

## New Product Announcement: AC2000 v8.0

CEM Systems is pleased to announce the latest release of the AC2000 suite of access control and security management software. **AC2000, AC2000 Airport** and **AC2000 Lite version 8.0** are now available with a range of new features that increase the performance, simplicity and scope of the system along with a number of additions that improve functionality.

### New Features at a Glance

- **Enhanced Data Partitioning**  
AC2000 now supports a new set of features, designed for multi-tenanted site requirements and will allow primary system administrators to deploy cardholder management tools to secondary partition users, such as tenants.
- **Enhanced AC2000 Security Hub functionality**  
AC2000 Security Hub, CEM's latest Security Management System module, has been expanded with new features that allow configuring visible zones directly on the maps, displaying Threat Level status in the main status bar, generating new types of reports and viewing live and recorded video footage for specific configured alarms directly within Security Hub.
- **Multiple cards per company**  
AC2000 system allows administrators to enrol more than one active card per cardholder. Cardholders can now also belong to several different companies (e.g. contractor working for several companies).
- **Enhanced AC2000 Personnel**  
Updating a large database of Personnel records is now even easier with added functionality of Batch Field Update, Batch Add Extra Access and Batch Remove Extra Access.
- **Improved Active Directory integration**  
AC2000 Active Directory interface has been improved to support importing data from more than one Active Directory group and to provide the ability to expire a card in AC2000 if the user is disabled or removed in Active Directory.
- **New and enhanced reporting**  
System administrators can now generate even more comprehensive reports that include new Device Access Levels, Visitor Passes and Visitor reports with enhanced customization options.
- **Improved AC2000 Cleardown**  
The AC2000 data housekeeping utility that deletes expired Personnel records has now been enhanced to delete expired Visitor and Vehicle records.
- **Enhanced Breach of Conditions**  
Breach of Conditions module now features a new scoring system, which associates a number of points for each breach type and keeps a total score for each employee.

- **Additional System Enhancements**

- **New** 64-bit AC2000 server operating system
- Full Windows 10 support for AC2000 client workstation software
- AC2000 Lite Software Only Virtual Kit available as part of pre-installed bundle
- Zone Monitoring can now be configured for a specific company
- External Systems Interface configuration upload from spreadsheet

- **New hardware features**

- emerald fingerprint terminal now available as TS100f and TS200f options
- **New** emerald terminal operating modes
- emerald Boarding and Deplaning Route Management (BDRM) mode

- **New Integration Interfaces and enhancements**



- Improved and enhanced AC2000 video integration platform
- **New** Milestone X Protect Professional VMS interface
- **New** DSC Power Series Neo intrusion alarm interface
- Updated American Dynamics video interface
- Updated Avigilon Control Center NVR interface

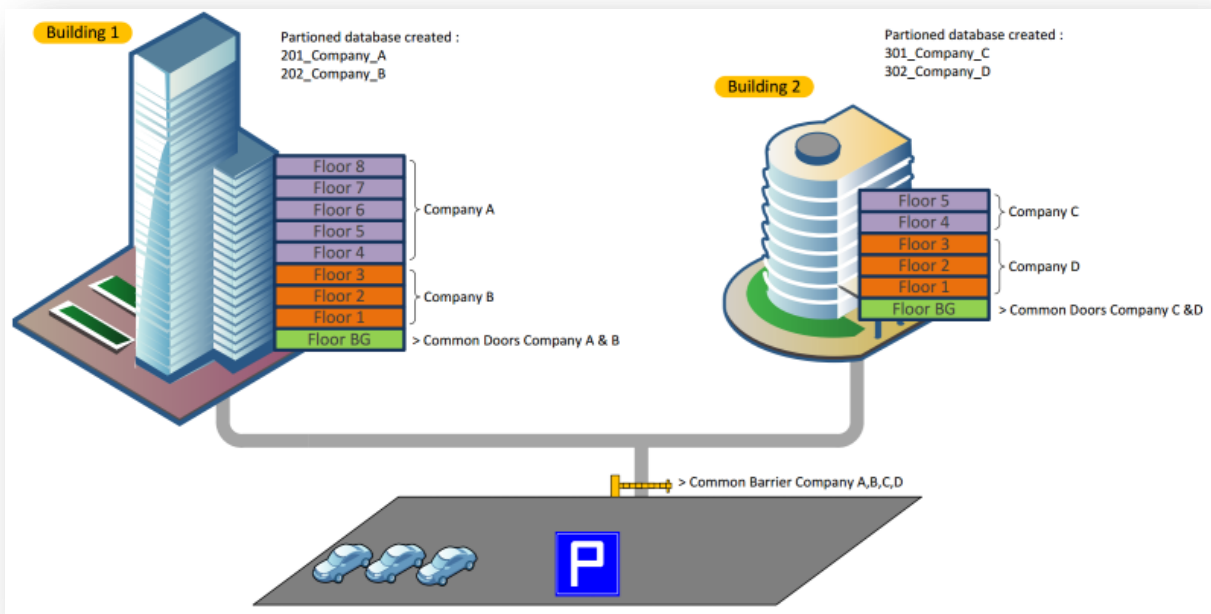
## Software Features

### AC2000 Data Partitioning

AC2000 Security Management System (SMS) contains a range of data separation features for use in a scenario where a number of separate business units occupy the same site and share a single SMS. These features allow system administrators to divide AC2000 database contents into partitions and empower each company by giving them control over their own private access areas while still allowing them access to common areas within the building or campus.

