STATE OF GEORGIA

(Department of Administrative Services, State Purchasing Division)

2022 TECHNICAL AND PERFORMANCE

SPECIFICATIONS

FOR

FORD OEM ADA MOBILITY VAN
Row 10-Line Items 6-4A and Row 11-Line Item 6-4B

NOTICE: This specification is NOT intended to restrict competition. Manufacturers/Dealer may bid their bus(es) in accordance with their standard manufacturing process. In the case where that process varies for this specification, Deviations must be submitted on the provided Request for Specification Deviation Document Form and Specification Deviation Certification and Compliance Form. Any deviation documented shall be "brand name, equivalent, or equal in performance" and must meet or exceed all FTA requirements (for FTA-compliant vehicles), and all Federal, State, and Local requirements. The state may, at any time during the evaluation and/or contract period, require the bidders to provide proof that the deviation meets the "brand name, equivalent or equal" in performance.

205 U4X Transit Specs

1.0 Chassis

1.1 General

1.1.1 Current/New Ford OEM Chassis 350 and/or 450. Vehicle Chassis shall meet all applicable SAE and FMVSS requirements

1.1.2 Manufacturer/Vehicle Alterer shall attest that they are certified by Chassis Manufacturer's QVM Program when they are supplying a response.

1.1.3 Manufacturer/Vehicle Alterer shall attest that they are certified by the Federal Transit Administration's TVM Program at the time they are supplying a response.

1.1.4. Must include a Catalytic Convertor Theft Protection System

1.2 Dimensions

1.2.1 Wheelbase- 148"

1.2.2 Overall height- 107.7"

1.2.3 Overall length- 263.9"

1.2.4 Inside height- 77"

1.3 Gross Vehicle Weight Rating (GVWR)

1.7.1 GVWR of 10,000 min

1.3 Electrical

1.3.1 Wiring shall be TXL insulated. All wiring shall be color coded for identification. All wiring should run inside the body in a protected area. Any wiring exposed to the elements shall be in a nonmetallic loom and securely clipped for maximum protection. Clips shall be rubber or plastic coated to prevent their cutting through the wire insulation.

1.3.2. All accessories and electrical equipment, except the head, parking lights, emergency flashers, and wheelchair lift, shall be wired through the vehicle ignition switch to be operative only with the switch in ON or ACCESSORY position.

1.3.3. OEM backup alarm shall be provided.

1.3.4. Power wire to lift shall be securely clamped and protected in-line circuit breaker with manual reset provided for the lift.

2.0 Body

2.1 General

2.1.1 Unibody raised roof van shall meet all stated specifications. The vehicle shall meet the structural integrity of the stated van that shall not be degraded.

2.1.2 Vehicles shall meet all applicable requirements of the Americans with Disabilities Act (ADA) as outlined in 49 CFR 37 and 38, issued 9/6/91; and 49 CFR 571, FMVSS 403 and 404, issued 12/27/02 for the body structure.

2.2 Raised Roof

2.2.1 The raised roof shall be part of a unitized body-constructed OEM vehicle.

2.2.2 Minimum of 77" center aisle height.

2.2.3 The raised roof shall be the Ford High roof option.

2.3 Passenger Entrance Door

2.3 The Passenger door sliding door shall be replaced with a bifold transit door.

2.4 All airbags must be retained except the rear passenger side ejection mitigation bag.

2.5 The bus door should be interlocked so that the door can not be opened if the vehicle is not in park

2.6 The bus door should be a 36" x 82" opening and a minimum of 84" at the second step.

2.7 The bus doorsteps shall be no larger than 9" x9."

2.8 The actuator shall be mounted above the transit door and shall be hidden behind the OEM headliner

2.9 The transit-style door shall be able to be opened by a rocker switch mounted within reach of a driver or the use of a key fob. In the event of an emergency, there shall be an emergency lever to release the door.

2.4 Lift Door

2.4.1 The lift door shall be curbside of the vehicle rear of the rear axle.

2.4.2 The lift doors shall be dual manual swing outdoors with a clear opening of 44" x74". The lift doors shall have shocks installed to help hold the doors open as well as help assist with opening the doors.

2.4.3 Pistol grip dual handles and locking from the outside.

2.7 Windows

2.7.1 Standard OEM power standard windows in the front doors shall be retained. The windshield shall be OEM safety tinted type.

