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# On-board control loop interpreter of the Russian Orbital Segment

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*It became necessary to develop a simplified mathematical model of the on-board Russian Orbital Segment control loop for preliminary checking digital data arrays to be input in the International Space Station. We developed the Russian Orbital Segment Control Loop Interpreter application that satisfies the minimum requirements for checking how digital data arrays correspond to the input data, that is, detailed flight plans. The application has been used for many years, helping to increase guidance reliability. The authors suggest directions for improving the application based on the experience obtained during its operation. Another reason for the modifications suggested is the fact that the developers of ISS on-board software have introduced alterations to the input data structure over the course of the ISS on-board control loop operation. The article considers an updated version of the Russian Orbital Segment Control Loop Interpreter application and proposes directions for its further development.*

**Keywords:** *interpreter, International Space Station, digital data arrays, on-board control loop, rocket and space corporation, energy, command and program flow data*

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