

PROJECT

CONCERTO

Cabin noise reduction ground Checked by new loudspeaker excitation

Funding: European (Horizon 2020)

Duration: Jul 2020 - Oct 2021

Status: Ongoing

Total project cost: €736,500

EU contribution: €549,000



[CORDIS RCN : 228823](#)

Objectives:

The current race for green mobility is changing the design philosophy in all engineering disciplines; this is tangible especially in aeronautical segment, where optimization and innovation are the key for a sustainable future mobility.

In addition, the comfort of passengers is a critical issue for both, manufacturer and airlines, and the noise levels in the passenger cabin of turbopropeller-driven aircraft are typically higher than the levels in comparable turbofan-powered aircraft. The sources of noise in a turboprop aircraft include boundary layer flow noise, structure-borne noise due to engine vibration, and acoustic excitation of the fuselage due to the propeller, with the latter being dominant for most turboprop aircraft.

According to Clean Sky program, this proposal aims to develop innovative technologies that will be used in the next gen aeronautical transports.

The activities related to the CONCERTO project are focused on the development of an innovative cabin/fuselage noise testing equipment for regional aircraft platforms.

The equipment will be based on an innovative Noise Generation System (iNGS) aimed to test and validate new technologies for noise reduction in composite cabin of regional aircraft.

The current systems effectiveness is limited by the following aspects:

- fixed fuselage diameter and fixed position;
- absence of a control closed loop for reverberance control;
- manual input for each loudspeaker and third-octave band.

Developing a smarter and modular system, removing at least such limitations, makes simpler and faster the noise testing phase, that can be difficult due the complex system setup procedures.

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-CS2-2019-CFP10-REG-01-19 Innovative Noise Generation System for testing of Regional Cabin Interior Noise reduction

Lead Organisation:

Lead Tech Srl

Address:

VIA NAPOLI 141 C.C. TECNOCITY

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Italy

EU Contribution: €437,500

Partner Organisations:

Katholieke Universiteit Leuven

Address:

Oude Markt
3000 Leuven
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Organisation Website:

<http://www.kuleuven.be>

EU Contribution: €111,500

Technologies:

Aircraft noise measurements"

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Environmental/Emissions aspects

Geo-spatial type: Other