Theme of final qualifying work:

Analysis and improvement of methods and means of the system of control and access of vehicles for the Office of Integrated Security FSBEI HE "PGU"

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Information about the customer organization: Federal State Budgetary Educational Institution of Higher Education "Pyatigorsk State University"

The relevance of the research topic: is that a new type of remote control tasks can be considered such tasks as remote mutual authentication of control objects, protection of information transmitted via unprotected communication channels and many others.

One of these tasks is an automated system for controlling and accessing motor vehicles to a protected area. Successful solution of this task will allow reaching a qualitatively new level of solving remote control tasks.

Purpose of work: analysis and improvement of methods and means of the system of control and access of vehicles for the Office of Integrated Security FSBI of HE "PGU" ..

Objectives: study of the structure of the organization and the subject area of its activities; familiarization with the activities of the University’s Integrated Security Administration; study and analysis of issues related to the protection of information of the enterprise; development of proposals for improving the engineering protection of information in the PGU; problem statement and development of algorithms for improving the universal system of access control on the basis of a hybrid probable model of cryptographic transformations.

The theoretical significance of the study: analyzed regulatory and legislative documents in the field of information security; analyzed special literature and investigated the market of software and hardware and software products in the field of information security; Existing information protection systems, software and technical information protection tools were studied; identified problems and shortcomings of the information protection system.

Practical significance of the results: the developed algorithm of remote authentication, based on the hybrid probabilistic model of the protocol of remote mutual authentication of interacting subjects, was analyzed and investigated.

Results of the study: The standard system of automatic control of the barrier has a number of shortcomings that allow the vehicle to enter the protected area, for example, by manipulating its license plate number. To improve the reliability of the automated system for the admission of vehicles, it is proposed to develop an additional remote control module based on a hybrid probabilistic model of cryptographic transformations.

Recommendations: The probabilistic hybrid model of cryptographic transformations, which reliably protects the remote control system from external illegal influence from intruders, is recommended as the basic model of the system of remote control and management of vehicle access to the protected area.