2.7.2 An OEM wagon Van Chassis with Full OEM Windows shall be provided.

2.10 Bumpers

2.10.1 OEM front and rear bumpers shall be provided.

2.8. Exterior Lighting

2.11.1 Exterior lighting shall meet all state and federal regulations.

2.11.2 Lighting requirements for the passenger entry and lift door areas must meet ADA requirements.

2.9. Exterior Mirrors

2.12.1 OEM dual power and black matte finish.

2.12.2 OEM mirrors with manual convex shall be provided.

2.10.Finishing Procedures

2.10.1 All bolts shall be treated to prevent corrosion.

2.10.2 All screws shall be fastened securely into panels or the vehicle so as not to jar loose.

2.10.3 All bare metal components shall be prepped with acrylic enamel paint to match the vehicle.

3.0 Interior

3.1.1 Interior finish shall be completed to industry standard. Interior color shall be OEM with coordinating colors for any additions.

3.1.2 All sharp edges, sharp corners, and protrusions shall be eliminated for safety reasons.

3.1.3 Vehicles shall meet all applicable requirements of the ADA as outlined in 49 CFR 37 and 38, issued 9/16/91; and 49 CFR 571; all applicable FMVSS requirements, including but not limited to 208, 302, 403, and 404 concerning the vehicle.

3.1.4 The chassis shall be an OEM wagon chassis with an OEM interior.

3.2. Flooring

¾" plywood subfloor with vinyl nonslip covering.

3.3. Seating

3.3.1 Driver's seat shall be OEM deluxe high back, fully padded, contoured bucket type, heavy-duty construction with armrest. The driver's seat shall be easily adjusted forward and backward without using tools. OEM unibelt restraint system is required. Vinyl upholstery shall complement the vehicle's exterior and coordinate with the passenger seats.

3.3.2 Freedman Go-ES or equivalent seating shall be provided for the vehicles. All seating must comply with the new requirements of FMVSS 208 and all other applicable FMVSS requirements. Bench seating shall be provided in single or double-passenger sizes depending on seating configurations shown in the attached drawings. Forward-facing foldaway seats (single or double) shall be provided over wheelchair stations.

3.3.3 All seats shall be heavy-duty construction with 1" 16 gauge reinforced tubular steel frames. All metal surfaces shall be chemically cleaned, iron phosphate, painted, and baked to provide rugged, long-lasting, rust-resistant surfaces.

3.3.4 All seat backs should be a minimum of 16 gauge 1" x16" steel straps welded to the seat frame. All seat bottoms shall use a flex plate suspension system for even support.

3.3.5 Upholstery material shall be Freedman Level 1, transit vinyl Seats, or equivalent, and shall be color-keyed to the vehicle's interior panels and exterior color. Foam padding shall be high-density (4.5 pcf), non-deformable foam. Load-bearing values shall be more than 45ILD.

3.3.8 All seating shall meet or exceed all applicable FMVSS requirements, including, but not limited to, FMVSS 302, 207, and 208

3.4. Passenger Restraint System All seating comes complete with integrated 3-point seatbelts to be compliant with FMVSS 208 and all other applicable FMVSS regulations.

3.5 Interior Lighting

3.5.1 The interior of the vehicle shall be adequately illuminated. Overhead lighting fixtures and courtesy lights shall be arranged in such a manner as to provide lighting intensity at a reading level.

3.5.2 Adequate light shall be provided for the instrument panel, with intensity controlled by an instrument panel switch.

3.5.3 All door lights and the passenger entry door shall automatically illuminate when doors are open.

3.6. Instrument Panel, Dash, and other controls

3.6.1 Dash shall coordinate with the interior trim color. Glove box with light and lock to be provided (OEM)

3.6.2 Instrument panel and dash shall be equipped with the following OEM instruments, gauges, and controls. All controls and switches shall be within easy reach of the driver. No overhead switches or controls are permitted. Lights in place of gauges are not acceptable except as noted.

