Thesis on the topic: «Algorythmical and software implementation of a mathematical model of a distributed wireless UAV control system on the example of operational service of ATMs in urban areas for PJSC Sberbank, Pyatigorsk».

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Details on the organisation: PJSC "Sberbank Russia".

Relevance of the research topic: the rejection of currency in physical form is not observed in the near future, and to expand the consumer base banks need to install more ATMs in different parts of the city, and, therefore, to establish the process of transporting money. The use of unmanned aerial vehicles as a transport for collection can increase both the convenience of transfer and the safety of funds.

Goal of the thesis: improving the convenience and safety of transporting funds during collection through the use of software implementation of the algorithm for establishing a secure connection between the control station and the unmanned aircraft.

Objectives: analysis of existing cryptographic models for remote authentication, comparison of their characteristics; development of a new algorithmic model of remote authentication in unprotected communication channels; its software implementation.

Theoretical and practical significance: theoretical significance is in the analysis of the experience on using existing authentication protocols. The practical significance lies in the development and software implementation of the remote authentication algorithm based on a hybrid model of cryptographic transformations that allows you to create a level of security when transmitting control actions to an unmanned aerial vehicle.

Research results: during the analysis, existing crypto-transformation models for data transmission in open (unprotected) communication channels were reviewed and analyzed, and new algorithmic model was developed to provide a secure remote connection with an unmanned aerial vehicle at both theoretical and software levels.

Recommendations: to increase the level of security in the process of collection of an organization, it is recommended to consider the introduction of unmanned aerial vehicles using the authentication system developed in the project.