

The consortium of the European project



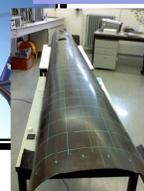
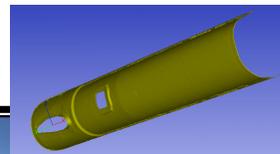
## AIRCRAFT INTEGRATED SAFETY HEALTH ASSESSMENT (AISHA)

will organise an OPEN PROJECT MEETING where essential results obtained within the project will be presented.

**DATE:**  
Tuesday, June 26, 2007

**PLACE:**  
Leuven, Belgium  
(Arenberg Library of the Catholic University of Leuven)

**Coordination of the meeting:**  
Metalogic N.V. and Katholieke Universiteit Leuven (MTM)



# PROGRAMME

## 09:00 - 10:30 Session 1

**CHAIRMAN: Prof. Vitalijs Pavelko (RTU)**

Opening by the executive of Metalogic and the research group K. U. Leuven MTM

Helge Pfeiffer (Metalogic - Project coordinator):

*Lamb waves and SHM in aircraft – The AISHA project*

Idurre Sáez de Ocáriz & Berdaitz Hormazabal (CTA):

*Aircraft: materials and typical defects. Component certification test*

### Coffee break + Poster session

## 11:00 - 12:00 Session 2

**CHAIRMAN: Prof. Vitalijs Pavelko (RTU)**

Fran Fransens (MTM):

*Monitoring of composites with optical fibre sensors demonstrated on a helicopter tail boom + monitoring of slat tracks by piezoelectric patches*

Wolfgang Hillger (DLR):

*Lamb waves in composites and their application in full-scale tests on a helicopter tail boom structure*

### Light lunch + Poster session + Demonstration of full-scale tests

## 14:00 - 15.30 Session 3

**CHAIRMAN: Prof. dr. ir. Martine Wevers (KULeuven-MTM)**

Vitalijs Pavelko (RTU):

*Degradation by aircraft operations and life time modeling - full-scale helicopter*

Ronan Le-Letty (CEDRAT):

*Dedicated electronics for SHM in aircraft – state of the art and potentials*

Fran Fransens (MTM):

*Durable sensor integration*

### Coffee break + Poster session

## 16:00 – 17:30 Session 4

**CHAIRMAN: Prof. dr. ir. Martine Wevers (KULeuven-MTM)**

Caroline Korosec (Eurocopter):

*The importance of SHM for modern helicopter design*

Geert Van der Linden (ASCO):

*The importance of SHM for suppliers of aircraft manufacturers*

### Closing words + Reception

## THE AISHA CONSORTIUM

### Metalogic

*Metalogic* is a Belgian SME company, which originated in 1991 as a spin-off company of the Katholieke Universiteit Leuven. The main competence of METALogic lies in the areas of material degradation (corrosion and environmental degradation in particular) and damage monitoring.

*Dr. Ir. Christine Buelens*, is engineer and CEO of Metalogic nv.

*Dr. Helge Pfeiffer*, is a physicist and has experience in the application and analysis of ultrasonic waves in different kind of materials. He is manager of the department for Research and Development in MetaLogic.

### Katholieke Universiteit Leuven - MTM

*Katholieke Universiteit Leuven*. The research group 'Materials performance and nondestructive testing' forms an integral part of the Department of Metallurgy and Materials Engineering of the Katholieke Universiteit Leuven. The research group coordinated by Prof. Dr. Ir. Martine Wevers, performs research which aims at finding optimum nondestructive testing techniques for detecting and sizing a material's internal damage state.

*Ing. Fran Fransens* is materials engineer and project collaborator in the AISHA project.

### Deutsches Zentrum für Luft- und Raumfahrt - DLR

*The German Aerospace Center (DLR)* is an independent non-profit research establishment with the objectives to carry out research in aeronautics, space, energy, and transportation, to construct and operate large scale test facilities, to manage aerospace projects, and to serve as the German space agency. All activities are conducted in 35 research/management units located in 8 sites, and with about 4500 employees in total. The DLR Institute of Composite Structures and Adaptive Systems (Prof. Dr. E. Breitbach) has vast experience and proven expertise in the theoretical and experimental structural mechanics as well as in design and manufacturing of lightweight fibre composite structures.

*Dr. Wolfgang HILLGER* is a physicist with 28 years of experience in ultrasonic imaging of composites and 4 years in SHM with Lamb waves and is responsible for the NDT-group.

### CEDRAT

*CEDRAT TECHNOLOGIES SA (CEDRAT)* is a high-tech SME of the CEDRAT group employing 70 people based in France close to Grenoble. CEDRAT specialises in 2 complementary fields of electric engineering such as active material applications and innovative electrical engineering.

