ES/STD-0235
Revision 3
February 2014

ELECTRONIC ENGINEERING STANDARD

INDOOR PANORAMIC NETWORK COLOUR CAMERA

FOR USE IN FEDERAL CORRECTIONAL INSTITUTIONS

AUTHORITY

Acquisition of a camera for the identified purposes that is not in compliance with this standard must be approved by the Design Authority.

Recommended corrections, additions or deletions should be addressed to the Design Authority at the following address:

Director, Electronic Security Systems
Correctional Service of Canada
340 Laurier Avenue West,
Ottawa, Ontario
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Approved by:

Director,
Electronic Security Systems

TABLE OF REVISIONS

Revision	Paragraph	Comment
0	N/A	Original issue
1	7.4	Frame rate increase
2	All	New format and change to cover indoor and outdoor
3	Definitions	Removed
	2.1	Added reference IEC EN 61000-4-3, Radiated RF immunity
	3.2.2.3	Changed humidity to non-condensing 20%-90%
	3.3.1	Interference now uses IEC EN 61000-4-3, Radiated RF immunity

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TABLE OF ABBREVIATIONS

Abbreviation	Expansion
AGC	Automatic Gain Control
CSC	Correctional Service Canada
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
MJPEG	Motion Joint Photographic Experts Group
MTBF	Mean Time Between Failures
ONVIF	Open Network Video Interface Forum
PoE	Power over Ethernet
TCP/IP	Transmission Control Protocol/Internet Protocol

1 INTRODUCTION

1.1 Overview

.1 This standard defines the requirements of Correctional Service Canada (CSC) for a panoramic, network capable, camera for use at federal correctional institutions.

1.2 Purpose

.1 The cameras are deployed for both observation and evidentiary use.

.2 These cameras are for deployment at:

.1 principal entrance;

2 REFERENCES

2.1 Specifications, Standards, and Statements of Work

.1   Access to non-government specifications is the responsibility of the contractor.

- IEC EN60529 – International Electrotechnical Commission Degrees of protection provided by enclosures (IP Code)
- IEC EN60950-1 – International Electrotechnical Commission Information technology equipment – Safety
- IEC EN 61000-4-3 – International Electrotechnical Commission Radiated RF immunity
- IEC EN62262 – International Electrotechnical Commission Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts
- IEEE 802.3at – IEEE Standard for Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements Part 3: 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
- 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

3 PHYSICAL

3.1 Dimensions

.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 250mm excluding any mount;
   .3 weigh less than 2.5kg;

3.2 Environment

.1 The camera case and dome must:

   .1 meet or exceed IEC EN60529 IP65 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;

.2 The camera must:

   .1 be capable of continuous operation;
   .2 start and operate from 0°C to 50°C;
   .3 start and operate from 20% to 90% non-condensing humidity;

3.3 Interference

.1 The camera must be certified compliant to IEC EN 61000-4-3, Radiated RF immunity

3.4 Reliability

.1 The camera must have an MTBF of at least 25,000 hours.

3.5 Safety

.1 The camera must meet IEC 60950-1 or the CSA equivalent.

4 OPERATIONAL

4.1 Camera

.1 The camera may use a single lens or a multi-lens/multi-camera configuration.
.2 The camera must retain its configuration over a power cycle.
.3 The image sensor must:

    .1 include automatic or remote back focus;
    .2 have a minimum of 1,000,000 pixels (horizontal x vertical, sum for multi-lens units);
    .3 have day (colour) and night (black and white) modes;
    .4 automatic removable infrared cut filter for day/night transition;
    .5 have 0.5 lux or less minimum illumination for day mode;
    .6 have 0.1 lux or less minimum illumination for night mode;
    .7 include Automatic Gain Control (AGC);

4.2 Lens

.1 The camera lens must:

    .1 minimum angle of view 180°x160° (multi-lens combined);
    .2 be approved by the manufacturer of the camera for that camera;

4.3 Video

.1 The video encoding must:

    .1 support H.264 configurable key frame frequency of at least 3 per second;
    .2 support H.264 constant bit rate transmission mode;
    .3 support H.264 frame rate transmission mode;
    .4 support at least 3 levels of H.264 image quality;
    .5 support at least 3 levels of MJPEG image quality;

.2 The video output must:

    .1 include an on-screen, programmable character generation overlay capability with a minimum of 8 visible characters;
    .2 support at least two simultaneous H.264 video streams at 30 frames per second with at least 1,000,000 pixel resolution;
    .3 support at least two simultaneous video streams, one H.264 and one MJPEG at 15 frames per second with at least 1,000,000 pixel resolution;
    .4 support virtual pan/tilt/zoom;

5 INTERFACE

5.1 Ports

.1   The camera must:

    .1   interface over IPV4 TCP/IP;
    .2   be able to operate on 100Base-TX (IEEE 802.3u);
    .3   connect using an RJ-45 connector;
    .4   be ONVIF compliant;

5.2 Power

.1   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.

5.3 Video Management System Compatibility

.1   The camera model must be identified as "Certified" or "Supported by Design" in the Genetec Omnicast Supported Hardware camera list.