

Onboard equipment training will be offered at CITY discretion and CONTRACTOR is responsible for attending training.

Roles and Responsibilities:

The CONTRACTOR first level support expectation for onboard equipment is as follows:

ON-BOARD SYSTEM MAINTENANCE REQUIREMENTS	
OVERVIEW	
	The CONTRACTOR is responsible for maintaining, diagnosing, and repairing all onboard equipment. All onboard equipment will be in an operational state prior to vehicle entering service.
	Onboard equipment to be maintained and supported includes, but is not limited to, the following components: <ol style="list-style-type: none"> 1. Intelligent Vehicle Unit 2. Mobile Digital Terminal 3. Handheld Mic 4. Emergency Alarm (EA) 5. Automatic Passenger Counter (APC) system 6. Passenger Information Display (PID) 7. ODK 8. Mobile Radio 9. 8-Port Ethernet Switch 10. Antennas: Radio, Smart Yard and 6-Band(WLAN, Cellular, GPS) 11. Onboard Surveillance System 12. System cables, wire harnesses 13. Radio box exhaust fans 14. Mobile Router 15. URLC 16. DVR 17. Exterior rear curb side and head sign 18. Automatic Volume Control Microphone
	The CONTRACTOR shall be responsible to understand all aspects of onboard equipment maintenance and repair.
	The CONTRACTOR shall ensure onboard components are maintained to OEM specifications.
	The CONTRACTOR shall be responsible to obtain and provide ongoing training for onboard equipment maintenance.
	The CONTRACTOR shall not install onboard components that will compromise the CITY’s vehicle voice/data communications system.
	The CONTRACTOR is responsible to maintain onboard equipment in existing mounted location as originally installed by CAD/AVL vendor or unless written approval is granted by the CITY.
	The CONTRACTOR shall use only CAD/AVL vendor approved hardware when replacing cable, wire harnesses, and/or additional onboard components.
	The CONTRACTOR shall maintain all system wire fasteners and/or clamps as installed by CAD/AVL vendor.

	The CONTRACTOR shall maintain all user end components such as MDT displays, headset, and relevant operator interface components in original mounting locations.
	The CONTRACTOR shall include reasonable provisions to protect all equipment and components from common vandalism, unauthorized access and physical abuse as may be expected on vehicles.
	The CITY onboard equipment is designed to be "hot swappable". The CONTRACTOR will ensure access to components, as originally installed, will be maintained.
	The CONTRACTOR shall continually review, as needed or determined by the CITY, equipment maintenance procedures to ensure components operate within OEM specifications and/or the CITY recommendation.
	The CONTRACTOR shall maintain vehicle's electrical systems in operational condition to support all onboard components power requirements.
	The CITY and CAD/AVL vendor determine the layout of all fonts, key assignments, menu structures, colors, and screen layouts. Future changes to existing MDT display maybe possible. If the CONTRACTOR requests fixed end menu MDT layout modifications the CONTRACTOR will be responsible for any cost incurred, if any.
	The CONTRACTOR shall provide, when needed, a physical inventory of all onboard equipment including spare components as requested by the CITY. The acceptable formats are XML, CSV, XLSX or another CITY approved format.
	The CONTRACTOR shall understand that the current onboard equipment is subject to normal end-of-life hardware replacement. The CONTRACTOR shall assist and coordinate, per CITY's direction, to ensure future onboard equipment upgrades are successful.
	The CONTRACTOR shall maintain and not remove any protection mechanisms in place to guard against Radio Frequency Interference (RFI) and Electromagnetic Interference (EMI) emission sources, as well as internal conductive or inductive emissions.
	The CONTRACTOR shall not use wire splices to repair onboard system communication issue. The CONTRACTOR shall repair wire damaged areas by replacing entire cable.
	The CONTRACTOR shall maintain, at its own expense, a spare ratio of all non-CAD/AVL Vendor Repair list components such as cables, GPS, antennas, wire harnesses, fasteners, and fuses per OEM specifications.
	<p>Onboard components failure, resulting from the CONTRACTOR's neglect is not covered under the RMA process. Examples of neglect are described as follows:</p> <ol style="list-style-type: none"> 1. Water damage 2. Physical damage 3. Breaking or Removing Vendor seal 4. Opening Proprietary Components 5. Graffiti 6. Removing Serial/Model information from unit <p>The CITY will make the determination if failure is a result of the CONTRACTOR neglect. The CONTRACTOR will be responsible to replace any components damaged due to neglect at its own expense.</p>

