

PART 1 - GENERAL

1.1 System description

- .1 Provide and install colour fixed dome network camera including integration to SenStar 100, configuration of Genetec (System ID : 893-167-529-355632793), licences Genetec OM-E-1C and OM-E-1FC, cables, configuring and startup.
- .2 Retain the services of "Marcomm Systems Group Inc." to provide the scope of work of this section.

1.2 Reference Standards

- .1 IEC EN60529 – International Electrotechnical Commission Degrees of protection provided by enclosures (IP Code)
- .2 IEC EN60950-1 – International Electrotechnical Commission Information technology equipment – Safety
- .3 IEC EN 61000-4-3 – International Electrotechnical Commission Radiated RF immunity
- .4 IEC EN62262 – International Electrotechnical Commission Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts
- .5 IEEE 802.3at – IEEE Standard for Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements Part Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications Amendment 3: Data Terminal Equipment (DTE) Power via the Media Dependent Interface (MDI) Enhancements
- .6 IEEE 802.3u – IEEE Standards for Local and Metropolitan Area Networks: Supplement to Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications Media Access Control (MAC) Parameters, Physical Layer, Medium Attachment Units, and Repeater for 100 Mb/s Operation, Type 100BASE-T

PART 2 - PRODUCTS

2.1 Materials

- .1 The camera case and dome must:
 - .1 measure a base diameter less than 200mm;
 - .2 measure from base to top of dome of less than 175mm excluding any mount;
 - .3 weigh less than 2.5 kg.
- .2 Environment : the camera case and dome must:
 - .1 meet or exceed IEC EN60529 IP66 dust and water resistance when mounted;
 - .2 meet or exceed IEC EN62262 IK10 impact resistance;
 - .3 have threaded openings for conduits;
 - .4 have a threaded plug to seal all unused openings;
 - .5 have set-screws to secure all conduit and plugs from inside the dome;
 - .6 have tamper resistant heads on all externally accessible screws;
 - .7 have a permanently affixed label on the interior of the unit which identifies the manufacturer, the model or assembly number, the serial number and the power requirement;
 - .8 have a permanently affixed label on the exterior of the unit which identifies the manufacturer, the model or assembly number, the serial number and the power requirement.
- .3 The camera must: be capable of continuous operation, start and operate from -40°C to 50°C and start and operate from 20% to 90% non-condensing humidity.
- .4 Interference: The camera must be certified compliant to IEC EN 61000-4-3, Radiated RF immunity.
- .5 Reliability: The camera must have an MTBF of at least 25,000 hours.
- .6 Safety: The camera must meet IEC 60950-1 or the CSA equivalent.

2.2 Operational

- .1 The camera must retain its configuration over a power cycle. The image sensor must: include automatic or remote back focus, have a minimum of 480,000 pixels (horizontal x vertical), have day (colour) and night (black and white) modes, automatic removable infrared cut filter for day/night transition, have 0.5 lux or less minimum illumination for day mode, have 0.1 lux or less minimum illumination for night mode, include Automatic Gain Control (AGC) and include extended dynamic range processing;

- .2 Camera: the camera must retain its configuration over a power cycle. The image sensor must include automatic or remote back focus, have a minimum of 480,000 pixels (horizontal x vertical), have day (colour) and night (black and white) modes, automatic removable infrared cut filter for day/night transition, have 0.5 lux or less minimum illumination for day mode, have 0.1 lux or less minimum illumination for night mode, include Automatic Gain Control (AGC) and include extended dynamic range processing.
- .3 Lens: the camera lens must have a 35° to 80° horizontal angular view varifocal lens and be approved by the manufacturer of the camera for that camera.
- .4 Video: the video encoding must support H.264 configurable I-frame frequency of at least 3 per second, support H.264 constant bit rate transmission mode, support H.264 frame rate transmission mode, support at least 3 levels of H.264 image quality and support at least 3 levels of MJPEG image quality.
- .5 The video output must include an on-screen, programmable character generation overlay capability with a minimum of 8 visible characters, support at least two simultaneous H.264 video streams at 30 frames per second with at least 480,000 pixel resolution and support at least two simultaneous video streams, one H.264 and one MJPEG at 15 frames per second with at least 480,000 pixel resolution.

2.3 Interface

- .1 Ports: The camera must interface over IPV4 TCP/IP, be able to operate on 100 Base-TX (IEEE 802.3u), connect using an RJ-45 connector and be ONVIF compliant.
- .2 Power: The camera must be a Type 1 powered device operating solely from Power over Ethernet (PoE) compliant with IEEE 802.3at Class 0, 1, 2, or 3.
- .3 Video Management System Compatibility: The camera model must be identified as "Certified" or "Supported by Design" in the Genetec Omnicast Supported Hardware camera list.

PART 3 - EXECUTION

<u>3.1 Manufacturer's Instructions</u>	.1	Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions, and datasheet.
<u>3.2 Installation</u>	.1	Install video surveillance equipment and components in accordance with ULC-S317.
	.2	Install cable, boxes, mounting hardware, brackets, video cameras and system components in accordance with manufacturer's written installation instructions.
	.3	Install components secure, properly aligned and in locations shown on reviewed shop drawings.
	.4	Connect cameras to cabling in accordance with installation instructions.
	.5	Install ULC labels where required.
<u>3.3 Field Quality Control</u>	.1	Have manufacturer of products, supplied under this Section, review Work involved in the handling, installation/application, protection and cleaning, of its product[s] and submit written reports, in acceptable format, to verify compliance of Work with Contract.
	.2	Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
	.3	Obtain reports, within [3] days of review, and submit, immediately, to Departmental Representative.
<u>3.4 Verification</u>	.1	Perform verification inspections and test in the presence of Departmental Representative. .1 Provide all necessary tools, ladders and equipment.

- .2 Ensure appropriate subcontractors, and manufacturer's representatives and security specialists are present for verification.
- .2 Visual verification: Objective is to assess quality of installation and assembly and overall appearance to ensure compliance with Contract Documents. Visual inspection to include:
 - .1 Sturdiness of equipment fastening.
 - .2 Non-existence of installation related damages.
 - .3 Compliance of device locations with reviewed shop drawings.
 - .4 Compatibility of equipment installation with physical environment.
 - .5 Inclusion of all accessories.
 - .6 Device and cabling identification.
 - .7 Application and location of ULC approval decals.
- .3 Technical verification: Purpose to ensure that all systems and devices are properly installed and free of defects and damage. Technical verification includes:
 - .1 Measurements of tension and power.
 - .2 Connecting joints and equipment fastening.
 - .3 Measurements of signals (dB, lux, baud rate, etc).
 - .4 Compliance with manufacturer's specification, product literature and installation instructions.
- .4 Operational verification: Purpose to ensure that devices and systems' performance meet or exceed established functional requirements. Operational verification includes:
 - .1 Operation of each device individually and within its environment.
 - .2 Operation of each device in relation with programmable schedule and or/specific functions.
 - .3 Operation control of camera lens, pan, tilt and zoom.
 - .4 Switching of camera to any monitor.
 - .5 Switching of system video recorder to selective monitor.
 - .6 Set dwell times.
 - .7 Demonstrate:
 - .1 Sequence viewing of cameras on each monitor.
 - .2 Bypass capability.
 - .3 Display of stored image to cardholder.

3.5 Cleaning and
Adjusting

- .1 Remove protective coverings from cameras and components.
- .2 Adjust cameras for correct function.
- .3 Clean camera housing, system components and lens, free from marks, packing tape, and finger prints, in accordance with manufacturer's written cleaning recommendations.