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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: STATUS OF THE VEHICLE INTEGRATION AND MISSION PREPARATION

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. The IXV integrates key technologies at the system level, with significant advancements on Europe's previous flying test-beds. The project builds on previous achievements at system and technology levels, and provides 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 are 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 is 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 detailed design definition concluded with the successful completion of the CDR, the IXV industrial activities are currently progressing throughout the Phase D, with the manufacturing, qualification and integration of the flight segment and ground segment elements, heading towards the implementation of the mission into space by mid-2014.

The 64th IAC presentation and article will provide the up-to-date status of the IXV industrial activities, with a focus on the status of the vehicle integration and the preparation of the mission implementation.