HONEYWELL VIDEO SYSTEMS HRDVS DIGITAL VIDEO RECORDER – HRDVS16, HRDVS8, HRDVS4, and HRDVS1

PART 1 – GENERAL

The intent of this document is to specify the minimum criteria for the design, supply, installation, and commissioning of the HRDVS Digital Video Recorder (HRDVS DVR). The HRDVS16 is a 16-channel DVR, the HRDVS8 is an 8-channel DVR, the HRDVS4 is a 4-channel DVR, and the HRDVS1 is a single-channel DVR.

1.01 SUMMARY

A. The general purpose of the HRDVS Digital Video Recorder is to provide a powerful, intelligent, digital storage management tool that combines capabilities for Video, Audio, and Data in a single Recorder Unit (DVR).

1.02 REFERENCES

A. Canadian Standards Association (CSA)

B. Conformity for Europe (CE)

C. Consultative Committee for International Radio (CCIR)

D. Electronic Industry Association (EIA)

E. Federal Communications Commission (FCC)

F. National Television System Committee (NTSC)

G. Phase Alternation by Line (PAL)

H. Underwriters Laboratories Inc. (UL)

1.03 DEFINITIONS

A. No Substitutes: The exact make and model number identified in this specification shall be provided without exception.

B. 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.

C. Or Approved Equal: A substitute for the specified item may be offered for approval by the Owner. The proposed substitution must provide the same or better capability and functionality, in every technical sense, as the specified item. Such requests for approval shall be submitted in accordance with the provisions of PART 1.05 – SUBMITTALS, and must be obtained within the time frames outlined.

1.04 SYSTEM DESCRIPTION

A. The HRDVS DVR shall provide a powerful, intelligent system-class digital storage management tool that combines Video, Audio, and Data capabilities in a single DVR. It is a complete, integrated digital video management system combining switcher, remote multiplexer, text inserter, video motion detector, and remote video transmission system. The system shall be designed to record, search, and transmit Video, Audio, and Data transactions, providing operators with live, pre- and post-event assessment options. The HRDVS Digital Video Recorder must be available in a minimum of four (4) different configurations, allowing the operator to select the right DVR for every application.

1.05 SUBMITTALS

A. General: Submittals shall be made in accordance with the Conditions of the Contract and Submittal Procedures Section.

B. Shop Drawings and Schematics: Shall depict the HRDV Digital Video Recorder in final proposed "as built" configuration. The following must be provided:

   1. Connection diagrams for interfacing equipment.

   2. List of connected equipment.

   3. Locations for all major equipment components to be installed under this specification.

C. Product Data: The following shall be provided:

   1. Technical data sheets.

   2. A complete set of instruction manuals.

D. Quality Assurance Submittals: The following shall be submitted:

    1. Checkout Report: The Contractor shall provide the Owner with a checkout report for each HRDVS Digital Video Recorder. The report shall include:
        a. A complete list of every device.
        b. The date at which every device was tested, and by whom.
        c. If device are retested, the date at which each device was retested, and by whom.
        d. A final report indicating that every device was tested successfully.

    2. Manufacturer's Instructions: The Contractor shall deliver **TBD** sets of System Operation and Maintenance Manuals (if available) to the Owner.

    3. Notice of Completion: When the final acceptance has been satisfactorily completed, the Owner shall issue a notice of completion to the Contractor.

1.06 QUALITY ASSURANCE

A. Manufacturer's Qualifications: The HRDVS Digital Video Recorder manufacturer shall be the world's largest and most experienced manufacturer of electronic security systems, with over seventy years of experience in the security industry. The HRDVS Digital Video Recorder must be assembled in the U.S.A., and the manufacturer shall provide technical assistance 24/7 and supported via a toll-free telephone number, at no extra charge.

1.07 DELIVERY, STORAGE, AND HANDLING

A. General: Delivery, storage, and handling of the HRDVS Digital Video Recorder shall be in accordance with the manufacturer's recommendations.

