REQUEST FOR PROPOSALS

INSTALLATION OF CAMERAS

City of Corcoran - Public Works Department
City of Corcoran
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SECTION 1 - SCOPE OF WORK

1.1 Project Background and Project Deliverables

The City of Corcoran is soliciting proposals for the supply and delivery of Digital Video Recorders (DVRs), color cameras and microphones to be installed in the City's transit coaches in accordance with the Technical Specifications, terms and conditions contained herein.

The City of Corcoran intends to award one (1) contract to the selected Contractor under this RFP solicitation. A contract will be awarded to the vendor that meets the city's business, technical, functional, and price requirements. All products must have a proven record of stability and reliability.

The project estimates placing up to seven (7) Digital Video Recorders, seven (7) color cameras and two (2) omni-directional microphones on the City's transit buses all of which operate out of the one City owned transit center. The project estimate will also include the instillation of related storage and monitoring equipment in the City transit center or alternate site.

The digital video recorders, color cameras and microphones will be installed in the City transit coaches, none of these coaches are pre-wired for any of these systems at this time. The proposed digital video recorder shall have the capability of downloading video and audio data using either some form of wireless technology supplied as a part of this contract or some other means agreed upon by the parties to the agreement.

There may be an option to purchase additional Digital Video Recorders and microphones in the future.
The City does not guarantee a minimum or maximum quantity or a specific contract value.

The project will do the following:

- Purchase digital video recorders, color cameras and microphones.

- Equip the City owned coaches with new digital video recorders, cameras and microphones all furnished by the contractor through this agreement.

- Contractor to provide installation, maintenance training, documentation and user training for selected staff.

The contractor who is selected must sign the general contract terms in the sample agreement attached to this Request For Proposals, prior to commencing performance of this project.

1.2 Equipment Installation

A. Location of Work

Work under this contract shall be performed at the City of Corcoran Corporation Yard located at 750 North Ave, Corcoran, California and at the City's Transit Facility or alternate location.

B. Coach Types

The DVRs, cameras and microphones purchased under this contract shall have the ability to be installed
and operational in a variety of transit vehicles, including small buses or vans, and standard buses. Listed below are some of the potential coach types where the DVRs and microphones could / will be installed:

TYPE	LENGTH	YEAR
El Dorado – 22 Passenger Transit Bus #160	29 ft.	2001
El Dorado – 22 Passenger Transit Bus #169	29 ft.	2003
El Dorado – 22 Passenger Transit Bus #170	29 ft.	2003
Ford E450 - 15 Passenger Shuttle Bus #161	23 ft.	2001
Ford E450 - 15 Passenger Shuttle Bus #167	23 ft.	2002
Ford E450 - 15 Passenger Shuttle Bus #215	23 ft.	2010
Ford E450 - 15 Passenger Shuttle Bus #216	23 ft.	2010

The lengths identified above are approximate, and provided for reference only. The City reserves the right to add additional coach types.

1.3 Contractor Responsibilities

The Contractor shall provide installation, all materials necessary for the proper installation and use of all of the equipment associated with this contract, maintenance training, documentation, and user training for selected staff.

The Contractor shall deliver the Digital Video Recorders, color cameras and microphones according to Section 1.5 of this Contract.

1.4 City Responsibilities

Test Digital Video Recorders to determine if they meet the specifications contained in Section 1.5 of this Contract.

Operate and maintain the Digital Video Recording System.

Conduct final acceptance testing pursuant to Section 2.10 of this Contract.

1.5 Digital Video Recording System Specifications

1.5.1 Referenced Documents

Equipment provided as part of the Technical Specifications Section 4, to the extent feasible, shall be developed in accordance with the latest edition and amendments of the following documents (as of the date the agreement is signed):

A. EIA (Electronic Industry Association) 330, Electrical Performance Standards for DVR ANSIIEIA 330-68, 11/66
B. EIA 343, Engineering Specifications Format for color DIGITAL VIDEO Camera Equipment
C. SAE (Society of Automotive Engineers) J-1455 Recommended Environmental Practices for Electrical Equipment Design

1.5.2 General Equipment Requirements

A. The DVR shall receive and record video and audio signals from both the color cameras and microphones, and store them on a high-capacity hard disk or flash drive(s) or other highly reliable non-volatile storage device(s) for review and playback at the Central Viewing Station located at the City Transit Center or alternate site and supplied under this contract.

B. Images viewed at the Central Viewing Station and final printed images shall be of sufficient quality so as to distinguish the facial features and apparel details of an individual on the bus.

C. The digital video recorders and microphones furnished under these specifications shall be the latest proven model in current production, as offered to commercial trade.

D. All equipment provided shall be new. Used, shop-worn, demonstrator, prototype, remanufactured, reconditioned or discontinued models are not acceptable.

E. Standard commercially available components shall be used.

F. All functionally identical modules, assemblies and components shall be fully interchangeable between all equipment acquired under this contract. The same type of equipment shall be used in each of the coach types.

