Automatización de un sistema de energía híbrido móvil independiente de la red eléctrica

Abstract:

The automation process of a hybrid mobile power system (HMPS) using photovoltaic panels, wind power generator, supercapacitor and batteries is presented. The HMPS is tested under Caribbean environmental scenarios. The automation system manages the different energy sources of the HMPS in order to meet the demand of the loads connected, which must be fed during the day or night, as needed. The HMPS include voltage and current sensors, relay, data acquisition system and software development in a graphical environment that provide a friendly graphical user interface. The controller system is responsible to the energy management, which through of the real-time operating parameters from the different components and the meteorological internet real-time data, makes decisions to provide autonomous operation. The control system connect and disconnect the power sources and the loadings, depending on the available energy or the total electrical load. Performance tests show that the hybrid system can operate for long periods of time taking the actions necessary to control and operate autonomously.

Keywords:

Virtual Instrumentation, hybrid system, energy management.

Article outline:

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