Deutscher Luft- und Raumfahrt Kongress 2007

10-13 September 2007 in Berlin, Germany

1st CEAS

European Air and Space Conference

www.CEAS2007.org Estrel-Hotel in Berlin CEAS@DGLR.DE

Imprint

Editor

Deutsche Gesellschaft für Luft- und Raumfahrt - Lilienthal-Oberth e.V. German Society for Aeronautics and Astronautics (DGLR)®
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Print

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Fax: (0208) 532 72

Coverdesign

MACH8 media design group
Kohlenstraße 22
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Deutscher Luft- und Raumfahrtkongress 2007

CEAS 2007
1st European Air and Space Conference

Century Perspectives

Berlin, 10 – 13 September 2007

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Host and Organizer

Host of the Conference

Deutsche Gesellschaft für Luft- und Raumfahrt - Lilienthal-Oberth e.V.
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Foreword by Prof. Dr.-Ing. Joachim Szodruch, President of the DGLR

It is a great pleasure for me to present you the first congress of the Council of the European Aerospace societies (CEAS). CEAS currently comprises the eight aerospace societies from France, Germany, Great Britain, Italy, the Netherlands, Spain, Sweden and Switzerland with more than 25.000 individual members. Each society represents the leading national society in the field of aeronautics and astronautics.

As the CEAS mission is to strengthen European alliances and working relationships between industries, universities and research establishments, the biannual European Air & Space Conference has been founded to provide a forum for presentation and discussion of all scientific and technical areas related to aeronautics and astronautics. CEAS wants to be a forum and as such would like to provide opportunities for European scientists and engineers to learn and exchange about new discoveries in aerospace science, technology and products. Furthermore we offer a place to discuss ideas and experiences and to develop a highly professional network free from cultural, political and ideological constraints. As in 2007 the presidency of the European Commission is being held by Germany, CEAS also wants to send out a signal in holding this first of a series conference in Berlin as a new start to gather the European aerospace societies, while opening up globally as well.

In this context it is a great honour for the German Society for Aeronautics and Astronautics (DGLR), which is – at 95 years – the second oldest aerospace society in Europe, to host this conference as the local organizer. In order to demonstrate the very close relation between the DGLR and CEAS, we integrated our annually national aerospace conference this year into CEAS. Berlin was chosen as the place of the conference because of its long tradition in aeronautics. Otto Lilienthal did his first steps in aeronautics in and near Berlin, and the German institutional aeronautical research started about at the same time in Berlin and Göttingen exactly 100 years ago. In the beginning of the modern era of flight, several European companies settled in Berlin Adlershof to use the then recently founded research facilities. Also the first steps in rocket technologies have been taken in Berlin.

As we continue into 21st century, the aeronautical and space technologies will significantly contribute to evolution and growth within an evolving and changing global environment. Therefore, the 2007 Congress in Berlin will have the theme:

CENTURY PERSPECTIVES

The focus of the presentations will follow the five goals of our Congress:
• Access to space and future space utilization,
• Innovative concepts for future air transport,
• Environment and technologies for environmental aspects in aeronautics and space,
• International cooperation among academia, research and industry,
• Education and training for aeronautics and space; attracting young engineers.

As this is the first Congress of CEAS, the prestigious event is gaining increasing recognition in the field of aeronautics. We are therefore very proud to present a technical program with more than 500 high-quality papers and a series of lectures held in 12 parallel sessions. A speciality about this congress will be a short course about aircraft design held on four days, several workshops about astronautics, and a symposium for young scientist. I have no doubt that, for everyone participating in the Congress, it will be a valuable meeting to remember.

This congress would not have been possible without your engagement, so I would like to extend my sincere thanks to the Programme Committee, the local organizers, to all authors who are sharing their work and ideas with us as well as to all session chair persons who are bringing in their expertise, and especially also to you, the participants.

I wish you all a very successful and fruitful meeting within a truly European and international environment.

Foreword by Sir Colin Terry, President of CEAS

It is a pleasure to welcome you to Air and Space Europe in Berlin – the first conference organised by the newly constituted Council of European Aerospace Societies (CEAS). The Council brings together the major aerospace societies from across Europe and today is comprised of the Societies from France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland and the United Kingdom.

The conference here in Berlin is focussed on the technological challenges facing aeronautics in the coming years and brings together experts from a wide range of technical disciplines. I hope that the presentations of subsequent discussions will provide an ideal platform for Europe to build upon its previous successes in this important industry. In particular the focus on the current challenges including the environment and future space utilisation mean that there is much for delegates to digest.

I would like to thank the DGLR for their organisation of the conference and also to thank the Programme Committee whose substantial efforts have made this event possible.

I hope that you enjoy your time in Berlin and it proves to be a valuable meeting that shapes the future of aeronautics in Europe.

Das DLR im Überblick

Das DLR ist das nationale Forschungszentrum der Bundesrepublik Deutschland für Luft- und Raumfahrt. Seine umfangreichen Forschungs- und Entwicklungsarbeiten in Luftfahrt, Raumfahrt, Verkehr und Energie sind in nationale und internationale Kooperationen eingebunden. Über die eigene Forschung hinaus ist das DLR als Raumfahrt-Agentur im Auftrag der Bundesregierung für die Planung und Umsetzung der deutschen Raumfahrtaktivitäten sowie für die internationale Interessenswahrnehmung zuständig. Das DLR fungiert als Dachorganisation für den national größten Projektträger.

In 28 Instituten und Einrichtungen an den acht Standorten Köln-Porz (Sitz des Vorstandes), Berlin-Adlershof, Bonn-Oberkassel, Braunschweig, Göttingen, Lampoldshausen, Oberpfaffenhofen und Stuttgart beschäftigt das DLR ca. 5.300 Mitarbeiterinnen und Mitarbeiter. Das DLR unterhält Außenbüros in Brüssel, Paris und Washington, D.C.

DLR at a glance

DLR is Germany's national research center for aeronautics and space. Its extensive research and development work in Aeronautics, Space, Transportation and Energy is integrated into national and international cooperative ventures. As Germany's space agency, DLR has been given responsibility for the forward planning and the implementation of the German space program by the German federal government as well as for the international representation of German interests. Furthermore, Germany's largest project-management agency is also part of DLR.

Approximately 5,300 people are employed in DLR's 28 institutes and facilities at eight locations in Germany: Koeln-Porz (headquarters), Berlin-Adlershof, Bonn-Oberkassel, Braunschweig, Goettingen, Lampoldshausen, Oberpfaffenhofen, and Stuttgart. DLR also operates offices in Brussels, Paris, and Washington, D.C.

DLR

Deutsches Zentrum
für Luft- und Raumfahrt e.V.
in der Helmholtz-Gemeinschaft

www.DLR.de

Foreword by Klaus Wowereit, Governing Mayor of Berlin

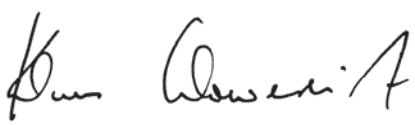
I am delighted to welcome all of you attending the 1st CEAS European Air and Space Conference to Germany's capital city. It is a great honor for Berlin, as an international trade fair and congress venue, to be hosting your important conference. I also regard your choice as a tribute to Berlin-Brandenburg as a business and science location with much expertise in the area of aeronautics and astronautics.

After all, the capital city region was not only the birthplace of German aviation, but has also been able to continue this tradition. Today the aeronautics and astronautics industry is among the most promising sectors in our region. A number of global players are active here, along with many small and medium-size businesses and countless research institutes focusing on areas important to aeronautics and astronautics. In addition, Berlin is home to one of the world's biggest air shows, the international aerospace exhibition ILA. With the opening of our new major airport, Berlin Brandenburg International, planned for 2011, the region's aviation industry will take off to new heights.

I am thus all the more pleased that the Council of European Aerospace Societies (CEAS) has chosen Berlin as the venue for this conference. With the 1st CEAS European Air and Space Conference, you are underscoring our reputation as an aeronautics and astronautics location with excellent prospects.

I wish all of the participants a productive meeting and a very pleasant stay in Germany's capital city. I hope you will also find the time to explore Berlin's cultural treasures and some of its many other sightseeing attractions.

In this spirit, let me say once again: Welcome to Berlin!



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Conference Overview

Monday, September 10th

13:30 hrs **Press Conference** **Room Paris**

15:00 hrs **Opening Ceremony** (included in registration fee) **ECC Hall A**
Hall A

(presentation: *Dr.-Ing. Detlef Müller-Wiesner, EADS, FR)*

1st CEAS European Air and Space Conference
Deutscher Luft- und Raumfahrtkongress 2007

"Century Perspectives"

Welcoming:

- **Prof. Dr. Joachim Szodruch**, President of the DGLR
- **Sir Colin Terry**, President of CEAS
- **Harald Wolf**, major of Berlin and Senator for economics, technology and women´s issues

Speeches:

- **Peter Hintze**, Parliamentary Secretary of State at the Federal Ministry of Economis and Technology

- **Dr. Jean Botti**, CTO EADS

Awards:

Ludwig-Prandtl-Ring to
Prof. Dr.-Ing. Peter Hamel, Braunschweig

Laudation:
Prof. Dr.-Ing. Gottfried Sachs, TU München

DGLR-Awards to Young Professionals presented by
Prof. Dr.-Ing. Joachim Szodruch, President of DGLR and by representatives of the Sponsors

Moderation:
Prof. Dr.-Ing. Stephan Staudacher, University of Stuttgart

Speech
Thomas Reiter, Member of directorate of DGLR

20:00 hrs **Reception**
in the town hall of Berlin, invited by the governing Mayor of Berlin, Klaus Wowereit

19:15 hrs departure of buses in front of the Estrel Hotel

Tuesday, September 11th (Morning)

08:30	PLENARY SESSION: Space Agencies Forum (Programmes)	ECC Hall C
09:40	SESSIONS [1]	
	- Detecting and Characterising Aircraft Wake Vortices [3]	ECC Hall C
	- Advanced Metallic Aerostructures [3]	ECC Hall D
	- Flight Guidance and Control: UAV Formation Flight & Refueling	Estrelsaal B
	- Aerodynamics Aero-Engine Components	ECC Room 2
	- Space Systems-Programmatic Aspects	ECC Room 3
	- Young Professional Conference I	ECC Room 1
	- Korean Session	Room Paris
	- Structures: Turbo Machines	Estrelsaal A
	- History	ECC Room 4
	- Mechanical Architecture, Design and Engineering 1 [4]	Estrelsaal C1
	- Random Vibration and Acoustics 1 [4]	Estrelsaal C3
	- Short Course 1	ECC Room 5
11:20	SESSIONS [1]	
	- Controlling and Attenuating Wakes and Wake Encounters [3]	ECC Hall C
	- Structures: Aeroelastics	ECC Hall D
	- HMI - Displays	Estrelsaal B
	- Space Propulsion I	ECC Room 2
	- Launcher Technologies I	ECC Room 3
	- Young Professional Conference II	ECC Room 1
	- Advanced Aero-Engine Concepts	Room Paris
	- Structures - CF Manufacturing	Estrelsaal A
	- Aerospace communications	ECC Room 4
	- Inflatable / Deployable Structures 1 [4]	Estrelsaal C1
	- Random Vibration and Acoustics 2 [4]	Estrelsaal C3
	- Short Course 2	ECC Room 5

Tuesday, September 11th (Afternoon)

14:00	PLENARY SESSION: Airbus A380 Forum	ECC Hall C
15:10	SESSIONS [1]	
	- Air Transport and Environment	ECC Hall C
	- Air Data and Navigation Sensor Systems	ECC Hall D
	- Numerical Simulation [3]	Estrelsaal B
	- Aerodynamics 1	ECC Room 2
	- Planetary Exploration	ECC Room 3
	- Young Professional Conference III	ECC Room 1
	- Environment and noise	Room Paris
	- Structures - CF Application	Estrelsaal A
	- Aerospace Information Technologies and Electronics	ECC Room 4
	- Inflatable / Deployable Structures 2 [4]	Estrelsaal C1
	- Shock 1 [4]	Estrelsaal C3
	- Short Course 3	ECC Room 5
16:50	SESSIONS [1]	
	- SESAR [3]	ECC Hall C
	- Flow Simulation and Validation [3]	ECC Hall D
	- Flight Control - Functions and Control Laws	Estrelsaal B
	- Optimisation of Aerodynamic Aircraft Configurations	ECC Room 2
	- New Space Missions	ECC Room 3
	- Young Professional Conference IV	ECC Room 1
	- Aero-Engine Components: Turbines / Combustors	Room Paris

	- Structures - Miscellaneous	Estrelsaal A
	- Space Control and Simulation	ECC Room 4
	- Mechanical Architecture, Design and Engineering 2 [4)]	Estrelsaal C1
	- Shock 2 [4)]	Estrelsaal C3
	- Short Course 4	ECC Room 5
17:30	- Korean Presentations	ECC Room 1

19:00	**Parliamentary Evening** **"European Aerospace - Joint Action for Sustainable Success"** **presentations by: Dr. Jean Botti, CTO EADS** **Prof. Dr.-Ing. Johann-Dietrich Wörner, Chairman of the board of directors of the DLR**	Estrel Hotel, ECC Hall C/A

Wednesday, September 12th (Morning)

08:30	PLENARY SESSION: Towards Climate-optimized Aviation	ECC Hall C
09:40	SESSIONS [1)]	
	- Wake Vortex Advisory Systems [3)]	ECC Hall C
	- Unmanned Aircraft Systems [3)]	ECC Hall D
	- Flight Control for Missiles	Estrelsaal B
	- Transport Aircraft Aerodynamics	ECC Room 2
	- Space Systems: Spacecraft Technologies	ECC Room 3
	- Aero-Engine Components: Compressors I	ECC Room 1
	- Air and Space Medicine and Law	Room Paris
	- Supersonic/Hypersonic: Thermal Protection	Estrelsaal A
	- Workshop: ICAO for Space 1	ECC Room 4
	- Columbia Accident [4)]	Estrelsaal C1
	- Composite Structures 1 [4)]	Estrelsaal C3
	- Short Course 5	ECC Room 5
11:20	SESSIONS [1)]	
	- Wake Vortex R&D	ECC Hall C
	- Air Transport System	ECC Hall D
	- Rotorcraft	Estrelsaal B
	- Advanced Wing Technologies and Flight Testing	ECC Room 2
	- Space Systems: Launcher Technologies II	ECC Room 3
	- Aero-Engine Components: Compressors II	ECC Room 1
	- UAS: Innovative Concepts	Room Paris
	- Structures - Optimisation	Estrelsaal A
	- Workshop: ICAO for Space 2	ECC Room 4
	- Inflatable / Deployable Structures 3 [4)]	Estrelsaal C1
	- Composite Structures 2 [4)]	Estrelsaal C3
	- Short Course 6	ECC Room 5

Wednesday, September 12th (Afternoon)

14:00	PLENARY SESSION: Objectives of the Bologna Process and Effects on Aerospace Engineer Education	ECC Hall C
15:10	Poster Short Lectures [2)]	
	- Session 1	ECC Hall C
	- Session 2	ECC Hall D
	- Session 3	Estrelsaal B
	- Session 4	ECC Room 2
	- Session 5	ECC Room 3
	- Session 6	ECC Room 1

-	Session 7	Room Paris
-	Session 8 [4)]	Estrelsaal A
-	Session 9 [4)]	Estrelsaal C1
-	Session 10 [4)]	Estrelsaal C3
-	Towards Climate-optimized Aviation – The Challenge	ECC Room 4
-	Short Course 7	ECC Room 5

15:50 SESSIONS [1)]

-	FLYSAFE	ECC Hall C
-	High Lift Aerodynamics 1 [3)]	ECC Hall D
-	Aviation Safety	Estrelsaal B
-	Education 1	ECC Room 2
-	Space Transportation 1	ECC Room 3
-	Space Propulsion II	ECC Room 1
-	Development Perspectives for Civil Aviation (Bauhaus Luftfahrt)	Room Paris
-	Launcher	Estrelsaal A
-	Mechanical Architecture, Design and Engineering 3 [4)]	Estrelsaal C1
-	Composite Structures 3 [4)]	Estrelsaal C3

16:50 SESSIONS [1)]

-	Operations (Air and Ground)	ECC Hall C
-	High Lift Aerodynamics 2 [3)]	ECC Hall D
-	Rotorcraft Flight and Structural Dynamics	Estrelsaal B
-	Education 2	ECC Room 2
-	Space Transportation 2	ECC Room 3
-	Aero-Engine Components: Compressors III	ECC Room 1
-	UAS	Room Paris
-	Aircraft Concepts - Future Projects	Estrelsaal A
-	Towards Climate-optimized Aviation – The Response	ECC Room 4
-	Mechanical Architecture, Design and Engineering 4 [4)]	Estrelsaal C1
-	Stochastic Analysis [4)]	Estrelsaal C3
	Short Course 8	ECC Room 5

19:30 - 23:30	**Conference Dinner** **Presentation of the CEAS Award 2007 to Prof. David Southwood, ESA** **Dinner Speech by Prof. Dr.-Ing. Johann-Dietrich Wörner, Chairman of the board of directors of the DLR**	Estrel Hotel, ECC Hall A

Thursday, September 13th (Morning)

08:30 PLENARY SESSION: Technology Forum (Space) — ECC Hall C

09:40 SESSIONS [1)]

-	Air Traffic Management 1	ECC Hall C
-	Flight Mechanics: Handling Qualities	ECC Hall D
-	Advanced Technologies to Optimize Aircraft Availability & Operability - 1 [3)]	Estrelsaal B
-	Aircraft Composite Structures [3)]	ECC Room 2
-	Space Systems: Technology Aspects	ECC Room 3
-	Aero-Engine Control and Measurement Techniques	ECC Room 1
-	UAS - Sensors and Signal Processing	Room Paris
-	Aerodynamics 2	Estrelsaal A
-	Space Technology Perspectives	ECC Room 4
-	Mechanical Architecture, Design and Engineering 5 [4)]	Estrelsaal C1
-	Materials and Active Structures 1 [4)]	Estrelsaal C3
-	Short Course 9	ECC Room 5

11:20 SESSIONS [1)]

- Air Traffic Management 2	ECC Hall C
- Advanced Wind Tunnel Testing [3)]	ECC Hall D
- Advanced Technologies to Optimize Aircraft Availability & Operability - 2 [3)]	Estrelsaal B
- Aircraft Composite Structures / Structures - Analysis 1	ECC Room 2
- Reentry and Landing	ECC Room 3
- Hypersonic Propulsion Systems	ECC Room 1
- Flight Control - Actuation and Sensors	Room Paris
- Cabin Architecture	Estrelsaal A
- Micro - Nano Technologies and Space Applications	ECC Room 4
- Structural Dynamics & Microvibrations 1 [4)]	Estrelsaal C1
- Mechanical Testing 1 [4)]	Estrelsaal C3
- Short Course 10	ECC Room 5

Thursday, September 13th (Afternoon)

14:00 PLENARY SESSION: Towards the green Aviation	ECC Hall C

15:10 SESSIONS [1)]

- Air Transport Research and Technology	ECC Hall C
- Technologies for Highspeed Transport 1 [3)]	ECC Hall D
- Fault Detection in A/C Systems	Estrelsaal B
- Structures: Buckling	ECC Room 2
- Galileo's First Steps and Promisses	ECC Room 3
- Aero Engine Components Exhaust System / Propeller	ECC Room 1
- UAS - Unmanned Helicopters	Room Paris
- Cabin Enviromental Control System Simulation and Test	Estrelsaal A
- New Technology for Earth Observation	ECC Room 4
- Structural Dynamics & Microvibrations 2 [4)]	Estrelsaal C1
- Mechanical Testing 2 [4)]	Estrelsaal C3
- Short Course 11	ECC Room 5

16:50 SESSIONS [1)]

- Industrial and Research Cooperations	ECC Hall C
- Technologies for Highspeed Transport 2 [3)]	ECC Hall D
- Measurement Methods for Aerodynamics	Estrelsaal B
- Structures: Analysis 2	ECC Room 2
- Supersonic/Hypersonic Flow: Reentry	ECC Room 3
- Aero-Engine Economic Design, Manufacturing and Maintenace	ECC Room 1
- UAS - Autonomous Flight	Room Paris
- Cabin - Acoustics	Estrelsaal A
- TBD	ECC Room 4
- Materials and Active Structures 2 [4)]	Estrelsaal C1
- Composite Structures 4 [4)]	Estrelsaal C3
- Short Course 12	ECC Room 5

[1)] Detailed technical programme see page 18 ff
[2)] Detailed technical programme see page 42 ff
[3)] STS (Special Technologies Session)
The Special Technologies Sessions provide latest research results in specific aeronautics technology area on technologies that are relevant and are becoming mature for industrial application. Many of the presented technology achievements are from EU-financed projects and the European Commission endorses this opportunity for the dissemination of results.
[4)] SSMMT, belongs to the integrated "Spacecraft Structures, Materials and Mechanical Testing Conference"

20:00	**Public Lecture by ESA Astronaut and Member of DGLR Board: Thomas Reiter**	Estrel Hotel, ECC Hall C/D

Young professional awards for outstanding dissertations:

Airbus Deutschland GmbH Award for an outstanding dissertation in the field of aeronautics to
Dr.-Ing. Ralf Petz, TU Berlin, for his dissertation with the topic:
Aerodynamic Benefits of Pulsed Blowing Applied to High-Lift Airfoils

Reinhard-Furrer-Award
Award of the Wernher-von-Braun-Stiftung for an outstanding dissertation in the topic of astronautics to
Dr. Carsten Wiedemann, TU Braunschweig, for his dissertation with the topic:
Die Modellierung der Natrium-Kaliumtropfen als Beitrag zu orbitalen Objektpopulation

Young Professionals Awards for outstanding study and diploma thesis:

Winfried Bierhals-Foundation-Award to
Dipl.-Ing. Ferdinand Meinl, University of Karlsruhe, for his diploma thesis with the topic:
Application of the Acoustic Emission Analysis to Higly Thermally Loaded Combustor Shielding Plates

Walther Blohm-Study-Award to
Dipl.-Ing. Ricardo Basan, TU Berlin, for his study thesis with the topic:
Vergleichende Analyse der konzentrierten Einzelkrafteinleitung in eine Rechteckscheibe mittels kontinuumsmechanischer und FEM-Berechnung sowie Experiment

Ludwig Bölkow-Foundation-Award to
Dipl.-Ing. Torsten Hensel, TU Darmstadt, for his diploma thesis with the topic:
Analysis of the Interaction of Neighbouring Laminae in Fibre-Reinforced Plastics during Cyclic Loading

DLR-Technology-Award for papers in the topic of gliding technology to
Alexander Wagner, TU Dresden, for his study thesis with the topic:
Detection of the Transition Point on the Wing of a Glider in Free Flight with the Help of a Thermography System

Claudius Dornier Jr.-Foundation-Award to
Dipl.-Ing. Georg Wellmer, RWTH Aachen, for his diploma thesis with the topic:
Development of a Preprocessor for the Generation of Structural Beam Models for Multidiciplinary Optimisation

