purchase Order in ProcureAZ and if it does so the rejection will be void.
6. Contractor shall acknowledge each Purchase Order from Co-Op Buyers in conformance with each buyer's instructions given at the time of ordering or in any supplemental participating agreement Contractor might have with them. Purchase Orders from Co-Op Buyers create no obligation on State's part, since they are entirely

between the Co-Op Buyer and Contractor. That notwithstanding, Contractor's obligation under the Contract is to service Co-Op Buyers commercially as though they were with an Eligible Agency, and Contractor's refusal to do so would be a material breach of the Contract.

3.3 Multiple-Use Provisions

Eligible Agencies may issue Purchase Orders for Services in several forms, all of which become final and effective by a "Release Purchase Order" in ProcureAZ. Purchase Orders issued by Co-Op Buyers will be in whatever form the Co-Op Buyer normally uses. Regardless of origin, Purchase Orders must cite the State contract number to be valid. State may, at its discretion in each instance, determine the scope, schedule, and price for each Purchase Order in any of the following ways:

1. By choosing some or all of the Materials or Services items covered by the Contract for which a price is established in the Pricing Document, then preparing an Purchase Order using those prices (e.g., filling out a purchase order form), and sending it to Contractor.
2. By instructing Contractor to provide a comprehensive proposal of item quantities, combinations, etc., or services hours, personnel, etc., for a defined scope using those established prices as a basis, then validating and negotiating the proposal with Contractor and issuing an Purchase Order if and when reaching agreement.
3. As described in *(2)* above but requesting the proposal from both Contractor and other vendors who are contracted within the applicable scope categories and locations, either sequentially or concurrently, then selecting the proposal or proposals combination that is most advantageous to State.
4. As described in *(3)* above but introducing ad-hoc commercial competition by making the selection and ordering conditional on obtaining more favorable prices than the contractually-established ones.

When evaluating the proposals under *(3)* and *(4)* above, State may select based on price (for example, a quoted number of hours times the contracted or improved rate plus a fixed amount for incidentals), by experience and qualifications (for example, having an office nearer the required work location), or whatever combination thereof it determines is most appropriate to the work in question.

4.0 Costs and Payments

4.1 Proposal Costs

Costs Incurred During Proposal Development. The State will not be responsible for any cost incurred during the period of proposal development, including but not limited to On-Site Visits, Pre-Offer Conferences, Demonstrations and any other costs incurred by the Offeror in preparation for Bid Offering.

5.0 Contract Changes

No modifications to uniform terms and conditions section.

6.0 Risk and Liability

6.1 Contractor Insurance

Indemnification Clause

To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless the State of Arizona, and its departments, agencies, boards, commissions, universities, and any jurisdiction or agency issuing permits for any work included in the project, and their respective directors, officers, officials, agents and employees (hereinafter referred to as "Indemnitee") from and against any and all claims, actions, liabilities, costs, losses, or expenses, (including reasonable attorney's fees), (hereinafter collectively referred to as "Claims") arising out of actual or alleged bodily injury or personal injury of any person (including death) or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of Contractor or any of Contractor's directors, officers,

agents, employees, volunteers or subcontractors. This indemnity includes any claim or amount arising or recovered under the Workers' Compensation Law or arising out of the failure of Contractor to conform to any federal, state or local law, statute, ordinance, rule, regulation or court decree. It is the specific intention of the parties that the Indemnitee shall, in all instances, except for Claims arising solely from the negligent or willful acts or omissions of the Indemnitee, be indemnified by Contractor from and against any and all Claims. It is agreed that Contractor will be responsible for primary loss investigation, defense and judgment costs where this indemnification is applicable. This indemnification will survive the termination of the above listed contract with the Contractor.

This indemnity shall not apply if the contractor or sub-contractor(s) is/are an agency, board, commission or university of the State of Arizona.

Insurance Requirements

Contractor and subcontractors shall procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Contract, insurance against claims for injury to persons or damage to property arising from, or in connection with, the performance of the work hereunder by the Contractor, its agents, representatives, employees or subcontractors.

The Insurance Requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. The State of Arizona in no way warrants that the minimum limits contained herein are sufficient to protect the Contractor from liabilities that arise out of the performance of the work under this Contract by the Contractor, its agents, representatives, employees or subcontractors, and the Contractor is free to purchase additional insurance.

Minimum Scope and Limits of Insurance

Contractor shall provide coverage with limits of liability not less than those stated below.

1. **Commercial General Liability (CGL) – Occurrence Form**

Policy shall include bodily injury, property damage, and broad form contractual liability coverage.

- General Aggregate $2,000,000
- Products – Completed Operations Aggregate $1,000,000
- Personal and Advertising Injury $1,000,000
- Damage to Rented Premises $50,000
- Each Occurrence $2,000,000

The policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed by or on behalf of the Contractor.

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

2. **Business Automobile Liability**

Bodily Injury and Property Damage for any owned, hired, and/or non-owned automobiles used in the performance of this Contract.

- Combined Single Limit (CSL) $1,000,000

Policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed

by, or on behalf of, the Contractor involving automobiles owned, hired and/or non-owned by the Contractor.

Policy shall contain a waiver of subrogation endorsement as required by this written agreement in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

3. **Workers' Compensation and Employers' Liability**

•	Workers' Compensation	Statutory
•	Employers' Liability	
o	Each Accident	$1,000,000
o	Disease – Each Employee	$1,000,000
o	Disease – Policy Limit	$1,000,000

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

This requirement shall not apply to each Contractor or subcontractor that is exempt under A.R.S. § 23-901, and when such Contractor or subcontractor executes the appropriate waiver form (Sole Proprietor or Independent Contractor).

4. **Professional Liability (Errors and Omissions Liability)**

•	Each Claim	$2,000,000
•	Annual Aggregate	$2,000,000

In the event that the Professional Liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract and, either continuous coverage will be maintained, or an extended discovery period will be exercised, for a period of two (2) years beginning at the time work under this Contract is completed.

The policy shall cover professional misconduct or negligent acts for those positions defined in the Scope of Work of this contract.

4. **Technology Errors & Omissions Insurance**

•	Each Claim	$2,000,000
•	Annual Aggregate	$2,000,000

Such insurance shall cover any, and all errors, omissions, or negligent acts in the delivery of products, services, and/or licensed programs under this contract.

Coverage shall include copyright infringement, infringement of trade dress, domain name, title or slogan.

In the event that the Tech E&O insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract and, either continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years, beginning at the time work under this Contract is completed.

5. **Network Security (Cyber) and Privacy Liability**

•	Each Claim	$2,000,000
•	Annual Aggregate	$2,000,000

Such insurance shall include, but not be limited to, coverage for third party claims and losses with respect to network risks (such as data breaches, unauthorized access or use, ID theft, theft of data) and invasion of privacy regardless of the type of media involved in the loss of private information, crisis management and identity theft response costs. This should also include breach notification costs, credit remediation and credit monitoring, defense and claims expenses, regulatory defense costs plus fines and penalties, cyber extortion, computer program and electronic data restoration expenses coverage (data asset protection), network business interruption, computer fraud coverage, and funds transfer loss.

In the event that the Network Security and Privacy Liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract and, either continuous coverage will be maintained, or an extended discovery period will be exercised for a period of two (2) years beginning at the time work under this Contract is completed.

The policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to vicarious liability of the insured arising out of the activities performed by or on behalf of the Contractor.

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

6. Installation Floater

- Coverage amount is $___TBD At Award

Policy shall contain an Additional Insured endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees.

The State of Arizona and the Department shall be named as loss payee as its interest may appear.

Coverage shall be written on an all risk, replacement cost basis and shall include coverage for flood and earth movement as well as coverage for losses that may occur during equipment testing/commissioning.

Policy shall be maintained until whichever of the following shall first occur: (1) final payment has been made; or, (2) until no person or entity, other than the State of Arizona, has an insurable interest in the property required to be covered.

Policy shall be endorsed such that the insurance shall not be canceled or lapse because of any partial use or occupancy by the State of Arizona.

The Installation Floater must provide coverage from the time the equipment/material becomes the responsibility of the Contractor and shall continue without interruption during the installation, testing and commissioning, including any time during which the equipment/material is being transported to the installation site, or awaiting installation, whether on or off site.

Policy shall contain a Waiver of Subrogation endorsement, as required by written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by the Contractor for the State of Arizona.

Contractor is responsible for the payment of all deductibles under the Installation Floater.

Additional Insurance Requirements

The policies shall include, or be endorsed to include, as required by this written agreement, the following provisions:

The Contractor's policies, as applicable, shall stipulate that the insurance afforded the Contractor shall be primary and that any insurance carried by the Department, its agents, officials, employees or the State of Arizona shall be excess and not contributory insurance, as provided by A.R.S. § 41-621 (E).

Insurance provided by the Contractor shall not limit the Contractor's liability assumed under the indemnification provisions of this Contract.

Notice of Cancellation

Applicable to all insurance policies required within the Insurance Requirements of this Contract, Contractor's insurance shall not be permitted to expire, be suspended, be canceled, or be materially changed for any reason without thirty (30) days prior written notice to the State of Arizona. Within two (2) business days of receipt, Contractor must provide notice to the State of Arizona if they receive notice of a policy that has been or will be suspended, canceled, materially changed for any reason, has expired, or will be expiring. Such notice shall be sent directly to the Department and shall be mailed, emailed, hand delivered or sent by facsimile transmission to (State Representative's Name, Address & Fax Number).

Acceptability of Insurers

Contractor's insurance shall be placed with companies licensed in the State of Arizona or hold approved non-admitted status on the Arizona Department of Insurance List of Qualified Unauthorized Insurers. Insurers shall have an "A.M. Best" rating of not less than A- VII. The State of Arizona in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.

Verification of Coverage

Contractor shall furnish the State of Arizona with certificates of insurance (valid ACORD form or equivalent approved by the State of Arizona) evidencing that Contractor has the insurance as required by this Contract. An authorized representative of the insurer shall sign the certificates.

All such certificates of insurance and policy endorsements must be received by the State before work commences. The State's receipt of any certificates of insurance or policy endorsements that do not comply with this written agreement shall not waive or otherwise affect the requirements of this agreement.

Each insurance policy required by this Contract must be in effect at, or prior to, commencement of work under this Contract. Failure to maintain the insurance policies as required by this Contract, or to provide evidence of renewal, is a material breach of contract.

All certificates required by this Contract shall be sent directly to the Department. The State of Arizona project/contract number and project description shall be noted on the certificate of insurance. The State of Arizona reserves the right to require complete copies of all insurance policies required by this Contract at any time.

Subcontractors

Contractor's certificate(s) shall include all subcontractors as insureds under its policies or Contractor shall be responsible for ensuring and/or verifying that all subcontractors have valid and collectable insurance as evidenced by the certificates of insurance and endorsements for each subcontractor. All coverages for subcontractors shall be subject to the minimum Insurance Requirements identified above. The Department reserves the right to require, at any time throughout the life of this contract, proof from the Contractor that its subcontractors have the required coverage.

Approval and Modifications

The Contracting Agency, in consultation with State Risk, reserves the right to review or make modifications to the insurance limits, required coverages, or endorsements throughout the life of this contract, as deemed necessary. Such action will not require a formal Contract amendment but may be made by administrative action.

Exceptions

In the event the Contractor or subcontractor(s) is/are a public entity, then the Insurance Requirements shall not apply. Such public entity shall provide a certificate of self-insurance. If the Contractor or subcontractor(s) is/are a State of Arizona agency, board, commission, or university, none of the above shall apply.

7.0 Warranties

No modifications to uniform terms and conditions section.

8.0 State's Contractual Remedies

No modifications to uniform terms and conditions section.

9.0 Contract Termination

No modifications to uniform terms and conditions section

10.0 Contract Claims

No modifications to uniform terms and conditions section.

11.0 General Provisions for Products

11.1	**Applicability**	Article 11 applies to the extent the Work is or includes Materials.
11.2	**Off-Contract Materials**	Contractor shall ensure that the design and/or procedures for the Materials ordering method prevents Purchase Orders for off-contract items or excluded items. Notwithstanding that State might have its own internal administrative rules regarding off-contract or excluded item ordering, and endeavors to prevent such purchase orders from occurring, Contractor is responsible for not accepting any such Purchase Orders; State may, at its discretion, return any such items under subparagraph 11.17 or cancel any such Purchase Order under subparagraph 11.18, in either case being without obligation and at Contractor's expense. As used above, "off-contract item" refers to any product not included in the scope of the Contract and for which no price or compensation has been established contractually, and "excluded item" refers to any product expressly stated in the Contract as being excluded from the Contract.
11.3	**Compensation for Late Deliveries**	Contractor shall have clear, published policies in place regarding late delivery, purchase order cancelation, discounts, or rebates given to compensate for late deliveries, etc., and make them readily available to those Eligible Agencies that are likely to need them.
11.4	**Indicate Shipping Costs on Purchase Order**	If shipping cost is additional to the contracted price or rate for an item, the Contractor shall identify the shipping cost it intends to add for shipping, as a separate line item on the price quote provided to ASDB. The Contractor shall also provide the required substantiating documentation for the shipping cost with the price quote. If ASDB approves paying a shipping cost, ASDB will list the agreed upon shipping cost as a line item on their Purchase Order, when it is issued. If there is no additional shipping cost, the Contractor shall indicate on the price quote that shipping is included in the Purchase Order price.
11.5	**Current Products**	Contractor shall keep all products being offered under the Contract: (a) in current and ongoing production; (b) in its advertised product lines; (c) as models or types that are actively functioning in other paying customer environments; and (d) in conformance to the requirements of the Contract.

11.6	**Maintain Comprehensive Selection**	Contractor shall provide at all times the comprehensive selection of products for which a price is established in the Pricing Document.
11.7	**Additional Products**	State, at its discretion, may modify the scope of the Contract by Contract Amendment to include additional products or product categories so long as they are within the general scope of the ones originally covered by the Contract. Once the Contract Amendment has been fully executed, Contractor shall then update all applicable catalogs and price lists and make them available to all affected entities at no additional cost. Either party may make the request to add products to the Contract; regardless of who makes the request, the parties shall negotiate in good faith a fair price for any additional products, but State may elect not to add some or all of the products in question if no agreement is reached on pricing in a timely manner. Contractor's request or proposal in response to State's request must include: (a) documentation demonstrating that the additional products meet or exceed the specifications for the original products while remaining in the same product groups as the original ones; and (b) documentation demonstrating that the proposed price for the additional products is both fair and reasonable and at the same level of discount relative to market price as were the original ones. Demonstration of (b) typically requires showing how prices at which sales are currently or were last made to a significant number of buyers compare to the prices or discounts (as applicable) being proposed for the additional products.
11.8	**Discontinued Products**	If a product or groups of products covered by the Contract are discontinued by the manufacturer, Contractor shall notify State within 5 (five) business days after receiving the manufacturer's notification. State, at its discretion, will either allow Contractor to provide substitutes for the discontinued products or delete the products from the scope of the Contract, both of which will be accomplished by Contract Amendment. Contractor shall then update all applicable catalogs and price lists and make them available to all affected entities at no additional cost. The parties shall negotiate in good faith a fair price for any substitute product, but State may elect to delete the products from the scope of the Contract if no agreement is reached on substitute pricing in a timely manner. When notifying State of the discontinuance, Contractor shall provide: (a) manufacturer's announcement or documentation stating that the products have been discontinued, with identification by model/part number; (b) documentation demonstrating that the substitute products meet or exceed the specifications for the discontinued products while remaining in the same product groups as were the discontinued ones; and (c) documentation demonstrating that the proposed price for the substitute products is both fair and reasonable and at the same level of discount relative to market price as were the discontinued ones (with demonstration being as described in subparagraph 11.7).
11.9	**Forced Substitutions**	Forced substitutions will not be permitted; Contractor shall obtain State's prior written consent before making any discretionary substitution for any product covered by the Contract.
11.10	**Recalls**	In the event of a recall notice, technical service bulletin, or other important notification affecting a product offered under the Contract (collectively, "recalls" hereinafter), Contractor shall send timely notice to State for each applicable Purchase Order referencing the affected Purchase Order and product. Notwithstanding whatever protection Contractor might have under A.R.S. § 12-684 with respect to a manufacturer, Contractor shall handle recalls entirely and without obligation on State's part, other than to permit removal of installed products, retrieval of stored products, etc., as necessary to implement the recall.
11.11	**Delivery**	11.11.1 PRICING. Unless stated otherwise in the Pricing Document, all Materials prices set forth therein are FCA (seller's dock) Incoterms®2010, with "seller's dock" meaning the last place of manufacturing, assembly, integration, final packing, or warehousing before departure to designated point of delivery to State. For reference, the foregoing is to be construed as equivalent to "F.O.B. Origin, Contractor's Facility" under FAR 52.247-30.

11.11.2 LIABILITY. Unless stated otherwise in the Pricing Document or an Purchase Order, Contractor's liability for all Materials is DDP (State-designated receiving point per Purchase Order) Incoterms®2010, but with unloading at destination included. For reference, the foregoing is to be construed as equivalent to "F.O.B. Destination, Within Consignee's Premises" under FAR 52.247-35.

11.11.3 PAYMENT. Unless stated otherwise in the Pricing Document or an Purchase Order, State shall reimburse Contractor the costs of the difference between DDP (State-designated receiving point per Purchase Order) and FCA (seller's dock) with no mark-up, which Contractor shall itemize and invoice separately.

11.12 Delivery Time

Unless stated otherwise in the Pricing Document generally or in the applicable Purchase Order particularly, Contractor shall make delivery within 2 (two) weeks or earlier after receiving each Purchase Order. If Contractor is unable to make delivery within 2 (two) weeks after receiving the Purchase Order, the Contractor will communicate expected delivery time to Eligible Agency within 24 hours after Purchase Order.

11.13 Delivery Locations

Contractor shall offer deliveries to every location served under the scope of the Contract, specifically:

1. if the Contract is for a single State agency in a single area, then Contractor shall deliver to any agency location in that area;
2. if the Contract is for a single State agency in all its locations, then Contractor shall deliver to any of that agency's location in Arizona;
3. if the Contract is for statewide use but excludes certain areas, then Contractor shall deliver to any Eligible Agency location that is not in the excluded areas; and
4. if the Contract is for unrestricted statewide use, then:
    a) Contractor shall deliver to any Eligible Agency anywhere in Arizona;
    b) if the Pricing Document indicates defined delivery areas and prices, those always apply unless the Purchase Order expressly states otherwise and Contractor accepts it.