With the introduction of the latest AC2000 v8.0 software, the data partitioning features have been significantly expanded to cope with ever more sophisticated business operations. The system's primary partition is deployed for setup and global monitoring for all site partitions and provides the administrators with the ability of complete cardholder management for secondary partitions.

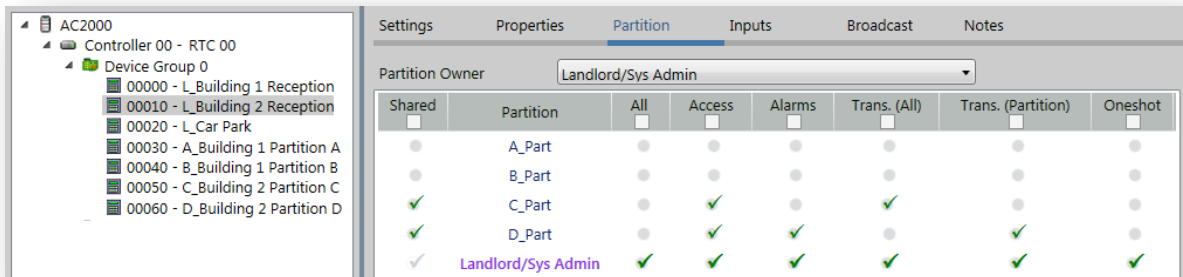
AC2000 Data Partitioning includes a range of extremely flexible features, which allow creating an unlimited number of secondary partitions with special cross-partition access as well as defining common areas and devices which can be shared between partitions.



All partition administrators can manage their own cardholder records, issue cards and monitor the activity exclusively within their own partition, while also having the ability to assign local partition access to cardholders from a different partition.

## Easy to Configure

AC2000 partition administrators have a range of options available to distribute access devices between partitions and to nominate a shared device to be shared to a selection or all partitions. Each of the partition managers will then be able to specify their own access permissions as per the local partition security policy.



## Partitioned Applications

The new data partitioning features have been implemented across the range of AC2000 applications, expanding its multi-site or multi-tenant capabilities. Partitioned applications include for example:

- **Personnel** – global system administrators can manage the data of any personnel regardless of the partition they belong to; however, all secondary operators can only access the data which belongs to their partition
- **Access Permissions** – with flexible configuration of access groups between primary and secondary partitions, as well as access levels either on global level or as per the individual partition
- **Extended Reports** – partition administrators are able to configure and run any reports on all data in their partitions, while the partitioned users can access local reports such as: Absentee, Alarm, Device, Personnel, etc.
- **Standard System Link** – allows the export of cardholder data from one partition to another, and even from a partitioned system to a non-partitioned system within AC2000 system link architecture

AC2000 data partitions are suitable for access controlled sites such as multi-tenanted units where departmentalised access control management is required, and as such – provides better and more flexible tools to landlords for Primary Partition control and monitoring, while restricting local data access for secondary partition users.

## AC2000 Security Hub – more power and control to security operators!

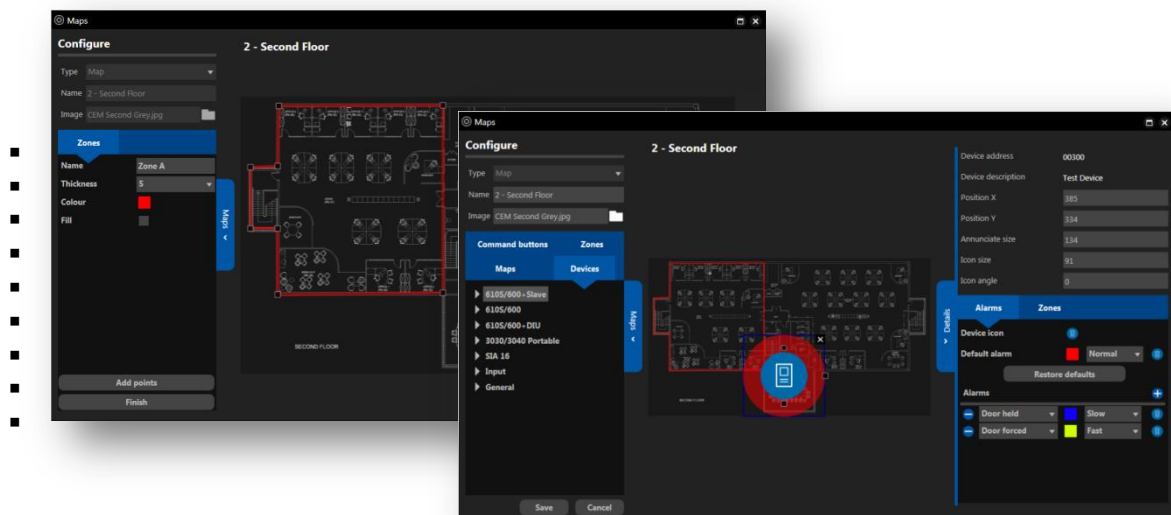
**AC2000 Security Hub** is a comprehensive security management application for centrally managing events within the AC2000 access control system. With a modern and intuitive interface, Security Hub provides security personnel with flexible and effective tools to ensure full interoperability between all system components, reduce response times to critical events and simplify security operations.



