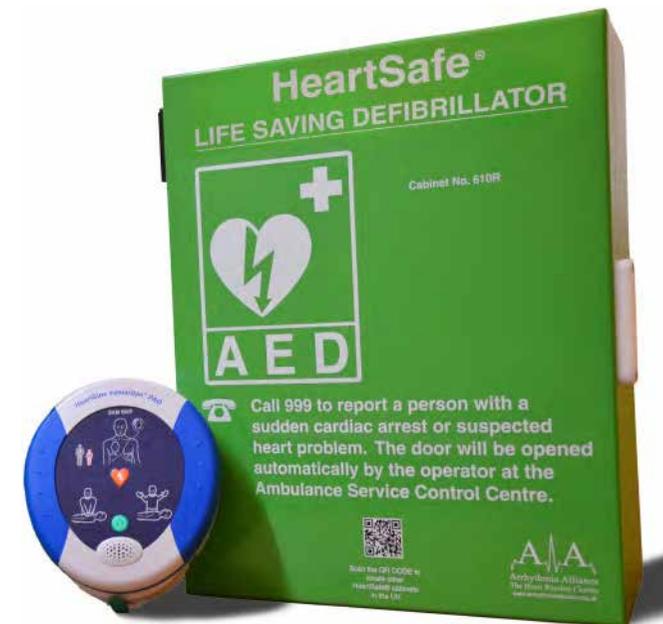# AED Locator and Communities working together to make the world

HeartSafe®

HeartSafe® SMART Outdoor Cabinet

This unique cabinet is designed to securely hold your defibrillator ready for public access with <u>full management oversight</u>. The cabinet is directly linked to the ambulance service and AED Locator Ltd. via a secure network connection, allowing 24/7 monitoring, access control and alerts. This provides a secure temperature controlled environment to store your AED. The SMART cabinet monitors your AED constantly ensuring readiness for use at all times. This makes the network of cabinets reliable and your AED's available to anyone at any time in the event of an emergency.

- Maintains AED in optimum condition ready for use
- Highly visible community presence of accessible AED
- Secure, high quality **<u>Stainless Steel</u>** construction
- Fully **CE Marked** and approved
- Access controlled remotely by Ambulance Service
- Flexible alerts to first responders and emergency services
- 24/7 Remote system monitoring and access control
- Up to 8 Hour battery backup in event of power failure
- Fully flexible and configurable management reporting
- Low power and running costs

HeartSafe® SMART Outdoor Cabinet

- **Defibrillator Fault Monitoring for Heartsine and some other AED's**
  - Unique system to monitor your Defibrillator in the cabinet 24/7
  - Very occasionally an AED can detect an internal error and go into fault mode. In this mode, the AED will **not** function and is unusable.
  - The AED Locator HeartSafe ® SMART cabinet detects the AED fault alarm, and immediately sends an alert to enable action to be taken
  - This system ensures your Defibrillator is <u>always</u> available for use
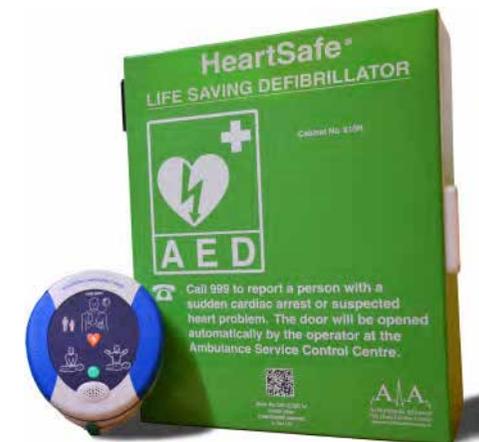
- **Cabinet security and Environmental Monitoring**
  - Cabinet security and remote access control by Ambulance service
  - Internal temperature control and logging for audit purposes
  - Confirmed presence of defibrillator with fault monitoring
  - Date Stamp alerts for pads/battery replacement
  - Internal battery gives up to 8 hours backup in event of power cut

