

UNIFIED ACCESS CONTROL AND VIDEO SURVEILLANCE SYSTEM

PART 1 – GENERAL

The intent of this document is to specify the minimum criteria for the design, supply, installation, and commissioning of the Unified Access Digital Video Recording (UADVR) and Integrated Security Systems.

1.1 MANUFACTURERS

1. The XAD, an Unified Access Digital Video Recorder (UADVR) shall be as manufactured by RF Logics, Inc located at 370 Amapola Ave, Torrance CA 90501 (310-782-8383)
2. Substitutions: No substitutions allowed.

1.2 SUMMARY

1. The Unified Access Digital Video Recorder (UADVR) and Access Control System shall provide a powerful, intelligent, enterprise-class, digital storage management tools that combines Video, Motion Video, Audio, Access Control Alarm and Event Data, Biometrics, IP Cameras, and POS interface in a single Hybrid Digital Video Recorder without the use of middleware Servers. The Unified Access Digital Video Recorder shall provide Text Searchable Surveillance Video File from the Local and Remote Systems.

1.3 REFERENCES

1. National Television System Committee (NTSC)
2. Phase Alternation by Line (PAL)
3. Consultative Committee for International Radio
4. Electronic Industry Association (EIA)
5. Conformity for Europe (CE)

1.4 DEFINITIONS

1. No Substitutes: The exact make and model number identified in this specification shall be provided without exception.
2. Or Equal: Any item may be substituted for the specified item provided that in Every technical sense. The substituted item provides the same or better capability and functionality.
3. Or Approved Equal: A substitute for the specified item may be offered for approval by the Owner. The proposed substitution must, in every technical sense, provide the same or better capability and functionality as the specified item. Such requests for approval shall be submitted in accordance with the provisions of 1.6 – SUBMITTALS, and must be obtained within the time frames outlined.

1.5 SYSTEM DESCRIPTION

1. The Unified Access Digital Video Recorder (UADVR) shall provide a powerful, intelligent, enterprise-class, digital storage management and convergence data management tool that combines Video, Motion Video, Audio, Access Control, Alarm Voice Announcement, Graphic Maps and Text Searchable Video Data capabilities in a single DVR. The system shall be designed to record, search, and transmit Video, Motion Video, Audio and Access Control transactions providing users with both live and post-event assessment options. User and security management shall be available either from one DVR or multiple DVRs. The Unified Access Digital Video Recorder (UADVR) and access control system must be available in a minimum of six (6) different configurations / models, allowing the user to select the proper UADVR and access controller for every application.
2. The Unified Access Digital Video Recorder (UADVR) shall provide complete integration of Access Control, Video surveillance, Elevator Control, Visitor Management, ID badge printing, Text Searchable POS / ATM, and Time & Attendance system using a single, simple, information-rich user interface.
3. The Unified Access Digital Video Recorder (UADVR) shall provide Real-Time Monitoring & Live Notification features such as Video Pop-Up, Voice Notification, Video

- Audit Trail Transaction List, and allow the ability to monitor the local system site and remote through the internet.
4. The Unified Access Digital Video Recorder (UADVR) shall be able to connect Analog CCTV Cameras and IP cameras as a Hybrid Digital Video Recorder. IP cameras can be fully integrated with UADVR are selected IP cameras manufactured by Arecont Vision, Axis, ACTi, Cynix, Cellinx, Pixord, Truen, UDP, Webgate and more.
 5. The Unified Access Digital Video Recorder (UADVR) shall provide Graphical Mapping Interface for an easy operation and direct controls of all connected devices such as door locks, and inputs/relays.
 6. The Unified Access Digital Video Recorder (UADVR) shall provide advanced Digital Watermark video recording, which shall authenticate and verify that the recorded videos are original and unaltered.
 7. The Unified Access Digital Video Recorder (UADVR) shall utilize the most advanced hardware H.264 compression technology to increase the quality of video and system performance.
 8. The Unified Access Digital Video Recorder (UADVR) shall be expandable and scalable to an enterprise level of security management system solution.
 9. The Unified Access Digital Video Recorder (UADVR) shall provide software-based central monitoring software that has the features of unlimited video stream video monitoring and recording, two-way audio communication, video transaction logs, graphical event map, and access control transaction with video clip as essential monitoring tools.

1.6 SUBMITTALS

1. General: Submittals shall be made in accordance with the Conditions of the Contract and Submittal Procedures Section.
2. Material List & Schematics: Shall depict The Unified Access Digital Video Recording (UADVR) and Access Control System in final proposed “as built” configuration. The

following must be provided:

- a. Connection diagrams for interfacing equipment
 - b. List of connected equipment
 - c. Locations for all major equipment components to be installed under this specification.
3. Product Data: The following shall be provided.
- a. Technical Data Sheets
 - b. A complete set of instruction manuals
4. Quality Assurance submittals: The following shall be submitted.
- a. Checkout Report: The contractor shall provide the owner with a checkout report for each The Unified Access Digital Video Recorder (UADVR) and access control system. The report shall include:
 - ① A complete list of every device
 - ② The date it was tested, and by whom
 - ③ If retested, the date it was retested, and by whom
 - ④ The final test report shall indicate that every device was tested successfully
 - b. Manufacturer's Instructions: The contractor shall deliver one sets of system operation and maintenance manuals (if available) to the owner.
 - c. Notice of completion: When the final acceptance has been satisfactorily completed, the owner shall issue a notice of completion to the contractor.

1.7 QUALITY ASSURANCE

1. Manufacturer's Qualifications: The Unified Access Digital Video Recorder (UADVR) and Access Control system must be assembled in U.S.A., and the manufacturer shall provide technical assistance and support via a toll-free telephone number at no extra charge.

1.8 DELIVERY, STORAGE, AND HANDLING

1. General: Delivery, storage, and handling of The Unified Access Digital Video Recorder (UADVR) and Access Control System shall be in accordance with the manufacturer's recommendations.
2. Ordering: The manufacturer's ordering instructions and lead-time requirements must be followed in order to avoid installation delays.
3. Delivery: The Unified Access Digital Video Recorder (UADVR) and Access Control System shall be delivered in the manufacturer's original, unopened, undamaged container with identification labels intact.
4. Storage and Protection: The Unified Access Digital Video Recorder (UADVR) and Access Control System shall be stored and protected from exposure to harmful weather conditions and at the environmental conditions recommended by the manufacturer.

