A&E Specification

O4D6M IP Camera

Division 28	Electronic Safety and Security
Section 28 00 00	Electronic Safety and Security
Section 28 20 00	Electronic Surveillance
Section 28 21 00	Surveillance Cameras
Section 28 23 00	IP Cameras

Notes to Security System Specifiers - This A&E specification is written according to Construction Specifications Institute (CSI) 3-Part Format, based on MasterFormat™ (2016 Edition) and The Project Resource Manual – CSI Manual of Practice. CSI MasterFormat 2016 incorporates numerous significant changes affecting electronic safety and security. This document is written to provide flexibility in using either format, although adoption of MasterFormat 2016 is encouraged. All trademarks are properties of their respective owners.

Part 1 General

1.1. Summary of Requirements

A. **O4D6M Network Camera**

1. A 4 megapixel dome IP camera.

B. **Related Requirements**

1.	Section 28 05 00	Common Work Results for Electronic Safety and Security
2.	Section 28 05 19.11	Digital Video Recorders
3.	Section 28 05 19.13	Hybrid Digital Video Recorders
4.	Section 28 05 19.15	Network Video Recorders
5.	Section 28 23 00	Video Surveillance
6.	Section 28 23 13	Digital Video Recorders and Analog Recording Devices

1.2. References

A. **Abbreviations**

1.	AVI	Audio Video Interleave (video file format)
2.	DDNS	Dynamic Domain Name Server
3.	DHCP	Dynamic Host Configuration Protocol
4.	DNS	Domain Name Server
5.	FTP	File Transfer Protocol
6.	GUI	Graphical User Interface
7.	HTTP	Hypertext Transfer Protocol
8.	HTTPS	Secure HTTP
9.	ICMP	Internet Control Message Protocol
10.	IGMP	Internet Group Management Protocol
11.	IP	Internet Protocol
12.	JPEG	Joint Photographic Experts Group

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200 New Highway, Amityville NY 11701
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13. MPEG   Moving Pictures Experts Group
14. NAS   Network Attached Storage
15. NIC   Network Interface Controller
16. NTP   Network Time Protocol over Ethernet
17. NVR   Network Video Recorder
18. OSD   On-screen Display
19. PoE   Power over Ethernet
20. PPPoE   Point-to-Point Protocol over Ethernet
21. P2P   Peer-to-Peer
22. PTZ   Pan Tilt Zoom
23. QoS   Quality of Service
24. RTP   Real-Time Transport Protocol
25. RTSP   Real-Time Streaming Protocol
26. SD Card   Secure Digital Flash Memory Card
27. SMTP   Simple Mail Transfer Protocol
28. TCP   Transmission Control Protocol
29. UDP   User Datagram Protocol
30. UPnP   Universal Plug and Play
31. VMS   Video Management System
32. ESD   Electrostatic discharge
33. MSIE   Microsoft Internet Explorer
34. HDD   Hard Disk Drive
35. EZ   Easy
36. FF   Fast Forward
37. FR   Fast Reverse
38. DAS   Direct Attached Storage
39. LAN   Local Area Network
40. WAN   Wide Area Network

1.3. Certifications, Standards and Ratings

A. Reference Standards

1. Networking
    a. IEEE – 802.3 Ethernet Standards
2. Video
    a. ISO/IEC 14496 Standards for MPEG-4
    b. ITU-T Recommendation H.264/H.265
3. ONVIF Profile S

1.4. Submittals

A. Product Data

1. Provide manufacturer's datasheets in printed or electronic form.
2. Provide manufacturer's Installation and operating manuals/guides.

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3. Provide manufacturer's warranty statement.

1.5. Qualifications

A. Manufacturer
1. Company specializing in manufacturing products at least ten years experience.

C. Supplier
1. Authorized distributor of specified manufacturer with at least 5 years.

D. Installer
1. Authorized installer of specified manufacturer with a least 5 years experience.

1.6. Delivery, Storage and Handling

A. Delivery
1. Deliver materials in original, unopened and undamaged packaging in accordance with manufacturer's instructions.

E. Storage
1. Store and guard materials from environmental and temperature conditions in accordance with manufacturer's instructions.

F. Handling
1. Handle and operate products and systems in accordance with manufacturer's instructions.

1.7. Warranty

A. Warranty Period
1. Manufacturer shall warranty camera for a period of [5] years for the repair or replacement of defective equipment.

1.8. Certifications

B. Certification Types
1. UL
2. IK10
3. IP67
4. CE (EMC/LVD)
5. FCC, Class A
6. RoHS

1.9. Tech Support

A. Support
1. Technical support shall be based in North America.
2. Technical support support shall be via email or toll-free phone number.
3. Technical support shall be available weekdays from 6 a.m. to 6 p.m. EST.