B. Ordering: The manufacturer's ordering instructions and lead-time requirements must be followed in order to avoid installation delays.

C. Delivery: The HRDVS Digital Video Recorder shall be delivered in the manufacturer's original, unopened, undamaged container with identification labels intact.

D. Storage and Protection: The HRDVS Digital Video Recorder shall be stored and protected from exposure to harmful weather conditions and at the environmental conditions recommended by the manufacturer.

1.08 PROJECT CONDITIONS

1.09 SEQUENCING

1.10 SCHEDULING

1.11 WARRANTY

A. General: The warranty period shall be a minimum of thirty-six (36) months from the manufacture date code under normal use and service. The warranty period for hard drives shall be a minimum of twelve (12) months from date of manufacture.

1.12 MAINTENANCE

A. Preventative Maintenance Agreement During Warranty: As a separate price item, the Contractor shall provide preventative maintenance during the warranty period. Maintenance shall include, but no be limited to:

1. Labor and materials, at no additional cost, to repair HRDVS Digital Video Recorder.

2. Labor and materials, at no additional cost, to provide test and adjustments to the HRDVS Digital Video Recorder.

3. Regular inspections.

B. 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:

1. Labor and materials, at no additional cost, to repair HRDVS Digital Video Recorder.

2. Labor and materials, at no additional cost, to provide test and adjustments to the HRDVS Digital Video Recorder.

3. Regular inspections.

1.13 TRAINING

A. Operator training shall be conducted for a minimum session length of **TBD** hours at the customer's site.

B. Training shall include, but not be limited to HRDVS Digital Video Recorder operation and diagnostics.

PART 2 – PRODUCTS

2.01   MANUFACTURED RECORDER UNITS

A. Model Number/Descriptions Table

HRDVS16 DVR Model Numbers

HRDVS16	FG, HRDVS16 SPLX, NTSC, W/O HD
HRDVS16X	FG, HRDVS16 SPLX, PAL, W/O HD
HRDVS16F250	FG, HRDVS16 SPLX, NTSC, FXD HD 250 GB
HRDVS16F250X	FG, HRDVS16 SPLX, PAL, FXD HD 250 GB
HRDVS16F500	FG, HRDVS16 SPLX, NTSC, FXD HD 500 GB
HRDVS16F500X	FG, HRDVS16 SPLX, PAL, FXD HD 500 GB

HRDVS8 DVR Model Numbers

HRDVS8	FG, HRDVS8 SPLX, NTSC, W/O HD
HRDVS8X	FG, HRDVS8 SPLX, PAL, W/O HD
HRDVS8F250	FG, HRDVS8 SPLX, NTSC, FXD HD 250 GB
HRDVS8F250X	FG, HRDVS8 SPLX, PAL, FXD HD 250 GB
HRDVS8F500	FG, HRDVS8 SPLX, NTSC, FXD HD 500 GB
HRDVS8F500X	FG, HRDVS8 SPLX, PAL, FXD HD 500 GB

HRDVS4 DVR Model Numbers

HRDVS4	FG, HRDVS4 SPLX, NTSC, W/O HD
HRDVS4X	FG, HRDVS4 SPLX, PAL, W/O HD
HRDVS4F250	FG, HRDVS4 SPLX, NTSC, FXD HD 250 GB
HRDVS4F250X	FG, HRDVS4 SPLX, PAL, FXD HD 250 GB
HRDVS4F500	FG, HRDVS4 SPLX, NTSC, FXD HD 500 GB
HRDVS4F500X	FG, HRDVS4 SPLX, PAL, FXD HD 500 GB

HRDVS1 DVR Model Numbers

HRDVS1	FG, HRDVS1 SPLX, NTSC, W/O HD
HRDVS1X	FG, HRDVS1 SPLX, PAL, W/O HD
HRDVS1F250	FG, HRDVS1 SPLX, NTSC, FXD HD 250 GB
HRDVS1F250X	FG, HRDVS1 SPLX, PAL, FXD HD 250 GB
HRDVS1F500	FG, HRDVS1 SPLX, NTSC, FXD HD 500 GB
HRDVS1F500X	FG, HRDVS1 SPLX, PAL, FXD HD 500 GB