1.5.3 Equipment Operating Environment

A. The DVR, cameras and microphone shall be capable of operating in the working environment of a transit coach. This environment includes indirect exposure to such climatic conditions as rain, mud, fog, frost, snow, sleet, exhaust, detergents, solvents, moisture, dust, grit, sand and operating in an outdoor marine environment. Transit environment also includes rough handling, accidental dropping, constant acceleration and deceleration. Day-to-day operations, general cleaning, sweeping, and/or maintenance practices can cause these adverse conditions.

B. The DVR, cameras and microphones shall operate in the temperature range between 25° and 125°F.

C. The DVR, cameras and microphones shall be able to store in the temperature range between 0° and 150° F.

D. The DVR, cameras and microphones shall operate in a humidity range of 0 - 95%, non-condensing.

1.5.4 On-Board Electrical Requirements

A. Power supply requirements:

1. Nominal voltage: 24 volts DC nominal (car or bus battery)

2. Operating range: (9VDC - 39 VDC)

3. Equipment shall be able to withstand sustained voltage levels of up to 48 VDC for up to ten (10) minutes and suffer no damage or data loss in memory.

4. Equipment shall not suffer corruption of data when the power dips below 9 VDC.

5. Equipment shall not be damaged by very high peak voltage (twenty-[20] times nominal voltage) of short duration (up to ten [10] milliseconds).

6. The equipment including all cables and connectors to and from the recorder must be electrically protected to withstand low voltage, high voltage and electrical spikes including spikes resulting from jump-starting. The equipment shall be capable of "self reset" in the event of one of these conditions.

7. The Contractor shall be responsible for any filters, power stabilizers, rectifiers and other devices that protect the all of the equipment associated with the completion of this contract from spikes, drops, harmonic resonance and other power issues routinely experienced in both a transit environment and those associated with installation of the onsite of equipment for viewing and data storage at the City's transit center or alternate location.

B. Electromagnetic Compatibility

1. The Contractor shall ensure that all of the equipment installed fully performs in the intended operational environments without being affected by, or causing harmful interference to, other on-board systems. Protection shall be provided against radio frequency and electromagnetic interference (RFI/EMI) emission sources, as well as internal conductive or inductive emissions.

2. Operation of equipment shall not be affected by the electromagnetic fields generated by utility transmission lines, by an overhead catenary at distances as close as 10 feet, or by local power distribution lines at distances as close as 50 feet.

3. Electromagnetic effects present during transit operations such as electric trolley buses and light rail vehicles shall not affect operation of equipment.

4. Operation of equipment shall not affect or be affected by equipment in the vehicle.

5. Operation of equipment shall not affect or be affected by other on-board equipment including but not limited to vehicle power supplies, two-way radios, radio receivers, automatic vehicle identification systems, on-board data collection and processing equipment, fare boxes, smart card readers, cell phones and other personal electronic devices.

6. Equipment shall meet applicable codes, standards and specifications at time of manufacture including, but not limited to:

7. Electromagnetic Emission and Susceptibility Requirements for Control of Electromagnetic Interference: MIL-STD-461C, Notice 2.

    a. Electromagnetic Emission and Susceptibility, Test Methods for MIL-STD-462.

    b. For electrostatic discharge: IEC-801-2

8. Within 10 Days after award of the contract, the Contractor shall provide certification from an independent testing agency or from a third party, if available, of the electromagnetic compatibility of equipment to be furnished. The City may accept evidence of the system's electromagnetic compatibility from similar transit agencies.

1.5.5 Digital Video Recorder

A. The Digital Video Recorder shall have an embedded or otherwise non-corruptible operating system. A disk based full Windows operating system will not be considered.

B. The on-board digital video recorder shall capture high-quality video images in a digital format. The images shall be stored on a high-capacity hard disk or flash drive(s) for review and playback at the Central Station, alternate location or on-site by a laptop computer.

C. The digital video recorder and mounting equipment shall be small, compact and lightweight. The equipment shall be designed to minimize impacts in a restricted space environment during all phases of installation, operations and maintenance.

D. The digital video recorder's security features shall be designed to restrict access, prevent alteration of images and/or tampering.

E. Access to the digital video recorder shall be through a key type system.

F. The digital video recorder shall have configurable camera brightness, contrast, and saturation settings for each camera.

G. The digital video recorder shall store video in MPEG4 or H.263 format.

H. The digital video recorder shall have a configurable camera obstruction setting. This setting will provide an email message if a camera is obstructed.

I. The digital video recorder shall be capable of recording and storing images from a minimum of eight (8) cameras.

J. The digital video recorder shall support BlacklWhite, Color or Day/Night Cameras. Day/Night cameras record in color during "lighted" conditions, and automatically switch to BlacklWhite at night or in "low light" conditions.

K. The digital video recorder shall have an external connection (RS 232 or Ethernet) accessible from the front of the digital video recorder. An auxiliary panel is acceptable.

L. The digital video recorder shall record all data in a standard Microsoft WindowsTM Media Player compatible format (. wmv or .mpg formats preferred).

