Application for Project Ideas

for the AeroPortal 3rd Call FP7 Workshop

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	
Proposers of the idea:	**D un D centrs**
Type of Organisation: (SMEs, niversity, Research center,…-	**SME**
Call identifier:	**FP7-SST-2010-RTD-1**
Topics called:	**AAT.2010.1.2-2, AAT.2010.6.1-4,AAT.2010.7-6,AAT.2010.7-11**
Funding Instruments:	CP-FP (Small or Medium scale focused research) ☒ CSA-CS (Coordinating) ☐ CSA-SA (Supporting) ☐
Project Title:	**Jet Engines Condition Monitoring**
Project objectives:	**Research & development of new technology of aircraft engine monitoring & diagnostics**
Project abstract: Be concise! Avoid abbreviations (Max. 3000 characters incl. spaces. Any exceeding words will be discarded.)	**Typical aircraft vibration monitoring systems lag behind other non-destructive testing methods because such systems measure rotor vibration only within frequency range of rotating speed. However, being too inertial, the rotor does not respond to local or smaller faults, so typical system (even modern HUMS) has limited diagnostic opportunities for engine diagnosis. To be more sensitive the monitoring system must cover wide frequency range of vibration, ranging even ultra-sound. Theoretical and experimental research works were carrying out for many years to find solutions for above-mentioned requirements. Some important tests had been taken place within the frames of SUSPOWER project of FP6 program. The set of vibration diagnostic techniques was combined in " vibration passport" (VP) technology. This technology had been realized as the land-based version of the vibration monitoring system for widely used helicopter engine. Trial use of this system, as well as testing on the stands, had proved effectiveness of VP for life cycle monitoring of the gas generator and free turbine of the engine.** **The project includes two work packages.** **A. The first work package has two main goals. The first, to verify the sensitivity and the correctness of developed diagnostic tools by the test series, like endurance engine tests on the test bench and main engine units tests on experimental rigs to simulate most dangerous faults in different compressors, turbines, gearboxes, etc. Development of experimental vibration data by dedicated analysis methods will supply project' s participants with specific data, which are beneficial for vibration diagnostics as well as for faults modeling, studying of dynamic interaction of engine units, its structural analysis etc. In result of research works, the set of proved diagnostic tools will provide detailed diagnosis of operating engine. New vibration diagnostic systems applied to operating engine could detect, for instance: a dint of separate blade, a bearing degradation at early stage, a fuel nozzle carbonization, etc.** **The second, to develop technical and economic requirements to vibration monitoring systems for helicopter and other aircrafts jet engines.** **B. The data acquired in the first work package will allow participants to improve VP technology by modification of its algorithms, software and hardware and to develop advanced vibration diagnostic system for different engines.** **Then improved system will be tested in different conditions with intent to verify:** **1) effectiveness of VP technology for monitoring of different engines;** **2) workability and reliability in field conditions;** **3) serviceability in field conditions and its suitability for technicians;** **4) economical efficiency of vibration diagnostic technology;** **Special research for optimization of vibration check periodicity will be carried out for most intensively used engines, like helicopter ones.**
Project structure (WPs, duration,..) *	
Estimated budget *	
Project Coordinator	Yes ☐ No ☒
What are you looking for (a coordinator, partners, technology, other,…)? Please specify.	**coordinator & 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 ☒

* Not Mandatory

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