11.14 Conditions at Delivery Location

Contractor shall verify receiving hours and conditions (i.e. height/weight restrictions, access control, etc.) with the relevant purchaser for the receiving site before scheduling or making a delivery. State will neither allow extra charges for wait time, comebacks, or the like nor excuse late delivery if Contractor has failed to make the verification or comply with the applicable conditions. Contractor shall make each delivery to the specific location indicated in the Purchase Order, which Contractor acknowledges might be inside an industrial building, institutional building, low-rise office building, or high-rise office building instead of a normal receiving dock. Contractor might be required to make deliveries to locations inside a secured perimeter at certain institutional facilities such as prisons where prior clearances are required for each delivery and driver individually. Contractor shall contact each such facility directly to confirm its most-current security clearance procedures, allowable hours for deliveries, visitor dress code, and other applicable rules. State will neither allow extra charges for wait time, comebacks, or the like nor excuse late delivery if Contractor has failed to make the confirmation or comply with the applicable conditions.

11.15 Materials Acceptance

State has the right to make acceptance of Materials subject to a complete inspection on delivery and installation, if installation is Contractor's responsibility. State may apply as acceptance criteria conformity to the Contract, workmanship and quality, correctness of constituent materials, and any other matter for which the Contract or applicable laws state a requirement, whether stated directly or by reference to another document, standard, reference specification, etc. Contractor shall remove any rejected Materials

from the delivery location, or from any immediate environs to which it might have been reasonably necessary to move it, carry it off the delivery premises, and subsequently deliver an equal number or quantity of conforming items. State will not owe Contractor any payment for rejected Materials, and State may, at its discretion, withhold or make partial payment for any rejected Materials that have been returned to Contractor in those instances where State has agreed to permit repair instead of demanding replacement.

11.16 Correcting Defects

Contractor shall, at no additional cost and without entitlement to extension of any delivery deadline or specified time for performance, remove or exchange and replace any defective or non-conforming delivered or installed Materials.

1. Contractor shall be solely responsible for the cost of any associated cutting and patching, temporary protection measures, packing and crating, hoisting and loading, transportation, unpacking, inspection, repacking, reshipping, and reinstallation if installation is within the scope of the Contract.
2. If Contractor fails to do so in a timely manner, State will be entitled to exercise its remedies under paragraph 8.5 [Right of Offset] of the Uniform Terms and Conditions.
3. Whether State will permit Contractor to repair in place or demands that Contractor remove and replace is at State's discretion in each instance, provided that, State shall not apply that discretion punitively if repair in place is practicable and doing so would not create safety hazards, put property at risk, unreasonably interfere with operations, create public nuisance, or give rise to any other reasonable concern on State's part.

11.17 Returns

State may, at its discretion, return for full credit and with no restocking charges any delivered Materials unused in the original packaging, including any instruction manuals or other incidental item that accompanied the original shipment, within 30 (thirty) days after receipt. If State elects to return delivered Materials, then State shall pay all freight, delivery, and transit insurance costs to return the products to the place from which Contractor shipped them, provided that, if State returns delivered Materials because they are defective or non-conforming or for any other reason having to do with Contractor fault or error, then State will not be responsible for paying freight, delivery, or transit insurance costs to return the products and may, at its discretion, either have those billed directly to Contractor or offset them under paragraph 8.5 [Right of Offset] of the Uniform Terms and Conditions.

11.18 Purchase Order Cancellation

State may cancel Purchase Orders within a reasonable period after issuance and at its discretion. The same method as that used for ordering will be used for cancellation. If State cancels an Purchase Order, then State shall:

1. pay Contractor for any portion of the Materials and Services from that Purchase Order that have been properly delivered or performed as of the cancellation effective date plus 1 (one) additional business day;
2. reimburse Contractor for:
    a) its actual, documented costs incurred in fulfilling the Purchase Order up to the cancellation effective date plus 1 (one) additional business day; and
    b) the cost of any obligations it incurred as of the cancellation effective date plus 1 (one) additional business day that demonstrably cannot be canceled, or that have pre-established cancelation penalties specified in the relevant Subcontracts, to the extent the penalties are reasonable and customary for the work in question; and

3. contractor shall not charge or be entitled to charge State for any new costs it incurs after receiving the cancelation notice plus 1 (one) business day or for any lost profits or opportunity.

By way of reminder, State is not liable for any products that were produced, shipped, or delivered or any services that were performed before Contractor had acknowledged the corresponding Purchase Order.

11.19 Product Safety

Materials as-shipped must comply with applicable safety regulations and standards. Unless expressly stated otherwise in the Scope of Work, State is not responsible for making any Materials safe or compliant following acceptance and is relying exclusively on Contractor to deliver only products that are already safe and compliant.

11.20 Hazardous Materials

Contractor shall timely provide State with any "Safety Data Sheets" (SDS) and any other hazard communication documentation required under the US Department of Labor's Occupational Safety and Health Administration (OSHA) "Hazard Communication Standard" (often referred to as the "HazCom 2012 Final Rule") that is reasonably necessary for State to comply with regulations when it or its other contractors install, handle, operate, repair, maintain or remove any Materials. Note that, in the past, those documents might have been referred to as "Material Safety Data Sheets" or "Product Safety Data Sheets", but State (and this Contract) use only the more up-to-date "SDS" reference. Contractor shall ensure that all its relevant personnel understand the nature of and hazards associated with, to the extent it they are Contractor's responsibility under the Contract, the design, shipping, handling, delivery, installation, repair and maintenance of any portion of the Work that is, contains or will become upon use a hazardous material, with "hazardous material" being any material or substance that is: (1) identified now or in the future as being hazardous, toxic or dangerous under applicable laws; or (2) subject to statutory or regulatory requirement governing special handling, disposal or cleanup.

12.0 General Provisions for Services

12.1 Applicability

Article 12 applies to the extent the Work is or includes Services.

12.2 Comprehensive Services Offering

Contractor shall provide the comprehensive range of services for which a price is established in the Pricing Document for ordering by Eligible Agencies, and Co-Op Buyers if co-op buying applies.

12.3 Additional Services

State at its discretion may modify the scope of the Contract by Contract Amendment to include additional services or service categories that are within the general scope of the ones originally covered by the Contract if it determines that doing so is in its best interest. Once the Contract Amendment is fully executed, Contractor shall then update all applicable price lists and make them available to all affected entities at no additional cost. Either party may make the request to add services to the Contract; regardless of who makes the request, the parties shall negotiate in good faith a fair price for any additional services, but State may elect not to add some or all of the services in question if no agreement is reached on pricing in a timely manner. Contractor's request or proposal in response to State's request must include documentation demonstrating that the proposed price for the additional services is both fair and reasonable and comparable to the original ones.

12.4 Off-Contract Services

Contractor shall ensure that the design and/or procedures for the Services ordering method prevents Purchase Orders for off-contract or excluded services. Notwithstanding that State might have its own internal administrative rules regarding off contract or excluded service ordering, and endeavors to prevent such purchase orders from occurring, Contractor is responsible for not accepting any such Purchase Orders. State may, at its discretion, cancel any such Purchase Order without obligation. As used above, "off-contract service" refers to any

service not included in the scope of the Contract and for which no price or compensation has been established contractually, and "excluded service" refers to any service expressly excluded from the scope of the Contract.

12.5 Removal of Personnel

Notwithstanding that Contractor is in every circumstance responsible for hiring, assigning, directing, managing, training, disciplining, and rewarding its personnel, State may at its discretion and without the obligation to demonstrate cause instruct Contractor to remove any of its personnel from State's facilities or from further assignment under the Contract. In such cases, Contractor shall promptly replace them with other personnel having equivalent qualifications, experience, and capabilities.

12.6 Transitions

During commencement, Contractor shall attend transition meetings with any outgoing vendors to coordinate and ease the transition so that the effect on State's operations is kept to a minimum. State may elect to have outgoing vendors complete some or all of their work or purchase orders in progress to ease the transition as is safest and most efficient in each instance, even if that scope is covered under the Contract. Conversely, State anticipates having a continued need for the same materials and services upon expiration or earlier termination of the Contract. Accordingly, Contractor shall work closely with any new (incoming) vendor and State to ensure as smooth and complete a transfer as is practicable. State's representative shall coordinate all transition activities and facilitate joint development of a comprehensive transition plan by both Contractor and the incoming vendor. As with the incoming transition. State may permit Contractor (outgoing) to complete work or purchase orders in progress to ease the transition as is safest and most efficient in each instance.

12.7 Accuracy of Work

Contractor is responsible for the accuracy of the Services, and shall promptly make all necessary revisions or corrections resulting from errors and omissions on its part without additional compensation. Acceptance by State will not relieve Contractor of responsibility for correction of any errors discovered subsequently or necessary clarification of any ambiguities.

12.8 Requirements at Services Location

Contractor personnel shall perform their assigned portions of the Services at the specific location indicated in the Purchase Order (if applicable). Contractor acknowledges that the location might be inside an industrial building, institutional building, or one of various office types and classes. Additionally, if performing the Services requires Contractor personnel to work inside a secured perimeter at certain institutional facilities such as prisons where prior clearances are required, Contractor shall contact the facility directly to confirm its most-current security clearance procedures, allowable hours for work, visitor dress code, and other applicable rules. State will neither allow extra charges for wait time, comebacks, or the like nor excuse late performance if Contractor has failed to make the confirmation or comply with the applicable conditions.

12.9 Services Acceptance

State has the right to make acceptance of Services subject to acceptance criteria. State may apply as acceptance criteria conformity to the Contract, accuracy, completeness, or other indicators of quality or other matter for which the Contract or law states a requirement, whether stated directly or by reference to another document, standard, reference specification, etc. State will not owe Contractor any payment for un-accepted Services; and State may, at its discretion, withhold or make partial payment for any rejected Services if Contractor is still in the process of re-performing or otherwise curing the grounds for State's rejection.

12.10 Corrective Action Required

Notwithstanding any other guarantees, general warranties, or particular warranties Contractor has given under the Contract, if Contractor fails to perform any material portion of the Services, including failing to complete any contractual deliverable, or if its performance fails to meet agreed-upon service levels or service standards set out in or referred to in the Contract, then Contractor shall perform a root-cause analysis to identify the source of the failure and use all commercially reasonable efforts to correct the failure and meet the Contract requirements as promptly as is practicable.

1. Contractor shall provide to State a report detailing the identified cause and setting out its detailed corrective action plan promptly after the date the failure occurred (or the date when the failure first became apparent, if it was not apparent immediately after occurrence).
2. State may demand to review and approve Contractor's analysis and plans, and Contractor shall make any corrections State instructs and adopt State's recommendations so far as is commercially practicable, provided that State may insist on any measures it determines within reason to be necessary for safety or protecting property and the environment.
3. Contractor shall take the necessary action to avoid any like failure in the future, if doing so is appropriate and practicable under the circumstances.

13.0 Data and Information Handling

13.1 Applicability

Article 13 applies to the extent the Work includes handling of any (1) State's proprietary and sensitive data or (2) confidential or access-restricted information obtained from State or from others at State's behest.

13.2 Data Protection and Confidentiality of Information

Contractor warrants that it will establish and maintain procedures and controls acceptable to State for ensuring that State's proprietary and sensitive data is protected from unauthorized access and information obtained from State or others in performance of its contractual duties is not mishandled, misused, or inappropriately released or disclosed. For purposes of this paragraph, all data created by Contractor in any way related to the Contract, provided to Contractor by State, or prepared by others for State are proprietary to State, and all information by those same avenues is State's confidential information. To comply with the foregoing warrant:

1. Contractor shall: (a) notify State immediately of any unauthorized access or inappropriate disclosures, whether stemming from an external security breach, internal breach, system failure, or procedural lapse; (b) cooperate with State to identify the source or cause of and respond to each unauthorized access or inappropriate disclosure; and (c) notify State promptly of any security threat that could result in unauthorized access or inappropriate disclosures; and
2. Contractor shall not: (a) release any such data or allow it to be released or divulge any such information to anyone other than its employees or officers as needed for each person's individual performance of his or her duties under the Contract, unless State has agreed otherwise in advance and in writing; or (b) respond to any requests it receives from a third party for such data or information, and instead route all such requests to State's designated representative.

13.3 Personally Identifiable Information.

Without limiting the generality of paragraph 13.2, Contractor warrants that it will protect any personally identifiable information ("PII") belonging to State's employees' or other contractors or members of the general public that it receives from State or otherwise acquires in its performance under the Contract.

For purposes of this paragraph:

1. PII has the meaning given in the [federal] Office of Management and Budget (OMB) *Memorandum M-07-16 Safeguarding Against and Responding to the Breach of Personally Identifiable Information*; and
2. "protect" means taking measures to safeguard personally identifiable information and prevent its breach that are functionally equivalent to those called for in that OMB memorandum and elaborated on in the [federal] General Services Administration (GSA) *Directive CIO P* 2180*.1 GSA Rules of Behavior for Handling Personally Identifiable Information*.

NOTE (1): For convenience of reference only, the OMB memorandum is available at:

https://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2007/m07-16.pdf

NOTE (2): For convenience of reference only, the GSA directive is available at:

http://www.gsa.gov/portal/directive/d0/content/658222

13.4 Protected Health Information

Contractor warrants that, to the extent performance under the Contract involves individually identifiable health information (referred to hereinafter as protected health information ("PHI") and electronic PHI ("ePHI") as defined in the Privacy Rule referred to below), it:

1. is familiar with and will comply with the applicable aspects of the following collective regulatory requirements regarding patient information privacy protection: (a) the "Privacy Rule" in CFR 45 Part 160 and Part 164 pursuant to the Health Insurance Portability and Accountability Act ("HIPAA") of 1996; (b) Arizona laws, rules, and regulations applicable to PHI/ePHI that are not preempted by CFR 45-160(B) or the Employee Retirement Income Security Act of 1974 ("ERISA") as amended; and (c) State's current and published PHI/ePHI privacy and security policies and procedures;
2. will cooperate with State in the course of performing under the Contract so that both State and Contractor stay in compliance with the requirements in *(1)* above; and
3. will sign any documents that are reasonably necessary to keep both State and Contractor in compliance with the requirements in *(1)* above, in particular "Business Associate Agreements" in accordance with the Privacy Rule.

NOTE: For convenience of reference only, the Privacy Rule is available at:

http://www.hhs.gov/hipaa/for-professionals/privacy/index.html

14.0 Information Technology Work

14.1 Applicability

Article 14 applies to any Invitation for Bids, Request for Proposals, or Request for Quotations for "Information Technology," as defined In A.R.S. § 41-3501(6) 6: " . . . computerized and auxiliary automated information processing, telecommunications and related technology, including hardware, software, vendor support and related services, equipment and projects" if and to the extent that the Work is or includes Information Technology.

14.2 Background Checks

Each of Contractor's personnel who is an applicant for an information technology position must undergo the security clearance and background check procedure, which includes fingerprinting, as required by A.R.S § 41-710. Contractor shall obtain and pay for the security clearance and background check. Contractor personnel who will have administrator privileges on a State network must additionally provide identify and address verification and undergo State-specified training for unescorted access, confidentiality, privacy, and data security.

14.3 Information Access

14.3.1 SYSTEM MEASURES. Contractor shall employ appropriate system management and maintenance, fraud prevention and detection, and encryption application and tools to any systems or networks containing or transmitting State's proprietary data or confidential information.

14.3.2 INDIVIDUAL MEASURES. Contractor personnel shall comply with applicable State policies and procedures regarding data access, privacy, and security, including prohibitions on remote access and obtaining and maintaining access IDs and passwords. Contractor is responsible to State for ensuring that any State access IDs and passwords are used only by the person to whom they were issued. Contractor shall ensure that personnel are only provided the minimum only such level of access necessary to perform his or duties. Contractor shall on request provide a current register of the access IDs and passwords and corresponding access levels currently assigned to its personnel.

14.3.3 ACCESS CONTROL. Contractor is responsible to State for ensuring that hardware, software, data, information, and that has been provided by State or belongs to or is in

the custody of State and is accessed or accessible by Contractor personnel is only used in connection with carrying out the Work, and is never commercially exploited in any manner whatsoever not expressly permitted under the Contract. State may restrict access by Contractor personnel, or instruct Contractor to restrict access their access, if in its determination the requirements of this subparagraph are not being met.

14.4 Pass-Through Indemnity

14.4.1 INDEMNITY FROM THIRD PARTY. For computer hardware or software included in the Work as discrete units that were manufactured or developed solely by a third party, Contractor may satisfy its indemnification obligations under the Contract by, to the extent permissible by law, passing through to State such indemnity as it receives from the third-party source (each a "Pass-Through Indemnity") and cooperating with State in enforcing that indemnity. If the third party fails to honor its Pass-Through Indemnity, or if a Pass-Through Indemnity is insufficient to indemnify State Indemnitees to the extent and degree Contractor is required to do by the Uniform Terms and Conditions, then Contractor shall indemnify, defend and hold harmless State Indemnitees to the extent the Pass-Through Indemnity does not.

14.4.2 NOTIFY OF CLAIMS. State shall notify Contractor promptly of any claim to which a Pass-Through Indemnity might apply. Contractor, with reasonable consultation from State, shall control of the defense of any action on any claim to which a Pass-Through Indemnity applies, including negotiations for settlement or compromise, provided that:

(a) State reserves the right to elect to participate in the action at its own expense;

(b) State reserves the right to approve or reject any settlement or compromise on reasonable grounds and if done so timely; and

(c) State shall in any case cooperate in the defense and any related settlement negotiations.

14.5 Systems and Controls

In consideration for State having agreed to permit Pass-Through Indemnities in lieu of direct indemnity, Contractor agrees to establish and keep in place systems and controls appropriate to ensure that State funds under this Contract are not knowingly used for the acquisition, operation, or maintenance of Materials or Services in violation of intellectual property laws or a third party's intellectual property rights.

14.6 Redress of Infringement

14.6.1 REPLACE, LICENSE, OR MODIFY. If Contractor becomes aware that any Materials or Services infringe, or are likely to be infringing on, any third party's intellectual property rights, then Contractor shall at its sole cost and expense and in consultation with State either:

(a) replace any infringing items with non-infringing ones;

(b) obtain for State the right to continue using the infringing items; or

(c) modify the infringing item so that they become non-infringing, so long as they continue to function as specified following the modification.