1.9 WARRANTY

1. General: The warranty period shall be a minimum of twenty-four (24) months from the manufacture date under normal use and service. The warranty period for hard drives shall be a minimum of twenty-four (24) months from date of manufacture.

1.10 MAINTENANCE

1. Preventative Maintenance Agreement during Warranty: As a separate price item, the Contractor shall provide preventative maintenance during the warranty period. Maintenance shall include, but not be limited to:
 - a. Labor and Materials, at no additional cost, to repair The Unified Access Digital Video Recorder (UADVR) and Access Control System.

- b. Labor and Materials, at no additional cost, to provide test and adjustments to The Unified Access Digital Video Recorder (UADVR) and Access Control System.
 - c. Regular Inspections.
2. Preventative Maintenance Agreement: As a separate price item, the contractor shall provide a complete maintenance agreement for a period of TBD months after the conclusion of the warranty period. The maintenance agreement shall include, but not be limited to:
- a. Labor and Materials, at no additional cost, to repair The Unified Access Digital Video Recorder (UADVR) and Access Control System.
 - b. Labor and Materials, at no additional cost, to provide test and adjustments to The Unified Access Digital Video Recorder (UADVR) and Access Control System.
 - c. Regular Inspections.

1.11 TRAINING

1. Operator training shall be conducted for a minimum session length of TBD hours at the customer's site.
2. Training shall include, but not be limited to and The Unified Access Digital Video Recorder (UADVR) Access Control System Operation and Diagnostics.

PART 2 – PRODUCTS 2**2. PRODUCTS****2.1 MANUFACTURED HYBRID DVR**

1. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system
2. All systems and components shall have been thoroughly tested and proven in actual use.

Unified Access Digital Video Recorder Model Numbers

XAD 8	8 Channel Hybrid Digital Video Recorder and 32 Door Access Control System, Text Searchable Video Surveillance. 240 FPS Video Recording (CIF), DVD-RW, 1 Terabyte Storage (up to 6 Terabyte), NTSC/PAL Resolutions: CIF, Half D1, D1. Compression: H.264/MPEG4. 8 Channel Audio Recording.
XAD 16	16 Channel Hybrid Digital Video Recorder and 64 Door Access Control System, Text Searchable Video Surveillance. 480 FPS Video Recording(CIF), DVD-RW, 1.5 Terabyte Storage (up to 6 Terabyte), NTSC/PAL Resolutions: CIF, Half D1, D1. Compression: H.264/MPEG4. 16 Channel Audio Recording.
XAD 32	32 Channel Hybrid Digital Video Recorder and 128 Door Access Control System, Text Searchable Video Surveillance. 960 FPS Video Recording(CIF), DVD-RW, 2 Terabyte Storage (up to 6 Terabyte), NTSC/PAL Resolutions: CIF, Half D1, D1. Compression: H.264/MPEG4. 32 Channel Audio Recording.

Software Model

Clairvoyance (Central Monitoring)	Connect up to 256 UADVR's together to view and manage up to 3,000 cameras and up to 3,000 access control doors, remote log on, POS interface, ATM interface, mapping software, elevator control, and automatic event/alarm pop-up.
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<p>Enterprise Commander (Central Management Software)</p>	<p>The Central Management Software shall support enterprise-wide security management system designed for large size projects. Up to 1000 UADVR can be monitored & managed in company in with UADVR central monitoring system, Clairvoyance. The UADVR Enterprise Commander software shall provide real-time Card Registration, Reader & Door Control, Elevator Control, and other management tools to operate multiple UADVR’s from a remote site.</p>
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2.2 ACCESS CONTROL SYSTEM

1. Access Control Head-End

- a. The access control system shall control the flow of authorized personnel and /or vehicular traffic through the secured access areas of the facility.
- b. The UADVR system shall be capable of integrating multiple functions including access control, biometrics, password entering and/or other types of access control devises.
- c. The system shall be modular in nature and shall permit expansion of both capacity and functionality through the addition of control panels, card readers and sensors.
- d. The system shall incorporate the necessary hardware, software, and firmware to collect, transmit and process alarm, tamper and trouble conditions, access requirements and notify the operator in accordance with the security procedure of the facility.
- e. The access control system shall permit access through the secured area by a combination of RF card and Password using a keypad reader or independently by RF card only.
- f. The access control system shall have multi-user and multi-tasking capability allowing for independent activities and monitoring to occur simultaneously at different client PCs.
- g. The system shall utilize graphical user interface with simple pull-down menus and a menu tree format that conforms to the interface guidelines.
- h. The system shall have open architecture that allows importing and exporting of data and the ability to interface with other systems.
- i. The system shall be Operator Identification logon password protected.

2. Access Control Software

- a. Access control software should be installed and run under Microsoft Windows2000/XP/Vista
- b. The software shall be capable to function in server-client environment to control all access controlled doors
- c. Expanding/ modifying inputs, outputs functionality and remote control station must be available.
- d. Validation of access control functions based on time, day scheduling and site code verification.
- e. System shall audibly and visually annunciate all alarm, tamper and trouble conditions, and advisories.
- f. The software shall support photo imaging as a standard features for video and/or digital camera.
- g. The software shall have seamless Video imaging and ID Badging capability through access control system software
- h. The software shall have password levels to define the level of system operation.
- i. The software shall have the ability to upload/download operating parameters and transaction history to/from any field panels and other devices
- j. The systems should be able to download data required for time & attendance functionality and export it with various compatible formats.
- k. The software shall support local and global anti-pass-back. Local anti-pass-back means that once a user enters the building they can not come back in (pass back) without exiting the building. Global anti-pass-back means that once a user enters the first building on the campus they can not enter again without exiting a building. Global shall work with any building connected to the system in an anti-pass-back mode.
- l. A supervisor shall have a method of selectively disabling anti-pass back feature per user.
- m. The software shall have the ability to take backup and restore all database system files.
- n. The software shall have the capability to display current transactions in the system.
- o. The software shall have the capability to monitor of communications in the system.
- p. The software shall have the capability to incorporate Floor Plan Graphics with icons that can show the status of what is going on in the system.
- q. The software shall permit cardholders to indicate, that they are requesting access to an area

under some forced or duress situation, an alarm may be generated if a duress condition occurs and the cardholder shall be granted access through operator's authorization.

