

A multiagent design for self-healing in electric power distribution systems

A multi-agent-based integrated self-healing and adaptive protection system for power distribution systems with distributed generation ..., Institution of Engineering and Technology, 2011. [18] M.J. Wooldridge, An Introduction to MultiAgent Systems, second ed., Jonh Wiley & Sons Ltd, 2009. [19] ... Computer Science Distributed Generation ...

These problems have formed a crucial demand to move from the current electric power system to a highly measurable, controllable, efficient, and self-healing electric power system, which has been termed "smart grid" . Smart grid (SG) have been recently introduced and developed to increase the efficiency, reliability and security of electric ...

A new multiagent system (MAS) design for fault location, isolation, and restoration in power distribution systems (PDSs) is presented. When there is a fault in the PDS, MAS quickly isolates the fault and restores the service to the fault-free zones. Hierarchical coordination strategy is introduced to manage the agents, which integrate the advantages of both ...

This paper proposes an agent-based approach for service restoration in smart distribution systems with distributed generations (DG). The proposed multi agent has four different types of agents: feeder agents, zone agents, switch agents and DG agents.

The smart grid concept and technologies have been applied to construct a self-healing framework for use in smart distribution systems and the results of the simulation conducted using the new framework demonstrate the effectiveness of the proposed control structure. Because of society's full dependence on electricity and high cost of system outages, one important goal is to ...

On the basis of multistage characteristics of self-healing control, this article proposes an integrated multistage self-healing strategy for smart distribution systems using multiagent system (MAS ...

A literature review of the self-healing techniques applied to the electric distribution networks with special emphasis has been taken on the different control architectures used in the search of a system with self-regeneration and self-adaptation capabilities in the face of contingencies of the electrical distribution system. Currently in our society, a constant supply ...

This study examines the conceptual features of Fault Detection, Isolation, and Restoration (FDIR) following an outage in an electric distribution system. This paper starts with a discussion of the premise for distribution automation, including its features and the different challenges associated with its implementation in a smart grid paradigm. Then, this article ...

In general, conventional power distribution systems lack communication and automation capabilities, making

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almost impossible the provision of features where self topology reconfiguration is necessary. This scenario can be changed through the emergence of smart grids technologies, where those capabilities are mandatory. An example of feature possible by ...

Because of society's full dependence on electricity and high cost of system outages, one important goal is to increase the reliability of the power system, which means that a salient attractive feature of smart grid is its self-healing ability. Smart grids will develop and enhance the automation of distribution by operating in a distributed manner through new digital ...

A Multi-Agent System (MAS) based on current amplitude and current direction measured is proposed for fault location, isolation, and power restoration in a smart distribution ...

Development of a Self-Healing Strategy With Multiagent Systems for Distribution Networks. Jônatas Boás Leite, Member, IEEE, and José Roberto Sanches Mantovani, Member, IEEE. ...

Due to the importance of self-healing subject in power distribution systems, this paper conducts a comprehensive literature review on self-healing from existing published papers.

A new Multi Agent System (MAS) design for fault location, isolation and restoration in power distribution systems is presented. In proposed approach, when there is a fault in the Power ...

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A multiagent design for self-healing in electric power distribution systems. E. Shirazi, S. Jadid * ... The out-of-service area after fault should berestored by changing the distribution system configuration by means of switching actions on the feeders. This paper proposes an agent-based approach for service restoration in smart distribution ...

State classification is the fundamental feature of self-healing for smart distribution systems. Framework of state classification and self-healing scheme in alert operating state are proposed, where a multi-stage method is introduced to resolve the mathematical model of self-healing scheme. Three stages are presented in the whole self-healing scheme: regulation of ...

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International Transactions on Electrical Energy Systems. Volume 30, Issue 5 e12348. ... investigating the effect of self-healing on improved reliability, power losses reduction, and load shedding reduction and the present a new approach for self-healing optimization and a new mathematical model. ... A modified RBTS-4

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distribution system is used ...

AREFIFAR et al.: A REVIEW ON SELF-HEALING IN MODERN POWER DISTRIBUTION SYSTEMS
selves after faults, while resilience is the measure of the ability to withstand disasters (low-frequency high ...

In this paper, multiagent system concepts are employed to develop a self-healing strategy, where all switching local agents have some awareness regarding the current network state and work cooperatively to reach the global purpose of distribution network automatic restoration. The increase in information and communication technologies in the electric power ...

The main objective of this thesis is to design and to implement a centralized self-healing software for unbalanced three-phase electrical distribution systems (EDS), using the...

The amount of a resource, such as sunlight reaching leaves, determines the thickness or growth of a connection. This acts as a model for self-healing power systems. The need for self-healing in materials is of huge interest as there is an increase in the lifetime of the material, reduction in replacement costs and improved product safety.

Multiagent Systems (MAS) techniques can enable the power system to become smarter, reliable, self-healing, and robust. Its decentralized nature and operational robustness make the MAS application ...

A new multiagent system (MAS) design for fault location, isolation, and restoration in power distribution systems (PDSs) is presented, which integrate the advantages of both centralized and decentralized coordination strategies. A new multiagent system (MAS) design for fault location, isolation, and restoration in power distribution systems (PDSs) is presented. When there is a ...

The increase in information and communication technologies in the electric power system has led the distribution network to a new evolutionary stage known as a smart grid. In this scenario, automatic local switching plans based on an understanding of the network topology and load behavior allow the implementation of self-healing strategies. Self-healing aims at the ...

This paper describes and models a reactive multi-agent system based in smart grid characteristics to provide the self-healing feature. Following a sequence of steps, the modeled ...

An agent-based approach for service restoration in smart distribution systems with distributed generations (DG) with four different types of agents: feeder agents, zone agents, switch ...

The fault diagnosis system of a smart distribution network provides important technical support for ... A., El-Saadany, E.F.: A cooperative multiagent framework for self-healing mechanisms in distribution systems. ... E., Jadid, S.: A multiagent design for self-healing in electric power distribution systems. Electr. Power Syst.



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Res ...

Smart grid technology has gained much consideration recently to make use of intelligent control in the automatic fault-detection and self-healing of electric networks. This ensures a reliable electricity supply and an efficient operation of the distribution system against disasters with minimum human interaction. In this paper, a fully decentralized multi-agent ...

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