AC2000 Security Hub has been enhanced to support the new functionality that greatly expands the monitoring and control capability of AC2000 Security Management System:

- **Map Zones**

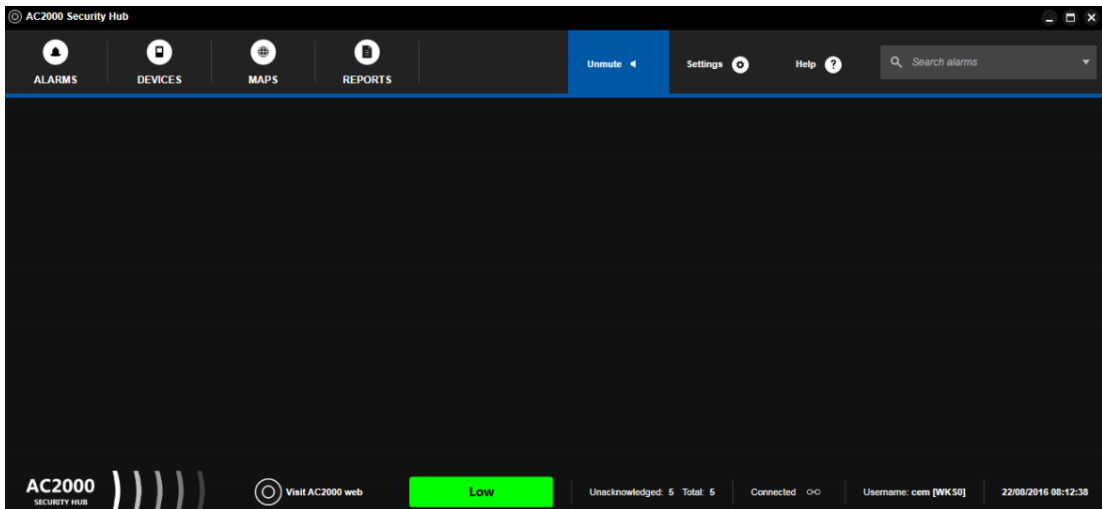
AC2000 Security Hub Maps allow an operator to draw a zone in the section of the map by adding points in the desired area, which in turn creates lines. Each zone can be easily adjusted by moving zone points and changing the shape of the zone. Devices can now be placed onto the maps and into the individual zones.



▪ **Threat Levels**

AC2000 Threat Levels is a management software module that compliments the AC2000 system allowing for building security to be completely reconfigured at the click of a button.

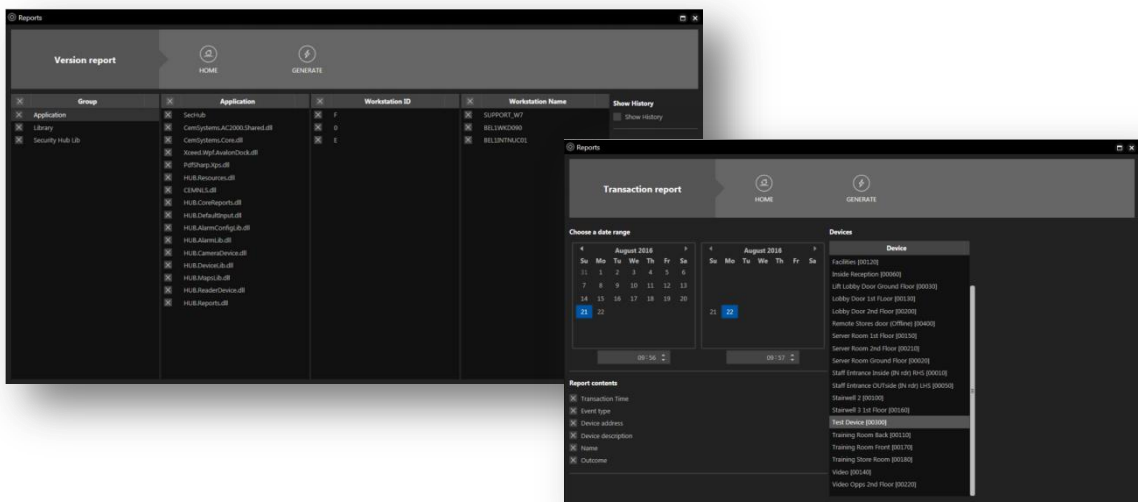
AC2000 Security Hub now allows the security operator to view and set threat levels directly from within the application and the current status is displayed in the main status bar.



▪ **Reports**

AC2000 Security Hub allows the security operator to generate reports on the fly – directly from within the application. These reports have been enhanced and now include:

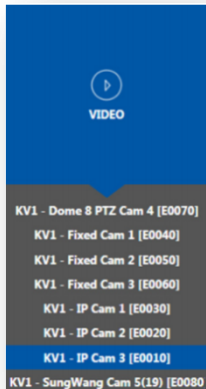
- Trace Report - to view traces associated with personnel, visitors, or vehicles
- Transaction Report - to view transactions on a particular device
- Version Report - to view versions of registered components of AC2000





AC2000 Security Hub also incorporates a seamless video integration interface\* which enables live and recorded video footage to be displayed for specific configured alarms.

The AC2000 Security Hub video interface features two 'Micro-Viewer' applications which can be easily accessed when the system is licensed with one of the many supported AC2000 Video integrations.



\* Requires supported AC2000 video integration licence

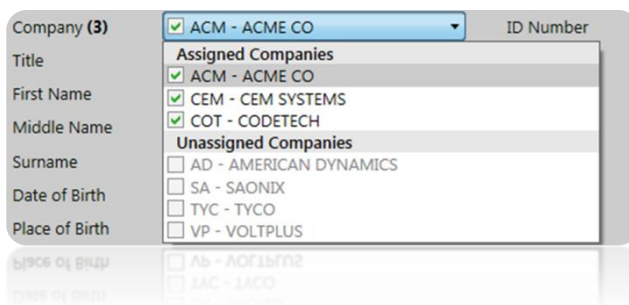
When one or more cameras are assigned to an alarm, a video option is available on the alarm processing navigation bar. The security operator can view a list of the available cameras, with the first camera being selected by default. When you select a different camera, the micro-viewers update to show the live and recorded footage for the selected camera.