- r. The software shall have the capacity to generate number of reports including:
- ① List of Employees Number, Department, defined shift
 - ② Attendance by Employee Number, department and date
 - ③ Number of Absenteeism by Employee Number, department and Date
 - ④ Late arrivals
 - ⑤ Early departures and overtime
 - ⑥ Any other information required for the generation of Payroll.
 - ⑦ Access Level Report - lists all readers and corresponding time zones for each user
 - ⑧ Time Zone Report - listing all users defined time zone parameters.
 - ⑨ Event Trigger and Action Report - listing all user defined trigger event sequences.
 - ⑩ Alarm History Report listing the alarm history filtered by alarm input point name, start/ stop date and time.

2.3 UNIFIED ACCESS DIGITAL VIDEO RECORDER

The Unified Access Digital Video Recorder (UADVR) and integrated access control system shall include, as a minimum, the following features / functions / specifications.

1. The Unified Access Digital Video Recorder (UADVR) and integrated access control system shall consist of four (4) major components:
 - a. An Unified Access Digital Video Recorder (1)
 - b. Video & Access Control System Graphical User Interface that requires a keyboard, mouse.
 - c. Remote monitoring administration and viewing software ("XAD Clairvoyance Central Monitoring Software") that runs on a Microsoft Windows-based PC. The remote monitoring and viewing software is used for communications from PC to Unified Access Digital Video Recorders (UADVR).

- d. Internet Explorer Browser based remote access, Web Based Monitoring S/W
 - e. ITDC Access Control System Hardware.
2. The Unified Access Digital Video Recorder (UADVR) and integrated Access Control System must be protected by the most extensive support services in the industry, including Customer Service, Pre-Sales Applications Assistance, After-Sales Technical Assistance, access to Technical Online Support, and Online Training using web conferencing. The Unified Access Digital Video Recorder (UADVR) must be manufactured in the U.S.A., and the manufacturer shall provide technical assistance and support via a toll-free telephone number at no extra charge.
 3. The Unified Access Digital Video Recorder (UADVR) and integrated access control system shall provide a powerful, intelligent, enterprise-class, digital storage tool that combines Video, Motion Video, Audio, Access Control, Graphical Mapping, and POS/ATM Data capabilities in a single DVR. This system must be designed to record, search, and transmit Video, Motion Video, Audio, Access Control records, ID Badges, and Data transactions, both live and post-event.
 4. The Unified Access Digital Video Recorder (UADVR) and integrated access control system's default priority shall be to capture and store video, motion video, audio, transaction data and alarms. The system must be configurable to prioritize live viewing and retrieval of video if required. Once alarm or any conditions occur The Unified DVR shall have video pop-ups as well as customizable voice announcement to the local users as well as remote users.
 5. The Unified Access Digital Video Recorder (UADVR) shall provide an unmatched excellent Text Searchable Video Surveillance Technology that is embedded text-based video search tool to find the transaction data and associated videos.
 6. The Unified Access Digital Video Recorder (UADVR) and integrated access control system shall be compatible with most existing and new video equipment and incorporate into any TCP/IP or dialup network. Communication options shall include LAN, WAN, Internet, and PSTN, all utilizing the system's standard equipment, without the need for additional hardware. Compatibility with ISDN and DSL must be supported using additional hardware. The system shall allow for retrieval of system files, and remote software upgrades, utilizing any of the communication options. Simultaneous multiple connections utilizing different network and/or communication types shall be supported.
 7. The Unified Access Digital Video Recorder (UADVR) and integrated access control system shall authenticate the video using digital watermark for the integrity of evidence.

8. The Unified Access Digital Video Recorder (UADVR) and integrated access control system shall control up to 32 / 64 / 128 access control doors and be scalable up to 3000 doors with the addition of access control hardware.
9. The Unified Access Digital Video Recorder (UADVR) and integrated access control system shall have visual verification with badge photo via pop-up window where the user can compare the badge photo to the video.
10. The Unified Access Digital Video Recorder (UADVR) and integrated access control system have graphical door status maps with the capability of controlling doors.
11. The Unified Access Digital Video Recorder (UADVR) shall include elevator control capability, ID badging software, visitor management and Time & Attendance software.
12. The Unified Access Digital Video Recorder (UADVR) shall provide voice announcements for multiple alarm status and inputs activation status as well.
13. The Unified Access Digital Video Recorder (UADVR) shall capture high resolution video at a resolution up to 4CIF resolution and shall record up to 30 frames per second at CIF resolution. The Unified Access Digital Video Recorder shall allow for programmable recording schedules for each camera.
14. The Unified Access Digital Video Recorder (UADVR) shall support H.264 IP cameras while supporting analog CCTV cameras.
 - a. Compatible IP camera manufacturers
 - ① Arecont Vision
 - ② Axis
 - ③ ACTi
 - ④ Cynix
 - ⑤ Cellinx
 - ⑥ Pixord
 - ⑦ Truen
 - ⑧ UDP
 - ⑨ Webgate
15. The Unified Access Digital Video Recorder (UADVR) must be offered in with the choice of length of time for storage of video as a function of video capture rate, with maximum settings of either 240 / 480 / 960 frames per second (FPS), NTSC at CIF, or 200 / 400 / 800 FPS, PAL

at CIF. Each standard configuration must include a writable digital video disc drive (DVD-RW) and a universal serial bus (USB) port to record incident clips onsite. The Unified DVR must operate set to either NTSC or PAL utilizing identical software, at either 115 VAC or 230 VAC.