M. During boot up or running of the DVR, any detected error, warning, hardware reset or failure shall be identified and recorded in the error log file resident on the hard disk or flash drive.

N. The digital video recorder shall automatically record digital images after boot-up when the coach Master Switch is in the "run', "night run" or "ID/CL (night park)" position.

O. The digital video recorder shall record date, time, DVR or hard drive electronic serial number, coach number and camera source so that it shall be viewable on the bottom of the playback image.

P. The digital video recorder shall send an email notification each time the DVR boots up.

Q. The digital video recorder shall power down at a user selectable time (5 to 120 minute range) after switched power is removed. If unable to power down automatically, unit shall tolerate having power removed suddenly with no negative effect on the DVR, system hardware, operating system, stored data/video/audio, nor the systems ability to function normally and fully once power is restored.

THIS IS A MANDATORY REQUIREMENT.

R. The digital video recorder should have an on-board, real-time clock that operates independently of the main power supply.

THIS IS A MANDATORY REQUIREMENT.

S. The Digital Video Recorder should be patched to accommodate the new dates for changes to Daylight Savings Time.

THIS IS A MANDATORY REQUIREMENT.

1.5.6 Recording Method

A. As pre-allocated video file hard disk drive space is filled, new information shall overwrite old in a linear sequence. This linear sequence shall continue indefinitely.

1.5.7 DVR Diagnostics

A. The DVR software shall include a diagnostic program, which shall provide the operating condition of the DVR.

B. The diagnostics program can be operated from the recorder or a portable laptop (portable viewing station.)

C. The display shall be in plain English, reflecting the operating status of the DVR.

1.5.8 System Status Display

A. There shall be a system status display that provides a description of the status of the DVR. The description shall include but not limited to system functional or not. Desirable are display of recording status, hard drive storage status, camera obstruction(s), and date and time.

B. The system status display shall be located near the operator's area, visible to the operator but not obstructing visibility or the operator's attention to road and operating conditions.

C. The location of the system status display is subject to approval by the City of Corcoran.

1.5.9 Ethernet Port

A. The DVR shall provide an Ethernet connection to off load data and run set-up diagnostics from a laptop computer.

1.5.10 Wireless Transmission

A. The system shall have the capability for downloading data using wireless technology or some other technology agreed upon by the parties to this agreement.

B. Any wireless data transfer approach shall be previously proven to work in the field with the all of the equipment provided.

1.5.11 Images

A. The user shall have the option to include date, time, DVR or hard drive electronic serial number, coach number and camera source on the printed images.

1.5.12 Central Viewing Station Software

A. The viewing software shall support the functions of analyzing/reviewing video and audio, setting up configuration parameters for the digital video recorder, and configuring the software for various users.

B. The software shall provide ability to configure different frame rates for each camera.

C. The software shall allow the Central Station Operator to enter video file download criteria that includes coach number, date, and time period into the Contractor-supplied software.

D. The software shall initiate the download of user selected video files when the selected coach comes in contact with a remote wireless access point.

E. The software shall download the requested video files to the City designated server.

F. The software shall provide the ability to setup multiple user accounts, and shall also provide the ability to configure each user account with specific privileges for use of the software.

1.5.13 Central Viewing Station and Laptop Computer Video/Audio Display Software

A. The Central Viewing Station which is to be included as a part of this contract and Laptop Computer systems shall be equipped with the same essential functions for viewing and managing video. A user shall be able to perform the following functions:

1. Search and retrieve video based on a specific date and specific time.
2. Playback previously recorded video at user-selectable speed.

3. Step forward in increments of one frame at user-activated intervals during playback.
4. Step back in decrements of one frame at user-activated intervals during playback.
5. Skip to the beginning of the selected video.
6. Skip to the end of the selected video.
7. Maximize the size of the selected image to the largest image window.
8. Pause the video during playback.
9. Display one (1), four (4) or nine (9) video viewing windows. The user shall be able to select which video to review by selecting the appropriate viewing windows. Once the viewing window has been selected, the user shall have the ability to use all playback tools for the selected window. The software shall allow the playback of images in the user selected viewing windows to be synchronized so that the viewer sees images tied together.
10. Zoom in on an image a minimum of 4+ times.
11. Zoom out of an image a minimum of 4+ times.
12. Shrink or enlarge an image to fit the size of the viewing window.
13. View an image even if the image is larger than the window in which it is viewed.
14. Sharpen an image.
15. Blur or smooth an image.
16. Restore an image back to its pre-enhanced state.
17. Increase or decrease the brightness of an image.
18. Increase or decrease the contrast of an image.
19. Preview an image before printing.
20. Specify printer and paper size, source and orientation for printing.
21. Save an image as a browser image record, BMP, or JPEG file.
22. Send an image to another recipient via email.
23. The user shall be allowed to save an entire video clip, or portion of a clip to a file on the disk, to a CD/DVD, flash drive or to any other digital media. The saved video shall be compatible with Windows Media player or have an embedded auto run player.

