

Context-Aware Approach for Microgrid

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Mathematical software for decision-making system of power semiconductor converters was developed using knowledge-engineering methods. The developed ontological knowledge base of the micro-grid provides a complete description of the subject area concerning the obtainment and integration of general and specific knowledge, delivered from different sources and described by various models of knowledge representation: domain ontology, the rules for identifying the problem situations and precedents of withdrawing from them. The algorithm description using the Semantic Web standards allowed to consolidate the accumulation of knowledge and to provide access to it to the remote users. Experiments made have shown that the context-aware control system of power semiconductor converters inside a micro-grid may be operated in real-time.

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[2] Zhuikov, V.; Kyselova, A. Integration of context-aware control system in microgrid / Electronics and Nanotechnology (ELNANO), 2013 IEEE XXXIII International Scientific Conference .– Kiev. – 2013. – P.386-390.