16. The Unified Access Digital Video Recorder (UADVR) in a continuous mode (circular buffer), offering either a choice of three (3) different resolutions (NTSC), selectable on a per camera basis: 352 x 240, 704 x 240, or 704 x 480, or a choice of four (3) different resolutions (PAL), selectable on a per camera basis: 352 x 288, 704 x 288 or 704 x 576. The resolution setting for recording video must be configurable by the administrator of the UADVR for each camera and be automatically optimized for the display of live video Access Controls. The recording format shall feature 24-bit, true color with over sixteen (16) million colors.
17. The Unified Access Digital Video Recorder (UADVR) shall be available with minimum system update rates of 240 / 480 / 960 FPS (NTSC at CIF) or 200 / 400 / 800 FPS (PAL at CIF) for recording, and a capable of simultaneous live Access Control. The frame rate for the recorded video from individual cameras shall be selectable from 0.1 FPS to thirty (30) FPS (NTSC) or from 0.1 FPS to twenty-five (25) IPS (PAL). The frame rate setting for recording video must be configurable by the administrator of the unified DVR for each camera and be automatically optimized for the display of live video Access Controls.
18. The Unified Access Digital Video Recorder (UADVR) must be engineered for durability and expandability, and be of a rugged, modular design, suited for desktop or rack-mount installations. It shall be designed to fit into a 19" EIA rack without additional hardware, or in an optional slide rack-mount kit for convenient servicing and installation.
19. The Unified Access Digital Video Recorder (UADVR) shall offer long-term digital storage for recorded Video, Motion Video, Audio, and Data. The unified DVR must be available in 1,000 GB (8 channel), 1,500 GB (16 channel), 2,000 GB (32 channel) with increased storage up to 6,000 GB.
20. The Unified Access Digital Video Recorder (UADVR) shall incorporate motion detection capability, and it shall allow the user to configure and program via a USB keyboard and mouse. The main monitor shall display multiple-screen formats and shall provide for the user interface. Programmable spot monitors shall be available with optional TV out matrix. Users shall be able to use one 17-pin VGA and one 15-pin Digital Video Input (DVI) VGA monitors as main monitors. The Unified Access Digital Video Recorder shall use TCP/IP Protocol-based Internet networking to deliver control and monitor of video recorders. All connections shall be made over a secure VPN connection, reducing the risks prevalent with public Internet-based data transfers.

21. The Unified Access Digital Video Recorder's (UADVR) operating system shall be Windows® XP, Windows® Vista, and Windows® 7. Linux and other operating systems are not acceptable.
22. The addition or replacement of hard drives shall require access to internal components or assemblies and must be accomplished by a certified technician without the removal or dismantling of The Unified DVR's chassis or enclosure.
23. A DVD-RW drive and a USB port must be available for distributing evidence clips of security video that can include motion video, audio and data, locally at the DVR, for event backup, archiving and distribution.
24. The Unified Access Digital Video Recorder (UADVR) must include a key lock to conceal the DVD-RW drive. Also secured behind the lockable front panel shall be the Front Panel Control, which shall include the following:
 - a. Power Switch (low voltage control)
 - b. System Ready LED
 - c. Hard Drive Activity LED
25. The BNC composite video inputs shall have a composite RCA video output. The BNCs inputs must have the ability to auto-detect cameras.
26. A minimum of ten video compression rate settings ("1" to "10") shall be available for storing video recordings, "1" producing bigger files (and a shorter archive of video, over time), and "10" producing smaller files (and a lengthier archive of video). Settings "1" to "10" are used only when connecting to legacy products. The quality setting for recording video must be configurable by the administrator of The UADVR for each camera and be automatically optimized for the display of live video Access Controls.
27. The Unified Access Digital Video Recorder (UADVR) shall work with either a 115 VAC or 230 VAC, 50 / 60 Hz input, 5 A or 10 A, and shall automatically select the correct supply.
28. The Unified Access Digital Video Recorder (UADVR) shall be equipped with one independent, bi-directional audio channel that offers users the ability to monitor and record synchronized audio streams. The audio channel must synchronize with the video and data streams. The audio inputs and audio outputs shall utilize a connector for a 3.5 mm stereo mini jack.
29. The Unified Access Digital Video Recorder (UADVR) shall include (8 / 16 / 32) 5VDC TTL to 12VDC compatible alarm/control inputs on removable 3.5 mm terminal block plugs, to interface with devices such as: contacts, motion sensors as well as 12V alarm and access control panels. The inputs must have a programmable sense threshold and must be configurable via software as Normally Closed (NC), Normally Open (NO) operation.

30. The Unified Access Digital Video Recorder (UADVR) shall include four (4 or 8) 5VDC TTL to 12 VDC compatible general purpose outputs on removable 3.5mm terminal block plugs, to interface with devices such as: lights, warning sirens, locks as well as 12 VDC alarm and access control panels. Each control output shall be able to internally drive a 0 to 3 VDC TTL logic signal and sink 12 VDC loads with an external 12 VDC power source. Each output shall be rated at 30 mA maximum current source at 3 VDC, and 100 mA maximum current sink from 3 VDC to 12 VDC.
31. Besides network connections all physical connections shall be made directly to the unified DVR, without the need for additional hardware.
32. The Unified Access Digital Video Recorder (UADVR) shall include e-mail on alarm and a simplified icon based user interface. The Unified Access Digital Video Recorder shall incorporate a 10/100/1000 Mbps network port.
33. The Unified Access Digital Video Recorder (UADVR) shall have the ability to be configured as a SNTP client (Simple Network Time Protocol), allowing the DVR to automatically synchronize to an SNTP server.
34. Each Individual camera configuration shall be available within the local user interface on a video settings panel that consolidates all video settings. Automatic changeover of camera type from color to monochrome in low light conditions shall be available when using color/monochrome cameras. The configuration shall include:
 - a. Camera name
 - b. Color or B&W camera
 - c. Brightness, Contrast, Hue, Saturation
 - d. Motion sensitivity
 - e. Rate of motion
 - f. Motion log
 - g. Motion alarm
 - h. Motion notification
 - i. Motion detection test
 - j. Privacy zone
 - k. PTZ enable
 - l. PTZ device
 - m. PTZ camera address
 - n. PTZ port attributes
 - o. PTZ post-use
 - p. PTZ preset

q. PTZ tour

35. Each Individual camera configuration shall be available within the local user interface on a video settings panel that consolidates all video settings. Automatic changeover of camera type from color to monochrome in low light conditions shall be available when using color/monochrome cameras. The configuration shall include:
36. Configuration of the recording of each video feed from the cameras connected to the DVR shall be available within the local user interface that consolidates all video recording settings. Controls for setting higher recording settings when digital recording becomes Event-driven, must be available on the recording setting. The recording panel must report an estimate of the UADVR's storage capacity and show how much is used and how much is left in storage. The recording panel configuration shall include, for each camera of the UADVR:
 - a. Normal Recording
 - b. Sensor Recording
 - c. Motion Recording
 - d. Display only (Without recording)
 - e. Sensor & Motion Recording
 - f. Normal & Event Recording (Defined frames per second recording options)
37. The Unified Access Digital Video Recorder (UADVR) shall provide RS422 / RS485 to control PTZ cameras.
38. The Unified Access Digital Video Recorder (UADVR) shall include one internal RS485 / RS422 serial port converter. The manufacturer must provide cables and/or adapters for connections to these serial ports.
39. The following PTZ protocols must be standard in all UADVR's