All recorded audio shall be synchronized with the associated video files. Audio channels shall be selectable (channel 1 [front], or channel 2 [rear]), or combined (channel 1 [front] and channel 2 [rear]) to play simultaneously.

1.5.14 Cables and Wiring

A. Cables and wiring shall meet all applicable industry standards.

B. The Contractor shall submit wiring and cabling product information for review and approval.

C. All cables wiring, interconnections, switches and circuit breakers/fuses shall be heavy duty and specifically designed for their purpose in an automotive application. All wiring shall be multi-strand, flame retardant, and made of flexible material.

D. All connectors and sockets shall be of a positive locking design and shall be equipped with gold contacts.

E. All wires sizes and insulation shall be based on the current carrying capability, voltage drop, mechanical strength, temperature and flexibility requirements. Wiring shall be uniformly color-coded and tagged.

F. The power source wires must be sized appropriately to meet specified requirements for unit startup and normal operation and should prevent unacceptable voltage drops.

G. Wiring shall be prefabricated into standardized harnesses, wrapped and tied with "all weather UV type" nylon ties.

H. Wherever there is a possibility of interference, wiring and interconnecting cables shall be properly shielded. Video and audio cables shall be gauged to minimize signal loss.

1.5.15 DVR Software

A. Software shall be the current version in production at the time of installation. Future updated versions of the software shall be made available to the City at no cost for the next five (5) years, effective with award of contract.

B. Software shall contain version control numbers.

C. Features shall be provided to identify the software version on each device, and verify that it is the correct or the most recent version for that device.

D. All DVR software and firmware shall be upgradeable without having to remove the Digital Video Recorder from the transit coach.

1.5.16 Data Integrity

A. Data transferred from a device or system shall not be purged or written over until a successful transfer is confirmed.

B. Features shall be provided to ensure that all transaction and system created files are uniquely identified, and that no files are lost or missed during data transfer.

C. Verification features should be provided to confirm that there have been no losses of data at any point in the system.

D. Verification features shall be provided to confirm that there have been no unauthorized changes to or destruction of data.

E. Features shall be provided to automatically detect, correct and prevent the propagation of invalid or erroneous data throughout the system.

F. Features shall be provided to prevent unauthorized association of a user identity with user specific activities.

G. Viewing, search and enhancement usage shall not alter the original recorded data.

1.5.17 Data Backup and Recovery

A. The DVR shall be capable of recovering and uploading data files in the event of a system failure or primary data storage failure.

1.5.18 Testing and Acceptance

A. General Requirements

1. The objective of the DVR test program is to ensure that the equipment furnished under this contract shall meet all the requirements specified in this document, including operation under environmental stress conditions. Testing and acceptance shall be conducted to satisfy production and delivery schedule requirements. The tests to be conducted shall be:

    a. Factory Acceptance Tests (FAT)
    b. Installation Acceptance Test (IAT)

2. Approval of inspection and test results or the waiving of inspection or test shall in no way relieve the Contractor of the responsibility for

furnishing a complete DVR that meets the requirements of the technical specifications.

3. If any test results indicate that specific hardware, software or documentation does not meet the specification requirements, the Contractor shall promptly replace, modify, or add the appropriate items necessary to correct noted deficiencies at no additional cost to the City.

4. The City reserves the right to perform additional non-destructive tests and inspections at any time prior to final acceptance. Results indicating deficiencies involving non-compliance with specification requirements shall be provided to the Contractor for corrective action.

5. The City's use of the coaches and equipment during testing shall not constitute acceptance of the equipment.

6. The Contractor shall provide any and all material and equipment necessary to conduct acceptance testing.

7. If the City determines that the system, equipment, materials, technical documentation or services furnished do not conform to any of the technical specification requirements, the Contractor shall bring appropriate remedial action based on an analysis of the tests results within 30 Days after receipt of the City's notice of deficiency. When such recommendations are related to engineering deficiencies, the Contractor shall, upon receipt of approval, make the necessary changes to all equipment and documentation of that type to be delivered or previously delivered (even if previously accepted) during the course of the contract, at no additional cost.

B. Test Plan and Procedures

i. For all tests to be conducted, the Contractor shall submit a test plan and procedures for approval at least thirty (30) Days prior to the start of each test. The City shall approve the test plan prior to proceeding with testing.

ii. The Contractor shall be responsible for preparing and submitting any revised test plan to correct procedural and technical errors or omissions discovered.

iii. The Contractor shall prepare a test plan and applicable procedures that shall govern the conduct of activity, surveillance, direction, and methods of observing and recording the pertinent data. The following items shall be included in the test plan:

a. Objective of the test.
b. Dates, times and locations of testing.
c. Support and calibration tools and instrumentation to be used.
d. Technical publications to be referenced.
e. Spares and consumables to be available.
f. Facilities needed.
g. Staffing requirements.
h. Scheduling of personnel.
i. The format and specific data to be collected during the test period together with the method used to report the test results.
j. Preventative maintenance tasks to be performed during test.
k. Test environment conditions.
l. Detailed description of test specimens including drawings, part numbers, inspection and test records, maintenance records, and calibration records.
m. Detailed procedure of test.
n. Test equipment to be used, including any measuring equipment and/or any equipment aiding in the performance of the tests.
o. The level and schedule of preventative maintenance during the test.
p. Pass/fail criteria.
q. Retest procedure.
r. Test data sheet format.
s. Test notification to engineer.
t. Test reports.

