



The FirstAED project
Incorporates emergency dispatch, GPS technology,
first responders with distinct roles, smartphones and an AED network

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Declaration of interest

- Teaching for MSD and AstraZeneca.
- Developed FirstAED GPS technology and applied for patent.





Background – the Langeland Island

- ~ 13,000 inhabitants.
- Long distances to the two nearest hospitals; (55 km, 90 km).
- Long ambulance response times (40 % \geq 15 minutes, 13 % \geq 20 minutes).
- Bystander CPR provided by 215 trained first responders
- 95 AEDs available around the clock
- Lay rescuers response times (8-10 minutes)



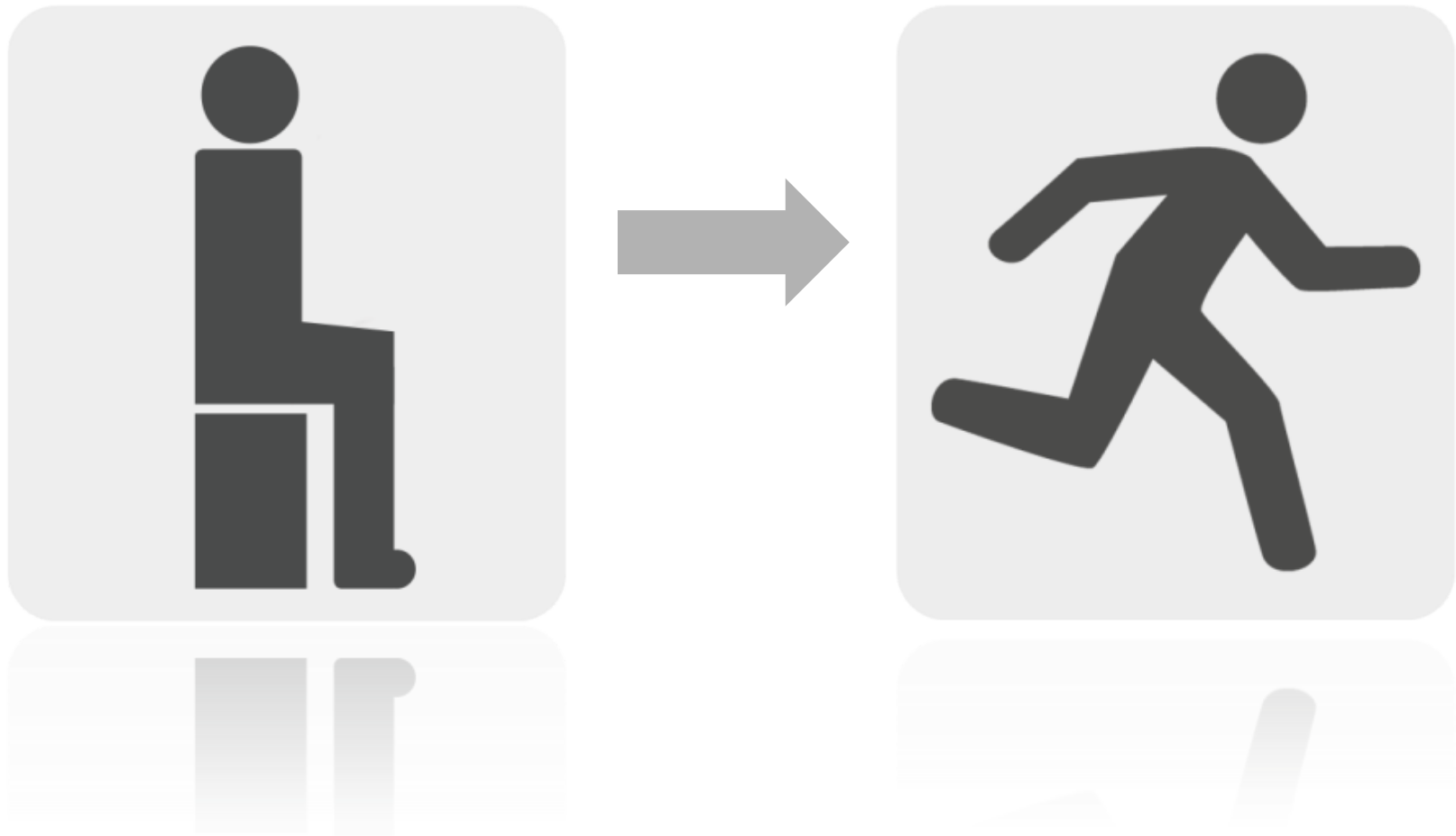
