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O.V. Kolonchuk, student
National Aviation University, Kyiv

THE ADJUSTMENT OF THE UNMANNED AERIAL VEHICLE (UAV) SYSTEMS FOR THE MITIGATION OF ENVIRONMENTAL HAZARDS

Abstract. *the presence of many types of navigation information measurement systems for unmanned aerial vehicles indicates that they have differences in accuracy, complexity of implementation, cost, reliability, and each of these methods is selected based on the complexity of the flight task, technical characteristics of the UAV used. The on-board control system must receive clear navigation information, but the systems used for navigation have their positive and negative sides, in the presence of natural or artificial obstacles, these systems lose their effectiveness and lead to uncontrolled UAV falls, which can pose a direct threat of soil pollution by gradually decomposing UAV components in the soil environment, which is why the development and improvement of new navigation systems is relevant.*

Keywords: navigation, measurement, unmanned aerial vehicle.

The effectiveness of a UAV's task depends on how accurately it receives navigation information. The tasks for UAVs are different, they range from observation to obtain a geodetic basis for geodetic or cadastral activities to military use.

The quality of the navigation information measurement system that transmits data to the digital computer of an unmanned aerial vehicle directly affects its ability to prevent uncontrolled falls that result in the loss of UAVs. Lost unmanned aerial vehicles, under the influence of natural conditions, begin to poison the soil by decomposing the components of their design, namely plastic (the most popular material) and the power system, circuit boards, batteries, etc. If the UAV is a military one, the soil suffers from the detonation of explosives or the gradual release of its harmful substances in the absence of detonation. That is why it is important that the UAV receives the data it needs to fly through a perfect navigation information measurement system.

The types of UAV navigation information measurement systems are divided into inertial, survey and comparison, and radio navigation systems. All these systems have their positive and negative aspects and differ from each other. Inertial navigation systems, in which information about speed and coordinates is obtained by integrating signals, are the most common due to their autonomy. Overview-comparative navigation systems are based on the results of surveying a certain area and comparing it with a map image or a system of landmarks stored in the memory of a digital computer, and mainly on the visibility of the earth's surface or landmarks. Radio navigation systems are a set of interacting radio equipment, on-board and ground-based, used to obtain information about a particular moving object, which are also common due to the absence of accumulation of errors in time, compact size and low cost of construction, but have the disadvantage of dependence of the radio signal quality on the number of satellites in the

constellation and the absence of natural or artificial interference with signal transmission.

Falling drone debris raises concerns due to fire hazard, potential release of heavy metals and plastic, as well as direct hazard to human health. Efficient application of the UAV in environmental and other information research tasks must take into account the environmental pollution risks and mitigate them to technologicall possible mibnimum.

Conclusions. Comparing these systems, we can state the fact that each type has its own characteristic conditions of use and the effectiveness of a particular method directly depends on the quality of these conditions. The development of an innovative type of navigation information measurement system for the flight control system is relevant to prevent uncontrolled UAVs from falling and, as a result, contaminating the soil. This can be achieved through the creation of a unique integrated system that will include comprehensive processing of information from inertial navigation systems and radio navigation systems. This project, if successfully implemented, will have increased accuracy of radio signal reception in difficult conditions and deep integration.

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Scientific Supervisor – T.V. Saienko, Dr of Pedagogy, Professor