Software Model Numbers

HRDV RAS	Remote Access Software CD & Operator Manuals

HRDVS16/8/4/1 Accessory Model Numbers

HRDVMOD	FG,MODEM,56K,PCMCIA,PC,FAX
HRDVNET	FG,ETHERNET CARD,PCMCIA,10/100M

2.02   SYSTEM PERFORMANCE

A. The HRDVS Digital Video Recorder shall include, as a minimum, the following features/functions/specifications:

1. The HRDVS DVR manufacturer must be the world's largest and most experienced manufacturer of electronic security systems, with over seventy years of experience in the security industry.

2. The HRDVS DVR 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 HRDVS Digital Video Recorder must be manufactured in the U.S.A., and the manufacturer shall provide 24/7 technical assistance and support via a toll-free telephone number at no extra charge.

3. The HRDVS Digital Video Recorder shall provide a powerful, intelligent enterprise-class digital storage management tool that combines Video, Audio, and Data capabilities in a single DVR. This system must be designed to record, search, and transmit Video, Audio, and Data transactions, live, and pre-, and post-event.

4. The HRDVS DVR is a stand alone and/or networked video and audio recording device. As a minimum, it includes switcher, remote multiplexing, selectable remote multi-mode display, digital motion detection, text insertion, camera titling, and is capable of event, pre-event, or time-lapse recording. It is available in NTSC or PAL configuration.

5. The HRDVS DVR's default priority shall be to capture and store video, audio, data, and alarms. The system must be configurable to prioritize live viewing and retrieval of video if required. The HRDVS DVR shall have the capability to function in true remote duplex mode, to allow remote replaying video without interrupting recording. Additionally, the HRDVS shall provide selectable remote multi-screen views while recording.

6. The HRDVS DVR shall use a Wavelet-based compression algorithm to reduce data storage requirements. The compression level and resultant video quality shall be capable of adjustment in several increments. These adjustments shall allow different compression level settings based on whether the clip is normal or event based.

7. The HRDVS DVR 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 (PSTN model dependent), all utilizing the system's standard equipment, without the need for customized 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.

8. The HRDVS software shall provide authentication of video images, regardless of the physical location of the stored image. This authentication process shall verify that the video image has not been altered or changed for integrity of evidence and shall run on images stored in the HRDVS DVR or after downloading the video clip using the HRDVS Remote Access Software (RAS).

9. The HRDVS Digital Video Recorder shall allow a remote operator to adjust the image quality in RAS to minimize network bandwidth requirements and ensure that images and system messages are delivered as quickly as possible within the capabilities of the network's available bandwidth.

10. The HRDVS Digital Video Recorder and its components shall be thoroughly tested before shipping from the manufacturer's facility.

11. The system shall consist of two (2) components:
    a. Recorder Unit with internal power supply
    b. Remote Access Software (RAS).

B. The HRDVS DVR shall include, as a minimum, the following features/functions/ specifications:

1. The DVR's operating system shall be designed for a real-time, embedded QNX-based distributed environment that is: secure, reliable, networked, and multi-tasking. In case of power loss, the fault-tolerant design shall provide quick, reliable recovery and automatically go to recording mode when power is restored. Operating systems that are not designed for real-time operations, such as Microsoft Windows®, are No Substitute and thus not acceptable for the DVR. The OS shall reside in Flash to minimize possible impact of hard drive failure.

2. The DVR shall be offered in a minimum of four (4) configurations, allowing the Owner a choice of:
    Number (up to 2 internal), size, and style (IDE) of Hard Drive (HD) for the storage of up to 500 GB of video, audio, alarm and motion events and text insertion data.
    The DVR can be ordered to use either video standard and operate on either 115 VAC or 230 VAC.

