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New Product Announcement

CEM Systems AC2000 Access Control Security Management System v12.2 Software Release

What's New in AC2000 v12.2?

CEM Systems is pleased to announce the release of AC2000 & AC2000 Airport v12.2 software, delivering enhanced web functionality, stronger smart card security and improved usability. This release introduces expanded web applications, advanced cybersecurity features, and an upgraded Smart Card Utility, enabling secure key control and seamless migration to encrypted DESFire AES technology within a flexible, future-ready access control platform.

Key Features:

Mobile Multi-Factor Authenticator (MFA) for AC2000 Client & Web login



Enhanced AC2000 Web Experience

AC2000 v12.2 introduces an expanded suite of web-based applications, bringing more core AC2000 functionality online while improving accessibility and usability across devices, including:

- **Web Dashboard** – Fully redesigned with System Health and Activity views, providing real-time diagnostics and system insights
- **Expanded Web Applications – Vehicles, Zone Monitor, Guard Tours, Occupancy Zones, Temporary Extra Access, and Lockdown**, mirroring key client functionality
- **Web Backup & Restore** – Now includes encrypted backup options for enhanced data protection



DESFire Smart Card Enhancements

- **DESFire Card Transport Keys Support** allowing secure on-site conversion from temporary transport keys to customer-owned encryption keys
- Enhanced AC2000 Smart Card Utility enabling Full Card Identity Capture including UID, PID, CSN, and future-ready 128-bit identifiers
- Automated Hotstamp Reading eliminating manual entry and reducing enrolment errors



Security Hub Enhancements

- New Disability Mustering: Personal Emergency Evacuation Plan (PEEP) Reporting supporting UK legislation and assisted evacuation planning
- Automated Muster Reporting with automatic print or email triggered by alarms (e.g. fire)
- Security Hub Broadcast functionality, Improved Map Performance, New Tailgating Alarm And more!

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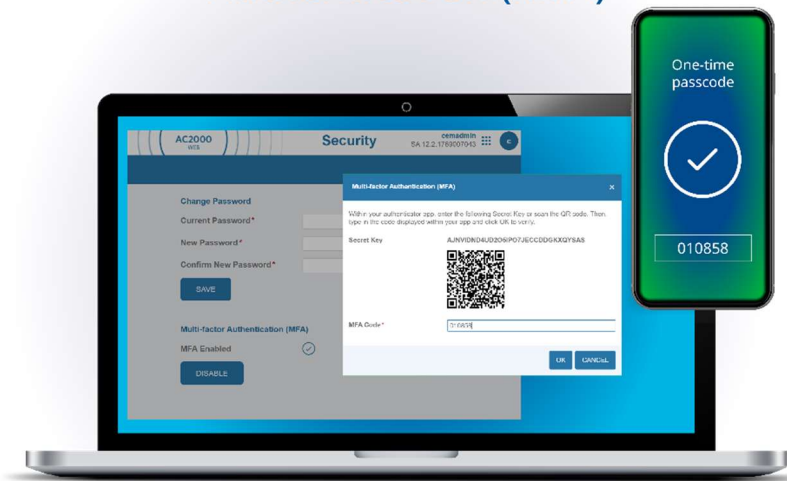
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New Security & Compliance Features

- **Mobile Authenticator for AC2000 Client & Web login**

We are pleased to introduce new **Multi-Factor Authentication (MFA)** for AC2000 Web and Client (workstation) operator logins, delivering enhanced security and greater control over user system access.

Multi-Factor Authentication (MFA)



2-Factor Authentication
MFA uses time-based one-time passcodes (TOTP) generated via a mobile authenticator app, such as Google Authenticator:

- 6-digit codes
- Generated using the **SHA-256 algorithm**
- Codes expire and refresh automatically

Flexible Configuration

AC2000 MFA can be tailored to suit your organisation's security requirements: It can be:

- Disabled
- Optional for select users or
- Mandatory for all logins

The new AC2000 MFA capability adds an additional layer of protection beyond traditional username and password login. When enabled, users are prompted to enter a valid time-based one-time passcode (OTP) generated using the authentication app on their mobile device. This additional verification step strengthens identity verification and significantly reduces the risk of unauthorised access to AC2000 Web and Client applications.

Front-end AC2000 Floatbar Security Improvements

Enhancements have also been implemented to strengthen security within the AC2000 front-end Floatbar. As part of these improvements, restrictions have been introduced to limit the ability to modify workstation settings to administrators and partition administrations only on Enterprise deployments for Cyber Security Hardening.