C. Factory Acceptance Test (FAT)

1. All equipment shall be subject to the Factory Acceptance Test (FAT) unless waived by the City.

2. The Contractor will be notified in writing, of the City's acceptance of the successful completion of all equipment subject to the FAT tests.

3. A test exemption can be requested by the Contractor, if it can be certified by a using authority, transit property, or independent testing organization that the proposed equipment has been subjected to the extent of testing specified herein.

   The following tests may be eligible for waiver:

   a. Environmental,

   b. Vibration,

c. Shock,

d. Electromagnetic Interference Effects, and

e. Radiated Electromagnetic Energy tests.

To request a waiver, the Contractor shall submit copies of independently verified tests to the City for approval at least sixty (60) Days prior to the scheduled start date for the FAT. The waiver request shall include actual test data documenting the appropriate test performed on the equipment and the name, address and phone number of all testing facilities used to perform such testing.

4. The FAT shall include the following tests:

a. Functional Test

i. The purpose of this test shall be to demonstrate that for each individual component of the DVR, the functions specified throughout this document, including all limiting conditions, shall be met. Each item of equipment shall be required to execute all hardware and software functions as detailed in these specifications and to meet the performance criteria requirements. The procedures for handling maintenance (troubleshooting and correcting faults) and service functions shall also be written and demonstrated.

ii. The Contractor shall be responsible for developing a functional test procedure that satisfactorily demonstrates all equipment functions and shall submit this test procedure to the City for approval thirty (30) Days in advance of the test.

iii. Each function specified shall be tested at least ten (10) times prior to confirming success or failure. Each piece of equipment shall have passed the functional test before environmental tests listed below are started.

b. Environmental Test

i. All DVR system equipment shall be tested per SAE Recommended Practice J1455, as follows:

(1) Test 1 - Thermal Shock Test,

The thermal shock test shall be per section 4.1.3.2 of the aforementioned SAE Recommended Practice, and shall use the

thermal profile portrayed in Figure 2C of said section, except that:

(a) The temperature limits shall be the City specified storage temperature limits of 0 TO 150 degrees Fahrenheit.

(b) The presoak shall be 2 hours at -25 degrees Fahrenheit.

(c) Hour 24 to hour 25 shall be at 70 degrees Fahrenheit Functional test shall occur immediately prior to and after the 25- hour test period.

(2) Test 2 - Thermal Cycle Test

The thermal cycle test shall be per section 4.1.3.1 of the aforementioned SAE Recommended Practice, and shall use the thermal profile portrayed in Figure 28 of said section, except that:

(a) The temperature range shall be from 25 to 125 degrees Fahrenheit.

(b) The chamber temperature shall be held for 2 hours minimum at the 25 degrees Fahrenheit, followed by 2 hours minimum at 125 degrees Fahrenheit, followed by 2 hours minimum at +70 degrees Fahrenheit.

Functional test shall occur immediately prior to and every thirty (30) minutes during the test period, which will terminate at eight (8) hours minimum, provided that all conditions above are satisfied. The functional test that concludes Test 1 may satisfy the requirement for functional test prior to Test 2, provided that power to the unit under test is not interrupted and that Test 2commences within thirty (30) minutes of said functional test.

(3) Test 3 - Humidity Test

The humidity test shall be per section 4.2.3 of the aforementioned SAE Recommended Practice, and shall use the humidity profile portrayed in Figure 3A, Recommended Humidity 8 Hour Cycle, of said section, except that:

(a) The operating temperature range shall be from 25 to 125 degrees Fahrenheit.

(b) Humidity shall be 95% relative humidity (non-condensing)

(4) Test 4 - Vibration Test

The Contractor shall ensure that the City vehicle fleet vibration conditions expected in the area of equipment installation, are taken into account to ensure that proper isolation/protection is built into the design of the DVR components to accommodate the range of frequencies anticipated for the vehicle fleet. In addition, the following requirements shall be met.

(a) The DVR system components shall be tested per the procedure of MIL-STD-810C, Method 514.2, Category f, Curve V (1.5g, 5.5 to 200 Hz) with the following changes:

i. The cycling time shall be two (2) hours on each axis for a total of six (6) hours. The equipment shall operate normally during and after this acceleration test, and the equipment shall not experience broken or loosened parts from this vibration.

ii. At the conclusion of each axis frequency sweep cycle, the equipment shall be subjected to a vibration of three (3) g-forces at a frequency sweep between seven (7) and fourteen (14) Hz for a period of one (1) minute, and four (4) g-forces at a frequency sweep between seventy (70) and one hundred and forty (140) Hz for a period of one (1) minute. The equipment shall operate normally after these acceleration tests and shall not experience broken or loosened parts from this vibration.