3. The DVR shall be engineered for durability and scalability, and be of a rugged, modular design, suited for desktop installation or sitting on a shelf in a rack-mount installation.

4. Up to sixteen (16) cameras can be connected to an HRDVS16 DVR; up to eight (8) cameras to an HRDSV8 DVR, up to four (4) cameras to an HRDVS4 DVR, and one camera to the HRDVS1. The cameras must be of the same standard: either NTSC or PAL, not both at once. Full front panel control will be available, including but not limited to, camera display buttons, search buttons and menu access.

5. The DVR shall be set to default record in a continuous (circular buffer) mode and shall be capable of timelapse and event mode partitioning on each installed drive.

6. The DVR shall offer 720 x 480 NTSC, 720 x 576 PAL resolutions.

7. The HRDVS16, HRDVS8 and HRDVS4 DVRs shall be available with maximum system update rates of 15 fps NTSC and 12.5 fps PAL, recorded over 16, 8, and 4 cameras respectively, aggregate.

8. In event mode, the HRDVS16, HRDVS8, and HRDVS4 DVRs can be set to record at a maximum update rate of 10 fps NTSC and PAL.

9. The HRDVS1 DVR can be set to record at a maximum update rate of 60 fps NTSC or 50 fps PAL in timelapse mode.

10. A minimum of nine (9) video compression settings shall be available (1–10, 1–15, 1–20, 1–25, 1–30, 1–35, 1–40, 1–45, 1–50) with 1–10 being the highest quality lowest compression (duration of video storage is shorter) and 1–50 being the lowest quality most compression (duration of video storage is longer). The quality settings shall be operator-defined for recording.

11. The DVR shall offer proprietary, long-term, digital storage for recorded Video, Audio, and Data. The actual duration of the video archive will depend on unit settings. Software for operating the unit shall report an estimate of the length of the video archive for each connected HD in an easily grasped unit such as 98% free as well as how the HD is proportioned for time-lapse and event usage.

12. For data handling, the DVR shall have the capability to monitor, record, retrieve, search, and filter data obtained from Asynchronous ASCII connected devices such as Point-Of-Sale (POS) electronic cash registers and Automatic Teller Machines (ATMs) or a system capable of providing an Asynchronous ASCII data stream from a printer or similar data port. The messages from these devices shall be treated as events, with the option of logging the occurrence of a message, or of having it trigger an alarm. A search engine for data shall be standard, allowing operators to search and review recorded data and video streams associated with the time, date, port number, and content from which the data is obtained. Support for data handling includes: the manufacturer's multi-port protocol interface translator connected to a single serial port on the DVR, allowing for up to four separate data sources, with each data stream displayed as an individual window within the RAS software.

13. The DVR shall support at a minimum, the following simultaneous capabilities:
    a. Live Video display, remote video display and playback, local recording, local video and data recording.
    b. The remote operations are limited to one (1) remote connection.

14. The DVR shall provide an interface for onsite operation without a computer or additional software. The DVR software interface is displayed on a NTSC/PAL monitor connected directly to the DVR. The embedded OS must enable onsite operators to manage video settings for each camera and all the basic system configurations. The embedded OS must start automatically and switch into record mode when the DVR is powered if configured to record or if automatic recording is enabled. The functions shall include, but not necessarily be limited to, the following:
    a. Basic system setup functions such as configuring network settings, including the DVR's IP address
    b. Camera set-up, including: camera name, camera title overlay position, frame rate, image quality and setting up motion zones
    c. Configure the system clock
    d. Review system log
    e. Monitor live video, audio, and data
    f. View recorded video, and data, and listen to recorded audio
    g. Copy a video clip to the local archive HD (model dependent)
    h. Automatic switch to live camera on alarm

15. Onsite operation of the local user interface shall include the ability to monitor Live video and play back Recorded video from up to sixteen (16) composite BNC Video In connectors on an HRDVS16 (eight (8) on an HRDsV8, four (4) on an HRDVS4, and 1 on an HRDVS1) and one (1) RCA Audio-In jack. The operator shall have the ability to arm recording based on schedules. Record schedules are based on a calendar. Playback shall provide selectable, VCR-like controls, such as Play, variable speed forward and reverse.

