# Patent Search

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**Abstract:**

An intelligent power distribution system designed to integrate real-time monitoring and advanced control mechanisms. The system employs state-of-the-art algorithr technologies, and communication protocols to optimize power distribution, enhance grid resilience, and cater to dynamic energy demands. By assimilating data from nodes and making instantaneous decisions, this invention revolutionizes energy management, paving the way for sustainable, efficient, and adaptive power infrastru

**Complete Specification**

Description:FIELD OF THE INVENTION

The present invention relates generally to power distribution systems, and more particularly, to an intelligent power distribution system that integrates real-time monitoring and control mechanisms. The primary objective of this invention is to enhance the resilience and efficiency of the power distribution network by leverag advanced algorithms, sensing technologies, and communication protocols. Such a system is poised to not only optimize energy consumption and reduce operation but also to ensure that energy distribution is more robust against potential disruptions and failures.

Background of the invention:

The evolution of power distribution systems has been marked by continual advancements, both in terms of infrastructure and technology. Historically, these systen designed to be passive in nature, where power flowed in one direction, from generation facilities to end-users. Over time, as electricity became the cornerstone of r civilizations, the reliability and efficiency of power distribution emerged as critical concerns for both utility providers and consumers.

The traditional power distribution paradigm, with its predominantly unidirectional flow and minimal monitoring capabilities, began facing challenges due to the eve growing demand for electricity and the concurrent need for resilience. The advent of distributed energy resources, such as solar panels, wind turbines, and battery systems, further complicated the landscape by introducing multiple points of energy injection, making the once straightforward distribution grid more intricate. Wit added complexities, it became increasingly challenging to maintain stability, predict outages, and prevent service disruptions.

Furthermore, with the growing ubiquity of connected devices and the advent of the Internet of Things (IoT), there has been an escalating demand for real-time data every node of the distribution grid. This surge in data availability holds the potential to revolutionize power management by offering insights into consumption patt

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