



A research project under European Commission's Framework Program "Horizon 2020", through the Marie Skłodowska-Curie Innovative Training Networks (ITN) grant agreement No. 722401.

Industrial exploitation potential of new materials and technologies for the reduction of flow-induced

9:00 – 9:15 Welcome

9:15 – 9:30 Overview of the SmartAnswer project

C. Schram & J. Christophe, von Karman Institute for Fluid Dynamics, Belgium

9:30 – 10:45 Aerodynamic noise reduction with flow control devices and their industrial perspectives

R. Zamponi, T. Suresh, C. Teruna, L. T. Lima Pereira, G. Bampanis, I. Zurbano Fernández

10:45 – 11:00 Coffee break

11:00 – 12:15 Acoustic control with new material technologies and their industrial perspectives

N. S. Khodashenas, M. D'Elia, F. A. Pires, E. De Bono

12:15 – 13:30 Lunch

13:30 – 14:45 Modeling techniques for noise reduction technologies and their industrial maturity

M. Monfaredi, S. Palleja, C. Sanghavi, A. Zarri

14:45 – 15:15 Feedback from the advisory board

AB

15:15 – 15:45 Wrap-up and Recommendations for the future research and development

All

Smart Mitigation of flow-induced Acoustic Radiation and
Transmission for reduced Aircraft, surface transport,
Workplaces and wind energy noise



von KARMAN INSTITUTE
FOR FLUID DYNAMICS

SmartAnswer Project Overview

C. Schram & J. Christophe

SmartAnswer workshop, VKI (online), 26th November 2020



H2020 MARIE SKŁODOWSKA-CURIE ACTIONS



Smart Mitigation of flow-induced Acoustic Radiation and
Transmission for reduced Aircraft, surface transport,
Workplaces and wind energy noise