16. The local user interface shall feature two (2) levels of password protected security:
    a. Administrator
    b. User

17. All physical connections shall be made directly to the DVR, without the need for additional hardware.

18. The DVR shall provide BNC composite video inputs, sixteen (16), eight (8), four (4), or one (1) depending on the model. On operator command, each input must have the ability to auto-detect camera inputs, detecting whether the input is color or monochrome. When a camera input is removed, the DVR will automatically generate a video loss specific for that camera input.

19. The DVR must include one (1) BNC composite monitor output used as a primary or sequential real-time switcher.

20. The DVR must be equipped with one (1), audio channel that offers operators the ability to monitor and record audio streams. The audio channel connects to an amplifier and must be synchronized with the video and data streams.

21. The DVR shall include four (4) EIA-RS-232 Async text insertion events, capable of up to 40 characters/line, selectable (1-10 lines) per camera.

22. The HRDV16 DVR shall include two (2) alarm/control inputs on a 6-pin terminal block, operator configurable to NO/NC contacts.

23. The DVR shall also include one (1) PCMCIA card slot, which shall support 10/100BaseT network interface or PSTN modem

24. The DVR shall be powered by either 115 VAC or 230 VAC, 60/50 Hz input, 125 Watts, and shall automatically select the correct supply.

25. The DVR shall have the ability to communicate with a designated PC, using a serial port, a telephone connection or network connection.

26. The DVR shall automatically adjust for Daylight Savings Time.

C. The Remote Access Software (RAS) shall be included with the DVR and shall include, as a minimum, the following features/functions/specifications.

1. The RAS software shall be a workstation/server based administration tool that allows remote connection to any DVR in the network via an optional Ethernet connection. Upon connection, most functions and controls available to an operator at the DVR are available remotely. This includes the ability to monitor video, replay recorded video, download recorded video, and perform system configuration.

2. The RAS software shall be Windows based, and must be compatible with Microsoft® Windows 2000, Service Pack 2 or higher, Windows XP Professional, Windows NT 4.0, Service Pack 6a or higher, and Windows 98, 2nd edition. The RAS software shall provide a user-friendly Graphical User Interface (GUI).

3. The RAS software shall be available in the following languages, operator-selectable: English, French, Spanish, Dutch, and Portuguese.

4. In addition to playback controls, the RAS software controls allow the operator to perform:
    a. Remote system configuration
    b. Remote monitoring of any DVR in the network
    c. Extracting video from the local unit for a fraud investigation being completed in another location
    d. Creating and running reports without interrupting recording at the DVR
    e. Archiving a video clip or individual image to the archive device in the DVR or to a connected PC
    f. Printing a stored BMP or JPEG image file directly from RAS
    g. Authenticating images
    h. Upgrading firmware without disturbing system settings
    i. Audio support for live monitoring
    j. Multiple playback speeds, user-configurable

D. The RAS Viewer software shall allow:

1. The user to observe and monitor live or recorded video, audio and data from any HRDVS DVR, simultaneous with recording to the DVR HD.

2. The viewer software shall have the ability to remotely connect to any one HRDVS DVR at a time via Ethernet network or modem connection. The software shall allow listing of a minimum of sixteen (16) DVRs.

3. Single remote camera view, user selectable, and auto sequencing of cameras when two or more cameras are enabled.

4. Images to be moved from a DVR to the local PC in either still or video formats.

5. Capture of images in JPEG or BMP format. The operator shall have the ability to change the default file name and the folder destination. The user shall have the ability to view and print JPEG or BMP images using any bitmap reading software (for example, Corel *Paint Studio,* Adobe *Photoshop*, Microsoft *Paintbrush*). The user must also be able to copy/paste or import images into e-mail, word processing, or presentation applications.