- **Fully flexible alerts and reporting by email/SMS**
  - Configurable alerts for Emergency Services, First aiders, Community responders or other persons approved to assist by the Emergency Services
  - Live minute/hour/week/month Worldwide reporting services without limits or boundaries to understand and manage your AED network
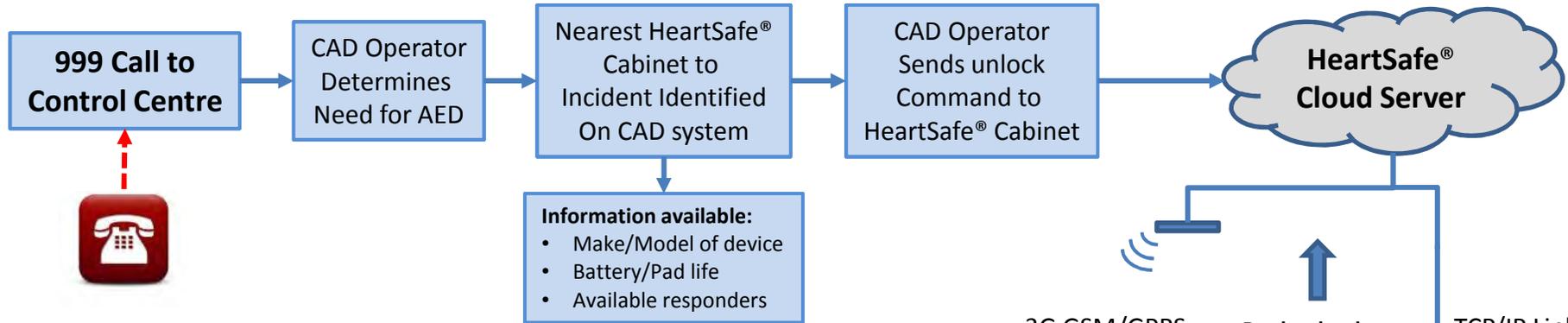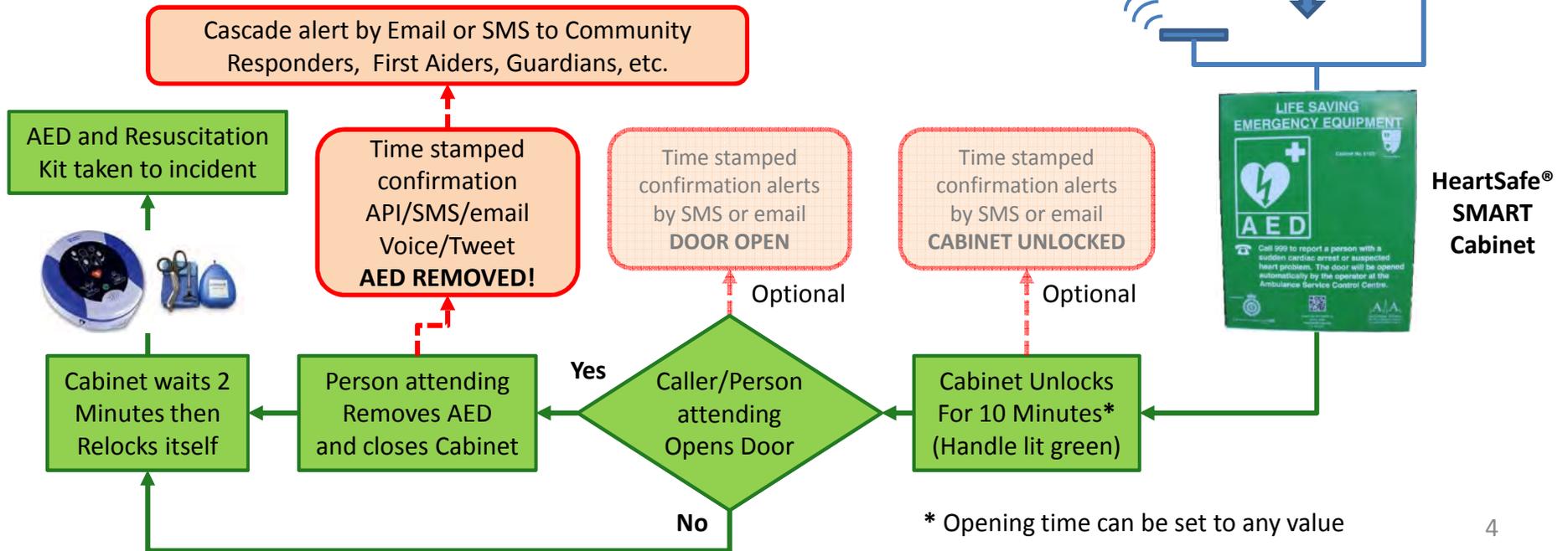
Samaritan PAD 500P

