ABSTRACT

Master’s dissertation consists of 91 pages., 28 images., 29 tables., 1 appendixes, 15 referring sources.

Topicality. In the twenty first century, with the growth of the number of people on the planet, the number of agrarian companies is increasing, which in the process of their activities increasingly use automated systems for monitoring the state of crops during the full cycle of their maturation.

Relationship of work with scientific programs, plans, themes. The work was carried out at the Department of Automated Systems for Information Processing and Management of the National Technical University of Ukraine "Kyiv Polytechnic Institute. Igor Sikorsky "within the framework of the theme" Monitoring system of the state of crops.

Aim of the research − optimization, automation, cheapening of the control process for crops.

Tasks of the research:

- to carry out the analysis of existing systems in the market of modern technologies for agrarian companies;
- Identify leading developments and disadvantages in each of them;
- to analyze the algorithms for solving the routing problem;
- develop the application in accordance with the requirements and taking into account the shortcomings of the analyzed applications;
- In the application to develop a functional simulation of flight unmanned aerial vehicle;
- to develop the functional of data transmission in the subsystem "multispectral analysis of aerial photographs";
- perform the analysis of the obtained modeling results;
- the process of laying down unmanned aerial vehicles and simulating their flight.

Object of the research – methods of laying routes and simulating the flight of unmanned aerial vehicles.

Subject of the research, applied in this work, are based on the analysis of the subject environment of the leading applications for automation of the process of monitoring the state of crops for agrarian companies.

Aim of the research is to develop a unique approach to modeling the flight results of an unmanned aircraft, to identify the necessary resources in advance to conduct the required time in the air. On the basis of the obtained simulation data, fixing the final route and loading it on board the aircraft.

Publications. The materials of the thesis are published in the theses of the All-Ukrainian Scientific and Practical Conference of Young Scientists and Students "Information Systems and Technologies of Management" (ISTU-2018) - Kyiv: NTUU "KPI im. Igor Sikorsky ", November 29-30, 2018

SAFE LITTLE APPARATUS, ROAD COMPOSITION, FLEET MODELING, SOFTWARE, CONTROL OF COMPLETE STATES, AUTOMATION.