

PROJECT

## AEROMIC

### Development of New digital Microphone-MEMS-Sensors for wind tunnels with open/closed test sections and flight tests

**Funding:** European (Horizon 2020)

**Duration:** Jan 2021 - Jun 2023

**Status:** Ongoing

**Total project cost:** €1,749,710

**EU contribution:** €1,399,990



**Call for proposal:** H2020-CS2-CFP11-2020-01

[CORDIS RCN : 232507](#)

#### Objectives:

AEROMIC aims at envisioning an innovative sensor technology for aeroacoustic measurements based on high performance MEMS microphones integrated as microphone arrays, and the development of a compact smart sensor surface through the integration of sensors and electronic components using vertical integration technology.

The main objective of this proposal is the development of novel high performance digital wall-mounted microphone-MEMS-sensors for surface unsteady pressure and wall shear stress measurements for future noise reduced large passenger and other aircrafts.

Novel miniaturized piezoelectric and piezoresistive MEMS microphones with properties exceeding the state-of-the-art in terms of bandwidth, sensitivity, dynamic range and robustness will be developed to capture the unsteady pressure fluctuations underneath the turbulent boundary layer with very high spatial and temporal resolutions in a very broad frequency range. The two MEMS microphones can be optimized for the wind-tunnel testing (WTT) and flight testing (FT) applications as required, respectively.

#### 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-CS2-2020-CfP11-LPA-01-88 Development of New digital Microphone-MEMS-Sensors for wind tunnels with open/closed test sections and flight tests

#### Lead Organisation:

**Silicon Austria Labs Gmbh**

**Address:**

INFFELDGASSE 33  
8010 GRAZ  
Austria

**EU Contribution:** €398,877

#### Partner Organisations:

**Universitetet I Sorost-Norge**

**Address:**

KJOLNES RING 56  
3918 PORSGRUNN  
Norway

**Organisation Website:**

<http://www.usn.no>

**EU Contribution:** €228,800

**Technische Universitat Berlin****Address:**

STRASSE DES 17 JUNI 135  
10623 Berlin  
Germany

**Organisation Website:**

<http://www.tu-berlin.de>

**EU Contribution:** €280,515

**Usound Gmbh****Address:**

KRATKYSTRASSE 2  
8020 GRAZ  
Austria

**EU Contribution:** €106,750

**Vectoflow Gmbh****Address:**

FRIEDRICHSHAFENER STR. 1  
82205 GILCHING  
Germany

**EU Contribution:** €196,218

**Universidad Carlos Iii De Madrid****Address:**

Calle Madrid  
28903 Getafe (Madrid)  
Spain

**Organisation Website:**

<http://www.uc3m.es>

**EU Contribution:** €188,830

**Technologies:**

Sensor technologies  
Integrate MEMS-based sensors and a RFID tag

**Development phase:** Research/Invention

Sensor technologies  
Smart sensors and smart running gear components for self diagnosis

**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