

What is smart grid software architecture?

[Show full abstract] Smart grid software interconnects multiple Engineering disciplines (power systems, communication, software and hardware technology, instrumentation, big data, etc.). The software architecture is an evolving concept in smart grid systems in which systematic architecture development is a challenging process.

How can distributed generation be integrated in a microgrid?

[Show full abstract] Full integration of Distributed Generation (DG) in the current electricity grids can be favoured by designing measurement, communication and monitoring (MCM) systems able to control power quality levels and to organize power systems in microgrids managed by Information and Communication Technology (ICT).

How does Nigeria's power system affect economic development?

The ability of the power system to deliver to its consumer electrical energy at an expected level of reliability is correlated with the economic development of a country. The Nigerian power system faces many challenges, varying from overdue infrastructure maintenance, obsolete tools and appliances, insufficient electricity supply, corruption, etc.

Can smart meters control low-voltage distribution networks with high penetration of photovoltaic (PV)?

With the inclusion of Information and Communication Technology (ICT) components into the low-voltage (LV) distribution grid, some measurement data from smart meters are available for the control of the distribution networks with high penetration of photovoltaic (PV).

In looking to improve Nigeria's critical power infrastructure, advanced low voltage, medium voltage, and smart grid management technologies will be implemented. The partnership will focus on enhancing grid reliability ...

Not only will electric vehicles with bidirectional charging capability be able to draw electrical power for their high-voltage battery when plugged into a compatible charging station or wallbox, they will also have the ability to reverse the process and feed energy back into the power grid.

The invention of Smart Grid Automation has become a transformative force in modernizing our electrical infrastructure, addressing the rising energy demands and environmental concerns of today.

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Niger distribution automation in smart grid

analyses the various smart grid technologies utilised in the Nigerian power system with their effects, impacts, deployment, and integration into the traditional Nigerian power grid. Also ...

Our feeder automation control and monitoring solutions range from Fault Passage Indicators to Smart Feeder RTUs, allowing users to have an impact on outages, from basic fault location to self-healing smart grid schemes. SAIDI and SAIFI are at the heart of every solution to provide maximum energy availability.

In looking to improve Nigeria's critical power infrastructure, advanced low voltage, medium voltage, and smart grid management technologies will be implemented. The partnership will focus on enhancing grid reliability and stability and increasing electrification rates to meet the demand for electricity in Nigeria .

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The distribution management systems for smart grid include several functions for manipulating legacy voltage control devices and distributed energy resources through closed-loop volt/var control, leading to wide-area regulation of voltages in the presence of ...

For an efficient distribution system, smart grid technology and automatic switching process were used to improve the voltage unbalances and voltage drop in order to minimize the system power losses.

analyses the various smart grid technologies utilised in the Nigerian power system with their effects, impacts, deployment, and integration into the traditional Nigerian power grid. Also discussed are issues and challenges of smart grid deployment and ways of mitigating these

The Markov Model optimization process for Smart Grid Monitoring using Distribution Automation is designed to enhance the performance, reliability, and efficiency of smart grid systems by leveraging key methods that include Exploration Initialization, Exploitation Refinement, Adaptive Exploration-Exploitation Balance, Exploration ...

