SAFECARE

Integrated cyber-physical security for health services

Hôpitaux Universitaires de Marseille | ap hm

COMMERCIAL EVENT
Overview of the SAFECARE Project and End-user benefits

2021-11-30

Philippe Tourron - Coordinator

SAFECARE has received funding as part of the “Secure societies – Protecting freedom and security of Europe and its citizens” challenge of the Horizon 2020 Research and Innovation programme of the European Union under grant agreement 787002

European Commission | HORIZON 2020

Project Identity

GA Number	787002
Starting date	01/09/2018
Duration in months	39
Topic	CIP-01-2016-2017
Consortium	21 partners - 10 EU countries Technical providers, hospitals, national public health agencies and security bodies
Project Coordinator:	Philippe Tourron, Marseille Public University Hospital (AP-HM)
Technical coordinator:	David Lancelin, Airbus CyberSecurity (CCS)
Scientific coordinator:	Isabel Praça, Instituto Superior de Engenharia do Porto (ISEP)

SAFECARE
Integrated cyber-physical security for health services

Context reminder
Challenge for health systems managers

- 3 perimeters that overlap and collaborate :
  - Medical devices
  - Building management
  - Medical data and software

Share data and infrastructure

- Polymorphic, agile, and combined threats : today and tomorrow, a strong attraction for cybercriminals and potentially terrorists
- A strong dependence between assets and complex impact chains... that can affect the lives of patients and staff
- A Paradox : A lot of information in specialized supervision systems without communication or integration

Need for a global approach in anticipation, protection, communication and crisis management

