Objective

The HEXAFLY-INT project aims to flight test an experimental vehicle above Mach 7 to verify its potential for a high aerodynamic efficiency during a free-flight while guaranteeing a large internal volume. The feasibility for a 3m long vehicle was demonstrated during the European L0 precursor project HEXAFLY. Its realization will now be enabled on an international scale underlining the need for global cooperation in case of a future deployment of a high-speed cruiser.

This flight opportunity will increase drastically the Technology Readiness Level of developments realized in previous high-speed EC projects such as ATLLAS I & II and LAPCAT I & II.

The different technologies and methodologies which need experimental flight testing at high speed are grouped around the major axes of HEXAFLY-INT:

1. High-Speed Vehicle Concepts
2. High-Speed Aerodynamics
3. High-Temperature Materials and Structures
4. High-Speed Flight Control
5. High-Speed Environmental Impact
To realize this experimental flight test, different consecutive steps are planned each followed by a critical review together with international partners:
– updated of the mission profile based upon the feasibility study
– a detailed design of a high-speed experimental flight vehicle
– selection and manufacturing of ground-tested technologies and systems
– assembly, integration and testing of the experimental flight test vehicle
– identification and procurement of the most promising flight platform(s)
The design of the experimental high-speed cruise vehicle will be the main driver and challenge in this project with following scientific objectives:
- an aerodynamic balance at a cruise Mach number higher than 7
- an integrated conceptual design demonstrating a combined volumetric and aerodynamic efficiency
- making maximum use of developed advanced high-temperature materials

Field of science

/engineering and technology/mechanical engineering/vehicle engineering/aerospace
engineering/aeronautical engineering

Programme(s)

Topic(s)

Call for proposal

FP7-AAT-2013-RTD-HIGH-SPEED

Funding Scheme

CP-FP - Small or medium-scale focused research project

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