

INTELLECTUAL AUTOMATION SYSTEM "SMART HOUSE"

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Introduction. Using modern concept of smart house and its requirements, as well as the main functions of the central processor and interfaces of management of the slave devices can lead to energy efficiency, savings, and an overall better quality of life. Smart Home is a system of intelligent automatics for managing the engineering systems of a modern building [1]. It is important for anyone in the home, the apartment or the office to feel comfortable and safe. It is these two tasks, plus the aesthetics of the appearance of the devices - that are the main targets for which the Smart House systems are oriented [4]. Intelligent automation controls all engineering systems in the house, allows a person to set comfortable for themselves - temperature, humidity, light in rooms, zones, and provides security.

Analysis: The Smart Home system includes the following automation facilities: lighting management; control of electric drives; climate control; control of the ventilation system [3]. Centralized management of systems: home theater; multi room; video surveillance systems; fire alarm; access control systems; control of loads and emergency states; control of engineering equipment from sensor panels; management server [1, 3]. The Smart House system provides a mechanism for centralized control and intellectual management in residential, office or public areas.

Aim: To review the modern concept of intelligent home automation and requirements for it.

Research Materials: The SH system allows access to information on the status of all home life support systems (either inside or remotely). The general scheme of the control system is as follows [1]:

- central control processor / main control unit;
- sensors (temperature, light, smoke, movement, etc.);
- control devices (dimmers, relays etc.);
- control interfaces (push-button switches, sensor and radio panels, touch panels, web / wap interface);
- its own management network that integrates the above elements;
- controlled devices (lamps, air conditioners, home theater components, etc.);
- auxiliary networks (Ethernet, telephone network, audio and video distribution);
- project software.

The main function of the CPU is to control its subordinate devices using the following interfaces: Ethernet, RS-232, RS-485, IR, the analog and digital inputs / outputs, etc. [3] The CPU also contains a multi-tasking operating system, programming tools, and in some cases a Web server. The sensors are located in certain places of the apartment, which are connected directly or through intermediate devices to a single network. The control interfaces provide overall control of the RD systems [4]. The general algorithm of operation of the RD system is as follows: from its own control network information from sensors or interfaces goes to the central control processor; central processing software processes the information received and the section 3. Automation of Electro technical Complexes 67 does not commands for control devices; commands come from both your own network and up to your home network. The methods of command generation, the form and composition of the displayed information on the status of the system themes are laid at the stage of software development, taking into account the requirements of the project.

In Nobody's Home mode, all devices and subsystems will be switched to the safest and most energy-efficient mode of operation, in which all electricity consumers are switched off, except for regular devices (refrigerator, telephone, security system) and the nature of the system itself. In this mode, Smart House monitors the state of

engineering communications and systems, and monitors attempts at unauthorized access to the premises or territory. The presence of people is simulated - switching on and off the light in the evening in different rooms, in accordance with the usual rhythm, opening and closing the blinds, turning on the music. Emergency and Emergency Intelligent Home will notify the landlord via a phone call or SMS message and, if instructed, to call special services (police, fire department) [2].

Conclusion: Designing a smart house is a task related to the design of modern control systems, but is performed with emphasis on functionality and design solutions of automation equipment.

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