Ferchau Engineering GmbH Division Aviation Award to
Dipl.-Ing. Hans Brunswig, HAW Hamburg, for his diploma thesis with the topic:
Bestimmung der aerodynamischen Eigenschaften des BWB-Modells AC20.30 mit Methoden der CFD

IABG-Foundation-Award to
Dipl.-Ing. Andreas Weber, TU Dresden, for his diploma thesis with the topic:
Study and Employment of the Monte Carlo Simulation for the Robust Design of Space Structures

Reinhardt Abraham – Lufthansa-Foundation-Award to
Dipl.-Ing. Eckard Anton, RWTH Aachen, for his study thesis with the topic:
Preliminary Design of a Simulation Tool to Ascertain the Potential Economic Impact of Airplane Noise Reduction Measures

Willy Messerschmitt-Award to
Dipl.-Ing. Stephan Rapp, TU München, for his diploma thesis with the topic:
Deformation fields estimation using fibre Bragg gratings

MT Aerospace Innovation-Award to
Dipl.-Ing. Sebastian Kébreau, TU Braunschweig, for his diploma thesis with the topic:
Fracture Mechanics Analysis of Novel Non-rectangular Stiffening Concepts in Comparison to Conventionally Rectangular Stiffened Fuselage Structures

Wolfgang Heilmann-Award of the MTU GmbH to
Dipl.-Ing. Timo Nafz, University of Karlsruhe, for his study thesis with the topic:
Background Oriented Schlieren – Möglichkeiten und Grenzen des optischen Verfahrens zur quantitativen Dichtegradientenbestimmung

Ferdinand Schmetz-Award to
Dipl.-Ing. Bernhard Kobiela, University of Stuttgart, for his diploma thesis with the topic:
Investigation of Boundary Layer Transition for Small Reynolds Numbers in Free Flight and Wind Tunnel Experiments

ZARM-Award to
Dipl.-Ing. Sebastian Höfner, TU München, for his diploma thesis with the topic :
LISA Thermal Control Analysis in Context of the BayernSat Mission

Zeppelin-Foundation-Award of the City Friedrichshafen to
Dipl.-Ing. 1st Lt. Dennis Höse, UniBW München, for his diploma thesis with the topic:
Development of a Microcontroller Based Sensor Aquisition System for Uninhabited Aerial Vehicles

The DGLR would like to thank all sponsors who enabled the young professional awards

08:30-09:30 **Space Agencies Forum (Programmes)**

09:40 – 10:00 / 10:00 – 10:20 / 10:20 – 10:40 / 10:40 – 11:00

Detecting and Characterising Aircraft Wake Vortices — STS — ECC Hall C

Chair: F. Holzäpfel, DLR Oberpfaffenhofen, DE

CEAS-2007-001
Acoustic Properties of Aircraft Wake Vortices
P. Böhning, Rolls-Royce Deutschland Ltd. & Co. KG, DE; U. Michel, German Aerospace Center, Institute of Propulsion Technology, DE

CEAS-2007-002
Comparison Between Arrival and Departure Wake Vortex Statistics Near the Ground
F.Y. Wang; S.M. Mackey; H. Wassaf; M. Soares; US DOT RITA Volpe National Transportation Systems Center, US

CEAS-2007-003
Ground-based and Air-Borne LIDAR for Wake Vortex Detection and Characterisation
A. Wiegele; S. Rahm; I. Smalikho; German Aerospace Center (DLR), DE

CEAS-2007-004
Wake Vortex Data Collection and Analysis Using X-Band Radar
F. Barbaresco, THALES Air Systems, Surface Radar Business Line, Strategy Technology & Innovation, FR; A. Jeantet[1]; U. Meier[1];
[1]THALES Defence Deutschland GmbH, Land & Joint Business Line, DE

Advanced Metallic Aerostructures — STS — ECC Hall D

Chair: P. Horst, TU Braunschweig, DE

CEAS-2007-009
Overview of WEL-AIR Project: Objectives and Achievements
D. Alléhaux[1]; F. Palm[1]; I. Bordesoules, ALCAN, FR; M. Kocak, GKSS, DE; E. Gratiot, Dassault Aviation, FR; G. Troiano, ALENIA, IT;
[1]EADS IW, FR

CEAS-2007-010
Magnesium for Aerospace Applications
G. Khelifati, EADS Innovation Works, FR; E. Hombergsmeier, EADS Deutschland GmbH, Innovation Works, DE

CEAS-2007-011
Potential Benefits of Integrally Stiffened Aircraft Structures
L.U. Hansen; S.M. Häusler; P. Horst; Inst. für Flugzeugbau und Leichtbau, TU Braunschweig, DE

CEAS-2007-012
Application of Fibre Metal Laminates to Aircraft Structures
F. Hashagen; K. Kalmer; Airbus, DE

Flight Guidance and Control: UAV Formation Flight & Refueling — Estrelsaal B

Chair: J. Wildi, RUAG Aerospace, CH

CEAS-2007-017
PAZLAT - An Unmanned Aerial Refueling System
R. Avraham; R. Givoni; S. Elitzur; C. Haddad; G. Katz; S. Mironov; V. Niyazov; M. Pustilnik; J. Rosenthal; D. Weinstein; B. Landkof; Technion, Faculty of Aerospace Engineering, IL

CEAS-2007-018
Control Laws for UAV Formation Flying
M. Chiaramonti; G. Mengali; University of Pisa, Department of Aerospace Engineering, IT

CEAS-2007-019
Fuel Consumption Reduction for Unmanned Air Vehicles by Preplanned Formation Flights Using Mixed Integer Programming
T. Kopfstedt; J.W. Vervoorst; Diehl BGT Defence GmbH & Co. KG, DE

CEAS-2007-020
Flight Test Validation of Modeling for Aerial Refuelling
J. Beck[1]; O. Heller, Eurocopter, FR; E. Özger[1];
[1]EADS Deutschland GmbH, Military Air Systems, DE

11:20 – 11:40 / 11:40 – 12:00 / 12:00 – 12:20 / 12:20 – 12:40

Controlling and Attenuating Wakes and Wake Encounters — STS — ECC Hall C

Chair: S. Lang, Federal Aviation Administration, US

CEAS-2007-005
Automated Pilot Assistance for Wake Vortex Encounters
C. Schwarz; K.-U. Hahn; DLR, DE

CEAS-2007-006
Wake Vortex Alleviation by Differential and Oscillating Flap Setting: A Comparative Numerical and Experimental Study
G. Voß; C. v. Carmer; R. Konrath; E. Stumpf; C.-P. Krückeberg; H. Meyer; H. Mattner; DLR, DE

CEAS-2007-007
Fundamental Vortex Phenomena: Instabilities and Interactions with Jets and Wakes
T. Schoenfeld[1]; J.-F. Boussuge[1]; S. Le Dizès[2]; T. Leweke[2];
[1]CERFACS, FR; [2]CNRS-IRPHE, FR

CEAS-2007-008
Wake Vortex Results from the Awiator Project
A.C. de Bruin, NLR, NL; G. Schrauf, Airbus, DE

Structures: Aeroelastics — ECC Hall D

Chair: P.M. Hutin, ONERA, FR

CEAS-2007-013
Calculation of Unsteady Loads for the F/A-18 Vertical Tail Buffeting
M. Guillaume[1]; J. Vos, CFS Engineering, CH; A. Gehri[1]; B. Bucher[1]; S. Merazzi[2]; TH. Ludwig[2];
[1]RUAG Aerospace, CH; [2]SMR SA, CH

CEAS-2007-014
Design and Analysis of an Aeroelastic Validation Experiment for Moving Flexible Airfoils
R. Unger[1]; J. Kleinert[1]; M.C. Haupt[1]; P. Horst[1]; J. Windte[2]; S. Bansmer[2]; C.J. Kähler[2]; R. Radespiel[2];
[1]TU Braunschweig, Institute of Aircraft Design and Lightweight Structures, DE; [2]TU Braunschweig, Institute of Fluid Mechanics, DE

CEAS-2007-015
Aeroelastische Untersuchungen an nachgiebigen Tragflächen
G. Thwapiah; L.F. Campanile; Eidgenössische Materialprüfungs- und Forschungsanstalt (EMPA), CH

CEAS-2007-016
New Aerodynamic Modelling for Aeroelasticity in an Industrial Environment
N. Forestier, Dassault-Aviation, FR; L. Daumas[1]; T. Fanion[1]; Z. Johan[1];
[1]Dassault Aviation, FR

HMI - Displays — Estrelsaal B

Chair: V. Gollnick, German Aerospace Centre, DLR, DE

CEAS-2007-021
A System of Optimizing the Human-Machine Interface at Aircraft
C.J. Szczepanski, Telecommunications Research Institute, PL

CEAS-2007-022
Simulation and Optimisation of Cockpit Display Visibility
D.D. Dreyer, EADS Innovation Works, DE

CEAS-2007-023
Enhanced Airport Situational Awareness by Airport Moving Map and Electronic Pre-Flight Information Bulletin
C. Vernaleken; C. Urvoy; K. Koch; U. Klingauf; Technische Universität Darmstadt, DE

CEAS-2007-024
The New Tornado Mission Support System in the Context of Network Centric Operations
G. Gorgon; M. Kranich; EADS Deutschland GmbH/Military Air Systems, DE

Tuesday, 11th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Space Agencies Forum (Programmes)**

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Aerodynamics Aero-Engine Components — Chair: H. Knittel, MTU Aero Engines, DE			**ECC Room 2**
CEAS-2007-449 **Numerical Simulation of Mixed Jet Exhaust System and its Verification** J.A. Lieser; B. Deinert; C. Möller; F. Müller; Rolls-Royce Deutschland Ltd. & Co. KG, DE	**CEAS-2007-026** **Combustor Liner Temperature Prediction: A Preliminary Tool Development and Its Application on Effusion Cooling Systems** A. Ceccherini[1]; A. Andreini[1]; C. Carcasci[1]; B. Facchini[1]; M. Surace[1]; D. Coutandin[2]; S. Gori[2]; A. Peschiulli[2]; [1]Dipartimento di Energetica "Sergio Stecco", IT; [2]Avio S.P.A., IT	**CEAS-2007-027** **Determination of Aerodynamic Damping from Axial-Compressor-Blades Using a Bidirectional Fluid-Structure-Simulation** A. Kühhorn; S. Schrape; J. Nipkau; Brandenburg University of Technology, Structural Mechanics and Vehicle Vebrational Technology, DE	**CEAS-2007-451** **Thrust Reverser Aerodynamic Design: CFD Analysis and Comparison with Experiments** C. Mundt[1]; D. Kliche[1]; R. Spieweg[2]; R. Schweikhard[2]; [1]Universität der Bundeswehr München, DE; [2]Rolls-Royce Deutschland Ltd. & Co. KG, DE
Space Systems-Programmatic Aspects — Chair: K. Brieß, TU Berlin, DE			**ECC Room 3**
CEAS-2007-033 **Aligning Strategy with Capabilities: Towards a European Space Research Community** A. Boese, DLR, DE	**CEAS-2007-034** **The On-Orbit-Verification-Programme of the German Space Agency** P. Willemsen, German Aerospace Center - Space Agency, DE; M. Turk[1]; R. Dittmann[1]; [1]German Aerospace Center - Space Agency, DE	**CEAS-2007-035** **New Cooperation Methods between Industry and Academia: The Research Training Group (Graduiertenkolleg) - "Aspects of Future Satellite Reconnaissance Missions"** S. Fasoulas[1]; K. Janschek, TU Dresden, Institut für Automatisierungstechnik, DE; K. Schönherr[2]; G. Willich[2]; A. Weber[1]; [1]TU Dresden, Institut für Luft- und Raumfahrttechnik, DE; [2]EADS Astrium GmbH, DE	**CEAS-2007-036** **The Soyuz at the Guiana Space Centre Programme** H. Arend[1]; D. Coulon[1]; D. Crowther[1]; J. Donadel[1]; E. Lefort[1]; J. Pascual[1]; N. Pottier[1]; J.-M. Astorg, CNES, FR; B. Gérard, Arianespace, FR; [1]ESA, FR
Young Professional Conference I — Chair: U. Apel, Hochschule Bremen, DE			**ECC Room 1**
CEAS-2007-041 **An Overview of the TU-Berlin UAV Student Project IFSys** F. Schindler; R. Luckner; Technical University of Berlin, DE	**CEAS-2007-042** **Maximierung der Nutzlastkapazität eines Modellflugzeugs und Teilnahme an der Air Cargo Challenge 2007** C. Kauer; C. Rößler, Akademische Modellfluggruppe München, DE Presentation in German	**CEAS-2007-043** **The Integrated Flapping Wing - Trying out a New Concept** K.-H. Helling, Modellflugclub Rossendorf e.V., DE	**CEAS-2007-044** **Luftbilder aus dem Modellflugzeug - Einsatzmöglichkeiten für landwirtschaftliche Nutzflächen** T. Elle; M. Klein; Modellflugclub Rossendorf e.V., DE Presentation in German

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
Space Propulsion I — Chair: O. Haidn, DLR Lampoldshausen, DE			**ECC Room 2**
CEAS-2007-029 **An Experimental Study on the Base Flow Plume Interaction of Booster Configurations** A. Henckels; A. Gülhan; D. Neeb; DLR, DE	**CEAS-2007-030** **Experimental Investigation of Coking Characteristics of Kerosene Jet A-1 with Respect to Practical Applications** J. Meinert, TU Dresden, Institute of Thermodynamics and Building Energy Systems, DE	**CEAS-2007-031** **Comparison between Supercritical Combustion Modelling for LO2-CH4 Rocket Engines at 15MPa Using Real and Ideal Gas Properties** A. Minotti; C. Bruno; University of Rome La Sapienza, IT	**CEAS-2007-032** **Preliminary Characterisation of Solar Sailing Materials** C.O.A. Semprimoschnig; A.W. Polsak; S. Heltzel; M. Gaud; ESA, NL
Launcher Technologies I — Chair: P. Vits, Astrium Space Transportation, DE			**ECC Room 3**
CEAS-2007-037 **Enabling Technologies for the Next Generation Reignitable Cryogenic Upper Stage** M. Müller; J. Krüger; EADS Astrium, DE	**CEAS-2007-038** **PRORA-USV: the First Dropped Transonic Flight Test** G. Russo, CIRA, IT	**CEAS-2007-039** **Trends in the Use of Solid Rocket Motors and Effects on the Space Debris Environment** S. Stabroth[1]; C. Wiedemann[1]; P. Vörsmann[1]; M. Oswald, Astrium GmbH, DE; H. Krag[2]; H. Klinkrad[2]; [1]Institute of Aerospace Systems, TU Braunschweig, DE; [2]Space Debris Office, ESA/ESOC, DE	**CEAS-2007-040** **TICTAC - Technology of Insert Conductive Thermally and Attenuator of Shock** S. Laborde, EADS ASTRIUM, FR; L. Mallet, SMAC, FR; R. Redondo, CNES, FR
Young Professional Conference II — Chair: R. Henke, RWTH Aachen, DE			**ECC Room 1**
CEAS-2007-045 **Design of a Monolithic VTP Leading Edge on Airbus Single Aisle Airplanes** S. Yammine, Université Toulouse/FH Aachen, DE	**CEAS-2007-046** **Extended Error State Modelling for Strapdown-INS-Systems** M. Becker, Technical University of Braunschweig, DE	**CEAS-2007-048** **Application of Multi-Objective Optimisation to Variable Stator Vane Schedule Improvement** P. Hecker, Brandenburg University of Technology Cottbus, DE	

08:30-09:30 **Space Agencies Forum (Programmes)**

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Korean Session — Room Paris Chair: R. Henke, RWTH Aachen, DE			
CEAS-2007-049 **Korean Aerospace Industry and T-50 Advanced Trainer** A. Jun, Korea Aerospace Industries, KR	**CEAS-2007-050** **Satellite Development Status of Korea** J.J. Lee; J.J. Rhiu; J.M. Choi; Korea Aerospace Research Institute, KR	**CEAS-2007-051** **Supersonic Combustion in Ram Accelerator and Scramjet Engine Combustor** I.-S. Jeung, Seoul National University, Department of Aerospace Engineering, KR; J.-Y. Choi, Pusan National University, Department of Aerospace Engineering, KR	**CEAS-2007-052** **Development and Simulation of Nonlinear Aeroelastic Analysis System for Advanced Transonic Aircrafts** I. Lee; J.-Y. Kim; K.-S. Kim; Korea Advanced Institute of Science and Technology, KR
Structures: Turbo Machines — Estrelsaal A Chair: C. Galinski, University Warsaw of Technology, PL			
CEAS-2007-057 **Damping of a Compressor Vane Cluster** A. Hartung; U. Retze; MTU Aero Engines GmbH, DE	**CEAS-2007-058** **Influence of Air Flow on Blisk Vibration Behavior** B. Beirow; A. Kühhorn; S. Schrape; Brandenburg University of Technology, Chair of Structural Mechanics and Vehicle Vibration Technology, DE	**CEAS-2007-059** **Advanced Coatings for Rotating Aero Engine Components** M. Peters[1]; U. Schulz[1]; B. Saruhan[1]; M. Fröhlich[1]; R. Braun[1]; A. Flores Renteria[2]; C. Leyens[2]; [1]DLR, DE; [2]Technical University of Brandenburg, DE	**CEAS-2007-060** **Filament Winding Technology – Example of an Integral Engine Nose Cone** O. Lenk[1]; M. Dieling[1]; R. Grothaus, East-4D Carbon Technology GmbH, DE; [1]Rolls-Royce Deutschland, DE
History — ECC Room 4 Chair: W. Heinzerling, DE			
CEAS-2007-065 **Historical Review and Analysis of Santos Dumont S 14-BIS** P. Greco; F. Catalano; Aerodynamic Laboratory/University of Sao Paulo/EESC-USP, BR	**CEAS-2007-066** **Statistical Investigations about Pioneers of Rocketry and Space Travel** D.B. Herrmann, Leipnitz-Sozietät der Wissenschaften zu Berlin e.V., DE	**CEAS-2007-067** **Albatros- und Heinkel-Flugzeuge bei der Fliegerschule der Reichswehr in Lipezk** P. Korrell, DE Presentation in German	**CEAS-2007-068** **Sind die Flügel von Raffaels Amor in seiner Freske "Die drei Grazien" hochgeschwindigkeitstauglich?** H.-U. Meier, TU Clausthal, DE Presentation in German

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
Advanced Aero-Engine Concepts — Room Paris Chair: I. Dubois, Snecma, FR			
CEAS-2007-053 **Toward ACARE 2020: Innovative Engine Architectures to Achieve the Environmental Goals?** S. Dron, Snecma, FR	**CEAS-2007-054** **The Geared Turbofan Technology - Opportunities, Challenges and Readiness Status** C. Riegler; C. Bichlmaier; MTU Aero Engines GmbH, DE	**CEAS-2007-055** **Active Core Technology within the NEWAC Research Program for Cleaner and More Efficient Aero Engines** J. Sieber; S. Bock; W. Horn; G. Wilfert; MTU Aero Engines, DE	**CEAS-2007-056** **Nacelle Lines for Small Next Generation Engines** R. Schweikhard; J.A. Lieser; Rolls-Royce Deutschland, DE
Structures - CF Manufacturing — Estrelsaal A Chair: J.F.M. Wiggenraad, National Aerospace Laboratory NLR, NL			
CEAS-2007-061 **New Fibre Reinforced Ceramics - A Technology Driver for New Products** H. Voggenreiter; B. Heidenreich; J. Göring; German Aerospace Center (DLR), DE	**CEAS-2007-062** **Innovative Manufacture of Aerospace Structural Composites Applying the out of Autoclave Quickstep Process** C. Weimer, Eurocopter Deutschland GmbH, DE; M. Kaiser[1]; C. Garschke[2]; B. Fox[2]; K. Drechsler[1]; [1]Institut für Flugzeugbau - Universität Stuttgart, DE; [2]Deakin University Geelong, AU	**CEAS-2007-063** **Electromagnetic Assisted Manufacturing of Carbon Fiber Reinforced Plastics** M. Podkorytov[1]; T. Stroehlein[1]; M. Frauenhofer[2]; M. Meyer[1]; L. Herbeck[1]; K. Dilger[2]; [1]Deutsches Zentrum für Luft- und Raumfahrt e.V., DE; [2]Technical University Braunschweig, DE	**CEAS-2007-064** **Combined Prepreg and Infusion Technology - Integrated CFRP Primary Structural Components** R. Kaps[1]; L. Herbeck[1]; A. Herrmann, Composites Technology Center (CTC), DE; [1]German Aerospace Center, Institute of Composite Structures and Adaptive Systems, DE
Aerospace communications — ECC Room 4 Chair: T. Wittig, Euro Telematik, DE			
CEAS-2007-069 **Broadband Communications for Aeronautical Networks: The ATENAA Outer Optical Link Validation** C. Fuchs[1]; H. Henniger[1]; B. Epple[1]; D. Giggenbach[1]; M. Amirfeiz[2]; M. Jentile[2]; G. Di Nepi[2]; F. Mazzi[3]; G. Martini[3]; [1]German Aerospace Center (DLR), DE; [2]Selex Communications, IT; [3]INSIS S.p.A., IT	**CEAS-2007-070** **A Comparison of Estimation Methods for the VHF Voice Radio Channel** M. Gruber, Graz University of Applied Sciences, AT; K. Hofbauer, Graz University of Technology, AT	**CEAS-2007-071** **The SANTANA Project** A. Geise[1]; A.F. Jacob[1]; K. Kuhlmann[1]; H. Pawlak[1]; R. Gieron[2]; P. Siatchoua[2]; D. Lohmann[2]; S. Holzwarth[2]; O. Litschke[2]; M. Heckler[3]; L. Greda[3]; [1]TU Hamburg-Harburg, Institut für Hochfrequenztechnik, DE; [2]IMST GmbH, DE; [3]DLR, Institut für Kommunikation und Navigation, DE	**CEAS-2007-072** **B-AMC – Aeronautical Broadband Communication in the L- band** M. Ehammer[1]; T. Gräupl[1]; C.H. Rokitansky[1]; M. Schnell[2]; S. Brandes[2]; S. Gligorevic[2]; C. Rihacek[3]; M. Sajatovic[3]; [1]University of Salzburg, AT; [2]German Aerospace Center (DLR), DE; [3]Frequentis GmbH, AT

Tuesday, 11th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Space Agencies Forum (Programmes)**