(5) Test 5 - Shock Test

The DVR components shall be tested per Procedure 1 of MIL-STD-810C with the following changes:

i. The half sine shock pulse shall have a peak value (A) of 5 g and a duration (D) of 20 milliseconds.

ii. The DVR components shall operate normally after the shock tests and shall not have experienced broken or loosened components as a consequence of these tests.

(6) Test 6 - Electromagnetic Interference Effects Test

i. The DVR components shall be tested for susceptibility to radiated electromagnetic energy per the procedures of PMC 33.1.1978, Class 2 (ten [10] volts per meter), Frequency Bands a, b, and c, including paragraph 5.3.3, Digital Equipment Modulation Tests, and paragraph 5.3.4 Keying Test.

ii. The DVR components shall be tested for susceptibility to conducted electromagnetic energy per the procedures of MIL-STD-461 B, Requirement CS06, utilizing the 400-volt, 5-microsecond pulse of both positive and negative polarity.

iii. This testing shall take into account the conditions existing throughout the transit operational area.

iv. The DVR components shall not sustain any permanent damage as a result of application of the pulse energy nor shall it lose the recorded data.

(7) Test 7 - Radiated Electromagnetic Energy Test

i. The Contractor shall be responsible for compliance with all applicable Federal Communication Commission (FCC) regulations concerning conducted and radiated radio frequency energy.

(8) Test 8 - Installation Acceptance Test (IAT)

1. The installation acceptance test (lAT) shall be conducted in two (2) stages:

a. Fourteen (14) Day settling period.

b. Thirty (30) Day reliability period.

Both tests may be done concurrently.

2. The test period shall start when the City receives the installation and warranty certification from the Contractor. This certification will be provided after the system has been installed, installation check is complete and all equipment is functioning in the manner specified.

3. The Contractor shall be responsible for all equipment maintenance before and during all testing. The Contractor shall provide adequate spare modules, parts, and assemblies to complete the IA T.

4. The entire DVR shall be fully operational and successfully delivering high quality digital images and audio activities 95% of the time during the test period. The DVR shall accurately reflect the time and respond to emergency alarm activation.

5. The City will determine the exact quantity of tests performed on each coach after completion of an individual DVR installation.

6. If the equipment fails during the acceptance testing, the City will notify the Contractor and the Contractor shall promptly supply replacement equipment at no additional cost. The Contractor will be responsible for reimbursement of additional City installation costs. The replacement equipment shall pass all acceptance testing as defined in this contract.

7. If a failure occurs, the City will provide the Contractor with a list of any test discrepancies. It shall be the Contractor's responsibility to determine the probable cause of the failure and the solution for correction of the problem. The Contractor shall provide the City a written explanation of the failure and recommended correction of the problem.

8. The City has the discretion to suspend or restart the test if the system fails to operate correctly. The City reserves the right to suspend testing on the entire system if a portion of the DVR is malfunctioning.

9. Adjustments to the test period will be based on the following:

    a. When the failure and the correction may require a short time to implement. This type includes those that involve conditions that are beyond the control of the Contractor, failures of a minor nature that are easily and quickly corrected, or failures that are expected of a new installation. Time suspension shall begin when the failure is first noticed, and it

shall extend only as long as required to correct. Once corrected, testing shall begin at the point in time of the failure.

b. When the failure may be more serious and require more time to correct. This type includes conditions that are within the control of the Contractor, failures that are related to system design, software problems, interference to/or with other equipment, or failures that may be of a minor nature but have not been easily or quickly corrected. It also can include a second failure of the same description on the same type component. Once corrected, the time of the test shall start at zero for all phases of the lAT.

10. After successful completion of all phases of the IAT test, the City will provide written final acceptance of the system.

1.6 Training and System Documentation

1.6.1 Training

The Contractor shall provide training. This training shall be through practical demonstrations, seminars, and other related technical procedures. Training shall be scheduled by mutual agreement between the Contractor and Project Manager. System operation training shall include proper methods for day-to-day operation of both the hardware and software including on-board recording, data retrieval, playback, data storage and transfer. Software training shall include system set-up, system commands (function and usage), operating parameters, password assignments, system privileges, report generation and other system administration functions. This training shall also include troubleshooting and problem identification procedures.

Over a two-day period, the Contractor shall train four (4) City of Corcoran employees or designated representives in the installation and set-up of DVRs. Day one (1), the Contractor shall train two (2) City of Corcoran employees or designated representives during the installation of one DVR in a transit coach. Day two (2), the Contractor shall train two (2) City of Corcoran employees or designated representatives during the installation of one DVR in a transit coach.