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Part 2 Product

2.1. Manufacturer

A. Manufacturer

1. Speco Technologies
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   Amityville, NY 11701
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G. Product

1. O4D6M IP Camera

H. Product Description

1. Develop a 4 Megapixel IP camera in a (white) dome style housing with a 3.3-12mm motorized lens, H.264/H.265/MJPEG encoding, and 2-way audio.

2.2. Product Description

A. General

1. All equipment and materials used shall be standard components, regularly manufactured, regularly utilized in the manufacturer's system.
2. All systems and components shall have been thoroughly tested and proven in actual use.
3. All systems and components shall be provided with the availability of a toll free technical support phone number from the manufacturer. The phone number shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge.
4. All systems and components shall be provided with an explicit manufacturer warranty.

B. Description

1. Camera shall meet the requirements of business, government and general security surveillance applications.
2. Camera shall offer remote network connectivity to a properly specified PC computer that allows transmission of video and control data over the Ethernet network.
3. Camera shall offer a GUI incorporating video display areas, toolbars and control palettes.
4. Camera shall be fitted with a motorized lens having a focal range of 3.3mm-12mm The F number of the lens shall be F1.2.
5. Camera shall employ a high profile H.264, H.265 and MJPEG compression algorithm in the video digitizing scheme.

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6. The camera shall provide full digital video surveillance over a standard 100Base-T network.
7. Camera shall continually capture digital video streams. Each stream of video and audio data shall have the capability of being transmitted to a recording device, a viewer client and may be distributed simultaneously across the network.
8. Camera shall provide a GUI for viewing live video with audio with controls to zoom, focus, select main or sub streams, go full screen mode and real-time image adjustments controls.
9. Camera shall support exporting of video and audio clips.
10. Camera shall offer edge recording with pre and post-alarm recording to an SD card, to a remote location via FTP, or to a NAS device. The camera shall support snapshots to any of the fore mentioned storage media.
11. Camera shall have a GUI to search and playback recorded video with playback controls to play, stop, reverse, fast reverse and fast forward video.
12. The camera shall have a GUI to support the following functionality: Recording schedule, SD card setup, FTP location setup, NAS drive setup.
13. The video shall also be capable of alarm notification based on motion via a built-in utility to configure motion detection of objects in the individual camera scenes. Each camera can be customized for motion area and sensitivity using grid blocks through the camera's setup tool. The motion events shall be transmitted to authorized users via an email notification utility.
14. The video shall also have selectable digital zoom on any camera in live view.
15. Camera shall also have full LAN, WAN and Internet connection capability. For live viewing of video at highest quality, the camera will require a broadband internet connection of a minimum 5 Mbps using either a static or dynamic type IP address. When using a dynamic IP address, DDNS shall be an available feature to track the IP address via a customized URL. The camera shall support TCP/IP and DHCP protocol.
16. Camera shall support user selectable resolution, frame rate, encoding, bit rate, CBR or VBR, video quality and GOP size set from within the GUI of the IP cameras.
17. Camera shall implement a Digital Signature for video authentication. It is a standard authentication that is based on a 128-bit message used to verify data integrity
18. Camera shall offer a full multi-user authorization logon function. This function shall offer 3 levels of authorization based on functionality. There shall be an Administrator, User and Guest level offered. Anyone with a correct password shall log into the camera.
19. The use of dialog messages shall be provided in a comprehensive menu structure.
20. Operation of the camera shall be facilitated by the use of a web browser that can be Google Chrome, MS Internet Explorer, Apple Safari or Mozilla Firefox.
21. Camera shall be configurable for several foreign languages, other than English.
22. The Camera shall support alarm in and relay out functions. The alarm events shall be transmitted to users via a built-in email utility.
23. The camera shall contain a lights to indicate status of PoE and network connectivity.

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24. The camera shall be powered by PoE or a 12VDC power supply.
25. The camera shall make available a recessed button for the purpose of applying factory default to the camera's settings.
26. Camera shall support exporting of video in AVI format.
27. Camera shall support exporting video to the viewing client's local storage.
28. Camera shall meet or exceed the following design and performance specifications
29. Camera shall support multi-time zone and DST.
30. Camera shall support Smart Analytics to include object removal, abnormality, line crossing, and area intrusion.
31. Camera shall support plug-n-play via Speco's free P2P service.
32. Camera shall support DDNS capability via Speco's free DDNS service.
33. Camera shall be auto-discoverable by Speco SecureGuard servers, Speco NVRs and ONVIF compatible third party VMS and recorders.
34. Camera shall make available system information with at least the following camera information: Model, firmware version, ONVIF version, serial number, MAC address, Speco's support phone number (1-800-645-5516) and email address (techsupport@specotech.com).
35. Camera shall support privacy masking.
36. Camera shall support OSD functionality and overlay the stream name, current date and time. When in playback mode, display the recorded date and time.
37. Camera shall allow changing of image attributes to include the following: Brightness, contrast, saturation, sharpness, gamma.
38. Camera shall allow the image to be mirrored and flip horizontally, vertically or both.
39. Camera shall allow enable/disable of backlight and IR light.
40. Camera shall allow configuring of white balance, day/night mode.
41. Camera shall allow configuring of network parameters (i.e. IP Address, subnet mask, default gateway, primary/secondary DNS servers).
42. Camera shall make the following common network ports configurable: TCP, UDP, HTTP, HTTPS, and RTSP.
43. Camera shall allow enable/disable of DDNS service.
44. Camera shall support PPPoE Authentication.
45. Camera shall support filtering of network data by IP or MAC addresses.
46. Camera shall allow setup of SMTP (email) servers for email notifications.
47. Camera shall support port forwarding.
48. Camera shall support multicast transmission of video to a user defined multicast address and port. Multicast shall be supported separately on each available stream.
49. Camera shall support QoS for better control of bandwidth utilization within a network environment.
50. Camera GUI shall allow factory default of settings, import and export of camera settings and updating of firmware.
51. There shall be 2 x 3.5mm connectors, one to connect a microphone and the other a speaker for 2-way audio capability.