Purpose

- GPS tracking of trained volunteer first responders.
- At least one of the first responders and the AED need to arrive not just earlier than the traditional ambulance, but within 5-6 minutes of the initial call.
- The system establish an emergency team of 3 first responders with distinct roles.



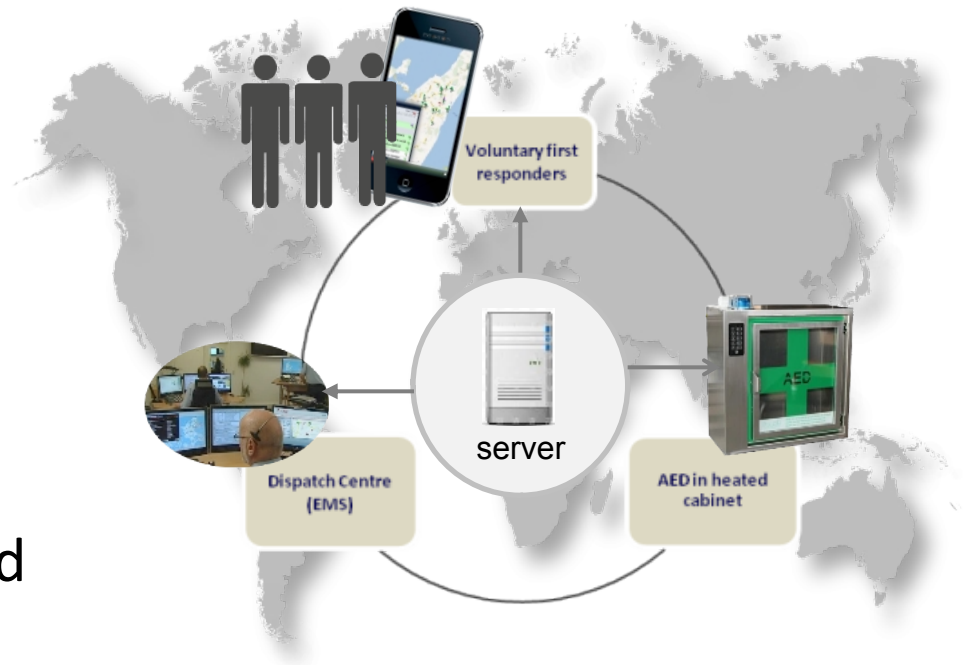


FirstAED activate trained volunteer first responders



FirstAED

- An IT-system (FirstAED app).
- All first responders are provided with an rescuer smartphone (iPhone 4S/5).
- FirstAED organizes the three first responders in a team with distinct roles.
- The IT-system activate the AED cabinets (unlock, sound & flash light).