- a. Honeywell HRX2000
- b. Panasonic
- c. Philips
- d. Cannon
- e. Kalatel
- f. Pelco P
- g. Pelco D
- h. SensorMatic Speed Dome
- i. Vicon
- j. Samsung
- k. Sony
- l. Everfocus

2.4 The Unified Access DVR Graphical User Interface (Local View)

The UADVR Graphical User Interface (GUI) provided by UADVR shall include, as a minimum, the following features / functions / specifications:

1. The operator shall be able to select preset, multiple and single camera views and/or text windows, for live or recorded video feeds within the local user interface.
2. For recorded video, a playback control toolbar shall be available, with many of the controls designed to mimic the controls on a video cassette recorder (VCR). The controls must include:
 - a. Play/Stop/Pause the playback of recorded video
 - b. A detailed seek (date, time)
 - c. Next image, when the recorded video is paused
 - d. Fast forward or slow motion, each at multiple speeds
3. To efficient and fast video searches, advanced video search tools shall be available such as time block thumbnail search that enables to find the videos by selecting thumbnail video of each time blocks and area motion detection search that provide the list of motion detection of selected area of a channel of video.
4. Simply by “double-clicking” a video feed, the operator shall go to a single camera view.
5. The Unified Access DVR’s local user interface shall provide users with the ability to produce a video clip of recorded video using start and stop times, with the option of including

recorded events or not, and the ability to store the clip on an unified DVR drive, without fear of loss or of overwriting the clip without a warning. The local user interface shall provide users with the ability to copy the clip to either a recordable DVD/CD media or storage media that can be connected to a USB port, with the 3 options of including an executable file format which provides built-in Player, Codec, and video data, for playing the video on a PC running Microsoft Windows without installing any software or Codec. The local user interface shall give operators the ability to review a clip from the unified DVR's hard drive, or to view a copy of a clip, either from appropriate media loaded either in the DVD-RW drive, or connected to the USB port on the keyboard connected to the unified DVR.

6. The local user interface shall allow a bitmap of a frame of video to be saved, on demand. The size of bitmap files shall be proportionate to the resolution of the video. Producing bitmaps must be available while monitoring either live video, recorded video, or while reviewing a video clip. The user shall have the ability to view bitmaps produced by the unified DVR, using the local user interface, and to copy the bitmaps to recordable DVD media or CD media, or to common USB storage devices.
7. The Unified Access Digital Video Recorder (UADVR) shall be integrated to Point Of Sales Terminals with the unmatched excellent Text Searchable Video Surveillance Technology.
 - a. For data handling, The Unified Access DVR shall have the capability to monitor, record, retrieve, search, and filter data obtained from connected devices for Point of Sale (POS) such as a cash register or an automatic teller machine (ATM). The messages from these devices shall be treated as events, with the option of logging the occurrence of a message, having the message trigger an alarm, having the message triggering an alarm and being logged, or of having no effect. A search engine for data shall be standard, allowing operators to search and review recorded data and video streams associated with the time at which the data is obtained. An operator shall have the option of designating serial data from POS/ATM to automatically initiate an action (alarm) and/or report (log). A post-event search of a specific recorded data stream qualifier must be available.
8. The local user interface shall include the ability to monitor and/or search streams of POS or ATM generated data, such as from cash registers, ATM machines. The operator shall have the ability to search for specific strings of text, (such as "no sale") and be able to view video for the time that that string of text was produced.

9. The local user interface shall have the option of receiving and processing alarms/events automatically from the DVR. The operator must have the ability to receive, monitor, acknowledge, and search. The following video delivery options must be available during an alarm:
 - a. Run live video session on alarm: An alarm causes video of cameras connected to a DVR to be displayed in the grid area.
 - b. View recorded video from the time of the event after selecting its alarm in the list of alarms.
 - c. Automatic record for live alarm: The recording of a clip starts immediately and automatically when an alarm is received by The UADVR.

10. The local user interface shall include a search tool that allows the operator to search for events, logs, and data strings and instantly review the associated video, and transaction data.

11. The local user interface must have the ability to control outputs, to remotely control devices such as lights, door locks, warning sirens, or gates. Depending on the device, additional hardware may be required. The status of the general purpose outputs shall be displayed automatically in the local user interface.

12. The local user interface must have the ability to “trace” events, caused by natural causes, operator error, or misuse of the system, which may compromise the effectiveness of the Event-driven UADVR.

13. The local user interface shall offer the system's administrator the option of adding, modifying or removing passwords on all user accounts and the option of managing operators from the DVR (Local User Management) even when the DVR reports that users are being managed from a Central location (Central User Management).

