

ESWIRP Proposals

workshop 3

11.-12.Oct. 2011

Project (short)	TR-wake & WI	Re-Vortex	small scale turbulence	Acoustics on High Lift	Rotor Mystery	Re-Flow-Plasma
Project Full	Time-resolved wake measurements of separated wing flow & wall interference investigations	Reynolds number influence on delta-wing vortex flow	Investigation of the small scale turbulence statistics in the Modane S1 Windtunnel	Experimental Investigation of the acoustic Field of a realistic Wing Section with Slats & Flaps in high lift Configuration	Enhanced aerodynamic Measurements on the Mexico Rotor in the DNW incl. methods for passive load control	High Reynolds Number Wind Tunnel Tests for active Flow Control with Plasma Actuators

Facility	ETW	ETW	S1	LLF	LLF	LLF
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Lead (country)	France, Mr. Carrier, ONERA	????????	Germany, Prof. Peinke, Uni Oldenburg	Germany, Dr. Abstiens, RWTH	Germany, Dr. Hufnagel, TU-Darmstad, D ???	????????
technical Lead	Dr. Lutz, Uni-Stuttgart, D Dr. Gorbushin, RU	Prof. Breitsamter, Uni-Munich, D	Prof. Bourgoin, C.Baudet Uni-Grenoble, F	Dr. Abstiens, Uni-Aachen, D	G. Schepers, ECN,NL	Dr. Veldhuis, Uni-Delft, NL
Subject	URANS Validation, Wall Interference Assessment	Improve Understanding of Vortex development as function of Re, extend Database	Improve Knowledge of Turbulence (Re-effect), build Database	Improvement of understanding of aeroacoustics, 2D --> 3D	Clarify aero findings from recent entry, add acoustics, Validate new concept	Validate Novel Active Flow Control Concept by Flaps
Consortium	France, Russia, USA, Germany	Czech. Rep., Greece, UK Sweden, Germany, Poland,	France, Germany,Russia, Australia, France, Czech Rep., UK, Canada	Romania, Germany, Russia, Czech Republic	Canada, Germany, Japan, Netherlands, Spain, USA, Denmark, Israel, Korea, Norway, Sweden	UK, Italy, Netherlands, USA, Germany, Czech Rep.
measur. Techniques	Forces & Moments, model/wall Pressures, TR-PIV, Dynamic SPT	Forces & Moments, PIV, unsteady pressures	Hot-wire, vorticity,acoustic/ optical particle, thermometry	Pressures. 2C PIV, or TR-PIV Microphon Array	Pressures, loads, PIV, Acoustic Array	Forces & Moments, TR-PIV, Pressures, Surface Flow Vis.
part of facility Upgrade	yes, TR-PIV, D-SPT	no	no	no	no	yes, moving belt
Model available	yes (NASA CRM)	yes	to be provided	no, FTEG, A3XX, A340, NEFA??	yes	no
full or half or other	full	full (plate)	other	half	wind turbine	full
Model support available	yes	no, but can be provided by ETW	not required	all models already tested in LLF	yes	depends on model
adapter required	no	yes, but can be provided by TUM	no	no	no	depends on model
other req. costly extras			grid, instrumentation, supports ( mostly funded)	serrated slats, new slats	new blade required incl. instrumentation covered ! person hours maybe charged to INNOWIND	instrumentation t.b. provided by partners
draft test program facility related	yes	no, some key points only	technical approach available	no	technical approach available	no
program fits budget	yes	not checked	yes, as low speed test	not checked	not checked	no
Test Date	spring 2013	spring 2013	June 2013	March-June 2013	spring 2013	spring 2013