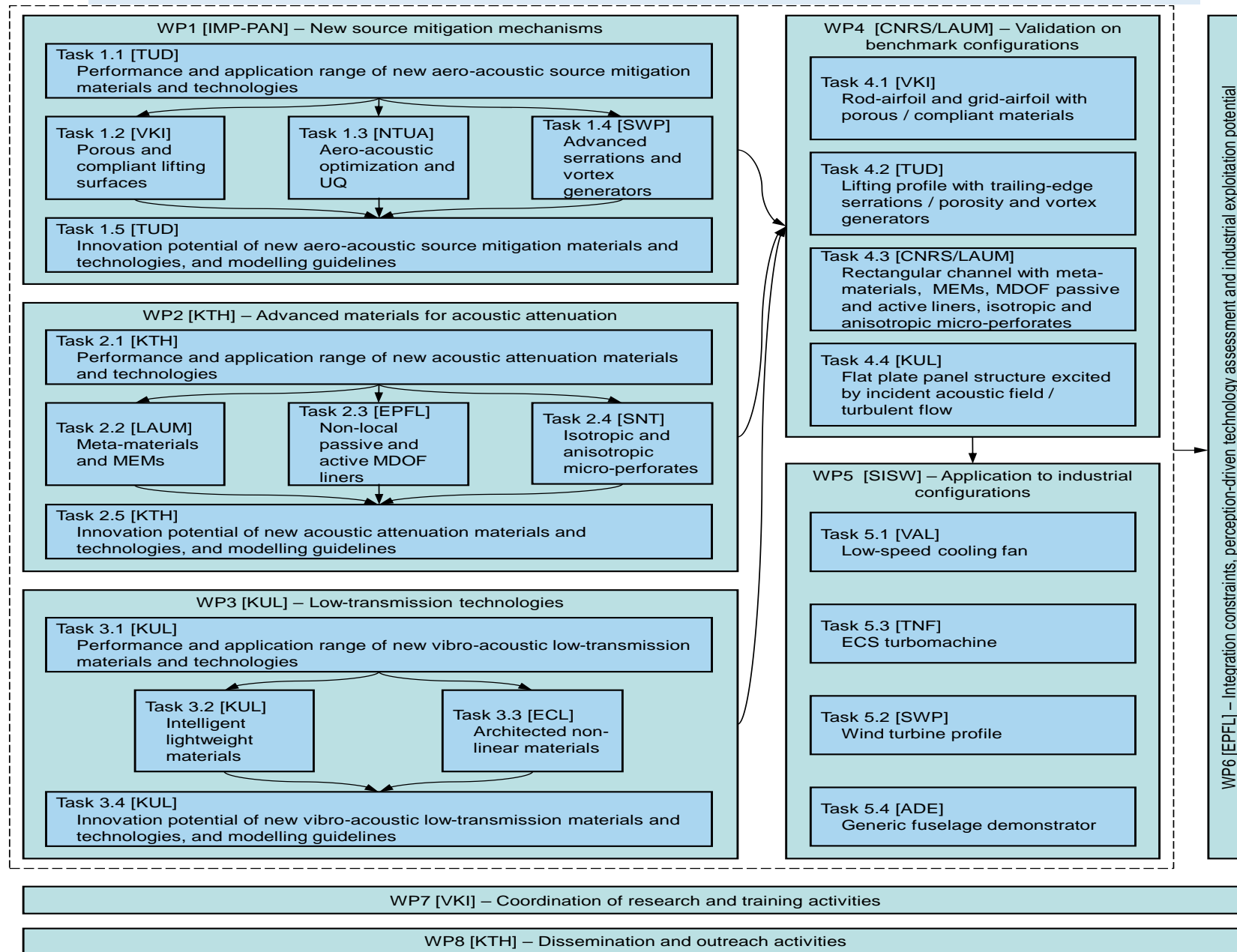
The storyline in a nutshell

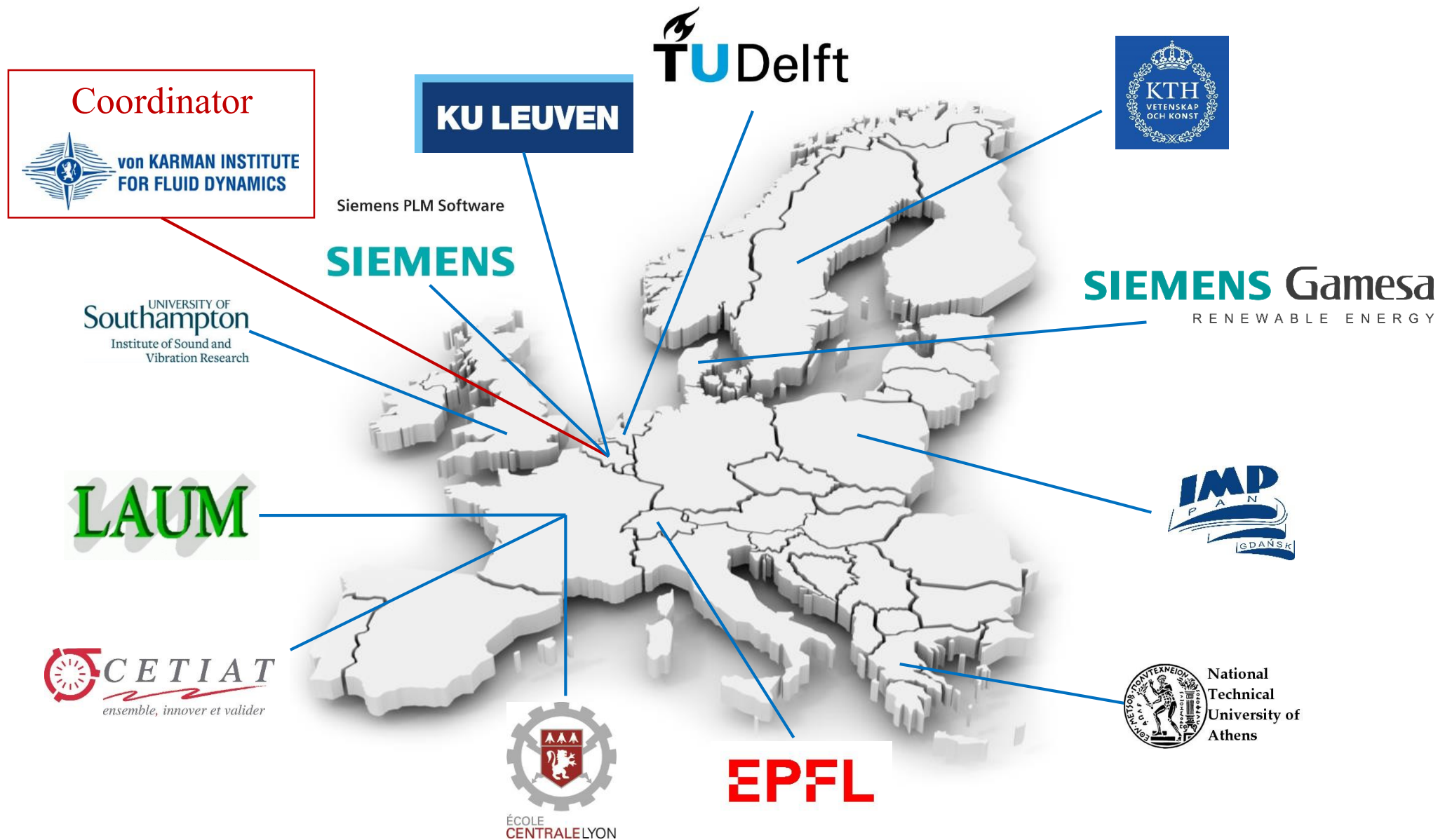
- Noise = serious issue in air / ground transportation, building ventilation systems and wind energy production
- New technologies now available: MEMs, meta-materials, porous materials, LE / TE serrations, ...
often developed through trial-and-error campaigns
- But development hindered by:
 - lack of understanding of physical mechanisms
 - lack of integration of multi-disciplinary constraints
 - lack of knowledge about novel manufacturing technologies
- ... but no worry: here we are!