6. The viewer software shall have the ability to display of video clips with transaction text data if available. The text display can be turned on or off by the user.

7. The user shall have the ability to search and retrieve video clips based on text parameters, including time, date, specific text string, numerical amount, arithmetic functions such as $<$, $>$, or $=$.

8. The viewer software shall have the ability to create and run reports without stopping recording at the DVR.

9. The viewer software shall have the ability to update firmware from the PC to the HRDVS DVR.

10. The viewer software shall have the ability to download previously saved configuration file from the PC to the HRDVS DVR.

11. Playback controls shall allow the operator to:
    a. Go to previous clip
    b. Play reverse and fast reverse
    c. Stop playback
    d. Play forward in real time
    e. Play fast forward
    f. Go to next clip
    g. View next or previous single image
    h. Search through clips from all camera inputs
    i. Freeze or unfreeze live video
    j. Enable or disable recording to the HRDVS DVR
    k. Archive either a whole video clip or an individual image to an archive device in the HRDVS DVR

12. The viewer software shall be able to copy live or recorded video into a "clip". Clips shall allow the user to view portions of video without having to connect to a site, retrieve video for review at a later time, and store and/or copy video on other computers. The software shall allow the operator to specify folders for storage of clips.

13. The viewer software shall have the ability to play back video clips recorded directly on the PC running.

14. The viewer software shall allow an operator, while connected to the remote DVR, to listen to live audio.

15. The viewer software shall include the ability to monitor and/or search up to four (4) streams of POS or ATM generated data, such as from cash registers. The four streams must be viewed in separate viewing windows. 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 of the event.

16. The viewer software shall include an advanced search tool that allows the operator to search for events, logs, and data strings and instantly review the associated video, audio, and data. The search shall be either by event (alarm, text, motion), data, time/date, first recorded clip, or last recorded clip.

17. The viewer software must have the ability to configure the DVR for one (1) auxiliary output, to remotely control onsite devices such as lights, door locks, warning sirens, or gates.

18. The viewer software shall allow the operator to set motion detection parameters, such as region-of-interest, size, and direction on a per-camera basis. On the HRDVS the following motion detection features/parameters must be available:
    a. Enable: Enables motion detection on selected camera.
    b. Sensitivity: Adjusts the sensitivity to motion.
    c. Motion Preview: On the local DVR allows the operator to see the motion that the DVR will detect. The color of objects changes as they move to indicate the level of detection that would trigger an alarm or log entry.
    d. Alarm: When enabled, the motion will trigger an alarm.
    e. Edit motion mask: Enables the "show gridlines" button.
    f. Show gridlines: Enables a grid overlaying the video image to display masking. Masking allows the operator to "hide" areas of no concern from motion detection.
    g. Clear mask: Removes all masking from the image area.
    h. Fill mask: Adds masking to entire image area. Useful as a first step when most of the image area needs masking.
    i. Undo: Cancels the last mouse click.

19. The viewer software shall have the ability to save clips to a PC for the purpose of burning an Evidence CD on a PC with CD burning capability.

20. The viewer software shall have the ability to automatically poll all registered HRDVS DVR sites once per day. The software shall log the operational and alarm status of sites that are contacted in a log file for later analysis.

21. The viewer software shall have the ability to enable or disable bandwidth throttle on the remote DVR to a maximum of 250 KBps. When bandwidth throttle is disabled the DVR will use the bandwidth as required.

22. Utilizing the viewer software, the operator shall have the ability to view a DVR's storage statistics. The statistics must include, but not necessarily be limited to, the following:
    a. The amount of storage in use for each connected HD, shown as a percentage of the storage amount
    b. The amount of time-lapse and event usage for each HD

23. The viewer software must have the ability to "trace" events that could compromise the effectiveness of the HRDVS DVR.

24. The view operator shall have the ability to call up an information screen report on the DVR's hardware. The screen must include the serial number of the DVR, the version of software running on the DVR, and internal hardware used by the DVR.