First responders involved in all 1-1-2 emergency call

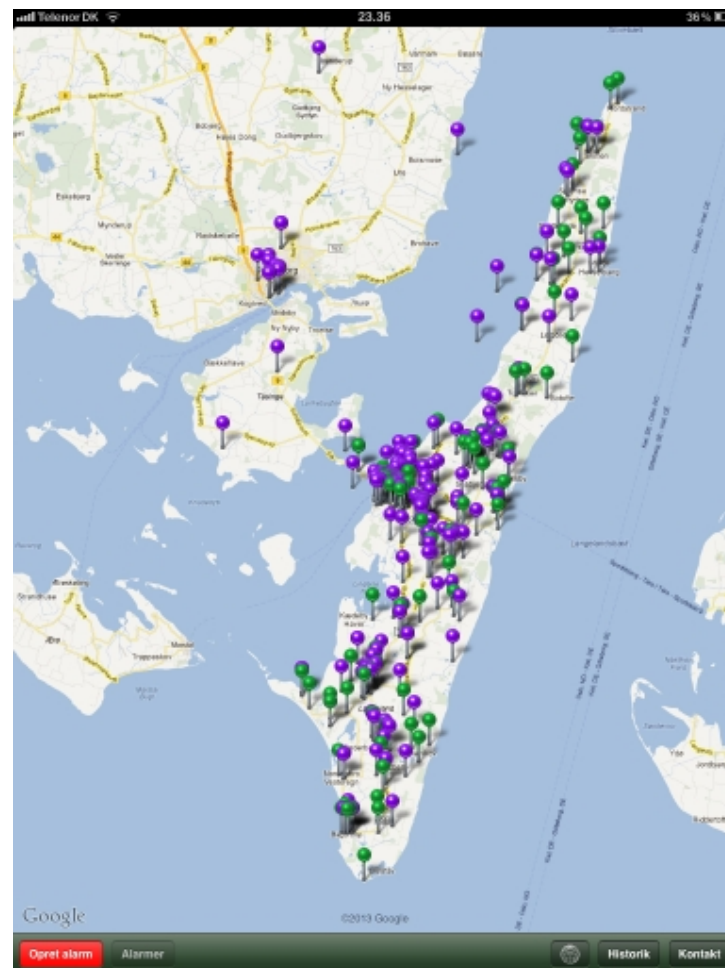
- Cardiac Arrest
- Disease
- Traffic accident/ fire
- Accident
- Others



Action: Emergency call – Cardiac Arrest

Dispatch Center iPad – GPS tracking

- 1 All first responders
(n= 215 (purple pushpins) (GPS-tracking)
- 2 AED's
(n= 95 (green pushpins))
- 3 Emergency Call
Activate iPad – GPS Tracking
(touch red marker)