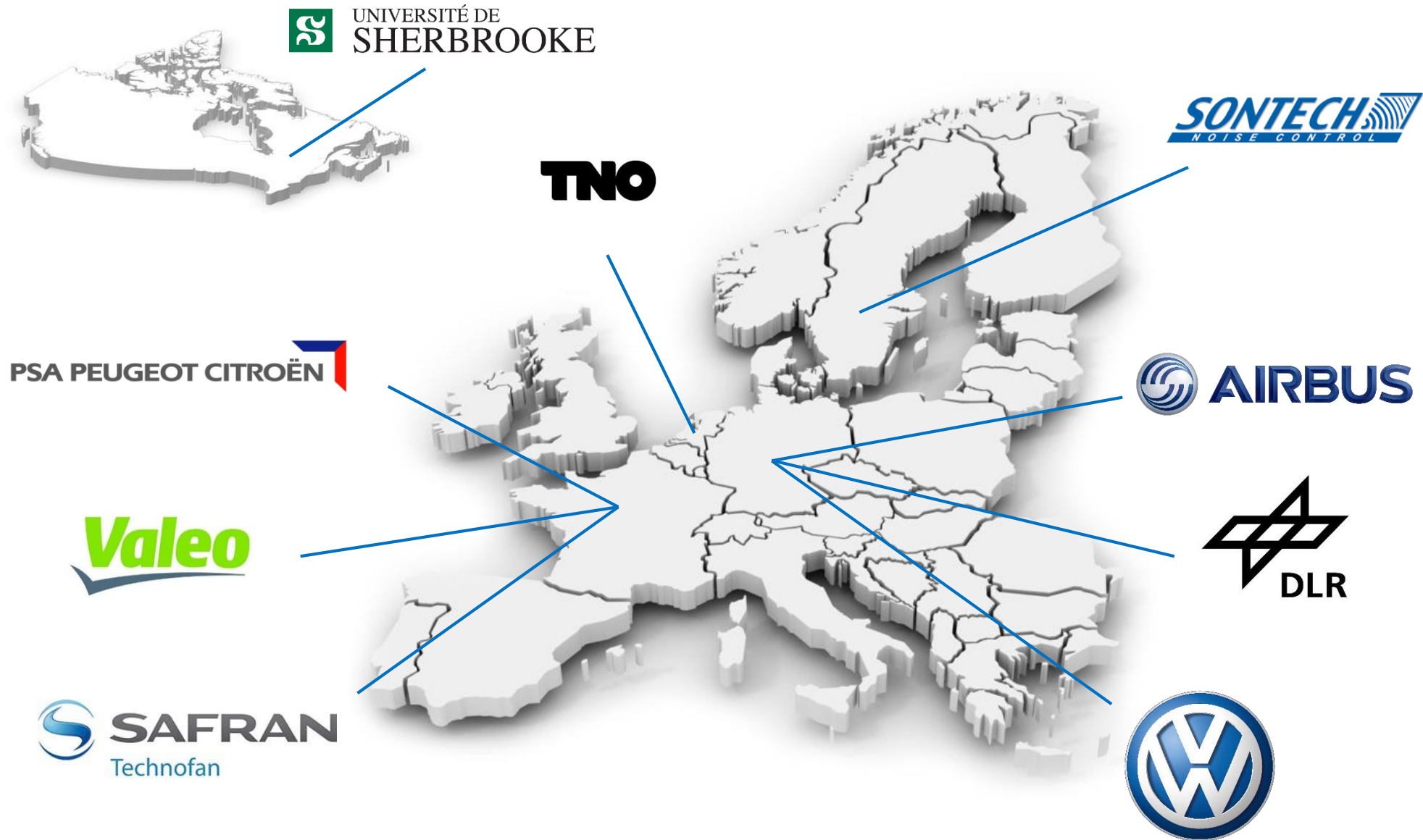
What is SmartAnswer ?