25. The view operator shall have the ability to initiate a soft reset of the DVR remotely.

2.03 MECHANICAL SPECIFICATIONS

A. The DVR must have the following mechanical specifications:

1. Dimensions (H x W x D) .... 7.75" × 5.0" × 11.375"
   (19.69 cm × 12.7 cm × 28.89 cm)

2. Weight: .... 10 lb (4.54 kg).

2.04 ELECTRICAL POWER REQUIREMENTS

B. The DVR must have the following electrical specifications:

1. Power Requirement .... 115–230 VAC, 60–50 Hz

2. Auto Sensing .... 115V/230V Operation

2.05 ENVIRONMENTAL CONDITIONS

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

1. Operating Temperature .... 40° to 100°F (4° to 37°C) non-condensing

2. Emissions .... FCC: Part 15, Class B,
   CE: EN61000-6-3:2001, (Class B)
   CE: EN61000-3-2:2000 (Harmonics)

3. Immunity   CE: EN50130-4, with use of an
                                               Uninterruptible Power Supply (UPS)

4. Safety   UL: 1950, CAN/CSA-C22.2 No. 60950-00,
                                               CE: EN60950:2000

PART 3 – EXECUTION

3.01   EXAMINATION

A. Submission of a proposal confirms that the contract documents and site conditions are accepted without qualifications unless exceptions are specifically noted.

B. 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.

C. The HRDVS Digital Video Recorder must be inspected before installation, and shall be free of any cosmetic defects or damage.

3.02   PREPARATION

A. Prior to installation, the HRDVS Digital Video Recorder shall be configured and tested in accordance with the manufacturer's instructions.

3.03   INSTALLATION

A. The HRDVS Digital Video Recorder must be installed, programmed, and tested in accordance with the manufacturer's instructions.

1. In order to ensure a complete, functional HRDVS Digital Video Recorder, for bidding purposes, where information is not available from the Owner upon request, the worst-case condition shall be assumed.

2. Interfaces shall be coordinated with the Owner's representative, where appropriate.

3. All necessary black boxes, racks, connectors, supports, conduit, cable, and wire must be furnished and installed to provide a complete and reliable HRDVS Digital Video Recorder installation. Exact location of all boxes, conduit, and wiring runs shall be presented to the Owner for approval in advance of any installation.

4. 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.

3.04   TESTING AND CERTIFICATION

A. The Contractor shall demonstrate the functionality of the HRDVS Digital Video Recorder upon completion of installation, documenting the result of all tests and providing these results to the Owner. The HRDVS Digital Video Recorder shall be tested in accordance with the following:

1. The Contractor shall conduct a complete inspection and test of all installed HRDVS Digital Video Recorder equipment. This includes testing and verifying operation with connected equipment.

2. 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.

3. The testing and certification shall take place as follows:
    a.   The HRDVS Digital Video Recorder shall be tested in conjunction with the manufacturer's representative.
    b.   All deficiencies noted in the above test shall be corrected.
    c.   Test results shall be submitted to the consultant or Owner's representative.
    d.   The test and correction of any deficiencies shall be witnessed by the owner's representative, and note.
    e.   The Owner's representative shall accept the system.
    f.   The system test shall be witnessed by the Authority Having Jurisdiction. Any deficiencies noted during the testing must be corrected.

4. A letter of certification shall be provided to indicate that the tests have been performed, and all devices are operational.