## Personnel Enhancements



CEM Systems have recently introduced support for multiple cards per cardholder, which allows administrators to enrol more than one active card per Personnel record. This enables a site to use multiple technologies or migrate from one technology to another.

With AC2000 version 8.0, CEM Systems have further enhanced this functionality by allowing for multiple active cards to belong to different companies.



### **Benefits:**

Contractors at site can now be enrolled into AC2000 system as a personnel working for several different companies.

## **Batch Updates**

Further improvements have also been made to simplify system administration and operation when updating a larger number of personnel records. These include:

- **Batch Field Update** – allows operators to update data in any specific field for a batch of records
- **Batch Add Extra Access** – allows adding extra access to a group of people
- **Batch Remove Extra Access** - allows removing extra access to a group of people

## **Personnel – Quick View Audit**

System administrators will have more visibility and traceability of any changes to a personnel record using the following new personnel application features:

- **Last Personnel Update** – information about who last updated a Personnel record and when it was updated
- **Last Card Print** - information about who last printed a Personnel record and when it was printed
- **Last Image Upload** - information about who last loaded an image to a Personnel record and when it was uploaded

## **Microsoft Active Directory Enhancements**

AC2000 Active Directory interface provides an easy to use web based GUI for the administrator to configure the system and allows real time management of cardholder data and access rights from the central Active Directory platform via LDAP protocol.



AC2000 Active Directory interface has been improved with the following features:

- AC2000 can now synchronise the cardholder database from more than one Active Directory group. This simplifies system administration and enables the use of collated data rather than individual records.
- When a card is disabled or removed from its group in Active Directory, the corresponding card will also be expired in AC2000 database.



## More comprehensive AC2000 Reports

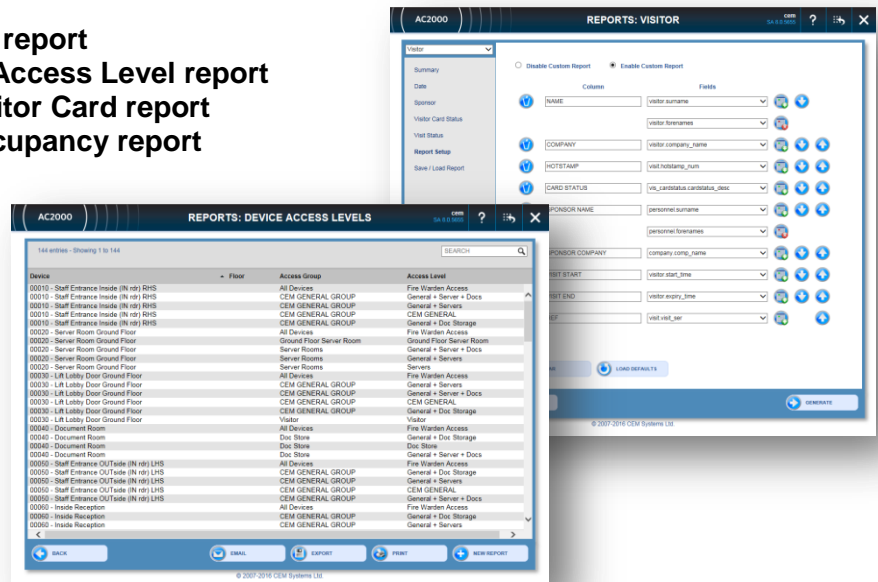


AC2000 Extended Reports and Web Reports are powerful, flexible and fully configurable tools for system administrators to provide vital system usage statistics. These are also a means for integrating and providing data to third party reporting systems.

The latest enhancements allow operators to customise the report layout by adding a header section and uploading company logos as well as adding a report cover page. System administrators also have the option to enable auditing which will log the details of all generated reports.

AC2000 version 8.0 also introduces new report templates available from the software client as well as AC2000 Web interface:

- Web Reports – **Visitors report**
- Web Reports – **Device Access Level report**
- Extended Reports – **Visitor Card report**
- Extended Reports – **Occupancy report**



## AC2000 Record Cleardown

AC2000 Security Management System features a range of housekeeping tools to maintain a healthy and reliable database and to ensure high performance of system operation.

AC2000 Personnel Cleardown application has been enhanced and now automatically deletes expired **Personnel, Visitor and Vehicle** records from the AC2000 database, including all associated images.

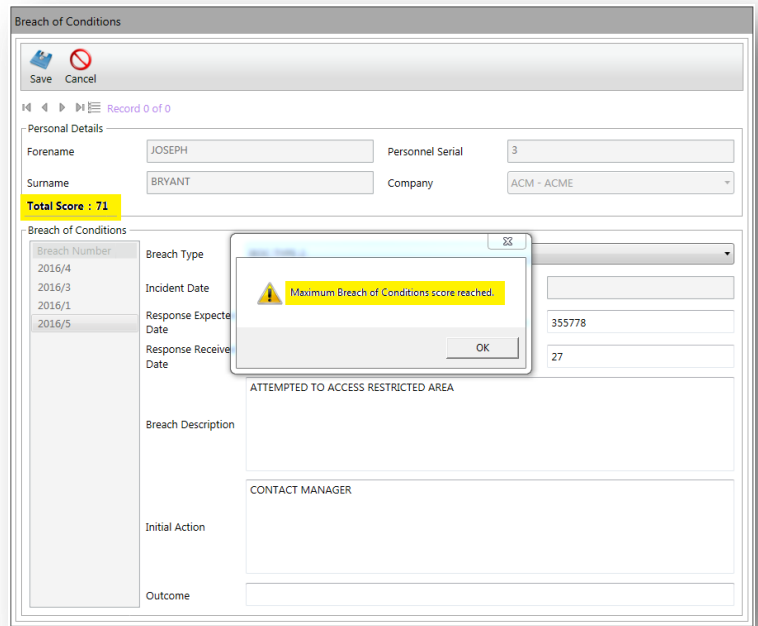
The benefits of the Personnel Clear Down utility include the ability to increase system capacity by removing unwanted data from the AC2000 database, comply with data protection requirements, and improving the speed and efficiency of personnel record queries. Additional benefits include providing the capability to restore deleted personnel records at a later date, if required.