	The CONTRACTOR shall establish separate and distinct business relationship with specific vendor(s) to supply OEM parts for the CITY's onboard equipment.
	The CONTRACTOR understands that first level onboard support documentation, provided by the CITY, is subject to change at the CITY's discretion.
	The CONTRACTOR shall not tight cable ties as to cause indentation and damage to the insulation.
	The CONTRACTOR shall not use adhesive to fasten wire ties or cable supports.
	The CITY requires CAD/AVL vendor to deliver all onboard equipment with component cables to be clearly indexed, labeled and schematically identifiable. Labels shall not peel off or abrade with normal cable installation, handling and use. Labels shall be at each end of the cable. The CONTRACTOR shall maintain an active role in ensuring onboard component cabling is maintained as delivered by CAD/AVL vendor and/or the CITY.
	The CONTRACTOR shall maintain an active role in ensuring onboard component cabling repairs remain insulated and protected as delivered by CAD/AVL vendor.
	The CONTRACTOR shall be available to address onboard equipment issues during CITY business hours.

Return Authorization Request (RMA) Process

The CITY contracts with the CAD/AVL vendor to provide a comprehensive onboard extended warranty coverage package. The covered components are described in this section. The term covered mean that components will be either repaired or replace by the CAD/AVL vendor.

The CONTRACTOR is required to assign an Electronic Technician to provide first level support for onboard electronic equipment. The CONTRACTOR shall be utilizing the RMA process and manage all aspects of repair and replace submissions. The CONTRACTOR is responsible for retaining knowledgeable staff who can properly utilize the RMA process.

Roles and Responsibilities:

The expectation from the CONTRACTOR for RMA process is as below:

RETURN MERCHENDIZE AUTHORIZATION (RMA) REQUIREMENTS	
	OVERVIEW
	The CONTRACTOR is responsible for all shipping cost associated with shipping equipment to CAD/AVL vendor.
	Components covered under the extended maintenance and support service agreement are as below: <ol style="list-style-type: none"> 1. Mobile Gateway Router 2. Multiband Antenna 3. GH7 with Operator Interface 4. In-Vehicle Unit (INV4, IVN4R)

	<ol style="list-style-type: none"> 5. IVN4 Bracket 6. Transit Control Head (TCH) 7. Universal Radio Logic Controller (URLC) 8. AVC Mic 9. Covert Microphone 10. Audio Handset 11. Automatic Passenger Counter (APC) Analyzer (Hella) 12. Automatic Passenger Counter (APC) Sensor (Hella) 13. Interior head sign 14. Mobile Radio
	<p>The CONTRACTOR shall maintain a local pool of onboard spare parts to repair failed components.</p>
	<p>All Onboard equipment shall be checked to ensure that the equipment is in an operational state prior to vehicle entering service.</p>
	<p>The CONTRACTOR shall return defective components to CAD/AVL vendor using the RMA process.</p>
	<p>The CONTRACTOR shall understand that no components will be accepted without a Return Merchandize Authorization (RMA) number.</p>
	<p>CAD/AVL vendor shall respond to RMA number request within 2 business days. RMA numbers can be obtained from vendor's customer service department.</p>

Mobile Device

The regional CAD/AVL system allows for a mobile device option to enhance communications for field personal. The CITY maintains a secure APN for mobile device access into the CAD/AVL backend systems. All CAD/AVL mobile devices must reside on this secure APN to utilize the CAD/AVL mobile applications.

