

**Call for application for research scholarships  
for post-graduate international candidates**

**RESEARCH PROJECT N. 22**

**Title**

Securing IoT-based Critical Infrastructures from Cyber Attacks

**Scientific responsible (name, surname, role)**

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**Short description of the research activity (max 250 words)**

Information systems and Internet of Things (IoT) devices are increasingly “involved” within the implementation of Domestic Critical Infrastructures (DCIs) and national strategic industrial assets. These systems are extremely appealing for security attack, due to the disruptive effects of compromising such strategic services. The recent history also shows that they are often affected by, sometimes even evident, vulnerabilities that are difficult to correct. It is often the case that an attack to a critical infrastructure originates from one of companies belonging to its supply chain.

When compared with “classical” IT infrastructures, the IoT-based Critical Infrastructures and their Cyber Physical Systems show new additional risks, mainly due to the intrinsic peculiar “nature” of the IoT devices, including, among the others, remote location, low power, reduced remote computation capability, and communication bands.

The project aim at securing IoT-based Water Supply Systems and it will involve several domestic stakeholder, including a couple of real test cases.

**Specific requirements (experiences, skills)**

Preferably:

Basic knowledge of cybersecurity

Good programming skill.

A good skill in at least one among the following:

- Machine Learning
- Hardware design
- Embedded Software design

**Keywords (min 3, max 6)**

- Cybersecurity
- Embedded Software design
- Object-Oriented Programming

- Machine Learning

- Hardware design

**Research Area (max 1)**

Computer Engineering