Speedometer with odometer and trip odometer
Oil pressure gauge
Voltmeter
Engine coolant temperature gauge
Fuel gauge
Upper beam headlamp indicator
Dual-note horn
Directional signals **(light)**
Parking brake on (**light**)
Headlight switch
Inside hood release
Controls for heater, defroster, and air conditioning
Standard OEM AM/FM radio w/digital clock & speakers
Windshield wiper and washer
Emergency flashers

3.6.3 OEM driver's sun visor to be provided.

3.6.4 OEM driver's side airbag to be provided in the steering wheel.

3.6.5 OEM front passenger airbag to be provided.

3.6.6 All vehicles shall provide a total of 4 sets of keys for the vehicles (Ford, Bus door key fob, lift door key)

3.7. Section Deleted

3.8 Heating and Cooling

3.8.1 Front heater and defroster shall be OEM with the maximum BTU rating available.

3.8.2 Rear aftermarket heat and AC

3.9 Emergency and Safety Equipment

3.9.4 Tire Changing Tools- Jack (OEM) shall be mounted at the back corner of the van. The wheel wrench and appropriate tools shall be located inside the front passenger step well compartment.

3.10 Front Airbags and Side Ejection Mitigation System

3.10.1 Standard OEM Driver and Front Passenger Airbags shall be retained.

3.10.2 The Standard OEM Passenger Van Sidewall Ejection Mitigation System shall be retained.

3.10.3 All vehicles shall provide an oxygen tank holder. The oxygen hold must hold at least one (1) tank and mount into an "L" track for securement.

4.0 Wheelchair/mobility Aid Lift System

4.1 General

4.1.1 Vehicles shall meet all applicable requirements of the Americans with Disabilities Act (ADA) as outlined in 49 CFR 37 and 38, issued 9/6/91; and 49 CFR 571, FMVSS 403 and 404, issued 12/27/02 concerning mobility aid accessibility. The contractor (vendor) is solely responsible for any additions, deletions, omissions, or interpretations of ADA, as it relates to the construction of the vehicles.

4.2 Wheelchair/Mobility Aid Stations

4.2.1 Wheelchair/mobility aid stations(s) are the space inside the vehicle for transporting persons in wheelchair/mobility aid devices and are to be provided on vehicles having wheelchair/mobility aid lifts. Each wheelchair/mobility aid device station shall consist of a usable floor area where a passenger in a wheelchair/mobility aid device may be positioned and where a wheelchair/mobility aid system shall be installed.

4.2.2 All wheelchair/mobility aid stations shall be designed to secure wheelchair/mobility aid devices in a forward-facing position.

4.2.3 The stations shall not be any less than the minimum length of 48" required per the ADA

4.2.4 No wheelchair/mobility aid station(s) obstructions shall hinder a wheelchair/mobility aid device from being rolled into place.

4.3 Wheelchair/Mobility Aid Securement System

4.3.1 The four-point track/belt tie-down shall be provided at each wheelchair/mobility aid device position. Securement systems and their attachments to the vehicles shall withstand a force in a forward longitudinal direction of 2,500 lbs. per securement leg and a minimum of 5,000 pounds for each aid device. Movement of an occupied wheelchair/mobility aid device shall be no more than 2".

4.3.2 this system shall be composed of the following components: four(4) separate belts and four(4) lengths of a track with all necessary buckles, hardware fittings, and other parts to make it a complete wheelchair/mobility aid device securement system. Q-Straint QRT-DLX tie-down system or equivalent.

4.3.3 Each wheelchair/mobility aid station shall have a separate securement for each set of tie-downs. They are not to share the same track.

4.3.4 The floor tracks for the wheelchair/mobility aid stations shall sit on top of the floor to ensure that no debris obstructs the securement of the wheelchair/mobility aid station

4.3.5 During the installation of the wheelchair/mobility aid securement system care shall be taken to avoid damage to any of the vehicle's components. Particular attention should be taken to avoid damage to the fuel tank during and after the installation of the L-Track. It should be noted that the method of installing the track is the solely responsibility of the vendor and he may use whatever method will obtain the required results. By submitting and signing this bid the vendor hereby certifies that the wheelchair/mobility aid device securement system has met all applicable Federal motor Vehicle Safety Standards and has been mounted in accordance with the manufacturer's specifications.

4.3.6 Each set of retractors shall have its own tiedown bags mounted in an approved location prior to building the vehicles.

