CORRECTIONAL SERVICE CANADA
FACILITIES BRANCH
ELECTRONIC SECURITY SYSTEMS

15 May 2015

DESIGN REQUIREMENTS

FOR THE

MAIN CONTROL AND COMMUNICATIONS POST (MCCP) CONSOLE

FOR USE IN FEDERAL CORRECTIONAL INSTITUTIONS

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1 INTRODUCTION

1.1 Overview

.1 This document defines the broad requirements of Correctional Service Canada (CSC) for a console that provides the supporting infrastructure for the User Interface Monitors, Controls, Telephones, Microphones and CCTV Monitors for systems that are managed by the MCCP Operator.

.2 Institutions with a medium or higher security rating are equipped with MCCPs that are staffed 24/7.

.3 The MCCP operator is responsible for monitoring the overall security of the facility with a primary focus on responding to incidents along the institution's perimeter.

.4 The MCCP Operator is typically required to manage and/or interact with a variety of security, communications and operational systems.

.5 The MCCP console is designed to allow the Operator optimal viewing of the information presented, provide access to all necessary controls, provide a work surface for writing, and a location for storing reference materials.

1.2 Purpose

.1 The purpose of the console is to provide a flexible and extensible platform that provides a sitting or standing Operator with ergonomic access to the displays and controls.

.2 The primary control interfaces on the console are touch screen user interfaces for most systems. Additional monitors are provided for outputs that either do not require Operator interaction, or are managed from a system or component integrated on the MCCP console.

.3 The systems integrated in the console may include:

.1 Perimeter Intrusion Detection System (PIDS) Integration Unit (PIU);

.2 Facility Alarm Annunciation System (FAAS) Integration Unit (FIU);

.3 PIDS Public Address (PA) System;

.4 Video Management System (VMS);

.5 Fence Disturbance System (FDS);

.6 Primary Radio Control System;

.7 Institutional PA System;

.8 Institutional Intercom System;

.9 Institutional Messaging System;

.10 Emergency telephone(s);

.11 Regular telephone(s);

.12 CSC network connected desktop computer interface;

.13 Door Control Systems;

.14 Perimeter Approach Systems.

.15 Additional components to support the above systems may include:

.16 Mouse or other pointing device;

.17 Speakers;

.18 Microphones.

2 REFERENCES

2.1 Specifications, Standards, and Statements of Work

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

- CSA Standard C22.1 Canadian Electrical Code CSA Standard C22.1
- IEC EN60950-1 International Electrotechnical Commission Information technology equipment – Safety
- HDMI v1.0 High Definition Multimedia Interface
- VESA FDMI VESA Flat Display Mounting Interface Standard (for Flat Panel Monitors/Displays/Flat TVs)

3 PHYSICAL LAYOUT

3.1 Console Physical Configuration

.1 The MCCP console must be designed primarily as a work station for one correctional officer under normal (non-emergency) conditions but must provide sufficient space to allow a second officer to assist with activities in the event of an emergency situation.

.2 The work surface of the console must be at least 38 cm deep and include a back lip at least 2.5 cm high to keep materials from sliding off the back of the surface.

.3 The work surface thickness must be 4 cm or less and deflect less than 3 mm when depressed with a force of 1000 N spread uniformly over a 200 mm diameter circular area.

.4 The colour of the console desktop surfaces must be approved by the Design Authority.

.5 The console supporting frame must be constructed of 14 gauge of heavier cold rolled steel or aluminum.

.6 The console must be equipped with motorized controls that maintenance staff can adjust the height to meet specific operational needs using either standard or specialized tools.

.7 The back of the console must include an area or shelf at least 20 cm wide along the back of the console, separate from cable trays or channels to hold any interface equipment such as KVMs, etc.

.8 The console must be firmly bolted to the floor to prevent any movement or tipping. It should also be positioned to allow at least 100 cm clearance behind the console for wiring and maintenance activities.