14.6.2 CANCELLATION OPTION. In every case under 14.6.1, if none of those options can reasonably be accomplished, or if the continued use of the infringing items is impracticable, State may cancel the relevant Purchase Order or terminate the Contract and Contractor shall take back the infringing items. If State does cancel the Purchase Order or terminate the Contract, Contractor shall refund to State:

(a) for any software created for State under the Contract, the amount State paid to Contactor for creating it;

(b) for all other Materials, the net book value of the product provided according to generally accepted accounting principles; and

(c) for Services, the amount paid by State or an amount equal to 12 (twelve) months of charges, whichever is less.

14.6.3. EXCEPTIONS. Contractor will not be liable for any claim of infringement based solely on any of the following by a State Indemnitee:

(a) modification or use of Materials other than as contemplated by the Contract or expressly authorized or proposed by a Contractor Indemnitor;

(b) operation of Materials with any operating software other than that supplied by Contractor or authorized or proposed by a Contractor Indemnitor; or

(c) combination or use with other products in a manner not contemplated by the Contract or expressly authorized or proposed by a Contractor Indemnitor.

14.7 First Party Liability Limitation

14.7.1 LIMIT. Subject to the provisos that follow below and unless stated otherwise in the Special Terms and Conditions, State's and Contractor's respective first party liability arising from or related to the Contract is limited to the greater of $1,000,000 (one million dollars) or 3 (three) times the purchase price of the specific Materials or Services giving rise to the claim.

14.7.2 PROVISOS. This paragraph 14.7 limits liability for first party direct, indirect, incidental, special, punitive, and consequential damages relating to the Work regardless of the legal theory under which the liability is asserted. This paragraph 14.7 does not limit liability arising from any:

(a) Indemnified Claim against which Contractor has indemnified State Indemnitees;

(b) claim against which Contractor has indemnified State Indemnitees; or

(c) provision of the Contract calling for liquidated damages or specifying amounts or percentages as being at-risk or subject to deduction for performance deficiencies.

14.7.2 PURCHASE PRICE DETERMINATION. If the Contract is for a single-agency and a single Purchase Order (or if no Purchase Order applies), then "purchase price" in Subparagraph 14.7.1 above means the aggregate Contract price current at the time of Contract expiration or earlier termination, including all change orders or other forms of Contract Amendment having an effect on the aggregate price through that date. In all other cases, "purchase price" above means the total price of the Purchase Order for the specific equipment, software, or services giving rise to the claim, and therefore a separate limit will apply to each Purchase Order.

14.7.3 NO EFFECT ON INSURANCE. This paragraph does not modify the required coverage limits, terms, and conditions of, or any insured's ability to claim against, any insurance that Contractor is required by the Contract to provide, and Contractor shall obtain express endorsements that it does not.

14.8 Information Technology Warranty

14.8.1 SPECIFIED DESIGN. Where the Scope of Work for information technology Work provides a detailed design specification or sets out specific performance requirements, Contractor warrants that the Work will provide all functionality material to the intended use stated in the Contract, provided that, the foregoing warranty does not extend to any portions of the Materials that are:

(a) modified or altered by anyone not authorized by Contractor to do so;

(b) maintained in a way inconsistent to any applicable manufacturer recommendations; or

(c) operated in a manner not within its intended use or environment.

14.8.2 COTS SOFTWARE. With respect to Materials provided under the Contract that are commercial-off-the-shelf (COTS) software, Contractor warrants that:

(a) to the extent possible, it will test the software before delivery using commercially available virus detection software conforming to current industry standards;

(b) the COTS software will, to the best of its knowledge, at the time of delivery be free of viruses, backdoors, worms, spyware, malware, and other malicious code

that could hamper performance, collect unlawfully any personally identifiable information, or prevent products from performing as required by the Contract; and

(c) it will provide a new or clean install of any COTS software that State has reason to believes contains harmful code.

14.8.3 PAYMENT HAS NO EFFECT. The warranties in this paragraph are not affected by State's inspection, testing, or payment.

14.9 Specific Remedies

Unless expressly stated otherwise elsewhere in the Contract, State's remedy for breach of warranty includes, at State's discretion, re-performance, repair, replacement, or refund of any amounts paid by State for the nonconforming Work, plus (in every case) Contractor's payment of State's additional, documented, and reasonable costs to procure materials or services equivalent in function, capability, and performance at that first called for. For clarification of intent, the foregoing obligations are limited by the limitation of liability. If none of the forgoing options can reasonably be effected, or if the use of the materials by State is made impractical by the nonconformance, then State may seek any remedy available to it under law.

14.10 Section 508 Compliance

Unless specifically authorized in the Contract, any electronic or information technology offered to the State of Arizona under this Contract shall comply with A.R.S. § 18-131 and § 18-132 and Section 508 of the Rehabilitation Act of 1973, which requires that employees and members of the public shall have access to and use of information technology that is comparable to the access and use by employees and members of the public who are not individuals with disabilities.

14.11 Cloud Applications

The following are required for Contractor of any "cloud" solution that hosts State data outside of the State's network, or transmits and/or receives State data.

1. Submit a completed Arizona Baseline Infrastructure Security Controls assessment spreadsheet as found at: https://aset.az.gov/resources/policies-standards-and-procedures, and mitigate or install compensating controls for any issues of concern identified by State. Contractor is required to provide any requested documentation supporting the review of the assessment. The assessment shall be re-validated on a minimum annual basis.
2. State reserves the right to conduct Penetration tests or hire a third party to conduct penetration tests of the Contractor's application. Contractor will be alerted in advance and arrangements made for an agreeable time. Contractor shall respond to all serious flaws discovered by providing an acceptable timeframe to resolve the issue and/or implement a compensating control.
3. Contractor must submit copy of system logs from cloud system to State of AZ security team on a regular basis to be added to the State SIEM (Security Information Event Monitor) or IDS (Intrusion Detection System).

Contractor must employ a government-rated cloud compartment to better protect sensitive or regulated State data.

15.0 Agency Contract Administration and Operations – Department of Corrections

15.1 Drug Testing Program

The Contractor shall implement a drug and alcohol testing program for applicants, employees and volunteers, at no additional cost to the Department. The Contractor shall ensure that all subcontractors implement the same drug and alcohol testing program required by the Department. The program shall meet the requirements of Department Order 522, Drug-Free Workplace.

15.2 Department Policies and Procedures

The contractor shall follow all Department policies, procedures and Department Orders (DO) and Directors Instruction (DI) i.e., drug-free workplace, dress code, grooming, etc. The policies, procedures, DO and DI are available on the following website www.azcorrections.gov.

15.3 Notice Warning

Any person who takes into or out of or attempts to take into or out of a correctional facility or the grounds belonging to or adjacent to a correctional facility, any item not specifically authorized by the correctional facility, shall be prosecuted under the provisions of the Arizona Revised Statues. All persons, including, employee and visitors, entering upon these confines are subject to routine searches of their persons, vehicles,

Authority	A.R.S. §13-2501:
	A.R.S. §13-2505
	ADC Department Order 708

15.4 Contraband

Contraband means any dangerous drug, narcotic drug, intoxicating liquor or any kind, deadly weapon, dangerous instrument, explosive or any other article whose use of or possession would endanger the safety, security or preservation of order in a correctional facility or any person therein. (Any other article includes any substance which could cause abnormal behavior, i.e., marijuana, nonprescription medications, etc.)

Promoting prison contraband A.R.S. § 13-2505:

A person, not otherwise authorized by law, commits promoting prison contraband:

a. By knowingly taking contraband into a correctional facility or the grounds of such a facility; or

b. By knowingly conveying contraband to any persons confined in a correctional facility; or

c. By knowingly making, obtaining, or possessing contraband while being confined in a correctional facility.

Promoting Prison Contraband is a Class 5 felony.

Authority	A.R.S. § 13-2501
	A.R.S. § 13-2505
	ADC Department Order 70814.4.2

15.5 Rules and Regulations

15.5.1 Attention of the Offerors is called to the requirements specified in **Attachment 6**, Rules for Non-Employees of the Department of Corrections in Arizona State Prison Complexes which shall be adhered to in all respects.

15.5.2 Should the Contractor require signatures of other parties such as subcontractor or persons directly or indirectly employed by the Contractor, it shall be the Contractor's responsibility to obtain such signatures. The signed document must be submitted within ten (10) days of notification of intent to award.

15.6 Unlawful Sexual Conduct

15.6.1 A person – who is employed by the State Department of Corrections or the Department of Juvenile Corrections; is employed by a private prison facility or a city or county jail; Contracts to provide services with the State Department of Corrections, the Department of Juvenile Corrections, a private prison facility or a city or county jail; is an official visitor, volunteer or agency representative of the State Department of Corrections, the Department of Juvenile Corrections, a private prison facility or a city or county jail – commits unlawful sexual conduct by intentionally or knowingly engaging in any act of a sexual nature with an offender who is in the custody of the State Department of Corrections, the Department of Juvenile Corrections, a private prison facility or a city or county jail or with an offender who is under the supervision of either Department or a city or county.

15.6.2 This section does not apply to a person who is employed by the State Department of Corrections, a private prison facility or a city or county jail or who Contracts to provide services with the State Department of Corrections, a private prison facility or a city or county jail or an offender who is on release status if the person was lawfully married to the prisoner or offender on release status before the prisoner or offender was sentenced to the State Department of Corrections or was incarcerated in a city or county jail.

15.6.3 Unlawful sexual conduct with an offender who is under fifteen years of age is a class 2 felony. Unlawful sexual conduct with an offender who is between fifteen and seventeen years of age is a class 3 felony. All other unlawful sexual conduct is a class 5 felony.

15.6.4 Unlawful sexual conduct; correctional facilities; classification; Definition A.R.S. §13-1419.

15.7 Federal Prison Rape Elimination Act 2003

15.7.1 The Contractor shall comply with the Federal Prison Rape Elimination Act of 2003.14.7.2

End of Section 2-C

SECTION 2-D:

Uniform Terms and Conditions

Version 2018 (2/1/2018)

1.0 Definition of Terms

1.1	**Acceptance**	"Acceptance" means the document headed "Offer and Acceptance Form" bearing the State contract number once Procurement Officer has signed it to signify (1) State's formal acceptance of the Accepted Offer and (2) the formation of the Contract.
1.2	**Accepted Offer**	If State did not request a Revised Offer, then "Vendor Offer" means the Initial Offer. If State did request a Revised Offer but not a Best and Final Offer, then "Accepted Offer" means the latest Revised Offer. If State requested a Best and Final Offer, then "Accepted Offer" means the latest Best and Final Offer.
1.3	**Arizona Procurement Code; A.R.S.; A.A.C.**	The "Arizona Procurement Code, "A.R.S.," and "A.A.C." refers to Arizona Revised Statutes ("A.R.S.") § 41-2501, *et seq.*, and the rules promulgated thereunder, Arizona Administrative Code ("A.A.C.") R2-7-101, *et. seq.*
1.4	**Arizona TPT**	"Arizona TPT" means Arizona Transaction Privilege Tax. For information, refer to the Arizona Department of Revenue (DOR) website at: https://www.azdor.gov/business/transactionprivilegetax.aspx.
1.5	**Attachment**	"Attachment" means any item that: 4. the Solicitation required Offeror to submit as part of the relevant Offer (e.g., Initial Offer, Revised Offer, or BAFO); 5. was attached to an Offer when submitted; and 6. was included in the Accepted Offer.
1.6	**Contract**	"Contract" " means the combination of the Solicitation, including the Uniform and Special Instructions to Offerors, the Uniform and Special Terms and Conditions, and the Specifications and Statement or Scope of Work; the Offer and any Best and Final Offers; and any Solicitation Amendments or Contract Amendments or authorized Purchase Orders.
1.7	**Contract Amendment**	"Contract Amendment" means a document signed by Procurement Officer that has been issued for the purpose of making changes to the Contract after execution. Only the Procurement Officer responsible for this Contract has the authority to modify or amend this Contract. In ProcureAZ, the term "Change Order" has the same meaning as "Contract Amendment".
1.8	**Contract Terms and Conditions**	"Contract Terms and Conditions" means the Special Terms and Conditions and these Uniform Terms and Conditions taken collectively.
1.9	**Contractor**	"Contractor" means the Person identified on the Accepted Offer who has entered into the Contract with State.
1.10	**Contractor Indemnitor**	"Contractor Indemnitor" means Contractor or any of its owners, officers, directors, agents, employees, volunteers or Subcontractors.

1.11	**eProcurement System (currently ProcureAZ)**	"eProcurement System" means State's official electronic procurement system, established pursuant to A.A.C. R2-7-201 as set forth in the Arizona Department of Administration State Procurement Office policy. This eProcurement System may be subject to change. The State's current eProcurement system is "ProcureAZ." The current version of the ADOA policy regarding the State's eProcurement System is *Technical Bulletin No. 020, ProcureAZ – The Official State eProcurement System*. NOTE (1): Technical Bulletin No. 020 is available online at: https://spo.az.gov/administration-policy/state-procurement-resource/procurement-regulations NOTE (2): The URL for ProcureAZ itself is: https://procure.az.gov/
1.12	**Gratuity**	"Gratuity" means a payment, loan, subscription, advance, deposit of money, services, or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value is received.
1.13	**Indemnified Basic Claims**	"Indemnified Basic Claims" means any and all claims, actions, liabilities, damages, losses, or expenses, including court costs, attorney fees, and costs of claim processing, investigation and litigation, for bodily injury or personal injury, including death, or loss or damage to any real or tangible or intangible personal property, collectively. See paragraph 6.2.
1.14	**Instructions to Offerors**	"Instructions to Offerors" is Section 3-a of Part 3 of the Solicitation Documents.
1.15	**Materials**	"Materials" has the meaning given in A.R.S. § 41-2503(7). Materials includes software, except that if software is sold or provided as a service, then to the extent it consists of encoded information or computer instructions it is included in "Materials" and to the extent it is a service it described in "Services" below.
1.16	**Offer: Initial Offer; Revised Offer; Best and Final Offer (BAFO)**	"Initial Offer" means, per A.A.C. R2-7-101(33), Offeror's proposal submitted to State in response to the Solicitation, as initially submitted. "Revised Offer" means any revised versions of the Initial Offer that Offeror has submitted to State at State's request as permitted under A.A.C. R2-7-C314 and R2-7-C315. "Best and Final Offer" ("BAFO") means, per A.A.C. R2-7-101(8), the Revised Offer submitted after negotiations have been completed that contain Offeror's most favorable terms for price, service, and products to be delivered. Reference to "an Offer, "the Offer," or "your Offer" means any of the Initial Offer, a Revised Offer, or the Best and Final Offer.
1.17	**Pricing Document**	"Pricing Document" means Section 2-B of Part 2 of the Solicitation Documents, provided that, if there is no such Section in the Contract, then "Pricing Document" is to be construed as referring to whatever item in the Contract contains the contracted pricing and payment provisions.
1.18	**Procurement Officer**	"Procurement Officer" means the person, or his or her designee, who has been duly authorized by the State to enter into and administer the Contract and to make written determinations with respect to the Contract. Procurement Officer is as identified on the Acceptance unless subsequently changed by Contract Amendment.
1.19	**Purchase Order**	"Purchase Order" means the instrument by which State authorizes Contractor to perform some or all of the Work. Whether the Contract will have one Purchase Order or many Purchase Orders depends the scope of the Contract and how State will use it. The Special Terms and Conditions provide that information. Any of the following is to be construed as being a "Purchase Order": 1. "Release" or "Release Purchase Order" in ProcureAZ;

2. "task order", "service order," or "job order" when a Release Purchase Order for Services has already been committed in ProcureAZ; or
3. "purchase order" for buying by Co-Op Buyers, if co-op buying applies.

1.20 Services "Services" has the meaning given in A.R.S. § 41-2503(35), Services include the service aspect s of software described in the definition of "Materials" above.

1.21 Specification "Specification" has the meaning given in A.R.S. § 41-2561. Specifications (if any are included in the Contract), are indexed in the Scope of Work and could be bound separately from the other documents forming the Contract.

1.22 State With respect to the Contract generally, "State" means the State of Arizona and its department, agency, university, commission, or board that has executed the Contract. With respect to administration or rights, remedies, obligations and duties under the Contract for a given Purchase Order, "State" means each of Eligible Agency or Co-Op Buyer who has issued the Purchase Order.

1.23 State Fiscal Year "State Fiscal Year" means the period beginning with July 1 and ending June 30.

1.24 State Indemnitees "State Indemnitees" means, collectively, the State of Arizona, its departments, agencies, universities, commissions, and boards and, and their respective officers, agents, and employees.

1.25 Subcontract "Subcontract" means any Contract, express or implied, between the Contractor and another party or between a subcontractor and another party, delegating, in whole or in part, the making or furnishing of any material or any service required for the performance of the Contract.

1.26 Subcontractor "Subcontractor" has the meaning given in A.R.S. § 41-2503(38).

1.27 Work "Work" means the totality of the provision of Materials and the Services and all the acts of administration, creation, production, and performance necessary to fulfill and incidental to fulfilling all of Contractor's obligations and duties under the Contract in conformance with the Contract and applicable laws.

2.0 Contract Interpretation

2.1 Arizona Law The Contract is governed by, and is to be interpreted in accordance with, the laws of the State of Arizona, including, but not limited to the Arizona Procurement Code, without consideration of conflict of laws principles.

2.2 Implied Terms Each provision of law and any terms required by law to be in this Contract are a part of this Contract as if fully stated in it.

2.3 Contract Order of Precedence COMPLEMENTARY DOCUMENTS. All of the documents forming the Contract are complementary and all provisions are to be interpreted as a single, united Contract. If certain work, requirements, obligations, or duties are set out only in one but not in another, Contractor shall carry out the Work as though the relevant work, requirements, obligations, or duties had been fully described in all, consistent with the other documents forming the Contract and as is reasonably inferable from them as being necessary to produce complete results.

CONFLICTS. In case of any inconsistency, conflict, or ambiguity among the documents forming the Contract and their provisions, the Contract documents and their provisions are to prevail in the following order, descending from most dominate to most subordinate, provided that, among categories of documents or provisions within the same sub-section below, the document or provision with the latest date prevails. Information being identified in one document but not in another is not to be considered a conflict or inconsistency.