4.5 Wheelchair/Mobility Aid Device Lift

4.5.1 The wheelchair/mobility aid lift system shall be a system that permits persons confined to a wheelchair/mobility aid device to enter and leave the vehicle while in a wheelchair/mobility aid device without difficulty by means of a vertical lifting platform and which also provides for the safe transportation of persons in a wheelchair/mobility aid device inside the vehicle. Braun Century II or approved equal.

4.5.2 The lift operation and installation must meet ADA, FMVSS 403 and 404 requirements.

4.5.3 Lift shall require no independent power source. The lift shall operate on the vehicle's existing heavy-duty electrical system.

4.5.4 Placement of the lift or the method of attaching shall not significantly diminish the structural integrity of the vehicle or cause a hazardous unbalancing of the vehicle either by its weight when the vehicle is moving or by its weight and load when the vehicle is stopped, subject to the vehicle manufacturer’s recommendations.

4.5.5 All protrusions or moving parts of the lift mechanism which could snag clothing shall have a guard or shield to protect passengers and/or operator.

4.5.7 An operational manual shall be provided.

4.6 Lift Platform

4.6.1 The platform to be provided shall be the widest available for the manufacturer with a minimum clear usable width of 34" and a minimum clear usable length of 51".

4.6.2 The lift platform shall also be in compliance with ADA and FMVSS 403 and 404 requirements.

4.6.3 The maximum weight that is lifted by the lift shall be posted on the lift (800lbs.).

4.6.4 Platforms shall be capable of being raised and lowered with no sudden acceleration, deceleration, or jerking motion.

4.6.5 A handrail restraint, a belt between the two handrails, shall be provided in order to offer extra security for passengers in wheelchair/mobility aid devices as they are listed on the platform.

4.7 Lift Controls, Interlock, and Backup Systems

4.7.1 Operating controls shall be of a heavy-duty commercial type and shall be designed for hand-held operation with a long cord extension to allow operation of the lift by the operator standing outside the vehicle at a position behind or at the side of the lift platform. A method for storing and securing the controls when not in use shall be provided.

4.7.2 The lift operation and interlock shall be in compliance with ADA and FMVSS 403 and 404 requirements.

4.7.3 The controls shall be designed to be used safely without adverse effects to the operator or to the controls in all weather conditions.

4.7.4 Lift controls shall allow for instant direction reversal at any point in the cycle.

4.7.5 The vehicle shall have an interlock system that will not allow the vehicle to be shifted out of the park if the lift door is open. As an added feature is also will not allow the vehicle to be shifted out of park anytime the parking (emergency) brake is applied.

4.7.6 The interlock system shall make the lift controls inoperative unless the vehicle's emergency brake is active.

4.7.7 The interlock system shall only allow the lift to be operational when the vehicle is in "Park", the "parking (emergency) brake is engaged, the "ignition" is on, and the "lift door" is open.

4.7.8 In addition to the normal operating power, a manual backup system for unloading wheelchair/mobility aid passengers and returning the lift to the stowed position shall be provided in the event of electrical failure. The backup system shall be mounted on the interior of the vehicle, close to the lift, and in a location that will not interfere with passenger loading and unloading.

5.0 OPTIONS

Please ensure you have included the options below in your Additional Options for each bus bid. Provide the following Options:

5.1 CAMERA SYSTEM-OPTION 1

6 cameras with DVR- Recording while vehicle is in service to include the panic button and specific SD card

Camera locations-

Front – rear

Rear-front

Viewing the driver

Viewing the interior of the wheelchair lift

Viewing out the windshield

Exterior Curbside viewing down the bus towards the wheelchair lift

5.1.1 CAMERA SYSTEM OPTION 2

OPTION 1 and **add the WIFI antenna for live camera views while bus is in service**

5.1.2. CAMERA SYSTEM OPTION 3

OPTION 1 & 2 and **add Automatic Vehicle Locator system with specific needs of Live Tracking in Real Time**

5.1.3.4 CAMERA SYSTEM OPTION 4

OPTION 1, 2 & 3 and **add Passenger WIFI**

NOTE: If there are any charges from cellular companies the subrecipients will be responsible for setting up their accounts.

