

STS-04

**Application of Hybrid Laminar Flow Control for Drag Reduction
of Transport Aircraft**

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Europe's Vision for Aviation 'Flightpath 2050' sets has set a target of 75% reduction of specific fuel consumption by 75% compared to the standard for civil aviation in 2000. To achieve this ambitious goal, also emphasized by the new universal climate change agreement of the United Nations climate conference in Paris in December 2015, we need to work on three topics: improvement of engine efficiency, reduction of the aircraft weight, and aerodynamic drag reduction. Because friction drag contributes to approximately half of the aircraft's drag, the most promising technologies for drag reduction are Natural Laminar Flow (NLF) for short and medium-range aircraft and Hybrid Laminar Flow Control (HLFC) for long-range aircraft [1]. In this session we will present the latest results on HLFC from European projects.

Within the AFLoNext project, a simplified HLFC system for the vertical tail plane of an Airbus A320 aircraft was designed, built and flight tested. We will give an overview of the flight tests and present some results.

A second HLFC topic is the application of HLFC for wings of a long-range aircraft. This work is performed within the European Clean Sky 2 project HLFC Win. We plan to cover the latest results.

References

- [1] G. Schrauf: "Status and perspectives of laminar flow." The Aeronautical Journal, December 2005, Vol. 109, No. 1102, pp. 639-644.