(a) Contract Amendments;

(b) the Solicitation Documents, in the order:

(1) Special Terms and Conditions;

(2) Exhibits to the Special Terms and Conditions;

(3) Uniform Terms and Conditions;
(4) Scope of Work;
(5) Exhibits to the Scope of Work;
(6) Pricing Document;
(7) Exhibits to the Pricing Document;
(8) Specifications; and
(9) any other documents referenced or included in the Solicitation;

(c) Orders, in reverse chronological order; and

(d) Accepted Offer.

2.4 Severability

The provisions of this Contract are severable to the extent allowed under Arizona Contract Law. Any term or condition deemed or adjusted illegal or invalid is thereby stricken from the Contract and will not affect any other term or condition of the Contract..

2.5 Complete Integration

The Contract, including any documents incorporated into the Contract by reference and any authorized Contract Amendments and Orders, is intended by the parties as a final and complete expression of their agreement. There are no prior, contemporaneous, or additional agreements, either oral or in writing, pertaining to the Contract. No course of prior dealings between the parties shall supplement or explain any terms used in this document and no other understanding either oral or in writing can independently bind the State to changes to the Contract.

2.6 Independent Contractor

Contractor is an independent contractor and shall act in an independent capacity in performance under the Contract. Neither party is or is to be construed as being to be the employee or agent of the other party, and no action, inaction, event, or circumstance will be grounds for deeming it to be so.

2.7 No Waiver of Rights

Either party's failure to insist on strict performance of any term or condition of the Contract is not, and is not to be construed as being, nor will it be deemed, a waiver of that term or condition or a bar to, or diminishment of the right of, subsequent enforcement of any term or condition.

3.0 Contract Administration and Operation

3.1 Books and Records; Audit

3.1.1 RETAIN RECORDS. By A.R.S. § 41-2548(B), Contractor shall retain and shall contractually require each Subcontractor to retain books and records relating for any cost and pricing data submitted in satisfaction of § 41-2543 for the period specified in the statute.

3.1.2 RIGHT TO AUDIT. The retained books and records are subject to audit by State during that period. By A.R.S. § § 35-214 and-2548(B), Contractor shall retain and shall contractually require each Subcontractor to retain books and records relating to performance under the Contract for the period specified in the statute and those retained books and records are subject to audit by State during that period.

3.1.3 AUDITING. Contractor or Subcontractor shall either make all such books and records under subparagraphs 3.1.1 and 3.1.2 available to State at all reasonable times or produce the records at a designated State office on State's demand, the choice of which being at State's discretion. For the purpose of this paragraph, "reasonable times" are during normal business hours and in such a manner so as to not unreasonably interfere with normal business activities. Any person who obstructs or impairs an audit being conducted or about to be conducted in relation to and Contract or Subcontract with the State may be found guilty of a Class 5 Felony under A.R.S. § 35-215.

3.2 Non-Discrimination

The Contractor shall comply with State Executive Order No. 2009-09 and all other applicable Federal and State laws, rules and regulations, including the Americans with Disabilities Act.

3.3 Contractor Licenses

Contractor shall maintain current all federal, state and local licenses and permits required for the operation of its business in general, for its operations under the Contract, and for the Work itself.

3.4 Inspection and Testing

By A.R.S. § 41-2547, State may at reasonable times inspect the part of Contractor's or Subcontractors' plant or places of business related to performance under the Contract. Accordingly, Contractor agrees to permit (for itself) and ensure (for Subcontractors) access for inspection at any reasonable time to its facilities, processes, and services. State may inspect or test, at its own cost, any finished goods, work-in-progress, components, or unfinished materials that are be supplied under the Contract or that will be incorporated into something to be supplied under the Contract. If the inspection or testing shows non-conformance or defects, then Contractor will owe State reimbursement or payment of all costs it incurred in carrying out or contracting for the inspection and testing, as well as for any re-inspection or re-testing that might be necessary. Neither inspection of facilities nor testing of goods, work, components, or unfinished materials will of itself constitute acceptance by State of those things.

3.5 Notices and Correspondence

3.5.1 TO CONTRACTOR. State shall:

(a) address all Contract correspondence other than formal notices to the email address indicated as "Default for Type" for "General Mailing Address" in Contractor's corresponding ProcureAZ Vendor Profile; and

(b) address notices to Contractor to the "Contractor Name and Title" at the "Mailing Address" indicated in the Contract

3.5.2 TO STATE. Contractor shall :

(a) address all Contract correspondence, other than notices, to the email address indicated in "Contact Instructions" in the ProcureAZ Summary for State; and

(b) address any required notices to State to Procurement Officer identified as "Purchaser" in the ProcureAZ Summary at the following mailing address:

Arizona Department of Administration
State Procurement Office
100 N 15th Ave., Suite 402
Phoenix, AZ 85007

3.5.3 CHANGES. State may change the designated Procurement Officer, update contact information, or change the applicable mailing address by Contract Amendment.

3.6 Signing of Contract Amendments

Contractor's counter-signature – or "approval" in ProcureAZ, in the case of a Change Order – is not required to give effect if the Contract Amendment only covers either:

4. extension of the term of the Contract within the maximum aggregate term;
5. revision to Procurement Officer appointment or contact information; or
6. modifications of a clerical nature that have no effect on terms, conditions, price, scope, or other material aspect of the Contract.

In every case other than those listed in *(1)*, *(2)*, and *(3)* above, both parties' signature – or "approval" in ProcureAZ, in the case of a Change Order – are required to give it effect.

3.7 Click-Through Terms and Conditions

If either party uses a web based ordering system, an electronic purchase order system, an electronic purchase order acknowledgement, a form of an electronic acceptance, or any software based ordering system with respect to the Contract (each an "Electronic Ordering System"), the parties acknowledge and agree that an Electronic Ordering System is for ease of administration only, and Contractor hereby acknowledges and agrees that the persons using Electronic Ordering Systems on behalf of State do not have any actual or apparent authority to create legally binding obligations that vary from the terms and conditions of the Contract. Accordingly, where an authorized State user is required to "click through" or otherwise accept or be made subject to any terms and conditions in using an Electronic Ordering Systems, any such terms and conditions are deemed void upon presentation. Additionally, where an authorized

State user is required to accept or be made subject to any terms and conditions in accessing or employing any Materials or Services, those terms and conditions will also be void.

3.8 Ownership of Intellectual Property

3.8.1 RIGHTS IN WORK PRODUCT. All intellectual property originated or prepared by Contractor pursuant to the Contract, including but not limited to, inventions, discoveries, intellectual copyrights, trademarks, trade names, trade secrets, technical communications, records reports, computer programs and other documentation or improvements thereto, including Contractor's administrative communications and records relating to the Contract, are considered work product and Contractor's property, provided that, State has Government Purpose Rights to that work product as and when it was delivered to State.

(a) "Government Purpose Rights" are:

i. the unlimited, perpetual, irrevocable, royalty free, non-exclusive, worldwide right to use, modify, reproduce, release, perform, display, sublicense, disclose and create derivatives from that work product without restriction for any activity in which State is a party;

ii. the right to release or disclose that work product to third parties for any State government purpose; and

iii. the right to authorize those to whom it rightfully releases or discloses that work product to use, modify, release, create derivative works from the work product for any State government purpose; such recipients being understood to include the federal government, the governments of other states, and various local governments.

(b) "Government Purpose Rights" do not include any right to use, modify, reproduce, perform, release, display, create derivative works from, or disclose that work product for any commercial purpose or to authorize others to do so.

3.8.2 JOINT DEVELOPMENTS. The parties may each use equally any ideas, concepts, know-how, or techniques developed jointly during the course of the Contract, and may do so at their respective discretion, without obligation of notice or accounting to the other party.

3.8.3 PRE-EXISTING MATERIAL. All pre-existing software and other materials developed or otherwise obtained by or for Contractor or its affiliates independently of the Contract or applicable Purchase Orders are not part of the work product to which rights are granted State under subparagraph 3.8.1 above, and will remain the exclusive property of Contractor, provided that any derivative works of such pre-existing material or elements thereof that are created pursuant to the Contract are part of that work product.

3.9 Subcontracts

3.9.1 INITIAL LIST. At the time of Contract execution, Contractor may have listed prospective Subcontractors in Attachment 3-C to the Vendor Offer [*Proposed Subcontractors*]. If a Subcontractor is on this initial list in a Vendor Offer, then the Contractor has the Procurement Officer's advance consent to enter into a Subcontract with each listed candidate.

3.9.2 ADDITIONAL NAMES. Contractor shall not enter into a Subcontract without first obtaining Procurement Officer's written consent with any prospective Subcontractor that (a) was not listed on Attachment 3-C at time of Contract execution or (b) is for any Materials or Services categories other than the ones for which they were previously consented. For either case *(a)* or *(b)*, Contractor shall submit a written request sufficiently in advance of the need date for those materials or services so that performance under the Contract is not impaired. Procurement Officer may request any additional information he or she determines is necessary to assess the submittal, and may withhold consent pending it.

3.9.3 FLOW-DOWN. Contractor shall incorporate the provisions, terms, and conditions of the Contract into every Subcontract by inclusion or by reference, as appropriate. When making any post-execution consent requests, Contractor shall include its warrant that it will do the same for the pending Subcontracts covered by the request. Entering into Subcontracts will not relieve Contractor of any of its obligations or duties under the Contract, including, among other things, the duty to supervise and coordinate the work of Subcontractors. Nothing contained in any Subcontract will create or is to be construed as creating any contractual relationship between State and the Subcontractor.

3.10 E-Verify Requirements

In accordance with A.R.S. § 41-4401, Contractor warrants compliance with all Federal immigration laws and regulations relating to employees and warrants its compliance with Section A.R.S. § 23-214, Subsection A. Contractor acknowledges and agrees that under A.R.S. § 41-4401, State retains the legal right to inspect papers of any Contractor employee who works under the Contract to ensure compliance with the foregoing warranty and understands that a breach of the foregoing warranty under shall be deemed a material breach of the Contract that is subject to penalties up to and including termination of the Contract.

3.11 Offshore Performance of Certain Work Prohibited

Contractor shall only perform those portions of the Services that directly serve State or its clients and involve access to secure or sensitive data or personal client data within the defined territories of the United States. Unless specifically stated otherwise in the Scope of Work, this paragraph does not apply to indirect or overhead services, redundant back-up services, or services that are incidental to performance under the Contract. This provision applies to work performed by Subcontractors at all tiers.

3.12 Purchase Orders

3.12.1 PURCHASE ORDER SUFFICIENCY. A Purchase Order issued by an authorized person that cites the correct State contract number will suffice to authorize Contractor to provide the Materials and perform the Services covered by that Purchase Order.

3.12.2 PURCHASE ORDER TERMS. All Purchase Orders are subject to the Contract Terms and Conditions; a Purchase Order cannot modify the Contract Terms and Conditions.

3.12.3 PURCHASE ORDERS ARE OBLIGATORY. Until the expiration or earlier termination of the Contract, State may issue and Contractor shall accept Purchase Orders that make proper reference to the Contract and are permissible hereunder, provided that, Contractor is not obliged to accept any Purchase Order that is not consistent with the then-current pricing, lead times, specifications, or payment provisions of the Contract. Contractor shall fulfill and complete any Purchase Orders that are begun but not yet completed as of expiration or earlier termination of the Contract unless State instructs otherwise at the time.

3.12.4 SPECIAL CASE. In the special case where both the following conditions are true, Procurement Officer's signature on the Acceptance is Contractor's authorization to perform and therefore no Purchase Order is required: (a) the Contract is identified as being a "single-agency/single-project" contract and (b) the Contract was created in ProcureAZ as something other than a "Master/ Blanket" type.

3.12.5 NO MINIMUMS OR COMMITMENTS. (a) Contractor shall not impose any minimum dollar amount, item count, services volume, or services duration on Purchase Orders; (b) State makes no commitment of any kind concerning the quantity or monetary value of activity actually initiated or completed during the term of the Contract; (c) Contractor shall only deliver or perform as authorized by Purchase Orders; and (d) State is not limited as to the number of Purchase Orders it may issue for the Contract. For clarity of intent, the foregoing applies equally whether an Eligible Agency issues the Purchase Order or, if applicable, a Co-Op Buyer issues it.

3.12.6 NON-CONTRACTED MATERIALS OR SERVICES. Any attempt to knowingly represent for sales, marketing, or related purposes that goods or services not specifically awarded are under a State contract is a violation of the Contract and law.

3.13 Other Contractors

State may undertake with its own forces or award other contracts to the same or other vendors for additional or related work. In such cases, Contractor shall cooperate fully with State's

employees and such other vendors and carefully coordinate, fit, connect, accommodate, adjust, or sequence its work to the related work by others. Where the Contract requires handing-off Contractor's work to others, Contractor shall cooperate as State instructs regarding the necessary transfer of its work product, services, or records to State or the other vendors. Contractor shall not commit or permit any act that interferes with the State's or other vendors' performance of their work.

3.14 Work on State Premises

3.14.1 COMPLIANCE WITH RULES. Contractor is responsible for ensuring that its personnel comply with State's rules, regulations, policies, documented practices, and documented operating procedures while delivering or installing Materials or performing Services on State's grounds or in its facilities. Contractor shall comply with State security requirements in order to deliver, install, or perform at that particular location, without entitlement to any additional compensation or additional time for performance if those particular requirements are not expressly stated in the Contract.

3.14.2 PROTECTION OF GROUNDS AND FACILITIES. Contractor shall deliver or install the Materials and perform the Services without damaging any State grounds or facilities. Contractor shall promptly repair or replace any damage it caused and at its own expense, subject to whatever instructions and restrictions State needs to make to prevent inconvenience or disruption of operations. If Contractor fails to make the necessary repairs or replacements in a timely manner, State will be entitled to exercise its remedies under paragraph 8.5 [*Right of Offset*].

3.15 Advertising, Publishing and Promotion of Contract

Contractor shall not advertise, promote, or otherwise use information concerning the Contractor commercial benefit without the prior written approval of Procurement Officer, which approval Procurement Officer may withhold at his or her discretion.

4.0 Costs and Payments

4.1 Payments

4.1.1 PAYMENT DEADLINE. State shall make payments in compliance with Arizona Revised Statues Titles 35 and 41. Unless stated otherwise in the Pricing Document, State shall make payment in full for Materials that have been delivered and accepted and Services that have been performed and accepted within the time specified in A.R.S. § 35-342 after both of the following become true: (a) all of the Materials being invoiced have been delivered or installed (as applicable) and accepted and all of the Services being invoiced have been performed and accepted; and (b) Contractor has provided a complete and accurate invoice in the form and manner called for in the Pricing Document, provided that, State will not make or be liable for any payments to Contractor until Contractor has registered properly in ProcureAZ and provided a current IRS Form W-9 or an equivalent form to the State unless excused by law from providing one.

4.1.2 PAYMENTS ONLY TO CONTRACTOR. Unless compelled otherwise by operation of law or order of a court of competent jurisdiction, State will only make payment to Contractor under the federal tax identifier indicated on the Vendor Offer.

4.2 Applicable Taxes

4.2.1 CONTRACTOR TO PAY ALL TAXES. State is subject to Arizona TPT. Therefore, Arizona TPT applies to all sales under the Contract and Arizona TPT is Contractor's responsibility (as seller) to remit. Contractor's failure to collect Arizona TPT or any other applicable sales or use taxes from an Eligible Agency or Co-Op Buyer (as buyer) will not relieve Contractor of any obligation to remit sales or use taxes that are due under the Contract or laws. Unless stated otherwise in the Pricing Document, all prices therein include Arizona TPT as well as every other manner of transaction privilege or sales/use tax that is due to a municipality or another state or its political subdivisions. Contractor shall pay all federal, state, and local taxes applicable to its operations and personnel.

4.2.2 TAX INDEMNITY. Contractor shall hold State harmless from any responsibility for taxes or contributions, including any applicable damages and interest, that are due to federal, state, and local authorities with respect to the Work and the Contract, as well any

related costs; the foregoing expressly includes Arizona TPT, unemployment compensation insurance, social security, and workers' compensation insurance.

4.3 Availability of Funds for the Next State fiscal year

Funds may not presently be available for performance under this Contract beyond the current state fiscal year. No legal liability on the part of the State for any payment may arise under this Contract beyond the current state fiscal year until funds are made available for performance of this Contract.

4.4 Availability of Funds for the current State fiscal year

Should the State Legislature enter back into session and reduce the appropriations or for any reason and these goods or services are not funded, the State may take any of the following actions:

4.4.1. Accept a decrease in price offered by the contractor;

4.4.2. Cancel the Contract; or

4.4.3. Cancel the contract and re-solicit the requirements

5.0 Contract Changes

5.1 Amendments

This Contract is issued under the authority of the Procurement Officer who signed this Contract. The Contract may be modified only through a Contract Amendment within the scope of the Contract. Changes to the Contract, including the addition of work or materials, the revision of payment terms, or the substitution of work or materials, directed by a person who is not specifically authorized by the procurement officer in writing or made unilaterally by the Contractor are violations of the Contract and of applicable law. Such changes, including unauthorized written Contract Amendments shall be void and without effect, and the Contractor shall not be entitled to any claim under this Contract based on those changes.

5.2 Assignment and Delegation

5.2.1 IN WHOLE. Contractor shall not assign or delegate its duties under the Contract, in whole or in part, without Procurement Officer's prior written consent; Procurement Officer may withhold at his or her discretion. If Contractor's proposed assignment or delegation stems from a split, sale, acquisition, or other non-merger change in control, then no such consent will be given in any event without the assignee or delegate giving State satisfactory and equivalent evidence or assurance of its financial soundness, competency, capacity, and qualification to perform as that which Contractor possessed when State first awarded it the Contract.

5.2.2 IN PART. Subject to paragraph 3.9 (*Subcontracts*) with respect to subcontracting, Contractor may assign particular rights or delegate particular duties under the Contract, but shall obtain Procurement Officer's written consent before doing so. Procurement Officer shall not unreasonably withhold consent so long as the proposed assignment or delegation does not attempt to modify the Contract in any way or to alter or impair State's rights or remedies under the Contract or laws.

6.0 Risk and Liability

6.1 Risk of Loss

Contractor shall bear all risk of loss to Materials if, and as, those duties are within the scope of the Work, until they have been accepted as conforming by State in the manner specified in the Purchase Order, or as specified generally elsewhere in the Contract if the Purchase Order does not provide particulars. Risk of loss for nonconforming Materials will remain with Contractor notwithstanding acceptance to the extent the loss stems from the nonconformance.