*************END OF CAMERA SYSTEMS OPTIONS**

5.2 MOBILE DVR SYSTEM OPTION

- 8 Channel HD/IP Mobile DVR Specifications for Mass Transit Applications

- The eight (8) channel mass transit surveillance system requested must meet the following minimum requirements:
- The vendor is permitted to propose multiple systems within their response.
- The vendor is to include pricing for the AngelTrax Vulcan Series eight (8) channel HD/IP mobile digital video recording system.

5.2.1 GENERAL REQUIREMENTS

The MDVR must be constructed in a modular configuration with the modules for the hard drive and main control board which are fully removable on slide rails such that repair and replacement may be completed without removing the MDVR from the vehicle. Onboard system components shall be modular, and entire MDVR replacement shall not be required.

5.2.2 SYSTEM REQUIREMENTS

- The system must be capable of recording eight (8) channels of audio and video in 1080P simultaneously, at up to 20FPS, including up to six (6) HD cameras capable of 1080P video and audio and up to two (2) IP cameras capable of up to 1080P.
- The MDVR must be capable of the following recording resolutions:
    - DIGITAL: 1080P (1920x1080), 720P (1280x720)
    - NTSC: 1080P, 720P, WD1 (928x480), WHD1 (928x240), WCIF (464x240), D1 (704x480), HD1 (704x240), CIF (352x240)
- The system must be capable of optimizing high quality video and recording time by selecting frame rates, recording quality and resolution for each camera independently.
- The system must have a 4 to 7 second brownout protection during a loss of power to protect media. Duration will be determined by power consumption at time of power loss.
- The front of the MDVR must have status indicator lights to include PWR, USB, ALM, REC, ERR, and NET. An optional light indicator box must be available for easy viewing by the driver.
- The system must also continue to record while being viewed remotely or wirelessly downloading video by multiple users.

- The MDVR system must operate utilizing an embedded Linux platform for stability and reliability.

5.2.3 MDVR FEATURES

- The MDVR must have a mounted extension cable for connection to an optional touchscreen monitor used for setup and troubleshooting without removing the front door panel.
- The MDVR must have a “plug and play” connection on the rear panel for an onboard live monitor.
- The MDVR “panic button” located near the driver’s seat must have hard drive location “marking” capabilities and serve as a live recording indicator.
- The MDVR must have one alarm input, one output and eight (8) sensor inputs for marking events defined by the customer.
- The 3.5-inch SATA hard drive shall have a minimum storage capacity of 1TB of high quality video.
- The MDVR must have the capability of storing data on one M.2 SATA SSD, as an alternative to the 3.5-inch SATA hard drive.
- Once the hard drive is full, the system will overwrite the oldest data first.
- The hard drive must be easily accessible from the front panel.
- The hard drive housing must include a heater.
- The MDVR must have one (1) microSD card slot for redundant recording, as desired by the user. The microSD recorder must have separate settings to allow for increased recording time when in redundant mode.
- The MDVR must have a slot to accept one (1) SIM card for dual cellular network capabilities. This feature must be included within the MDVR housing.
- The MDVR must have a USB port on the front of the unit for removable storage to allow for downloading video or images directly from the MDVR or upgrading the firmware of the device, the CP4 monitor, IPC or GPS. The USB port must also accommodate a mouse or the Vulcan™ Series Easy Check device management software and Wi-Fi module.
- All recording on the MDVR must utilize H.264/H.265 compression.
- The MDVR must have the capability to connect to an Ethernet port at 10/100M/1000M, for connecting the MDVR to a wired Ethernet connection. This unit has 2 RJ45 connections for IP cameras.

- The MDVR must power up based on a 9-36V ignition trigger under continuous record, alarm record, motion record and schedule recording options. In addition, the MDVR must be able to be programmed to stay powered on and recording for up to 24 hours after the vehicle is off.

- The MDVR must be capable of onboard viewing, downloading video and setting

up the MDVR via a laptop or touchscreen monitor directly connected to the MDVR.