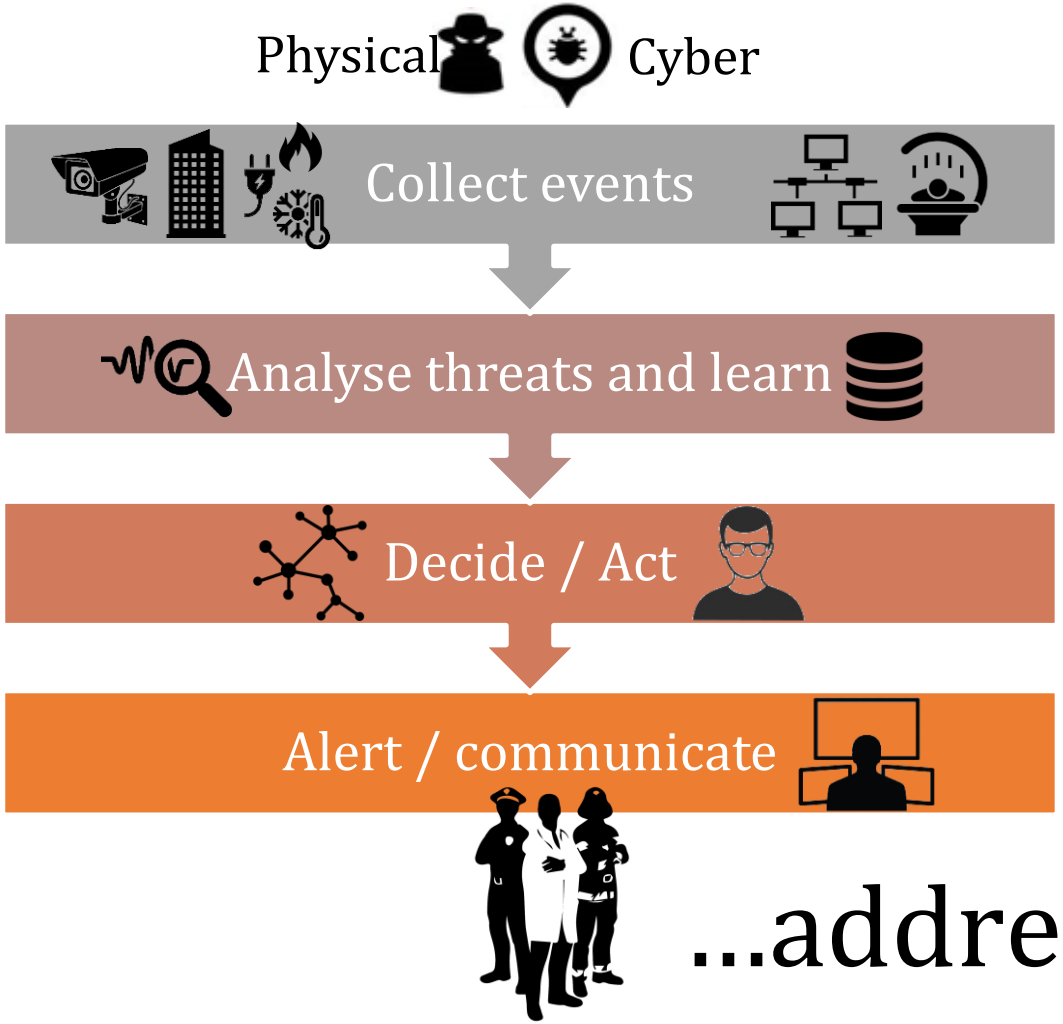
Addressing the challenge…

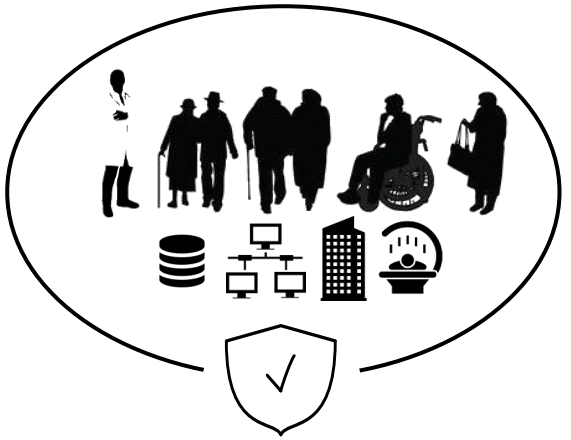
SAFECARE aims to:

- Provide high-quality, innovative, and cost-effective solutions that will improve physical and cyber security; and
- Enhance threat prevention, threat detection, incident response, and mitigation of impact in healthcare infrastructures, through the creation of a global protection system.

Over the course of 39 months, SAFECARE will design, test, validate and demonstrate 13 innovative elements optimizing the protection of critical infrastructure under operational conditions

Four steps to manage the security





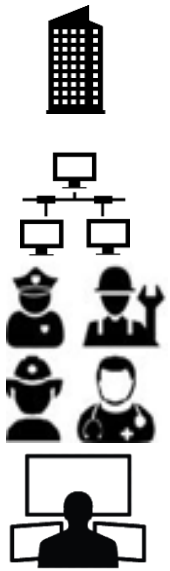
Patients, employees, assets, and services to protect

SAFECARE
Integrated cyber-physical security for health services

…addressed by SAFECARE

SAFECARE Four features for End-Users

To help in:



Qualification of physical incidents

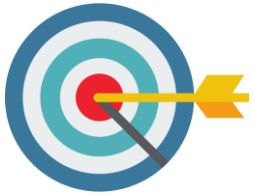
Qualification of cyber incidents

Communication to security staff and practitioners

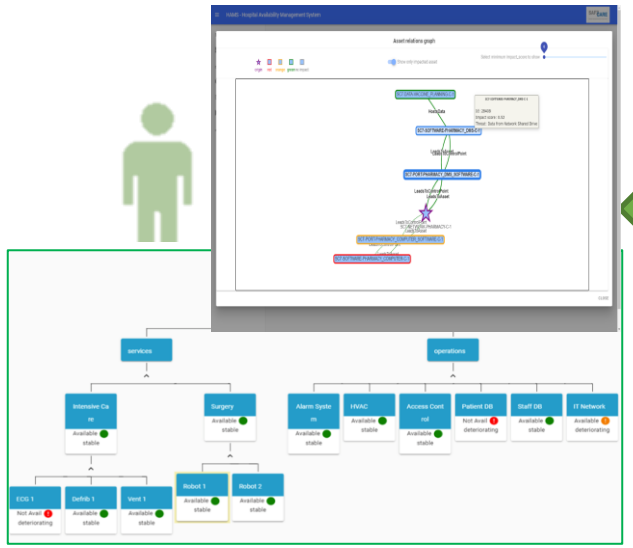
Decision in crisis management

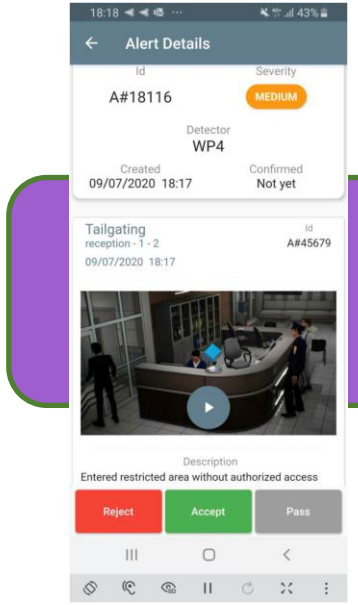
Quickly
Precisely

With anticipation
With relevance



SAFECARE Four tools for End-Users

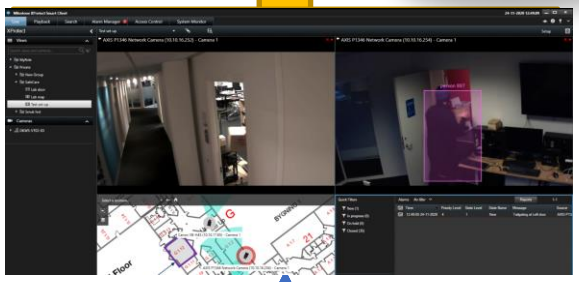


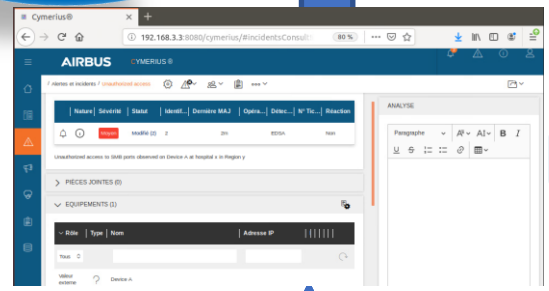


Cascading impacts calculation (IPM Ontology)

INCIDENTS

INCIDENTS





Access control

Video protection

Building monitoring system

Fire detection system

. . .