52. The Camera shall support a BNC connector and be able to output analog video for local monitoring.

C. Electrical Specification

1. Power Input   PoE or 12VDC
2. Power Supply   12.95W PoE Injector or 12VDC power supply
3. Power Consumption   ≤ 5W

D. Environmental Specification

1. Operating Temperatures   -40° to 140°F (-40° to 60°C)
2. Operating Humidity   0% to 95%, non-condensing

E. Environmental Specification

1. Dimension   5.9"D x 2.0"H
2. Weight   2.3lbs

F. Mechanical Specification

1. System
   a. Image Sensor: Progressive scan 1/3" CMOS, 4MP
   b. Lens: 3.3-12mm motorized lens, F1.2
   c. Illumination: F1.2, Color: 0 lux
   d. 3-axis Adjustment: Pan: 0°-360°, Tilt: 0°-77°, Rotate: 0°-360°
   e. Field of View: 80°-38°
   f. IR Range: 98'
   g. White Balance: Auto, Indoor, Outdoor, Manual
   h. Compensation: WDR/BLC/HLC
   i. Day/Night   IR Cut Filter
   j. Exposure Control: Digital Slow Shutter
   k. Shutter Speed: 1/25 – 1/100000s
   l. Dynamic Range: 2D/3D
2. Video
   a. Streams   3
   b. Encoding   H.264, H.265, MJPEG
   c. Resolutions   2592x1520 / 2560x1440 / 2304x1296 / 1980x1080 / 1280x720 @ 30fps
   d. Frame Rate   30 fps
   e. Bitrate   VBR, CBR
   f. Pre-record   5 seconds
   g. Post-record   5 seconds
3. Audio
   a. Inputs   1
   b. Outputs   1

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    c.   Codec   Mono G.711A/G.711U

4. Network
   a. Ethernet   1 x 10/100Mbps (RJ45)
   b. Protocol   IPv4, IPv6, TCP, UDP, RTCP, RTP, RTSP, HTTP, HTTPS, SMTP, SNMP, UPnP, FTP, DHCP, Bonjour, QoS, 802.1x, ONVIF Profile S
   c. Security   Password protection with digest authentication.

5. PTZ   N/A
6. Alarm
   a. Inputs   1
   b. Outputs   1
7. Local Surveillance
   a. Desktop Client   MSIE 11
8. Remote Surveillance
   a. Control System   Speco Technologies SecureGuard and NVRs
   b. Mobile Devices   iOS, Android
9. Local Storage   Micro SD (128GB Max)
10. External Storage   FTP, NAS

Part 3 Execution

3.1 Examination
A. Device shall be inspected for physical and cosmetic defects.
B. Package box shall include device, mounting screws, L wrench, installation and user guides on disk.

3.2 Preparation
A. ESD-sensitive parts shall be properly protected against static buildup through the use of static shielding material.
B. Package box shall contain adequate padding to prevent damage to device and parts during shipping.

3.3 Installation
A. Device shall be installed in accordance with the manufacturers' installation guide provided.
B. Device shall be installed by qualified service professionals.

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C. Device shall be installed in accordance with the National Electric Code or applicable local codes.
D. Device shall be installed in locations which adequately supports the device's environmental and electrical requirements.

3.4 Field Quality Control

A. Test for proper communication between device and supporting devices.
B. Test for proper operation of device's system software and related software programs.
C. Determine and report all problems to the manufacturers' customer service representatives.

3.5 Adjusting

A. Make all necessary adjustments to the device and supporting devices to ensure the proper operation of the device.
B. Make all necessary adjustments to the devices to satisfy end-user requirements.

3.6 Demonstration and Training

A. Perform final inspection to validate and ensure proper functioning of device.