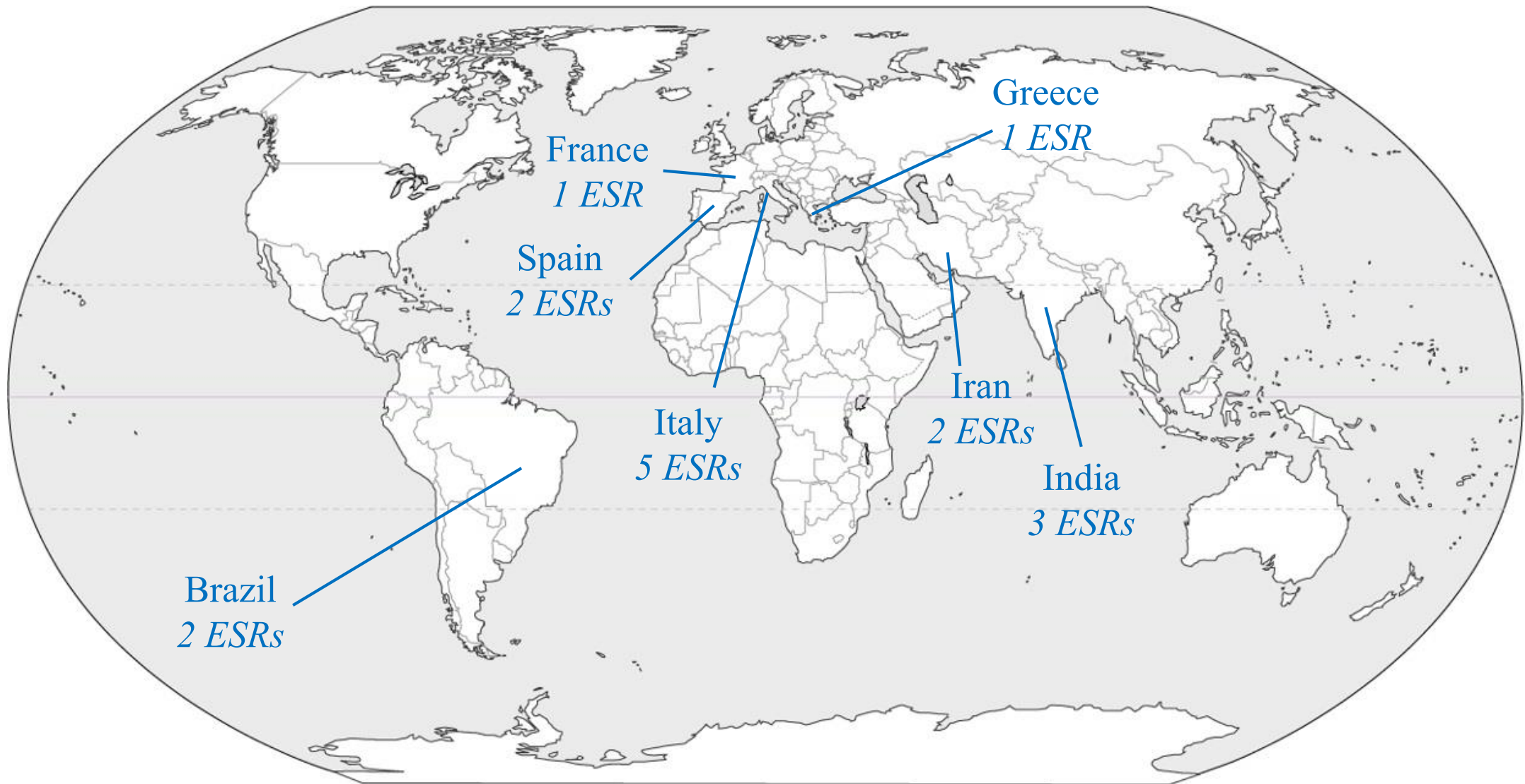
- Research and training platform focused on innovative **flow / noise control and optimization** approaches
 - where ESRs will investigate **theoretically, experimentally and numerically** promising emerging technologies
 - gathering key industrial stakeholders selected from the **aeronautical, automotive, wind turbine and cooling/ventilation** sectors
 - where the ESRs will be confronted with intricacies of a **realistic innovation process**

