Event-triggered microgrid patent

What is a distributed event-triggered control algorithm for dc microgrid?
This article presents a distributed event-triggered control algorithm for accurate load current sharing and voltage profile regulationof dc microgrid. According to the control design,a subsystem controller only communicates with its neighboring controller (s) when a certain condition evaluated using local measurements is triggered.

Can a dc microgrid control voltage and current regulation?
The proposed control is applied to a DC microgrid system for secondary controlof voltage and current regulation,and the performance of the proposed technique is validated under various operating conditions and disturbance in the communication system in both simulation and hardware environment.

Can event-triggered distributed control reduce communication requirements?
However,traditional distributed control schemes based on fixed-cycle communication usually result in a waste of communication resources. Thus,this paper proposes an event-triggered distributed control strategy that can significantly reducethe requirements of communication.

What are the key goals of system-wide control in DC microgrids?
In DC microgrids,the key goals of system-wide control are droop-based current sharing and network dc-voltage regulation.

Is there an adaptive event-triggered control strategy for a load frequency control system?
In this paper,an adaptive event-triggered control (ETC) strategy for a load frequency control (LFC) system in an islanded MG is proposed. First,a bounded adaptive event-triggered communication scheme is designed.

What is event triggered control diagram?
Event-triggered control diagram for the secondary control. The local error represents the difference between the real-time state value and the last broadcast state value,while the global error represents the difference between the real-time state value and the reference value. On this basis,the trigger time and trigger function are defined as:

Attack-resilient event-triggered distributed control strategy of microgrid based on multi-objective optimization May 2023 IET Generation, Transmission and Distribution 17(8):n/a-n/a

The distributed control of DC microgrid is becoming increasingly important in modern power systems. One important control objective is to ensure DC bus voltage stability and proper ...

Thus, this paper proposes an event-triggered distributed control strategy that can significantly reduce the requirements of communication. In addition, compared with existing schemes, the proposed algorithm can ...

N2 - Distributed dynamic event-triggered control (ETC) method is proposed to solve the stochastic and intermittent problem caused by distributed renewable energy generation unit (DG) in ...

In the multi-microgrid system, once a microgrid is severely disturbed into the alert or emergency state, the effective multi-mode management method is necessary to make the system restore ...

This article investigates a problem of event-triggered controller design for DC microgrid, in which multiple nonlinear Constant power loads (CPLs) and probabilistic actuator fault are ...

In this paper, we introduce a distributed secondary voltage and frequency control scheme for an islanded ac microgrid under event-triggered communication. An integral type event-triggered ...

This article addresses the problem of distributed secondary voltage control of an islanded microgrid (MG) from a cyber-physical perspective by using two novel event triggering ...

For the proposed microgrid model, network control systems (NCSs) are introduced, and linear quadratic gaussian (LQG) controllers are designed. The asynchronous sampling data system ...

This paper proposes an adaptive event-triggered communication-assisted distributed secondary cooperative control strategy using a parameter projection law-based estimate of states to ...

A distributed fixed-time nonlinear control strategy, which integrates the event-triggered mechanism into voltage and frequency regulation and active power sharing in an ...

The article investigates the optimal energy management (OEM) problem for microgrids. To figure out the problem in fixed time and alleviate communication load with limited resources, this ...

The event is not triggered and the time interval of any two adjacent triggered time of DG i is greater than 0, which means that the Zeno behavior is avoided. 4.3 Attack resilient ...

event-triggered secondary voltage and frequency control, fair sharing of both active and reactive powers between power sources are investigated. Authors in [19] utilized an event-triggered ...

In this article, an event-triggered distributed sliding mode control (SMC) scheme is developed for dc microgrids composed of multiple boost converters in parallel under limited ...

First of all, a dynamic event-triggered (DET) protocol is introduced for each DG unit to orchestrate the information transmission, which aims to save communication resources ...

A dc microgrid needs to be well controlled to fully unlock its potential. This article presents a distributed

event-triggered control algorithm for accurate load current sharing and voltage ...

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