.9 The work surface of the console must be completely covered with an unattached, solid, clear transparent polycarbonate mat of no more than three segments that can be lifted manually to place papers underneath. Friction pads must be included to restrict mat sliding.

3.2 Configuration of Console Monitors

.1 The console must provide for six (6), 22” side-by side touch screen user interface monitors that are positioned in an open “U” configuration (2 left, 2 centre,2 right) to allow the Operator to reach the complete display area of all monitors..

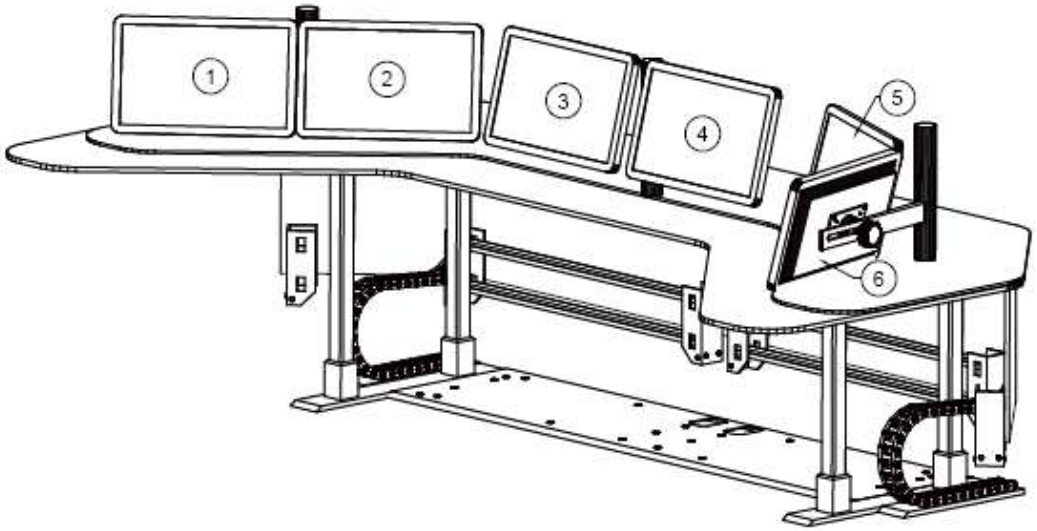

Figure 1 - Preferred Touch Screen User Interface Layout

.2 The preferred arrangement for the monitors installed on the console desktop will be:

1.	IMS Workstation User Interface (as required)
2.	Motorola Radio Operator Touch Screen
3.	Perimeter Security (PIDS) Operator Touch Screen
4.	Interior System (FAAS) Operator Touch Screen
5.	Video Management System Operator Touch Screen
6.	Aggregator Operator Touch Screen

.3 The mounts for the monitors must be compliant with the VESA FDMI standard. The monitors must be positioned between 5 cm and 10 cm above the desk surface and each monitor must be independently manually adjustable anywhere from vertical to at least 20 degrees back from vertical without interfering with adjacent monitors.