Roles and Responsibilities:

The CITY shall be responsible for activation service and performing the initial provision of the tablet device. The CITY shall be responsible for SIM activation and will require the CONTRACTOR to fill out a Security Access Form for device activation. The CITY will oversee the management of SIM service and will run regularly scheduled auditing reports.

The CONTRACTOR shall have an IT representative who will communicate all Clever application tablet issues or relevant Mobile Device Manager (MDM) requests to the CITY. The CONTRACTOR's IT representative will be responsible to provide all first level tablet device support. This includes, but not limited to, local password issues, hardware failure, data backups, damage to device, warranty related issues, and third-party application support.

MOBILE DEVICE REQUIREMENTS	
	OVERVIEW

	The CONTRACTOR shall utilize the CITY's process to request for access of the mobile device CAD/AVL applications.
	The CONTRACTOR is responsible to purchase mobile device and any warranty.
	The CONTRACTOR is responsible for cellular services fees.
	The CONTRACTOR understands that the CITY reserves the right to revoke access the mobile application for any reason such as network security noncompliance.
	The CONTRACTOR understand that only supported mobile devices will be supported.
	The CONTRACTOR is responsible for maintaining, diagnosing, and repairing all tablet equipment.
	The CONTRACTOR's IT representative will escalate only Clever system related mobile application issues.
	The CONTRACTOR shall understand that the CITY reserves the right to "brick" (remove all software and lock) any tablet device which can potentially compromise the CITY network.
	The CONTRACTOR is responsible to ship mobile devices to the CITY for activation or Clever specific application support.
	The CONTRACTOR shall understand that the mobile devices reside on the CITY's secure APN for hosting business CAD/AVL approved mobile applications. Any other third-party applications may not work due to network security restrictions.
	The CONTRACTOR shall understand that the CITY must authorize all third-party applications request prior to use on the APN.
	The CONTRACTOR shall understand that the first level mobile support documentation, provided by CITY, is subject to change at CITY's discretion.
	The CONTRACTOR shall be available to address mobile device equipment issues during CITY work hours.

Out of Scope Onboard Integration with Third Party Vendor

The CITY hosts the backend system and is responsible for the integrity of the entire CAD/AVL system and any modifications, additions, upgrades must be authorized by the CITY. Any system that will connect directly or indirectly with the CAD/AVL system must be approved by the City prior to commencing work.

THIRD PARTY INTERATION	
	OVERVIEW
	The CONTRACTOR shall utilize the CITY's process to request authorization of third party system integration.
	The CONTRACTOR shall not proceed with any integration work until the CITY has reviewed and provided authorization.

	The CONTRACTOR shall understand that failure to notify the CITY of third party integration projects can result in charges to remediate noncompliance
	The CONTRACTOR shall not install equipment on the vehicle that can interfere with existing COP owned communication systems.

Digital Video Recorder System (DVRS)

The CAD/AVL onboard equipment integrates with the Apollo Digital Video Recording System (DVRS) to improve maintenance and operational functions such as health status and live looking capabilities. The on-board mounted systems consist of interior and/or exterior mounted and focused cameras used to help mitigate insurance claims for liability and personal injury, resolve customer service issues, address crime and security problems, mitigate graffiti, investigate auto/pedestrian related accidents, and review operations. The DVRS are not specifically intended to monitor bus operator behavior.

Roles and Responsibilities:

The CONTRACTOR is required to assign an onboard representative to provide initial troubleshooting support of the DVR systems. The CONTRACTOR is responsible for retaining knowledgeable staff who can provide first level DVR maintenance and support.