6.2 Basic Indemnification

6.2.1 CONTRACTOR/VENDOR (NOT PUBLIC AGENCY). To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless State Indemnitees from Indemnified Basic Claims that: (a) are caused or alleged to be caused in whole or in part by the negligent or willful acts or omissions of a Contractor Indemnitor; (b) arise out of or are recovered under worker compensation laws; and/or (c) arise out of a Contractor Indemnitor's failure to conform to any federal, state, or local law, statute, ordinance, rule, regulation, or court decree. The parties specifically intend that the Contractor Indemnitors shall indemnify the relevant State Indemnitees from and against Indemnified Basic Claims in all instances except where the Indemnified Basic Claim

arises solely from those State Indemnitees' own negligent or willful acts or omissions. Wherever the indemnification under this subparagraph applies, Contractor is responsible for primary loss investigation, defense, and judgment costs for an on behalf of the other Contractor Indemnitors with respect to State Indemnitees, and accordingly Contractor is also responsible for any cooperation, contribution, or subordination between or amongst the Contractor Indemnitors. In consideration of the award of the Contract by a State Indemnitee, Contractor hereby waives all rights of subrogation against State Indemnities for losses arising from the Work.

If Contractor is a public agency, this paragraph does not apply and subparagraph 6.2.1 below applies instead.

6.2.2 PUBLIC AGENCY. Each party (as 'indemnitor') agrees to indemnify, defend, and hold harmless the other party (as 'indemnitee') from and against any and all claims, losses, liability, costs, or expenses (including reasonable attorney's fees) (hereinafter collectively referred to as 'claims') arising out of bodily injury of any person (including death) or property damage but only to the extent that such claims which result in vicarious/derivative liability to the indemnitee, are caused by the act, omission, negligence, misconduct, or other fault of the indemnitor, its officers, officials, agents, employees, or volunteers.

6.2.3 If Contractor is not a public agency, this paragraph does not apply and subparagraph above applies instead.

6.3 Patent and Copyright Indemnification

CONTRACTOR/VENDOR (NOT PUBLIC AGENCY). With respect to Materials or Services provided or proposed by a Contractor Indemnitor for performance under the Contract, Contractor shall indemnify, defend and hold harmless State Indemnitees against any third-party claims for liability, costs, and expenses, including, but not limited to reasonable attorney fees, for infringement or violation of any patent, trademark, copyright, or trade secret by the Materials and the Services. With respect to the defense and payment of claims under this subparagraph:

1. State shall provide reasonable and timely notification to Contractor of any claim for which Contractor may be liable under this paragraph;
2. Contractor, with reasonable consultation from State, shall have control of the defense of any action on an indemnified claim including all negotiations for its settlement or compromise;
3. State may elect to participate in such action at its own expense; and
4. State may approve or disapprove any settlement or compromise, provided that, (i) State shall not unreasonably withhold or delay such approval or disapproval and (ii) State shall cooperate in the defense and in any related settlement negotiations.

If Contractor is a public agency, this paragraph 6.3 does not apply.

6.4 Force Majeure

6.4.1 DEFINITION. For this paragraph, "force majeure" means an occurrence that is (a) beyond the control of the affected party, (b) occurred without the party's fault or negligence, and (c) something the party was unable to prevent by exercising reasonable diligence. Without limiting the generality of the foregoing, force majeure expressly includes acts of God, acts of the public enemy, war, riots, strikes, mobilization, labor disputes, civil disorders, fire, flood, lockouts, injunctions-intervention-acts, failures or refusals to act by government authorities, and, subject to paragraph 7.10 (*Performance in Public Health Emergency)*, declared public health emergencies. Force majeure expressly does not include late delivery caused by congestion at a manufacturer's plant or elsewhere, an oversold condition of the market, late performance by a Subcontractor unless the delay arises out of an occurrence of force majeure, or inability of either Contractor or any Subcontractor to acquire or maintain any required insurance, bonds, licenses, or permits.

6.4.2 RELIEF FROM PERFORMANCE. Except for payment of sums due, the parties are not liable to each other if an occurrence of force majeure prevents its performance under the Contract. If either party is delayed at any time in the progress of their respective performance under the Contract by an occurrence of force majeure, the delayed party

shall notify the other no later than the following working day after the occurrence, or as soon as it could reasonably have been expected to recognize that the occurrence had effect in cases where the effects were not readily apparent. In any event, the notice must make specific reference to this paragraph specifying the causes of the delay in the notice and, if the effects of the occurrence are on-going, provide an initial notification and thereafter the delayed party shall provide regular updates until such time as the effects are fully known. To the extent it is able, the delayed party shall cause the delay to cease promptly and notify the other party when it has done so. The parties shall extend the time of completion by Contract Amendment for a period equal to the time that the results or effects of the delay prevented the delayed party from performing.

6.4.3 EXCUSABLE DELAY IS NOT DEFAULT. Failure in performance by either party will not constitute default hereunder or give rise to any claim for damages or loss of anticipated profits if and to the extent that such failure was or is being caused by an occurrence of force majeure.

6.4.4 DEFAULT DIMINISHES RELIEF. Entitlement to relief from the effects of an occurrence of force majeure is diminished to the extent that the delay did or will result from the affected party's default unrelated to the occurrence, in which case and to that extent the other party's normal remedies and the affected party's obligations would apply undiminished.

6.5 Third Party Antitrust Violations

Contractor assigns to State any claim for overcharges resulting from antitrust violations to the extent that those violations concern materials or services supplied by third parties to Contractor toward fulfillment of the Contract.

7.0 Warranties

7.1 Liens

The Contractor warrants that the materials supplied under this Contract are free of liens and shall remain free of liens.

7.2 Conformity to Requirements

Contractor warrants that, unless expressly provided otherwise elsewhere in the Contract, the Materials and Services will for 1 (one) year after acceptance and in each instance: (1) conform to the requirements of the Contract, which by way of reminder include without limitation all descriptions, specifications, and drawings identified in the Scope of Work and any Contractor affirmations included as part of the Contract; (2) be free from defects of material and workmanship; (3) conform to or perform in a manner consistent with current industry standards; and (4) be fit for the intended purpose or use described in the Contract. Mere delivery or performance does not substitute for express acceptance by State. Where inspection, testing, or other acceptance assessment of Materials or Services cannot be done until after installation, the forgoing warranty will not begin until State's acceptance.

7.3 Quality

Unless otherwise modified elsewhere in these terms and conditions, the Contractor warrants that, for 1 (one) year after acceptance by the State of the materials, they shall be:

7.3.1. Of a quality to pass without objection in the trade under the Contract description;

7.3.2. Fit for the intended purposes for which the materials are used;

7.3.3. Within the variations permitted by the Contract and are of even kind, quantity, and quality within each unit and among all units;

7.3.4. Adequately contained, packaged and marked as the Contract may require; and

7.3.5. Conform to the written promises or affirmations of fact made by the Contractor.

7.4 Inspection/Testing

The warranties set forth in subparagraphs 7.1 through 7.3 of this paragraph are not affected by inspection or testing of or payment for the materials by the State.

7.5 Compliance with Laws

The materials and services supplied under this Contract shall comply with all applicable Federal, state and local laws, and the Contractor shall maintain all applicable license and permit requirements.

7.6 Survival of Rights and Obligations after Contract Expiration or Termination

7.6.1. Contractor's Representations and Warranties. All representations and warranties made by the Contractor under this Contract shall survive the expiration or termination hereof. In addition, the parties hereto acknowledge that pursuant to A.R.S. § 12-510, except as provided in A.R.S. § 12-529, the State is not subject to or barred by any limitations of actions prescribed in A.R.S., Title 12, Chapter 5.

7.6.2. Purchase Orders. The Contractor shall, in accordance with all terms and conditions of the Contract, fully perform and shall be obligated to comply with all purchase orders received by the Contractor prior to the expiration or termination hereof, unless otherwise directed in writing by the Procurement Officer, including, without limitation, all purchase orders received prior to but not fully performed and satisfied at the expiration or termination of this Contract.

7.7 Contractor Personnel

Contractor warrants that its personnel will perform their duties under the Contract in a professional manner, applying the requisite skills and knowledge, consistent with industry standards, and in accordance with the requirements of the Contract. Contractor further warrants that its key personnel will maintain any certifications relevant to their work, and Contractor shall provide individual evidence of certification to State's authorized representatives upon request.

7.8 Intellectual Property

Contractor warrants that the Materials and Services do not and will not infringe or violate any patent, trademark, copyright, trade secret, or other intellectual property rights or laws, except only to the extent the Specifications do not permit use of any other product and Contractor is not and cannot reasonably be expected to be aware of the infringement or violation.

7.9 Operational Continuity

Contractor warrants that it will perform without relief notwithstanding being sold or acquired; no such event will operate to mitigate or alter any of Contractor's duties hereunder absent a consented delegation under paragraph 5.2 (*Assignment and Delegation*) that expressly recognizes the event.

7.10 Performance in Public Health Emergency

Contractor warrants that it will:

1. have in effect promptly after commencement a plan for continuing performance in the event of a declared public health emergency that addresses, at a minimum: (a) identification of response personnel by name; (b) key succession and performance responses in the event of sudden and significant decrease in workforce; and (c) alternative avenues to keep sufficient product on hand or in the supply chain; and
2. provide a copy of its current plan to State within 3 (three) business days after State's written request. If Contractor claims relief under paragraph 6.4 (*Force Majeure*) for an occurrence of force majeure that is a declared public health emergency, then that relief will be conditioned on Contractor having first implemented its plan and exhausted all reasonable opportunity for that plan implementation to overcome the effects of that occurrence, or mitigate those effects to the extent that overcoming entirely is not practicable.

For clarification of intent, being obliged to implement the plan is not of itself an occurrence of force majeure, and Contractor will not be entitled to any additional compensation or extension of time by virtue of having to implement it. Furthermore, failure to have or implement an appropriate plan will be a material breach of contract.

7.11 Lobbying

7.11.1 PROHIBITION.

(a) Contractor warrants that:

i. it will not engage in lobbying activities, as defined in 40 CFR part 34 and A.R.S. § 41-1231, et seq., using monies awarded under the Contract, provided that, the foregoing does not intend to constrain Contractor's use of its own monies or property, including without limitation any net proceeds duly realized under the Contract or any value thereafter derived from those proceeds; and

ii. upon award of the Contract, it will disclose all lobbying activities to State to the extent they are an actual or potential conflict of interest or where such activities could create an appearance of impropriety.

(b) Contractor shall implement and maintain adequate controls to assure compliance with *(a)* above.

(c) Contractor shall obtain an equivalent warranty from all Subcontractors and shall include an equivalent no-lobbying provision in all Subcontracts.

7.11.2 EXCEPTION. This paragraph does not apply to the extent that the Services are defined in the Contract as being lobbying for State's benefit or on State's behalf.

8.0 State's Contractual Remedies

8.1 Right to Assurance

If the State in good faith has reason to believe that the Contractor does not intend to, or is unable to perform or continue performing under this Contract, the Procurement Officer may demand in writing that the Contractor give a written assurance of intent to perform. Failure by the Contractor to provide written assurance within the number of Days specified in the demand may, at the State's option, be the basis for terminating the Contract under the Uniform Terms and Conditions or other rights and remedies available by law or provided by the contract.

8.2 Stop Work Order

8.2.1. The State may, at any time, by written order to the Contractor (the "Stop Work Order"), require the Contractor to stop all or any part, of the work called for by this Contract for period(s) of days indicated by the State in the Stop Work Order. The order shall be specifically identified as a Stop Work Order issued under this clause. Upon receipt of the Stop Work Order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the Stop Work Order during the period of work stoppage.

8.2.2. If a Stop Work Order issued under this clause is canceled or the period of the order or any extension expires, the Contractor shall resume work. If the Procurement Officer determines that an equitable adjustment is necessary, he or she shall make an equitable adjustment in the delivery schedule or Contract price, or both, and the Contract shall be amended in writing accordingly.

8.3 Non-exclusive Remedies

The rights and the remedies of the State under this Contract are not exclusive.

8.4 Nonconforming Tender

Materials or services supplied under this Contract shall fully comply with the Contract. The delivery of materials or services or a portion of the materials or services that do not fully comply constitutes a breach of contract. On delivery of nonconforming materials or services, the State may terminate the Contract for default under applicable termination clauses in the Contract, exercise any of its rights and remedies under the Uniform Commercial Code, or pursue any other right or remedy available to it.

8.5 Right of Offset

The State shall be entitled to offset against any sums due the Contractor, any expenses or costs incurred by the State, or damages assessed by the State concerning the Contractor's non-conforming performance or failure to perform the Contract, including expenses, costs and damages described in the Uniform Terms and Conditions.

9.0 Contract Termination

9.1 Cancellation for Conflict of Interests

Pursuant to A.R.S. § 38-511, the State may cancel this Contract within three (3) years after Contract execution without penalty or further obligation if any person significantly involved in initiating, negotiating, securing, drafting or creating the Contract on behalf of the State is or becomes at any time while the Contract or an extension of the Contract is in effect an employee of or a consultant to any other party to this Contract with respect to the subject matter of the Contract. The cancellation shall be effective when the Contractor receives written notice of the cancellation unless the notice specifies a later time. If the Contractor is a political subdivision of the State, it may also cancel this Contract as provided in A.R.S. § 38-511.

9.2	**Gratuities**	The State may, by written notice, terminate this Contract, in whole or in part, if the State determines that employment or a Gratuity was offered or made by the Contractor or a representative of the Contractor to any officer or employee of the State for the purpose of influencing the outcome of the procurement or securing the Contract, an amendment to the Contract, or favorable treatment concerning the Contract, including the making of any determination or decision about contract performance. The State, in addition to any other rights or remedies, shall be entitled to recover exemplary damages in the amount of three times the value of the Gratuity offered by the Contractor.
9.3	**Suspension or Debarment**	The State may, by written notice to the Contractor, immediately terminate this Contract if the State determines that the Contractor has been debarred, suspended or otherwise lawfully prohibited from participating in any public procurement activity, including but not limited to, being disapproved as a subcontractor of any public procurement unit or other governmental body. Submittal of an offer or execution of a contract shall attest that the contractor is not currently suspended or debarred. If the contractor becomes suspended or debarred, the contractor shall immediately notify the State.
9.4	**Termination for Convenience**	The State reserves the right to terminate the Contract, in whole or in part at any time when in the best interest of the State, without penalty or recourse. Upon receipt of the written notice, the Contractor shall stop all work, as directed in the notice, notify all subcontractors of the effective date of the termination and minimize all further costs to the State. In the event of termination under this paragraph, all documents, data and reports prepared by the Contractor under the Contract shall become the property of and be delivered to the State upon demand. The Contractor shall be entitled to receive just and equitable compensation for work in progress, work completed and materials accepted before the effective date of the termination.
9.5	**Termination for Default**	9.5.1. In addition to the rights reserved in the contract, the State may terminate the Contract in whole or in part due to the failure of the Contractor to comply with any term or condition of the Contract, to acquire and maintain all required insurance policies, bonds, licenses and permits, or to make satisfactory progress in performing the Contract. The Procurement Officer shall provide written notice of the termination and the reasons for it to the Contractor. 9.5.2. Upon termination under this paragraph, all goods, materials, documents, data and reports prepared by the Contractor under the Contract shall become the property of and be delivered to the State on demand. 9.5.3. The State may, upon termination of this Contract, procure, on terms and in the manner that it deems appropriate, materials or services to replace those under this Contract. The Contractor shall be liable to the State for any excess costs incurred by the State in procuring materials or services in substitution for those due from the Contractor.
9.6	**Continuation of Performance Through Termination**	The Contractor shall continue to perform, in accordance with the requirements of the Contract, up to the date of termination, as directed in the termination notice.

10.0 Contract Claims

10.1	**Claim Resolution**	Notwithstanding any law to the contrary, all contract claims or controversies under the Contract are to be resolved according to the Arizona Procurement Code, including judicial review under A.R.S. § 12-1518.
10.2	**Arbitration**	The parties to this Contract agree to resolve all disputes arising out of or relating to this Contract through arbitration, after exhausting applicable administrative review, to the extent required by A.R.S. § 12-1518, except as may be required by other applicable statutes (Title 41).

End of Section 2-D
End of Part 2

Attachment 3-C
Proposed Subcontractors

Check "NO" if you **WILL NOT** subcontract any portion of the Work and will therefore be carrying out all of the Work with your own personnel.

○	NO, the Offeror will not subcontract any portion of the Work.

If you WILL subcontract any portion of the Work, check "YES" below and list name of persons or companies you propose to use as subcontractors.

1. Fill in the information for every significant subcontractor – indicate the type of work the subcontractor will perform under the Contract, and their approximate percentage of the total Contract work.
2. Provide copies of relevant certifications each one possesses in the Attachment Supplements section.
3. Provide description of quality assurance methods and quality control measures that you will use to ensure that Subcontractor work meets the Contract requirements.
4. State may demand additional information about proposed subcontractors as a precondition of award.

●	YES, the Offeror will use the Subcontractors listed below:

	Name and contact information	Small Business	Work to be performed	%
1.	Gila Electronics 2481 E Palo Verde St Yuma, AZ 85365 (928) 726-0896	YES	Front-line sales, support, engineering, and field service as a regional Manufacturer's Representative ("MR") of Motorola serving primarily Yuma, La Paz, and Mohave counties.	5
2.	ADW Communications 14350 N 87th St #145 Scottsdale, AZ 85260 (480) 291-6820	YES	Provides turnkey project management, engineering, and construction services for wireless infrastructure.	5
3.	Mangum Civil Constructors, Inc., 1075 E Salter Dr Phoenix, AZ 85024 (602) 466-3926	YES	Full range of construction and technical services in the general and wireless construction industry and are an "In-House" builder with it's own civil, tower, DC and fiber crews	5
4.	High Desert Communications, Inc., 372 W Cullumber Ave Gilbert, AZ 8523 (480) 632-0020	NO	Full service communication site/tower design, engineering, installation, and ongoing support.	5
5.	NB Construction, Inc., 16602 N 23rd Ave Ste 111 Phoenix, AZ 85023 (480) 947-3599	NO	Provider of wireless communications site development services for government, enterprise and commercial carriers.	5

6.	Arizona West Builders, Inc., 7515 S Atwood Mesa, AZ 85212 (480) 988-3630	NO	Licensed general contractor that specializes in "turn-key" construction and maintenance solutions for the cellular industry including tower erection, foundations, excavations, electrical, RF and microwave installation/services, site surveys, power and Telco coordination services.	5
7.	Pyramid Network Services, LLC. 6615 Towpath Road East Syracuse, NY 13057 (315) 701-1300	NO	Pyramid is Motorola Solutions largest preferred vendor for site development services across the United States and Canada, and has completed over 340 distinct public safety projects. Pyramid Network Services—is a leading nationwide turnkey communications systems contractor delivering cost effective solutions to design, develop and deploy wireless communications networks for both commercial carriers AND Federal, State, & Local public safety agencies.	5

End of Attachment 3-C

Attachment 5-B

Conformance Statements

STATE WILL NOT CONSIDER ANY EXCEPTIONS UNLESS DESIGNATED ON THIS FORM.