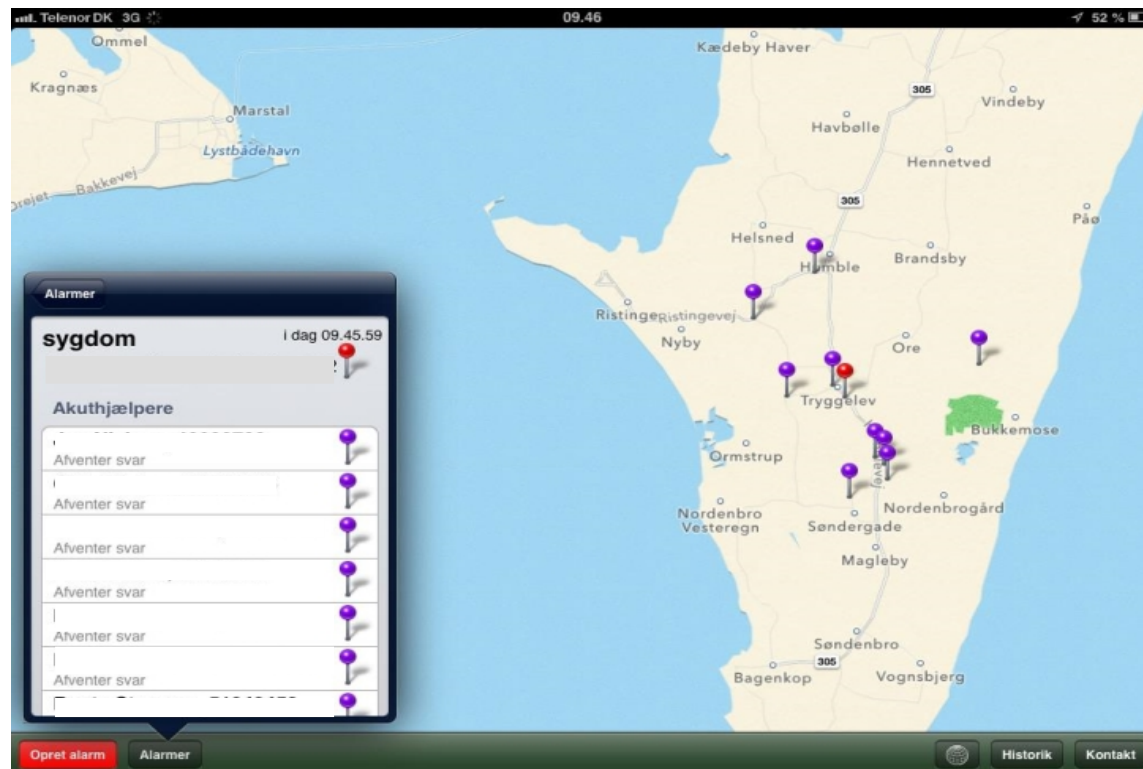


Action: GPS tracking

Emergency Call

Dispatch Center

iPad



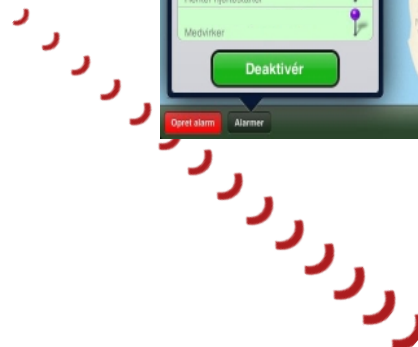
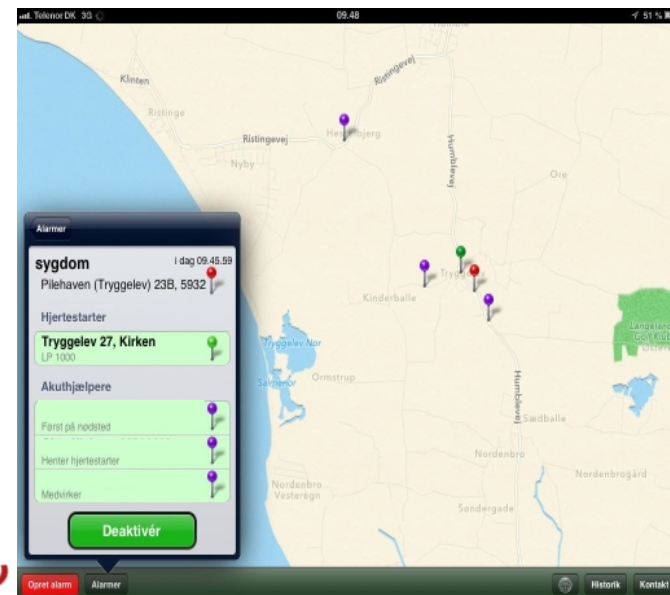
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- The 9 closest first responders are alarmed (push message).
- The 3 most optimally located first responders are organized in a team.
- The IT-system activate the AED cabinets (unlock, sound & flash light).





**Emergency Call
Dispatch Center
iPad**



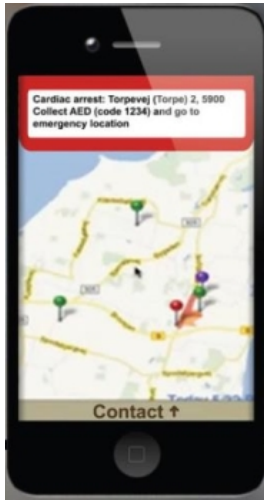
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Responder
no.1 & no. 3
accept

