

Analysis of reliability, survivability and telemetry data of on-board equipment of small satellites

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Abstract: In paper we present the solution of relevant problems of estimation, analysis and forecasting the indicators of reliability and survivability of the onboard equipment of small satellites. The solution of the problem of intelligent data analysis of telemetry onboard equipment of small satellites in order to detect the states of its operation and do operability analysis. A set of software tools and techniques for the evaluation and analysis of reliability, survivability and telemetry of small satellites onboard equipment was developed. The developed software tools and techniques are based on the methods and algorithms of reliability theory, probability theory and mathematical statistics, Boolean algebra, machine learning and image processing. The suggested software tools set is implemented in desktop and web versions, and has a flexible service-oriented architecture.

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