Maintenance training shall be of an adequate level to enable City staff to maintain equipment (including related control equipment) for reliable

performance and maximum service life. Training shall include (but not limited to) the following topics:

A. Theory of operations

B. Both field and shop maintenance and repair

C. Inspection

D. System troubleshooting or problem identification

E. Techniques pertaining to adjustment, calibration and bench check

F. Component replacement

G. Preventative maintenance

H. Servicing procedures

I. De-installation procedures

J. Warranty coverage

Training will be conducted at City facilities within the Corcoran area. The City reserves the right to have training at multiple locations. The entire cost of providing the training (including materials, travel, per diem, etc.) shall be included in the basic contract price.

The Contractor shall submit a class outline and syllabus for all training, along with a time estimate to complete the session for City review and approval.

Qualified technical experts shall conduct all Contractors training. The instructors shall have a thorough mastery of the specific subject matter involved, and shall have the ability to impart information to others in easily understood terms.

A complete set of training manuals shall be provided to the City to use for further training purposes. Such materials normally include a lesson plan and course syllabus. Any handouts, audiovisual aids, workbooks, overhead transparencies, chart, VHS tapes, slides, CD's, etc. also shall be provided.

It is anticipated the staff and training facilities can be scheduled using a standard work week calendar of 8 hours per Day, (Monday - Friday) between 7:00 a.m. and 5:00 p.m., excluding holidays. The City reserves

the right to adjust this standard work week in cases of emergencies or operational commitments.

The City reserves the right to record the training sessions.

1.6.2 System Documentation

A. Training Manuals

a. Manuals shall be designed to withstand continuous, long-term use in a commercial environment. Desired features include the following:

a. Prepared in the English language.
b. Divided and tabbed into logical and/or functional sections.
c. Indexed.
d. Lie flat when opened, and permit easy addition and replacement of pages.
e. Covers for all manuals made from materials that are oil, water and wear resistant.
f. Pages shall be 8" x 11" except where otherwise specified and double sided.
g. Sides of pages that are intentionally left blank shall be so noted.
h. Figures, illustrations, diagrams, and drawings shall be labeled as figures.

2. All revised pages shall be issued with a revision number and date. A transmittal shall be issued with each revision containing the date of the revision and the page references revised. The transmittal shall be designed to be included as part of a control list in the front of each manual.

3. The Contractor shall provide one (1) set of all manuals in the following electronic formats:

a. Text shall be provided in the latest version (current production version at deployment as approved by the Project Administrator) of Microsoft Word.
b. Drawings shall be provided in .eps or .dfx file formats.
c. Graphics files shall be provided in GIF and/or JPEG formats.

4. The Contractor shall be responsible for updating manuals to reflect changes that are made to the system or operational procedures. Manuals shall be updated and maintained by the Contractor throughout the life of the Contract. Updates shall be provided within 30 Days in the formats specified above.

B. Systems Operations and Maintenance Manual

The Contractor shall submit four (4) complete sets of system operations and maintenance manuals on 7 Days prior to the system installation period. The manuals shall be comprehensive and provide complete detailed technical descriptions of the system operations and maintenance requirements for each component of the system.

The information shall include the following information:

a. General descriptions and theory of operations

b. Full description of the operation procedures and instructions of the system, provided to the component level.

c. Methods and/or tests to demonstrate that systems are functioning properly.

d. Testing, diagnostic and troubleshooting diagrams procedures and techniques sufficient to facilitate troubleshooting to the component level. A non-disclosure agreement can be executed to protect the integrity of Contractor proprietary information.

e. Restart/recovery procedures including corrective measures, both temporary and permanent.

f. Complete software protocol requirements and descriptions for interfaces.

g. Recommended schedule for routine inspection, an inspection checklist and procedures.

h. Preventive maintenance schedule and activities

i. List of required maintenance tools and equipment

j. Circuit and logic diagrams with point to point component wiring schematics.

k. Assembly and disassembly drawings.

l. Location and availability of support services for all major components.

C. Current Parts Listing

1. The Contractor shall provide a comprehensive and detailed Current Parts List (CPL) for each and every component included in the system. Parts shall be numerically coded for inventory purposes.

2. The CPL shall be categorized and related to particular system components.

3. The CPL shall show the manufacturers part number and any other identification numbers and codes as applicable.

4. The CPL shall include prices and quantity of discounts offered.

5. Parts manual shall include complete parts descriptions and illustrations.

D. Spare Parts, Test and Maintenance Equipment

a. The Contractor shall provide a recommended level of inventory for spare parts required for support of the DVR. The inventory shall include quantities, associated pricing information, delivery lead-time, and if commercially available or from restricted source.

b. The Contractor shall provide one complete set of all spare parts included in the final approved inventory list.

c. The Contractor shall provide four (4) complete sets of any special tools and test equipment required for operating, maintaining and/or repairing the proposed system.

d. The Contractor guarantees that replacement parts or superior substitute parts shall be available one year beyond the ordering life of this contract. Parts availability shall be required for a period of six (6) years after the completion of the warranty period.

e. Changes in a product, or the parts required to build a product, shall be disclosed to the City at least 90-Days prior to planned equipment substitution.

f. If it is necessary for the Contractor to request substitutions of any equipment previously approved by the City, the Contractor shall do so in writing and may be requested to submit samples of such equipment substitutions for testing prior to approval of the substitution by the City.