## Breach of Conditions

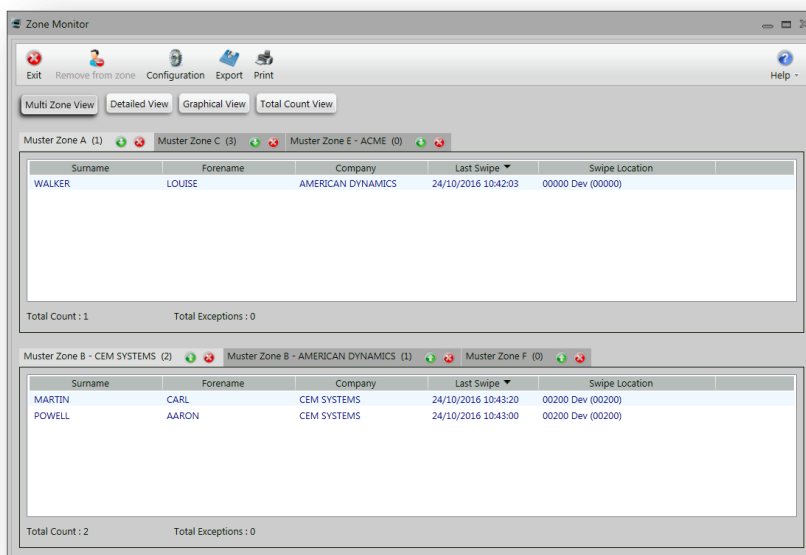
The Breach of Conditions module is a useful and flexible safety management tool, that allows system administrator to monitor whether employees are following the conditions of their stay at site and take appropriate actions, if the conditions are breached.

Administrators can define a set of Breach Types along with associated penalty points and allocate breaches to employees as they occur. Each of the breaches will add to the overall employee score and a letter to employer can be generated from within the application to highlight breaches.

When the overall employee breach score has exceeded a predefined value, their access card will be automatically parked and they will be unable to enter the premises until site administration is contacted.



## Zone Monitoring



AC2000 Zone Monitor has been enhanced to allow zone monitoring of a specific company within a zone. The same zone can also be selected multiple times for different companies.

**Benefits:**  
More comprehensive personnel monitoring

## AC2000 External Systems Interface



The AC2000 External Systems Interface removes the need for custom software development when an interface to a third party system is required. It provides the user with a quick and easy way of customising the interface.

System integrators now have the ability of configuring the interface to a third party system more effectively, by being able to upload a batch CSV configuration file thus eliminating the need of creating each configuration one by one.

Administrators simply configure the interface using the AC2000 software. This offers customers the flexibility to seamlessly integrate the AC2000 access control system with third party systems of their choice.

***Benefit:***

Quick set up of 3<sup>rd</sup> party interfaces without the need of complex software development .

## System Core Enhancements



AC2000 is now designed in full 64-bit system architecture and a new Linux-based operating system that offers compatibility with the latest server hardware technologies, and support for new system capabilities and enhancements.

AC2000 Workstation software has been designed and tested for full compatibility in Windows 10 environment.



## AC2000 Lite Software Only Virtual Kit



AC2000 Lite Software Only Virtual Kit is now available pre-installed as a part of a hardware bundle kit. This new option has all the features and functionality of AC2000 Lite Software-only Virtual Kit but also comes pre-installed on workstation PC hardware for even easier deployment.

***Benefit:***

Ready configured out of the box solution for easy deployment!

## Hardware Features

### emerald TS100f and TS200f Intelligent Fingerprint Terminal



emerald Intelligent Fingerprint Terminal is one of the industry's most multifunctional touchscreen access terminal with fully integrated biometric capabilities. Used in conjunction with CEM Systems AC2000 security management system, the emerald uniquely provides users with options for built in Voice over IP (VoIP) intercom functionality and a range of remote server-based applications, all in one powerful device that controls access to restricted areas where an additional biometric layer of security is required.

Building on the success of emerald TS300f, CEM Systems is introducing the emerald fingerprint terminal in TS100f and TS200f options. System integrators can now select the emerald fingerprint terminal option to meet their specific functionality requirements, while maintaining the highest level of site security via three stage identity authentication (card, PIN, and biometric verification).

emerald Key Features	emerald TS100f	emerald TS200f	emerald TS300f
<b>Biometric Fingerprint Reader</b>	✓	✓	✓
<b>Integrated Reader / Controller</b>	✓	✓	✓
<b>Special Modes</b>	✓	✓	✓
- Image on Swipe	✗	✗	✓
- Personalised Messages	✓	✓	✓
- Entry Checklist	✓	✓	✓
- Multi Date Check	✓	✓	✓
- PIN as Card	✓	✓	✓
<b>VoIP Intercom</b>	✗	✓	✓
<b>Remote Applications</b>	✗	✗	✓

Fig1. - emerald fingerprint terminal features

**Benefits:**

With fully integrated fingerprint biometric and suite of options to match specific requirements for site deployment, the emerald fingerprint range can save cost on a range of functionality e.g. intercom, controller, special modes.

