



Hosted by

THALES

WAKENET-3 Europe / GREENWAKE DEDICATED WORKSHOP ON “**WAKE VORTEX & WIND MONITORING SENSORS IN ALL WEATHER CONDITIONS**”

29th and 30th March 2010

Thales Research & Technology

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Wake Vortex & Wind Monitoring Sensors

Workshop Agenda

Monday, 29th March 2010

08:30 Desk Reception

09:00 Opening session : Welcome & Introduction

Thierry Beauvais, Key Technology Domain PCC (Processing, Computing & Cognition) Director, THALES
 Frederic BARBARESCO, Task Leader - WakeNet3-Europe, THALES AIR SYSTEMS
 Carsten Schwarz, Greenwake, DLR

Sensors for Wind Monitoring in All Weather Conditions

09:10 Topic 1 : Wind Monitoring Radars

Chair: P. Eriksen / EUROCONTROL

09:10 **Next Generation Operational Met Office Weather Radars and Products**

P. Tabary & J. Parent-du-chatelet / Meteo-France, France

09:30 **Wind Field Observations with a Monostatic and Bistatic C-band Doppler Radar Network**

M. Hagen / DLR, Germany

09:50 **Multi-Static X-Band Radar**

J. Saebboe / TRIAD, Norway

10:10 Coffee Break

10:40 **HYDRIX: An X Band Radar to Monitor Atmospheric Hazards for Airport**

J. Testut / NOVIMET, France

11:00 **An Airborne X Band Weather Radar Simulator Environment**

J.P. Artis / THALES, France

11:20 **DWD's New Remote Wind Sensing Equipment for An Integrated Terminal Weather System (ITWS)**

T. Wetter & F. Lehrnickel / DWD, Germany

11:40 **All Weather Wind Monitoring with Integrated Radar and Lidar**

S. Hannon / Lockheed CT, USA

12:00 Lunch Break

14:00 Topic 2 : Radar Wind Profilers

Chair: R. Wilson / LATMOS

14:00 **Vaisala UHF Wind Profiler, Optimizing the Wind Measurement**

J. Polvinen / VAISALA, Finland

14:20 **UHF Wind Profiler Radar Applications in Aviation Support**

P. Currier/ Degreane Horizon, Vinci Group, France

14:40 **Long-term Radar Wind Profiler and Windline Measurements for the Wake Vortex Warning System at Frankfurt Airport**

J. Konopka/ DFS, Germany

15:00 Coffee Break

15:30 Topic 3 : Lidar Wind Profilers

Chair: J.C. Fontanella / Thales

15:30 **New Long Range Lidar for Airport Wind Profiling**

L. Sauvage, J.P. Cariou / LEOSPHERE, France

15:50 **Aviation ZephIR: Lidar Wind Profiling and Wake Vortex Detection**

C.Hill / Qinetiq, UK

16:10 **Lidar Wind-Shear Monitoring : Nice Airport Trials**

Florence Besson, Jean-Louis Maridet & Alain Dabas / Meteo-France, France

- 16:30 **Wind Monitoring Using 2nd Generation Wind Lidars**
Peter Clive / Renewable Energy Consultant, France
- 16:50 **Wind Lidar as an Aid to Airport Security Under Unfavourable Weather Conditions**
P. Martinez & A. Alcayde / ADTelecom, Spain
- 17:10 Topic 4 : Airborne Sensors & Aircraft Met Data**
Chair: L. Mutuel / Thales
- 17:10 **LIDAR Airborne Aerodynamic Sensors**
A. Verbeke / THALES Avionics, France
- 17:30 **Potential Use of Aircraft Derived Meteorological Data for Wake Turbulence Applications**
E. Johnson / FAA, USA
- 17:50 End of Day 1**

Tuesday, 30th March 2010

08:45 Desk Reception

Sensors for Wake-Vortex Monitoring in All Weather Conditions

- 09:00 Topic 5 : Radar Wake Vortex Sensors**
Chair: F. Barbaresco / Thales Air Systems
- 09:00 **High Resolution W-Band Radar Detection and Characterization of Aircraft Wake Vortices in Precipitation**
T. A. Seliga & J. B. Mead / ProSensing Inc., USA
- 09:20 **High Doppler Resolution X-band Wake-Vortex Radar : CDG Airport Trials**
F. Barbaresco / THALES AIR SYSTEMS, France
- 09:40 **Electronic-Scanning X-band Wake Vortex Radar : First Demonstrator**
P.R. Drake / RAYTHEON, USA
- 10:00 **Study on Wake Vortex Electromagnetic Model and Radar Detection Technologies**
X. WANG / NUDT, China
- 10:20 **Multi-Physics Electromagnetic/Fluid-Mechanical Simulator of Radar WV Monitoring**
D. Vanhoenacker-Janvier / UCL, Belgium
- 10:40 Coffee Break**
- 11:10 Topic 6 : Acoustic Wake Vortex Sensors**
Chair : P. Feneyrou / Thales Research & Technology
- 11:10 **Acoustic Technology for Wake Vortex Detection**
W. W. Durgin / Worcester Polytechnic Institute, USA
- 11:30 **Bi-static Radio-Acoustic System for Wake Vortex Monitoring**
J. Saebboe / TRIAD, Norway
- 11:50 **Enroute Wake Vortex Flight Data Acoustic Signature Characteristics**
A.P. Brown / NRC, Canada
- 12:10 Lunch Break**
- 14:00 Topic 7 : IR & UV Wake Vortex Sensors**
Chair: C. Schwarz / Greenwake Project & DLR
- 14:00 **Pulsed 1.5 micron Lidar for Wake Vortex Measurements and Monitoring : CREDOS Trials on Frankfurt Airport**
J.P.Cariou & A.Dolfi / LEOSPHERE & ONERA, France
- 14:20 **Measurement of Aircraft Wake Vortices Using Doppler 1.5 micron LIDAR**
H. Kato & S. Fujita / Tohoku University & ENRI, Japan
- 14:40 **Airborne and Ground based Wake Vortex Measurements with Pulsed Lidar**
T. Gerz or F. Holzäpfel / DLR, Germany

15:00 **Assessment of Pulsed Lidar Measurements of Aircraft Wake Vortex Positions Using a Lidar Simulator**
D. Delisi / NorthWest Research Associates, USA

15:20 Coffee Break

15:50 **Radiometric Detection of Aviation Hazards**
L. West / GTRI, USA

16:10 **GreenWake : UV Lidar for Wake Vortex Detection**
J. Storey / Green-Wake project technical co-ordinator, Lidar Technologies Ltd, UK

16:30 **GreenWake : Wake Vortex Detection Simulations**
Sébastien Lugan / Green-Wake project, UCL-TELE, Belgium

16:50 Topic 8 : Multiple Sensors
Chair: Steven Lang / FAA

16:50 **Wake Turbulence Measurements – Practical experience, considerations, contributions made to NAS and science to date**
F. Wang / Volpe, USA

17:10 **Wake Vortex Tracker for Radar/Lidar Sensors**
Meiko Steen / Institute of Flight Guidance , TU-Braunschweig, Germany

17:30 Closing session : Synthesis
F. BARBARESCO, Task Leader - WakeNet3-Europe, THALES AIR SYSTEMS