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**THE USE OF SWARM INTELLIGENCE ALGORITHMS IN THE DESIGN OF CONTROL SYSTEMS FOR GROUPS OF UNMANNED AERIAL VEHICLES**

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The identification of swarm interchangeability methods in a group of UAVs solves one problem of UAVs – access to on-board sensors and resources is greatly changed, allowing a small-sized UAV to independently collect information, if only for small tasks of the space around itself.

When joining a group of UAVs instead, the supporting vehicles exchange information about the environment, thus expanding the available data about obstacles, air flows, and other important parameters of the environment [1].

Systems of swarm intelligence (SI), as a rule, are formed due to the errors of agents that cause interaction. Ideas, as always, come from nature, and features come from biological systems by individual agents.

The exact vision of swarm intelligence has not yet been formulated. In this case, RI showed that it is a multi-agent system that can self-organize the transmission of information and also, in general, is guilty of the fact that it shows activity in intelligent information. In a group of interchangeable UAVs based on swarm intelligence, each device will interact only with the actions closest to it now [2].

With such an expansion of communication and energy consumption for information transmission is relatively small. The UAV makes decisions about its current behavior based on self-collected environmental data as well as data transmitted by the rovers.

The energy efficiency of connections with the central control device is carried out only to receive information about the task facing the group and to transmit a report with information about the state of the group during the completion of the completed tasks [3].

Swarm intelligence algorithms such as ant algorithms and bee colony algorithms.

Algorithms are developed on a grown colony of living organisms to implement "optimal" behavior for the entire colony and eliminate warehouse combinations of optimization tasks to solve the optimal path.

The general scheme of swarm intelligence algorithms includes the following main stages:

1) population initialization (at this stage, a population of agents is initialized (often randomly), and directions for searching for goals are provided to them;

2) agent migration (finding goals, exchanging information among agents, changing goals if other agents discover a higher priority goal);

3) search completion (occurs if all found goals have been met) [4].

So, based on the general concepts of swarm intelligence, it is possible to analyze the main ways of implementing this algorithm within small groups of objects, how it is possible to directly use the algorithm as the main way of controlling groups of aircraft.

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