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SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Future Space Transportation Systems Verification and In-Flight Experimentation (6)

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THE IXV PROGRAMME: FROM DESIGN TO FLIGHT EXPERIENCE

Abstract

The Intermediate eXperimental Vehicle (IXV) is an advanced re-entry demonstrator vehicle aimed to perform in-flight experimentation of atmospheric re-entry enabling systems and technologies aspects. The IXV integrates key technologies at the system level, with significant advancements on Europe's previous flying test-beds.

The IXV definition, design, development, ground qualification, and flight experience provided a unique and concrete way of establishing and consolidating Europe's autonomous position in the strategic field of atmospheric re-entry.

The IXV mission and system objectives were the design, development, manufacturing, assembling and on-ground to in-flight verification of an autonomous European lifting and aerodynamically controlled reentry system, integrating critical re-entry technologies at system level. Among such critical technologies of interest, special attention was paid to aerodynamic and aerothermodynamics experimentation, including advanced instrumentation for aerothermodynamics phenomena investigations, thermal protections and hot-structures, guidance, navigation and flight control through combined jets and aerodynamic surfaces (i.e. flaps), in particular focusing on the technologies integration at system level for flight.

Following the extensive design definition, development, manufacturing, qualification, integration, testing, and flight experience successfully performed on February 11th, 2015, the 66th IAC presentation and article will provide a unique opportunity to present the up-to-date status of the IXV post flight analysis activities.