**SECTION 28 23 13**

**VIDEO SURVEILLANCE CONTROL AND MANAGEMENT SYSTESM**

**Advanced Technology Video ATVision IP VMS Server Software**

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*This guide specification is intended for use by the design/construction professional and any user of Advanced Technology Video (ATV) products to assist in developing project specifications for security and video surveillance systems.*

*Notes in Italics, such as this one, are explanatory and intended to guide the design professional/specifier and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions.*

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1. **GENERAL**
	1. SUMMARY
		1. Section includes Video Surveillance Control and Management Systems (VMS).
		2. Related Sections:
			1. Section 28 23 16 – Video Surveillance Monitoring and Supervisory Interfaces
			2. Section 28 23 19 – Digital Video Recorders and Analog Recording Devices.
			3. Section 28 23 23 – Video Surveillance Systems Infrastructure
			4. Section 28 23 29 – Video Surveillance Remote Devices and Sensors.
	2. SYSTEM DESCRIPTION
		1. Description: Video surveillance and monitoring at points as indicated on Drawings.
			1. ATVision IP VMS Server Software
		2. Performance Requirements
			1. Networked video management system (VMS) hosted on PC’s and servers with Microsoft Windows operating system.
			2. Support all leading industry-standard compression formats, including Motion JPEG, MPEG-4 & H.264.
			3. ONVIF compliant for network video interoperability.
			4. Connect and record up to 64 independent network IP cameras, or view and manage an unlimited number of network video recorders (NVR).
			5. Full featured application with live monitoring, search and playback retrieval, alarm monitoring and system management.
			6. Support up to 7 monitors for live, playback and status
	3. DEFINITIONS
		1. H.264 (also known as MPEG4 Part 10): a powerful encoding format that compresses video much more effectively than older (MPEG4) standards. Recording video in H.264 format requires approximately 30% less storage than traditional MPEG-4.
		2. PTZ: refers to a movable camera that has the ability to pan left and right, tilt up and down, and zoom or magnify a scene.
	4. SUBMITTALS
		1. Submit under provisions of Section 01 33 00 - Submittal procedures.
		2. Shop Drawings: Indicate electrical characteristics and connection requirements, including system wiring diagram.
		3. Product Data: Submit catalog data showing electrical characteristics and connection requirements for each component.
	5. CLOSEOUT SUBMITTALS
		1. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.
		2. Project Record Documents: Record actual locations of cameras and routing of cabling.
		3. Operation and Maintenance Data: Submit instructions for operating system and performing routine trouble shooting procedures.
	6. QUALIFICATIONS
		1. Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
		2. Supplier: Authorized distributor of specified manufacturer with minimum 5 years documented experience.
		3. Installer: Authorized installer of specified manufacturer with 5 years documented experience and with service
	7. ENVIRONMENTAL REQUIREMENTS
		1. Section 01 60 00 - Product Requirements.
		2. Deliver materials in manufacturer’s original, unopened, undamaged packaging; and unharmed original identification labels.
		3. Protect store materials from environmental and temperature conditions following manufacturer’s instructions.
		4. Handle and operate products and systems according to manufacturer’s instructions for installation, environmental, mechanical or electrical requirements and within thermal stress limits.
		5. Ensure conformance with operating limitations according to applicable data sheet.
	8. FIELD MEASUREMENTS
		1. Verify field measurements prior to fabrication.
	9. WARRANTY
		1. Provide manufacturer’s warranty covering [3] years for CCTV products to repair or replace defective equipment.
		2. Exchanges available for product failures.
	10. MAINTENANCE SERVICE
		1. Section 01 70 00 - Execution and Closeout Requirements: Maintenance service.
		2. Make ordering of new equipment for expansions, replacements, and spare parts available to dealers and end users.
		3. Provide factory direct technical support via phone or e-mail, or any time via Web.
			1. Provide toll-free numbers to contact customer support.
		4. Provide on-site training and on-line training via web.
2. PRODUCTS
	1. VIDEO MANAGEMENT SOFTWARE
		1. Manufacturers:
			1. Advanced Technology Video
			2. Substitutions: Section 01 60 00 - Product Requirements: Not Permitted.
		2. ATVision IP VMS Server Software
		3. General Requirements:
			1. The networked Video Management System (VMS) server software shall consist of the following components:
				1. No license fees
				2. Free lifetime upgrades
				3. Hosted on PC’s and servers with Microsoft Windows operating system.
				4. Support all leading industry-standard compression formats, including Motion JPEG, MPEG-4 & H.264.
				5. ONVIF compliant for network video interoperability.
				6. Connect and record up to 64 independent network IP cameras, or view and manage up to 64 independent network video recorders (NVR).
				7. Full featured application with live monitoring, search and playback retrieval, alarm monitoring and system management.
				8. Support up to 7 monitors for live, playback and status.
		4. The VMS Server shall operate in a Microsoft Windows environment.
		5. The VMS shall capture video, alarm, audio and associated data from single or multiple IP cameras or recorders.