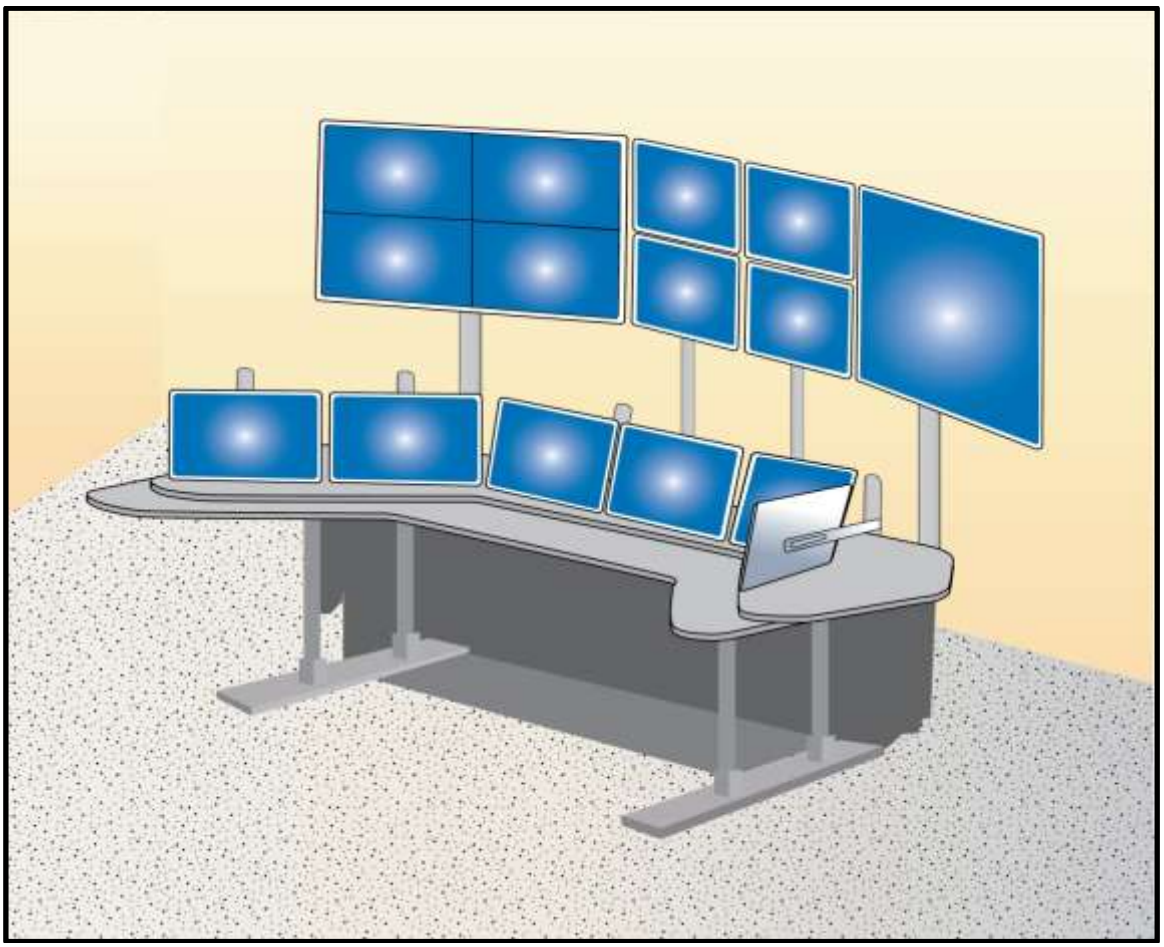

Figure 2 – Layout of Touch Screen User interfaces and Video Monitors

.4 The console must be equipped with four (4), 22" side by side video monitors that are positioned immediately above and centred over the PIDS and FAAS touch screen user interface monitors and two (2) 42" video monitors that are positioned with one monitor on each side of the 22" side by side video monitor array. All six (6) monitors are for display only. For reference purposes, these monitors are numbered from 7 to 12 going left to right and top to bottom. The four (4) 22" video monitors that display the PIDS camera views will be on monitors 8,9 10,11, quad screen camera views displayed on 7 or 12 and a full screen camera view will be displayed on 12 or 7. The final assignment of the video monitors will be determined by the institution's equipment requirements and preferences..

.5 The mounts for the video monitors must be compliant with the VESA FDMI standard. The mount must allow each monitor to be positioned independently anywhere from vertical to at least 20 degrees forward from vertical. The mount must allow each monitor to be positioned forward or backward to have the bezel adjacent to the bezel of the user interface monitor in any possible user interface monitor position.

.6 Mount positions for all monitors must be able to be changed by maintenance staff without any special tools. Once positioned, the monitors must be able to be locked into position so as to avoid any movement as a result of touching or bumping the screens.