READ PARAGRAPH **ERROR! REFERENCE SOURCE NOT FOUND.** OF THE INSTRUCTIONS TO OFFERORS BEFORE TAKING ANY EXCEPTIONS – TAKING EXCEPTIONS CAN BE GROUNDS FOR STATE REJECTING OR DOWN-GRADING YOUR OFFER IN EVALUATION.

CONFORMANCE TO THE INSTRUCTIONS:
(PART 3 OF THE SOLICITATION)

Check one of the following – if neither is checked, State will assume that as equivalent to "YES":

○ YES – Offeror acknowledges that it has read and understands the Instructions to Offerors in Section 3-A of the Solicitation Documents and attests that its Offer complies with both.

● NO – Offeror acknowledges that it has read and understands the Instructions to Offerors in Section 3-A of the Solicitation Documents, and attests that its Offer complies with both EXCEPT FOR the exceptions listed in **Attachment 5-B Supplement 1**.

CONFORMANCE TO THE TECHNICAL DOCUMENTS:
(PART 2 OF THE SOLICITATION)

Check one of the following – if neither is checked, State will assume that as equivalent to "YES":

○ YES – Offeror acknowledges that it has read and understands the Scope Document and the Pricing Document in Part 2 of the Solicitation Documents and attests that its Offer complies with both.

● NO – Offeror acknowledges that it has read and understands the Scope Document and the Pricing Document in Part 2 of the Solicitation Documents and attests that its Offer complies with both EXCEPT FOR the exceptions listed in **Attachment 5-B Supplement 2**.

CONFORMANCE TO THE CONTRACT TERMS AND CONDITIONS:
(PART 2 OF THE SOLICITATION)

Check one of the following – if neither is checked, State will assume that as equivalent to "YES":

○ YES – Offeror acknowledges that it has read and understands the Special Terms and Conditions and the Uniform Terms and Conditions, along with their respective Exhibits and Appendices, in Part 2 of the Solicitation Documents and attests that its Offer complies with both.

● NO – Offeror acknowledges that it has read and understand the Special Terms and Conditions and the Uniform Terms and Conditions, along with their respective Exhibits and Appendices in Part 2 of the Solicitation Documents and attests that its Offer complies with both EXCEPT FOR the exceptions listed in **Attachment 5-B Supplement 3**.

ATTACHMENT 5-B Supplement No. 1:

Exceptions to Instructions

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change
Section 1-A: Solicitation Details		
x	x	x
x	x	x
x	x	x
Section 1-B: Instructions to Offerors		
6.3 Cost or Pricing Data	Pursuant to A.R.S § 41-2543 per A.A.C. R2-7-702(B)(2), Motorola certifies to the best of its knowledge and belief the pricing provided within its response is accurate, complete and current. Motorola will cooperate with reasonable requests for pricing validity information but will not be required to provide its internal cost and pricing data which it considers confidential and proprietary information.	9.16.19 See attached Change Log to Attachment 5-B Exceptions, ("5-B Change Log").

Motorola Solutions, Inc.

Company Name

Signature of Person Authorized to Sign

NOTE: Offeror must sign and return all Attachment 5-B Supplements Nos. 1 – 3 (even if not submitting exceptions)

ATTACHMENT 5-B Supplement No. 2:

Exceptions to Technical and Commercial

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change
Section 2-A: Scope of Work (Technical Document)		
2.49.4 E&M / DC Control	Comply with clarification, No DC Control, Exception on DC Contact Keying	9.16.19 See attached 5-B Change Log for all Section 2-A.
2.52.1 Physical Construction	Comply w/ one exception 36.8 lbs x	
2.52.5	Exception 10Mhz to 1050Mhz (useable from 100kHz); Optional to 2700MHz	
2.55.1 x	Exception 10Mhz to 1050Mhz (useable from 100kHz); Optional to 2700MHz	
3.23.1x	Exception- PTP820 doesn't provide way-side service channel.	
3.37 Feed Connection	Exception-TNC connectors	
3.39.1	Exception – 100/200KHz options not supported (OK) - cnReach is a software defined radio. In 900 MHz MAS band current max bandwidth is 50 kHz but 100/200 kHz channels can be added via roadmap.	
Capacity Received Signal Level (RSL) in dBm (c) 28 - DS-1 / 10 MHz -73 76 73 76 77	Exception-not offered	
Capacity Received Signal Level (RSL) in dBm d) 84 - DS-1 / 30 MHz -68 72 69 71 73	Exception not offered	

Capacity Received Signal Level (RSL) in dBm (b) 28 - DS-1 / 10 MHz -80	Exception not offered	
Capacity Received Signal Level (RSL) in dBm (c) 84 - DS-1 / 30 MHz -67 73	Exception not offered	
Capacity Received Signal Level (RSL) in dBm (b) 28 - DS-1 - 78	Exception not offered	
Capacity Received Signal Level (RSL) in dBm (c) 84 - DS-1 - 68 73	Exception not offered	
4.5.1	**Exception-Motorola has a 2-yr standard warranty on microwave and LMR antennas. If any products are discontinued Motorola will be able to provide spare parts and repair for a period of 7 yrs.**	
5.15.12	Motorola does not support DC control	
5.16.2 Panel Wiring/Remote Electronic Circuitry- FPD consoles (a)	Exception CAT5e cable range is only 100 mts. However, Motorola can provide a fiber link to connect the base station to the Conventional interface.	
5.16.2 Panel Wiring/Remote Electronic Circuitry- FPD consoles (b)	Exception CAT5e cable range is only 100 mts. However, Motorola can provide a fiber link to connect the base station to the Conventional interface.	
5.16.5 Maintainability (a)	Exception Motorola's CCGWs can support from 1 to 8 channels per module.	

Section 2-B: Commercial Document

Section 2.1 Contractor Best Pricing	Motorola takes exception to this provision and requires its removal.	Motorola Solutions builds communication equipment, systems and solutions that do not fit within a standard conventional pricing framework. Due to the unique pricing and design specifications for each customer's communication equipment, system and solution requirements, Motorola Solutions cannot guarantee that the pricing offered in this proposal is no higher or lower than prices offered to other customers. 9.16.19 See attached x5-B Change Log.

Motorola Solutions, Inc.

Company Name

Signature of Person Authorized to Sign

NOTE: Offeror must sign and return all Attachment 5-B Supplements Nos. 1 – 3 (even if not submitting exceptions)

ATTACHMENT 5-B Supplement No. 3:

Exceptions to Contract Terms & Conditions

Article/ Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change
Section 3-A: Special Terms & Conditions		
Section 6.1 Contractor Insurance Indemnification Clause	Motorola complies with the general indemnification described in this section subject to removing the words “or intangible” and “arising or recovered under the Worker’s Compensation Law”.	Motorola believes that Workers Compensation is provided for and covered in Subsection 6.1.3. The proposed edits are consistent with the indemnification language agreed by the State in previous contracts, including ADSPO13-036880. 9.16.19 See attached 5-B Change Log
Section 6.1 Contractor Insurance-Insurance Requirements	Please see the attached proposed modifications for how Motorola can comply with the State's insurance requirements	The parties have previously negotiated an insurance module in the Arizona Department of Transportation Solicitation # T11-43-00008, agreed as applicable to ADSPO13-036880. Motorola’s Corporate Insurance Department believes that the changes it has made to this section are in line with what has been previously negotiated and agreed upon between the State and Motorola. 9.16.19 see attached 5-B Change Log
Section 13.1 Applicability	Motorola complies with the language with the removal of the words 'or from others at State's behest.'	It is unclear if Motorola has a contractual relationship with the 3rd party. 9.16.19 See attached 5-B Change Log

Section 13.2 Data Protection & Confidentiality	Motorola proposes the following language in lieu of the RFP language: Contractor warrants that, to the extent the Work includes (1) or (2) above, it will establish and maintain procedures and controls for ensuring that State's proprietary and sensitve data is protected from unauthorized access and that information obtained from the State in performance of its contractual duties is not mishandled, misused, or inappropriately released or disclosed. Contractor, the third party manufacturer, and the copyright owner of any non-Contractor software own and retain all of their repective proprietary rights in the equipment and software, and nothing in this Article 13 is intended to restrict their proprietary rights. All intellectual property developed, originated, or prepared by Contractor in connection with providing to State the Work remain vested exclusively in Contractor, and this Article 13 does not grant to State, either directly or by implication, estoppel, or otherwise, any right, title or interest in Contractor's Proprietary Rights.	The RFP language "all data created by Contractor" in the next to last sentence of the first paragraph in this section implies transfer of IP rights, which is not contemplated in the work Motorola would be performing. 9.16.19 See attached 5-B Change Log.
Section 13.2.1 Data Protection & Confidentiality	Motorola complies with the language in 13.2.1.a and b with the following suggested modifications: (1) with the replacement of 'immediately' with 'promptly' and (2) in 13.2.1.b with the insertion of 'reasonably' at the beginning of the statement. Motorola takes exception to 13.2.c and requests its removal.	Motorola requests these modifications to be in line with industry standard language. Regarding 13.2.c., it is not reasonably practicable to notify the State to every possible threat which might affect the system. 9.16.19 See attached 5-B Change Log.
Section 13.2.2 Data Protection & Confidentiality	**Motorola complies with the language in 13.2.2.a with the insertion of 'except as required by law' a the beginning of the statement.**	**Motorola requests these modifications to be in line with industry standard language.** 9.16.19 See attached 5-B Change Log.
Section 13.3.2 Personally Identifiable Information	**Motorola clarifies that it maintains industry standard security measures to protect the Solution from intrusion, breach, corruption, or other security risk. Please see Section 4.1 of the attached Subscription Services Addendum for more information on Motorola's compliance with security standards.**	**Motorola asserts it is CJIS compliant.** 9.16.19 See attached 5-B Change Log.

Section 14.3.3 Access Control	**Motorola proposes the inclusion of the following language within this section: To the extent permitted by law, State retains ownership of State Data. State grants Motorola and its subcontractors a personal, royalty-free, non-exclusive license to use, host, cache, store, reproduce, copy, modify combine, analyze, create derivatives from, communicate, transmit, publish, display, and distribute such State Data for the purpose of providing the Subscription Services to State, other Motorola customers and end users. In addition to the rights listed above, State grants Motorola a license to sell an Anonymized version of State Data for any purpose.**	**Motorola requests the ability to retain rights to use anonymized and derivative data for purposes of improving its product.** 9.16.19 See attached 5-B Change Log.
Section 14.4 Pass-through Indemnity	**Motorola proposes the language in Section 3 of the Additional Provisions in place of the RFP language regarding infringement indemnity:**	**Motorola requests the use of its standard intellectual properity infringement indemnities for its solutions.** 9.16.19 See attached 5-B Change Log.
Section 14.8.2.b Information Technology Warranty	**Motorola proposes the following language in lieu of the RFP: At Customer's request, Motorola will make every reasonable effort to test and verify specific anti-virus, anti-worm, or anti-hacker patches against a replication of Customer's application. Motorola will respond to any reported problem as an escalated support call.**	**As is industry standard, Motorola does not provide a warranty against worms and viruses.** 9.16.19 See attached 5-B Change Log.
Section 14.11.2 Cloud Applications	**Motorola requests 'serious flaws' be expressly defined. Motorola will not allow either State or third-party penetration testing from within Motorola's system**	**Requested definition to clarify between the parties what errors are agreed as serious meriting correction. Motorola's security policies do not allow outside-Motorola entities access to Motorola's internal system for penetration testing.** 9.16.19 See attached 5-B Change Log.

Section 14.11.3 Cloud Applications	**Motorola proposes the following language: Contract will submit a copy of system logs specific to the State from cloud system to State of AZ security team on an annual basis to be added to the State SIEM (Security Information Event Monitor) or IDS (Intrusion Detection System).**	**Motorola requests clarity on what logs are being requested and the proposed regularity of such requests.** 9.16.19 See attached 5-B Change Log.
Section 15.1 Drug Testing Program	**Motorola affirms that all employees are required to submit to a five-panel drug screen at the time of hire, where permitted by law. If Motorola is awarded the contract, Motorola agrees to discuss the need for additional drug tests of Motorola employees and to negotiate a contractual provision that is mutually acceptable and compliant with applicable law. However, in no event can Motorola agree to waive the rights of its employees, nor can Motorola provide the Customer with any information protected by law, including but not limited to drug test results.**	**Motorola cannot agree to waive the rights of its employees or to providing information protected by law, including drug test results.** 9.16.19 See attached 5-B Change Log.

Article/ Paragraph or Appendix Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change
Section 3-B: Uniform Terms & Conditions		
Section 3.1 Books and Records; Audit	Motorola understands and will comply with all applicable Arizona statutes with the clarifying assertion that Motorola considers its books and records, including those related to product cost data, to be trade secrets, confidential or proprietary and as may be provided by Arizona law, should not be used, duplicated or disclosed to any other third party.	Motorola considers its internal books and records confidential and proprietary information. 9.16.19 See attached 5-B Change Log.

Section 3.4 Inspection and Testing	Motorola acknowledges the State's right to inspect materials, equipment and workmanship at Motorola manufacturing or staging facilities for the limited purpose of evaluating Motorola's performance of this Agreement. Motorola requires thirty days' written notice prior to the inspection of any facility and the State will be responsible for its own costs associated with such inspection. Motorola will restrict inspection of its facilities to areas that are relevant to the performance of the Contract, and to areas which Motorola Solutions does not consider confidential or proprietary in nature. A Motorola representative must accompany State's employees at all times."	Motorola requires sufficient notice of State's intent to inspect Motorola facilities. 9.16.19 See attached 5-B Change Log.
Section 3.8 Ownership of Intellectual Property	It is Motorola's understanding from past dealings with the State Procurement Office that the State is not interested in obtaining ownership interest in any intellectual property and accordingly, these sections, or any other section that may give ownership rights in intellectual property, are not applicable and be of no cause and effect in this contract.	Motorola is providing products and services that are commercially available to any customer and does not intend to perform any Works For Hire. The Pricing included in Motorola's proposal does not reflect the transfer of any intellectual property rights to the State. If performance results in the development of new proprietary and secret concepts, methods, techniques, processes, adaptations, discoveries, improvements and ideas ("Discoveries"), such Discoveries and the intellectual property embodied therein will be owned exclusively by Motorola. If subsequently the State elects to purchase and Motorola elects to sell development services that are intended to result in a new product to be owned by the State, the parties will execute a separate development or Work for Hire agreement. 9.16.19 See attached 5-B Change Log.

Section 6.2 Basic Indemnification	Motorola proposes that all indemnification be handled as provided for in Subsection 6.1- Indemnification of the Special Terms and Conditions.	Motorola believes that Workers Compensation is provided for and covered in Subsection 6.1.3 of the Special Terms and Conditions in Section 2-C. The proposed edits are consistent with the indemnification language agreed by the State in previous contracts, including ADSPO13-036880. 9.16.19 See attached 5-B Change Log.
Section 6.3 Patent and Copyright Indemnification	Please see Section 3 of the attached Additional Provisions which describe Motorola's IP Infringement Indemnifications.	Motorola requests the use of its standard intellectual properity infringement indemnities for its solutions. 9.16.19 See attached 5-B Change Log.
Section 7.2 and 7.3 Conformity and Quality	Please see the attached Section 1 of the Additional Provisions below which explain Motorola's suggested way to address warranty which is in a like manner as in the current contracts between the parties for similar products (i) ADSPO13-036613 and (ii) ADSPO13-036880.	Motorola proposes addressing the State's warranty requirements in a manner consistent with previous contracts. 9.16.19 See attached 5-B Change Log.
Section 9.5.3 Termination for Default	Motorola complies subject to excess costs being reasonable and for materials and services not exceeding that specified in the contract less the unpaid portion of the contract price.	Motorola proposes the suggested modifications to clarify termination costs to be reasonable. 9.16.19 See attached 5-B Change Log.
5C Insurance Certificate	Please see Motorola's Evidence of Coverage Certificate and modifications to the Special Terms and Conditions, Section 6.2, for Motorola's coverage details. Motorola agrees all COI, endorsements and waivers must be valid and provided via email to State Contract Manager within 30 days of contract execution and before any work commences. Motorola's surety requires a signed agreement prior to issuing COI.	9.16.19 See attached 5-B Change Log.

Motorola Solutions, Inc.