		6. The VMS Server shall simultaneously handle recording, archiving, retrieving, playback and live distribution of video and audio. The software shall operate in a continuous recording mode or according to a programmed time/date schedule. Recording functions may also be triggered by events or motion detection.
		7. Live and archived video/audio data shall be available to authorized users at anytime over local or wide area network connections.
		8. The VMS Server shall be capable of exporting video clips to CD/DVD’s without third party software. All video clips shall include an executable player that verifies no tampering has occurred and can be played on standard PC’s.
		9. The VMS Server shall be capable of operating with non-ATV model IP cameras through the ONVIF protocol, Profile S specification.
		10. The VMS Server shall be licensed by Advanced Technology Video to the end user at no cost and without annual maintenance fees. Lifetime server software upgrades shall be included at no cost as well.
		11. The following are the minimum system and hardware requirements for the VMS:
			1. Operating System: Microsoft Windows 7 or 8, Professional/Enterprise/Ultimate
			2. CPU: Intel Core i7
			3. RAM: 4GB
			4. Ethernet Connection: 1Gbps
			5. Graphics Card: Gaming rated, with 1GB at 1080p for single monitor; 2GB at 1080p for multiple monitors
			6. Hard Disk Drive (HDD): 7200RPM and 64MB cache; 1 separate HDD for operating system and software; and 1 (2TB) HDD for recording
		12. The VMS Server shall be capable of recording up to 5 mega-pixel resolution video images at up to 20 frames per second (fps).
		13. The VMS Server shall provide the system administrator with the tools to monitor the overall system health, individual camera status, video archive usage and status plus other elements of every recorder connected. This tool will also be used to perform individual or group updates of the VMS software on selected recorders.
		14. The VMS Server shall be capable of configuring multiple hard disk drives (HDD) and assigning devices to each HDD, and shall have unlimited recording HDD size.
		15. The VMS Server shall provide configurable individual camera parameters for, but not limited to, the following items:
			1. Camera Name
			2. IP address
			3. Video resolution
			4. Compression type
			5. Video stream
			6. Video Quality
			7. Time Stamp
			8. Motion detection alert icons
		16. The VMS Server shall be able to program notification to one (1) or more administrator configured e-mail addresses if any of the following events occur and the server has been configured to provide the events:
			1. Alarm events
			2. Server Connection Lost
			3. Camera Offline
			4. Volume Offline
		17. The VMS Server shall provide control of Pan-Tilt-Zoom (PTZ) cameras via screen buttons or an attached USB joystick.
		18. The VMS shall provide an interactive mapping interface for displaying device placement within a site or facility.
		19. The VMS Server shall be capable of displaying up to sixty-four (64) live cameras concurrently per monitor, and shall be capable of handling up to four (4) “live” monitor displays. Each monitor shall have the ability of customized viewing layouts.
		20. The VMS Server shall provide various recording modes:
			1. Manual
			2. Weekly Schedule
			3. Special Day Schedule
			4. Event
			5. Event-relay
		21. The VMS Server shall provide various search modes:
			1. Time-Lapse
			2. Event
			3. Favorite
3. EXECUTION
	1. EXISTING WORK
		1. Disconnect and remove abandoned video surveillance equipment.
		2. Extend existing video surveillance installations using materials and methods compatible with existing installations as specified.
		3. Clean and repair existing video surveillance equipment remaining or to be reinstalled.
	2. EXAMINATION
		1. Examine areas to receive devices and notify adverse conditions affecting installation or subsequent operation.
		2. Do not begin installation until unacceptable conditions are corrected.
		3. Non-compliance with security instructions may result in loss of data.
		4. Ensure environmental, mechanical and electrical requirements are met.
	3. PREPARATION
		1. Protect devices from damage during construction.
	4. INSTALLATION
		1. Install devices in accordance with manufacturer’s instruction at locations indicated on the floor plan drawings.
		2. Perform installation with qualified service personnel.
		3. Install devices in accordance with the National Electrical Code or applicable local codes.
		4. Ensure selected location is secure and offers protection from accidental damage.
			1. Ground and bond video surveillance equipment in accordance with Section 26 05 26.
		5. Location must provide reasonable temperature and humidity conditions, free from sources of electrical and electromagnetic interference.
	5. FIELD QUALITY CONTROL
		1. Test proper operation of all video system devices.
			1. Communication between VMS and recorders or cameras.
			2. Independent operation of alarms, and cameras.
		2. Test proper operation of all VMS modules.
		3. Determine and report all problems to the manufacturer’s customer service department.
	6. MANUFACTURER'S FIELD SERVICES
		1. Section 01 40 00 - Quality Requirements: Manufacturer's field services.
		2. Furnish manufacturer’s field representative to supervise final wiring connections and system adjustments.
	7. ADJUSTING
		1. Section 01 70 00 - Execution and Closeout Requirements: Requirements for starting and adjusting.
		2. Make proper adjustment to video system devices for correct operation in accordance with manufacturer’s instructions.
		3. Make any adjustment of camera settings to comply with specific customer’s need.
	8. DEMONSTRATION AND TRAINING
		1. Demonstrate at final inspection that video management system and devices function properly.

END OF SECTION