How will it be achieved ?



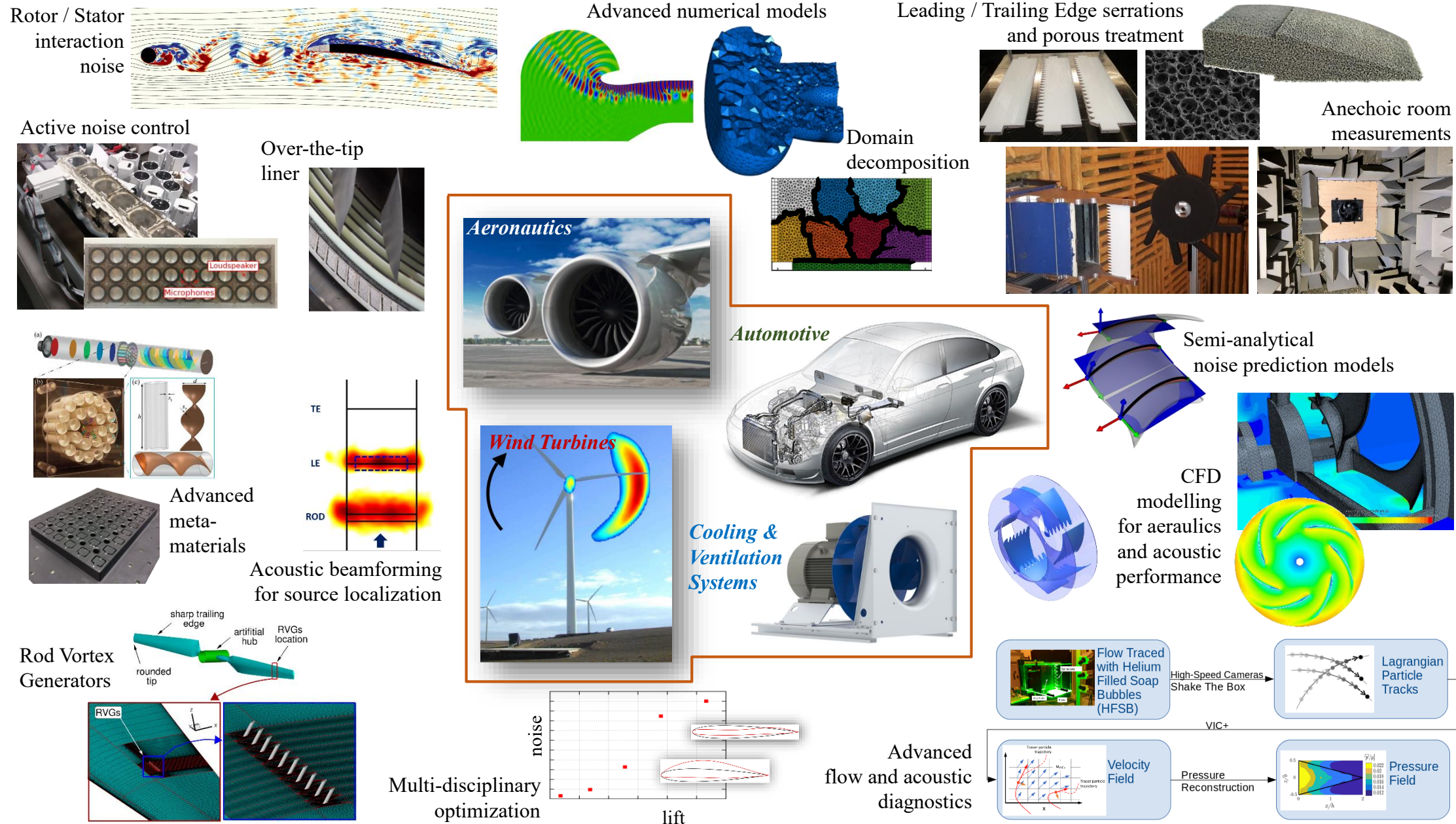




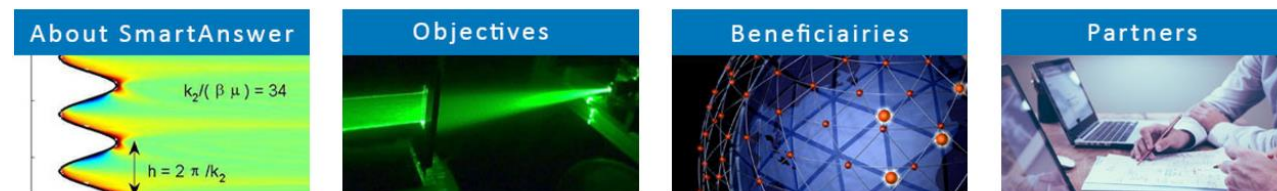
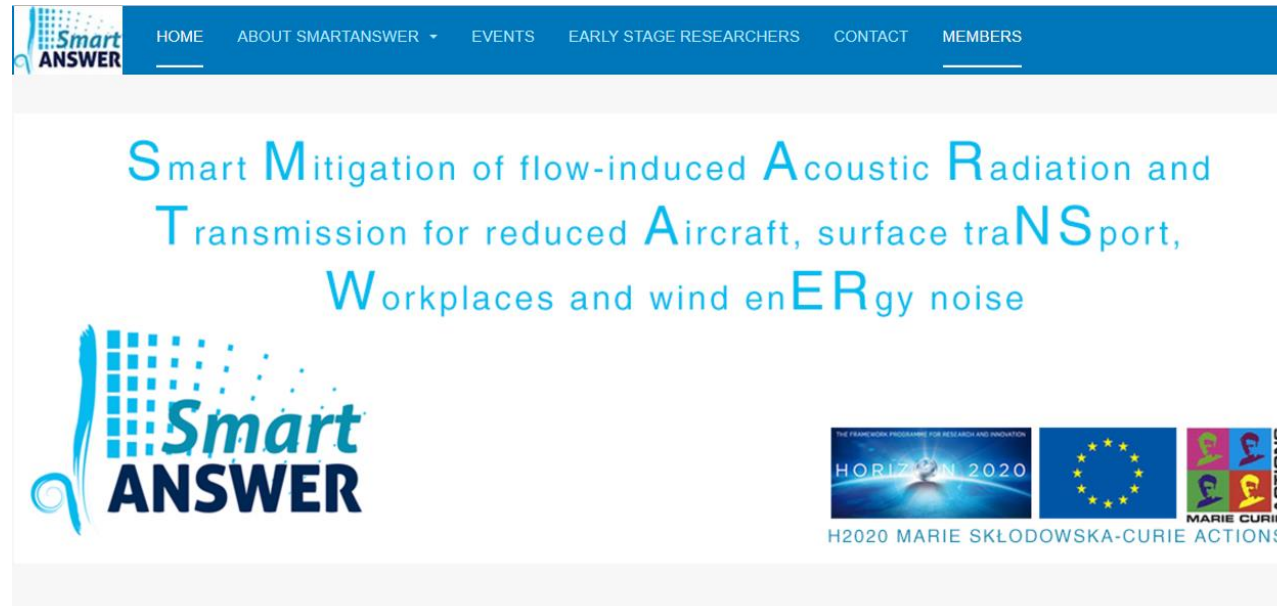


SmartAnswer is:

- 48 months, finishing end of December 2020
- 17 ESRs
- 30 courses/workshops
- 1 new Lecture Series
- 40+ scientific publications
- ESR movies and posters
- 1 demonstrator including most of the research outcome



<https://www.h2020-smartanswer.eu/>



Contacts: julien.christophe@vki.ac.be
christophe.schram@vki.ac.be