14. The Unified Access Digital Video Recorder shall meet or exceed the following design and performance specifications.

2.5 Unified Access Digital Video Recorder (UADVR) Administration

The UADVR's administration software shall include, as a minimum, the following features / functions / specifications:

1. The administration software shall be a workstation/server based tool capable of enterprise-wide configuration of DVR connection data, management of user accounts, DVR setup, and alarm station connection data.
2. The administration software shall be Windows based, and must be compatible with Microsoft Windows XP and Vista32, and must provide a user-friendly Graphical User Interface (GUI) for creating the event-driven video recording and access control system's database.
3. The administration software shall allow the administrator to generate database, upon which subsequent operator accounts or administrator accounts can be based. This operation shall make it easy to set up operator accounts with a predefined set of rights.
4. A record of each alarm event shall be entered in the alarm log of the database during an alarm session. The Unified Access DVR must have the ability to sort the alarms in true chronological order and it can be searched using Text Searchable Video Surveillance Technology. The alarm log must contain a minimum of the following information for each event:
 - a. Name of user logged on to alarm station or using alarm session.
 - b. Name of DVR
 - c. Time and date action taken.
 - d. Time and date of alarm.
 - e. Sensor input of alarm.
 - f. Name of alarm event.
5. The administration software shall allow for definable user names and privileges. The administrator must have the ability to restrict any, or all, of the following:
 - a. The right to use the administration features & functions.
 - b. The right to use maintenance functions, including modifying configuration settings, modifying security settings, and modifying system settings.
 - c. The right to obtain live video from a Unified Access Digital Video Recorder.
 - d. The right to obtain recorded video and transaction data from a Unified Access Digital Video Recorder.

- e. The right to listen, and/or talk, utilizing the audio feature.
 - f. The right to use pan, tilt, and zoom (PTZ) commands, on cameras that have the capability, during a live session.
 - g. The right to operate outputs (for controlling gates, lights, and so on), during a live session.
 - h. The right to process alarms using an alarm session to acknowledge and reset alarms.
 - i. The right to access to any of The Unified Access DVR.
 - j. The right to access certain camera at a specific The Unified Access DVR, while allowing access to other cameras.
6. The administration software shall feature encrypted password protection and the system administrator shall have the option of assigning individual unique passwords to operator accounts, or assigning the same password to a group of operators. The system administrator shall have access to and control of an optional system password that can be assigned to each UADVR, or subset of UADVRs, in the Unified Access Digital Video Recorder and access control System. When in use, the system password must block access by unauthorized users to UADVRs, regardless of whether they have access to the administration or remote viewing software, and /or the dial-up of the modem circuitry in the UADVR or the IP address used to connect to the UADVR when it is connected to a network.

2.6 Central Monitoring System Software

The Central Monitoring System software shall include, as a minimum, the following features / functions / specifications:

1. The central monitoring system software shall be a feature rich, workstation based operator program that provides a user friendly Graphical User Interface (GUI) for complete operation and configuration of one or many different Unified Access DVR's simultaneously. The user must have the ability to observe and monitor live or recorded video, audio and access control transaction event data from any UADVR. The user shall also have the ability to connect to multiple sites simultaneously using multiple connection methods from the same or multiple workstations for live and/or recorded information.
2. The central monitoring system software shall be Windows based, and must be compatible with Microsoft Windows 2000, Windows XP, Windows Vista, Windows 7.

3. The central monitoring system shall provide the separate window for event transactions, POS transactions, Unified DVR's status transactions, and motion sensing transactions.
4. The central monitoring system software shall provide associated video pop-ups for access control event transactions, POS transactions, alarm & sensor events transactions, and motion sensing transaction in real-time.
5. The central monitoring system software shall provide multiple video split screens for multiple site monitoring. The user must have the ability to change the position of videos and monitor on user-defined selection of videos.
6. The central monitoring system software shall provide a graphical event map which can be created by the user to show the status of doors, sensors, relays, and access control transactions in real-time.
7. The central monitoring system software shall provide the controls of unified DVRs such as remote shutdown / reboot, remote search, remote camera control of PTZ camera, remote setting, and Unified DVR connection status check.
8. The central monitoring system software shall be able to monitor up to 1,000 sites with up to 255 customizable video monitoring screens.
9. The central monitoring system software shall be able to record the video streams on to its local hard drives and the central monitoring system software shall provide its own search program.
10. The central monitoring system software shall be able to access the XAD systems and search the video data remotely.
11. The central monitoring system software shall provide the event transactions such as video loss, motion detection, relay event, sensor event, access control transaction, and unified DVR's hard drive failure.
12. The central monitoring system software shall provide the video pop-ups for any transactions and configurations of user-defined popup videos such as all-channel live video, one-channel live video, one-channel recorded video, and remote search programs to review all recorded videos.
13. The central monitoring system software shall provide the setting & schedule tool for different types of events.
14. The central monitoring system software shall be able to backup and restore the default setting data.

15. The central monitoring system software shall utilize database for CMS log data for associated video file storage.
16. Individual camera configuration shall be available within the central monitoring system software on a video settings panel that consolidates all video settings.
17. Configuration of the recording of each video feed from the cameras connected to the UADVR shall be available within the central monitoring system software, on a recording panel that consolidates all video recording settings.
18. The operator shall be able to dynamically move, size, and tile individual camera and/or text windows, either during a live or retrieval session, within the central monitoring system software. The viewing windows shall be detachable and scalable without preset limitations.
19. The central monitoring system software shall allow an operator to listen to live audio, or broadcast audio from an operator's CMS PC to multiple UADVRs, and to review recorded audio.
20. The central monitoring system software shall include the ability to monitor and/or search up to 8 / 16 / 32 streams of POS or ATM generated data, such as from cash registers, ATM. The streams must be viewed as an overlay on the videos. The operator shall have the ability to search for specific strings of text, (such as "no sale") and be able to make the video pop-up when the time of event happens.
21. The central monitoring system software shall have the option of receiving and processing alarms/events automatically from multiple UADVR's, either by LAN/WAN, or both. The operator must have the ability to receive, view, acknowledge, and memo. A notification of an alarm occurrence is always immediate. An alarm icon must appear to blink, and the operators PC can produce an audible sound through speakers. The following video delivery options must be available during an alarm:
 - a. Run live video session on alarm: An alarm causes live video of cameras connected to a DVR to be displayed as soon as the alarm reaches the operator's PC.
 - b. Launch a recorded video on selection from alarm list: During an alarm, the operator retrieves the video from the time of the event by selecting an alarm from the alarm list.
 - c. Automatic record for live alarm: Recording of a clip starts immediately and automatically when an alarm is received at the operator's PC.