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Mechanical Architecture, Design and Engineering 1 SSMMT **Estrelsaal C1** Chair: H. Baier, TU München, DE			
CEAS-2007-073 **Deployment Analysis of Solar Arrays and Model Correlation** G. Ladurée; A. Carpine; Thales Alenia Space, FR	**CEAS-2007-074** **The Influence of Load and Deformation on the Fracture Behavior of Specimens and Structures** G. Schullerer; M. Windisch; MT Aerospace AG, DE	**CEAS-2007-075** **Functional Membranes – A Basis for Satellite Architectures of the Future** H. Baier; L. Datshvili; S. Rapp; TU Muenchen, DE	**CEAS-2007-076** **Efficient Mechanism Simulation for Solar Array Deployment Analysis** B. Specht, EADS ASTRIUM, DE
Random Vibration and Acoustics 1 SSMMT **Estrelsaal C3** Chair: J. Wijker, Dutch Space BV, NL			
CEAS-2007-081 **Vibro-Acoustic Study of Corot: Analysis and Test Correlation** R. Redondo; A. Pradines; CNES, FR		**CEAS-2007-083** **Simulation of a Spacecraft Acoustic Test by Hybrid FE-SEA Method: Application to the CALIPSO Spacecraft and Comparison with Experimental Data** R. Knockaert, Thales Alenia Space, FR; S. Frikha, ESI Group, FR; V. Cotoni, ESI-US R&D, US	**CEAS-2007-084** **Herschel SVM STM Vibro-Acoustic Test / Prediction Comparison** L. Trittoni; P.C. Marucchi-Chierro; Thales Alenia Space Italia, IT
Short Course 1 **ECC Room 5** Chair: TBD			

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
Inflatable / Deployable Structures 1 SSMMT **Estrelsaal C1** Chair: J. Block, DLR Braunschweig, DE			
CEAS-2007-077 **Slotted Thin Shell Deployable Reflectors** L.T. Tan, University College London, Department of Civil & Environmental Engineering, GB	**CEAS-2007-078** **Self-deploying Structures and Polymer Materials with Shape Memory** G.A. Pavlov, IPCP RAS, RU	**CEAS-2007-079** **The Innovative Deorbiting Aerobrake System "IDEAS": The Gossamer Technology for Micro-Satellite Deorbiting** B. Santerre[1]; O. Le Couis[1]; C. Dupuy, CNES, FR; [1]EADS Astrium, FR	**CEAS-2007-080** **Pressure Restraint Design for Inflatable Space Habitats** M. de Jong, Thin Red Line Aerospace Ltd., CA; A. Lennon, ABL Engineering Ltd., IE
Random Vibration and Acoustics 2 SSMMT **Estrelsaal C3** Chair: M. Link, Universität Kassel, DE			
CEAS-2007-085 **Introduction of JAXA Tool for Random Vibrations Prediction and Its Recent Upgrading** Q. Shi; S. Ando; M. Tsuchihashi; M. Saitoh; JAXA, JP	**CEAS-2007-086** **Vibration Response of Spacecraft Under Fill Effect** S. Ando; Q. Shi; M. Tsuchihashi; Japan Aerospace Exploration Agency (JAXA), JP	**CEAS-2007-087** **Level Homogeneity Versus Frequency in a Reverberant Chamber** E. Cavro; A. Girard; Intespace, FR	**CEAS-2007-088** **Insights into the Equipment Random Vibration Environment Based on Simulations of an Acoustic Test Bench** B.J. Brevart, Thales Alenia Space, FR; A. Pradines, CNES, FR
Short Course 2 **ECC Room 5** Chair: TBD			

Short Course Aircraft Design
Details are be published on www.ceas2007.org

Tuesday, 11th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Airbus A380 Forum**

Speaker: R. Lafontan, Airbus, FR

Chair: J. Szodruch, DLR Köln, DE

Air Transport and Environment

Chair: J. König, Airbus, DE — **ECC Hall C**

CEAS-2007-089
Aviation and Climate Change: A Comparison of the Overflights of the Belgian Territory and the Local Aviation Activities
J. Matheys[1]; T. Festraets[2]; J. Van Mierlo[1]; C. Macharis[2]; N. Sergeant[1]; J.-M. Timmermans[1];
[1]Vrije Universiteit Brussel - ETEC, BE; [2]Vrije Universiteit Brussel - MOSI-T, BE

CEAS-2007-090
The Variability of Air Transports Specific CO2 Emissions and its Implications for Airline Strategies
M. R. Schaefer; W. Grimme; German Aerospace Center (DLR), DE

CEAS-2007-091
Investigations of Atmospheric Conditions in Fluids on Sonic Boom
S. Chernyshev; A.P. Kiselev; P.P. Vorotnikov; Central Aerohydrodynamic Institute n.a. Prof. N.E. Zhukovsky, RU

CEAS-2007-092
Reinhardt Abraham - Lufthansa-Foundation-Award for his studies thesis with the topic:
Preliminary Design of a Simulation Tool to Ascertain the Potential Economic Impact of Airplane Noise Reduction Measures
E. Anton, RWTH Aachen, DE

Air Data and Navigation Sensor Systems

Chair: H. von Viebahn, Diehl Aerospace, DE — **ECC Hall D**

CEAS-2007-097
A Precision, Time-Relative GPS Approach for Measuring Kinematic Trajectories Using Miniaturized L1 GPS Receivers
J.P. Traugott[1]; O. Montenbruck, DLR, DE; G. Sachs[1];
[1]Technische Universität München, DE

CEAS-2007-098
Design and Implementation of an Integrated Wind- /Airdata- and Navigation System Based on Low-Cost Sensor Components
S. Myschik, IABG mbh, DE; G. Sachs, Technische Universität München, DE

CEAS-2007-099
Angles of Attack and Sideslip Reconstruction Using Neural Networks
A. Calia; V. Poggi; F. Schettini; University of Pisa, Department of Aerospace Engineering, IT

CEAS-2007-100
Zeppelin-Foundation-Award of the City Friedrichshafen for his diploma thesis with the topic:
Development of a Microcontroller Based Sensor Aquisition System for Uninhabited Aerial Vehicles
D. Höse, UniBw München, DE

Numerical Simulation

Chair: C. Rossow, DLR Braunschweig, DE — STS — **Estrelsaal B**

CEAS-2007-105
Future Simulation Concept
J. Klenner[1]; K. Becker[1]; M. Cross[1]; N. Kroll, DLR, DE;
[1]Airbus, FR

CEAS-2007-106
Future Simulation Technology Centers in Europe
K. Becker, Airbus, DE

CEAS-2007-107
Challenges for Development of Numerical Simulation
N. Kroll, DLR Braunschweig, DE

CEAS-2007-108
Future Design Concept
M. Cross; M. Aston; Airbus, GB

SESAR

Chair: T. Mühlhausen, DLR Braunschweig, DE — STS — **ECC Hall C**

CEAS-2007-093
The Concept of Operations for the Future European Air Traffic Management System Being Defined by SESAR
S. Reed; J.R.F. Guy; Air Traffic Alliance, FR

CEAS-2007-094
An Airport's View on the SESAR Operational Concept
M. Huhnold, Fraport AG, DE

CEAS-2007-095
DFS Deutsche Flugsicherung GmbH Aligning Their Research & Development Needs for the Single European Sky Air Traffic Management Research Programme (SESAR)
T. Bierwagen, DFS Deutsche Flugsicherung GmbH, DE

CEAS-2007-096
European Research Center Position and Contribution in European R&D for Single European Sky Air Traffic Management Research Programme (SESAR)
K.-H. Keller, German Aerospace Center (DLR), DE

Flow Simulation and Validation

Chair: T. Schönfeld, CERFACS, FR — STS — **ECC Hall D**

CEAS-2007-101
QNET-CFD Knowledge-Base - A Platform for the Preservation of Knowledge Generated by EU Funded Projects
J. Vos, CFS Engineering, CH; A.G. Hutton, Qinetic, GB; Ch. Hirsch, NUMECA, BE

CEAS-2007-102
Reynolds Number Effects on Blunt Leading Edge Delta Wings
S. Crippa; A. Rizzi; KTH, Dept. of Aeronautical and Vehicle Engineering, SE

CEAS-2007-103
Inlet Boundary Conditions for Embedded LES
L. Davidson, Chalmers University of Technology, SE

CEAS-2007-104
CFD Validation of Unsteady Installed Propeller Flows Using the DLR TAU-Code
A. Stuermer, DLR, DE

Flight Control - Functions and Control Laws

Chair: S. Levedag, DLR Braunschweig, DE — **Estrelsaal B**

CEAS-2007-109
Nonlinear Flight-Path Control - A Flight Dynamics Perspective
F. Holzapfel, IABG mbH, DE; L. Höcht[1]; F. Schuck[1]; G. Sachs[1];
[1]Lehrstuhl für Flugmechanik und Flugregelung, TU München, DE

CEAS-2007-110
Advanced Gust Load Alleviation System for Large Flexible Aircraft
S. Hecker, German Aerospace Center, Institute of Robotics and Mechatrinics, DE; K.-U. Klaus-Uwe Hahn, German Aerospace Center, Institute of Flight Systems, DE

CEAS-2007-111
Direct Force Control Using Brake Flaps for Improving Flight Path Control
G. Sachs, Institute of Flight Mechanics and Flight Control of TU München, DE

CEAS-2007-112
Aircrafts Control Systems Design: An H_∞ Loop-Shaping Approach
R. Panesi; G. Mengali; University of Pisa, IT

Tuesday, 11th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Airbus A380 Forum**

Speaker: R. Lafontan, Airbus, FR

Chair: J. Szodruch, DLR Köln, DE

Aerodynamics 1 — ECC Room 2

Chair: H. Rosemann, DLR Göttingen, DE

15:10 – 15:30

CEAS-2007-113
Further Investigation on Vortex Turbulent Characteristics in Pattern Transition of a SFRJ Simulator
S.C. Lee, Yung Ta Institute of Technology and Commerce, TW

15:30 – 15:50

CEAS-2007-114
Active Flow Control on the Simplified Flapped Airfoil
M. Matejka[1]; N. Souckova[1]; L. Popelka, Academy of Science of the Czech Republic, Institute of Thermomechanics, CZ; J. Nozicka[1]; [1]CTU in Prague, FME, CZ

15:50 – 16:10

CEAS-2007-115
Numerical Investigation of Upstream Moving Wave Phenomenon in Unsteady Transonic Airfoil Flow
V. Hermes, ShockWaveLaboratory/RWTH-Aachen University, DE; I. Klioutchnikov[1]; A. Alshabu[1]; H. Olivier[1]; [1]ShockWaveLaboratory, DE

16:10 – 16:30

CEAS-2007-116
Steady Longitudinal Vortices in Separated Turbulent Flows
E. Schülein, DLR, DE; V. Trofimov, NSPU, RU

Planetary Exploration — ECC Room 3

Chair: H.-J. Heidmann, Astrium ST, DE

15:10 – 15:30

CEAS-2007-121
The Radio Science Experiment "VeRa" Onboard ESA´s Venus Express Spacecraft
R. Mattei[1]; B. Häusler[1]; M. Pätzold[2]; S. Remus, VEGA, DE; W. Eidel[1]; S. Tellmann[2]; T. Andert[1]; J. Selle[1]; M.K. Bird, Argelander - Institut für Astronomie, Universität Bonn, DE; R.H. Simpson[3]; G.L. Tylor[3]; [1]Institut für Raumfahrttechnik, UniBw, DE; [2]Rheinisches Institut für Umweltforschung, Universität Köln, DE; [3]Department of Electrical Engineering, Stanford University, US

15:30 – 15:50

CEAS-2007-122
The Stuttgart Moon Orbiter LUNAR MISSION BW1
R. Laufer; H.-P. Roeser; Stuttgart University, Institute of Space Systems (IRS), DE

15:50 – 16:10

CEAS-2007-123
Regenerative Fuel Cells for Mars Applications
M. Hörenz, TU Dresden, Institute for Aerospace Engineering, DE; S. Fasoulas[1]; T. Schmiel[1]; K. Zajac[1]; [1]TU Dresden,Institute for Aerospace Engineering, DE

16:10 – 16:30

CEAS-2007-124
Probenpräparation, Probenhandling und Nutzlastaspekte für die Europäische ExoMars Mission
P. Hofmann, Kayser-Threde GmbH, DE

Presentation in German

Young Professional Conference III — ECC Room 1

Chair: M. Sölter, Astrium GmbH, DE

15:10 – 15:30

CEAS-2007-129
Untersuchungen eines 2D-Flügelmodells im Wasserumlaufkanal zur Bestimmung der aerodynamischen Kennwerte im Hinblick auf mögliche Optimierung unter bionischen Aspekten
M. Schnizzer; R. Schomaker; H. Witte; University of Bremen, DE

Presentation in German

15:30 – 15:50

CEAS-2007-130
CubeSat in Dresden: Student's Oxygen Measurement Project - SOMO
K. Schindler, Technical University of Dresden, DE

15:50 – 16:10

CEAS-2007-131
Der WARR-Climber für die Beam Power Challenge (Space Elevator Games 2007)
J. Sturm; M. Bernert; WARR/Technische Universität München, DE

Presentation in German

16:10 – 16:30

CEAS-2007-132
Emergency Information Design in Extreme Space Environment
I. Schlacht, Technical University of Berlin, DE

Optimisation of Aerodynamic Aircraft Configurations — ECC Room 2

Chair: C. Breitsamter, TU München, DE

16:50 – 17:10

CEAS-2007-117
Towards Aerodynamic Design by Optimisation of Transonic Transport Aircraft in a Multi-Disciplinary Environment
G. Carrier; S. Mouton; M. Marcelet; C. Blondeau; ONERA, FR

17:10 – 17:30

CEAS-2007-118
Multi-Objective Optimisation of Aircraft Range and Fuel Consumption
W.J. Vankan; E. Kesseler; M. Laban; National Aerospace Laboratory NLR, Aerospace Vehicle Division, NL

17:30 – 17:50

CEAS-2007-119
VEGA RACS Waterhammer Analysis
F. Dengra Moya, HE Space Operations, DE; M. Gralher[1]; B. Behrens[1]; [1]Astrium ST, DE

17:50 – 18:10

CEAS-2007-120
Next Generation Missile Aerodynamic Visualisation with CFD
K. Weinand; D. Stern; MBDA LFK, DE

Presentation in German

New Space Missions — ECC Room 3

Chair: P. Hofmann, Kayser-Threde, DE

16:50 – 17:10

CEAS-2007-125
Lunar Infrastructure for Exploration - European Roadmap and Reference Concept
H.-J. Heidmann, Astrium ST, DE

17:10 – 17:30

CEAS-2007-126
A Scientific and Technological Lunar Lander Mission
D. Wilde; P. Kyr; Astrium ST, DE

17:30 – 17:50

CEAS-2007-127
KAP - An In-Orbit Test Facility for Technology Demonstration and Scientific Use
C. Kaiser[1]; G. Pont[1]; A. Conde Reis, ESTEC/ESA, NL; [1]Kayser-Threde GmbH, DE

17:50 – 18:10

CEAS-2007-128
Time Resolved Measurement of Atomic Oxygen in Low Earth Orbit and its Benefits for Future Spacecraft Design
T. Schmiel; S. Fasoulas; J. Heisig; O. Przybilski; TU Dresden, DE

Young Professional Conference IV

Chair: C. Holze, machtwissen.de, DE

Introduction of DGLR Student Groups

Korean Presentations — ECC Room 1

Chair: R. Henke, RWTH Aachen,DE

17:30 – 17:50

CEAS-2007-133
Aerodynamic Analysis and Design of a Propeller for MAV Propulsion
J. Cho, Hanyang University/School of Mechanical Enginnering, KR; S. Lee[1]; L. Cho[1]; [1]Hanyang University/Department of Mechanical Enginnering, KR

17:50 – 18:10

CEAS-2007-134
Tilt Rotor Development Status in Korea as Smart UAV Platform
O.S. Ahn; S.O. Koo; J.M. Kim; S.J. Kim; C.H. Lim; Korea Aerospace Research Institute, KR

Tuesday, 11th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Airbus A380 Forum**
Speaker: R. Lafontan, Airbus, FR

Chair: J. Szodruch, DLR Köln, DE

15:10 – 15:30

Environment and noise — **Room Paris**
Chair: C. Mundt; Universität der Bundeswehr, DE

CEAS-2007-135
On the Development of Combustion Systems and their Design Methodologies for the Reduction of Pollutant Emissions from Aero-Engines - The European Project INTELLECT D.M.
R. v. d. Bank, Rolls-Royce Deutschland Ltd. & Co. KG, DE; N. Savary, Turbomeca, FR; M. Aldèn, Lunds Universitet, SE; M. Zedda, Rolls-Royce, GB; J. McGuirk, Loughborough University, GB; G. Cinque, AVIO, IT

Structures - CF Application — **Estrelsaal A**
Chair: G.A. Pavlov, IPCP RAS, RU

CEAS-2007-143
Ludwig Bölkow-Foundation-Award for his diploma thesis with the topic:
Analysis of the Interaction of Neighbouring Laminae in Fibre-Reinforced Plastics during Cyclic Loading
T. Hensel, Technische Universität Darmstadt, Maschinenbau, DE

Aerospace Information Technologies and Electronics — **ECC Room 4**
Chair: P. Stütz, ESG Elektroniksystem- und Logistik-GmbH, DE

CEAS-2007-151
Secure Network-enabled Commercial Airplane Operations: It Support Infrastructure Challenges
R.V. Robinson[1]; K. Sampigetha[1]; M. Li[1]; S. Lintelman[1]; R. Poovendran, University of Washington, US; D. von Oheimb, Siemens, DE;
[1]Boeing, US

15:30 – 15:50

CEAS-2007-136
Strategy for Evironmentally Friendly Low Emissions Combustion Development in European Aeronautics
R. v. d. Bank, Rolls-Royce Deutschland, DE; C. Berat, Turbomeca, FR; M. Cazalens, SNECMA, FR; S. Harding, Rolls-Royce, GB

CEAS-2007-144
Willy Messerschmitt-Award for his diploma thesis with the topic:
Deformation Fields Estimation Using Fiber Bragg Gratings
S. Rapp, TU München, DE

CEAS-2007-152
Software: The Underestimated Component in Space Missions
S. Montenegro, Fraunhofer Institut FIRST, DE

15:50 – 16:10

CEAS-2007-137
Influence of the Bypass Ratio on Low Altitude NOx Emissions
H. Hemmer; T. Otten; M. Plohr; M. Lecht; A. Döpelheuer; DLR, DE

CEAS-2007-145
Walther Blohm-Study-Award for his studies thesis with the topic:
Vergleichende Analyse der konzentrierten Einzelkrafteinleitung in eine Rechteckscheibe mittels kontinuumsmechanischer und FEM-Berechnung sowie Experiment
R. Basan, Bundesanstalt für Materialforschung und –prüfung (BAM), DE

Presentation in German

CEAS-2007-153
Topological Design of a High Altitude Platform (HAP) using a System Design Language
M. Haq, TAO Technologies GmbH, DE; B. Kröplin, University of Stuttgart, Institute for Statics and Dynamics of Aerospace Structures, DE

16:10 – 16:30

CEAS-2007-138
Noise Radiation through Aero-Engine Exhausts - Large Scale Model Experiments
F. Arnold, Rolls-Royce Deutschland, DE; U. Tapken[1]; R. Bauers[1]; J. Zillmann, EADS Innovation Works, DE;
[1]DLR, DE

CEAS-2007-146
Experimentelle Untersuchungen zum Biegeeinfluss an Flachproben mit Nähten unterschiedlicher Parameter unter Einsatz von optischen Messverfahren
F. Kruse; H.-G. Reimerdes; RWTH Aachen, DE

Presentation in German

CEAS-2007-154
Extension of EDA Toolbox for VHF Data Link System Simulation
H. Flühr, FH Joanneum Graz, AT

16:50 – 17:10

Aero-Engine Components: Turbines / Combustors — **Room Paris**
Chair: H. Knittel, MTU Aero Engines, DE

CEAS-2007-139
Preparation of Aero Technology for New Generation Aircraft Engine LP Turbines
J. Gier[1]; I. Raab[1]; T. Schröder[1]; L. Enghardt, DLR, DE;
[1]MTU Aero Engines, DE

Structures - Miscellaneous — **Estrelsaal A**
Chair: A. Viviani, Seconda Università di Napoli, IT

CEAS-2007-147
The Delamination Behaviour of Carbon Composite Structures Manufactured with the Vacuum Assisted Process (VAP)
G. Spenninger, EADS Military Air Systems, DE; H. Bansemir[1]; M. Schulz[1];
[1]Eurocopter Deutschland GmbH, DE

Space Control and Simulation — **ECC Room 4**
Chair: C. Wiedemann, TU Braunschweig, DE

CEAS-2007-155
Calibration of the Micro-Newton Propulsion System for the LISA Pathfinder Drag-Free Satellite
T. Ziegler[1]; M. Göbel[2]; A. Schleicher[1]; W. Fichter[2];
[1]EADS Astrium GmbH, DE;
[2]University of Stuttgart, Institute of Flight Mechanics and Control, DE

17:10 – 17:30

CEAS-2007-140
Numerical Modeling of Aviation Gas Turbine Cooled Elements
A. Sadiqov; A. Pashayev; D. Askerov; A. Samedov; R. Mamedov; National Academy of Aviation, AZ

CEAS-2007-148
Numerical Simulation of Advanced Folded Core Materials for Structural Sandwich Applications
S. Heimbs[1]; P. Middendorf[1]; S. Kilchert[2]; A.F. Johnson[2]; M. Maier, Institute for Composite Materials (IVW), Kaiserslautern University of Technology, DE;
[1]EADS Innovation Works, DE;
[2]German Aerospace Center (DLR), Institute of Structures and Design, DE

17:30 – 17:50

CEAS-2007-141
Passive Shroud Cooling Concepts for HP Turbine Blades
E. Janke, Rolls-Royce Deutschland, DE

CEAS-2007-149
EMI Control in the Presence of Composites Materials
F. Thurecht[1]; M. Leininger, Kayser-Threde GmbH, DE; C. Schöppinger, INVENT GmbH, DE; L. Trougnou, ESA-ESTEC, NL; E. Pfeiffer[1];
[1]HPS GmbH, DE

CEAS-2007-157
Flight Software, Rigid Body, and Computational Fluid Dynamics Closed Loop Simulation
M.I. Panevsky; B.J. Pataky; P.T. Than; The Aerospace Corporation, US

17:50 – 18:10

CEAS-2007-142
Parametric Study of Soot Formation in an Aeroengine Model Combustor at Elevated Pressures by Laser-Induced Incandescence: Effect of the Fuel Phase
U. Meier[1]; C. Hassa[1]; K.-P. Geigle[2]; O. Lammel[2]; P. Kutne[2];
[1]German Aerospace Center (DLR), Institute of Propulsion Technology, DE; [2]German Aerospace Center (DLR), Institute of Combustion Technology, DE

CEAS-2007-150
Finite Elemente Simulation einer Notwasserung eines Transportflugzeugs zur Ermittlung der dabei auftretenden Lasten
T. Schmid-Fuertes; R. Curtius; J. Mendler; EADS Military Air Systems, DE

Presentation in German

CEAS-2007-158
Analytical Approach for the Solution of Super-/ Hypersonic Flow Fields
B. Thorwald; C. Mundt; Universität der Bundeswehr, München, DE

