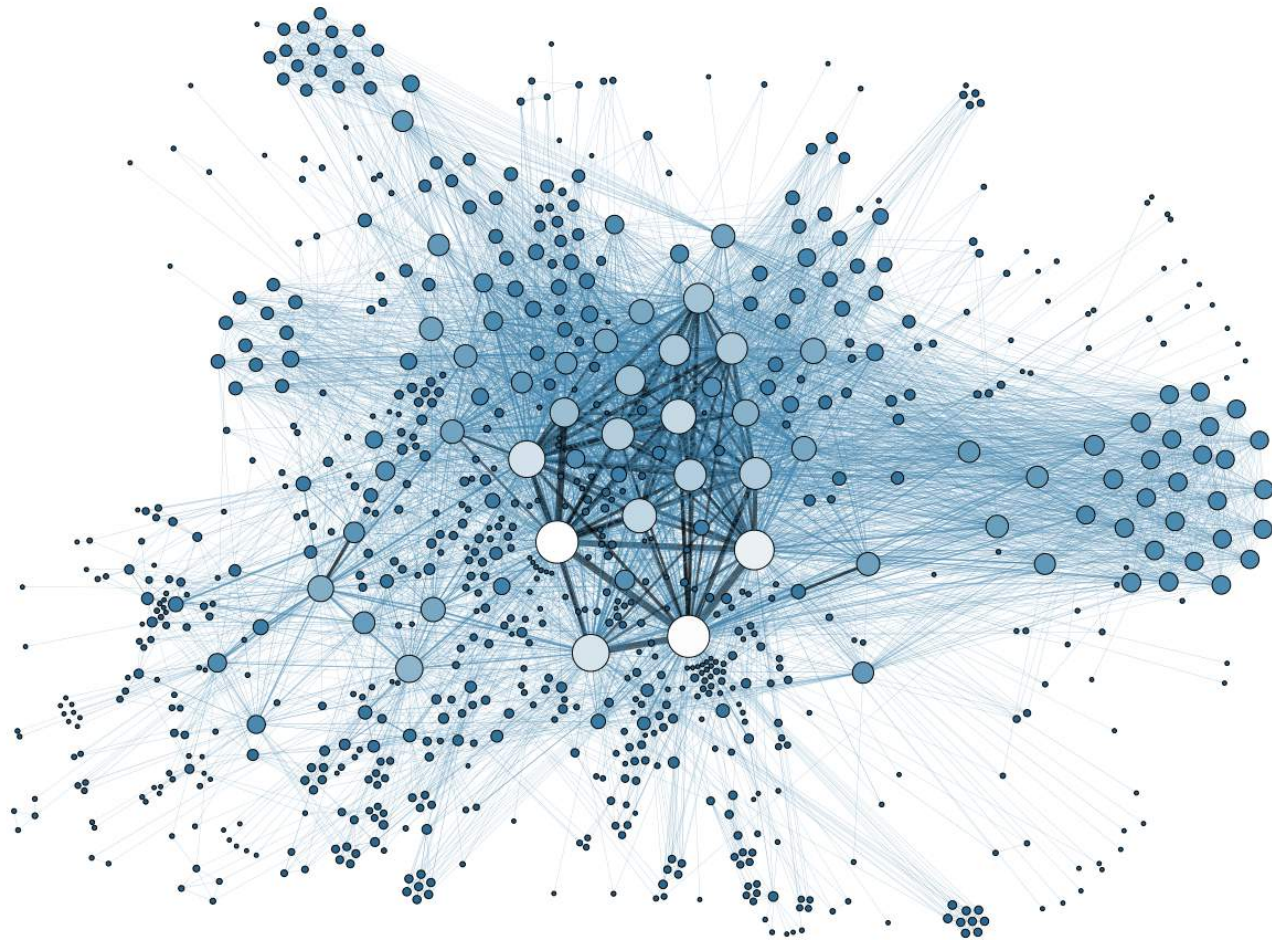


DATA ANALYSIS AND CYBERSECURITY



GOI ESKOLA
POLITEKNIKOA
FACULTY OF
ENGINEERING



The team researches INTELLIGENT SYSTEMS applied to improve actual industrial processes, bridging the gap between manufacturing and ICT, contributes to INFORMATION AND COMMUNICATION SECURITY, specially focusing to Operational Cybersecurity, and contributes to the HEALTH industry through DATA ANALYTICS

Research Lines

INTELLIGENT SYSTEMS FOR ADVANCED MANUFACTURING

The Group works towards providing more intelligence to manufacturing processes, through **real time monitoring** and prediction of asset failures (**streaming Big Data** techniques and **predictive algorithms** in time series), **Predictive/Proactive maintenance** of manufacturing assets, parts inspection (with artificial vision and acoustic), and collaborative robots [in cooperation with intelligent automation group]



INTELLIGENT SYSTEMS FOR INDUSTRIAL PROCESSES

Focuses its activity on improving processes where automation (**metal processing, water treatment, etc.**) is involved. It makes use of information at the process level, and it seeks the **optimization of parameters**, and the **detection of anomalies** in the process.