22. The central monitoring system software shall include a search tool that allows the operator to search for events, logs, and data strings and instantly review the associated video, audio, and data.
23. The central monitoring system software shall have the ability to control eight (8) auxiliary outputs, to remotely control onsite devices such as lights, door locks, warning sirens, or gates with external relay devices. These general purpose outputs shall be automatically displayed to the operator on the PC during a live video session.
24. The PC based the central monitoring system software shall have the ability to simultaneously connect to as many as hundred twenty eight (128) DVR's, as the memory and CPU of the PC running the software will allow.
25. The central monitoring system software must have the ability to "trace" events, caused by natural causes, operator error, or misuse of the system, which may compromise the effectiveness of the Event-driven digital video recording and access control system.

2.6 MECHANICAL SPECIFICATIONS

A. The UADVR must have the following mechanical specifications:

1. UADVR Dimensions(H x W x D) 5.23" (4U) x 17.3" x 18.8"
(133mm x 440mm x 478mm)
2. Maximum UADVR Weight..... 43 lbs. (19.5 kg.)
3. Maximum Shipping Weight..... 55 lbs. (25 kg.)

2.7 ELECTRICAL POWER REQUIREMENTS

A. The UADVR must have the following electrical specifications:

1. Power Requirement..... 115-23 VAC, 60-50Hz, 6-3A
2. Auto Sensing 120V/240V Operation

2.8 ENVIRONMENTAL CONDITIONS

A. The UADVR shall be designed to meet the following environmental conditions:

1. Operating Temperature.....40° to 104°F (5° to 40°C) non-condensing
2. Emissions.....FCC: Part 15, Class B
CE: EN61000-6-3:2001
CE: EN61000-3-2:2000
3. Immunity.....CE: EN50130-4, with use of an Uninterruptible
Power Supply (UPS)
4. Safety..... IEC/EN 60950-1:2001

PART 3 – EXECUTION

3.1 EXAMINATION

1. Submission of a proposal confirms that the contract documents and site conditions are accepted without qualifications unless exceptions are specifically noted.
2. The site shall be visited on a regular basis to appraise ongoing progress of other trades and contractors, make allowances for all ongoing work, and coordinate the requirements of this contract in a timely manner.
3. The Unified Access Digital Video Recorder (UADVR) and Access Control System must be inspected before installation, and shall be free of any cosmetic defects or damage.

3.2 PREPARATION

1. Prior to installation, the Unified Access Digital Video Recorder (UADVR) and Access Control System shall be configured and tested in accordance with the manufacturer's instructions.

3.3 INSTALLATION

1. The Unified Access Digital Video Recording (DVR) and Access Control System must be installed, programmed, and tested in accordance with the manufacturer's instructions.
 - a. In order to ensure a complete, functional Event-driven Digital Recording and Access Control

System, for bidding purposes, where information is not available from the Owner upon request, the worst-case condition shall be assumed.

- b. Interfaces shall be coordinated with the Owner's representative, where appropriate.
- c. All necessary black boxes, racks, connectors, supports, conduit, cable, and wire must be furnished and installed to provide a complete and reliable Unified Access Digital Video Recorder (UADVR) and Access Control System installation. Exact location of all boxes, conduit, and wiring runs shall be presented to the Owner for approval in advance of any installation.
- d. All conduit, cable, and wire shall be installed parallel and square with building lines, including raised floor areas. Conduit fill shall not exceed forty percent (40%). All wires shall be gathered and tied up to create an orderly installation.

3.4 TESTING AND CERTIFICATION

1. The Contractor shall demonstrate the functionality of the Unified Access Digital Video Recorder (DVR) and Access Control System upon completion of installation, documenting the result of all tests and providing these results to the Owner. The Unified Access Digital Video Recorder (UADVR) and Access Control System shall be tested in accordance with the following:
 - a. The Contractor shall conduct a complete inspection and test of all installed Unified Access Digital Video Recorder (UADVR) and Access Control System equipment. This includes testing and verifying operation with connected equipment.
 - b. The Contractor shall provide staff to test all devices and all operational features of the system for witness by the Owner's representative and the Authority Having Jurisdiction. All testing must be witnessed by the Owner's representative, prior to acceptance.
 - c. The testing and certification shall take place as follows:
 - ① The Unified Access Digital Video Recorder (UADVR) and Access Control System shall be tested in conjunction with the manufacturer's representative.
 - ② All deficiencies noted in the above test shall be corrected.
 - ③ Test results shall be submitted to the consultant or Owner's representative.
 - ④ The test and correction of any deficiencies shall be witnessed by the Owner's representative, and note.
 - ⑤ The Owner's representative shall accept the system.

- ⑥ The system test shall be witnessed by the authority having jurisdiction. Any deficiencies noted during the testing must be corrected.
- d. A letter of certification shall be provided to indicate that the tests have been performed, and all devices are operational.

PART 4 – COMPATIBLE PRODUCTS

4.1 ITDC ACCESS CONTROL DEVICE (CONTROLLER BOARD & FIELD PANEL)

1. ITDC Controller

- a. Complete distributed processing for any decision-making.
- b. Control up to 4 readers per loop.
- c. Maximum registration of user is 20,000 users and 25,900 transactions.
- d. Shall be interfaced with 26bit Wiegand and 4/8 bit burst from the reader (PIN Pad)
- e. Access verifications for all cards performed at controller.
- f. Linking of Input and output is done locally at controller.
- g. Status LED for each Input and each Output.
- h. Controller polled LED.
- i. Separate communication received and transmitted LEDs.
- j. Self diagnostic LED.
- k. Loaded redundant 7 Amp battery back-up for four hours full system operation including locks and accessories during the emergency AC power failure. Once the AC power is restored, automatic charging circuit on the power supply be on.
- l. Controller that reports to PC any loss of DC power and low battery as separate alarms with

- status LED for DC power to controller.
- m. Real time on board clock/calendar generation synchronized with host PC clock/calendar.
 - n. Dynamic memory allocation
 - o. Change to/from auto buffering of all transactions based on communications status.
 - p. Wiring management system including wire chases, cable ties, and mounting clips.
 - q. Buffered events shall be handled in a FIFO (First In First Out) mode of operation.
 - r. Failure of one controller may affect the operation of the associated devices i.e. operation of turnstiles or gate. However, rest of the system shall continue to function without any reduction in the functionality.
 - s. The controller shall have in-built TCP/IP connectivity for direct interfacing with the Unified Access Control Digital Video Recorder (UADVR).
 - t. Functions provided by Controller shall include but not limited to the following features:
 - ① Provides central control for all devices attached.
 - ② Dedicated controller for each door operation and associated readers.
 - ③ Decision making for access.
 - ④ Receives input to control its decision-making.
 - ⑤ Reports activity to other devices.
 - ⑥ Should have in-built operational battery back up supporting at least 4hrs operation in case of mains failure.

