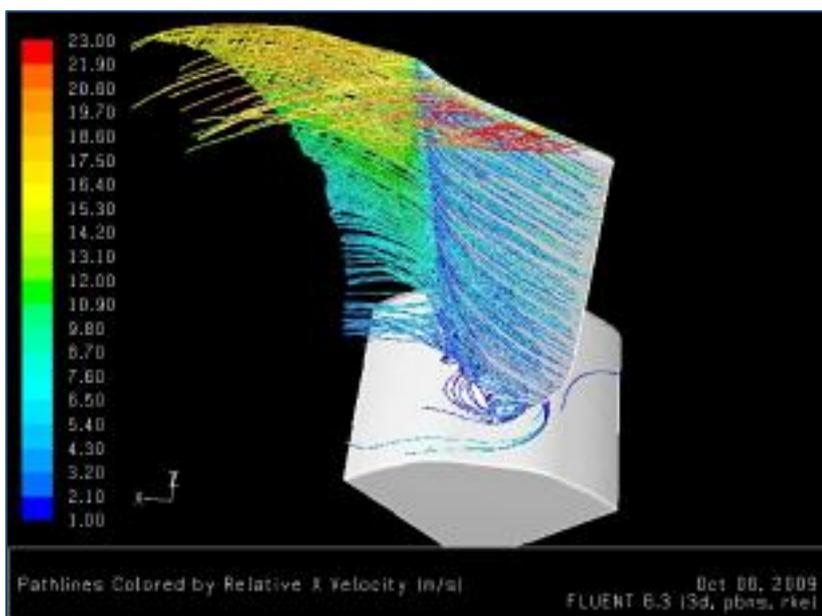


Work packages of the research programme

The work programme is divided into **8 Work Packages**. The first two deal with sound production mechanisms. WP3 is focused on innovative solutions for noise reduction. Three other WPs are concerned with different numerical procedures and system identification methods that are used in flow duct systems. Two WPs deal with the dissemination of the results to European citizens, researchers and industries and management.

WP1 studies air-moving devices, e.g., fans, compressors, turbo-chargers and gas-turbines, as the primary sources of sound in duct or pipe systems. A strong focus is put on the applicability of the methods and models for industrial applications (natural gas production and transport installations, ventilation systems). (ESR4, 6)

In **WP2**, methods and models are developed to predict the occurrence and amplitude of flow-induced pulsations. A strong focus is put on the applicability of the methods and models for industrial applications (natural gas production and transport installations, ventilation systems). (ESR2, 5)

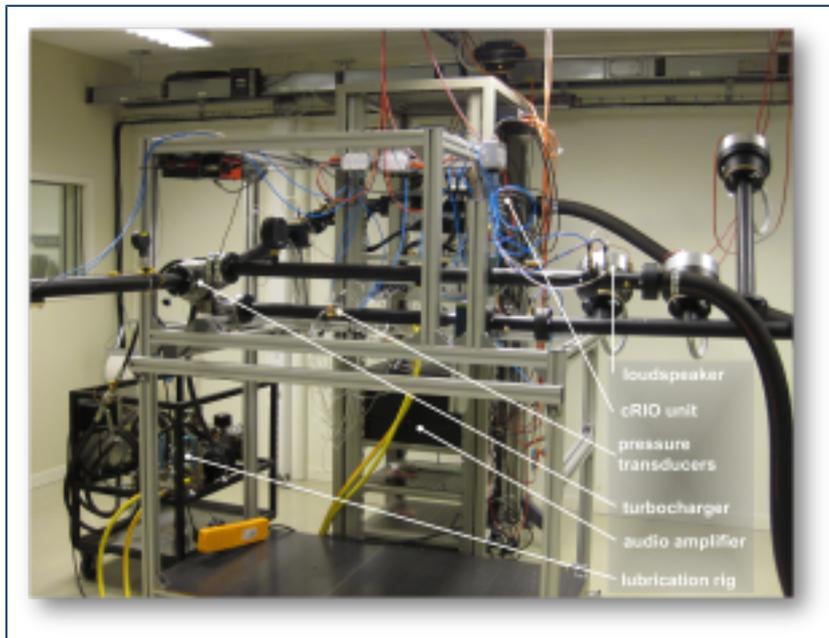


In **WP3**, the use of metamaterials in silencers is studied and the effects of such materials in silencers are quantified by the measurements of samples and demonstrators. (ESR1, 8, 11, ER1)

Incompressible Large-Eddy Simulation are performed in **WP4** for academic and industrial cases. The quality of the results allows a detailed investigation of the noise generation. (ESR9, 10, ER4)

WP5 investigates latest technology in noise radiation and propagation in presence of flow with a clear focus on efficiency for large scale model. It also provides a platform to investigate the impact of the noise exposure on population. (ESR3, 7, ER3)

WP6 makes use and further develops methods of system identification to determine the scattering matrix as well as the source vector (for broad band noise) of acoustic multi-ports from aero-acoustic (LES) data. In particular, an extension to higher-order, non-plane waves in ducts is done. (ESR12, 13, ER2)



WP7 dissemination: The outreach activities are organised mainly through the FlowAirS website and thanks to the ESRs and ERs participation. The FlowAirS website is a tool to disseminate knowledge to the larger EU community. On this website, basic introduction to the field as well as advanced concepts will be available for all people interested in the sound in flow ducts systems. This website will continue to be maintained long after the FlowAirS project ends. The ESRs and the ERs will be encouraged to disseminate their results as widely as possible and depending on the target audience (network partners, scientific community, general public and European industries). The second Lecture Series (VKI) will constitute the international event of the FlowAirS project.

The **WP8** organises management and training activities. Its main objectives are to ensure that the training of early-stage researchers overcomes the sectoral and disciplinary fragmentation and leads to rich contacts of ESRs and ERs with industry.