Tuesday, 11th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Airbus A380 Forum**
Speaker: R. Lafontan, Airbus, FR

Chair: J. Szodruch, DLR Köln, DE

15:10 – 15:30	15:30 – 15:50	15:50 – 16:10	16:10 – 16:30
Inflatable / Deployable Structures 2 SSMMT **Estrelsaal C1** Chair: S. Langlois, European Space Agency, ESA/ESTEC, NL			
CEAS-2007-159 **Large Deployable Membrane Structures** M. Straubel[1]; C. Sickinger[1]; S. Langlois, ESA/ESTEC, NL; [1]DLR - Institut für Faserverbundleichtbau und Adaptronik, DE	**CEAS-2007-160** **Bending-wrinkling Characteristics of the Inflated Boom** H. Tan[1]; C. Wang[1]; J. Yang, China Academe of Space Technology, CN; X. Du[1]; X. He[1]; [1]Harbin Institute of Technology, CN	**CEAS-2007-161** **Shape Memory Polymer Composite and its Application to Deployable Hinge for Solar Arrays** JS. Leng; XH. Wang; X. Lan; YJ. Liu; Harbin Institute of Technology, Centre for Composite Materials and Structures, CN	**CEAS-2007-162** **Design and Analysis of Full-Scale Offset Stiffened-Spring Back Reflector** O. Soykasap, Afyon Kocatepe University, Department of Mechanics, TR; L.T. Tan, University College London, Department of Civil & Environmental Engineering, GB
Shock 1 SSMMT **Estrelsaal C3** Chair: A. Capitaine, Astrium EADS SAS, FR			
CEAS-2007-167 **Statistical Processing of Shock Test Data** G. Ladurée, Thales Alenia Space, FR; S. Kiryenko, ESA/ESTEC, NL	**CEAS-2007-168** **Herschel SVM Shock Qualification Test / Prediction Comparison - An Industrial Experience** P.C. Marucchi-Chierro, Thales Alenia Space-I, IT; N. Riva, SOFITER SYSTEM ENGINEERING ENGINEERING, IT; P. Lodereau, Thales Alenia Space-F, FR; S.J. Kiryenko, ESA /ESTEC, NL	**CEAS-2007-169** **Main Outcomes of CNES Launcher Directorate Research Group on Shock Propagation into Launcher Structures** P. Roux, CNES, FR	**CEAS-2007-170** **Reliability Demonstration of the Pyrosoft Release Nut** M. Castarede[1]; R. Tougeron[1]; P. Thebault[1]; D. Dilhan, CNES, FR; [1]Etienne Lacroix Tous Artifices S.A., FR
Short Course 3 **ECC Room 5** Chair: TBD			

16:50 – 17:10	17:10 – 17:30	17:30 – 17:50	17:50 – 18:10
Mechanical Architecture, Design and Engineering 2 SSMMT **Estrelsaal C1** Chair: T. Henriksen, European Space Agency, ESA/ESTEC, NL			
CEAS-2007-163 **Failure Testing and Test Simulation of the ARIANE 5 EPC-BME Actuator Brackets** J. Hoogendoorn; J.F. Koorevaar; Dutch Space B.V., NL	**CEAS-2007-164** **Finite Element Based Initial Post-buckling Analysis of Conical Shell Structures** T. Rahman[1]; E.L. Jansen[1]; J.J. Wijker, Dutch Space BV, NL; [1]Delft University of Technology, NL	**CEAS-2007-165** **Testing of Flexible Cu(In,Ga)Se2 Solar Cells for Space Applications** K. Zajac[1]; S. Fasoulas[1]; S. Brunner[2]; K. Seifart[2]; K. Otte, Solarion AG, DE; [1]Technische Universität Dresden, DE; [2]HTS GmbH, DE	**CEAS-2007-166** **Reliability of Shell Structures Through Sensitivity Analysis** M. Oberguggenberger; J. King; B. Schmelzer; University of Innsbruck, AT
Shock 2 SSMMT **Estrelsaal C3** Chair: P. Camarasa, EADS ASTRIUM, FR			
CEAS-2007-171 **Shock Inputs Derivation to Subsystems** G. Ladurée, Thales Alenia Space, FR; J.B. Bernaudin, EADS Astrium, FR; S. Kiryenko, ESA, NL; S. Mary, CNES, FR	**CEAS-2007-172** **Shock Propagation in Spacecraft Structure** J.B. Bernaudin[1]; J.B. Vergniaud[1]; E. Courau[2]; S. Mary[2]; [1]Astrium Satellites, FR; [2]CNES, FR	**CEAS-2007-173** **Qualification to Shock Environment in Vega Program by Full Scale Tests, Models and Similarity** R. Mancini; M. Fragnito; ELV SpA Mechanical System Development, IT	**CEAS-2007-174** **HSS3 - An Improved Concept for the Horizontal Separation System of the Ariane5 Payload Fairing and Its Qualification Status** P. Bodagala, CNES, FR; M. Rendina, Oerlikon Space, CH
Short Course 4 **ECC Room 5** Chair: TBD			

Short Course Aircraft Design
Details are bepublished on www.ceas2007.org

Wednesday, 12th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Towards Climate-optimized Aviation**

Speakers: U. Schumann, DLR Oberpfaffenhofen, DE; Cord Rossow, DLR Braunschweig, DE

Chair: J. Szodruch, DLR Köln, DE

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Wake Vortex Advisory Systems Chair: T. Rötger, Airbus, DE		STS	**ECC Hall C**
CEAS-2007-175 **Wake Vortex Avoidance System** W. Bryant[1]; S. Lang[1]; J. Tittsworth[1]; S. Darr, Dynamic Aerospace Inc., US; [1]Federal Aviation Administration, US	**CEAS-2007-176** **Wake Turbulence Mitigation for Departures from Closely Spaced Parallel Runways: A Research Update** S. Lang[1]; J. Tittsworth[1]; D. Domino[2]; C. Lunsford[2]; D. Clark[3]; F. Robasky[3]; G. Lohr, NASA, US; [1]Federal Aviation Administration, US; [2]The Mitre Corporation, US; [3]MIT Lincoln Laboratory, US	**CEAS-2007-177** **The Wake Vortex Prediction and Monitoring System WSVBS - Part I: Design** F. Holzäpfel[1]; T. Gerz[1]; M. Frech[1]; A. Tafferner[1]; F. Köpp[1]; I. Smalikho[1]; S. Rahm[1]; K.-U. Hahn[2]; C. Schwarz[2]; [1]DLR-Oberpfaffenhofen, DE; [2]DLR-Braunschweig, DE	**CEAS-2007-178** **The Wake Vortex Prediction and Monitoring System WSVBS - Part II: Performance and ATC Integration at Frankfurt Airport** T. Gerz[1]; F. Holzäpfel[1]; W. Gerling[1]; A. Scharnweber[1]; M. Frech, Deutscher Wetterdienst, DE; A. Wiegele[1]; K. Kober[1]; K. Dengler[1]; S. Rahm[1]; [1]DLR, DE
Unmanned Aircraft Systems Chair: C. Le Tallec, Onera, FR			**ECC Hall D**
CEAS-2007-183 **A Solar Powered HALE-UAV for Arctic Research** H. Runge[1]; W. Rack, University of Canterbury, NZ; A. Ruiz-Leon[1]; M. Hepperle[1]; [1]DLR, DE	**CEAS-2007-184** **Insertion of Unmanned Aircraft Systems in Non-Segregated Airspace: A Combined Technological and Regulatory Challenge** G. Mardiné, SAFRAN-Sagem Défense Sécurité, FR	**CEAS-2007-185** **Miniature UAVs Concepts for Outdoor Missions** A. Joulia; S. Bertrand; ONERA, FR	**CEAS-2007-186** **Conceptual Design Methodology of HALE UAV** C. Le Tallec; J. Hermetz; N. Bérend; S. Defoort; Onera, FR
Flight Control for Missiles Chair: H. Buschek, Diehl BGT Defence, DE			**Estrelsaal B**
CEAS-2007-191 **Case Study: TAURUS KEPD350 Integration on Tornado Fighter Aircraft** D. Fasol; H. Neubauer; MBDA Deutschland, DE	**CEAS-2007-192** **Comparison of Classical to H_∞-Norm Optimal Robust Autopilot Design** B.J.E. Misgeld; A. Reindler; T. Kuhn; Diehl BGT Defence, DE		**CEAS-2007-194** **Multi-spectral Image Generation for Real-time Hardware-in-the-loop Simulations** R.G. Wiedemann; P. Schätz; K.M. Wanie; LFK-Lenkflugkoerpersysteme GmbH, DE

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
Wake Vortex R&D Chair: A. Reinke, Airbus, DE		STS	**ECC Hall C**
CEAS-2007-179 **Wake Vortex R&D in the USA - A Status of Current Progress and Plans** W.H. Bryant, NASA, US; J.P. Nicolaon, National Insititute for Aeronautics, US; S.L. Lang[1]; J.A. Tittsworth[1]; [1]FAA, US	**CEAS-2007-180** **Parametric Study & Simplified Approach to Wake Vortex Encounter Offline Simulation** D. Bieniek, University of Berlin, Institute of Aeronautics and Astronautics, DE; R. Luckner, University of Berlin, Institutd of Aeronautics and Astronautics, DE	**CEAS-2007-181** **Investigation of Four Vortex System Wake Characteristics** A. Allen; C. Breitsamter; TU München, Institute of Aerodynamics, DE	**CEAS-2007-182** **A Comparison between CFD and Wind Tunnel Measurements for Wake Vortex Prediction** S. Melber-Wilkending, DLR Braunschweig, Institut für Aerodynamik und Strömungsmechanik, DE; A. Allen[1]; C. Breitsamter[1]; [1]TU München, Lehrstuhl für Aerodynamik, DE
Air Transport System Chair: H. Fricke, TU Dresden, DE			**ECC Hall D**
CEAS-2007-187 **EVTS Enhanced VFR Transport System** J. Groeneweg, National Aerospace Laboratory, NL; R. van Gent, TNO Defence, Security and Safety, NL; W.R. Berkouwer, Aerospace Software and Technologies Institute, NL	**CEAS-2007-188** **Level of Service for Aviation Infrastructure Markets?** E. Grunewald, DLR e.V., DE	**CEAS-2007-189** **SESAR: A Vision of the Future European Air Traffic Management System for 2020 and Beyond** S. Reed, Air Traffic Alliance, FR	**CEAS-2007-190** **Aviation Safety Plans - The Total Systems Approach and the Way Forward** F. Böhm; T. Mickler; BMVBS - Bundesministerium für Verkehr, Bau und Stadtentwicklung, DE
Rotorcraft Chair: B. Gmelin, DLR Braunschweig, DE			**Estrelsaal B**
CEAS-2007-195 **Helicopter Noise and Vibration Reduction with Adaptive Fiber Composites** T.H. Brockmann, EADS Eurocopter, DE	**CEAS-2007-196** **Structural Design and Optimization of the Integrated Active Trailing Edge Concept for a Helicopter Rotor Blade** E. Ahci; R. Pfaller; Eurocopter, DE	**CEAS-2007-197** **Crash Analysis of the "High Cabin"-Version of the NH90 Transport Helicopter Fuselage** J. Majamäki, Eurocopter Germany, DE	**CEAS-2007-198** **Piezoceramic Actuators for Morphing Helicopter Rotor** B.A. Grohmann; Ch. Maucher; P. Jänker; EADS Innovation Works, DE

Wednesday, 12th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Towards Climate-optimized Aviation**

Speakers: U. Schumann, DLR Oberpfaffenhofen, DE; Cord Rossow, DLR Braunschweig, DE

Chair: J. Szodruch, DLR Köln, DE

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Transport Aircraft Aerodynamics Chair: G.A. Dirks, Airbus, FR — **ECC Room 2**			
CEAS-2007-199 **Parametric Effects on Spoiler Geometry Assessment with Chimera Technique** X. Bertrand, Airbus, FR	**CEAS-2007-200** **On the Comparison of Stalling Flow-Through Nacelles and Powered Inlets at Take-Off Conditions** S. Schulze; C. Kähler; R. Radespiel; TU Braunschweig, Institute of Fluid Mechanics, DE	**CEAS-2007-201** **Computations of Unsteady Aerodynamics due to Body Motion** H. Berglind, FOI, SE; V. Brunet, ONERA, FR; N. Caballero Rubiato, INTA, ES; N. Ceresola, Alenia, IT; R. Heinrich, DLR, DE; S. Leicher, EADS-M, DE; B. Prananta, NLR, NL	**CEAS-2007-202** *Ferdinand Schmetz-Award for his diploma thesis with the topic:* **Investigation of Boundary Layer Transition for Small Reynolds Numbers in Free Flight and Wind Tunnel Experiments** B. Kobiela, University Stuttgart, DE
Space Systems: Spacecraft Technologies Chair: M. Sölter, Astrium GmbH, DE — **ECC Room 3**			
CEAS-2007-207 **A Fleet Management System for Commercial Spacerafts in GEO Using SMART-OLEV** C. Kaiser, Kayser-Threde GmbH, DE; F. Sjöberg, SSC, SE; J.-M. Del Cura, Sener, ES; B. Eilersten, OSSL, GB	**CEAS-2007-208** *ZARM-Award for his diploma thesis with the topic:* **LISA Thermal Control Analysis in Context of the BayernSat Mission** S. Höfner, TU München, Institute of Astronautics, DE	**CEAS-2007-209** **Simulation of the Attitude Behaviour and Available Power Profile of the Delfi-c3 Spacecraft with Application of the OpSim Platform** F. te Hennepe; B.T.C. Zandbergen; R.J. Hamann; Delft University of Technology, NL	**CEAS-2007-210** **Imaging Radiometer METimage for Future Operational Earth Observation Platforms in Polar Orbits** A. Pillukat, Jena-Optronik GmbH, DE; H.-P. Nothaft, AIM GmbH, DE; C. Brüns, DLR, DE
Aero-Engine Components: Compressors I Chair: U. Wenger, Rolls-Royce Deutschland, DE — **ECC Room 1**			
CEAS-2007-215 **Blade Mistuning Induced Blisk Vibration** T. Klauke; A. Kühhorn; B. Beirow; BTU Cottbus, Chair of Structural Mechanics and Vehicle Vibrational Technology, DE	**CEAS-2007-216** **The Capability of Influencing Secondary Flow in Compressor Cascades by Means of Passive and Active Methods** A. Hergt[1]; R. Meyer[1]; K. Engel, MTU Aero Engines GmbH, DE; [1]German Aerospace Center (DLR), Institute of Propulsion Technology, DE	**CEAS-2007-217** **A Feature Based Approach to High Pressure Compressor Preliminary Design for Civil Aircraft Propulsion Systems** S. Bretschneider; S. Staudacher; Stuttgart University, Institute of Aircraft Propulsion Systems, DE	**CEAS-2007-218** **Der Axialverdichter im Flugtriebwerk – gestern, heute und morgen** U.L.H. Schmidt-Eisenloher; O.E. Kosing; Atena Engineering GmbH, DE Presentation in German

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
Advanced Wing Technologies and Flight Testing Chair: J. König, Airbus, DE — STS — **ECC Room 2**			
CEAS-2007-203 **Requirements and Results of Wake Vortex in-flight Measurements in AWIATOR** J. König, Airbus, DE	**CEAS-2007-204** **Forward Looking Clear Air Turbulence Measurement with the AWIATOR LIDAR Sensor** N.P. Schmitt[1]; W. Rehm[1]; T. Pistner[1]; H. Diehl[1]; P. Navé[1]; G. Jenaro-Rabadan[2]; P. Mirand[2]; M. Reymond[2]; [1]EADS Innovation Works, DE; [2]Airbus, FR	**CEAS-2007-205** **Validation of Low Noise Procedures in Simulator and Flight Tests** B. Boche[1]; N. Kulwatz, Airbus, DE; R. Luckner[1]; [1]TU Berlin, DE	**CEAS-2007-206** **Advanced Methods for In-flight Flap Gap and Wing Deformation Measurements in the Project AWIATOR** T. Kirmse; A. Wagner; DLR Göttingen, DE
Space Systems: Launcher Technologies II Chair: M. Sölter, Astrium GmbH, DE — **ECC Room 3**			
CEAS-2007-211 **Payload Adaptor System of High Performances and Low-Shock** M. Lancho; E. Grande; J. Rivas; EADS, ES	**CEAS-2007-212** **Shock Attenuator System for Spacecraft and Adaptor** P. Camarasa, EADS-ASTRIUM, FR; S. Kiryenko, ESA/ESTEC, NL	**CEAS-2007-213** **Payload Adaptor System for James Webb Space Adapter** J. Vilanova; R. Rosa; EADS CASA Espacio, ES	**CEAS-2007-214** **Shock Attenuation System for Spacecraft and Adaptor (SASSA)** M. Lancho; A. Fernandez; EADS, ES
Aero-Engine Components: Compressors II Chair: A. Kühhorn, BTU Cottbus, DE — **ECC Room 1**			
CEAS-2007-219 **Multi-objective Blade Design Using a Quasi-3d Non-dimensional Parameterization Approach** A.K. Dutta; P.M. Flassig; D. Bestle; Brandenburg University of Technology Cottbus (BTU Cottbus), DE	**CEAS-2007-220** **Multi-Objective Compressor Blade Optimisation Using a Non-Dimensional Parameterisation Approach** P.M. Flassig, BTU Cottbus, LS Technische Mechanik und Fahrzeugdynamik, DE	**CEAS-2007-221** **Multi Disciplinary Blading Design by Means of Multi Objective Optimisation** D. Otto; D. Bestle; Chair of Engineering Mechanics and Vehicle Dynamics, BTU, DE	**CEAS-2007-222** **Comparison of Different Parameterization and Optimization Approaches in the Field of Aerodynamic Compressor Blade Design** A. Keskin[1]; M. Swoboda[1]; J. Palluch[2]; C. Abt[2]; [1]Rolls-Royce Deutschland Ltd. & Co. KG, DE; [2]FRIENDSHIP SYSTEMS GmbH, DE

Wednesday, 12th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Towards Climate-optimized Aviation**

Speakers: U. Schumann, DLR Oberpfaffenhofen, DE; Cord Rossow, DLR Braunschweig, DE

Chair: J. Szodruch, DLR Köln, DE

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Air and Space Medicine and Law Chair: U. Müller, DLR Köln, DE			**Room Paris**
CEAS-2007-223 **Aircraft Noise Effects on Sleep: DLR Research and Application to a German Airport** A. Samel; M. Basner; U. Isermann; H. Maaß; J. Quehl; DLR, DE	**CEAS-2007-224** **Noise-Reduced Landing Approaches and Pilots´ Workload** E.-M. Elmenhorst; H. Maaß; M. Vejvoda; A. Samel; German Aerospace Center (DLR), DE	**CEAS-2007-225** **Perspectives for the Network of Centres in the Space Domain** W. Rathgeber, European Space Policy Institute (ESPI), AT	
Supersonic/Hypersonic: Thermal Protection Chair: J.M.A. Longo, DLR Braunschweig, DE			**Estrelsaal A**
CEAS-2007-231 **Plasma Windtunnel Tests at P A R E S Thermal Protection System** W.P.P. Fischer; R. Knoche; Astrium Space Transportation, DE	**CEAS-2007-232** **Thermal Qualification of Transpiration Cooling for Atmospheric Entry** B. Esser; A. Gülhan; M. Kuhn; DLR, DE	**CEAS-2007-233** **In Flight Research on Aerothermodynamics (ATD) and Thermal Protection Systems (TPS) for Space Transportation Systems** J.M. Muylaert; J. Gavira; H. Ritter; ESA/ESTEC, NL	**CEAS-2007-234** **Aerodynamic Analysis of Computed Plate / Jet - Interactions for Blunted Cone-Cylinder in Hypersonic Flow** S. Zahir; Z. Ye; Northwestern Polytechnical University, CN
ICAO for Space Chair: T. Sgobba, ESA/ESTEC, NL		***Workshop***	**ECC Room 4**
CEAS-2007-239 **An ICAO for Space - WHY,** T. Sgobba, IAASS, NL	**CEAS-2007-240** **Space Traffic Management,** K.-U. Schrogl, ESPI, Vienna, AT	**CEAS-2007-241** **An ICAO for Space - HOW,** N. Bahr, BAH, Washington, US	**CEAS-2007-242** **The Role of the UN Committee for the Peaceful Uses of Outer Space (UN COPUOS) in Developing the International Legal Framework for Space Activities** G. Brachet, FR

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
UAS: Innovative System Concepts Chair: W. Engelhardt, MBDA Deutschland, DE			**Room Paris**
CEAS-2007-227 **EADS Technology Activities in Communications** D. Hoffmann, EADS Deutschland, DE	**CEAS-2007-228** **Cost Appreciation of Morphing UAV Projects at a Conceptual Design Stage.** T. Melin; A. T. Isikveren; M.I. Friswell; University of Bristol, GB	**CEAS-2007-229** **Designing Future Unmanned Combat Air Systems from the Effector Point of View** J. Engel, MBDA/LFK, DE	**CEAS-2007-230** **Notwendigkeit adaptiver Flugsteuerungssysteme am Beispiel der Reglerentwicklung für den Technologiedemonstrator ARTIS** S. Lorenz, DLR, DE Presentation in German
Structures - Optimisation Chair: H. Hönlinger, DLR Göttingen, DE			**Estrelsaal A**
CEAS-2007-235 **Multidisciplinary, Large Scale Optimization of Composite Aircraft Structures** G. Schuhmacher; F. Daoud; J. D. Wagner; R. Zotemantel; EADS Military Air Systems, DE	**CEAS-2007-236** **Structural Optimization of Adaptive Airfoils Using Evolutionary Algorithms** J. Seeger; K. Wolf; TU Dresden, Institute of Aerospace Engineering, DE	**CEAS-2007-237** **The GA Optimization of Straight and Curved Laminated Composite Panels in Presence of a Cutout** A. Gorjipoor; B. Dehghanmanshadi; A. Abedian; Sharif University of Technology, IR	**CEAS-2007-238** *Claudius Dornier Jr.-Foundation-Award for his diploma thesis with the topic:* **Development of a Preprocessor for the Generation of Structural Beam Models for Multidiciplinary Optimisation** G. Wellmer, Department of Mechanics, RWTH Aachen, DE
ICAO for Space, Panel Forum Chair: T. Sgobba, ESA/ESTEC, NL		***Workshop***	**ECC Room 4**

Dr. G. Brachet, Chairman of UN COPUOS, AT
Dr. K-U. Schrogl, Director of ESPI (European Space Policy Institute), AT
Dr. I. Rongier, Safety Manager, CNES, FR
Prof. S. Hobe Director, Institute of Air and Space Law, University of Cologne, DE
Dr. L. Perek, Czech Academy of Sciences, CZ
Mr. R. Coppinger, Technical Reporter of Flight International, GB
Mr. N. Bahr, Safety Director, BAH, Washington, US
Dr. Ing. T. Sgobba, IAASS President, NL