2. RF/PIN PROXIMITY READER

- a. The reader shall include personal identification features with personal identification number to support dual authentication of identity. (RF Card & Password)
- b. The reader shall read up to 4 inch range.
- c. The reader shall have a Supervisory signal feature detecting when the line is cut.
- d. The reader shall have reverse polarity protection.
- e. Reader shall support 26bit Wiegand format for communication and optionally changeable to RS232, ABA TrackII Magstrip format available.
- f. The Proximity card reader shall support proximity cards based on PSK technology and not

- compatible with any other products from different manufacturers.
- g. The reader shall be capable of reading the card without any physical contact.
 - h. The card reader shall only read the card data & transmit it on to the controller for validation.
The card reader shall not take any decisions on its own.
 - i. Provide feedback trough LED and Beep.
 - j. Operation temperature is between -35C~+65C.
 - k. UL, CE and FCC approved.
 - l. Proximity Readers:
 - ① RF Tiny: RFID proximity reader. Vandal proof/100% weather proof. Life-time warranty. Mini size.
 - ② RF10: RFID proximity reader. Vandal proof/100% weather proof. Life-time warranty. Mullion Type
 - ③ RF20: Proximity reader. Vandal proof/100% weather proof. Life-time warranty. Wall Mount Type
 - ④ RFK101: Proximity reader with keypad. Fits on a single gang electric box.
 - ⑤ RFK101W: Proximity reader with keypad. Vandal proof/100% weather proof.
 - ⑥ RF30: Medium range reader up to 12 inches with passive RFID card. Vandal proof/100% weather & water proof.
 - ⑦ RF70: Medium range reader up to 18 inches. Vandal proof/100% weather & water proof.

3. BIOMETRIC READER (Finger006/FGR006/LX006)

- a. The biometric reader shall include biometric identification features with personal identification number to support dual/triple authentication of identity. (RF Card and/or Password and/or Fingerprint)
- b. The biometric reader shall read up to 4 inch range with RFID passive card
- c. The biometric reader shall accommodate 1,000 users (optional 2,000 and 4,000 users)
- d. The biometric reader shall verify fingerprint less than 1 second & identify user less than 2 seconds.
- e. The biometric reader shall have less than 0.001% of False Acceptance Ratio (FAR) and 0.1% of False Rejection Ratio (FRR).

- f. The biometric reader shall support 26bit Wiegand format or higher output format as a slave reader for communication.
- g. The biometric reader shall be compatible with ISO 14443 Type A proximity/RFID card.
- h. The biometric reader shall only read the fingerprint and identify the users and transmit associated ID number on to the controller for validation. The biometric reader shall not take any decisions on its own.
- i. Provide feedback trough LED, Beep, text if LCD is equipped.
- j. Operation temperature is between -35C~+65C.
- k. UL, CE, RoHS Compliance and FCC approved.

l. Biometric Readers:

- ① FINGER006: Fingerprint identification proximity reader with built-in LCD & Pinpad.
- ② FGR006: Fingerprint identification proximity reader
- ③ LX006: Fingerprint identification proximity reader

4. RFID PROXIMITY CARD

- a. RFID card must be based on PSK technology with 125KHz frequency.
- b. Each RFID card shall be encoded the number which is totally unique and does not exist in any system in the world.
- c. RFID card shall generate a minimum of eight-digit access number and numeric encoded data shall be an integrated circuit within the RFID card.
- d. RFID CARDS:
 - ① IDC80: ISO credit card size and thickness. 86 mm (3.38") x 54 mm (2.13") x 0.80 mm (0.03") size and suitable for directly printable on both side with dye sublimation.
 - ② IDC170: ISO credit card size. Dimension: 86 mm (3.38") x 54 mm (2.13") x 1.7 mm (0.07")
 - ③ IDK50: Key tag type. Suitable for carrying with key-chains. 46 mm (1.81") x 28 mm (1.12") x 6 mm (0.23).

- ④ IMC125: Mini Prox sticker type. Suitable for attaching on to devices such as cell phone, PDA, and other types of IDs. Diameter: 54 mm (2.13")

5. ACTIVE LONG RANGE READER FOR PARKING APPLICATIONS (RF245)

- a. The active long range reader shall have up to 33ft read range. Additionally 10ft, 18ft read range readers are also available for shorter distance operation.
- b. The active long range reader shall use 2.45GHz frequency and be capable of reading up to 30 active tags per second.
- c. The active long range reader shall have vandal resistant case with 100% weather proof rating for outdoor applications.
- d. The active long range reader shall have parking hold signal and direct connection to bar gate using bar gate output for optimal performance for parking applications.
- e. The active long range reader shall support 26bit Wiegand protocol as standard and optionally 34bit Wiegand or higher up to 40bit and RS232 communication protocol shall be available.
- f. The active long range reader shall have 90 degree one-directional antenna.
- g. CE, RoHS Compliance and FCC approved.

6. ACTIVE RFID CARD FOR LONG RANGE READER (IDA245)

- a. The active long range card shall have 3~5 year battery life and replaceable battery feature.
- b. The active long range card shall be pre-programmed with standard 26bit Wiegand data format and available any Wiegand proprietary formats up to 40bits.
- c. RoHS Compliance.

7. ID CARD PRINTER

- a. ID card printer shall print directly on the cards in full color with crisp, sharp graphics.
- b. ID card printer shall have automatic front card loading and output.
 - ① DCP240+: Single-side printing. Up to 160 full-color and up to 750 monochrome cards per hour. Advanced cleaning roller system. Various ribbon combinations available.
 - ② DCP340+: Double-side printing. Up to 190 full-color and up to 1,000 monochrome

cards per hour. Advanced cleaning roller system. Various ribbon combinations available.

- ③ DCP560i: Double-side printing. Up to 180 full-color and up to 720 monochrome cards per hour. Removable and reusable cleaning rollers. Built-in LED panel.

END OF SECTION