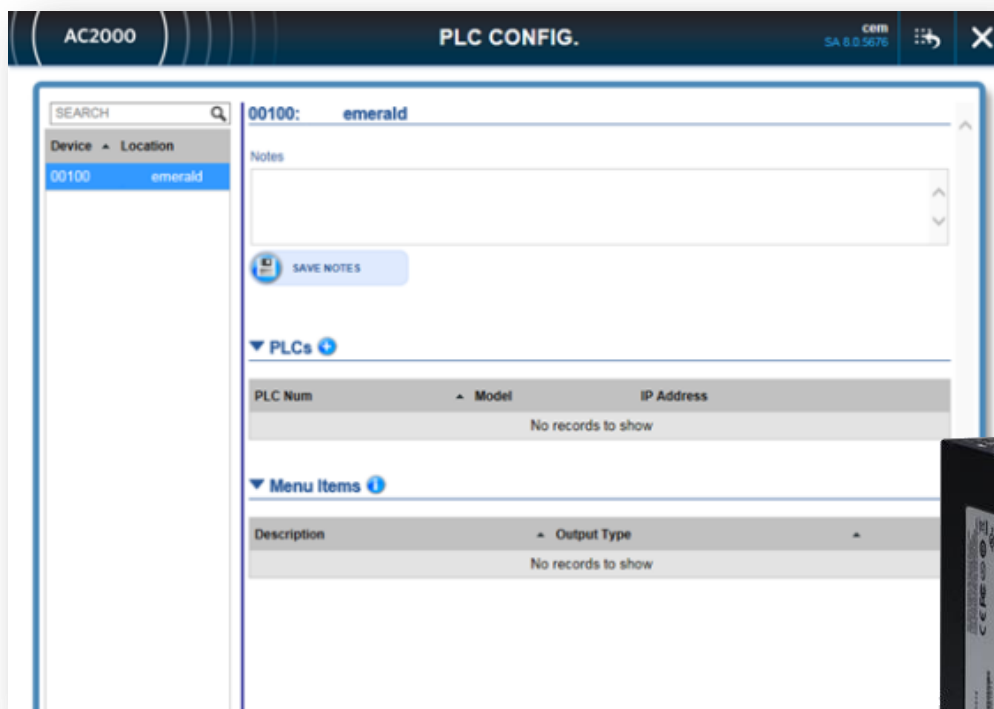
## **emerald Boarding and Deplaning Route Management (BDRM) Mode**

Designed for use with the CEM Systems AC2000 security management system, emerald terminals not only controls access to restricted areas but also open up a world of infinite possibilities by bringing CEM Systems AC2000 intelligence directly to the edge.

Supporting a range of advanced door modes, emerald can be used in a variety of applications such as Control Post, Interlock Mode, Multi-Swipe mode, Entry Checklist Mode and many more.

To expand this functionality, emerald now supports a highly configurable BDRM mode which effectively increases its I/O capability while offering extremely flexible interlocking logic configuration via an intuitive AC2000 Web interface.

The Web PLC Config page allows system integrators to easily create and configure operation patterns using meaningful names, which define specific output relays that are activated when a particular pattern is selected on the emerald's BDRM mode selection screen.



Web PLC Config



ioLogik E1214 I/O Controller

When authorised staff member swipes their card, they are presented with the mode selection screen (Fig. 2). After selecting BDRM Options, they will select a time using the dial control (Fig. 3) and finally confirm pattern selection (Fig. 4).