Wednesday, 12th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Towards Climate-optimized Aviation**

Speakers: U. Schumann, DLR Oberpfaffenhofen, DE; Cord Rossow, DLR Braunschweig, DE

Chair: J. Szodruch, DLR Köln, DE

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Columbia Accident SSMMT **Estrelsaal C1** Chair: T. Henriksen, European Space Agency, ESA/ESTEC, NL			
CEAS-2007-247 **The Space Shuttle Columbia Accident Investigation: Tools, Techniques, and Results** S. McDanels, NASA, Kennedy Space Center, US; M. Solomon, Boeing, Kennedy Space Center, US		**CEAS-2007-248** **Space Shuttle Orbiter Columbia Reconstruction and Investigation** M. Solomon, Boeing, US	
Composite Structures 1 SSMMT **Estrelsaal C3** Chair: R. Usinger, Oerlikon Space, CH			
CEAS-2007-253 **Design of Multifunctional Folded Core Structures for Aerospace Sandwich Applications** Y. Klett[1]; K. Drechsler[1]; M. Kolax[2]; H. Wentzel[2]; R. Kehlre, Foldcore GmbH, DE; [1]University of Stuttgart, Institute of Aircraft Design, DE; [2]Airbus, DE	**CEAS-2007-254** **A New Concept for Testing Fatigue and Damage Tolerance at Aerospace Structure** B. Zapf; C. Rieß; RUAG Aerospace Structures GmbH, DE	**CEAS-2007-255** **Mechanical and Physical Evaluation of a New Carbon Fibre/ PEEK Composite System for Space Applications** J.P. Kilroy, Composites Testing Laboratory, IE; C.M. Ó Brádaigh, Composites Research Unit, IE; C.O.A. Semprimoschnig, European Space Agency (ESA/ESTEC), NL	**CEAS-2007-256** **Compressive Strength: The Key to Future CFRP Production** C. Arlt; D. Röstermundt; T. Mahrholz; U. Riedel; L. Herbeck; German Aerospace Centre (DLR), Institute of Composite Structures and Adaptive Systems, DE
Short Course 5 **ECC Room 5** Chair: TBD			

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
Inflatable / Deployable Structures 3 SSMMT **Estrelsaal C1** Chair: J. Santiago Prowald, European Space Agency, ESA/ESTEC, NL			
CEAS-2007-249 **Verification Methodology for Self-Deploying Support Frames** C. Sickinger; H. Assing; H. Koeke; M. Straubel; DLR - German Aerospace Center, DE	**CEAS-2007-250** **Topology Optimization Studies for a Contoured Beam Deployable Micro-Satellite Antenna** N. Fazli; S. Ghaffari; S.M.B. Malaek; A. Abedian; Sharif Univ. of Tec., IR	**CEAS-2007-251** **Lessons from Structural Design of a Highly-Flexible Space Structure: the Space-Tow Solar Sail** G. Tibert, KTH (Royal Institute of Technology), SE; A. Lennon, ABL Engineering Ltd., IE	**CEAS-2007-252** **Mechanical Behaviours and Fracture Mechanisms of Rigidizable Composites for Inflatable Structures** V. Calard, Austrian Research Centers GmbH, AT; B. Defoort, Astrium Space Transportation, FR; S. Langlois, ESA/ESTEC, NL
Composite Structures 2 SSMMT **Estrelsaal C3** Chair: A. Obst, European Space Agency, ESA/ESTEC, NL			
CEAS-2007-257 **Thermo-mechanical qualification of Ultra High Temperature Ceramic structures for space application** R. Gardi[1]; G. Marino[1]; S. Di Benedetto[1]; M. Marini[1]; E. Trifoni[1]; R. Savino, DIAS (univ. of naples), IT; [1]CIRA scpa, IT	**CEAS-2007-258** **Increase of Bolted Joint Performance by means of Local Laminate Hybridization** A. Fink, German Aerospace Center DLR, DE; P. Camanho, INEGI, Instituto de Engenharia Mecânica e Gestão Industrial, PT; M. Canay, EADS CASA Espacio, ES; A. Obst, European Space Agency, NL	**CEAS-2007-259** **Bioinspired Self-Healing Composite Materials for Space and Aerospace Applications** R. Trask[1]; I. Bond[1]; C. Semprimoschnig, European Space Agency/ESTEC, NL; G. Williams[1]; H. Williams[1]; [1]University of Bristol, Department of Aerospace Engineering, GB	**CEAS-2007-260** **Composite Fasteners for Aerospace Applications** J.W. de Haan, icotec, CH; M. Barbezat, EMPA, CH; A. Obst, ESA, NL
Short Course 6 **ECC Room 5** Chair: TBD			

Short Course Aircraft Design

Details are be published on www.ceas2007.org

Wednesday, 12th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 | **Objectives of the Bologna Process and Effects on Aerospace Engineer Education**

Speaker: J. Steinbach, TU Berlin, DE; Discussion with: S. Pantelakis, University Patras, GR; F. Schmith, Lufthansa Technik, DE; P. Greisler, BMBF, DE

Moderator: J.-M. Wiarda, DIE ZEIT, DE

15:10 – 15:50	15:50 – 16:10	16:10 – 16:30	16:50 – 17:10	17:10 – 17:30	17:30 – 17:50	17:50 – 18:10
Poster Session 1	**FLYSAFE** — Chair: K. Burkhardt, Diehl Aerospace, DE — **ECC Hall C**		**Operations (Air and Ground)** — Chair: T.M. Cerbe, Fachhochschule Braunschweig/Wolfenbüttel, DE — **ECC Hall C**			
Details for poster session please find at the end of this overview	**CEAS-2007-261** **The European Research Project FLYSAFE: Evaluation of Novel Traffic Functionalities for Future Airliners** N. Barraci[1]; C. Vernaleken[1]; C. Urvoy[1]; K. Koch[1]; A. Andreas, Sindlinger, DE; G. Heidelmeyer[1]; U. Klingauf[1]; [1]TU Darmstadt, Institut für Flugsysteme und Regelungstechnik, DE	**CEAS-2007-262** **FLYSAFE - Design of the Next Generation Integrated Surveillance System** M. Jirsch, Diehl Aerospace, DE	**CEAS-2007-263** **Optimized Minima Information on Data Driven Aeronautical Charts** T. Grasse; P. Wipplinger; T. Wiesemann; J. Schiefele; Jeppesen GmbH, DE	**CEAS-2007-264** **Highly Efficient Civil Aviation - An Opportunity for Present & A Vision for Future** R.K. Nangia, Nangia Aero Research Associates, GB	**CEAS-2007-265** **The Impact of High Speed Intercity Train Access on Airport Choice in Germany** M.C. Gelhausen, German Aerospace Center (DLR), DE	**CEAS-2007-266** **Standardized Concept for Passenger Guidance Systems at Aerodromes** M. Schultz; A. Wachtel; H. Fricke; TU Dresden, DE
Poster Session 2	**High Lift Aerodynamics 1** — Chair: R. Rudnik, DLR Braunschweig, DE — STS — **ECC Hall D**		**High Lift Aerodynamics 2** — Chair: R. Rudnik, DLR Braunschweig, DE — STS — **ECC Hall D**			
Details for poster session please find at the end of this overview	**CEAS-2007-267** **An Overview on recent High-Lift Research Achievements from Airbus Aerodynamics** D. Reckzeh; H. Hansen; M. Sutcliffe; K. Bohannon; S. Galpin; Airbus, DE	**CEAS-2007-268** **Prediction Capabilities of Maximum Lift Effects for Realistic High-Lift-Commercial-Aircraft-Configurations within the European Project EUROLIFT II** H. von Geyr; N. Schade; German Aerospace Center (DLR), Institute of Aerodynamics and Flow Technology, DE	**CEAS-2007-269** **High Lift Aerodynamics at NASA - Part 1** L. Leavitt; Washburn; Wahls; NASA, LaRC, US	**CEAS-2007-270** **High Lift Aerodynamics at NASA - Part 2** L. Leavitt; Washburn; Wahls; NASA, LaRC, US	**CEAS-2007-271** **Overview of Current Achievements and Future Challenges for High Lift Integration R&T Projects** S. Bauß; B. Kiefner; Airbus, DE	**CEAS-2007-272** **Validation of In-Tunnel High Lift Computations** T. Delille; J.C. Courty; Dassault-Aviation, FR
Poster Session 3	**Aviation Safety** — Chair: H. Heinen, Diehl Aerospace, DE — **Estrelsaal B**		**Rotorcraft Flight and Structural Dynamics** — Chair: I.C. Hermans, NLR / AT Amsterdam, NL — **Estrelsaal B**			
Details for poster session please find at the end of this overview	**CEAS-2007-273** **Parametric Aircraft Trajectory Model for Takeoff and Departure** S. Amelsberg; R. Luckner; TU Berlin, DE	**CEAS-2007-274** **Safety in the Terminal Area - An Approach for a Quantitative Assessment** M. Kietzmann; H. Fricke; Dresden University of Technology, Air Transport Technology and Logistics, DE	**CEAS-2007-275** **EC135 System Identification for Model Following Control and Turbulence Modeling** S. Seher-Weiss; W. von Gruenhagen; DLR, DE	**CEAS-2007-276** **Prediction of Rate Limiter Effects on Rotorcraft Stability** V. Gollnick, German Aerospace Centre, DLR, DE; C. Gudrian, Fluidon, DE	**CEAS-2007-277** **Helicopter Rotor Blade Integrated Turbulence Detector for Noise and Vibration Reduction Measures** C. Gradolph[1]; M. Knecht[2]; T. Ziemann[1]; W.J. Wagner[3]; V. Klöppel[3]; C. Breitsamter[2]; N. Adams[2]; J. Wilde, University of Freiburg, DE; G. Müller[1]; A. Friedberger[1]; [1]EADS Innovation Works, DE; [2]Technical University of Munich, DE; [3]Eurocopter Deutschland GmbH, DE	

Wednesday, 12th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Objectives of the Bologna Process and Effects on Aerospace Engineer Education**

Speaker: J. Steinbach, TU Berlin, DE; Discussion with: S. Pantelakis, University Patras, GR; F. Schmith, Lufthansa Technik, DE; P. Greisler, BMBF, DE

Moderator: J.-M. Wiarda, DIE ZEIT, DE

15:10 – 15:50	15:50 – 16:10	16:10 – 16:30	16:50 – 17:10	17:10 – 17:30	17:30 – 17:50	17:50 – 18:10
Poster Session 4	**Education 1** — Chair: J. Thorbeck, TU-Berlin, DE — **ECC Room 2**		**Education 2** — Chair: W. Alles; RWTH Aachen, DE — **ECC Room 2**			
Details for poster session please find at the end of this overview	**CEAS-2007-279** **EPMA - European Postgraduate Master in Aeronautical Engineering** D. Scholz, Hamburg University of Applied Sciences, Dept. of Automotive and Aeronautical Engineering, DE	**CEAS-2007-280** **Education, Projects and other Aerospace Activities on Brno University of Technology (Czech Rep.)** J. Hlinka; A. Pistek; Brno University of Technology, Institute of Aerospace Engineering, CZ	**CEAS-2007-281** **An Implementation of an Aircraft Flight Mechanics Model for Flight Control Law Studies** L. Cruz, EMBRAER – Empresa Brasileira de Aeronáutica, BR; K. Kienitz, Instituto Tecnológico de Aeronáutica, BR	**CEAS-2007-282** **IFSYS - A TU Berlin UAV Student Project** A. Hoffmann; F. Schindler; R. Luckner; TU Berlin, Institut für Luft- und Raumfahrt, DE	**CEAS-2007-283** **A Strategy for Management and Leadership Training for the European Defence Community** H. Heumann, CONSULTUM, DE	**CEAS-2007-284** **Information Management vs. Education and Training: CIRA, Italian Aerospace Research Centre, Expertise and Future Developments** F. Diozzi; R. Sannino; CIRA, IT
Poster Session 5	**Space Transportation 1** — Chair: M.H. Obersteiner, Astrium SPACE Transportation, DE — **ECC Room 3**		**Space Transportation 2** — Chair: R. Janovsky, OHB-Technology, DE — **ECC Room 3**			
Details for poster session please find at the end of this overview	**CEAS-2007-285** **Space Transportation Systems – Demand / Market Analysis** Ch. Gritzner, German Aerospace Center - Space Agency, DE; M. Obersteiner, Astrium Space Transportation, DE	**CEAS-2007-286** **Space Transportation Systems – System Concepts** J. Kauffmann, ESA, FR	**CEAS-2007-287** **Space Transportation Systems - Propulsion, Structures & Subsystems** R. Lo[1]; H. Adirim[1]; W. Zinner, Astrium Space Transportation, DE; R. Pernpeintner, MT-Aerospace, DE; [1]AI: Aerospace Institute, DE	**CEAS-2007-288** **Space Transportation Systems – Missions, Operations, and Ground Infrastructure** O. Kalden, Vega IT, DE; M.H. Gräßlin, Universität Stuttgart, DE	**CEAS-2007-289** **Development and Transportation Costs of Space Launch Systems** D.E. Koelle, TCS-TransCostSystems, DE; R. Janovsky, OHB-System AG, DE	**CEAS-2007-290** **Survey of Agency Programmes and Budgets Dedicated to Demonstration and Development Available for German Space Industry** R. Pernpeintner, MT-Aerospace AG, DE; D. Sygulla, MT Aerospace AG, DE
Poster Session 6	**Space Propulsion II** — Chair: O. Haidn, DLR Lampoldshausen, DE — **ECC Room 1**		**Aero-Engine Components: Compressors III** — Chair: A. Kühhorn, BTU Cottbus, DE — **ECC Room 1**			
Details for poster session please find at the end of this overview	**CEAS-2007-291** **Challenges of Test Facilities for Space Propulsion** K. Schäfer[1]; G. Krühsel[1]; V. Schmidt[1]; H. Zimmermann, German Aerospace Center, Insitute of Space Propulsion, DE; [1]German Aerospace Center, Institute of Space Propulsion, DE	**CEAS-2007-292** **Multidisciplinary Simulation at the Ariane 5 Nozzle Section** J. Bartolome Calvo; H. Lüdeke; DLR (German Aerospace Center), DE	**CEAS-2007-293** **Aerodynamic Technology Integration on the TP400 and E3E Core Compressors** V. Gümmer; R. Digele; T. Gietl; Rolls-Royce Deutschland Ltd. & Co. KG, DE	**CEAS-2007-294** **Multi Objective Optimization of a Fan Blade Using an Advanced Parameterization Method** M. N´ Diaye[1]; G. Grondin[1]; V. Kelner, University of Liège, BE; P. Ferrand, LMFA, FR; S. Moreau, VALEO Motors and Actuators, FR; [1]Fluorem SAS, FR		**CEAS-2007-296** **Hypersonic Nozzle Flow Analysis Using Equilibrium Chemistry Model** I. Mahmood; M. Bashir; S. Zahir; M. Khan; NESCOM, PK

Wednesday, 12th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Objectives of the Bologna Process and Effects on Aerospace Engineer Education**

Speaker: J. Steinbach, TU Berlin, DE; Discussion with: S. Pantelakis, University Patras, GR; F. Schmith, Lufthansa Technik, DE; P. Greisler, BMBF, DE

Moderator: J.-M. Wiarda, DIE ZEIT, DE

15:10 – 15:50	15:50 – 16:10	16:10 – 16:30	16:50 – 17:10	17:10 – 17:30	17:30 – 17:50	17:50 – 18:10
Poster Session 7	**Development Perspectives for Civil Aviation (Bauhaus Luftfahrt)** Chair: J. van Toor, EADS, DE — **Room Paris**		**UAS** Chair: A. Schöttl, MBDA, DE — **Room Paris**			
Details for poster session please find at the end of this overview	**CEAS-2007-297** **Implication of Ultra High Bypass Engines on Aircraft Design Features and Mission** A. Seitz; S. Donnerhack; J. Seifert; Bauhaus Luftfahrt e.V., DE	**CEAS-2007-298** **Perspectives of Vertical / Short Take Off and Landing in Commercial Aviation** C. Gologan; C. Heister; C. Kelders; A. Kuhlmann; J. Seifert; Bauhaus Luftfahrt e.V., DE	**CEAS-2007-299** **Certification of "Small" UAV Systems** C. Battaglia[1]; R. Querzoli[1]; A. Grasso[2]; G. Orsini[2]; [1]Alenia Aeronautica S.p.A., IT; [2]Ministry of Defence, D.G.A.A., IT	**CEAS-2007-300** **An Efficient Approach to GPS/INS Integrity Monitoring** J. Wendel[1]; J. Dambeck[1]; G. Herbold[1]; S. Kiesel[2]; O. Meister[2]; R. Mönikes[2]; [1]MBDA Germany, DE; [2]University of Karlsruhe, DE	**CEAS-2007-301** **Flight Control for Micro Aerial Vehicles Using a Modular Neural Network Approach** T. Krüger[1]; L. Krüger, Mavionics GmbH, DE; A. Kuhn, Andata Development Technologies, AT; J. Axmann, Volkswagen AG, DE; P. Vörsmann[1]; [1]Institut für Luft- und Raumfahrtsysteme - TU-Braunschweig, DE	**CEAS-2007-302** **Plasma Flyer - The First MiniUAV with Plasma Flow Control** B. Göksel, Electrofluidsystems Ltd. Holding, DE
Poster Session 8	**Launcher** Chair: A. Juhls, Astrium SPACE Transportation GmbH, DE — **Estrelsaal A**		**Aircraft Concepts - Future Projects** Chair: F. Jouaillec, Aerospace Valley, FR — **Estrelsaal A**			
Details for poster session please find at the end of this overview	**CEAS-2007-303** **History and Lessons Learnt from the Development of Mechanical Systems for Different Launch Vehicles** V. Gómez-Molinero, EADS CASA Espacio, ES	**CEAS-2007-304** **FLACON: Future high-altitude Flight - an attractive commercial niche?** J. Starke, Astrium, DE; J.-P. Belmont, DE; J. Longo, DE; Ph. Novelli, DE; W. Kordulla, DE	**CEAS-2007-305** **Estimating Modification Efforts for New Aircraft Development Projects** C. Manz, HTWG Konstanz, University of Applied Sciences, DE	**CEAS-2007-306** **Aerodynamic Analysis and Design of a Future Air-speed Transit Flying Over the Nonplanar Ground Surface** J. Cho; J. Jeonghyun Cho; Hanyang University, KR	**CEAS-2007-307** **The Principles of the Constant 'g' Stability System** D. Reid, Aquaduckt Aviation, NZ	**CEAS-2007-308** **Configuration Design of a Roadable Aircraft Fixed a Ring Wing** M. Nakajima; Y. Nishimiya; H. Kikukawa; Kanazawa Institute of Technology, JP
Towards Climate-optimized Aviation – The Challenge Chair: U. Schumann, DLR Oberpfaffenhofen, DE — ***Workshop*** — **ECC Room 4**			**Towards Climate-optimized Aviation – The Response** Chair: U. Schumann, DLR Oberpfaffenhofen, DE — ***Workshop*** — **ECC Room 4**			
Introduction Joachim Szodruch, DLR, DE **Global Climate Change - a Challenge for Aviation** Ulrike Lohmann, ETH Zürich, CH **Climate Impact of Aviation: Issues and Present Assessment** Ulrich Schumann, DLR Oberpfaffenhofen, DE **Climate Impact of Aviation: Atmospheric Science Progress and Uncertainties** David Lee, Univ. Manchester, GB			**ACARE Goals and DLR Contributions for Reduction of Aviation Climate Impact** Cord Rossow, DLR Braunschweig, DE **Aircraft for Reduced Impact on Climate - How Aircraft Design can Contribute to Mitigating Global Warming** Regina Egelhofer, TU Munich, DE **Engine Emissions Reduction Potential** Norbert Arndt, Rolls-Royce Germany, DE **Conclusions** Ulrich Schumann, DLR Oberpfaffenhofen, DE			

Wednesday, 12th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Objectives of the Bologna Process and Effects on Aerospace Engineer Education**

Speaker: J. Steinbach, TU Berlin, DE; Discussion with: S. Pantelakis, University Patras, GR; F. Schmith, Lufthansa Technik, DE; P. Greisler, BMBF, DE

Moderator: J.-M. Wiarda, DIE ZEIT, DE

15:10 – 15:50	15:50 – 16:10	16:10 – 16:30	16:50 – 17:10	17:10 – 17:30	17:30 – 17:50	17:50 – 18:10
Poster Session 9	**Mechanical Architecture, Design and Engineering 3** SSMMT **Estrelsaal C1** Chair: N. Gualtieri, Thales Alenia Space, IT		**Mechanical Architecture, Design and Engineering 4** SSMMT **Estrelsaal C1** Chair: N. Gualtieri, Thales Alenia Space, IT			
Details for poster session please find at the end of this overview	**CEAS-2007-309** **Development of a Dimensionally Stable CFRP Structure for Supporting Optical Instruments in a Laser Communication Device** A. Di Carlo; R. Usinger; Oerlikon Space AG, CH	**CEAS-2007-310** **Development of a Dimensionally Stable Lightweight Structure for the LISA Pathfinder Science Module** HP. Gröbelbauer; M. Heer; Oerlikon Space AG, CH	**CEAS-2007-311** **A Hierarchical Approach for the Buckling Analysis of the Vega 1/2 Interstage** E. Jansen[1]; J. Wijker, Dutch Space BV, NL; J. Arbocz[1]; [1]Delft University of Technology, Faculty of Aerospace Engineering, NL	**CEAS-2007-312** **The Primary and Secondary Structures of ALADIN** C. Kaiser[1]; C. Widani[1]; K. Härtel[1]; P. Haberler[1]; O. Lecrenier, EADS Astrium SAS, DE; G. Labruyere, ESTEC/ESA, DE; [1]Kayser-Threde GmbH, DE	**CEAS-2007-313** **Efficient Structural-Thermal-Optical Performance Analysis Approach** B. Messerschmidt; B. Specht; EADS Astrium, DE	
Poster Session 10	**Composite Structures 3** SSMMT **Estrelsaal C3** Chair: H. Baier, TU München, DE		**Stochastic Analysis** SSMMT **Estrelsaal C3** Chair: J.N. Bricout, CNES, FR			
Details for poster session please find at the end of this overview	**CEAS-2007-315** **Polymerisation of Composite Structures in Free Space Environment** G. Nechitailo, Institute of Biochemical Physics, Russian Academy of Science, RU; A. Kondyurin, University of Sydney, AU	**CEAS-2007-316** **CESIC® - A Mature Technology for Space Applications** M.R. Kroedel, ECM, DE	**CEAS-2007-317** **Probabilistic Methods Applied to Fracture Control of Spaceflight Structures** G. Sinnema[1]; C. Mattrand, IFMA, French Institute of Advanced Mechanics, FR; F. Novo[1]; [1]European Space Agency, NL	**CEAS-2007-318** **PLEIADES HR SATELLITE - Mechanical and Thermal Architecture** V. Albouys, CNES, FR; P. Corberand[1]; L. Larue[1]; S. André[2]; A. Soler[2]; [1]EADS Astrium, FR; [2]Thales Alenia Space, FR	**CEAS-2007-319** **Identification of Numerical Modelling Uncertainty Based on Dynamic Fuzzy Finite Element Analysis** D. Moens; M. De Munck; D. Vandepitte; K.U.Leuven, Department of Mechanical Engineering, BE	**CEAS-2007-320** **Stochastic Simulation for the Robust Design of Space Optical Instruments** Lucarelli[1]; C. Mottl, Technische Universität Berlin, DE; A. Weber, Technische Universität Dresden, DE; S. W. Konrad[1]; [1]EADS Astrium GmbH, DE
	Short Course 7 **ECC Room 5** Chair: TBD		**Short Course 8** **ECC Room 5** Chair: TBD			