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Enhanced Emergency Mustering

- **New Disability Mustering (PEEP) Reporting & Automatic Print Muster Report via Security Hub**

NAME	HOME SERIAL	COMPANY ID	COMPANY	PAYROLL NUM	KEY INDIVIDUAL
DOE, JOHN	6	JCI	JOHNSON CONTROLS	1	First Alder
GARCIA, RYAN	3	CEM	CEM SYSTEMS		PEEP - Wheelchair
MYERS, ALICE	4	CEM	CEM SYSTEMS	5	
SMITH, DAVE	7	JCI	JOHNSON CONTROLS		



Portable reader has also been updated to display 'Key Individuals' information.

Introducing new **Disability Mustering (PEEP) reporting** and expanded **Key Individual management** to support recent UK legislation around Personal Emergency Evacuation Plans (PEEPs) and fire safety compliance.

These regulations place increased responsibility on organisations to identify individuals who may require assistance during an emergency and ensuring appropriate support measures are in place. AC2000 addresses this through enhanced mustering capabilities, enabling the identification of “**Key Individuals**”, real-time visibility of their status (Zones) during incidents, and improved evacuation response. The solution is fully configurable, allowing up to 10 custom Key Individual categories to be defined and assigned to personnel, with dedicated monitoring via the Zone Monitor application to track their real-time location across defined areas during an emergency. This ensures stronger alignment with new UK fire safety requirements for assisted evacuation and compliance.

Report

In Zone Report: First Floor
Total Personnel : 4

Company	Department	Name	Key Individuals	Date / Time	Location	Tick
CEM SYSTEMS		GARCIA RYAN	PEEP - Wheelchair	15/05/2026 15:42:18	Device 00040	—
CEM SYSTEMS		MYERS ALICE		15/05/2026 15:41:07	Device 00040	—
JOHNSON CONTROLS	ENGINEERING	SMITH DAVE		15/05/2026 15:38:13	Device 00040	—
JOHNSON CONTROLS		DOE JOHN	First Alder	15/05/2026 15:34:52	Device 00040	—

Report Date 15/05/2026 16:19:37

To further enhance mustering, Security Hub supports automatic generation and printing of the In Zone Muster Report when a specified alarm is triggered.

A trigger is configured using the device, alarm type, muster zone and output option (print, email or both) and can be assigned to multiple workstations running Security Hub. This enables automated actions such as immediate report printing when a fire alarm is activated, improving response efficiency and safety compliance.

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Other Security Hub improvements include:



- Ability to limit map view instances to a single window
- Search results window linked to map selection
- Option to open the Trace Report application when selecting a device report
- Device template enhancements allowing full reset to original default settings and icons and bulk updates across multiple templates simultaneously.
- **Security Hub broadcast** functionality enabling users to broadcast a device or its associated zone directly from Security Hub
- Introduction of a **new tailgating alarm** feature and more!

Operational Intelligence – Enhanced Customisable Reports

- **First and Last Report Customisation**
Customisable reporting now includes enhanced first and last swipe comparisons for deeper insights. A new report setup tab allows users to tailor report outputs, with an additional field that automatically displays the time difference between the first and last swipe. This provides greater visibility into how facilities are used, enabling organisations to move beyond simple access logs to more meaningful operational intelligence. By offering accurate attendance and occupancy insights, showing when for example individuals first enter and last leave, this feature helps build a clearer picture of on-site presence while supporting smarter, data-driven decision-making.

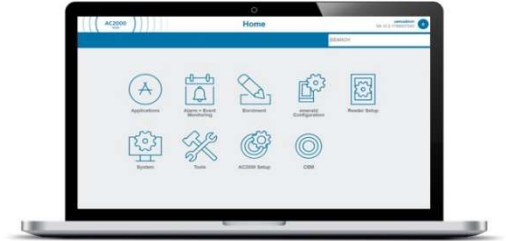
Name / Reg Number	First Swipe	Location	Outcome	Last Swipe	Location	Outcome	Company ID	Company	Payroll Number	Time Difference
BLACK, SARAH	05/05/2026 09:46:29	Side Entrance Out	Card valid	05/05/2026 10:16:03	Side Entrance Out	Card valid	AD	AMERICAN DYNAMICS		00:29:34
SMITH, JOHN	05/05/2026 09:46:03	Main Entrance In	Card valid	05/05/2026 15:50:53	Main Entrance Out	Card valid	CEM	CEM SYSTEMS		06:04:50

