

PROJECT

NO-ICE-ROTOR

Development and demonstration of materials and manufacturing process for ultra high reliability electric Anti-ice/De-ice thermal layers for high strain rotor blades and helicopter airframe sections

Funding: European (Horizon 2020)

Duration: Jan 2017 - Dec 2020

Status: Complete

Total project cost: €985,000

EU contribution: €749,987



Call for proposal: H2020-CS2-CFP02-2015-01

[CORDIS RCN : 207494](#)

Objectives:

The expected outcome of the NO-ICE-ROTOR project is structural and environmental test substantiation of ultra-high reliability heater layers which are capable to be integrated into an advanced tilt civil rotorcraft configuration with high cruise speed, low fuel consumption and gas emission, low community noise impact, and high productivity for operators.

The realisation of such an advanced tilt civil rotorcraft is the objective of the Clean sky Fast Rotorcraft Project (FRC). It is the aim of this project to use technologies developed through the Clean Sky Programme to demonstrate a compound rotorcraft configuration that combines the vertical lift capability of the conventional helicopter with the speed capability of a fixed wing aircraft in a sustainable way.

The overall objectives of the NO-ICE-ROTOR project are:

- Design and development of heater layer for application in tilt rotors
- Establishment of test criteria and test matrix project
- Manufacturing of suitable test pieces for ice protection system (IPS) testing
- Structural and environmental rig test adaptations for IPS testing
- IPS rig and coupon test realization and tests results
- Synthesis of results: comparison of performance of materials and of technologies tested

The specific objective of the NO-ICE-ROTOR project is to develop heater layers to be embedded in composite structures to provide anti-icing and de-icing capability where safety requirements dictate ultra-high reliability, while operating in high strain and vibration conditions. Structural and environmental testing will be conducted on representative test items consisting of functional heater layers embedded in the prop-rotor blade and airframe sections of a tilt-rotor configuration intended for civil certification.

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)

Lead Organisation:

Villinger Gmbh

Address:

GEWERBEPARK 6
6142 MIEDERS
Austria

Organisation Website:

<http://www.villinger.com>

EU Contribution: €189,525

Partner Organisations:**Rta Rail Tec Arsenal Fahrzeugversuchsanlage Gmbh****Address:**

PAUKERWERKSTRASSE 3
1210 WIEN
Austria

Organisation Website:

<http://www.rta.eu>

EU Contribution: €124,338

Ait- Austrian Institute Of Technology Gmbh**Address:**

Donau-City-Strasse 1
1210 WIEN
Austria

Organisation Website:

<http://www.arcs.ac.at>

EU Contribution: €201,625

Cest Kompetenzzentrum Fur Elektrochemische Oberflachentechnologie Gmbh**Address:**

VIKTOR KAPLAN STRASSE 2
2700 WIENER NEUSTADT
Austria

EU Contribution: €114,800

Sia Aviatest**Address:**

REZEKNES IELA 1
RIGA 1073
Latvia

EU Contribution: €119,700

Technologies:

Aircraft design and manufacturing
Heater layer for tilt rotorcraft

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Safety/Security

Geo-spatial type: Other