The expectation from the CONTRACTOR for DVR systems maintenance and support is as follows:

DVR Maintenance and Support Requirements	
	OVERVIEW
	As custodian of the DVR's and the data images recorded, the CONTRACTOR shall fully respond to any requests for DVRS footage from the Public Transit Department or Phoenix Police Department.
	The CONTRACTOR shall maintain digital video recording systems according to OEM specifications and operate them according to CITY policies. No vehicle shall be put into revenue service without a properly functioning DVRS.
	The CONTRACTOR shall use the CITY provided surveillance system software to download video.
	The CONTRACTOR shall not proceed with any integration work until the CITY has reviewed and provided authorization.
	The CONTRACTOR shall be responsible to compile and maintain an up-to-date surveillance administration and maintenance guides for the system.
	The CONTRACTOR shall be responsible for maintaining all system equipment, documentation and software in operational order for the term of the contract.

	The CONTRACTOR shall be responsible to supply system diagnostic laptop(s) and attaining any system software necessary for maintaining such systems to OEM specifications.
	The CONTRACTOR shall maintain DVR configuration files as determined by the CITY.
	The CONTRACTOR shall maintain all integration component as requested by the CITY.
	The CONTRACTOR shall utilize the City Return Merchandise Authorization (RMA) process to repair DVR covered components.
	The CONTRACTOR is responsible for supplying all DVR ancillary components.
	The CONTRACTOR shall follow OEM recommendations for repairing connection points, single wire, and wire harness.
	The CONTRACTOR shall be available to address onboard DVR equipment issue during the CITY work hours.

RADIO

The regional CAD/AVL system utilizes an onboard radio for voice and data communications. This device has administrative and hardware elements that must be managed properly to ensure device is optimized to meet CITY's functional and asset management requirements.

Roles and Responsibilities:

The CONTRACTOR shall utilize the CITY's established escalation procedure to request support for radio issues. The CONTRACTOR's staff shall perform first level troubleshooting of the radio device. The CONTRACTOR should have experience with commercial LMR radio technology. The CONTRACTOR is responsible for retaining knowledgeable staff who can provide first level onboard mobile router device issues.

The expectation from the CONTRACTOR for radio maintenance and support is as follows:

Garage Infrastructure Support Requirements	
	OVERVIEW
	CONTRACTOR shall not install any onboard technology that will negatively impact radio communications.
	CONTRACTOR shall notify the CITY when production radio device is relocated.
	CONTRACTOR shall follow radio configuration programming as defined by the CITY.
	CONTRACTOR understands that first level radio support documentation, provided by CITY, is subject to change at CITY's discretion.
	CONTRACTOR shall be available to address radio issue during CITY work hours.
	CONTRACTOR is responsible for ancillary components.

	CONTRACTOR shall follow RMA vendor procedure for repairing radio.
	CONTRACTOR shall follow CAD/AVL vendor procedure for providing maintenance and support.

Garage Infrastructure

The regional CAD/AVL system utilizes a Real-Time Locator System (RTLS) system and a Wireless network comprised of several Access Points (AP) and network switches at both North and South garages. The RTLS system allows for tracking of vehicles, while vehicle is on premises. The AP allows for two-way bulk data transfers for vehicles to the central Clever servers. This equipment is specialized and requires multiple technical teams to ensure system is optimally calibrated and operational.

Roles and Responsibilities:

The CONTRACTOR shall utilize the CITY's established helpdesk procedure to request 2nd level Garage System support. The CONTRACTOR's IT representative will perform first level troubleshooting and then place a service request to the CITY.

The CONTRACTOR is required to assign an IT representative to provide initial troubleshooting support for the RTLS and AP systems. The IT representative should have a background in the information network field. The CONTRACTOR is responsible for retaining knowledgeable staff who can provide first level garage infrastructure support.

