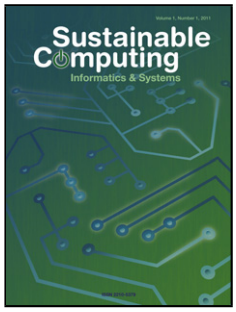

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Supervisory control and data acquisition for Standalone Hybrid Power Generation Systems☆

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Abstract

Recently, the development of renewable energy resources has increased significantly. In particular, hybrid power combines multiple renewable resources and the next generation of systems with diverse micro-controllers and sensors has become a common trend. Since the hybrid electric power generation systems are usually located remotely and have various micro-controllers and sensors to be acquired and processed, a SCADA(supervisory control and data acquisition) system is required to monitor them remotely and control the data from the various sensors. The SCADA system collects data from distributed sensors to provide real time information for controlling micro-controllers of single or multiple turbines.

In this paper, we present the design and implementation of the SCADA which is an integral part of energy operation for a standalone offshore wave-wind hybrid power generation system. The hybrid power generation system has four 2MW-class wind turbines and twenty-four 100KW-class wave force generators. The SCADA system is designed based on IEC61850 which is an international standard for vendor-agnostic engineering of the configuration of Intelligent Elec-

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