

SPACE SYSTEMS SYMPOSIUM (D1)
Training, Achievements, and Lessons Learned in Space Systems (5)

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STANDARDIZATION OF THE MATING OPERATIONS IN SPACE HISTORY, STATUS AND
PROSPECTS

Abstract

ABSTRACT

Various international spacecraft's, modules and payloads are expected to be mated in space for the variety of programs and missions in the near future. Standardization of the mechanical mating systems presents the important components to make these coming missions less costly, flexible, reliable. A unified mating port standard will be a long living tool for the effectiveness and harmonization human space activity including emergency and rescue operations. The International Docking System Standard (IDSS) has been approved recently as the result of the four-year collaboration by the International Space Station membership. This paper presents a short description of the fourthly-years history of creation this first standard in the space mating technique. Requirement evolution of the compatible docking devices is analysed, different technologies and concepts are studied to arrive to a suitable configuration for standard. Finally a possible modernization of the accepted configuration based on the Russian APAS-89 is proposed to update its characteristics and to accelerate the standardization process. The similar standard documents should be developed for the other spacecraft systems, whose compatibility are the key element of the international cooperation in the human space activity.