- The HD cameras must connect directly to the rear of the MDVR with 4 pin aviation grade connectors.
- The MDVR must have the ability to adjust the brightness, contrast, color and saturation individually on each camera and must also be able to electronically mirror or flip the camera displays.
- The MDVR must have the ability to store alarm events without the events being overwritten.
- The MDVR must have an integrated 3-axis accelerometer and must be capable of tagging the video and/or sending alerts if the vehicle exceeds a pre-determined G-Force threshold. An additional connection must be available for an external accelerometer for use in driver behavior reporting.
- The MDVR must have the ability to provide the following, available for immediate download:
    - A programmed channel snapshot, taken when the panic button is pressed or when an alarm or event is triggered, and
    - Video clips, recorded in pre-defined lengths, of the camera view before and after the snapshot is taken.
- The MDVR must have the ability to detect video loss, motion or a camera being covered and be able to trigger an alarm or event independently.
- The MDVR must have the ability to upgrade the device firmware, CP4, IPC or GPS, either directly from a USB drive plugged into the MDVR or remotely using an active Internet connection.
- The MDVR will be capable of recording optional Virtual Synchronized Mapping™ as a permanently embedded video record simultaneously recorded with the video, providing a court-ready GPS map for evidence without the use of an Internet connection or the Google Maps™ mapping service.

5.2.4 MDVR WIRELESS CONNECTIVITY

- The MDVR must have two GPS connections on the rear panel: one for an optional active GPS antenna and one for an optional passive GPS antenna.
- The MDVR must include a port for an optional Wi-Fi or cellular antenna on the rear panel.

- The MDVR must have the ability to connect to one (1) internal cellular modem without requiring any external hardware other than antennas. The cellular connection must be able to be set to 3G/4G or a mix of the networks; must have a place to enter an APN number, user name and password; and must work with both CHAP and PAP certifications.
- The MDVR must be able to connect to a Pro 8™ Central Management System (CMS) server for live tracking, remote view, MDVR health, remote playback and remote video download.
- The MDVR must be able to switch from cellular download to Wi-Fi download when in range of the Wi-Fi network or be able to be programmed for video download using Wi-Fi only.

5.2.5 MECHANICAL REQUIREMENTS

- The MDVR casing must be of extruded aluminum and built for MIL-STD-810F shock resistance and must operate between -40 degrees and 158 degrees Fahrenheit without additional enclosures.
- The MDVR must have user-selectable settings to shut down operations autonomously when temperature or voltage limits are exceeded. Temperature and voltage limits may be set by user, within the MDVR's recommended operating limits.
- The MDVR must be of the following dimensions: 13.7"L x 7.4"W x 3.9"H.

5.2.6. MDVR ELECTRICAL REQUIREMENTS

- The MDVR must operate within a power input range of 9-36V DC and must be connected with a wire that is a minimum of 16-gauge, with inline fuses, and be internally and continually protected from power surges, voltage spikes and reverse polarity.
- A separate, external UPS must be available to regulate fluctuations in vehicle voltage and to provide for operation of all functions at full capacity in the event of an interruption in power to the MDVR.

▪ ENVIRONMENTAL REQUIREMENTS

- The MDVR unit must have high and low temperature protection including a heater. An optional fan kit is required for use with HDD of 4TB+.
- The MDVR must have startup protection to prevent damage from voltage fluctuations.

5.2.7. PLAYBACK SOFTWARE

- Playback software must be provided without charge, including upgrades, for the life

of the system.

- The playback software must be simple to use and, from one window, allow the user to access live or recorded video from multiple sources.
- The playback sources must include but not be limited to the following:
- An MDVR hard drive connected to a PC.
- An MDVR connected to the Pro 8 CMS server via an active Internet connection aboard the vehicle.
- A PC connected directly to the MDVR via the LAN aboard the vehicle or a server and a live stream from selected vehicles.
- The playback software must be capable of displaying video utilizing zoom, blur, selected camera views and selected microphone audio from all playback sources stated above. Organizing the display to pertinent and specific channel display must be done with a mouse click.
- The playback software must be capable of requesting wireless downloads, when equipped with an active Internet connection.
- The playback software must be capable of easy download for viewing by legal authorities and authorized parties.
- The video must be equipped with a watermark feature to alert the viewer to video alteration or manipulation.
- The playback software must utilize proprietary encryption to limit access to authorized parties.
- The playback software must be capable of converting video to AVI formats for common display.
- The playback software must be able to create “clips” of pertinent event time duration for storage and transmission on multiple media such as thumb drives, DVDs, etc.
- The playback software must display Google Maps™ mapping service and the vehicle’s GPS location, if the MDVR is equipped with optional GPS antenna, when the playback PC is connected to the Internet.
- The playback software must be capable of displaying Virtual Synchronized Mapping™, a GPS map of the vehicle location permanently embedded in the video recording, without Internet access, as court-ready evidence.