END OF SECTION

<u>Brief Specification</u>

The HRDVS Digital Video Recorder shall be a powerful, intelligent digital storage management tool that combines Video, Audio, and Data capabilities in a single Recorder Unit (DVR). The system must be designed to record, search, and transmit Video, Audio, and Data transactions, live and pre- and post-event. The system shall be compatible with most existing and new video equipment and incorporate into TCP/IP or dialup networks, and shall allow the user to regulate the data rate, using a bandwidth throttle. The system's DVR must be offered in a minimum of four (4) standard configurations, allowing the choice of length of time for storage of video and video capture rate (ips). The same DVR must be able to be ordered in either NTSC or PAL utilizing the identical software, at either 120 VAC or 230 VAC. The DVR shall offer long-term digital storage for recorded Video, Audio, and Data. The DVR must be available in 1-, 4-, 8- and 16-channel versions. The 16-, 8-, and 4-channel DVRs shall be available with maximum system record rates of 15 fields per second NTSC (12.5 in PAL) in timelapse mode. In event mode the 16-, 8-, and 4-channel DVRs shall be available with maximum system record rates of 10 fields per second NTSC or PAL. The single-channel DVR shall be available with maximum system record rates of 60 fields per second NTSC (50 fps PAL) in both timelapse and event modes. The DVR shall include data handling capabilities that enable connection to Point-Of-Sale (POS) devices such as cash registers and Automatic Teller Machine's (ATMs) for monitoring, recording, and retrieval of critical business data. The DVR must be equipped with one (1) independent, audio channel that offers users the ability to monitor and record synchronized audio stream. The DVR shall include, as standard, a local front panel control interface to enable the user to provide onsite video management capabilities and full system and camera configurations. All physical connections shall be made directly to the DVR. Sixteen (16), eight (8), four (4), or one (1) BNC (model dependent) composite video inputs shall be provided. The input BNCs shall be auto-detected, based on operator command. Each input must have the ability to auto-detect camera inputs, detecting whether the input is color or monochrome and automatically display video loss specific for that camera input. One (1) BNC composite monitor output used as a primary or sequential real-time switcher shall be present. The DVR shall include two (2) alarm/control inputs, four (4) EIA-RS-232 Async text insertion ports, one (1) PCMCIA card slot, to support 10/100 BaseT Ethernet internal network interface or PCMCIA PSTN modem connection. The viewer 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 HRDVS DVRs, and must have the ability to observe and monitor, live or recorded video, audio and data from any DVR. The operator shall be able to dynamically select and position individual cameras within the display layout, either during a live or retrieval session, within the viewer software. The viewer software shall be able to be displayed in full screen or reduced size to allow operating of different applications while still monitoring live video. During a retrieval session, the remote operator must have the ability to access the recordings from many cameras, simultaneously. The user shall also have the ability to connect to a remote site. One (1) remote uses shall be able to connect to the same remote site simultaneously to observe live video and/or recorded information. The viewer software shall be able to copy live or recorded video into a "clip"; clips shall allow the user to view portions of video without having to connect to a site, display video for review at a later time, and store and/or copy video on other computers. Separate software must be available that can play back clips on personal computers that are not part of the HRDVS Digital Video Recorder. This software shall

use standard Windows techniques to install to a workstation. The user shall have the ability to view and print bitmaps using any bitmap reading software (e.g. Corel *Paint Studio*, Adobe *PhotoShop*, Microsoft *Paintbrush*, etc.), and must be able to copy/paste or import images into e-mail, word processing, or presentation applications. The viewer software shall allow an operator to listen to live audio on the operator's PC when connected to the remote site. The software shall also include the ability to monitor and/or search up to four (4) streams of POS or ATM generated data, such as from cash registers. The four streams must be viewed in separate viewing windows. The software shall be able to configure the remote DVR for advanced video motion detection, allowing the operator to set motion detection parameters, such as region-of-interest, and motion intensity on a per-camera basis. The HRDVS Digital Video Recorder manufacturer must be the world's largest and most experienced manufacturer of electronic security systems, with over seventy years of experience in the security industry, and the HRDVS Digital Video Recorder 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 HRDVS Digital Video Recorder must be assembled in the U.S.A., and the manufacturer shall provide 24/7 technical assistance and support via a toll-free telephone number at no extra charge. The system must be a Honeywell Video Systems HRDVS Digital Video Recorder (HRDVS16, HRDSV8, HRDVS4, HRDVS1).