DEVELOPMENT OF THE DIGITAL PLATFORM OF INTELLECTUAL SERVICES FOR THE REGIONAL ELECTRIC GRID COMPANY

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Abstract

Background. Annually, the structural units of electric grid companies involved in the operation of network equipment, dispatch and technological management tools, maintenance and repair of power equipment, asset management and electricity metering introduce specialized hardware-software complexes (HSC) from different manufacturers. This trend leads to the disunity of technological processes control means of electricity transport and distribution. It is difficult to control the life cycle of the equipment in a single management system, as well as access to the information of the relevant services of different HSC, which requires the integration of highly specialized systems. The aim of the study is to develop the structure and information model of a digital integration platform that integrates the management systems of a regional network company and to create on this platform the intelligent services for conducting business processes by various structural divisions of the company.

Materials and methods. The software for the development of cloud digital platforms and cloud services was used. When analyzing the management structure of an electric grid company, the methods for building multilevel automated control systems that take into account the specifics of managing distribution networks on a regional-company scale were applied.

Results. The structure and information model of a digital integration platform has been proposed, which forms a unified trusting software environment for automated management systems of a regional network company. Intelligent services have been developed for a digital platform, including the prediction of energy consumption, and a basic version of services for conducting joint business processes by different divisions of the electric grid company has been presented. A modern hierarchical structure of the automated technological control system of a regional power grid company has been proposed. It implies providing of an intelligent module at each control level, that allows integrating the local system into a single trusted software environment for operational management in everyday and emergency situations.

Conclusions. The proposed digital integration platform is open and scalable. In the first case, it allows combining the efforts of intelligent services developers, and in the second one, it can be deployed both on local servers within the enterprise and on rented cloud resources.

Key words: trusted software environment, intelligent services, digital integration platform, electric grid company

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