Short Course Aircraft Design
Details are be published on www.ceas2007.org

Thursday, 13th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Space Technology Forum**

with CEOs of EADS Satellites, EADS Space Transportation, AAS, OHB and SSTL

Moderator: C. Stavrinidis, ESA/ESTEC, NL

Air Traffic Management 1

ECC Hall C

Chair: A. Geisler, Österreichische Forschungsförderungsgesellschaft, AT

09:40 – 10:00

CEAS-2007-321
The Air Traffic Management System for 2050: Virtual - Global - Automated
M. Brochard, EUROCONTROL, FR

10:00 – 10:20

CEAS-2007-322
EMMA2 - European Airport Movement Management by A-SMGCS, Part 2
M. Roeder, DLR Institute of Flight Guidance, DE

10:20 – 10:40

CEAS-2007-323
Augmented Reality Technology for Control Tower - Analysis of Applicability Based on the Field Study
E. Pinska, EUROCONTROL Experimental Centre, FR; C. Tijus, Université Paris, Laboratoire Cognition & Usages, FR

10:40 – 11:00

CEAS-2007-324
Reliable Traffic Scenarios for Very Light Jets and their Impact onto the Air Traffic Control System
G. Naumann; T. Guenther; H. Fricke; Dresden University of Technology, Chair of Air Transport Technology and Logistics, DE

Flight Mechanics: Handling Qualities

ECC Hall D

Chair: H.-C. Oelker, EADS Military Air Systems, DE

09:40 – 10:00

CEAS-2007-329
Aircraft Flying Qualities and Flight Safety
A. Efremov; A. Ogloblin; A. Koshelenko; Moscow aviation institute, RU

10:00 – 10:20

CEAS-2007-330
Optimizing Motion Cueing for Research Flight Simulation
L. Fucke; R. Luckener; TU Berlin, Institut für Luft- und Raumfahrt, DE

10:20 – 10:40

CEAS-2007-331
Fine-tuning Handling Qualities on a High-performance Aircraft: Maximising Roll Acceleration While Avoiding Roll Ratchet
M. Hanel, EADS Deutschland GmbH, DE; S. Fallon, BAE Systems Plc., DE

10:40 – 11:00

CEAS-2007-332
A Method for Investigation of Pilot-vehicle System Dynamics in Wake Vortex Encounters
A. Schönfeld[1]; R. Luckner[1]; A.V. Efremov, Moscow Aviation Institute, RU;
[1]ILR, Technical University of Berlin, DE

Advanced Technologies to Optimize Aircraft Availability & Operability – 1

STS

Estrelsaal B

Chair: M. Worsfold, GE Aviation Systems, GB

09:40 – 10:00

CEAS-2007-337
On-board Health Assessment of an Electro-mechanical Actuator Using Wavelet Features
J. Schaab, TU Darmstadt, DE; M. Harrington, GE Aviation, Bishops Cleeve, Cheltenham, GB; U. Klingauf, TU-Darmstadt, DE

10:00 – 10:20

CEAS-2007-338
Knowledge Space Model - Human Factors and Operability Concepts in the System of Aviation Industry
R. Morrison; P. Grommes; N. McDonald; Trinity College Dublin, School of Psychology, IE

10:20 – 10:40

CEAS-2007-339
Hydraulic Actuation Loop Degradation Diagnosis and Prognosis
E. Diez-Lledó[1]; J. Aguilar-Martin[1]; J.-R. Massé, Hispano-Suiza , Groupe Safran, FR; A. Sif, Teuchos , Groupe Safran, FR; E. Griful, ETSEIAT-UPC, ES;
[1]LAAS-CNRS, FR

10:40 – 11:00

CEAS-2007-340
Landing Gear Health Monitoring
A. Mortimore, Airbus, GB

Air Traffic Management 2

ECC Hall C

Chair: M. Schnell, DLR Oberpfaffenhofen, DE

11:20 – 11:40

CEAS-2007-325
ANASTASIA : Airborne New and Advanced Satellites Techniques and Technologies in a System Integrated Approach
J.Y. Catros, THALES Avionics, FR

11:40 – 12:00

CEAS-2007-326
NEWSKY - Networking the Sky for Aeronautical Communications
F. Schreckenbach; M. Schnell; S. Scalise; German Aerospace Center (DLR), Institute of Communications and Navigation, DE

12:00 – 12:20

CEAS-2007-327
A Generic Platform for Building Air Traffic Environmental Internet Services
J. Weggemans; J. van Weert; National Aerospace Laboratory NLR, NL

12:20 – 12:40

CEAS-2007-328
Newsky – Novel Simulation Concepts for Future Air Traffic
T. Gräupl; C.H. Rokitansky; M. Ehammer; University of Salzburg, AT

Advanced Wind Tunnel Testing

STS

ECC Hall D

Chair: J.W. Kooi, German-Dutch Wind Tunnels, NL

11:20 – 11:40

CEAS-2007-333
Noise Source Localization in Closed Test Sections With Microphone Arrays
A. Henning, DLR, DE; L. Koop, DLR, DE; P. Sijtsma[1]; S. Oerlemans[1];
[1]NLR, NL

11:40 – 12:00

CEAS-2007-334
Benchmark Tests of the Pressure Sensitive Paint Systems Developed within the European Windtunnel Association (EWA)
D. Hurst, Aircraft Research Association, GB; A. Davies, BAE Systems, GB; A. Auletta, CIRA, Italian Centre for Aerospace Research, IT; U. Henne, German Aerospace Center (DLR), DE; R. van Schinkel, DNW, NL; M.-C. Merienne, ONERA, FR; V. van der Haegen, VKI, BE

12:00 – 12:20

CEAS-2007-335
Development of Remote Controls for Movable Surfaces of Wind Tunnel Models
J. van Twisk, NLR, NL

12:20 – 12:40

CEAS-2007-336
Benchmark Testing of the Model Deformation Measurement Systems Developed within the European Windtunnel Association (EWA).
D. Hurst, Aircraft Research Association, GB; H. Frahnert, DLR, Göttingen, DE; R. van Schinkel, DNW, NL; H. Quix, ETW, DE; Y. Le Sant, ONERA, DAFE, FR

Advanced Technologies to Optimize Aircraft Availability & Operability – 2

STS

Estrelsaal B

Chair: M. Worsfold, GE Aviation Systems, GB

11:20 – 11:40

CEAS-2007-341
Condition Based Operational Risk Assessment An Innovative Approach to Improve Fleet and Aircraft Operability: Conditional View
M. Buderath, EADS-Military Air Systems, DE; A. Arnaiz[1]; L. Susperregi[1];
[1]Fundación Tekniker, ES

11:40 – 12:00

CEAS-2007-342
Condition-Based Operational Risk Assessment - An Innovative Approach to Improve Fleet and Aircraft Operability: Operational Risk
A. Schirrmann, EADS Deutschland GmbH, Innovation Works, DE

12:00 – 12:20

CEAS-2007-343
Condition based Operational Risk Assessment. An Innovative Approach to Improve Fleet And Aircraft Operability, Part 3: Maintenance Planning
P. Papachatzakis; N. Papakostas; G. Chryssolouris; University Patras, Dept. of Machanical Engineering and Aeronautics, GR

12:20 – 12:40

CEAS-2007-344
Cost Benefit Analysis of a Health Management System
H. Fromm; S. Heck; M. Buderath; EADS Deutschland GmbH, DE

08:30-09:30 **Space Technology Forum**
with CEOs of EADS Satellites, EADS Space Transportation, AAS, OHB and SSTL
Moderator: C. Stavrinidis, ESA/ESTEC, NL

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Aircraft Composite Structures — Chair: S. Pantelakis, University of Patras, GR — STS — **ECC Room 2**			
CEAS-2007-345 **ALCAS - Advanced Low Cost Aircraft Structures** H. Bommer, EADS Deutschland, DE; D. Phipps, Airbus, GB	**CEAS-2007-346** **ALCAS Centre Wing Box – Lower Cover Low Cost Resin Infusion Stringer Manufacturing** M. Kleineberg, DLR, DE; M. Schradick, Airbus, DE; E. Sperlich, ZIM, DE	**CEAS-2007-347** **Crashworthiness of Composite Aircraft Structures** G. Labeas, University of Patras, GR	**CEAS-2007-348** **New Challenges in Structural Design and Analysis of Composite Structures** C. Petiot; P. Lefebure; S. Chatel; C. Duval; EADS France, FR
Space Systems: Technology Aspects — Chair: M. Sölter, Astrium GmbH, DE — **ECC Room 3**			
CEAS-2007-353 **The Advanced ISS Air Monitor ANITA - In Orbit Operations** T. Stuffler[1]; G. Tan, ESA, NL; A. Honne[2]; H. Mosebach[1]; D. Kampf[1]; H. Odegard[2]; N. Henn, DLR, DE; [1]Kayser-Threde GmbH, DE; [2]SINTEF, NO	**CEAS-2007-354** **Structural Vibrations Induced by HVI - Application to the GAIA Spacecraft** J.B. Bernaudin[1]; J.-B. Vergniaud[1]; M. Guyot[1]; M. Lambert, ESA, NL; F. Schafer[2]; S. Ryan[2]; S. Hiermaier[2]; E. Taylor, Open University, GB; [1]EADS Astrium, FR; [2]EMI, DE	**CEAS-2007-355** **Orbit Error Estimations for ESA's Collision Risk Prediction Service** H. Krag[1]; H. Klinkrad[1]; J.-R. Alarcón-Rodríguez, GMV S. A., ES; [1]ESA/ESOC, DE	**CEAS-2007-356** *Reinhard-Furrer-Award for his dissertation with the topic:* **Modeling of Sodium-Potassium Droplets as a Contribution to the Orbital Object Population** C. Wiedemann, TU Braunschweig, DE
Aero-Engine Control and Measurement Techniques — Chair: S. Staudacher, Universität Stuttgart, DE — **ECC Room 1**			
CEAS-2007-361 **Application of Fuzzy-Logic Controller in Gas Turbine Speed Control and Surge Control on Transient Performance** A.A. Torghabeh; A.M. Tousi; Amirkabir University, IR	**CEAS-2007-362** **Dynamic Simulation and Control System Modelling of Solid Oxide Fuel Cell Hybrids** F. Kroll; A. Nielsen; S. Staudacher; Institut für Luftfahrtantriebe, Universität Stuttgart, DE	**CEAS-2007-363** **Installation Effects Characterisation of a Typical High Bypass Ratio Engine Using Numerical Simulations and Particle Image Velocimetry Part 1: Experimental Setup and Wind Tunnel Improvements** J. Julliard, Snecma, FR; O. Piccin, ONERA GMT, FR; R. Davy, ONERA DSNA, FR	**CEAS-2007-364** *Winfried Bierhals-Foundation-Award for his diploma thesis with the topic:* **Application of the Acoustic Emission Analysis to Higly Thermally Loaded Combustor Shielding Plates** F. Meinl, University of Karlsruhe, Institut für Thermische Turbomaschinen, DE

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
Aircraft Composite Structures / Structures - Analysis 1 — Chair: R. Kroyer, MBDA Deutschland, DE — **ECC Room 2**			
CEAS-2007-349 **Experimental and Computational Studies of Mechanically Fastened Joints in Composite Aircraft Structures** C. McCarthy; M. McCarthy; University of Limerick, Dept. of Mechanical and Aeronautical Engineering, IE	**CEAS-2007-350** **Finite Element Unit Cell Based Strength Prediction of Stitched CFRP Laminates** H. Heß; N. Himmel; Institut für Verbundwerkstoffe (IVW) GmbH, DE	**CEAS-2007-351** *MT Aerospace Innovation-Award for his diploma thesis with the topic:* **Fracture Mechanics Analysis of Novel Non-rectangular Stiffening Concepts in Comparison to Conventionally Rectangular Stiffened Fuselage Structures** S. Kébreau, TU Braunschweig, DE	**CEAS-2007-352** **Innovative Approaches for Integration of Functions in Composite Sandwich Structures by the Example of Cabin Interior** D. Krause; M. Pein; T. Gumpinger; Hamburg University of Technology, DE
Reentry and Landing — Chair: D. Wilde, EADS Astrium, DE — **ECC Room 3**			
CEAS-2007-357 **Landing Pallet: a Crushable Mission to Mars** P. Palmieri, Thales Alenia Space, IT	**CEAS-2007-358** **The Hypersonic Drag Balloon Archimedes and Its Research and Testing Program** H.S. Griebel[1]; B. Häusler[1]; C. Mundt, Institute of Thermodynamics, UniBw München, DE; H. Rapp, Institute of Light Weight Structures, UniBw München, DE; H.J. Gudladt, Institute of Material Sciences, UniBw München, DE; [1]Institute of Space Technology, UniBw München, LRT9, DE	**CEAS-2007-359** **Landing Impact Simulation and Testing Approaches-Alcatel Alenia Space Experience** P.C. Marucchi-Chierro[1]; R. Riva, SOFITER SYSTEM ENGINEERING, IT; R. Ullio[1]; F. Quagliotti[1]; [1]Alcatel Alenia Space-I, IT	**CEAS-2007-360** **Re-entry Risk Assessment for Launchers - Development of the New SCARAB 3.1L** T. Lips[1]; B. Fritsche[1]; M. Homeister[1]; G. Koppenwallner[1]; H. Klinkrad, European Space Agency/ESOC, DE; M. Toussaint, European Space Agency/HQ, FR; [1]HTG, Hypersonic Technology Göttingen, DE
Hypersonic Propulsion Systems — Chair: J. von Wolfersdorf, Universität Stuttgart, DE — **ECC Room 1**			
CEAS-2007-365 **Recent Progress in Scramjet / Rocket based Combined Cycle Engines at JAXA, Kakuda Space Propulsion Center** S. Ueda; S. Sato; K. Itoh; K. Tani; S. Tomioka; T. Kanda; JAXA, Combined Propulsion Research Group, JP	**CEAS-2007-366** **Non Deterministic Analysis of a Scramjet Propulsion System** G. Schütte; S. Staudacher; Institute of Aircraft Propulsion Systems/University of Stuttgart, DE	**CEAS-2007-367** **Experimental Study of the Single Expansion Ramp Nozzle Flow Properties and its Interaction with the External Flow** C. Hirschen; A. Gülhan; German Aerospace Center (DLR), DE	**CEAS-2007-368** **Optimizing Aircraft Maintenance Efficiency in Global Start-up Support Projects** S. Hollmeier, Lufthansa Technik, DE

Thursday, 13th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Space Technology Forum**
with CEOs of EADS Satellites, EADS Space Transportation, AAS, OHB and SSTL

Moderator: C. Stavrinidis, ESA/ESTEC, NL

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00

UAS - Sensors and Signal Processing — Room Paris

Chair: G. Trommer, Universität Karlsruhe, DE

CEAS-2007-369
Optimal Manoeuvre Change-detection of Agile Aerial Systems
A. Schöttl, LFK – Lenkflugkörpersysteme GmbH, DE

CEAS-2007-370
Implementation of a Sense and Avoid System for Unmanned Aerial Vehicles
J.-B. Park; P. Vörsmann; Institute of Aerospace Systems, TU Braunschweig, DE

CEAS-2007-371
Sensor Suites for Future Autonomous Unmanned Aerial Vehicles
T. Rapp; D. Hoffmann; EADS Deutschland GmbH, DE

CEAS-2007-372
Stereo-based Obstacle Mapping from a Helicopter Platform
F. Andert; L. Goormann; Deutsches Zentrum für Luft- und Raumfahrt, DE

Aerodynamics 2 — Estrelsaal A

Chair: H.-P. Kreplin, DLR Göttingen, DE

CEAS-2007-377
Numerical Simulation of the Flow around Circulation Control Airfoils
K.-C. Pfingsten; C. Jensch; K.W. Körber; R. Radespiel; TU Braunschweig, Institute of Fluid Mechanics, DE

CEAS-2007-378
Airbus-Awards of Airbus Deutschland GmbH for his dissertation with the topic:
Aerodynamic Benefits of Pulsed Blowing Applied to High-lift Airfoils
R. Petz, TU Berlin, DE

CEAS-2007-379
Analysis of Plume Impact on Launch Pad During Lift Off
R. Sala[1]; M. Galeotta[1]; A. Veneziani, Politecnico di Milano, IT; [1]Carlo Gavazzi Space, IT

CEAS-2007-380
DLR-Technology-Award for his studies thesis with the topic:
Detection of the Transition Point on the Wing of a Glider in Free Flight with the Help of a Thermography System
A. Wagner, TU Dresden, DE

Forum: Space Technology Perspectives — ECC Room 4

Coordinator: C. Stavrinidis, ESA/ESTEC, NL

Forum and Discussion with

CTOs of EADS Astrium, EADS Space Transportation, AAS, OHB and SSTL

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40

Flight Control - Actuation and Sensors — Room Paris

Chair: D. Scholz, HAW Hamburg, DE

CEAS-2007-373
Advanced GPS/INS Integration for Autonomous Mini and Micro Aerial Vehicles and Scientific Payload Applications
A. Heindorf[1]; T. Martin[1]; M. Buschmann, Mavionics GmbH, DE; P. Vörsmann[1]; [1]Technical University of Braunschweig, Institute of Aerospace Systems, DE

CEAS-2007-374
The Power Electronic Environment on More Electric Aircrafts A Way to Improve Signal Integrity by means of Shielded Cables
R. Tiedemann, Rolls-Royce Deutschland Ltd. & Co. KG, DE

CEAS-2007-375
Position and Load Control for Hybrid Primary Flight Controls with Electromechanical and Electrohydraulic Actuators
O. Cochoy; U.B. Carl; F. Thielecke; Hamburg University of Technology, DE

CEAS-2007-376
Anforderungen an Steuerungen in Segelflugzeugen und Motorseglern mit Servo-Übertragungs- und Regelungselementen
A. Gäb; J. Nowack; W. Alles; RWTH Aachen, DE

Presentation in German

Cabin architecture — Estrelsaal A

Chair: L. Jonson, SAS, SE

CEAS-2007-381
Airbus Innovative Cabin Design
K.D. Kricke; I. Wuggetzer; Airbus, DE

CEAS-2007-382
Electrical Passenger Door Concepts
W. Buchs; J. Margraf; Eurocopter Deutschland, DE

CEAS-2007-383
Modelling of Passenger Movement Behaviour on Long-haul Flights
K. Ploetner, Institute of Aeronautical Engineering - TU München, DE

CEAS-2007-384
RODON®'s Diagnostic Methods for New Generic System BITE Architectures
W. Seibold[1]; D. Geiter, Airbus, DE; B. Kadmiry[1]; [1]Soerman Information & Media AB, DE

Micro - Nano Technology Developments for Space Applications — ECC Room 4

Coordinator: E. Kircher, ESA/ESTEC, NL

11:20 – 11:40 **ESA-CTB Micro Nano Technology Dossier: Roadmaps and Perspectives for Space**
O. Vendier, TAS, FR , for CTB MNT Working Group

11:40 – 12:00 **MEMS Reliability for Space**
A. Dommann, CSEM, CH

12:00 – 12:15 **Development of a MEMS Rate Sensor for Space Applications**
B. Olivier, D. Durrant , SEA, GB

12:15 – 12:30 **MEMS 3D-System-in-Package - High Performance Air and Space Components**
J. Bergman, Angstrom Aerospace, SE

12:30 – 12:45 **MNT in the PRISMA Mission**
T.A. Grönland, Nanospace, SE

12:45 – 13:00 **NEOMEX - A Strawman Mission for MNT in Space**
J. Köhler, ESA-ESTEC, NL

Thursday, 13th September 2007

Plenary Session in **ECC Hall C**

08:30-09:30 **Space Technology Forum**
with CEOs of EADS Satellites, EADS Space Transportation, AAS, OHB and SSTL

Moderator: C. Stavrinidis, ESA/ESTEC, NL

09:40 – 10:00	10:00 – 10:20	10:20 – 10:40	10:40 – 11:00
Mechanical Architecture, Design and Engineering 5 SSMMT — Estrelsaal C1 Chair: P. Mourey, CNES, FR			
CEAS-2007-393 **AlphaBus, the European High Capacity Platform for SatComs** S. Massier[1]; G. Lubrano[1]; P. Belliol, EADS Astrium, FR; A. Obst, ESA/ESTEC, NL; L. Petitjean, CNES, FR; [1]Thales Alenia Space, FR	**CEAS-2007-394** **Thermal Management Issues for Multifunctional Solar Arrays** J.A. Foster; G.S. Aglietti; University of Southampton, School of Engineering Sciences, GB	**CEAS-2007-395** **Innovation in Structures Engineering for Future Launch Vehicles - Facing the 21st Century Challenges** J. Martin, EADS CASA Espacio, ES	**CEAS-2007-396** *IABG-Foundation-Award for his diploma thesis with the topic:* **Study and Employment of the Monte Carlo Simulation for the Robust Design of Space Structures** A. Weber, TU Dresden, DE
Materials and Active Structures 1 SSMMT — Estrelsaal C3 Chair: H. Baier, TU München, DE			
CEAS-2007-401 **High-Temperature Oxidation of SSIC in Plasma Flows** T. Laux, German Aerospace Center, DE	**CEAS-2007-402** **Nonlinear Modeling and Active Flatness Control of Membrane Structures** X. Wang; Y.-R. Hu; W. Zheng; C. Sulik; Y. Shen; Canadian Space Agency, CA	**CEAS-2007-403** **Strength Aspects for the Design of ZERODUR Glass Ceramics Structures** S. Lucarelli[1]; P. Gath[1]; P. Hartmann[2]; K. Nattermann[2]; T. Doehring[2]; [1]EADS Astrium GmbH, DE; [2]Schott AG, DE	**CEAS-2007-404** **In-Orbit Monitoring and Re-Adjustment of Satellite Structures** S. Rapp; H. Baier; TU Muenchen, DE
Short Course 9 — ECC Room 5 Chair: TBD			

