

Title of graduate qualification work The organization of a secure network based on blockade technology (on the example of LLC "Sigma-Servis")

The author of WRC: Osinin Ilya Dmitrievich

Scientific adviser of the WRC: Ryndiuk Victoria Alexandrovna, Ph.D. Associate Professor of the Department of Information and Communication Technologies, Mathematics and Information Security.

Information about the contracting authority: «Sigma-Servis» LLC is a small organization, it is occupied with automation of production and business processes. In particular, it deals with the installation, technical support and support of commercial equipment and programs for business (1C, Sbis, etc.), as well as developing its own software for sale. The organization has a complex of information security, but there is a threat of theft of know-how (software algorithms) to prevent this problem, a secure network will be developed.

Relevance of the research topic: Information security is increasingly integrated into all kinds of industry areas. Traditional methods of protection are trusted, but innovative methods and new technologies are often ignored. Now in the realities of information relationships, this can be fatal. Attackers do not shy away from using the latest methods of hacking, stealing, modifying deletions, etc. To prevent these threats, I chose a relatively young technology, "Blockchain" — distributed, replicated database, containing in itself information of different plan, flexible in the environment of its functioning. The leading minds of the countries of foreign countries are already using it everywhere in various fields.

Purpose of work: organization and methodological description of the concepts of creating a secure network based on Blockchain technology to protect copyrights for software.

Tasks: to characterize the organization as a whole and its subdivision, to analyze information flows, to analyze the technical support and existing means of protection, to set the task of modernizing protection facilities, to describe the basic principles of a typical Blockchain network, to develop specialized algorithms for the

domain of the organized network, to compile a list of subscribers and their description , to create the principle of connecting nodes, to reveal the design features of the developed network.

Theoretical and practical significance of the research An organized network will help to solve the actual practical important issue of copyright protection. The flexibility of the system will also allow us to modernize the conceptual framework for networks of very different plans.

Results of the research The models of participants of the protected network, the scheme of their connection, algorithms of formation and transmission of information flows were developed.

Copyright protection is realized by the fact that there is a patent application inside the network (already recorded information is practically impossible to change), and its confidentiality is caused by the use of asymmetric encryption or symmetric with the use of session keys.

Also, methodological provisions and recommendations for organizing and developing a secure network based on Blockchain technology within the organization and administrative structure of Russia are provided.

Recommendations As recommendations, the subject of transmitted information should be considered in more detail, since with a large number of users the network will become extremely cumbersome and will require large computing powers.