*Dr. Ronan LE LETTY* got in 1990 an Engineering diploma from the Institut Supérieur d'Électronique du Nord, Lille (F). Since 2005, he is technical director in charge of the products & projects, including AISHA.

### EUROCOPTER

*Eurocopter (EC)* is a wholly owned subsidiary of EADS (European Aeronautic Defence and Space Company), formed in July 2000. It is the first manufacturer of helicopters in the world, with nearly 11,100 aircraft sold to 133 countries and is specialised in the development, manufacturing and sale of helicopters, for civil and military applications (56% civil and parapublic, 44% military).

*Caroline Korosec* is an engineer in NDT.

### **Riga Technical University - RTU**

Riga Technical University (RTU) is main establishment of the higher technical education in Latvia. In AISHA project RTU is presented by Department of Aircraft Strength and Fatigue Durability of Aviation Institute. The research activities of the Division of the Strength and the Fatigue Durability of Airframe (DSFA) are focused in the field of theoretical and experimental investigations of the strength and the fatigue of airframe materials and structures.

*Prof. Vitalijs Pavelko* (speaker) is a professor of aircraft strength and fatigue durability.

### **Centro de Tecnologías Aeronáuticas (CTA) - CTA**

CTA is a Spanish non-profit making entity specialised in testing for development and certification of aeronautical and aerospace materials, components and structures with a high R&D activity. There are two operative units situated in the north of Spain: one is specialized in structural, maintenance and fire aeronautical tests (CTA Miñano, near Vitoria), and the other, in fluid dynamics and aero-acoustic tests (CTA Zamudio, near Bilbao). The mission of CTA is the promotion of those scientific research and technological development activities, which may be of interest for the industrial environment in the aeronautical technologies field.

[www.ctaero.com](http://www.ctaero.com)

*Dr. Idurre SÁEZ DE OCÁRIZ*, is Ph. D. In Physics, Head of R&DT of CTA ,she has 11 year experience working as researcher and Project Manager a in R&DT projects, 6 of them in aeronautical sector.

*Berdaitz HORMAZABAL*, industrial and test engineer, with 3 year experience working in the development of new aeronautical structures, design and structural test on aircraft components for development and certification.

### **ASCO**

*ASCO Industries nv* is a world leader in the design and manufacturing of high precision, hard metal, structural components for the aeronautical industry. It specialises in difficult to machine materials such as maraging steels and titanium alloys and supplies to all major aircraft manufacturers worldwide (Airbus, Boeing, Canadair, Embraer, Dassault, etc.).

*Ir. Geert VAN DER LINDEN*, mechanical engineer is responsible for all research projects (various subjects such as high speed machining, high strength stainless steels, fatigue and damage

## Live presentations of structural health monitoring systems

(see also cover pictures related to aircraft parts)

- **Helicopter tail boom EC135**  
*Measurements on the EC tail boom structure with 8 piezoelectric transmitters and receivers using USPC 5000, data processing and evaluation*
- **Slat track of an Airbus A 320**  
*Detection of the growth of artificial cracks using piezoelectric sensors.*
- **Helicopter tail boom EC135**  
*Measurements on the EC demonstrator structure with optical fibres sensors.*

## Poster session

Every visitor is also invited to present posters related to structural health monitoring  
(Please mention it when you subscribe to the open project meeting)

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## Travel and Accomodation

For assistance concerning travel or accommodation, please contact Lieve Van Genechten  
at **METALogic**, Technologielaan 11, 3001 Leuven,  
Tel: +32 /(0)16 39 60 00, Fax: +32 /(0)16 39 19 90

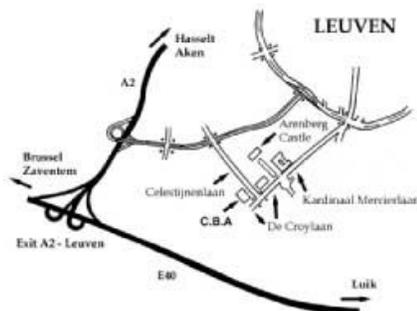
## Address of venue

Travel directions to Leuven

by plane: <http://www.kuleuven.be/transportation/airplane.htm>

by car: <http://www.kuleuven.be/transportation/car.htm>

by public transport: [http://www.kuleuven.be/transportation/public\\_transport.htm](http://www.kuleuven.be/transportation/public_transport.htm)



Campusbibliotheek Arenberg (C.B.A.)  
Willem de Croylaan 5  
3001 Heverlee

[http://www.wbib.kuleuven.be/content\\_img/plan/Kaart\\_groot.jpg](http://www.wbib.kuleuven.be/content_img/plan/Kaart_groot.jpg)

## Registration

Please subscribe via email [Lieve Van Genechten@METALogic.be](mailto:Lieve.Van.Genechten@METALogic.be)  
before 19<sup>th</sup> of June 2007.