HeartSafe SMART Cabinet

3

How the System Works

AED LOCATOR

Ambulance Service Control Centre

999 Call to Control Centre → CAD Operator Determines Need for AED → Nearest HeartSafe® Cabinet to Incident Identified On CAD system → CAD Operator Sends unlock Command to HeartSafe® Cabinet → **HeartSafe® Cloud Server**

Information available:
- Make/Model of device
- Battery/Pad life
- Available responders

3G GSM/GPRS Wireless Link

Dual redundant communications

TCP/IP Link
Ethernet LAN

AED Locator Network

Cascade alert by Email or SMS to Community Responders, First Aiders, Guardians, etc.

AED and Resuscitation Kit taken to incident

Time stamped confirmation API/SMS/email Voice/Tweet **AED REMOVED!**

Time stamped confirmation alerts by SMS or email **DOOR OPEN**
Optional

Time stamped confirmation alerts by SMS or email **CABINET UNLOCKED**
Optional

HeartSafe® SMART Cabinet

LIFE SAVING EMERGENCY EQUIPMENT

Cabinet waits 2 Minutes then Relocks itself ← Person attending Removes AED and closes Cabinet ← **Yes** Caller/Person attending Opens Door ← Cabinet Unlocks For 10 Minutes* (Handle lit green)

No

* Opening time can be set to any value

4

HeartSafe® SMART Cabinet Monitoring

AED LOCATOR

Welcome Phil Kempson
Log out

| Dashboard | Status | Configure | Account |

Add widget

Personal view Account view

Example Dashboard with data Logging display

South Western Ambulance Service NHS
NHS Foundation Trust

www.aedlocator.org

SWAST Cabinet Temperatures – Last 10 Days

C

50
40
30
20
10
0
-10

02-17   02-19   02-22   02-24   02-27
08:49   20:56   09:04   21:12   09:19

Time
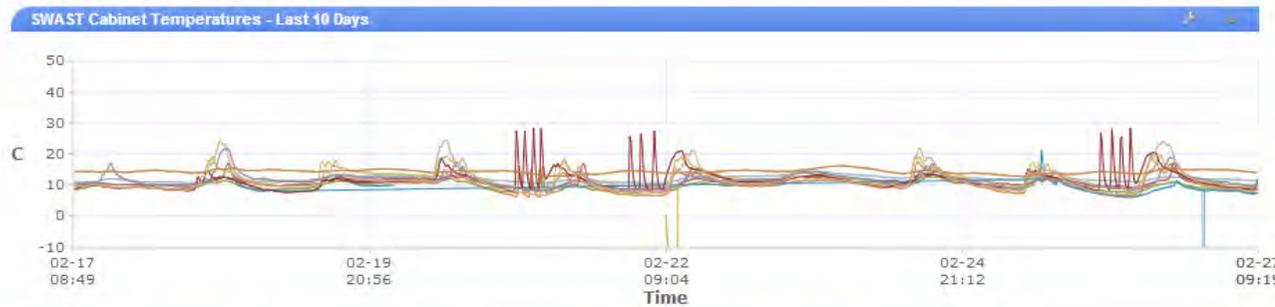
10 Day Cabinet Temperature log

Defibrillator Availability (Input HIGH is available)

