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HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
How Can We Best Apply Our Experience to Future Human Missions? (2)

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# RESULTS OF 15-YEARS EXPLOITATION IF THE FIRST ISS MODULE FGB "ZARYA" AND EXPERIENCE OF SERVICE LIFE EXTENSION UNTIL 2028

**Abstract**

Basing on the ISS general configuration and strategy as well as the FGB construction, layout and functionality specific, requirements forming issues for the first ISS module are considered. In comparison with articles created before the FGB launch, project and design characteristics novelty is assessed, as well as organizational, technical and logistics aspects of exploitation and engineering support of the module during 15-years flight. Reliability and safety of the module's exploitation and module's redesign in the process of flight exploitation are analysed. Directions and steps to extend the module's service life are researched as well as conditions, when life extension after 2013 is possible, are determined. Flight article analogues tests results are considered and analyzed, as well as calculation and analytic works results confirming possibility of exploitation beyond 15 years designated by the module's specification. Module's spare parts logistics recommendations are developed for safe exploitation after 2013 basing on changing manufacturing conditions. Design and methodical recommendations are given to use creation and long-term exploitation experience taking into account life extension beyond 15 years for future long-living space manned objects.