.7 The console configuration must allow for Monitor 2 to be interchanged with a EIA-310 compatible rack with side and top panels that is between 30 cm and 35 cm high mounted between 5 cm and 10 cm above the desk surface. This provides a temporary location for legacy rack mount radio systems pending a system upgrade.

3.3 Ergonomic Requirements

.1 Ergonomic requirements that must be considered when determining the size and positioning of the CCTV monitors must be based upon the human ergonomic 5^{th} to 95^{th} percentile criteria for males and females.

.2 The height of a seated Operator must be between 31.3" (795 mm) to 38.3" (973 mm) measured from the chair seat to the top of the Operator's head.

.3 The thigh clearance of a seated Operator must be between 21.0" (533 mm) to 26.8" (681 mm) measured from the floor to the top of the thigh.

.4 The knee height clearance of a seated Operator must be between19.8" (510 mm) to 28.0" (711 mm) measured from the floor to the top of the knee cap.

.5 The eye height of a seated Operator must be between 42.6" (1082 mm) to 52.6" (1336 mm) measured from the floor to the Operator's eye.

.6 The foot clearance under the console must be at least 65 cm measured from the front of the working surface at floor level over the complete width of the console.

.7 The average reach distance of a Touch Screen User Interface for a seated Operator must be between 14" (356 mm) to 24" (610 mm) measured from the rear of the shoulder to the tip of the middle finger with arm extended.

.8 The mounting height of each video monitor must be such that the top edge of the monitor field of view represents a maximum tilt of 30 degrees relative to the eye level of a seated Operator who falls within the 5^{th} to 95^{th} human ergonomic percentile

.9 The mounting height of each video monitor must be such that the bottom of the field of view of a video monitor is not obstructed by turrets or Operator User Interface Monitors installed on the desktop work surface.

.10 The 42" video monitors should be spaced such that the furthest left field of view and furthest right field of view represent a maximum pan of +/- 45 degrees relative to the Operator's eye position when facing directly forward.

.11 The video monitors must be installed such that the distance between the monitor and the Operator's eye meets the manufacturer's optimum monitor viewing distance.

3.4 Cabling

.1 All cables must enter the console from floor level (typically through the floor) and travel through a flexible cable channel to horizontal cable trays or channels.

.2 The cable trays or channels must allow for cables to be tie-wrapped to the tray/channel.

.3 The cable trays or channels must be sized to allow for at least 40% unused room based upon initial installation cable requirements.

.4 All cable entry points and locations passing through the surface or dividers must have grommets to prevent cable chafing.

.5 All cables must be labeled with machine printed tags on both ends of cable.

3.5 Safety

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

.2 The console must support a minimum total load of 250 kg in excess of the monitors.

.3 The console must not have any swing out or slide out components weighing more than 5 kg.

.4 The console must have grounding straps installed.

3.6 MCCP Operator Chair Requirements

.1 The Operators Chair must meet the following requirements:

1. Durability: Intensive Use Rated (24/7/365),

.2 Warranty: Five (5) years on all components including parts and labour.

.3 Construction:

1. Standard Seat Dimensions: >20” (508 mm) Width x >19” (483 mm) Depth
2. Seat: Dual density moulded polyurethane foam with 8-ply hardwood
3. Base: Five (5) point base with heavy duty castors
4. Backrest Dimensions: >19” (483 mm) Width X >24.5” (622 mm) Height
5. Weight Capacity: >350lbs (158.8kg)
6. Fabric: Abrasion resistant
7. Fabric Colour: Black or charcoal

.4 Adjustability:

1. Backrest: Fully upholstered backrest system with a minimum of 5” (127 mm) range of vertical adjustment
2. Headrest: Height adjustable
3. Lumbar: Adjustable (air) support
4. Seat Height: Adjustable to between 17.5” (445 mm) to 22.5” (572 mm)
5. Back/Seat Angle: Heavy-duty 3-lever independent back/seat angle control.

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