



Project Number 265943

## **X-NOISE EV**

### **Aviation Noise Research Network and Coordination**

## **Deliverable D6.17**

# **Publishable Project Activity Summary**

Period covered: 1 December 2010 - 30 November 2015

Date of preparation: March 2016

Start date of project: 1 December 2010

Duration: 60 months

**Definition of Research Agenda (Strategic Domain):**

Steps were taken to support the development of the new ACARE SRIA. Contribution was provided in view of the Volume 1 and Volume 2 documents, in a phased and comprehensive strategy aimed at achieving the noise targets set by the Flightpath 2050 vision.

Technology roadmaps have been maintained and updated. Supporting the near term steps towards the 2035 target, a new technology roadmap for 2015 – 2025 is also being provided in line with the noise strategy for the novel architecture concepts. Annual Technology Status reports were produced.

A Combined Roadmap for Balanced Approach and Impacts 2010-2025 has been developed. These research areas were also considered as excellent candidates for international cooperation.

There was continued participation and contribution to the European modelling strategy discussion in the ECAC / ANCAT / MITG framework. In this framework a durable organisation structure has been developed to address Interdependencies Modelling.

Two Noise Mapping seminar were organized to review the issues involved in the full mapping process. Research needs were identified for: model improvement, validation of model and database, supplemental noise metrics and land use planning. Case studies were reviewed. Based on the findings of the two noise mapping seminars a Catalogue of Good Practices was elaborated. An exploratory study undertaken to identify the causes for observed bad Land Use practices stressed the need for wider research in this area to advise main stakeholders accordingly.

A workshop on General Aviation noise was held to support future identification of key issues and associated research needs. A report was produced to summarize the identified research priorities. To complement this effort, a workshop was organized dedicated to Muffler design

X-NOISE EV contributed to the OPTI progress assessment, using an approach similar to the previous AGAPE process to assess the current situation relative to the ACARE 2020 targets. The project also supported a presentation of the specific assessment methodology developed within the X-NOISE context at the occasion of the workshop on Evaluation Methodology organised by the EC. A new progress assessment was finally performed in 2015 for the benefit of ACARE WG3 to provide an update relative to the OPTI situation. In dealing with the further steps towards the -10dB target, the 2015 assessment exercise benefited from the achievements of the OPENAIR project as well as interim results from CLEAN SKY. In conclusion, relative to the ACARE noise target of -10dB per operation, the aircraft noise research effort can be considered as generally on track to meet its objective, but will require significant support in the few years remaining before 2020. Actions critical to the ultimate success of the comprehensive overall approach initiated around 2000 were summarized. A status of remaining efforts needed to draw was issued as part of the exploitation plan.

The overall achievements to date and the proposed way forward (2020, 2035, 29050) were presented at the joint European Commission, ACARE and X-Noise event - *Workshop on Future Trends in Aviation Noise Research* held in Brussels in October 2014.

In May 2015, a second workshop “*Managing Aviation Noise Impacts - Mapping Future Research Priorities*” was organised . This workshop was the a continuation of the workshop “*Future Trends in Aviation Noise Research*”,

### **Dissemination:**

Five annual Scientific workshops have been organized:

- 2011 - Acoustic Liners and Associated Propagation Technique, at EPFL in Lausanne
- 2012 - Aeroacoustic Installation Effects and Novel Aircraft Architectures at DLR Braunschweig .
- 2013 - Atmospheric and Ground Effects in Sevilla in September in Sevilla
- 2014,- Aircraft Noise Reduction by Flow Control and Active/Adaptive Techniques, at Vilnius Gediminas Technical University
- 2015 - Broadband Noise of Rotors and Airframes in La Rochelle

X-NOISE EV also supported participation to Aerodays 2011 and Aerodays 2015 by way of a an exhibition stand and a session dedicated to noise projects. Similar sessions were organized at Euronoise 2012 and Internoise 2014. At last, to promote and disseminate the results of the COSMA project to an international audience, a dedicated workshop was organized in the wake of the Internoise 2013 conference.

Prior to completing the X-NOISE EV project, the website content has been revisited. Overall projects roadmaps have been updated to reflect the 2015 status. The publications database contains a list of publications from EC aircraft noise projects, incl. reference to authors. The list has been updated including 2015. Network Newsletters were posted and distributed through the public website regularly at 6-month intervals.

### **Integration of Research Community:**

A number of national Focal Points have had their network reaching a critical mass and periodic activities such as annual workshops are considered as established. In the areas targeted for regional network development (South America, Méditerranée, Balkans), the highlight was the success of the first ANEW workshop in Rio, organized in coordination with several Brazilian stakeholders. Over the project, a comprehensive inventory of National efforts in Noise research within Europe and worldwide has been achieved through the activities of the National Focal Points. New Focal Points (Slovenia, Bulgaria, Estonia) have joined the network.

### **Outreach and Cooperation:**

The International Technology Seminar on Open Rotors undertook a review of noise technology programmes past and present dedicated to Open Rotor engine concepts. Contributions were provided by EU and Russian experts from industry and research organisations. Key US experts currently engaged in Open Rotor noise research were invited and provided contributions. The Seminar output was later used to provide a technology status on Open Rotor noise as information was provided within the framework of ICAO CAEP Working Group 1 to support the 2nd Technology Review and the associated Independent Experts report that was presented at the CAEP/9 plenary meeting in February 2013.

Recommendations were made within the framework of CooperateUS and CANNAPÉ Support Actions for topics of interest in considering cooperation with USA and Canada.

At last a “Network of Networks Seminar” was organised, aimed at concluding an effort carried out through the project in its various outreach and cooperation activities. It allowed the coordinators of international research networks to provide an overview of their activities and express their interest for collaboration on specific areas.