INTELLIGENT SYSTEMS FOR HEALTH INDUSTRY

Focuses on the **analysis of data to help decision-making and improve the quality of life** of both patients and health professionals. **Pattern recognition** and **human behavior prediction** techniques are used to help prevent disease, or improve quality of life. Heterogeneous data sources are used following the **Big Data** paradigm, being the medical history, personal data or environmental data some examples of this.



INFORMATION AND COMMUNICATION SECURITY

We contribute to **Anomaly Detection** Systems to Industrial Control Systems. We also research in understanding, learning and simplifying cybersecurity information by means of intelligent systems, such as correlation of security events, honeypots/deception systems, social network analysis, mobile device and network data analysis, and vulnerability analysis of embedded/industrial systems.



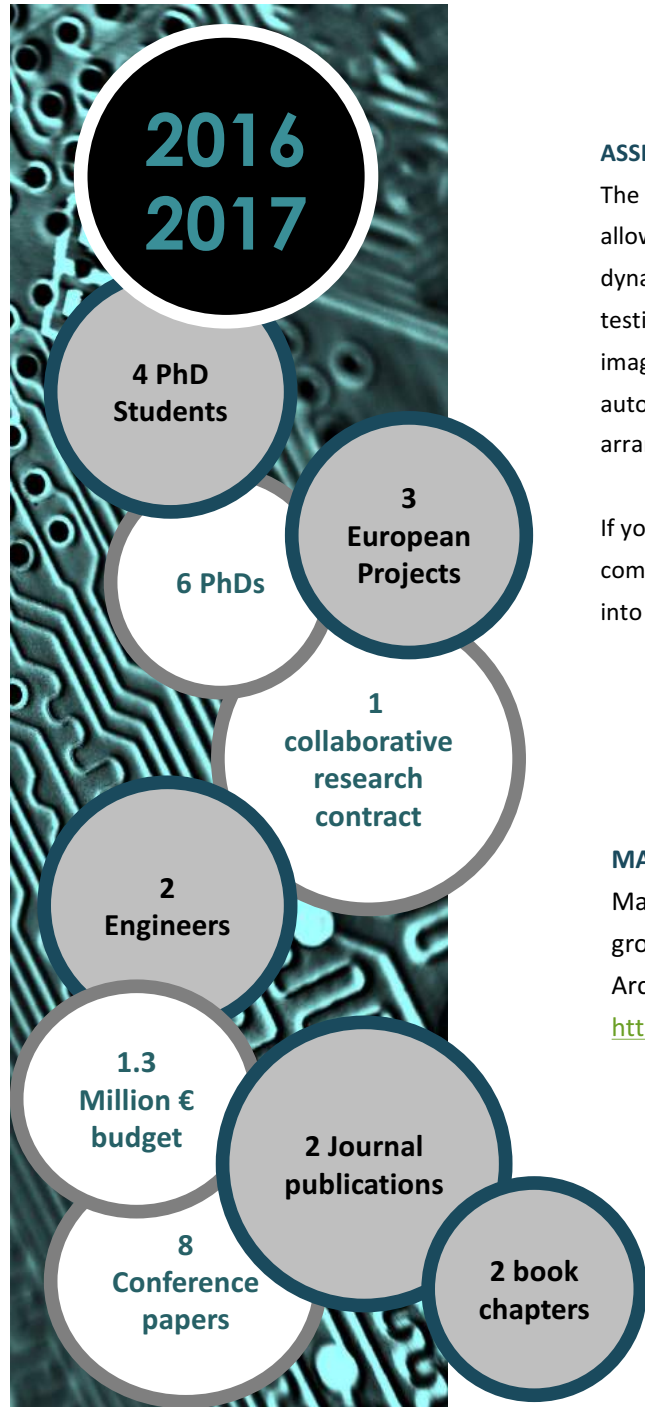
Orona



INSTITUTO NACIONAL DE CIBERSEGURIDAD

Founding Members of the Network of Excellence Research Centres in Cybersecurity

Big Data Value Association (BDVA) full members



EQUIPMENT

ASSERT-MU Lab

The laboratory is structured around the network emulation software Emulab. It allows an emulation of different network topologies and virtual devices in a dynamic, secure and rigorous manner. Therefore, the laboratory is capable of testing networks ranging from few to hundreds of nodes easily, uploading images prepared in advance of the devices connected to the network and automatically setting the communication devices to achieve the desired arrangement.

If you want to evaluate a topology redesign of your IT or industrial network , comparing different designs, test new technologies , before putting the system into production, ASSERT -MU can do safely and in a flexible way.

PROJECTS

MANTIS

Mantis is an Industry 4.0 related European Project coordinated by the group. The aim of MANTIS is to design and develop a Reference Architecture based on industrial maintenance services in the Cloud.

<http://www.mantis-project.eu/>

MC-SUITE

MC-SUITE is a H2020 project of the Factories of the Future call, where the groups has a fundamental role of providing technology to secure the entire flow of data from the machine to the Cloud

<http://www.mc-suite.eu/>



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