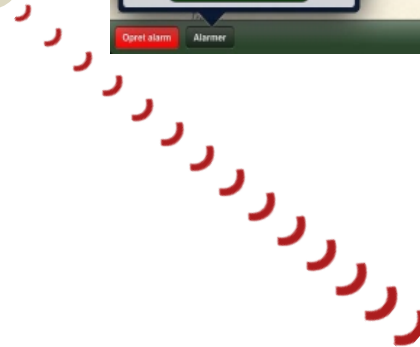
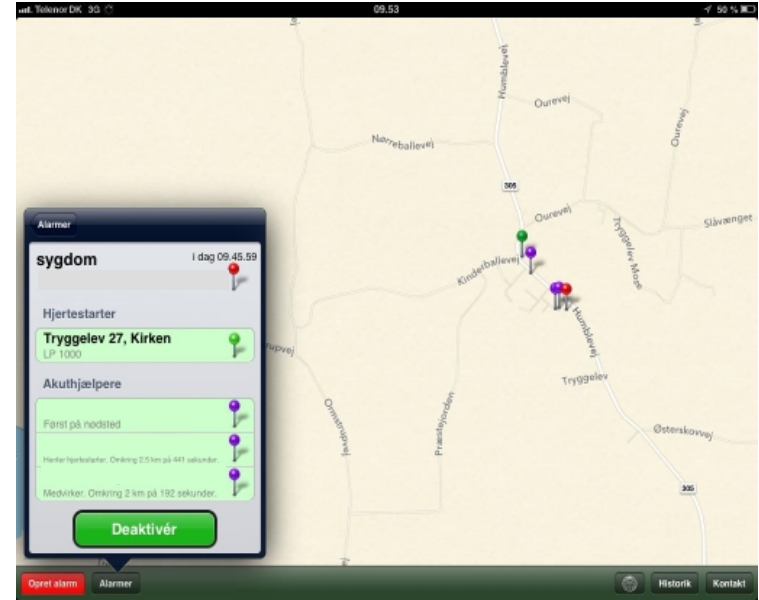


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Responder no.1 & 3 (purple pushpins)
receive the location of the emergency call
(red pushpin - GPS advice).
*Responder no.1 reaches the patient to give
first aid/HLR and responder no. 3 is the
onsite coordinator.*

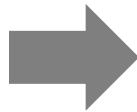


**Emergency Call
Dispatch Center
iPad**



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Responder no. 2 accept.



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Responder no. 2 (purple pushpin) receive the location of the nearest AED (green pushpin) and next the location of the emergency call (red pushpin - GPS advice).
Responder 2 brings the AED to the emergency place.

Key results of the first 21 months :

Dispatch categories

Alarm type	Number	Percentage
Disease	484	~ 82,3 %
Accident	45	~ 7,7 %
Cardiac Arrest	26	~ 4,4 %
Traffic accident/ fire	21	~ 3,6 %
Others	12	~ 2,0 %
Total	588	

