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CONTACTLESS OPTICAL SYSTEM FOR CALCULATING PATHS OF SMALL-SCALE UNMANNED AERIAL VEHICLE

Introduction. During the territory monitoring there are situations, when the volume of priory information is not sufficient when the aircraft is moving on a small altitude or in an area where there is no way to contact satellites (e.g., in the city or in the mountains). That is why it is necessary to develop the alternative methods of targeting ultralight UAVs on the basis of the external factors analysis in the real time.

Objectives. The purpose of the project is to develop an alternative method of targeting ultralight UAVs based on obtaining information about the terrain from a camera without using the information received from satellites of the global navigation system.

Methods. The method of calculating the traversed path based on the analysis of streaming video is used, since this method does not require additional, pre-prepared data on the terrain.

Results. Such a system is able to specify its location, to hold or to continue task without a signal from satellites of the global navigation system, to make corrections to the course in the absence of regular updating the exact data about its location. And also such a system does not consume a lot of energy resources of the small UAV and do not require additional equipment.

Conclusion. The analytical review of the current state of the path calculating system is conducted and the system based on the method of generating and processing the flow of photos locally is developed. The drawbacks and strengths of such a system are identified. The research identifies factors that influence inaccuracies as a result of random errors.

REFERENCES

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