The first level support expectation from the CONTRACTOR for garage infrastructure is as follows:

Garage Infrastructure Support Requirements	
	OVERVIEW
	The CONTRACTOR shall not install any technology on property that will negatively impact CAD/AVL garage network communications.
	The CONTRACTOR shall not proceed with any integration work until the CITY has reviewed and provided authorization.
	The CONTRACTOR shall understand that the failure to notify the CITY of third party garage network projects can result in charges to remediate non-compliance.
	The CONTRACTOR'S IT representative shall perform initial troubleshooting which is limited to the following: <ol style="list-style-type: none"> 1. Validate house power to the devices 2. Reset power breakers as needed 3. Inform the CITY of any damage to RTLS or AP equipment 4. Performed site inspections as requested by the CITY to ensure all RTLS/AP equipment cabinets are secure (locked)

	The CONTRACTOR shall remediate any wild life issues such as birds or insects, that can damage network equipment located in network cabinets under garage canopies.
	The CONTRACTOR shall remediate any weather issues that can damage network equipment located in network cabinets under garage canopies.
	The CONTRACTOR shall understand that the first level garage support documentation, provided by the CITY, is subject to change at the CITY's discretion.

Mobile Router

The regional CAD/AVL system utilizes an onboard mobile router for voice and data communications. This device has administrative and hardware elements that must be managed properly to ensure device is optimized to meet the CITY's functional and asset management requirements.

The CONTRACTOR shall utilize the CITY's established escalation procedure to request support for mobile router issues. The CONTRACTOR's staff shall perform first level troubleshooting of the mobile router device. The CONTRACTOR should have a background in the information network field. The CONTRACTOR is responsible for retaining knowledgeable staff that can provide first level onboard mobile router device issues.

The first level support expectation from the CONTRACTOR for mobile router is as follows:

Garage Infrastructure Support Requirements	
	OVERVIEW
	The CONTRACTOR shall not install any onboard technology that will negatively impact CAD/AVL communications.
	The CONTRACTOR shall notify the CITY when production mobile router device is relocated.
	The CONTRACTOR shall understand that first level mobile support documentation, provided by CITY, is subject to change at CITY's discretion.
	The CONTRACTOR shall be available to address mobile router issues during the CITY work hours.
	The CONTRACTOR shall follow the CITY SOP for SIM cards management.
	The CONTRACTOR shall follow CAD/AVL vendor procedure for replacing mobile router device.
	The CONTRACTOR shall follow CAD/AVL vendor procedure for providing maintenance and support.

New Vehicle Builds

For new vehicles, the CAD/AVL onboard equipment comes with a 1-year repair or replacement warranty from the vehicle manufacturer. The CONTRACTOR shall submit failed onboard components thru the established RMA process.

Communication System Software

Along with various hardware components, Communications system comprises of various software interfaces and reports.

System Access: Along with access requirements specified under General Requirements section, there additional requirements for CAD/AVL components access. SAF procedure includes these requirements as well. SAF has a specific procedure for submitting the “Employee Feed” file for CAD/AVL Operator, Dispatch and access for various other roles. SAF also includes a section for reports access. The Agency staff is required to follow the defined SAF procedure and complete the SAF correctly and completely to gain the required access to the system. Additional details related to the system access and Employee Feed file will be available at the

Roles and Responsibilities:

CONTRACTOR: The following functions are the responsibility of CONTRACTOR local IT staff:

CAD/AVL related operation functions: (examples below, this is not an exhaustive list)

- Modifying AVL configuration views and Non-CAD/AVL functions.
- Saving print screen images to an external data storage device (i.e. USB drive).
- First level of troubleshooting for the issues reported by the Agency staff.
- The CONTRACTOR IT staff shall be available at the time of any system outages for the staff to provide the necessary support.
- The CONTRACTOR IT staff shall have resources, Admin permissions, necessary tools to assist the staff without any delays.

CAD/AVL and other City supported system user manuals are accessible on CITY Contractors and Regional Contractor's web page.

CITY: The City is responsible to resolve CAD/AVL or ANY Communications System related issues, that stay unresolved after the First level effort by the CONTRACTOR IT staff. These issues shall be reported by the CONTRACTOR IT staff, with details to help in the process of troubleshooting for the CITY.