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Expanded AC2000 Web Application Suite

AC2000 v12.2 introduces an expanded suite of new web-based applications that mirror key AC2000 client functionality including:

- **Web Vehicles** – Create, edit, and manage vehicle credentials
- **Zone Monitor** – View personnel and visitor occupancy across up to two zones in real time.
- **Guard Tours** – Configure and monitor guard patrol routes and activities.
- **Occupancy Zones** – Monitor and manage zone capacity
- **Temporary Extra Access** – Assign and control temporary permissions
- **Lockdown** – Initiate and manage lockdown scenarios via the web interface



These additions extend core system capabilities to the web, improving operational flexibility and efficiency.

Surname	Forename	Company	Job Title	Date of Birth
DOE	JOHN	JCI - JOHNSON CONTROLS	SOFTWARE ENGINEER	1980-11-01

Zone	Name	Company	Last Swipe	Swipe Location	Key Individual
First Floor Zone	DOE, JOHN		2025-01-30 10:21:51	Device 00010 (00940)	First Aider
Ground Floor Zone	SUR 1, FORE 1		2025-04-30 10:29:01	Device 00000 (00800)	
Ground Floor Zone	SUR4, FOR4		2025-04-30 09:54:29		

Zone	Zone Count
First Floor Zone	2
Ground Floor Zone	0

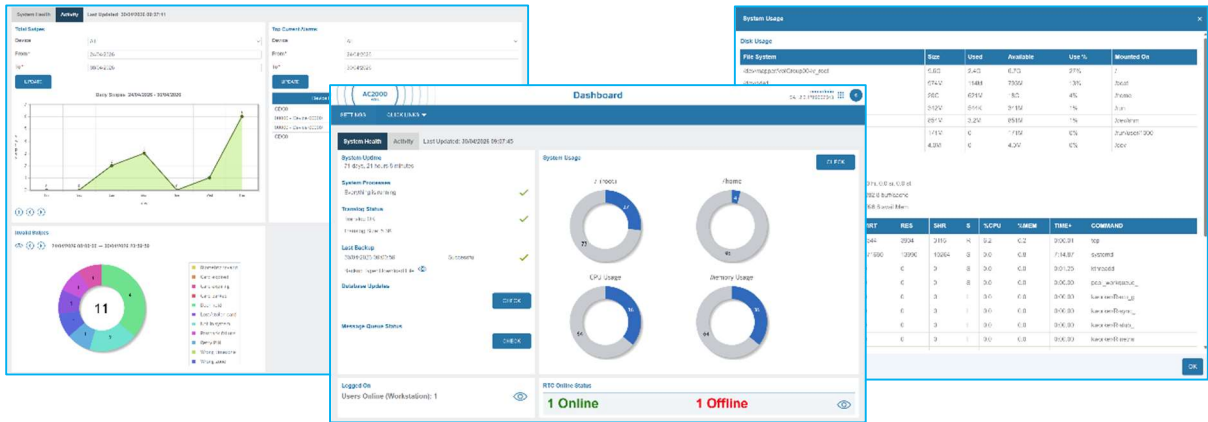
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Web Dashboard Redesign



The Web Dashboard has been fully redesigned to provide enhanced system visibility through two dedicated views:

- **System Health** – Displays real-time diagnostics including system uptime, processes, RTC status, database updates, message queues, and resource usage (e.g. current users logged onto workstations, online/offline status of RTCs etc).
- **Activity** – Visual insights into system usage, including total swipes, invalid swipe trends, and top current alarms. Also displays the amount of time that the AC2000 system has been running continuously without a restart or shutdown and last successful backup.

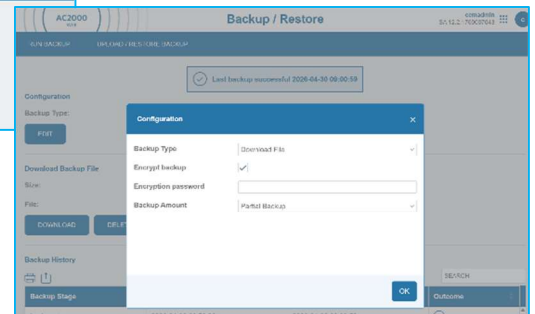
This delivers a clear, real-time overview of AC2000 system performance and activity.