11:20 – 11:40	11:40 – 12:00	12:00 – 12:20	12:20 – 12:40
Structural Dynamics & Microvibrations 1 SSMMT — Estrelsaal C1 Chair: M. Sinapius, DLR Braunschweig, DE			
CEAS-2007-397 **Micro-vibration Measurements on Thermally Loaded Multi-layer Insulation Samples** A. Grillenbeck[1]; G. Deutsch[1]; B. Pouilloux, CNES, FR; [1]IABG, DE	**CEAS-2007-398** **A Process with Quantified Accuracy for Predicting Electronic Equipment Vibration Response** R. Amy[1]; G.S. Aglietti[1]; G. Richardson, Surrey Satellite Technology Limited, GB; [1]School of engineering sciences, University of Southampton, GB	**CEAS-2007-399** **Aeroelastic Prediction and Validation Methods for USV1** M. Belardo; L. Di Palma; M. Pecora; CIRA Scpa, IT	**CEAS-2007-400** **Local Damping Identification from Spacecraft Sine Test** G. Ladurée[1]; A. Carpine[1]; R. Redondo, CNES, FR; [1]Thales Alenia Space, FR
Mechanical Testing 1 SSMMT — Estrelsaal C3 Chair: J.B. Bernaudin, EADS Astrium, FR			
CEAS-2007-405 **Mechancial Qualification of the Herschel Satellite** W. Teichert, European Testing Services, NL; M. v. Alberti, EADS Astrium, DE; Y. Roche, Thales Alenia Space, FR; A. Schnorhk, European Space Agency, NL	**CEAS-2007-406** **Optical Methods for Non Contact Measurements of Membranes for Space Structures** S. Roose[1]; Y. Stockman[1]; T. Kuhn[2]; H. Baier[2]; S. Langlois, ESTEC, European Space Agency, NL; G. Casarosa, AOES Group BV, NL; [1]Centre Spatial de Liège, BE; [2]Lehrstuhl für Leichtbau, Technische Universität München, DE	**CEAS-2007-407** **New Mechanical Test Data Handling Concept at IABG** A. Grillenbeck; S. Dillinger; S. Prause; IABG, DE	**CEAS-2007-408** **SmosPIm Mechanical Qualification Tests** M.A. Gil; J.M. Bajo; M.A. Plaza; EADS CASA Espacio, ES
Short Course 10 — ECC Room 5 Chair: TBD			

Short Course Aircraft Design
Details are be published on www.ceas2007.org

Thursday, 13th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Towards the Green Aviation**

Requestet Speakers: A. Garcia, Airbus, FR; R. Parker, Rolls-Royce, GB; F. Beyer, Liebherr-Aerospace, DE

Chair: F. Abbink, NLR, NL

15:10 – 15:30	15:30 – 15:50	15:50 – 16:10	16:10 – 16:30
Air Transport Research and Technology — Chair: J. Reichmuth, DLR Köln / RWTH Aachen, DE — **ECC Hall C**			
CEAS-2007-409 **Thinking Out of the Box** A. de Graaff, AD Cuenta, NL	**CEAS-2007-410** **Multiobjective Particle Swarm Optimization Technique as an Effective Tool for Aircraft Requirements Analysis** L. Blasi; S. Barbato; L. Iuspa; Second University of Naples, Department of Aerospace and Mechanical Engineering, IT	**CEAS-2007-411** **CELINA - Fuel Cell Application In A New Configured Aircraft** C. Schilo, Airbus, DE	**CEAS-2007-412** **Trajectory Optimization of a Solar Aircraft for Performance Improvement** G. Sachs[1]; J. Lenz[1]; H. Ross, IBR, DE; [1]Institute of Flight Mechanics and Flight Control of TU München, DE
Technologies for Highspeed Transport 1 — Chair: M. Mallet, Dassault Aviation, FR — STS — **ECC Hall D**			
	CEAS-2007-418 **Development of MDO Techniques for the Design of a SSBJ** M. Ravachol, Dassault Aviation, FR; K. Giannakoglou, NTUA, GR	**CEAS-2007-419** **The Challenges of an "Acceptable" Sonic Boom** F. Coulouvrat, CNRS, FR	**CEAS-2007-420** **Alternative Engine Technologies for Supersonic Propulsion** J. Julliard; P. Coat; Snecma, FR
Fault Detection in A/C Systems — Chair: F. Thielecke, DLR Braunschweig, DE — **Estrelsaal B**			
CEAS-2007-425 **Performance Degradation Analysis of Fault-Tolerant Aircraft Systems** C. Raksch; R. van Maanen; D. Rehage; F. Thielecke; U.B. Carl; Hamburg University of Technology, Institute of Aircraft Systems Engineering, DE	**CEAS-2007-426** **Fault Detection and Isolation of Actuator Failures for a Large Transport Aircraft** A. Varga, DLR - Oberpfaffenhofen, DE	**CEAS-2007-427** **Model-Based Failure Detection of a Trimmable Horizontal Stabilizer Actuator with Two Primary Load Paths** N. Wachendorf; U.B. Carl; F. Thielecke; Hamburg University of Technology, Institute of Aircraft Systems Engineering, DE	**CEAS-2007-428** **Predictive Maintenance in Avionics** P.-I. Maisonneuve[1]; S. Ghelam[1]; J.-P. Derain[1]; Z. Simeu Abazi, FR; [1]Eurocopter, FR

16:50 – 17:10	17:10 – 17:30	17:30 – 17:50	17:50 – 18:10
Industrial and Research Cooperations — Chair: S. Eelman, TU München, DE — **ECC Hall C**			
CEAS-2007-413 **EREA, the Association of European Research Establishments in Aeronautics** F. Abbink, NLR, NL; A. Junior, DLR, DE; U. Möller, DLR Büro Brüssel, BE	**CEAS-2007-414** **GARTEUR: Long Term R&T Collaboration in Europe** L. Vecchione; V. Puoti; CIRA, Italian Centre for Aerospace Research, IT	**CEAS-2007-415** **Aerospace Valley: The Cluster Effect Applied to the Aerospaec Industry in South Western France** F. Jouaillec, Aerospace Valley, FR	**CEAS-2007-416** **In-House Integration of Space Payloads: CNES Facilities and Activities in Progress** V. Dubourg; C. Escande; P. Agogué; O. Maes; CNES, FR
Technologies for Highspeed Transport 2 — Chair: M. Mallet, Dassault Aviation, FR — STS — **ECC Hall D**			
CEAS-2007-421 **Climate Impact of a Potential Supersonic Fleet** V. Grewe, DLR Oberpfaffenhofen, Institut für Physik der Atmosphäre, DE	**CEAS-2007-422** **Supersonic Laminar Flow Control Investigations within the Supertrac Project** D. Arnal, ONERA, FR	**CEAS-2007-423** **Automatic Shape Design for Low Boom and Low Drag High Speed Transport** V. Selmin, Alenia Aeronautica, IT	**CEAS-2007-424** **Solution of the Euler Equations for the Prediction of the Sonic Boom** A. Dervieux, INRIA, FR
Measurement Methods for Aerodynamics — Chair: H.-P. Kreplin, DLR, DE — **Estrelsaal B**			
CEAS-2007-429 **The TELFONA Pathfinder Wing for the Calibration of the ETW Wind Tunnel** G. Schrauf, Airbus, DE; K.H. Horstmann, DLR, DE	**CEAS-2007-430** **Stereo-PIV and Hot-Wire Investigations on Delta Wing with Sharp and Rounded Leading Edge** A. Furman; C. Breitsamter; Technische Universität München, Lehrstuhl für Aerodynamik, DE	**CEAS-2007-431** **Aerodynamic Optimization and Boundary Layer Control on Sailplane Wing Sections** L. Popelka, Academy of Sciences of the Czech Republic, Institute of Thermomechanics, CZ; M. Matejka[1]; N. Souckova[1]; [1]Czech Technical University in Prague, Faculty of Mechanical Engineering, CZ	**CEAS-2007-432** *Wolfgang Heilmann-Award of the MTU GmbH for his studies thesis with the topic:* **Background Oriented Schlieren - Möglichkeiten und Grenzen des Optischen Verfahrens zur Quantitativen Dichtegradientenbestimmung** T. Nafz; M. Ochs; H.-J. Bauer; Universität Karlsruhe, Institut für Thermische Strömungsmaschinen, DE Presentation in German

Thursday, 13th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Towards the Green Aviation**

Requestet Speakers: A. Garcia, Airbus, FR; R. Parker, Rolls-Royce, GB; F. Beyer, Liebherr-Aerospace, DE

Chair: F. Abbink, NLR, NL

15:10 – 15:30

Structures: Buckling — **ECC Room 2**

Chair: H. Voggenreiter, German Aerospace Center (DLR), DE

CEAS-2007-433
Buckling Analysis and Qualification Static Load Testing of VEGA Interstage 1/2 Structure
J. Tyrrell; J. Cremers; J. Wijker; Dutch Space B.V., NL

Galileo´s First Steps and Promisses — **ECC Room 3**

Chair: M. Meurer, DLR Oberpfaffenhofen, DE

CEAS-2007-441
Galileo Evolution: Enhanced Error Correction Strategies and Integrity Assessments
B. Belabbas[1]; P. Rémi, Technical University of Munich, Institute of Communications and Navigation, DE; M. Meurer[1];
[1]German Aerospace Center (DLR), Institute of Communications and Navigation, DE

Aero Engine Components, Economic Design, Manufacturing and Maintenance — **ECC Room 1**

Chair: R. Lederer, MTU Aero Engines, DE

CEAS-2007-450
Experimental and Numerical Investigations of the Mixing Flow in Turbofan Engines in the Sub-Idle Operating Range
S. Staudacher; B. Banzhaf; Universität Stuttgart, Institut für Luftfahrtantriebe, DE

15:30 – 15:50

CEAS-2007-434
Probabilistic Approach for Improved Buckling Knock-down Factors of CFRP Cylindrical Shells
R. Degenhardt[1]; A. Bethge[1]; A. Kling[1]; R. Zimmermann[1]; K. Rohwer[1]; H. Klein[1]; J. Tessmer[1]; A. Calvi, ESA/ESTEC, NL;
[1]DLR, DE

CEAS-2007-442
The GIOVE-A Mission - A Major Step Towards Galileo
B. kl. Schlarmann; M. Falcone; J. Hahn; M. Hollreiser; ESA/ESTEC, NL

CEAS-2007-453
Empowering Engine Engineers: Advancing the State-of-the-Art in Collaborative Multi-National Multidisciplinary Engine Design
E. Kesseler[1]; P. Arendsen[1]; M.H. van Houten[1]; R. Parchem[2]; B. Meissner[2]; M. Nagel[3]; J. Barner[3]; H. Wenzel, Engineous, DE;
[1]National Aerospace Laboratory, NL; [2]Rolls-Royce Deutschland, DE; [3]MTU Aero Engines, DE

15:50 – 16:10

CEAS-2007-435
Buckling of Multilayered Metal Composite Domes
J. Blachut; P. Smith; The University of Liverpool, Mechanical Engineering, GB

CEAS-2007-443
BayNavTech - Monitoring GNSS Performance for Demanding Applications
J. Vilzmann; M. Söllner; M. Kirchner; EADS Astrium GmbH, DE

CEAS-2007-454
Global Trends in the Industry of Commercial Aircraft Engine Maintenance
P. Schumacher, MTU Maintenance Berlin-Brandenburg GmbH, DE

16:10 – 16:30

CEAS-2007-436
Efficient Buckling Analysis of Stiffened Composite Airframe Parts
C. Mittelstedt, Airbus, DE

CEAS-2007-444
First Outdoor Positioning Results with Real Galileo Signals by Using the German Galileo Test and Development Environment - GATE
G. Heinrichs[1]; E. Löhnert[1]; E. Wittmann[1]; R. Kaniuth, University FAF Munich, DE;
[1]IfEN GmbH, DE

CEAS-2007-455
Market-oriented Blisk Manufacturing - A Challenge for Production Engineering
E. Bayer; M. Bußmann; MTU Aero Engines GmbH, DE

Presentation in German

16:50 – 17:10

Structures: Analysis 2 — **ECC Room 2**

Chair: H.-G. Reimerdes, RWTH Aachen, DE

CEAS-2007-437
FEA Approach for the Prediction of the Void's Effects on the Elastic Properties of Unidirectional Fiber Reinforced Composites
L. Mormile[1]; F. Romano[2]; A. Riccio[2]; L. Iuspa[1];
[1]Second University of Naples, IT; [2]CIRA, IT

Supersonic/Hypersonic Flow: Reentry — **ECC Room 3**

Chair: W. Kordulla, European Space Agency, NL

CEAS-2007-445
In Flight Aerodynamic Experiment for the Unmanned Space Vehicle FTB-1.
G.C. Rufolo; M. Marini; P. Roncioni; S. Borelli; CIRA, Italian Centre for Aerospace Research, IT

17:10 – 17:30

CEAS-2007-438
Postbuckling Mode Shapes of Composite Stiffened Fuselage Panels Incorporating Stochastic Variables
M. Lee[1]; D. Kelly[1]; A.C. Orifici, RMIT University, School of Aerospace, Mechanical & Manufacturing Engineering,, AU; R.S. Thomson, Cooperative Research Centre for Advanced Composite Structures Limited, AU;
[1]University of New South Wales, School of Mechanical and Manufacturing Engine, AU

CEAS-2007-446
Aero(thermo)dynamic CFD Analyses of the Pares Re-Entry Capsule Shape in Comparison to Recent Test Results
P. Noeding, EADS Astrium GmbH, DE; R. Molina, ESA-ESTEC, NL

17:30 – 17:50

CEAS-2007-439
FEM Simulation of the Inflicted Delamination to IMC Laminated Composites during Manufacturing Process
S. Khosoussi; M. Rezaei; A. Abedian; Sharif University of Technology, IR

CEAS-2007-447
Advanced Aerothermodynamic Analysis of SHEFEX I
T. Barth, DLR, DE

17:50 – 18:10

CEAS-2007-440
Finite Element Analysis of Superplastic Behavior of MMCs in Presence of Some Manufacturing Defects
A. Abedian; A. Barakati; Sharif University of Technology, IR

CEAS-2007-448
The Pre-X Lifting Body Computational Fluid Dynamics and Wind Tunnel Test Campaign
P. Baiocco[1]; S. Guedron[1]; J. Oswald[1]; D. Ponziani[1]; M. Dormieux[2]; E. Cosson[2]; J.-P. Tribot[3]; A. Bugeau[3];
[1]CNES, FR; [2]ASTRIUM SAS, FR; [3]Dassault Aviation, FR

Thursday, 13th September 2007

Plenary Session in **ECC Hall C**

14:00-15:00 **Towards the Green Aviation**

Requestet Speakers: A. Garcia, Airbus, FR; R. Parker, Rolls-Royce, GB; F. Beyer, Liebherr-Aerospace, DE

Chair: F. Abbink, NLR, NL

15:10 – 15:30	15:30 – 15:50	15:50 – 16:10	16:10 – 16:30
UAS - Unmanned Helicopters — Chair: F. Holzapfel, IABG mbH, DE — **Room Paris**			
CEAS-2007-457 **ARTIS - An Interdisciplinary Unmanned Rotorcraft Flight Test Demonstrator** J.S. Dittrich, DLR Institute of Flight Systems, DE	**CEAS-2007-458** **UAV VTOL Research Testbed 'SHARC'** O. Heinzinger; R. Arning; EADS Germany Innovation Works, DE	**CEAS-2007-459** **VTOL-MAV for Security and Rescue Operations with Enhanced Geo-Positioning Capabilities** R. Mönikes, University of Karlsruhe, Institute of Systems Optimization, DE; N. Frietsch[1]; O. Meister[1]; G.F. Trommer[1]; [1]University of Karlsruhe, DE	**CEAS-2007-460** **A Sequence and Supervisory Control System for Onboard Mission Management of an Unmanned Helicopter** F.M. Adolf, German Aerospace Center (DLR), Institute of Flight Systems, DE
Cabin Enviromental Control System Simulation and Test — Chair: K.-D. Kricke, Airbus, DE — **Estrelsaal A**			
CEAS-2007-465 **Stability of the Air Flow in a Two Aisle Cabin Model** M. Kühn; J. Bosbach; C. Wagner; German Aerospace Center, Institute of Aerodynamics and Flow Technology, DE	**CEAS-2007-466** **Dynamic Simulation of Innovative Aircraft Air Conditioning** C. Müller[1]; D. Scholz[1]; T. Giese, Airbus, DE; [1]Hamburg University of Applied Sciences, Dept. of Automotive and Aeronautical Engineering, DE	**CEAS-2007-467** **A Flexible Toolkit for the Design of Environmental Control System Architectures** M. Sielemann, DLR, Institute of Robotics and Mechatronics, DE; T. Giese[1]; B. Öhler[1]; M. Otter, DLR, DE; [1]Airbus, DE	**CEAS-2007-468** **The New Pressurised Fraunhofer Flight Test Facility Offered to the Scientific Cabin Environment Network** E. Mayer; G. Grün; R. Hellwig; A. Holm; Fraunhofer-Institut für Bauphysik, DE
New Technology for Earth Observation — Chair: K. Brieß, TU Berlin, DE — **ECC Room 4**			
CEAS-2007-473 **The Rubin Testbed for In-Orbit Verification of Micro- and Nanotechnologies** B. Ziegler[1]; B. Penné[1]; I. Kalnins, University of Applied Sciences Bremen, DE; F. Bruhn[2]; P. Nilsson[2]; [1]OHB Systems, DE; [2]Angstrom Aerospace Corporation, SE	**CEAS-2007-474** **Future Very High Resolution SAR & Optical Earth Observation Missions** B. Penné; C. Tobehn; M. Kassebom; S. Mahal; R. Greinacher; O. Preradovic; OHB-System AG, DE	**CEAS-2007-475** **EnMAP Satellite Bus - A Cost Efficient Platform for Advanced Earth Observation Missions** M. Kassebom[1]; B. Penné[1]; S. Mahal[2]; P. Fröhner, OHB-System AG, DE; R. Greinacher[2]; S. Hofer[3]; K.P. Förster[3]; T. Stuffler[3]; [1]OHB Systems, DE; [2]OHB-Systems, DE; [3]Kayser-Threde, DE	**CEAS-2007-476** **Security Systems for Future Satellite Operations** C. Tobehn[1]; B. Penné[1]; R. Rathje[1]; A. Weigl[1]; L. Hinsenkamp, DSI, DE; H. Michalik, IDA TU Braunschweig, DE; [1]OHB-System AG, DE

16:50 – 17:10	17:10 – 17:30	17:30 – 17:50	17:50 – 18:10
UAS - Autonomous Flight — Chair: U. Klingauf, TU Darmstadt, DE — **Room Paris**			
CEAS-2007-461 **GARTEUR FM AG14 - Autonomy in UAVs - A Collaborative Research Forum Overview** J.T. Platts, QinetiQ, GB	**CEAS-2007-462** **Development of an Autonomous Avoidance Algorithm for UAVs in General Airspace** J. van Tooren[1]; M. Heni, ATENA Engineering GmbH, DE; A. Knoll[1]; J. Beck[1]; [1]EADS Defence & Security, Military Air Systems, DE	**CEAS-2007-463** **UAV/UCAV Navigation Systems - Present and Potential Future** R.K. Arning; A. Langmeier; E. Stenzel; H. Diehl; G. Sobotta; EADS Germany Innovation Works, DE	**CEAS-2007-464** **Fast Range Image Based Landing Field Detection** R.M. Leitner; O. Heinzinger; EADS Germany Innovation Works, DE
Cabin - Acoustics — Chair: K.-D. Kricke, Airbus, DE — **Estrelsaal A**			
CEAS-2007-469 **High Soundproofing Ability of Porous Materials under Stress Using 4S Technology** D. Rakov, Russian Academy of Science / IMASH, RU; J. Thorbeck, TU-Berlin, Institute of Aeronautic and Astronautic, DE	**CEAS-2007-470** **Mock-up of a Loadmaster Area for Acoustic Ground Tests** S. Böhme[1]; D. Sachau[1]; T. Kletschkowski[1]; H. Breitbach, Airbus, DE; [1]Helmut-Schmidt-University, DE	**CEAS-2007-471** **Influence of Noise and Vibration on the Perception of the Ambience Inside the Cabin** V. Mellert; I. Baumann; N. Freese; R. Weber; Oldenburg University, DE	**CEAS-2007-472** **Audio Interior for Light Aircraft** O. Pabst; F. Teuma Tsafak; T. Kletschkowski; D. Sachau; Helmut-Schmidt-University/University of the Federal Armed Forces, DE

Thursday, 13th September 2007 — Plenary Session in **ECC Hall C**

14:00-15:00 **Towards the Green Aviation**
Requestet Speakers: A. Garcia, Airbus, FR; R. Parker, Rolls-Royce, GB; F. Beyer, Liebherr-Aerospace, DE
Chair: F. Abbink, NLR, NL

15:10 – 15:30	15:30 – 15:50	15:50 – 16:10	16:10 – 16:30
Structural Dynamics & Microvibrations 2 SSMMT — **Estrelsaal C1** Chair: A. Grillenbeck, IABG, DE			
CEAS-2007-481 **The Integration of Modal Analysis in Vibration Qualification Testing** L. Britte[1]; B. Peeters[1]; H. v. d. Auweraer[1]; J. Debille[1]; M. O'Grady[2]; R. Singhal[2]; [1]LMS International nv., BE; [2]Canadian Space Agency, CA	**CEAS-2007-482** **Feasibility Study of Acceleration Limit Substitution of Force Limit Vibration Test** K. Nagahama; S. Shi; T. Iwasa; M. Saitoh; JAXA (Japan Aerospace Exploration Agency), JP	**CEAS-2007-483** **Non-Linear Dynamics on Space Structures at Low Frequencies** J.B. Bernaudin, Astrium Satellites, FR; R. Redondo, CNES, FR	**CEAS-2007-484** **Development of Failsafe and Vibration Damping Flexural Feet for Sensitive Space Instrument** E. Bigot; A. Di Carlo; Oerlikon Space AG, CH
Mechanical Testing 2 SSMMT — **Estrelsaal C3** Chair: P. Mourey, CNES, FR			
CEAS-2007-489 **New Large Mass Property Measurement Facility: Experience with the First Three Test Specimens** W.H. Teichert; G. Slagter; European Test Services, NL	**CEAS-2007-490** **Mechanical Testing on Large Aircraft Structures: Possibilities - Limits - Examples** R. Baumgartl, IABG mbH, Department Mechanical Testing, DE	**CEAS-2007-491** **Qualification Tests of Eurostar 3000 XL Central Tube** P. Brotons; P. Luengo; P. Tejero; EADS CASA Espacio, ES	
Short Course 11 — **ECC Room 5** Chair: TBD			

