

PROJECT

TAILTEST

Development of a multipurpose test rig and validation of an innovative rotorcraft vertical tail

Funding: European (Horizon 2020)

Duration: Nov 2019 - Apr 2023

Status: Ongoing

Total project cost: €696,750

EU contribution: €696,750



Call for proposal: H2020-CS2-CFP09-2018-02

[CORDIS RCN : 225264](#)

Objectives:

The overall objectives of TAILTEST project are to perform structural tests to support the certification process of a rotorcraft tail and to develop and validate advanced numerical models for the simulation of debonding propagation in structural joints.

A multipurpose test rig is required to serve the purposes of performing rotorcraft vertical tail structural tests, as well as, testing of representative structural joints (e.g. fin spar to skin). The starting point of the technical developments of TAILTEST will be the design and manufacturing of this multipurpose test rig.

The results of the tests performed using the multipurpose test rig will have triple use:

- they will support the certification process of the innovative fin, (testing of the innovative fin)
- they will be used for the validation of the fin global FE model and
- they will contribute to the investigation of stiffness and strength of novel joining technologies (testing of novel hybrid joint concepts).

One key characteristic required by the test rig design is that the test rig will have variable stiffness, such that the actual behaviour of the fuselage at which the fin will be attached will be properly emulated. Having the test rig available, structural tests at sub-scale level will be performed, by incorporating the minimum amount of modifications at the test rig design. In this way, the multipurpose test rig will be exploited to the sub-scale level testing, too.

Results of the tests at sub-component level, e.g. fin spar to skin hybrid joints, will facilitate the validation of advanced numerical models, which will be developed for predicting the debonding at the hybrid joint. These numerical models will be applied in the simulation of static and fatigue crack growth (debonding) of bonded composite joints. The model's input parameters will be obtained from experimental tests on coupon level.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Other programmes: JTI-CS2-2018-CFP09-AIR-02-74 - Development of a multipurpose test rig and validation of an innovative rotorcraft vertical tail

Lead Organisation:

Vyzkumny A Zkuebni Letecky Ustav, A.s.

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EU Contribution: €440,500

Partner Organisations:

Athina-Erevnitiko Kentro Kainotomias Stis Technologies Tis Pliroforias, Ton Epikoinonion Kai Tis Gnosis

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EU Contribution: €256,250

Technologies:

Aircraft design and manufacturing
Aircraft design model

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other