

How smart grids make Portugal a more efficient and sustainable country?

Smart grids makes Portugal a more efficient and sustainable country. The smart grid makes Portugal a more efficient and sustainable country,by optimizing energy systems,reducing CO2 emissions and lower utilization of fossil resources. The smart grid has numerous sensors installed along its extension.

What is a smart grid SCADA system?

A smart grid SCADA system's main function is to assist distributed generation, switching procedure, alarming, telemetry, event logging, measurement recording, and remote control of outstation equipment. A modern SCADA system should support the engineering plan by providing entrance to power system data without affecting any operational workstation.

Can smart grid services be offered to the end-user?

Only with all these elements,it is possible to offer smart grid services to the end-user. ERSE approved the Smart Grid Services Code (RSRI) for electricity distribution,which designed the services to be offered by network operators and suppliers to users integrated in a smart grid. The new smart grid services include,for instance:

When will a smart meter be available in Portugal?

The pace of meter installation is in line with the timetable approved by the Government in 2022,and it is expected that,by the end of 2024,all low voltage customers in mainland Portugal will have access to a smart meter.

The smart grid can use SAS features to rapidly deploy several services and functions in transmission and distribution networks and control centers. One function can be to protect a network of connected renewable energy ...

This paper presents the major implementations of smart grid projects in Portugal, which resulted from a close collaboration between academia and industry. An overview of the entire development process is presented culminating with the real implementation of the developed concepts.

A SCADA system is a distributed network of cyber-physical devices used for instrumentation and control of critical infrastructures such as a electric power grid. With the emergence of the smart ...

Decree-Law no. 15/2022, of 14 January, orders the integration in a smart grid of every BTN customer in the mainland Portugal, by 2024. Their integration in a smart grid allows customers to access a set of new advanced services. Smart grid infrastructure includes not only the smart meters but also ICT and data management systems.

8.2 The Smart-Grid concept o Generally, the most effective Smart Grid can monitor/control residential home devices that are non-critical during peak power consumption times to reduce power demand, and restore their function during non-peakhours. o Proposals for optimization include smart microgrids, smart power grid, and intelligent grid.

The smart grid SCADA system integrates the existing renewable energy sources (RES) system with digital information processing and advanced telemetry systems. It is clear that the increased integration and automation of the electric microgrid and utility grids present new development aspects of energy management.

energy distribution networks - Smart Grids. This is the main aim of InovGrid one of the important projects in place on EDP Distribui  o, Portuguese DNO. InovGrid project is the response of EDP Distribui  o to these challenges, and is structured around three pillars: (1) Smart metering, designed to implement system-wide

O que s  o os Smart Grid A l  gica da Smart Grid est   em uma palavra: intelig  ncia. Isso que dizer que as novas redes ser  o automatizadas com medidores de qualidade e de consumo de energia em tempo real, ou seja, a sua casa vai conversar com a empresa geradora de energia e, em um futuro pr  ximo, at   fornecer eletricidade para ela.

In Europe, Compton Greaves (CG), part of the Avantha Group, has secured a deal to supply data concentrators to Portuguese energy operator Energias de Portugal (EDP). CG won a tender to supply PRIME Alliance-certified data concentrator units made by ...

Importance of SCADA in Smart Grid. SCADA system is one of the key components of a smart grid. It is essentially provided in a smart grid for the following purposes -. To continuously monitor the grid in real-time for detecting potential issues. To control and operate the grid components from a remote location.

5 ???   Cyber-physical system (CPS) security for the smart grid enables secure communication for the SCADA and wide-area measurement system data. Power utilities world-wide use various SCADA protocols, namely DNP3, Modbus, and IEC 61850, for the data exchanges across substation field devices, remote terminal units (RTUs), and control center applications. ...

Smart grids are complex cyber-physical systems that incorporate smart devices" communication capabilities into the grid to enable remote management and the control of power systems. However, this integration reveals numerous SCADA system flaws, which could compromise security goals and pose severe cyber threats to the smart grid. In conventional ...

To authenticate the home smart meter and the utility server in the smart grid, Nicanfar et al. [31] introduced an authentication scheme, named SGKM (smart grid key management). Wireless mesh network topology is adopted between the home smart meter and the utility server, for which both IEEE 802.16 and IEEE 802.15.4 communications are used ...

Being SCADA at the core of any smart grid decision making, in which real-time analysis of that stream of data is fundamental for any automatic or manual decision process, EDPD started to develop big data handling ... functions for the entire mainland Portugal distribution grid. As the results of this work have been fully implemented in the ...

3 ???· Tecnologías como SCADA (Supervisory Control and Data Acquisition) y SCADA ADMS (Advanced Distribution Management System) están redefiniendo la manera en que las empresas gestionan sus redes, mejorando la eficiencia, sostenibilidad y confiabilidad. ... Smart Grid. La evolución de la gestión energética: SCADA ADMS y su impacto en Digital ...

In this paper, emphasis is given to the smart technology which promotes the interface between the Portuguese power grid and the consumers of the InovGrid Project located in the city of Évora, Portugal. The main focus is to develop the distributor owned SM integration in a SCADA system

The group supplies energy to almost 100 million people in dozens of countries. With a focus on renewable energy, smart networks and smart solutions for customers, Iberdrola's main markets include Europe (Spain, the United Kingdom, Portugal, France, Germany, Italy and Greece), the United States, Brazil, Mexico and Australia.

In this Chapter, we discuss the challenges for secure smart energy grid and automation systems. We first describe the current security status and existing attacks on power grid and critical infrastructures. Then we use the SCADA system as an example to show the challenges to secure the automation systems and smart power grid systems. Dis-

2.1. Advanced Distribution Management System or ADMS - refers to a platform that integrates hardware and multiple utility-based systems which provides automated outage restoration and optimization of distribution grid performance; 2.2. Advanced Metering Infrastructure or AMI - refers to an integrated system of smart meters, communications networks, and implementation ...

In this project of exchange between researchers of the FCUL (Portugal) and the PUPCR/Inmetro (Brasil) the objective is to embrace the following challenge: to collaborate in the design and development of advanced security mechanisms to be integrated in a next-generation SCADA system, with the goal of assuring correct behaviour in spite of the ...

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