HASTUS (Scheduling and Dispatch System)

The CITY utilizes HASTUS as the Scheduling and Dispatch system. This section outlines scope for HASTUS and technical requirements. The system is available to use for the CONTRACTOR as currently set up. Modifications to the existing system are out of scope. Any modifications required in the system to accommodate the CONTRACTOR's business needs can be submitted to the CITY for a review, if required. If decided, that the changes are necessary to gain efficiencies, and do not cause conflict in any other operations, the CONTRACTOR will be responsible for any costs incurred for the system update as well as staff time for the implementation.

For any tasks that require the CONTRACTOR to provide data fed into HASTUS, the CONTRACTOR shall provide the associated data in a HASTUS acceptable format. HASTUS Dispatch is extensively dependent on the Calendar Week. The CITY set up of HASTUS will only accommodate two Calendar Weeks: "Monday to Sunday" or "Sunday to Saturday". The CONTRACTOR shall utilize one of the two options available and the CITY will not accommodate a different Calendar Week within HASTUS. The CITY reserves the right to require the CONTRACTOR to modify the Calendar Week for system performance purposes and will coordinate closely with the CONTRACTOR to make such modifications if needed.

Other modules included with HASTUS Dispatch are BidWeb and Sign-in/Sign-out. The CONTRACTOR can utilize those modules as provided by the CITY. The modules allow for the Operators to use an automated Sign-in/Sign-out console for their shifts start and end, and to Bid for the work assignments, vacations and holidays.

Roles and Responsibilities:

CONTRACTOR:

- The CONTRACTOR IT Specialist will serve as the First level support for any HASTUS related issues at the CONTRACTOR site.
- The CONTRACTOR IT Specialist will be responsible to communicate the issue to the CITY, when determined that it needs the CITY assistance to resolve.
- The CONTRACTOR IT Specialist will be responsible to make sure that the technical environment for HASTUS is always up to date and does not cause any interference in the users' ability to effectively use the system. This will include but not limited to ensuring that VPN environment is up to date, network is performing as expected.
- The CONTRACTOR IT Specialist shall also be available at the time of any system outages and be the Primary Contact for the CITY to help with any information as needed.
- During the term of the agreement, if any upgrades/modifications are made to HASTUS, the CONTRACTOR shall support the CITY as follows:

- Assign sufficient staff resources to provide input during requirements gathering or specifications study for the software.
- Attend meetings and provide feedback during various stages of the upgrade.
- Assign sufficient resources to perform testing the software upgrade tasks as relevant to the CONTRACTOR.
- Support a successful and timely software upgrade.

CITY:

- The CITY is responsible to resolve any HASTUS related issues that are specific to the HASTUS and not to the technical resources provided by the CONTRACTOR.
- The CITY contracts with the vendor GIRO Inc. for the support and maintenance of HASTUS. The support from GIRO is limited to business hours Monday – Friday. Any issues that need assistance from GIRO but are reported during after- hours and holidays, might need to wait for resolution. It is essential that the CONTRACTOR reports the issues in a timely manner.
- The CONTRACTOR must follow the Call Escalation chart provided by the CITY to report any HASTUS related issues.
- The CONTRACTOR must have a business continuity plan in case of any urgencies, when HASTUS is not available for any reasons.

System Access: All access requests are made through SAF procedure. Please see the System Access section under “General Requirements” in this document.

Training

The CITY will coordinate with GIRO to provide training at the time of system changes and upgrades. The CONTRACTOR will be given opportunity to attend the training and the CONTRACTOR staff, who will be utilizing the training, must attend the training. This will help the CONTRACTOR staff to utilize the system correctly and efficiently. The CONTRACTOR shall use the staff expertise to train any new staff. New staff hired to use any components of HASTUS must be trained by the CONTRACTOR team. Additional training requirements from the CONTRACTOR can be coordinated with the CITY, at the CONTRACTOR's expense.