

CYBERSECURITY FOR SMART CITIES

1. Background to the Challenge

Iberdrola has more than 400,000 Transformer Centers (TC) in the United States, Brazil, United Kingdom and Spain. These Centers house more than 1.5 million medium to low voltage distribution transformers, built and operated to provide a high quality and reliable service to a total of 31 million electricity supply points.

Automation and digitalization allow us to control and manage the grid based on data, generating a new, much smarter and more efficient grid. This deployment of the Smart Grid is the basis for the electrification of mobility and heating-cooling systems, with particular impact on Smart Cities. The intensive use of data and electronic equipment is always accompanied by the most advanced cybersecurity measures at all levels.

Coordination and integration of electrical cybersecurity with that of the Smart City itself is essential to ensure supply and resilience.

2. Description of the Challenge

In this context, Iberdrola, through its PERSEO Startups Program, is looking for **solutions to coordinate the integral cybersecurity of the Smart City by using simulators for the design of joint solutions and for the early detection of cybersecurity incidents**. The need to reduce the impact of potential attacks on the electricity supply is becoming increasingly critical in cities.

The features to be demonstrated may be with a general purpose on the different infrastructures and services of a smart city dependent on the electricity supply: from information systems and data, lighting and traffic control, charging points, the power grid itself, telecommunications infrastructure, water and gas supply, etc.

The challenge will value the simulation and demonstration of cybersecurity applied to telecommunications, centralized systems and equipment distributed, to infrastructures and services, which will help to identify vulnerabilities and to design comprehensive solutions.

In addition, consideration will be given to:

- The capacity for early identification of cybersecurity attacks and incidents.
- Type of attacks to be simulated: systems, data, equipment and infrastructure points that are especially vulnerable.
- Sensitive assets in the electricity grid: meters, automation equipment, control systems, management systems, etc.
- Smart City sensitive assets: charging points, public systems and infrastructures, customer management systems, photovoltaic self-consumption, batteries, etc.
- Critical services other than electricity supply such as water, gas and telecommunications, mainly
- The maturity, reliability and scalability of the simulation solution.
- Its potential for integration with current cybersecurity systems.

- The total cost, both initial and recurring, if any.

The application must include a design-level proposal, which may be undertaken in a controlled environment. Among other features, it should describe:

- The proposed solution to physically demonstrate the risks on Smart City services.
- The SW and HW design to demonstrate cybersecurity features. Include number of interactive points, sensors, scenarios, etc., including unit costs (in order to objectively compare the different proposals).
- Interoperability with equipment external to the proposal, which can be functionally integrated into the demonstrator.
- The constructive feasibility and cost estimate of at least one company capable of building a model, including dimensions.

The challenge is launched within the framework of the new **Global Smart Grids Innovation Hub**. Iberdrola will make the Hub a worldwide smart grid benchmark, through open collaboration and Co-Working between i-DE technicians, suppliers, Startups and different organizations from all around the world.

The team of experts from Iberdrola's Grid business will be responsible for selecting the innovative solution(s) that will enable the integration and demonstration of cybersecure Smart Cities environments.

3. The prize

The prize will consist of a collaboration and test agreement with PERSEO or any other Group company, which will bear the cost of these activities and **provide the winner with all necessary technical support**, as well as an **environment and real data to test the solution**, providing access to equipment, teams, infrastructure, high technology sites and shared work areas. **The project will be developed in collaboration with technical specialists from the Iberdrola Network area.**

It will also be included directly in the **Global Smart Grids Innovation Hubs** registration process, as a collaborator able to benefit from the services, activities and resources that the GSGI Hub makes available.

If the trial or test of the concept is satisfactory, **Iberdrola may offer the winner the opportunity to scale up the solution**, adopting it by means of commercial agreements.

What's more, PERSEO will consider investing in the participating company and/or the winner of the challenge.