Serial	Location	Input	Value	Unit	Status
AAC-207	The Old Ship Hotel, Padstow, 697R	AED	4516	mV	○ ○ ○ ○
AAC-208	St Enodoc Hotel, Rock, 700R	AED	4174	mV	○ ○ ○ ○
AAC-209	Longwell Green Dental Surgery, 606R	AED	4209	mV	○ ○ ○ ○
AAC-574	UWE Centre for Sport, 691R	AED	4497	mV	○ ○ ○ ○
AAC-575	UWE Bus Terminus, 692R	AED	4321	mV	○ ○ ○ ○
AAC-576	Delabole, 713R	AED	4557	mV	○ ○ ○ ○
AAC-577	St. Merryn School, Nr Padstow, 706R	AED	4562	mV	○ ○ ○ ○
AAC-580	Thornbury, St Mary Centre, 698R	AED	4311	mV	○ ○ ○ ○
AAC-581	Emersons Green, 708R	AED	4456	mV	○ ○ ○ ○
AAC-584	UWE Glenside, 693R	AED	4265	mV	○ ○ ○ ○

Defibrillator Availability (Input HIGH is available)

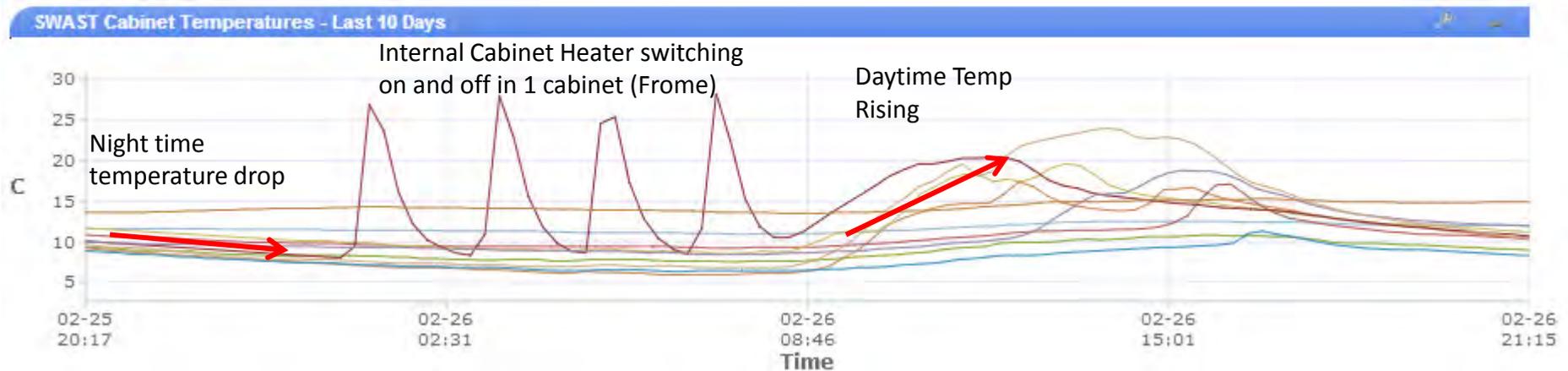| Serial	Location	Input	Value	Unit	Status
AAC-586	UWE TBC, 695R	AED	4393	mV	○ ○ ○ ○
AAC-591	Saltford Community Hall, 707R	AED	4326	mV	○ ○ ○ ○
AAC-593	Costa Coffee, St Austell, 709R	AED	4393	mV	○ ○ ○ ○
AAC-594	Wovina, Bodmin, 710R	AED	4204	mV	○ ○ ○ ○
AAC-602	Frome Rugby Club, 696R	AED	4427	mV	○ ○ ○ ○
AAC-612	The Harbour Office, Padstow, 702R	AED	4321	mV	○ ○ ○ ○
AAC-616	Ring o'Bells Inn, St Issey, 701R	AED	4427	mV	○ ○ ○ ○
AAC-634	Severn Beach, 609R	AED	4497	mV	○ ○ ○ ○
AAC-638	Pilning, Mafeking Hall, 607R	AED	4393	mV	○ ○ ○ ○
AAC-640	Tickenham Village Hall, 699R	AED	4364	mV	○ ○ ○ ○

Live view of Defibrillator availability inside Cabinets

KNOW FOR SURE your AED's are there and ready to deploy!!