5.2.8. 7 WARRANTY, SERVICE AND SUPPORT

- All hardware shall include a warranty of five (5) years parts and labor.
- Unlimited telephone and email technical support shall be provided at no additional charge for the life of the system.
- Additional extended warranty and service contracts will be available.

*********END OF MOBILE DVR SYSTEM OPTION**

5.3 CENTRAL MANAGEMENT SYSTEM OPTION

- Central Management System (CMS) is an optional upgrade to the software and includes additional features to enhance the functionality of the software. The following specifications are divided into Playback Software Requirements and Central Management System Requirements for your reference and should remain separate from each other in all requests and proposals.

5.3.1. PLAYBACK SOFTWARE REQUIREMENTS

- License-free playback software that is capable of video playback, calendar and event searches shall be provided to administration at no extra cost, and shall be compatible with Windows® 7, Windows® 8 and Windows® 10.
- The software shall include the following playback controls: pause/play, stop, rewind and fast forward up to x32 speed, slow motion playback, frame-by-frame playback, audio volume, snapshot, video export.
- The software shall allow users to select specific cameras to be displayed during playback.
- The software shall be capable of allowing camera channels to be rearranged within the playback screen.
- The software shall display the resolution and frame rate at the top of each camera channel.
- The software shall provide multiple layout options and window configurations of camera channels with the playback screen.
- The software shall allow users to double-click a camera channel to maximize its display in the playback screen for full-screen mode. While in full-screen mode, users shall be able to cycle through all camera channels.
- The software shall allow users to select date, time range and condition of the video when searching for available videos.
- The software shall include a slider bar that can be dragged directly to a particular point of the video. The timeframe represented by the slider bar shall be capable of being increased or decreased using magnifying lens icons located at the top of the slider bar.
- The software shall provide a calendar display for each month and adjacent month's video with available clips highlighted by video type (normal or alarm).
- The software must provide a security watermark indicator during playback.
- The software must be capable of timeline zoom to (five) 5 seconds.
- The software shall allow for the following selectable metadata to overlay on recorded video: date/time, speed, vehicle number and GPS coordinates.
- When the system is equipped with GPS, the software shall include a GPS map to

display vehicle location, route, breadcrumb trail, and vehicle's sensor inputs synchronous to the video being played. Users shall be able to click on any point on the vehicle's breadcrumb trail on the map to jump directly to that time in the video.

- When equipped with GPS, the system shall provide historical software mapping display routes of the vehicle location and speed charts.
- When the system is equipped with GPS, the software shall be capable of connecting to prerecorded video by selecting a point on the map or selecting a point on the speed chart to view from that speed or location.
- Vehicle sensor inputs displayed below the map shall correlate with their corresponding location on the map such that when a sensor becomes active, it is highlighted at that point in the recording's timeline.
- The software shall include tabs in the playback screen to allow users to view map only, video only or both.
- To retrieve recorded video, the software shall provide searches by the following: event, time lapse, time and date and vehicle location.
- The software shall include an "Event" tab which displays all events and alarms that occurred during the open video segment. Users shall be able to double-click on an event to jump directly to that time in the video.
- The software shall include a "zoom in" button at the top of each camera channel to allow users to zoom in on any selected areas.

- The software shall include a "Blur" button at the top of each camera channel to allow users to select the areas of the camera's image to blur out. Blurring shall be capable of being used in one or all camera channels simultaneously. Blurring shall be capable of being exported with video.
- The software shall be capable of saving a video clip as a Windows Media Player (.avi) file or saving a video as a self-executable format (.exe). However, our preferred method of saving is in proprietary codec format.
- Video clips saved using the self-executable format (.exe) shall be encrypted and should be viewed without the embedded software, providing the ability to easily transfer secure video evidence.
- The video clip function shall provide the option of saving a portion of the video clip (shorter in length and/or reducing the number of cameras) in order to make a smaller video clip from the original.
- The software shall feature the option to archive video clips requiring a username and password for reviewing.
- The software shall include a "Snapshot" button to save a single-frame still image in .bmp format from any user-selected camera.
- With optional PRO8CMS, the playback software must automatically connect to the backend Central Management System (CMS) for video and audio review and

investigation.

