

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Future Space Transportation Systems (4)

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CONCEPT STUDY FOR A SPACE VEHICLE WITH RE-ENTRY CAPABILITY

Abstract

Several concepts of space vehicles with re-entry capability have been proposed in the past years, however only few are actually flown, in USA and in Russia. A recent agreement between JAXA and ASI has put in place a framework activity to investigate advanced concept in this field. ASI, with the support of CIRA, Italian Aerospace Research Centre, and JAXA are conducting this joint project to analyse the feasibility of a specific vehicle through a system trade-off analysis. This paper describes the preliminary results of this cooperation study, in particular mission analysis and its requirements for re-entry system level and technology. This joint study will benefit of the competences earned by Italian team in several programs at European and national level, as USV1 (Unmanned Space Vehicle for Transonic Flight), and by the Japanese team on HOPE-X and HYFLEX programs. The vehicle architecture, is defined as an unmanned winged body, to be launched within the fairing of the VEGA launch vehicle, which has been successfully qualified to flight in February 2012.