Example of data logging on cabinet temperature
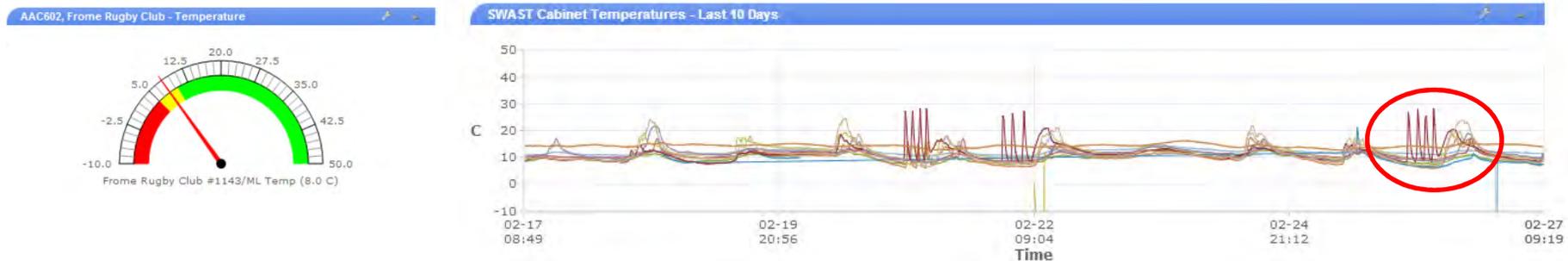
Detail of one 24 hr period during colder weather, clearly showing thermostatic heater function

KNOW your cabinet heater is working and be able to prove your AED has been stored according to manufacturers guidelines to maintain your AED's warranty

How does the SMART Cabinet communicate?

🌱 The AED Locator HeartSafe® SMART Cabinet utilises an embedded controller that communicates via dual redundant Ethernet, TCP/IP and 3G GSM/GPRS network links

🌱 The controller collects data from sensors within the cabinet used to manage the storage environment for the AED. It is also used to manage the security, alarming and remote access control when deployment of the AED is necessary

🌱 The SMART cabinet will send alerts to predefined recipients in the event that any of the monitored parameters go outside set limits. This ensures governance and oversight of your PAD network.

How secure is the SMART Cabinet on my network?

🌱 The controller firmware only supports the minimum set of services required to communicate with the system back-end servers. The protocol stack has been stripped from all unused services. In addition to ARP, DHCP and DNS, the only supported protocols are ICMP (ping) and the proprietary encrypted UDP protocol used by our servers.

🌱 The controller does not expose **any** server features. It does not support TCP connections of any kind, and all unrecognized UDP packets are ignored. The controller can only connect outbound. It has no exposed ports or services, and the hardware has no provisions for loading custom firmware.

🌱 All data that is sent between our servers and the controller is encrypted using a unique 128 bit key, making snooping or spoofing close to impossible

🌱 *The only way to communicate with the AED HeartSafe® SMART cabinet is through our system cloud services*

Can the SMART Cabinet be hacked?

- While nothing is impossible, we believe it is highly unlikely
- The controller does not have a web server. Instead it uses a small ARM-type processor, and the code cannot be accessed or changed by anyone. There is no executable loaded on startup as all the code is embedded in a flash memory inside of the CPU, and it is running a custom "tasker" rather than a standard operating system. As noted above, communication is limited to transporting sensor data and control commands to/from the server

How much bandwidth will each controller use?

- Very little. A typical installation moves less than 5MB (5 million bytes) per month, counting data both to and from the SMART Cabinet controller. That's about 10 seconds of a YouTube HD-video.

SMART Cabinet Summary

- The communications controller used inside the HeartSafe® SMART Cabinet is designed from ground up as a secure networked device, using well researched and broadly accepted methods for secure communications. It cannot be "hacked" and is immune to viruses and trojans. Most importantly, **it will not cause harm to any network**.

For any more questions regarding the HeartSafe® SMART Cabinet or general questions on AED Locator and Public Access Defibrillation

Please contact...

AED Locator (EU) Ltd.

