HEIR

a secure Healthcare Environment for Informatics Resilience

HEIR

A Secure Healthcare environment for informatics resilience

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 883275.

Summary

HEIR
a secure Healthcare Environment for Informatics Resilience

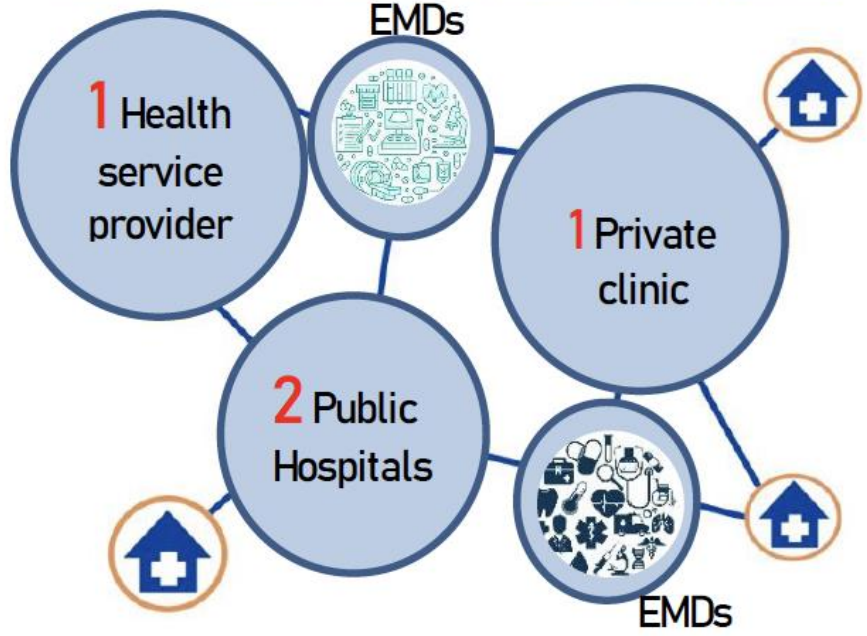
- HEIR is an RIA 2020 project started in September 2020 with duration of 36 months
  - Project number: 883275
- The topic of the project is SU-DS05-2018-2019 - Digital security, privacy, data protection and accountability in critical sectors
- The consortium includes partners from ten (10) countries: France, Germany, Greece, Cyprus, Switzerland, Romania, Norway, the Netherlands, United Kingdom, and Israel.
- The budget is € 4.999.975.

General information

HEiR
a secure Healthcare Environment for Informatics Resilience

The validation ecosystem

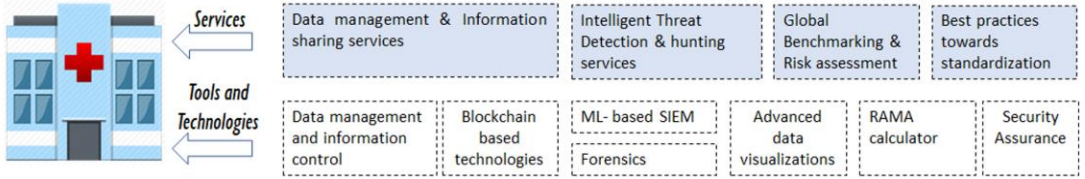
4 real-word pilots from health domain with physically entangled systems involving connected electronic medical devices and distributed medical facilities



HEIR at a Glance

HEIR
a secure Healthcare Environment for Informatics Resilience

- HEIR will design and deploy an Electronic Medical Devices Cybersecurity Framework that will facilitate intelligent threat identification and hunting services leading to the delivery of the envisioned Risk Assessment of Medical Applications (RAMA).
- The outcome of these analyses will be available to the IT personnel responsible for the medical devices. More to that, the RAMA client software will submit anonymized statistical data to a central server which will host the envisioned Observatory for the Security of Electronic Medical Devices (OSEMD)



Innovations

HEIR
a secure Healthcare Environment for Informatics Resilience

- Develop and support a threat identification and cybersecurity knowledge base system
  - *HEIR Agent, aggregator, GUI*
- Provide scientific and technological advances in Risk Assessment and Security
  - *HEIR RAMA Score and observatory*
- Provide novel tools and services for enabling secure data storage and sharing in healthcare operations
  - *HEIR Privacy-Aware Framework*

Vision

HEIR
a secure Healthcare Environment for Informatics Resilience

- The vision of HEIR is to provide a thorough threat identification and cybersecurity knowledge base system addressing both local (in the hospital/ medical centre) and global (including different stakeholders) levels, that comprises the following pillars:
  - Real time intelligent threat hunting services, facilitated by advanced machine learning technologies, supporting the identification of the most common threats in electronic medical systems based on widely accepted methodologies such as the OWASP Top 10 Security Risks and the ENISA Top 15 Threats.
  - Sensitive data trustworthiness sharing facilitated by the HEIR privacy aware framework.

Vision (cont'd)

HEIR
a secure Healthcare Environment for Informatics Resilience

- Innovative Benchmarking based on the calculation of the Risk Assessment of Medical Applications (RAMA) score, that will measure the security status of every medical device and provide thorough vulnerability assessment of hospitals and medical centres.
- The delivery of an Observatory for the Security of Electronic Medical Devices; an intelligent knowledge base accessible by different stakeholders, providing advanced visualisations for each threat identified in RAMA and facilitating global awareness on EMD-related threats.

HEIR Use Cases

HEIR
a secure Healthcare Environment for Informatics Resilience

- Four complementary end users, **HYGEIA**, **PAGNI**, **NSE/NOKLUS** and **CUH** with leading roles in the health domain, will validate, demonstrate, and carry out experimental evaluation of the proposed framework on four real-world diverse health pilots in sensitive medical environments.

HEIR
a secure Healthcare
Environment for Informatics
Resilience

Thank you