5.3.2 CENTRAL MANAGEMENT SYSTEM REQUIREMENTS

- The CMS shall provide various levels of user access rights that allow and restrict access to various functions.
- The system shall feature software for large-scale remote viewing and administrator functions for unlimited simultaneous users and for viewing up to hundreds of camera views at one time. The software shall allow for automated software upgrades and simultaneous updates to multiple sites.
- The CMS shall clearly display all connected assets (vehicles) for live viewing.
- The CMS shall be capable of live viewing any or multiple connected assets simultaneously.
- The CMS shall be capable of displaying 12 different screen formats for live view.
- The CMS shall be capable of arranging users into hierarchical groups that mirror an agency's organization.
- The CMS shall be capable of arranging vehicles into multiple groups.
- The CMS shall include a "Frame Information" tab which displays detailed metadata: firmware, agency name and vehicle number, specific accelerometer reading and GPS coordinates, vehicle speed, and device voltage and temperature.
- The CMS shall allow the system (when networked via cellular or Wi-Fi or both) to automatically send email or text notifications for any system event including the following: video loss, camera obstruction, hard drive "full status," etc.
- The CMS shall supply health information of the video system with error logs, reports and automatic notifications for the following: video blind events, video loss events, disk errors, disk temperature events, fan errors, recorder errors, disk almost full, and hard disk monitoring events.
- The CMS shall allow the system to send notifications to the vehicle driver or external systems for any system event including video loss, camera obstruction, hard drive "full status," etc.
- The CMS shall be capable of automatically sending notifications to a central location and shall support automatic fleet-wide email notification of system events as well as a fleet-wide health summary featuring camera and system health reports.
- With the CMS, the playback software will have the ability to playback video from the remote server, the asset (vehicle), the local hard drive, the directory or local storage.
- The CMS shall allow for easy fleet-wide searches and wireless download of video-based solely upon the date and a general map location.
- The CMS shall include an "Evidence" folder which allows users to label, categorize, organize and generate incident reports after reviewing critical video

clips.

- The CMS shall display the current time and date on live video.
- When events are detected, the CMS shall display the event information and allow users to access the remote server directly to search the image associated with the event, when equipped with Wi-Fi or cellular equipment.
- The CMS shall allow the user to connect to multiple units simultaneously and allow for viewing 64 camera views at one time, based on the number of cameras in the fleet.
- The CMS shall be capable of two-way audio with optional speaker and microphone and cellular connection.
- The CMS shall be capable of remote configuration of recorder settings while the vehicle and MDVR are running.
- The CMS shall be capable of remotely setting the streaming quality while the vehicle and MDVR are running.
- The CMS shall be capable of remotely setting the GPS post frequency while the vehicle and MDVR are running.
- The CMS shall be capable of sending SMS messages to the driver while the vehicle and MDVR are running.
- The CMS shall be capable of remotely restarting the recorder while the vehicle and MDVR are running.
- The CMS shall be capable of remotely formatting the hard drive while the vehicle and MDVR are running.
- The CMS shall be capable of taking remote snapshots of individual or all views and storing them locally for review.
- Image adjustments and alarm out controls shall be adjustable utilizing the CMS.
- The CMS shall be capable of archiving video as an evidence package to the server, allowing the user to name the event, record vehicle name, input key words for searching, driver name, overall description and screen snapshots.
- The CMS shall be capable of displaying and reporting the following: GPS, alarm, user log, device online/offline, offline user, mileage, continuous driver, online rate, video data traffic, panic button, motion alarm, last vehicle position, fence, I/O, vehicle patrol, RFID, recording unit temperature, and cellular data reporting capabilities.
- The CMS shall be capable of automated event video upload to a remote server.
- The CMS shall be capable of advanced backend capabilities for automatic download of video clips and the ability to classify event video data with wireless connections.
- The CMS shall be capable of searching saved, HDD or live video based on geo-fence setting, by vehicle speed range and by event or alarm.
- The CMS shall also be available as a downloadable app that can be installed onto

any mobile device or tablet to stream live video and fleet tracking...

************END OF CENTRAL MANAGEMENT SYSTEM OPTION**