Company Name | Signature of Person Authorized to Sign

NOTE: Offeror must sign and return all Attachment 5-B Supplements Nos. 1 – 3 (even if not submitting exceptions)

End of Attachment 5-B

State Response to Exceptions
Motorola Change Log/Revised Attachment 5-B Exceptions 9.16.19

ATTACHMENT 5-B Supplement No. 1:

Exceptions to Instructions

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change	State Response	Vendor Response
Section 1-A: Solicitation Details				
x	None	x		
Section 1-B: Instructions to Offerors				
6.3 Cost or Pricing Data	Pursuant to A.R.S § 41-2543 per A.A.C. R2-7-702(B)(2), Motorola certifies to the best of its knowledge and belief the pricing provided within its response is accurate, complete and current. Motorola will cooperate with reasonable requests for pricing validity information but will not be required to provide its internal cost and pricing data which it considers confidential and proprietary information.	Public exposure of Motorola's internal costs and pricing would put it at a severe competitive disadvantage.	Rejected, exception not accepted. Catalog/list pricing along with % off list data is required as part of soliciataion and is not considered confdential per R2-7-103.	7/25/19 Motorola verbally agreed 8-8-19 Motorola concurs

ATTACHMENT 5-B Supplement No. 2:

Exceptions to Technical and Commercial

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change	State Response	
Section 2-A: Scope of Work (Technical Document)				**8/28/19 Motorola agreed with the State's responses to Motorola's clarifications and exceptions in this Section 2-A**
2.49.4 E&M / DC Control	Comply with clarification, No DC Control, Exception on DC Contact Keying	x	Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
2.52.1 Physical Construction	Comply w/ one exception 36.8 lbs x	x	Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
2.52.5	Exception 10Mhz to 1050Mhz (useable from 100kHz); Optional to 2700MHz	x	Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
2.55.1 X	Exception 10Mhz to 1050Mhz (useable from 100kHz); Optional to 2700MHz		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
3.23.1x	Exception- PTP820 doesn't provide way-side service channel.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
3.37 Feed Connection	Exception-TNC connectors		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed

3.39.1	Exception – 100/200KHz options not supported (OK) - cnReach is a software defined radio. In 900 MHz MAS band current max bandwidth is 50 kHz but 100/200 kHz channels can be added via roadmap.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
Capacity Received Signal Level (RSL) in dBm (c) 28 - DS-1 / 10 MHz -73 76 73 76 77	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm d) 84 - DS-1 / 30 MHz -68 72 69 71 73	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm (b) 28 - DS-1 / 10 MHz -80	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm (c) 84 - DS-1 / 30 MHz -67 73	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm (b) 28 - DS-1 - 78	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
Capacity Received Signal Level (RSL) in dBm (c) 84 - DS-1 - 68 73	Exception-not offered		Rejected, exception not accepted. For standardization and uniformity concerns the clause must remain. If it's not applicable, Offeror shall just ignore this section.	7/25/19 Motorola agreed to remove exception
4.5.1	**Exception-Motorola has a 2-yr standard warranty on microwave and LMR antennas. If any products are discontinued Motorola will be able to provide spare parts and repair for a period of 7 yrs.**		Accept, the State will accept the exception with End Of Life Notification being provided in writing and buyer being notified of End Of Life Notification at time of order placement.	7/25/19 Motorola verbally agreed
5.15.12	Motorola does not support DC control		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
5.16.2 Panel Wiring/Remote Electronic Circuitry-FPD consoles (a)	Exception CAT5e cable range is only 100 mts. However, Motorola can provide a fiber link to connect the base station to the Conventional interface.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed

ATTACHMENT 5-B Supplement No. 1:

5.16.2 Panel Wiring/Remote Electronic Circuitry-FPD consoles (b)	Exception CAT5e cable range is only 100 mts. However, Motorola can provide a fiber link to connect the base station to the Conventional interface.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
5.16.5 Maintainability (a)	Exception Motorola's CCGWs can support from 1 to 8 channels per module.		Accept, the exception is accepted by the State as a clarification. As stated in Section 2-A Scope of Work 1.3 This is a multi-award contract, The State may choose not to engage with a vendor, if noted clarifications impact product or services sought after.	7/25/19 Motorola verbally agreed
Section 2-B: Commercial Document				
Section 2.1 Contractor Best Pricing	Motorola takes exception to this provision and requires its removal.	Motorola Solutions builds communication equipment, systems and solutions that do not fit within a standard conventional pricing framework. Due to the unique pricing and design specifications for each customer's communication equipment, system and solution requirements, Motorola Solutions cannot guarantee that the pricing offered in this proposal is no higher or lower than prices offered to other customers.	Rejected, exception not accepted. The State requires standardization and uniformity of contract language across its suppliers.	7/25/19 Motorola will send new language to review 8/14/19 Please see below language. Price Guarantee: During the Term of the Agreement and provided Customer is in compliance with all provisions of the Agreement, Motorola asserts its pricing for products and services offered on this Agreement will be consistent with competitively priced products and services for similarly situated state and local customers within the State of Arizona purchasing the same or similar products and services sold in like quantities on substantially similar or comparable terms and conditions. This price guarantee excludes volume discounts, Federal, dealer, and third party distributor pricing.

ATTACHMENT 5-B Supplement No. 3:

Exceptions to Contract Terms & Conditions

Article / Paragraph or Exhibit Reference	Proposed Changes / Alternate Language	Rationale for Proposed Change	State Response
Section 3-A: Special Terms & Conditions			

Section 6.1 Contractor Insurance Indemnification Clause	Motorola complies with the general indemnification described in this section subject to removing the words “or intangible” and “arising or recovered under the Worker’s Compensation Law”.	Motorola believes that Workers Compensation is provided for and covered in Subsection 6.1.3. The proposed edits are consistent with the indemnification language agreed by the State in previous contracts, including ADSPO13- 036880.	Rejected, exception not accepted. Please be specific in your request for a exception. Exceptions from previous contracts (7-9 years old) may not be acceptable. 8-8-19 Please see attachment FINAL Attachment 5-A Confidential Information Designation - State Response 8-8-19	8/8/19 Motorola acknowledges receipt of State's response to Attachment 5-A Confidential Information Designation and asserts Motorola insurance policies are its confidential and proprietary information not generally known externally and will cause Motorola harm if released. Motorola will not release copies of its policies.
Section 6.1 Contractor Insurance- Insurance Requirements	Please see the attached proposed modifications for how Motorola can comply with the State's insurance requirements	The parties have previously negotiated an insurance module in the Arizona Department of Transportation Solicitation # T11-43-00008, agreed as applicable to ADSPO13-036880. Motorola’s Corporate Insurance Department believes that the changes it has made to this section are in line with what has been previously negotiated and agreed upon between the State and Motorola.	Rejected, exception not accepted. Please be specific in your request for a exception. Exceptions from previous contracts (7-9 years old) may not be acceptable. 8-8-19 Please see attachment FINAL Attachment 5-A Confidential Information Designation - State Response 8-8-19 9-6-19 State will discuss duiring meeting on 9/9/19	9.16.19 Motorola includes its revised Insurance redline as discussed with State on 9.13.19; please see attached redline and comment.
Section 13.1 Applicability	Motorola complies with the language with the removal of the words 'or from others at State's behest.'	It is unclear if Motorola has a contractual relationship with the 3rd party.	Rejected, exception not accepted. The State requires standardization and uniformaity of contract language across its suppliers.	7/25/19 Motorola verbally agreed 8/8/19 Motorola notes it withdrew based upon this provision may not be applicable to Motorola's scope of work; specific requirement to be addressed with task order. 8/9/19 Motorola agrees with State's language as noted in comment dated 7/25/19.
Section 13.2 Data Protection & Confidentiality	Motorola proposes the following language in lieu of the RFP language: Contractor warrants that, to the extent the Work includes (1) or (2) above, it will establish and maintain procedures and controls for ensuring that State's proprietary and sensitve data is protected from unauthorized access and that information obtained from the State in performance of its contractual duties is not mishandled, misused, or inappropriately released or disclosed. Contractor, the third party manufacturer, and the copyright owner of any non-Contractor software own and retain all of their repective proprietary rights in the equipment and software, and nothing in this Article 13 is intended to restrict their proprietary rights. All intellectual property developed, originated, or prepared by Contractor in connection with providing to State the Work remain vested exclusively in Contractor, and this Article 13 does not grant to State, either directly or by implication, estoppel, or otherwise, any right, title or interest in Contractor's Proprietary Rights.	The RFP language "all data created by Contractor" in the next to last sentence of the first paragraph in this section implies transfer of IP rights, which is not contemplated in the work Motorola would be performing.	Rejected, exception not accepted. The State requires standardization and uniformaity of contract language across its suppliers. 7/25/19 - State added langauge - Upon the issuance of a Task Order, requirements will be defined. IP rights will not be transferred	

Section 13.2.1 Data Protection & Confidentiality	Motorola complies with the language in 13.2.1.a and b with the following suggested modifications: (1) with the replacement of 'immediately' with 'promptly' and (2) in 13.2.1.b with the insertion of 'reasonably' at the beginning of the statement. Motorola takes exception to 13.2.c and requests its removal.	Motorola requests these modifications to be in line with industry standard language. Regarding 13.2.c., it is not reasonably practicable to notify the State to every possible threat which might affect the system.	Rejected, exception not accepted. The State requires standardization and uniformaity of contract language across its suppliers. 7/25/19 - State added langauge - Upon the issuance of a Task Order, requirements will be defined.	8/9/19 Motorola agrees with State's language as noted in comment dated 7/25/19.
Section 13.2.2 Data Protection & Confidentiality	Motorola complies with the language in 13.2.2.a with the insertion of 'except as required by law' a the beginning of the statement.	Motorola requests these modifications to be in line with industry standard language.	Rejected, exception not accepted. The State requires standardization and uniformaity of contract language across its suppliers. 7-25-19 - The State accepts the addition "except as required by law"	8/9/19 Motorola agrees with State's language as noted in comment dated 7/25/19.
Section 13.3.2 Personally Identifiable Information	Motorola clarifies that it maintains industry standard security measures to protect the Solution from intrusion, breach, corruption, or other security risk. Please see Section 4.1 of the attached Subscription Services Addendum for more information on Motorola's compliance with security standards.	Motorola asserts it is CJIS compliant.	Rejected, exception not accepted. The State requires that you meet the States requirements at a minimum.	7/21/19 Motorola may be acceptable, State to verify Federal requirements vs State requirements 8/28/19 Motorola verbally accepts 9/10/19 Motorola accepted.
Section 14.3.3 Access Control	Motorola proposes the inclusion of the following language within this section: To the extent permitted by law, State retains ownership of State Data. State grants Motorola and its subcontractors a personal, royalty-free, non-exclusive license to use, host, cache, store, reproduce, copy, modify combine, analyze, create derivatives from, communicate, transmit, publish, display, and distribute such State Data for the purpose of providing the Subscription Services to State, other Motorola customers and end users. In addition to the rights listed above, State grants Motorola a license to sell an Anonymized version of State Data for any purpose.	Motorola requests the ability to retain rights to use anonymized and derivative data for purposes of improving its product.	Rejected, exception not accepted.	7/25/19 Motorola verbally agreed 8/8/19 Motorola agrees.
Section 14.4 Pass-through Indemnity	Motorola proposes the language in Section 3 of the Additional Provisions in place of the RFP language regarding infringement indemnity:	Motorola requests the use of its standard intellectual properity infringement indemnities for its solutions.	Rejected - Any compromise in wording of the Indemnification clause that reduces protection or shifts liability back to the State of Arizona are in direct violation of A.R.S. § 41-621 and A.R.S. § 35-154. The State cannot accept this exception.	7/25/19 Motorola to review 8/28/19 Motorola conditionally accepts 9/10/19 Motorola agrees to withdraw exception.
Section 14.8.2.b Information Technology Warranty	Motorola proposes the following language in lieu of the RFP: At Customer's request, Motorola will make every reasonable effort to test and verify specific anti-virus, anti-worm, or anti-hacker patches against a replication of Customer's application. Motorola will respond to any reported problem as an escalated support call.	As is industry standard, Motorola does not provide a warranty against worms and viruses.	Rejected, exception not accepted. (b) the COTS software will, **to the best of its knowledge**, at the time of delivery be free of viruses, backdoors, worms, spyware, malware, and other malicious code that could hamper performance, collect unlawfully any personally identifiable information, or prevent products from performing as required by the Contract; and	7/25/19 Motorola to review will probably accept 8/8/19 Motorola accepts State's language.

Section 14.11.2 Cloud Applications	Motorola requests 'serious flaws' be expressly defined. Motorola will not allow either State or third-party penetration testing from within Motorola's system	Requested definition to clarify between the parties what errors are agreed as serious meriting correction. Motorola's security policies do not allow outside-Motorola entities access to Motorola's internal system for penetration testing.	Rejected, exception not accepted. 7/25/19 - State added langauge - Upon the issuance of a Task Order, requirements will be defined.	7/25/19 Motorola to review 8/8/19 Motorola agrees with State's added language regarding issuance of Task Order.
Section 14.11.3 Cloud Applications	Motorola proposes the following language: Contract will submit a copy of system logs specific to the State from cloud system to State of AZ security team on an annual basis to be added to the State SIEM (Security Information Event Monitor) or IDS (Intrusion Detection System).	Motorola requests clarity on what logs are being requested and the proposed regularity of such requests.	Rejected, exception not accepted. 7/25/19 - State added langauge - Upon the issuance of a Task Order, requirements will be defined.	7/25/19 Motorola to review 8/8/19 Motorola agrees with State's added language regarding issuance of Task Order.
Section 15.1 Drug Testing Program	Motorola affirms that all employees are required to submit to a five-panel drug screen at the time of hire, where permitted by law. If Motorola is awarded the contract, Motorola agrees to discuss the need for additional drug tests of Motorola employees and to negotiate a contractual provision that is mutually acceptable and compliant with applicable law. However, in no event can Motorola agree to waive the rights of its employees, nor can Motorola provide the Customer with any information protected by law, including but not limited to drug test results.	Motorola cannot agree to waive the rights of its employees or to providing information protected by law, including drug test results.	Rejected, exception not accepted.	7/25/19 Motorola to review 8/8/19 Pursuant to conversation with State on 7/25/19, this provision has limited applicability to DOC and historically Motorola employees have agreed to background checks. Motorola withdraws its exception.
Section 3-B: Uniform Terms & Conditions				
Section 3.1 Books and Records; Audit	Motorola understands and will comply with all applicable Arizona statutes with the clarifying assertion that Motorola considers its books and records, including those related to product cost data, to be trade secrets, confidential or proprietary and as may be provided by Arizona law, should not be used, duplicated or disclosed to any other third party.	Motorola considers its internal books and records confidential and proprietary information.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response Motorola acknowledges the State's audit requirements. The statements here are meant the clarify and assert that any Motorola cost information provided be afforded trade secret protections pursuant to AZ law. 8/9/19, Pursuant to conversation on 7/25/19, vendor cost and price data is not required if State elects to audit Motorola's performance.

Section 3.4 Inspection and Testing	Motorola acknowledges the State's right to inspect materials, equipment and workmanship at Motorola manufacturing or staging facilities for the limited purpose of evaluating Motorola's performance of this Agreement. Motorola requires thirty days' written notice prior to the inspection of any facility and the State will be responsible for its own costs associated with such inspection. Motorola will restrict inspection of its facilities to areas that are relevant to the performance of the Contract, and to areas which Motorola Solutions does not consider confidential or proprietary in nature. A Motorola representative must accompany State's employees at all times."	Motorola requires sufficient notice of State's intent to inspect Motorola facilities.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response This is a clarification only; Motorola agrees with the State having the contractual right to inspect at its facilities and seeks to outline the parameters of that process 7/25/19 Verbal agreement to remove exception 8/9/19 Motorola concurs.
Section 3.8 Ownership of Intellectual Property	It is Motorola's understanding from past dealings with the State Procurement Office that the State is not interested in obtaining ownership interest in any intellectual property and accordingly, these sections, or any other section that may give ownership rights in intellectual property, are not applicable and be of no cause and effect in this contract.	Motorola is providing products and services that are commercially available to any customer and does not intend to perform any Works For Hire. The Pricing included in Motorola's proposal does not reflect the transfer of any intellectual property rights to the State. If performance results in the development of new proprietary and secret concepts, methods, techniques, processes, adaptations, discoveries, improvements and ideas ("Discoveries"), such Discoveries and the intellectual property embodied therein will be owned exclusively by Motorola. If subsequently the State elects to purchase and Motorola elects to sell development services that are intended to result in a new product to be owned by the State, the parties will execute a separate development or Work for Hire agreement.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions. If it's not applicable, Offeror shall just ignore this section.	6/10/19 Response Motorola would not be providing any custom development work for the State under this agreement and believes this provision to be non applicable. Would the State please confirm. 8/8/19 Pursuant to 7/25/19 discussion, intellectual property ownership is not contemplated in the agreement.
Section 6.2 Basic Indemnification	Motorola proposes that all indemnification be handled as provided for in Subsection 6.1- Indemnification of the Special Terms and Conditions.	Motorola believes that Workers Compensation is provided for and covered in Subsection 6.1.3 of the Special Terms and Conditions in Section 2-C. The proposed edits are consistent with the indemnification language agreed by the State in previous contracts, including ADSPO13-036880.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response Motorola proposes that the general indemnity provisions be governed by Subsection 6.1 within the Special Terms and Conditions in lieu of the basic indemnity outlined in the Uniform terms and conditions; this is consistent with ADSPO13-036880. 7/25/19 Verbal agreement to remove exception 8/8/19 Agreed, during the 7/25 conversation, parties agreed if modification need to handle in special T&C

Section 6.3 Patent and Copyright Indemnification	Please see Section 3 of the attached Additional Provisions which describe Motorola's IP Infringement Indemnifications.	Motorola requests the use of its standard intellectual properity infringement indemnities for its solutions.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response Motorola proposes the inclusion of its industry standard IP Infringement Indemnity for its solutions in lieu of the RFP Patent and Copyright Indemnification, which did not appear t be pursuant to State statute. 7/25/19 Verbal agreement to remove exception 8/8/19 Handle in special T&C's
Section 7.2 and 7.3 Conformity and Quality	Please see the attached Section 1 of the Additional Provisions below which explain Motorola's suggested way to address warranty which is in a like manner as in the current contracts between the parties for similar products (i) ADSPO13-036613 and (ii) ADSPO13-036880.	Motorola proposes addressing the State's warranty requirements in a manner consistent with previous contracts.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions.	6/10/19 Response Motorola is proposing its express warranties which apply to its products and services; these are also consistent with the warranty provisions agreed to in previous contracts ADSPO13-036613 and ADSPO13-036880. 7/25/19 Motorola to compare. Motorola warranty may be exceed requirements. 8/8/19 Motorla accepts, discussion was for clarification.
Section 9.5.3 Termination for Default	Motorola complies subject to excess costs being reasonable and for materials and services not exceeding that specified in the contract less the unpaid portion of the contract price.	Motorola proposes the suggested modifications to clarify termination costs to be reasonable.	Rejected, exception not accepted. The State is limited in its ability to modify the Uniform Terms and Conditions. Any Concerns would need to be documented and addressed in Special Terms and Conditions. Please see Uniform Terms and Conditions, Section 8 State's Contractual Remidies the State may choose to use prior to Contract Termination.	6/10/19 Response Motorola complies with the language included in 9.5.3 of the Uniform Terms; its modification here is to specify the replacement materials not exceed the specifications of the materials originally purchased (no upgrades). 7/25/19 Added Section 8 language for clarification 8/9/19 Motorola agrees with State's clarification (addition of Section 8 reference).
5C Insurance Certificate	Please see Motorola's Evidence of Coverage Certificate and modifications to the Special Terms and Conditions, Section 6.2, for Motorola's coverage details. Motorola agrees all COI, endorsements and waivers must be valid and provided via email to State Contract Manager within 30 days of contract execution and before any work commences. Motorola's surety requires a signed agreement prior to issuing COI.		Rejected, exception not accepted. The State provides the following clarification: You have 30 days from award (Agreement) to provide Certificates Of Insurance. Pursant to Section 3-A: Instructions to Offerors, 3.0 Offer Preparation, 3.6 Insurance, All COI, endorsements, and waivers must be valid, in place and provided via emailed to the Contracts Manager within 30 days after award and before any work commences as called for in Attachment 5-C [Insurance].	6/10/19 Response Motorola has provided its Evidence of Coverage certificate and references its proposed modifications to the RFP insurance provisions in the Special Terms and Conditions. These modifications are based on statutory as well as Motorola's insurance compliance requirements. 8/14/19 Please see attached revised insurance terms.