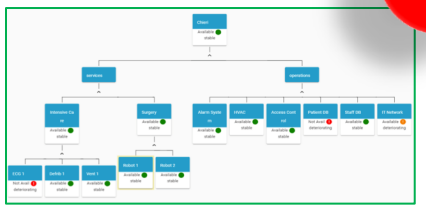
FW-IPS-IDS

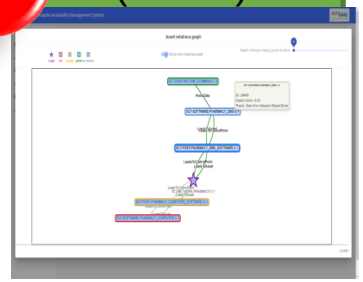
SIEM

Threats detection systems

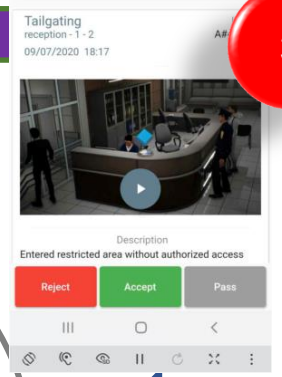
E-health AI

SAFECARE Four tools for End-Users

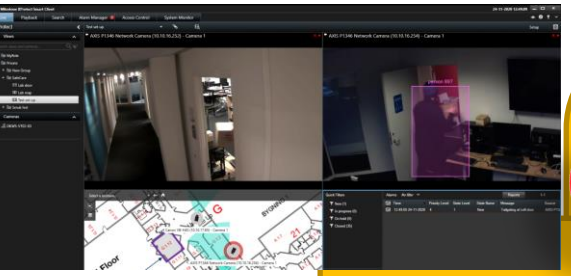




4 Global Supervision (HAMS)



3 Alerting system (TRAS-MAS)

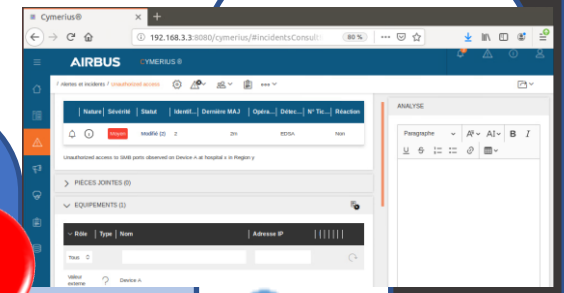


1 Physical security supervision (BTMS – MAS)

INCIDENTS

Cascading impacts calculation (IPM Ontology)

INCIDENTS



2 Cyber sécurity supervision (CTMS)

Access control

Video protection

Building monitoring system

Fire detection system

. . .

FW-IPS-IDS

SIEM

Threats detection systems

E-health AI

SAFECARE - Tests and Demonstration

From simulation to reality

Test Platform

Cyber Range

Pilots

Hôpitaux Universitaires de Marseille | ap hm

Marseille

A.S.L. TO5
Azienda Sanitaria Locale di Chieri, Carmagnola, Moncalieri e Nichelino

Turin

amc
Academisch Medisch Centrum
Universiteit van Amsterdam

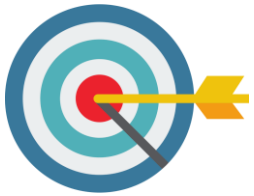
Amsterdam

SAFECARE
Integrated cyber-physical security for health services

SAFECARE End-Users benefits

Demonstrated in AP-HM hospitals:

1. Facilitate a global security with interactions between physical and cyber incidents
2. Be informed in real time
3. Alert the right people
4. React and get to safety faster
5. Get all security actors to work together
6. Develop the security professions
7. Bring about an ethical reflection on safety/security
8. Bring out new professions
9. Facilitate prevention and training
10. Facilitate understanding of risks
11. Allow anticipatory decisions in crisis management



Quickly
Precisely

With anticipation
With relevance

For hospitals, regions, countries…

SAFECARE

Project and End-user benefits – ASLTO5

Physical Security

Cyber Security

Territorial Healthcare Structures - **the context**

- Critical structures in a wide territory
- Open to the public, also 24h-7dd
- Perimeters overlapping: medical devices, building management, patient data
- Highly specialized sectors – with huge need for integration
- Cloud and virtualization solutions are quite partial or unsuitable

SAFECARE
Integrated cyber-physical security for health services

Safecare proven benefits **for cyber, physical and combined cyber-physical security**

- Early detection of threats 24h-7dd and early response
- Cost effective solution maintaining open and friendly structures, without closures
- Improve Health Service resilience and availability for patients and victims

Combined Cyber - Physical Security

- Integrated solution in integration context
- (human) decision support (automatic) tool

SAFECARE End-Users benefits

Amsterdam UMC
Universitair Medische Centra

AMC pilot (medical device test bed):

- Use case:
  - Interventional X-Ray system
  - Critical, interconnected medical device
- Main problem:
  - Medical devices attractive target
  - However: limited tools for SOC to respond to threats
- SAFECARE benefits:
  - Much better **visibility** for security operators
  - Identifying and reaching **the right people**
  - Efficient **collaboration**, between actors from different disciplines
  - Tools **specialized** for health care
  - Bridging the **cyber-physical** gap
  - Enables **fast response**

Thank you

More details available on:

- Our website: https://www.safecare-project.eu/
- Twitter: @SafecareP
- -LinkedIn: SAFECARE Project

Philippe.tourron@ap-hm.fr