

Would you like us to try to find interested companies with your projects ideas, please send us a short project abstract (by the 7th October) which we will display on this webpage under the match-making section.

The match-making concept is only designed to help you to find partners, a coordinator, technology,...

This webpage can be found at: <http://www.aeroportal.eu/ap3callfp7workshop.html>

| Project Ideas | |
|--|---|
| <u>Proposers of the idea:</u> | Oguz Uzol (Middle East Technical University), Jean-François Brouckaert (von Karman Institute for Fluid Dynamics) |
| <u>Type of Organisation:</u> (SMEs, University, Research Center,...) | University and Research Center |
| <u>Call identifier:</u> | FP7-AAT-2010-RTD-1 |
| <u>Topics called:</u> | AAT.2010.1.1-3 Propulsion AAT.2010.4.2-3 Propulsion |
| <u>Funding Instruments:</u> | CP-FP (Small or Medium scale focused research) <input checked="" type="checkbox"/> CSA-CS (Coordinating) <input type="checkbox"/> CSA-SA (Supporting) <input type="checkbox"/> |
| <u>Project Title:</u> | COMPREHENSIVE EXPERIMENTAL DATABASE FOR UNSTEADY MULTI-STAGE TURBOMACHINERY FLOWS (Project Acronym: ExMuST) |
| <u>Project objectives:</u> | The objective of this project is to generate a comprehensive experimental benchmark database that could be used for enhancing the accuracy and reliability of the current unsteady multi-stage turbomachinery flow prediction tools, which in turn would help in developing more cost efficient engines through a better flow prediction capability. |
| <u>Project abstract:</u> Be concise! Avoid abbreviations (Max. 3000 characters incl. spaces. Any exceeding words will be discarded.) | <p>This project involves the generation of a comprehensive experimental benchmark database for unsteady multi-stage turbomachinery flows.</p> <p>Two different complimentary experimental facilities operating an industry representative multi-stage axial compressor are proposed for the generation of this dataset.</p> <p>The experiments would include unobstructed Particle Image Velocimetry measurements in a Refractive-Index-Matched facility at METU Department of Aerospace Engineering, Ankara, Turkey, within the entire multi-stage flow field. Measurements would be performed from inlet to exit, on various radial planes from hub to tip at different operating conditions. The data collected from this facility would consist of instantaneous, phase-averaged and average-passage velocity fields, turbulent and deterministic stress distributions within the entire machine, which could then be used for the validation of existing CFD codes as well as to develop advanced turbulence and deterministic stress models for improved prediction capability.</p> <p>This data would be complimented by tests in air at a scaled multi-stage compressor model using the R4 facility at the von Karman Institute for Fluid Dynamics, Turbomachinery and Propulsion Department. Measurements would include a comprehensive steady state performance characterization, as well as detailed unsteady measurements with fast response aerodynamic probes, yielding unsteady flow field total pressure, flow angle, static pressure and flow unsteady Mach number.</p> <p>The final dataset would help developing more cost efficient engines through a more accurate flow prediction capability.</p> |
| <u>Project structure</u> (WPs, duration,...) * | |
| <u>Estimated budget</u> * | |
| <u>Project Coordinator</u> | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| <u>What are you looking for</u> (a coordinator, partners, technology, other,...)? Please specify. | Partners |
| The person identified above confirms that the data provided in this form are correct and that permission is given to publish this data in the MatchMaking table located in the Workshop page. | Yes <input checked="" type="checkbox"/> |

* Not Mandatory

Please return the completed form **BY THE 7th October 2009** to AeroPortal, Ms. Monica Ibedo, aeroportal@asd-europe.org.
For more details refer to the AeroPortal homepage www.aeroportal.com.