6.0 Risk and Liability

6.1 Contractor Insurance

Please see following proposed modifications to the Insurance provisions. Motorola also encloses its Evidence of Coverage certificate.

Insurance Requirements

Contractor and subcontractors shall procure and maintain, until all of their obligations have been discharged, including any warranty periods under this Contract, insurance against claims for injury to persons or damage to property arising from, or in connection with, the performance of the work hereunder by the Contractor, its agents, representatives, employees or subcontractors.

The Insurance Requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. The State of Arizona in no way warrants that the minimum limits contained herein are sufficient to protect the Contractor from liabilities that arise out of the performance of the work under this Contract by the Contractor, its agents, representatives, employees or subcontractors, and the Contractor is free to purchase additional insurance.

Minimum Scope and Limits of Insurance

Contractor shall provide coverage with limits of liability not less than those stated below.

1. Commercial General Liability (CGL) – Occurrence Form

Policy shall include bodily injury, property damage, and broad form contractual liability coverage.

- General Aggregate $2,000,000
- Products – Completed Operations Aggregate $1,000,000
- Personal and Advertising Injury $1,000,000
- Damage to Rented Premises $50,000
- Each Occurrence $2,000,000

The policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed by or on behalf of the Contractor.

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

The policy shall include coverage for Sexual Abuse and Molestation (SAM). This coverage may be sub-limited to no less than $500,000. The limits may be included within the General Liability limit or provided by separate endorsement with its own limits. If you are unable to obtain SAM coverage under your General Liability because the insurance market will not support it, it should it be included with the Professional Liability.

Contractor must provide the following statement on their Certificate(s) of Insurance: "Sexual Abuse and Molestation coverage is included" or "Sexual Abuse and Molestation coverage is not excluded."

2. Business Automobile Liability

Bodily Injury and Property Damage for any owned, hired, and/or non-owned automobiles used in the performance of this Contract.

- Combined Single Limit (CSL) $1,000,000

Policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to liability arising out of the activities performed by, or on behalf of, the Contractor involving automobiles owned, hired and/or non-owned by the Contractor.

Policy shall contain a waiver of subrogation endorsement as required by this written agreement in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

3. Workers' Compensation and Employers' Liability

- Workers' Compensation Statutory
- Employers' Liability
  - o Each Accident $1,000,000
  - o Disease – Each Employee $1,000,000
  - o Disease – Policy Limit $1,000,000

Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.

This requirement shall not apply to each Contractor or subcontractor that is exempt under A.R.S. § 23-901, and when such Contractor or subcontractor executes the appropriate waiver form (Sole Proprietor or Independent Contractor).

4. Professional Liability (Errors and Omissions Liability) **including Technology Errors & Omissions and Network Security (Cyber) and Privacy Liability**

- Each Claim $2,000,000
- Annual Aggregate $6,000,000

In the event that the Professional Liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract and, either continuous coverage will be maintained, or an extended discovery period will be exercised, for a period of two (2) years beginning at the time work under this Contract is completed.

The policy shall cover Contractor's professional misconduct or negligent acts for those positions defined in the Scope of Work of this contract.

Such insurance shall cover any, and all errors, omissions, or negligent acts in the delivery of products, services, and/or licensed programs Contractor provides under this contract.

Coverage shall include copyright infringement, infringement of trade dress, domain name, title or slogan.

Such insurance shall include, but not be limited to, coverage for third party claims and losses with respect to network risks (such as data breaches, unauthorized access or use, ID theft, theft of data) and invasion of privacy regardless of the type of media involved in the loss of private information, crisis management and identity theft response costs. This should also include breach notification costs, credit monitoring, defense and claims expenses, regulatory defense

costs plus fines and penalties, cyber extortion, computer program and electronic data restoration expenses coverage (data asset protection), network business interruption,.

Commercial Crime –including employee dishonesty covering liability against direct and verifiable losses of money, securities, products, equipment, material and other property of the State caused by theft or forgery, computer fraud or fund transfers by identifiable employees of in the following limits:

- $2,000,000 each claim
- $5,000,000 annual aggregate

~~The policy shall be endorsed, as required by this written agreement, to include the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees as additional insureds with respect to vicarious liability of the insured arising out of the activities performed by or on behalf of the Contractor.~~

~~Policy shall contain a waiver of subrogation endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees for losses arising from work performed by or on behalf of the Contractor.~~)

4. Installation Floater

- Coverage amount is $___TBD At Award of Contract based on Value_____

Policy shall contain an Additional Insured endorsement, as required by this written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities, officers, officials, agents, and employees.

The State of Arizona and the Department shall be named as loss payee as its interest may appear.

Coverage shall be written on an all risk, replacement cost basis and shall include coverage for flood and earth movement as well as coverage for losses that may occur during equipment testing/commissioning.

Policy shall be maintained until whichever of the following shall first occur: (1) final payment has been made; or, (2) until no person or entity, other than the State of Arizona, has an insurable interest in the property required to be covered.

Policy shall be endorsed such that the insurance shall not be canceled or lapse because of any partial use or occupancy by the State of Arizona.

The Installation Floater must provide coverage from the time the equipment/material becomes the responsibility of the Contractor and shall continue without interruption during the installation, testing and commissioning, including any time during which the equipment/material is being transported to the installation site, or awaiting installation, whether on or off site.

Policy shall contain a Waiver of Subrogation endorsement, as required by written agreement, in favor of the State of Arizona, and its departments, agencies, boards, commissions, universities,

Comment [DAB1]: 9.16.19 After further consultation with its broker and underwriter, Motorola cannot agree to the inclusion of the Additional Insured endorsement within the Professional Liability Policy. It is however, included within the CGL policy.

officers, officials, agents, and employees for losses arising from work performed by the Contractor for the State of Arizona.

Contractor is responsible for the payment of all deductibles under the Installation Floater.

Additional Insurance Requirements

The policies shall include, or be endorsed to include, as required by this written agreement, the following provisions:

The Contractor's policies (excluding the Professional Liability policy) as applicable, shall stipulate that the insurance afforded the Contractor shall be primary and that any insurance carried by the Department, its agents, officials, employees or the State of Arizona shall be excess and not contributory insurance, as provided by A.R.S. § 41-621 (E).

Insurance provided by the Contractor shall not limit the Contractor's liability assumed under the indemnification provisions of this Contract.

Notice of Cancellation

Applicable to all insurance policies required within the Insurance Requirements of this Contract, Contractor's insurance shall not be permitted to expire, be suspended, be canceled, or be materially changed for any reason without thirty (30) days prior written notice to the State of Arizona. Within two (2) business days of receipt, Contractor, (not Contractor's insurance provider), must provide notice to the State of Arizona if they receive notice of a policy that has been or will be suspended, canceled, materially changed for any reason, has expired, or will be expiring. Such notice shall be sent directly to the Department and shall be mailed, emailed, hand delivered or sent by facsimile transmission to (State Representative's Name, Address & Fax Number).

Acceptability of Insurers

Contractor's insurance shall be placed with companies licensed in the State of Arizona or hold approved non-admitted status on the Arizona Department of Insurance List of Qualified Unauthorized Insurers. Insurers shall have an "A.M. Best" rating of not less than A- VII. The State of Arizona in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.

Verification of Coverage

Contractor shall furnish the State of Arizona with certificates of insurance (valid ACORD form or equivalent approved by the State of Arizona) evidencing that Contractor has the insurance as required by this Contract. An authorized representative of the insurer shall sign the certificates.

All such certificates of insurance and policy endorsements must be received by the State before work commences. The State's receipt of any certificates of insurance or policy endorsements that do not comply with this written agreement shall not waive or otherwise affect the requirements of this agreement.

Each insurance policy required by this Contract must be in effect at, or prior to, commencement of work under this Contract. Failure to maintain the insurance policies as required by this Contract, or to provide evidence of renewal, is a material breach of contract.

All certificates required by this Contract shall be sent directly to the Department. The State of Arizona project/contract number and project description shall be noted on the certificate of insurance. In the event of a claim from a third party naming the State of Arizona with allegations arising directly out of the products and/or services rendered by Motorola under this contract, the State of Arizona reserves the right to request Motorola as Contractor to provide access to any and all policy(ies) required by the insurance requirements, including all endorsement(s), within 30 business days of such request. Contractor will be permitted to redact any references or endorsements to other customer (non-State of Arizona) information before providing access to the policies.

Subcontractors

Contractor shall be responsible for ensuring and/or verifying that all subcontractors have valid

and collectable insurance as evidenced by the certificates of insurance and endorsements for each subcontractor. All coverages for subcontractors shall be subject to the minimum Insurance Requirements identified above. The Department reserves the right to require, at any time

throughout the life of this contract, proof from the Contractor that its subcontractors have the required coverage.

Approval and Modifications

Upon 60 days' notice to Contractor, tThe Contracting Agency, in consultation with State Risk, reserves the right to review or make modifications to the insurance limits, required coverages, or endorsements throughout the life of this contract, as deemed necessary. Such action will not require a formal Contract amendment but may be made by administrative action, but will be subject to commercially available terms and conditions on the marketplace.)

Exceptions

In the event the Contractor or subcontractor(s) is/are a public entity, then the Insurance Requirements shall not apply. Such public entity shall provide a certificate of self-insurance. If the Contractor or subcontractor(s) is/are a State of Arizona agency, board, commission, or university, none of the above shall apply.

Comment [K2]: The State would need to make 60 day's notice to Motorola of any change in the insurance requirements and be subject to commercially available terms and conditions in the marketplace and not result in increased premium charges to Motorola. Otherwise, this paragraph is unacceptable. **8.28.19 Procurement will check with Risk Mgmt, but agreed 60 days was reasonable. 9/9/19 State can agree with exception of 'result in increased premium to Motorola' which such event might occur due to legislative changes.. if high/ significant premium increase then State may agree to a price increase.**
9/12/19 Motorola risk and finance agreed with exclusion of 'increased premium charges to Motorola' and includes the 60 days' notice and available marketplace conditions in this revision.
9.13.19 State will double check with risk mgmt; tentatively accept, State to confirm.

Motorola Solutions, Inc.

Change Log to State of Arizona – Additional Provisions-Supplemental Terms – ADSPO19-00008376

The following are changes that Motorola Solutions, Inc. is submitting to our original proposal submitted on September 4, 2018.

Attachment A

For purposes of showing precedence and the parties' past course of doing business, Solicitations # ADSPO13-036880 and ADSPO13-036613, which are the current contracts between the Parties for similar products, contain Additional Provisions for limitation of liability, warranty and the inclusion of Motorola's Software License Agreement. With this in mind, Motorola proposes for the State's consideration the inclusion of the following items:

Section 1:

1.1 EQUIPMENT WARRANTY. During the Warranty Period established in the State of Arizona contract resulting from ADSPO19-00008376, Motorola warrants that the Equipment under normal use and service will be free from material defects in materials and workmanship. If System Acceptance is delayed beyond six (6) months after shipment of the Equipment by events or causes within Customer's control, this warranty expires eighteen (18) months after the shipment of the Equipment.

1.2. MOTOROLA SOFTWARE WARRANTY. Unless otherwise stated in the Software License Agreement, during the Warranty Period, Motorola warrants the Motorola Software in accordance with the terms of the Software License Agreement and the provisions of this Section 1 that are applicable to the Motorola Software. If System Acceptance is delayed beyond six (6) months after shipment of the Motorola Software by events or causes within Customer's control, this warranty expires eighteen (18) months after the shipment of the Motorola Software.

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

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

the balance of the original applicable warranty period. All replaced products or parts will become the property of Motorola.

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

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

"Warranty Period" means ~~one (1) year from the date of System Acceptance or Beneficial Use, whichever occurs first.~~the applicable category warranty period defined in the State of Arizona ADSPO19-00008376.

Section 2 LIMITATION OF LIABILITY

This limitation of liability provision shall apply notwithstanding any contrary provision in this Agreement and to the extent permitted by State of Arizona law. Except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, indemnification, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of the Equipment, Software, or services with respect to which losses or damages are claimed. 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, THE SALE OR USE OF THE EQUIPMENT OR SOFTWARE, OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT. This limitation of liability will survive the expiration or termination of this Agreement.

Section 3 Intentionally Deleted. ~~PATENT AND COPYRIGHT INFRINGEMENT.~~

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

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

~~Motorola will have no duty to defend or indemnify for any Infringement Claim that is based upon: (a) the~~

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

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

Attachment B. SOFTWARE LICENCE AGREEMENT: For the purposes of showing precedence and the parties past course of doing business, in the Arizona Department of Transportation Solicitation # T11-43-00008 contract dated September 2, 2010, the State of Arizona's Attorney General agreed to an additional provision that provided for licensing of software in accordance with Motorola's Software License Agreement, which was contemplated in ADSPO13-036880. With this in mind, Motorola's Software License Agreement is attached and proposed for inclusion in this contract.

Attachment B

MOTOROLA SOFTWARE LICENSE AGREEMENT

This Exhibit A Motorola Software License Agreement ("Agreement") is between Motorola Solutions, Inc., ("Motorola"), and the purchaser of products containing Motorola software under the State of Arizona's Agreement from RFP ADSPO19-00008376 ("Licensee").

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

Section 1 DEFINITIONS

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

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

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

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

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

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

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

Section 2 SCOPE

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

Section 3 GRANT OF LICENSE

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

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

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

Section 4 LIMITATIONS ON USE

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

4.2. Licensee will not, and will not allow or enable any third party to: (i) reverse engineer, disassemble, peel components, decompile, reprogram or otherwise reduce the Software or any portion to a human perceptible form or otherwise attempt to recreate the source code; (ii) modify, adapt, create

derivative works of, or merge the Software; (iii) copy, reproduce, distribute, lend, or lease the Software or Documentation to any third party, grant any sublicense or other rights in the Software or Documentation to any third party, or take any action that would cause the Software or Documentation to be placed in the public domain; (iv) remove, or in any way alter or obscure, any copyright notice or other notice of Motorola's proprietary rights; (v) provide, copy, transmit, disclose, divulge or make the Software or Documentation available to, or permit the use of the Software by any third party or on any machine except as expressly authorized by this Agreement; or (vi) use, or permit the use of, the Software in a manner that would result in the production of a copy of the Software solely by activating a machine containing the Software. Licensee may make one copy of Software to be used solely for archival, back-up, or disaster recovery purposes; *provided* that Licensee may not operate that copy of the Software at the same time as the original Software is being operated. Licensee may make as many copies of the Documentation as it may reasonably require for the internal use of the Software.

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

4.4 Licensee will maintain, during the term of this Agreement and for a period of two years thereafter, accurate records relating to this license grant to verify compliance with this Agreement. Motorola or an independent third party ("Auditor") may inspect Licensee's premises, books and records, upon reasonable prior notice to Licensee, during Licensee's normal business hours and subject to Licensee's facility and security regulations. Motorola is responsible for the payment of all expenses and costs of the Auditor. Any information obtained by Motorola and the Auditor will be kept in strict confidence by Motorola and the Auditor and used solely for the purpose of verifying Licensee's compliance with the terms of this Agreement.

Section 5 OWNERSHIP AND TITLE

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

Section 6 LIMITED WARRANTY; DISCLAIMER OF WARRANTY

6.1. Unless otherwise stated in the Primary Agreement, the commencement date and the term of the Software warranty will be a period of ninety (90) days from Motorola's shipment of the Software (the "Warranty Period"). If Licensee is not in breach of any of its obligations under this Agreement, Motorola warrants that the unmodified Software, when used properly and in accordance with the Documentation and this Agreement, will be free from a reproducible defect that eliminates the functionality or successful operation of a feature critical to the primary functionality or successful operation of the Software. Whether a defect occurs will be determined by Motorola solely with reference to the Documentation. Motorola

does not warrant that Licensee's use of the Software or the Designated Products will be uninterrupted, error-free, completely free of Security Vulnerabilities, or that the Software or the Designated Products will meet Licensee's particular requirements. Motorola makes no representations or warranties with respect to any third party software included in the Software. Notwithstanding, any warranty provided by a copyright owner in its standard license terms will flow through to Licensee for third party software provided by Motorola.

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

6.3. Warranty claims are described in the Primary Agreement.

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

Section 7 TRANSFERS

Licensee will not transfer the Software or Documentation to any third party without Motorola's prior written consent. Motorola's consent may be withheld at its discretion and may be conditioned upon transferee paying all applicable license fees and agreeing to be bound by this Agreement. If the Designated Products are Motorola's radio products and Licensee transfers ownership of the Motorola radio products to a third party, Licensee may assign its right to use the Software (other than CPS and Motorola's FLASHport® software) which is embedded in or furnished for use with the radio products and the related Documentation; *provided* that Licensee transfers all copies of the Software and Documentation to the transferee, and Licensee and the transferee sign a transfer form to be provided by Motorola upon request, obligating the transferee to be bound by this Agreement.

Section 8 TERM AND TERMINATION

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

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

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

United States Government).

Section 9 Commercial Computer Software

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

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

Section 10 CONFIDENTIALITY

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

Section 11 LIMITATION OF LIABILITY

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

Section 12 NOTICES

Notices are described in the Primary Agreement.

Section 13 GENERAL

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

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

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

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

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

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

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

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