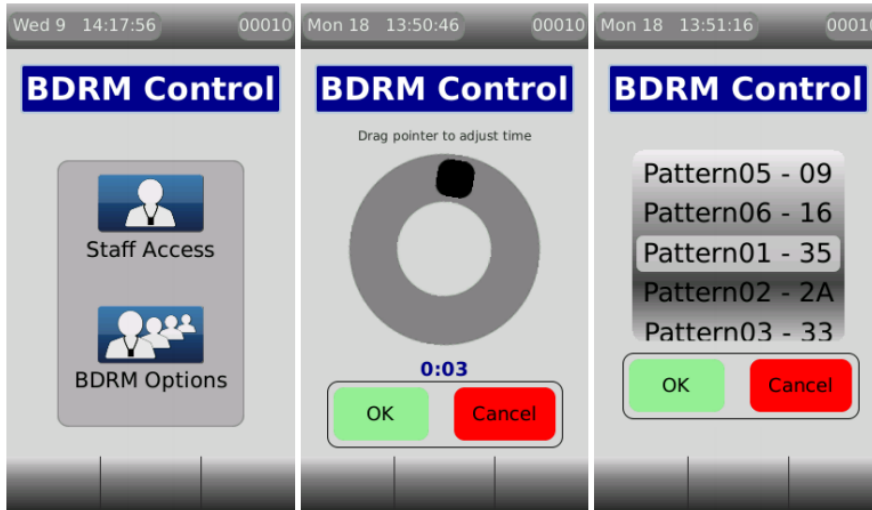


Fig. 2 – Mode Select

Fig. 3 – Time Select

Fig. 4 – Pattern Select

## Emerald Link



Master display

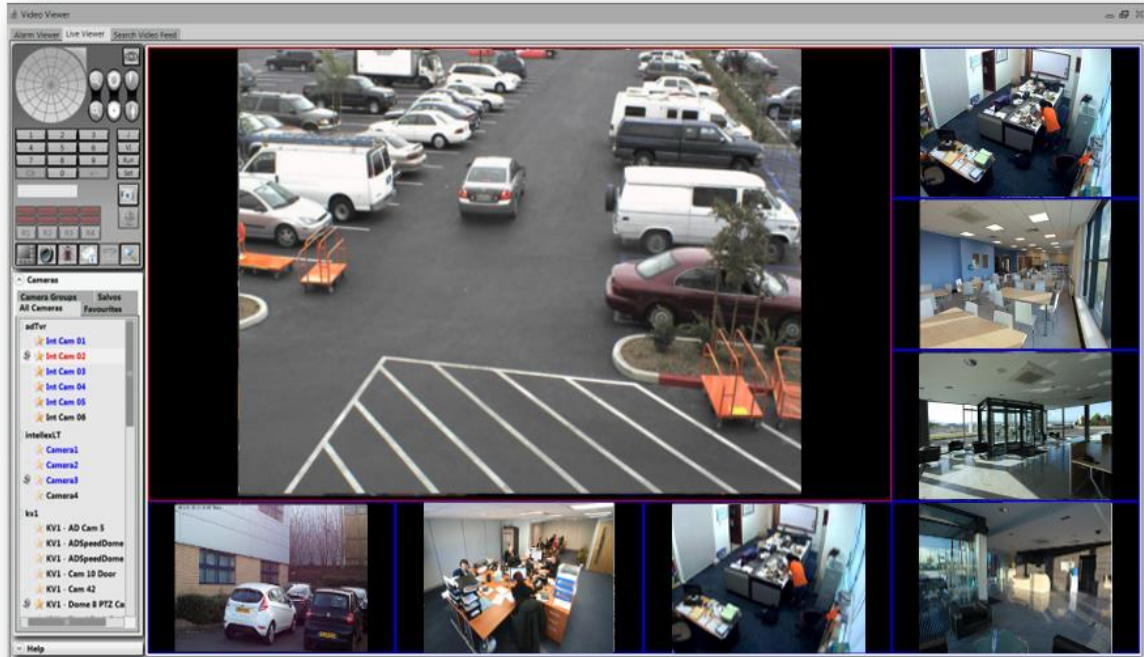
Exit display

Emerald link allows operators to activate passenger mode at both sides of the door while providing visual feedback of the remaining passenger time. Emerald Link is the deployment of two emerald terminals back to back in passenger mode to control a single door. The emerald terminals communicate with each other over Ethernet using secure 128-bit AES encryption. Alarms generated on either emerald are visually displayed on both sides of the door.



## Integrations

### Redesigned AC2000 Video Viewer



AC2000 Security Management System supports high-level integration (HLI) interfaces to a wide range of video systems, utilizing a powerful built-in 'Video Viewer' application which allows selecting and viewing live video feed from up to 16 cameras in a configurable video panel.

The operator can change the number of cameras displayed on the live viewer panel using a simple selection menu and display up to sixteen cameras simultaneously. The pane layout menu allows operators to have a main camera feed surrounded by smaller camera feeds to focus on a certain camera. Each pane can be simply configured using a drag and drop facility to place the appropriate camera into the required pane.



Thanks to a built-in Control Panel, the operator can control Pan/Tilt/Zoom functions of PTZ capable cameras, configure and activate presets and configure logging functions.

**Benefits:**

All-inclusive security management functionality with embedded video and customizable maps.

## New and updated AC2000 Integrations

The AC2000 video integration interfaces provide the ability to associate access control alarms with digital video clips on a third party video system. This enables AC2000 to act as the central Security Management System (SMS).



- **AC2000 Milestone XProtect** interface has been updated and now supports both Corporate and Professional versions.

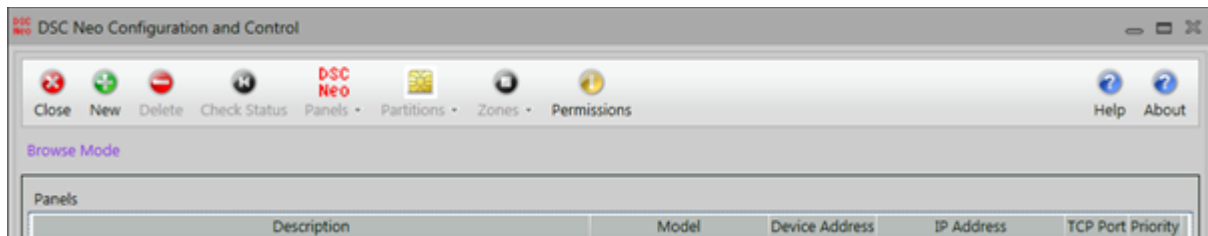
- **American Dynamics Video** interface (including HDVR, ADTVR, NVR, DVMS) has been updated to SDK version 4.9



- **Avigilon** interface has been updated to SDK version 6.0



CEM is expanding its integration portfolio of intrusion systems by introducing a new interface to **DSC PowerSeries Neo** including a dedicated DSC Neo Configuration and Control application.



The AC2000 DSC PowerSeries intruder interface enables alarms from DSC intruder detection system (IDS) to be fully integrated with the AC2000 security management system.

The AC2000 DSC PowerSeries Neo interface enables inputs from intruder panels to be placed as icons on the AC2000 Security Hub application. This provides, on a single screen, a graphical representation of the physical layout of intruder sensors and allows for central alarm monitoring of both access control and intruder alarms.

