On-board computer efficiency evaluation of unmanned aerial vehicles (UAV) when implementing the targeting process

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The article considers the methods for estimating on-board digital computers performance, which are used in the modern unmanned aerial vehicles (UAV) control circuits, since the entire control system efficiency depends on the processor speed. The paper analyses various approaches to the on-board computers speed evaluation. Evaluation techniques, carried out with the MFLOPS processor, have become widespread, and they are of particular interest. According to these evaluation methods, we developed a set of recommendations to improve the control algorithms structure, to assess the opportunities for simplification without significantly reducing the control efficiency, and to determine the computational operations frequency in the algorithm. The article clearly illustrates the operation process by the example of the evaluation of the on-board computer performing the direct homing with functional anticipation program.

Keywords: *on-board computer, digital computer, MFLOPS, control algorithm, functional anticipation*

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