Swallet Farm

Old Bristol Road

East Harptree

Bristol

BS40 6DQ

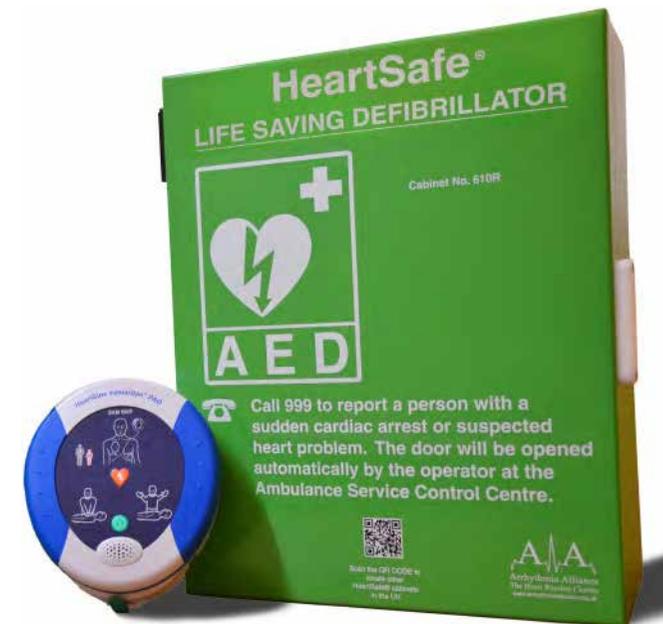Email: enquiries@aedlocator.org

Tel: 01275 332323

AED Locator and Communities
working together to make the world

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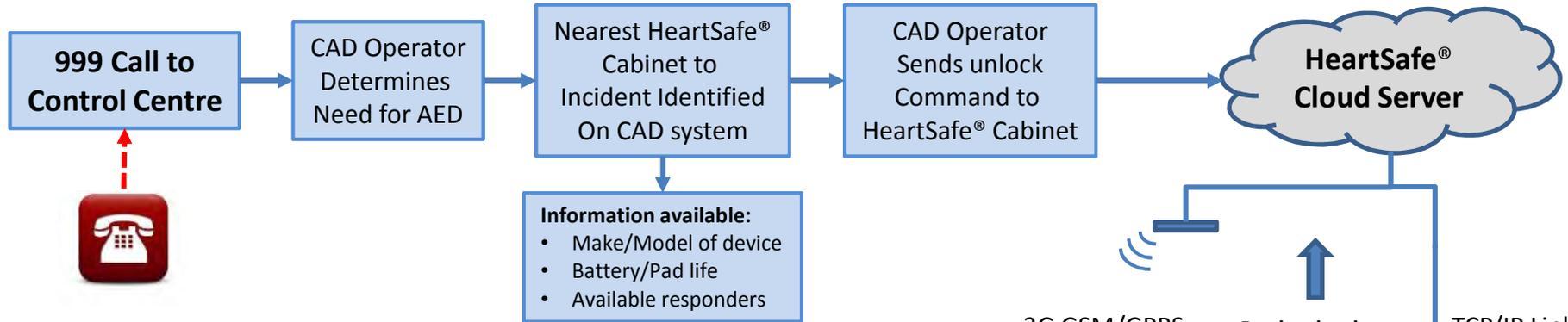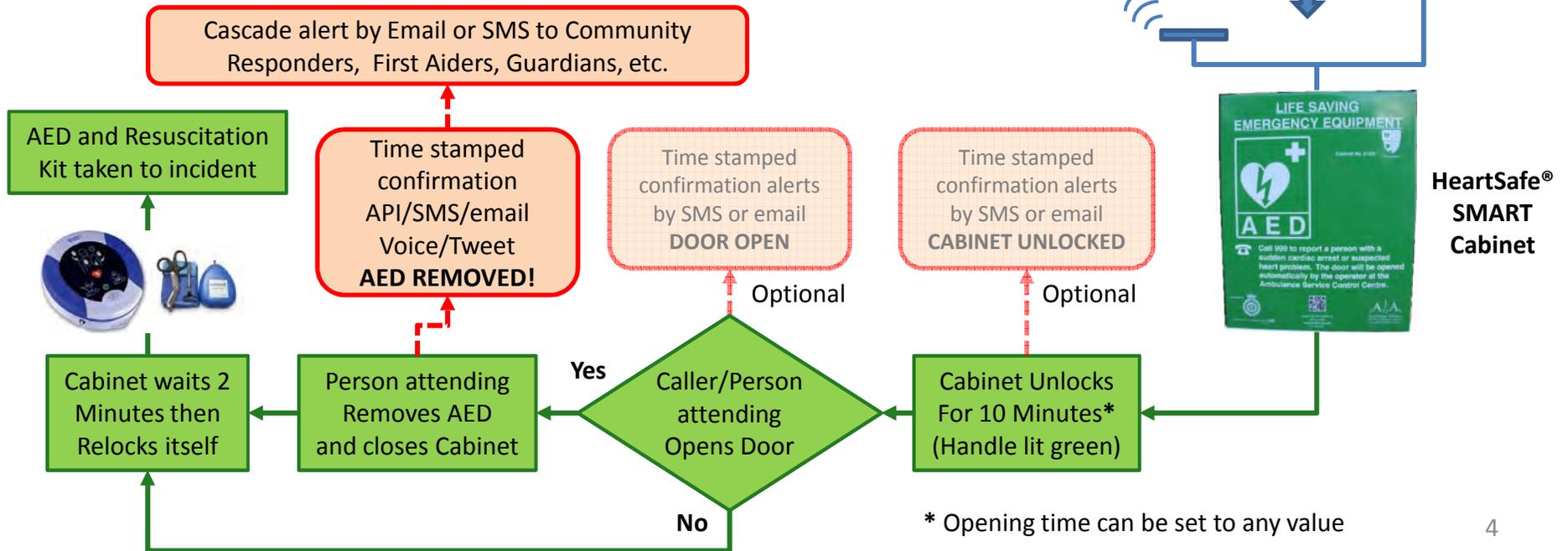
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HeartSafe® SMART Cabinet

