



## Vancouver International Airport

Canada's second busiest airport, Vancouver International Airport (YVR) welcomed 17.6 million people in 2012, facilitated more than 296,000 aircraft take-offs and landings and handled 228,000 tonnes of cargo.

CEM Systems have been working with Vancouver International Airport for over 10 years, supporting the airport through upgrade and expansion.

The CEM AC2000 access control and security management system provides a reliable and scalable security for the airport. A range of CEM readers also provide security at key points throughout the airport. This solution helps protect passengers, staff and the airport premises.

## CASE SUMMARY

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**Location:** Vancouver, Canada

**Systems Installed:**  
AC2000 access control  
AC2000 AED (Alarm Event Display)  
AC2000 VIPPS

**Hardware Installed:**  
S600 & S610 intelligent card readers  
S3020 portable readers  
CEM Lift Control Interface

## Introduction

YVR has been successfully using CEM Systems AC2000 access control and security management system for over 10 years. In 2009, with the expansion of the International Terminal Building (ITB) under way CEM was approached not only to secure the new West Wing but also to conduct a major upgrade of the existing system to the powerful and fully integrated CEM AC2000 system.

This update included the upgrade of over 380 existing card readers as well as the supply of over 120 additional CEM readers for the West Wing. As part of the project CEM conducted firmware customisation to the intelligent S600s reader as well as modifying the hardware on the CEM DCM 150 door controller to create specially requested YVR door control modes.

With the airport operational 24 hours a day, seven days a week, YVR needed a seamless and convenient upgrade with both the new and existing access control systems running in parallel prior to the new system migration.

## Solution

### CEM card readers

The S600s reader proved ideal for YVR with its on-board database for offline validation, its LCD screen for visual display of reader messages and its keypad feature to allow operations to be performed at reader level. With the ability to validate cards offline, YVR operations can continue as normal even in the event of host communication being temporarily lost.

It was requested that YVR cards issued by CATSA (Canadian Air Transport Security Association) be readable on the YVR access system. This request was easily fulfilled with the S600s reader able to concurrently read both existing YVR proximity

technology cards as well as the cards issued to CATSA screening officers.

The S600s reader is also securing bridge drive controls so that only approved personnel may operate the bridge. Bridge exits to the apron are also secure to allow aircrew without cards to access the apron for aircraft inspection. Ramp staff may also access the apron or enter the bridge via a “Restricted Area Pass” (RAP) which not only meets YVR security standards, but also the Transport Canada Airline Security Measures.

The S3020 portable reader also provides YVR with the ability to provide roaming security throughout the airport. The portable reader enables airport security/guards to perform ID card validation at remote sites or temporary entrances which have no power and can be used as a mobile device for random checks within pre-defined airside/landside zones. They also provide a secondary check on access levels within airport zones, where guards can ensure the right people are accessing the appropriate controlled doors within the airport.



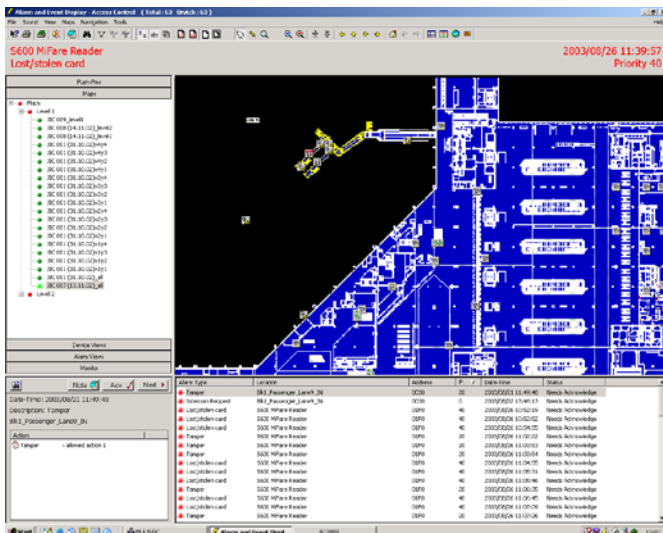
## Customised Door Modes

In addition to the CEM standard reader modes such as Door, Passenger and Lobby mode, CEM conducted customisation of the reader firmware to include a site specific mode for airline staff, Panic Bar mode and the remote cancellation of panic alert sounders. This means that although alarm and alert sounders can be cancelled remotely, an alert strobe remains flashing until cancelled by a valid card swipe, ensuring the full investigation of all alarms.

Further customisation of the CEM DCM 150 door controller was also performed to create a permanent sounder mode on non-critical door entry areas where 3rd party readers are installed.

## Alarm Event Display (AED)

Remote cancellation of alarms is performed using the CEM AED (Alarm Event Display) module, which allows security staff to view devices and all alarms/sounders via graphical maps of the airport. In the case of a door forced/left open staff can zoom into the alerted area and instruct the access control system to display images from the corresponding CCTV camera.



## Lift Control

CEM lift controller hardware seamlessly secures all elevators in the new international wing with lift movement determined by card swipes. Baggage Intake Doors and Oversize Baggage Roll-up doors are also controlled using the external “Equipment Control” feature on AC2000.

## Seamless security upgrade

With the airport operational 24 hours a day, seven days a week, CEM designed a seamless and convenient upgrade with both the new and existing access systems running in parallel prior to the new system migration. Using CEM S9032 controllers, YVR was able to use existing cabling in order to minimise disruption and maintain efficient passenger throughput.

The upgrade also included the supply of failover dual redundant servers to enhance system resilience and the CEM VIPPS (Visual Imaging & Pass Production System) to create professionally designed cards for the 21,000 YVR employees that have restricted area passes.

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