## Frequently Asked Questions

- **What versions of AC2000 are being released as version 8.0?**
  - AC2000 version 8.0 is being released for the core AC2000 product, AC2000 Airport and AC2000 Lite editions.
- **Is there an upgrade path for previous AC2000 installations?**
  - Yes, however due to the AC2000 Server core structure change of operating system (OS), the existing AC2000 database will need to be fully backed up and the AC2000 server wiped. When the server is clean, AC2000 v8.0 is then installed; the existing database backup will be converted into AC2000 v8.0 format and restored into the new AC2000 v8.0 system. AC2000 Workstation client software will also require re-installation.
- **Is it possible to deploy data partitioning to existing AC2000 Installation?**
  - AC2000 Data Partitioning is designed to be implemented on a fresh installation in order to divide the data as it is recorded in the database, therefore it is not possible to deploy the partitioning on existing non-partitioned AC2000 system.
- **My current system has a third party interface using AC2000 API. Will it still work after I upgrade to AC2000 v8.0?**
  - Certain API procedures have changed therefore it may be necessary to update the third party interface. Please contact CEM Systems for details. (add link to Sales contact information on website)
- **Which version of AC2000 supports Security Hub and is it licensed?**
  - Security Hub is available from AC2000 version 7.1 onwards. Standard Security Hub is included with AC2000 Security Management software and is not licensed; however if Graphical Maps functionality is required then an additional licence will be needed.
- **If I upgrade my AC2000 system and migrate from using Alarm & Event Display (AED) to Security Hub will I retain the AED map and device configuration?**
  - No, because the map and device configuration for both applications are not shared, new AC2000 Security Hub design and layout must be created separately from Alarm & Event Display (AED).
- **Will my system support emerald Fingerprint Readers?**
  - The emerald fingerprint is supported on AC2000 systems v6.6 upwards with PostgreSQL database. Earlier versions of AC2000 will have to be upgraded. Additional patches may also be required depending on required functionality. Please note that S610f validation reader is required for fingerprint enrolment.
- **What biometric sensor is used in emerald Fingerprint Readers?**
  - The emerald fingerprint is using a high-resolution optical waterproof sensor with solid and scratch-free sensor surface. The sensor uses FIPS201 approved algorithm and automatically optimises fingerprint images for improved performance.

Feature	Function	Benefit
AC2000 Data Partitioning	AC2000 data partitioning enables the AC2000 system to be divided into multiple data partitions and provides individual access control for each partitioned company.	Site administrators can restrict access not only to a company's card reader network but also restrict access to content not belonging to other companies/ organisations. Data partitioning also empowers each company by giving them control over their own private access areas while still allowing them access to common areas within the building or facility.
AC2000 Security Hub	Ability to draw zone lines directly on the maps.  Threat Levels displayed in the status bar.  More Reports.	Better overview of the map events and improved monitoring of high security areas.  Operator can change Threat Level directly from within maps in a reaction to imminent threat.  Quick system statistics on the fly directly within security management module.
AC2000 Personnel	Multiple cards per cardholder for different companies.  Batch data updates and activity logging.	Person working for different companies can be registered in the system with separate cards.  Administration tasks are simplified by updating details for batch of personnel and the ability to monitor all changes.
Active Directory Interface	Improved data import from Active Directory.	Collated source for data import and card status changes.
AC2000 Reports	More comprehensive reports.	Ability to run customised reports on critical system alarms and events.
AC2000 Personnel Cleardown	Improved data housekeeping.	AC2000 Cleardown can now delete expired record for Visitors and Vehicles.
AC2000 Breach of Conditions	Monitor and automatically block offenders.	Introducing breach scoring system that automatically locks the card if the score reaches pre-defined maximum.
AC2000 Zone Monitoring	Zone monitoring split by companies.	Monitor specific company within pre-defined zone.
External Systems Interface	Upload interface configuration from file.	Simplified configuration upload file for third party system interface that eliminates the need for creating individual configurations.
CDC Server Software	New operating system architecture.	Full 64-bit architecture offers full compatibility with latest server hardware.
emerald BDRM	Create trigger patterns for external I/O controller.	Manage route patterns for complex door or device interlocking operation scenarios.

## New Product Codes

Model Number	Description
<b>SYS/500/501</b>	AC2000 Lite Software Only Virtual Kit and Server PC Bundle (32 Door Licence)
<b>SYS/500/502</b>	AC2000 Lite Software Only Virtual Kit and Server PC Bundle (64 Door Licence)
<b>SYS/500/503</b>	AC2000 Lite Software Only Virtual Kit and Server PC Bundle (128 Door Licence)
<b>TSR/100/115</b>	emerald TS100f Intelligent Fingerprint Access Terminal (MIFARE CSN/DESFire CSN/CEM DESFire)
<b>TSR/100/118</b>	emerald TS100f Intelligent Fingerprint Access Terminal (iCLASS/iCLASS SE)
<b>TSR/200/115</b>	emerald TS200f Intelligent Fingerprint Access Terminal (MIFARE CSN/DESFire CSN/CEM DESFire)
<b>TSR/200/118</b>	emerald TS200f Intelligent Fingerprint Access Terminal (iCLASS/iCLASS SE)
<b>SWTSR-BDRM</b>	emerald BDRM (Boarding and Deplaning Route management) Mode
<b>IOC/101/214</b>	emerald BDRM (Boarding and Deplaning Route management) IO Controller
<b>SWINT-DSC-NEO</b>	DSC PowerSeries Neo Intruder System Interface
<b>SWVINT-XPROT-PRO</b>	Milestone XProtect Professional Video Interface

For more information email [cem.info@tycoint.com](mailto:cem.info@tycoint.com) or contact your account manager.