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Time stamped confirmation API/SMS/email Voice/Tweet **AED REMOVED!**

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HeartSafe® SMART Cabinet Monitoring

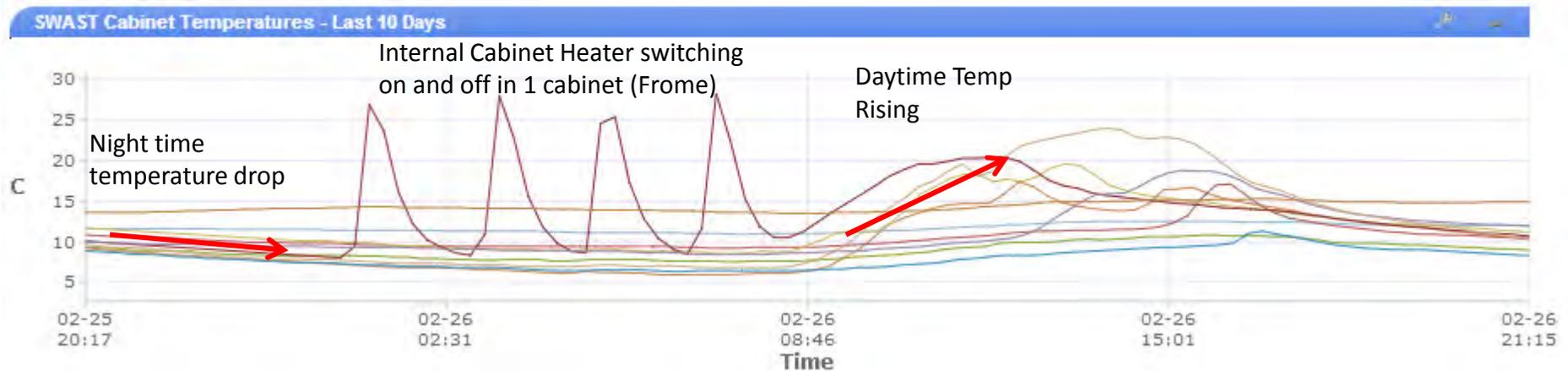**Example Dashboard with data Logging display**

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Live view of Defibrillator availability inside Cabinets

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5

HeartSafe® SMART Temperature Logging

Example of data logging on cabinet temperature

Detail of one 24 hr period during colder weather, clearly showing thermostatic heater function

Night time temperature drop

Internal Cabinet Heater switching on and off in 1 cabinet (Frome)

Daytime Temp Rising

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