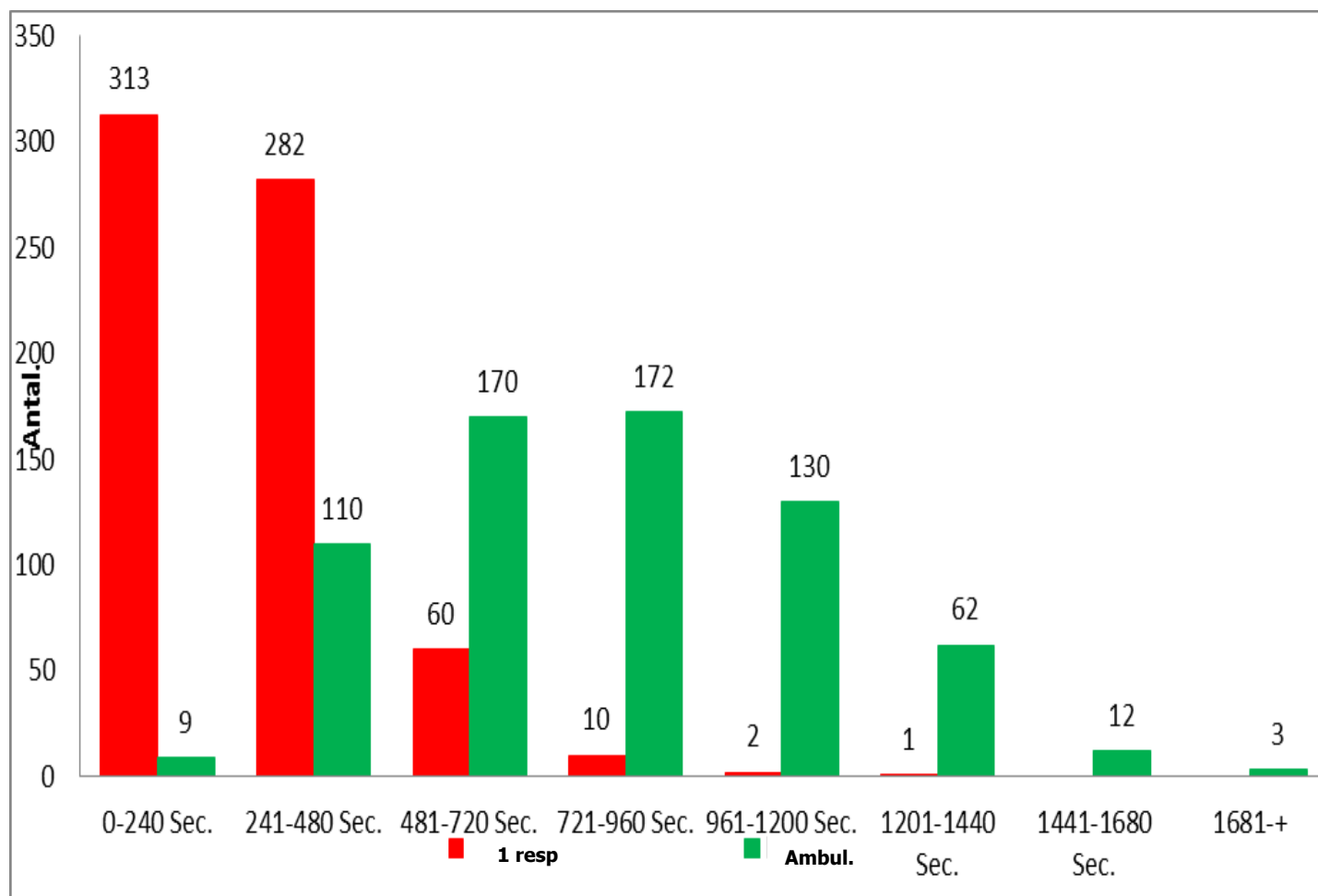


Results: Response times

Median Response time – Langeland n = 588	Time seconds
First Person On Site	249 sec. [1-1200 sec.]
AED On Site	358 sec. [1-1813 sec.]
Ambulance/paramedic On Site	714 sek



Response times first responders and ambulances/paramedics



Results: Arrival

Number first responders Arrival On Site		
3 first responders		89.1 %
2 first responders		7.1 %
1 first responders		3.1 %
0 first responders		0,7 %



Results: Arrival

Arrival		
Before ambulances/paramedics/ doctors		95 %



Key results of the first 21 months – FirstAED Emergency Call

- 6 Cardiac arrests - 3 survived.
- 6 Respiratory insufficiency - 5 survived.
- 3 Hangings - 1 survived.
- 2 Divers with decompression sickness (Complete restituted)
- 1 Subarachnoid haemorrhage (Restituted)
- Positioning of more than 10 traffic accidents



Conclusion:

- The FirstAED GPS app technology entails a significant reduction in first responder median response times from more than 8 minutes before to 4 minutes 9 seconds after.
- FirstAED organizes the three first responders in an emergency team with distinct roles.
- FirstAED activate the AED cabinets (unlock, sound & flash light).