Other AC2000 web enhancements include:

- **Maintenance Date Changes**
A new licence maintenance tracking features provides greater visibility and control:
 - Display of licensing **maintenance expiry dates** within the web interface
 - Login notifications alert users if maintenance is nearing expiry, due, or expired
 - Mandatory acknowledgement ensures visibility of critical system status



- **Web Backup/Restore** – Added encrypted Backup
Added option to encrypt backups and passwords for each backup type.



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Enhanced AC2000 Smart Card Utility & DESFire Transport Keys

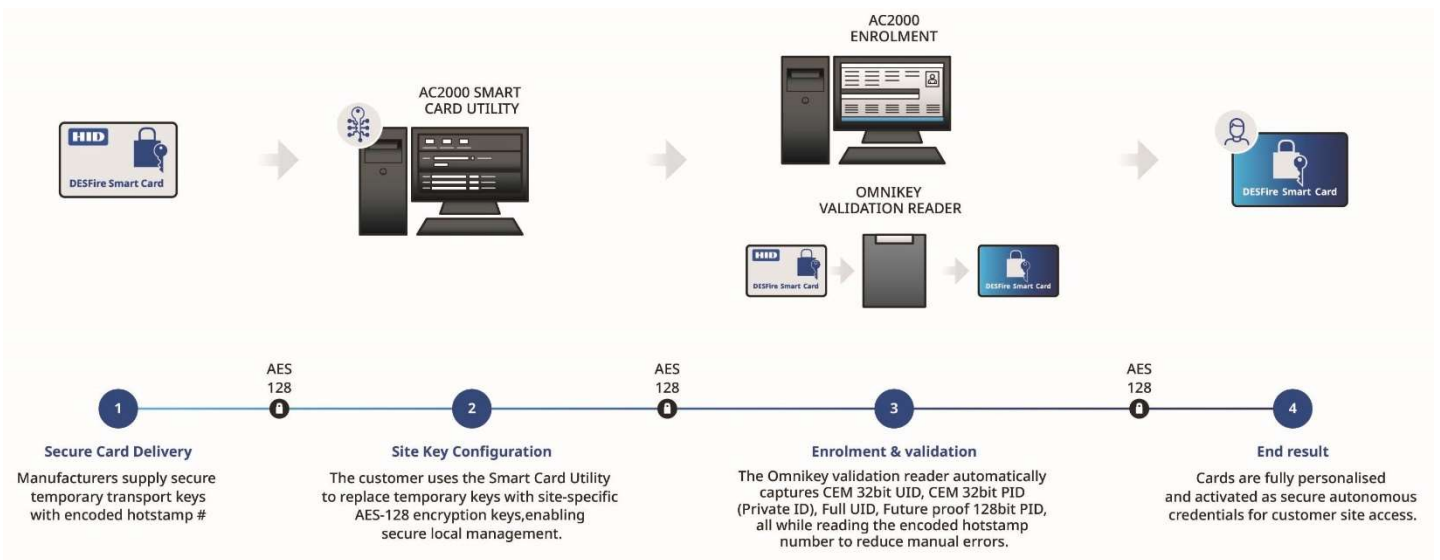


AC2000 v12.2 introduces a significant advancement in smart card security and credential management, combining DESFire transport key support, secure key provisioning, and full card identity capture within an upgraded Smart Card Utility. It enables customers to move from legacy card systems to fully encrypted DESFire AES credentials - securely, gradually, and without operational disruption.

Secure DESFire Transport Keys Support

AC2000 v12.2 introduces support for **DESFire transport keys**, enabling a secure and controlled transition from manufacturer-issued credentials to fully customer-managed encryption. Smart cards can be pre-personalised with **secure, temporary transport keys** and seamlessly converted on-site into customer-specific encrypted credentials during validation.

- Cards can be issued in a secure transport handling state
- Transport keys from manufacturers such as HID etc are replaced on-site with customer-specific encryption keys
- Keys are never exposed, ensuring a controlled and secure handover process
- Full ownership of the credential trust chain transfers entirely to the customer.



So how does it work?

- Manufacturer Transport keys authenticate the card in its initial state
- The AC2000 Smart Card Utility then validates and personalises the credential - it automatically extracts multiple identifiers from it.
- Transport keys are replaced with **site-specific encryption keys**
- After this process, transport keys are permanently retired for that card.

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Enhanced Smart Card Utility

AC2000 Smart Card Utility application has been significantly improved to simplify enrolment, validation, and card migration. v12.2 software release transforms the AC2000 Smart Card Utility into a **secure identity capture, validation, and migration engine**, bridging legacy card technologies with fully encrypted DESFire AES credentials. All while preparing for next-generation 128-bit identity architectures.