E. Service Support

a. The Contractor shall provide DVR technical expertise support for the duration of the contract ordering period plus one year. This expertise shall include all aspects of the equipment, hardware, software, checkout procedures, and components/sub-components that comprise the systems provided under this contract.

b. Contractor technical support shall be available to City staff Monday through Friday, 7:00 a.m. to 4:00 p.m. pacific standard time.

c. Provide on-site service support upon request.

d. The Contractor shall be expected to respond to short notice requests for technical assistance to resolve equipment failures. The Contractor shall be capable of responding to the City while working with other customers simultaneously.

F. Systems Support

1. Interface Support

The Contractor shall be responsible for the correct interfacing to the DVR; subsystem and equipment provided under this contract with the existing equipment on-board the coach. If any incompatibility is discovered, the Contractor shall correct the incompatibility by modifying the equipment provided and/or providing additional required equipment and material at no additional cost to the City. Unless otherwise specified, modifications to the equipment of existing on-board systems, subsystems and equipment shall generally not be permitted. If no other solution exists, and the Contractor has to modify other system(s), this shall require approval of the City and the supplier of the other system.

2. Quality Assurance

The Contractor shall be responsible for an effective quality assurance program and assuring that the DVR provided conforms to the specifications. The quality procedures shall guarantee quality control over all phases of production from initiation of design, development, purchasing, processing, assembly, inspection, integration, installation, testing, delivery and systems check. The program shall provide for the early and prompt detection of actual or potential deficiencies, trends or conditions, which could result in unsatisfactory quality.

1.7 Project Deliverables and Payment Schedule

The City shall notify the Contractor of Work Accepted by the City after each Project Deliverable in accordance with the Acceptance Process in Section 2.10 of this Contract. The Contractor may then submit to the City an invoice for the work performed. The payment and project deliverables are stated in the table below.

No.	Projected Deliverables	Expected Duration	Payment Process	Payment[1]
1				
2				
3				
4				
5				
6				
7				
8				

INSURANCE REQUIREMENTS

CONTRACTOR shall provide and maintain insurance for the duration of this Agreement against claims for injuries to persons and damage to property, which may arise from, or in connection with, performance of the Agreement by the CONTRACTOR, its agents, representatives, employees, or subcontractors, if applicable.

A. Minimum Scope & Limits of Insurance

1.Commercial General Liability coverage at least as broad as ISO CG 00 01 with limits of no less than $1,000,000 per occurrence. If there is an annual aggregate it must be at least two times the amount of the per occurrence limit of liability.

B. Automobile Liability coverage for any auto

1. Workers' Compensation and Employer's Liability Insurance as required by law.

2. Professional Errors and Omissions Insurance of $1,000,000 (unless expressly waived by City's Risk Manager).

3. Work and Materials Insurance (if applicable).

a. For up to twenty-five thousand dollars ($25,000) for any loss on contracts for remodeling, renovation, alterations or maintenance of existing buildings.

b. For 100% of the contract value for all bridge construction and new construction up to two hundred thousand dollars ($250,000). See City Manager for construction over $250,000.

C. Specific Provisions of the Certificate

1. The Certificate of Insurance for General Liability, Automobile Liability Insurance, and Professional Errors and Omissions Insurance must provide separate written endorsements for the following requirements.

a. Name the City of Corcoran, its officers, agents, employees and volunteers, individually and collectively, as additional insured.

b. State that such Insurance for additional insured shall shall be at least as broad as ISO CG 20 10 or its equivalent as allowed by law.

c. Provide that coverage shall not be suspended, voided, canceled, reduced in coverage, or otherwise materially changed except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City of Corcoran.

2. The Certificate of Insurance for Workers Compensation must include the following waiver of subrogation:

a. Waiver of Subrogation: "[CONTRACTOR] waives all rights against the City of Corcoran and its agents, officers, and employees for recovery of damages to the extend such damages are covered by the workers' compensation and employers liability insurance."

Deductibles and Self-Insured Retentions
The City of Corcoran City Manager must approve any deductible or self-insured retention that exceeds one hundred thousand dollars ($100,000).

D. Acceptability of Insurance

Insurance must be placed with insurers with a current rating given by A.M. Best rating of no less than an A or as otherwise approved by the City.

E. Verification of Coverage

Prior to approval of the agreement for this Project by the City of Corcoran, the CONTRACTOR shall file with the City Clerk, newly revise Acord Certificate of Liability Insurance form. The City of Corcoran reserves the right to require certified copies of all required insurance policies at any time.

F. Professional Errors and Omissions Insurance of $1,000,000

G. Work and Materials Insurance (if applicable).

a. For up to twenty-five thousand dollars ($25,000) for any loss on contracts for remodeling, renovation, alterations or maintenance of existing buildings.

b. State that such Insurance for additional insures shall apply as primary insurance and any other insurance maintained by City of Corcoran shall be excess.