1. Full Card Identity Capture

Smart Card Utility now automatically captures **complete card data during validation**, including:

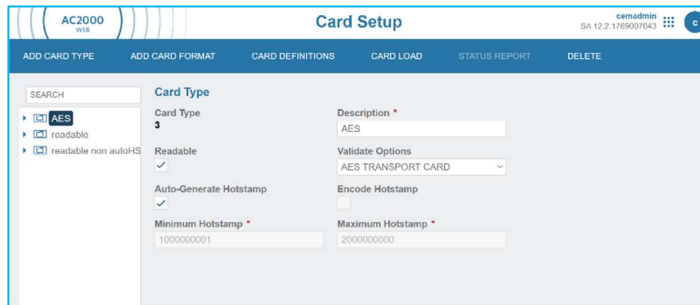
- CEM UID (32-bit legacy identifier)
- Private PID (32-bit)
- Full card UID / CSN (hardware identifier)
- Future-ready 128-bit identifier

This replaces single number reads with a rich identity dataset, enabling:

- Support for multi-use credentials beyond access control
- Future-proofing for 128-bit architectures



2. Automated Hotstamp Reading



Transport cards are now encoded with an **embedded hotstamp number** that matches the etched number on the outside of the card and is automatically read from the card during the enrolment and validation process. This eliminates **manual data entry**, reduces enrolment errors and makes the validation process simpler.

Seamless Migration to DESFire AES Without Disruption

The enhanced Smart Card Utility provides a modernised validation and migration process that enables customers to transition from legacy, less secure card technologies to fully encrypted DESFire AES credentials while also preparing for future 128-bit identity schemes. It delivers a unified validation workflow supporting both legacy and secure credential formats, allowing organisations to continue operating existing systems while gradually migrating to encrypted DESFire technology and adopting future ready architectures. This approach avoids the need to replace all card readers or re-enrol users at once, enabling a phased smart card transition. With dual format support for legacy 32-bit and emerging 128-bit identifiers, along with flexible options for storing 128-bit credentials (with or without zero-padding), the solution ensures a seamless and scalable migration from CSN based systems to modern encrypted environments. AC2000 v12.2 delivers a secure, flexible, and future-ready smart card solution, giving customers full control of their credential lifecycle while enabling safe migration to modern encrypted technologies.

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Frequently Asked Questions

Q. What integrations are available in 12.2 software release?

A. At initial launch, version 12.2 will support Exacq and American Dynamics victor video integrations. Throughout 2026, additional integrations will be added to the v12.2 interface portfolio, including Avigilon Unity, Stentofon, DSC PowerSeries Pro, KONE, Genetec Security Center and Milestone.

For the latest integration matrix, please contact your CEM Systems Account Manager.

Q. Does AC2000 WEB come as standard in AC2000 & AC2000 Airport Edition? Or do I need a separate WEB license?

A. Licensing is only required for AC2000 Web Time Hub and AC2000 Web Visitor Management modules. All other AC2000 Web applications are included in AC2000 and AC2000 Airport software as standard.

Q. What cards are supported in AC2000 Smartcard Utility with Transport Keys?

A. CEM introduced new card SKU for use with AC2000 Smartcard Utility with Transport Keys: CRD-EV3-004

Q. What is the purpose of the new Disability Mustering feature?

A. To help building managers and employers to comply with a legal requirement for a tailored escape plan (Personal Emergency Evacuation Plan – PEEP) for anyone who cannot leave a building unaided during an emergency e.g. individuals with permanent disabilities, temporary injuries, or cognitive impairments.

Q. What are the requirements for a Mobile Authenticator App for use with AC2000 login MFA?

A. The key requirement is that the Mobile Authenticator App must support SHA256 OTP generation, for example: FreeOTP or Google Authenticator.

Q. Can I receive support if I want to migrate my existing legacy card technology to secure DESFire?

A. Yes, CEM can provide full assistance with migrating older card technologies to modern encrypted DESFire cards with advice and recommendations for the best approach to modernise not only cards but also reader technologies for future-proofing site security.

Q. How can I upgrade my existing AC2000 system to version 12.2?

A. CEM provide easy to follow upgrade guides and self-service software scripts for seamless software upgrade. Professional services are also available on request. The easiest way to start is to review the upgrade requirements with CEM Support by raising a support ticket on the Support Portal. Valid SSA is required for access to free software upgrades.

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For more information, pricing or a demo speak with your CEM Systems sales representative.

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