16:50 – 17:10	17:10 – 17:30	17:30 – 17:50	17:50 – 18:10
Materials and Active Structures 2 SSMMT — **Estrelsaal C1** Chair: M. Klein, European Space Agency, ESA/ESTEC, NL			
CEAS-2007-485 **Development of Electro Active Polymers Configurations to Monitor and Control Deployable Space Structures** S. Baldacci[1]; L. Serafini[1]; V.S. Zolesi[1]; F. Thurecht[2]; E.K. Pfeiffer[2]; P. Sommer Larsen, TU Denmark, RISOE National Laboratory, DK; F. Carpi[3]; D. De Rossi[3]; L. Lampani*; P. Gaudenzi*; [1]Kayser Italia Srl, IT; [2]High Performance Space Structure Systems GmbH, DE; [3]Pisa Univ., Centro Piaggio, IT; *Univ. of Rome La Sapienza, DIAA, IT	**CEAS-2007-486** **Production of Gamma Tial Based Alloys by Combustion Synthesis+Compaction Route for Space Rocket Engine Complex Parts** J. Marcos[1]; J. Coleto[1]; I. Agote[1]; M. García de Cortazar[1]; M. Lagos[1]; L. Pambaguian, ESA-ESTEC, NL; A. Sargsyan[1]; V.L. Kvanin[2]; N.T. Balikhina[2]; I.P. Borovinskaya[2]; S.G. Vadchenko[2]; A.E. Sytschev[2]; [1]TECNALIA-AEROSPACE, ES; [2]Institute of Structural Macrokinetics and Materials Science Russian Academy of Sciences, RU	**CEAS-2007-487** **Phase Change Materials and Thermosensitive Painting: Application on Smart Thermal Protection Systems** J. Marcos[1]; J. Coleto[1]; J. Maudes[1]; T. Salmon, EADS-ST, FR; L. Martinez, LISAP, FR; A. Passaro, ALTA SpA., IT; H. Ritter, ESA-ESTEC, NL; [1]TECNALIA-AEROSPACE, ES	**CEAS-2007-488** **Time Influence on Viscoelastic Materials: Experience Feedback on Applications in the Space Field** D. Givois[1]; M. Lathuilière[1]; D. Martin de Argenta[1]; R. Redondo, CNES, FR; [1]01dB-METRAVIB, FR
Composite Structures 4 SSMMT — **Estrelsaal C3** Chair: H. Bansemir, Eurocopter Deutschland, DE			
CEAS-2007-493 **Alphabus Central Tube. Development and Manufacturing of the Bread Board Model** J. Trigo, EADS CASA Espacio, ES	**CEAS-2007-494** **Liquid Composite Moulding Technologies for Space Applications** H. Assing; M. Kleineberg; C. Sickinger; L. Herbeck; DLR, DE	**CEAS-2007-495** **Radiation Attenuation of CFRP Wolfram Laminate Structures** T. Brander, Helsinki University of Technology/Laboratory of Lightweight Struktures, FI; F. Garcia, Helsinki Institute of Physics (HIP), FI	**CEAS-2007-496** **Passive Damping of Spacecraft Sandwich Panels** O. Romberg, DLR Bremen, DE; M. Tausche, OHB-System AG, DE; C. Pereira, RUAG Aerospace, CH; L. Panning, Institut für Dynamik & Schwingungen, DE
Short Course 12 — **ECC Room 5** Chair: TBD			

Short Course Aircraft Design
Details are be published on www.ceas2007.org

Poster Session 1
Chair: R. Luckner, TU Berlin, DE

ECC Hall C

CEAS-2007-700
Identification System of Aircraft Gas Turbine Engine's Temperature Condition
A.M. Pashayev; D.D. Askerov; R.A. Sadiqov; P.S. Abdullayev; Azerbaijan National Academy of Aviation, AZ

CEAS-2007-701
Experimental Investigation of Frontal Device for Perspective Combustors
V. Rutovskiy; I. Kravchenko; D. Tkachenko; M. Boulaeva; Moscow Aviation Institute (State Technical University), RU

CEAS-2007-702
Terrain Following Minimum Time Trajectory Design for UAV Swarms Using Mixed Integer Programming
J.W. Vervoorst; T. Kopfstedt; Diehl BGT Defence GmbH & Co. KG, DE

CEAS-2007-703
Cabin Electrical Installation for BWB Aircraft
W. Granzeier; O. Zysk; T. Liesk; QualityPark AviationCenter GmbH, DE

Poster Session 2
Chair: D. Scholz, HAW Hamburg, DE

ECC Hall D

CEAS-2007-704
Improving runway safety through airborne traffic conflict detection and alerting
D. Zammit-Mangion, Cranfield University, GB; A. Sammut[1]; B. Zammit[1];
[1]University of Malta, MT

CEAS-2007-705
Enhancing the Dynamic System Simulation of an Aircraft Cabin Climate for Comfort-Improved Climate Control using 1D/3D Coupling
H. Knigge; A. Joos; G. Schmitz; Hamburg University of Technology, DE

CEAS-2007-706
Efficient Double Root Optimal Path Determination
P.H. Richter, O & S Consultancy, DE

CEAS-2007-707
Optimal Path Determination Observing Turn Restrictions
P.H. Richter, O & S Consultancy, DE

Poster Session 3
Chair: K.U. Hahn, DLR Braunschweig, DE

Estrelsaal B

CEAS-2007-708
Attitude and Heading Reference System for an Integrated Stand-by Display Incorporating Solid State Sensors
M. Carminati[1]; G. Ferrari[1]; M. Sampietro[1]; R. Grassetti, Logic S.p.A., IT;
[1]Politecnico di Milano, Dipartimento di Elettronica e Informazione, IT

CEAS-2007-709
How to Avoid Contrail Cirrus
H. Mannstein[1]; K. Gierens[1]; P. Spichtinger, ETH Zurich, CH;
[1]DLR, DE

CEAS-2007-710
Aerodynamically Induced Formation of Contrails
H. Mannstein; K. Gierens; B. Kärcher; B. Mayer; DLR, DE

CEAS-2007-711
Messung der Erreichbarkeiten im Luftverkehr - Ansätze zur Beurteilung der Anbindungsqualitäten europäischer Flughäfen
S. Medenbach, AT

Poster Session 4
Chair: K. Lesch, EADS, DE

ECC Room 2

CEAS-2007-712
Trailing Edge Treatment to Enhance High Lift System Performance
F. Catalano; R. Lemes; G. Brand; Aerodynamic Laboratory / University of Sao Paulo / EESC-USP, BR

CEAS-2007-713
FDMP - Concept of an Improved Flight Data Analysis Methodology
H. Flühr[1]; S. Sporer[1]; G. Knoll[1]; M. Haider[1]; D. Reisinger, Austrian Airlines, AT;
[1]FH JOANNEUM Graz, AT

CEAS-2007-714
Impact Damage and Repair of Composite Structures (Garteur Action Group - 28)
B.G. Falzon, Imperial College London, GB

Poster Session 5
Chair: K. Brieß, TU Berlin, DE

ECC Room 3

CEAS-2007-715
Stochastic Approach for the Sizing of Space Launchers Components
E. Gery, CNES, FR; G. Defaux, PHIMECA Engineering, FR; L. Escudero López, EADS Casa Espacio, ES

CEAS-2007-716
Optimization of Bolted Joints Connecting Honeycomb Panels
G. Bianchi[1]; G.S. Aglietti[1]; G. Richardson, Surrey Satellites Technologies Ltd. (SSTL), GB;
[1]University of Southampton, GB

CEAS-2007-717
An e-Learning System for Polish Aviation Training Center
P. Michalowski; P. Madrzycki; D. Karczmarz; Air Force Institute of Technology, PL

Poster Session 6
Chair: O. Brieger, DLR, DE

ECC Room 1

CEAS-2007-718
Study of Flowfield around Truncated Square Protuberance in Hypersonic Flow
A. Ahmed; A. Baig; S. Bilal; S. Zahir; NESCOM, PK

CEAS-2007-719
Design of Stable Fuzzy Control for a Flight Based on Popov-Lyapunov's Method
Z. Li; Y. Zhang; College of Aeronautics, Northwestern Polytechnical University, CN

CEAS-2007-720
Effects of Angle of Attack on a Swept-Back Wing
S.C. Yen, National Taiwan Ocean University, TW; C.M. Hsu, National Taiwan University of Science and Technology, TW

Poster Session 7
Chair: TBD

Room Paris

CEAS-2007-721
Maintenance Credits, from the Monitoring of Helicopter Mechanical Parts to a Dynamic Maintenance Planning
P.-I. Maisonneuve[1]; M. Glade[1]; J.-P. Derain[1]; S. Ghelam[1]; P. Lyonnet, LTDS - ENISE, FR;
[1]Eurocopter, FR

CEAS-2007-722
The GA Optimization of Straight and Curved Laminated Composite Panals in Presence of a Cutout
A. Gorjipoor; B. Dehghanmanshadi; A. Abedian; Sharif University of Technology, Aerospace Engineering Dept., IR

CEAS-2007-723
A Deployable SAR Membrane Antenna Mechanical Prototype
M.-J. Potvin[1]; S. Montminy[1]; S. Brunel[1]; Y. Shen[1]; V. Tokateloff[2]; G. Akhras[2];
[1]Canadian Space Agency, CA; [2]Royal Military College of Canada, CA

CEAS-2007-724
SAND-MESH PLUS – A Parameter Controlled Finite Element Pre-processor for Composite Sandwich Structures
M. Streubig; K. Wolf; TU Dresden, Institute of Aerospace Engineering, DE

Poster Session 8
Chair: C. Sickinger, DLR, DE

SSMMT

Estrelsaal A

CEAS-2007-725
Comparison of Tensile Properties of Two NiCoCrAl / YSZ Microlaminates Produced by EB-PVD
J. Liang; G.D. Shi; G.Q. Chen; S.Y. Du; Center for Composite Materials, Harbin Institute of Technology, CN

CEAS-2007-726
Shock and Elastic Waves in Space Structures: Simulation, Attenuation and Usage for Monitoring
C. Zauner[1]; H. Baier[1]; M. Reindl, KRP Mechatec, DE;
[1]TU Muenchen, Lehrstuhl für Leichtbau, DE

CEAS-2007-727
Simulation of Pyroshocks
N. Juengel[1]; U. von Wagner[1]; A. Baeger[2]; S. Ritzmann[2];
[1]TU Berlin, Institute of Mechanics, DE; [2]Astro- und Feinwerktechnik Adlershof GmbH, DE

Poster Session 9

Chair: J. Block, DLR Braunschweig, DE

SSMMT

Estrelsaal C1

CEAS-2007-728
System-Level Mass Savings from a Multifunctional Powerstructure
S. Roberts; G. Aglietti; University of Southampton, School of Engineering Sciences, GB

CEAS-2007-729
The Effects of Microstructure on Cavity Nucleation and Propagation for UHTCs Used in HCV
J. Liang; C. Wang; Harbin Institute of Technology, CN

CEAS-2007-730
Development of a Class of Shell Finite Elements for Nonlinear Applications
R. Winkler, University of Innsbruck, Unit for Engineering Mathematics, AT

CEAS-2007-731
FLVT - New Force Measurement Method for Instrument and Equipment Testing
S. Ritzmann[1]; M. Rose[1]; M. Stock, Kistler Instrumente Deutschland, DE;
[1]Astro- und Feinwerktechnik Adlershof GmbH, DE

Poster Session 10

Chair: M. Gädke, DLR Braunschweig, DE

SSMMT

Estrelsaal C3

CEAS-2007-732
Prediction of the Pointing Stability from Ground Test and Its Initial In-orbit Evaluation of the Solar Observation Satellite SOLAR-B
O. Takahara[1]; K. Ichimoto, National Astronomical Observatory of Japan, JP; T. Shimizu, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency, JP; Y. Sakamoto, University of Tokyo, JP; S. Nagata, Kyoto University, JP; S. Shimada[1]; N. Yoshida[1];
[1]Mitsubishi Electric Corp., JP

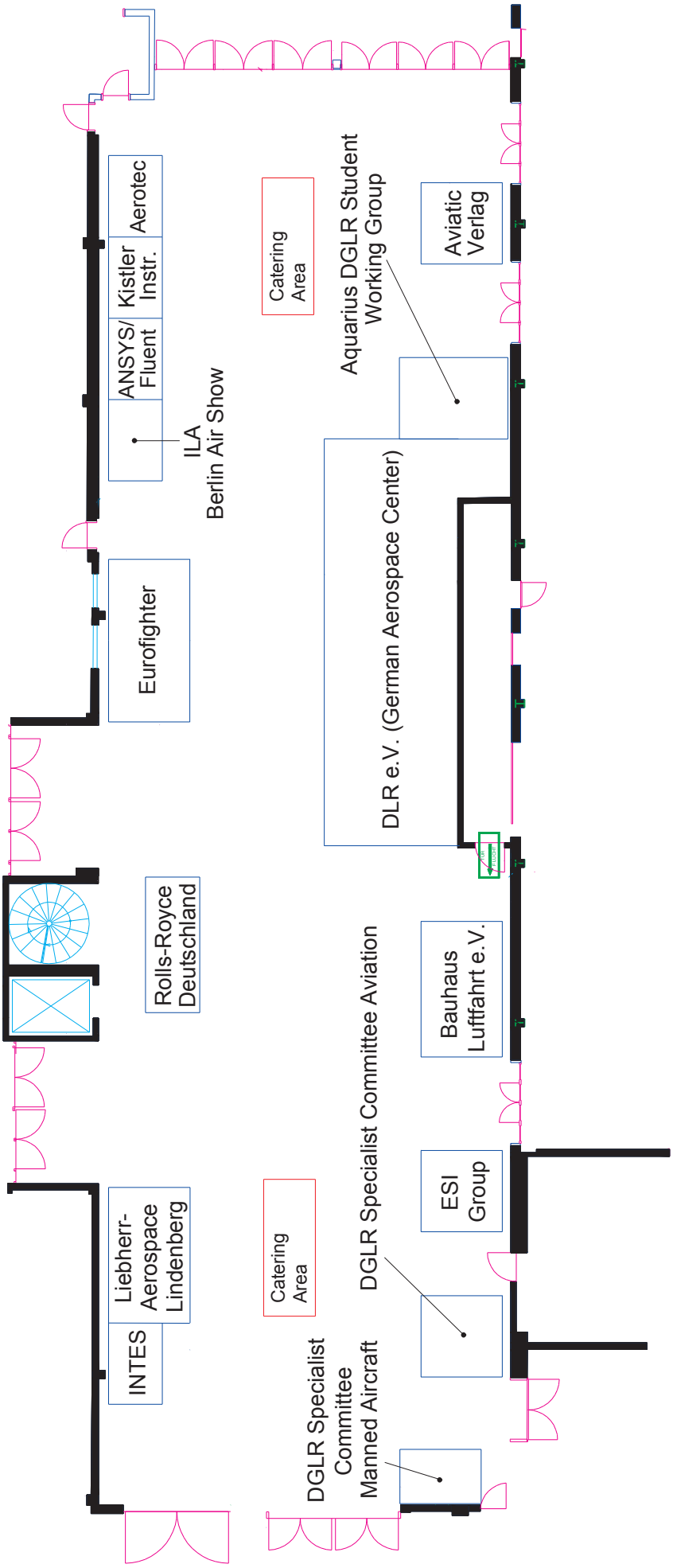
CEAS-2007-733
Robustness of Numerical Predictions of Clamp Band (C/B) Release Shocks
J. Kasper, EADS Astrium GmbH, DE

CEAS-2007-734
USV1 In-Flight Loads Evaluation by Means of Strain Gauge Instrumentation Part I
L. Di Palma; M. Belardo; N. Paletta; M. Pecora; CIRA, Italian Centre for Aerospace Research, IT

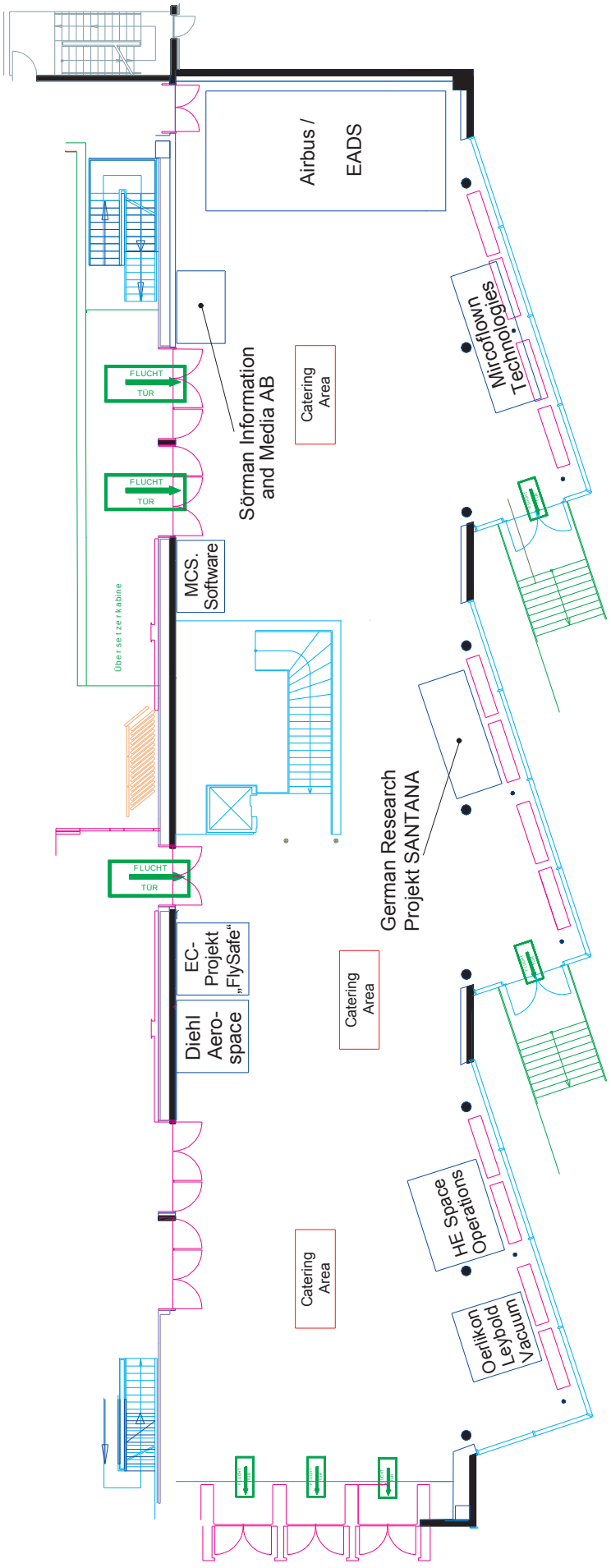
CEAS-2007-735
Conception and Validation of a Two High Level Axes Set-up for Pyroshock Qualification of Space Electronic Equipments
C. De Fruytier[1]; F. Dell Orco[1]; D. Wattiaux, Faculté Polytechnique de Mons, BE;
[1]Thales Alenia Space ETCA, BE

Overview of Session Halls

FOYER 1 Coffee breaks and poster session area



FOYER 3 Coffee breaks and exhibition



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Social Programme

Monday 10 September **Congress Reception by the Senate**
20:00

(Registration is necessary to receive ticket, included in Delegate, Student and Accompanying Person's fee)

Delegates, Students and Accompanying Persons are invited to attend the Congress Reception in the Town Hall. A bus shuttle from the Estrel to the Town hall is organised (Bus transfer at 19:15, back transfer between 21:30 and 22:00 or individually). Complimentary light snacks and drinks will be served.

Tuesday 11 September **Parliamentary Evening**

19:00

(Registration is necessary to receive ticket, included in Delegate, Student and Accompanying Person's fee)

Delegates, Students and Accompanying Persons are invited to attend the Parliamentary Evening in the Estrel Convention Hall C (19:00 – 20:00) and after 20:00 in the Estrel Convention Hall A.

Wednesday 12 September **Conference Dinner**
19:30 - 23:30 hrs **55 € per person**

(included in Accompanying Person's fee)

The Congress Banquet will be held in the pleasing Hall A of the Estrel Convention Centre. The Dinner will serve a buffet-type dinner including beverage (except for hard liquors) until 23:30. Guests must present purchased tickets for entry.

Accompanying Persons Programme

(subject to minimum numbers of participants, English speaking guide)

TUESDAY, 11 SEPTEMBER
10:00 – 13:00 hrs

Big Berlin Tour

20 € per person

Highlights of the capital with the Government area

In the morning a bus will be waiting for you in front of the Estrel hotel. Sitting in a comfortable seat, you will start to discover the capital. This bus tour with English and German speaking guides will give you an overview of the well known sights of Berlin: Kaiser-Wilhelm-Memorial Church, Europe Centre, Bauhaus Museum, New National Gallery, Philharmonic Hall, Potsdamer Platz/Sony Centre, Jewish Museum, Checkpoint Charlie – Wall Museum, Gendarmenmarkt, Alexanderplatz, St.-Nicolai Quarter, City Hall of Berlin, TV-Tower, Berliner Dom, Zeughaus, State Opera, Boulevard Unter den Linden, Brandenburger Tor, Holocaust memorial, Berlin central station, Reichstag, Government Area Chancellery, Tiergarten, Bellevue Palace, Siegessäule, Charlottenburg Palace, Olympic Stadium, Grunewald Forest, Radio Tower, ICC, Kurfürstendamm and more.

After this bus tour you will have the opportunity to have lunch in a nice little restaurant at the Gendarmenmarkt (not included in the tour fee).

14:30 – 17:30 hrs

Historical Berlin Walk including a trip to the Pergamon Museum

20 € per person

Our afternoon´s programme offers a walking tour through the history of Berlin. Meeting Point is the Gendarmenmarkt, starting from there, you will discover the capital where it is most beautiful: between Gendarmenmarkt, St.-Nikolai Quarter and Schloßplatz, Boulevard Unter den Linden and Friedrichstraße. An English and German speaking guide will report about the foundation of Berlin in

the 13th century and its development to one of Europe's most exciting capitals. Here, in Berlin Mitte, many great kings of the past have left their marks on the metropolis.

The tour will end on the Museumsinsel (museum island). There you will have the opportunity to visit the world-famous Pergamon Museum (included in the tour fee).

WEDNESDAY, 12 SEPTEMBER
10:00 – 16:00 hrs

Guided tour to Potsdam / Sanssouci - including Palace of Sanssouci

40 € per person

The former Royal City of Potsdam, an UNESCO world heritage site with its unique collection of palaces and parks, is located just an hour away from the centre of Berlin. The rococo Palace of Sanssouci became the favourite refuge of Prussia's greatest King, Friedrich II. Here, the Philosopher of Sanssouci entertained some of the most educated men of his time, among them the French poet Voltaire who was a frequent guest over many years.

Our excursion - starting from Estrel Hotel - takes you on an extensive tour of Sanssouci Palace with a stroll through the magnificent gardens, and a city tour of Potsdam during which you discover the heart of the baroque city with its Dutch Quarter and Russian Colony Alexandrovka. A lunch break in Potsdam is included. The bus tour ends again at the Estrel Hotel.

THURSDAY, 13 SEPTEMBER
9:30 – 13:00 hrs

Berlin from the water site - River Cruise on Landwehrkanal and Spree

20 € per person

We invite you to a special event – a beautiful boat trip through the water ways of the capital. Experience the variety of architectural styles on our city cruise and discover that Berlin has more bridges than Venice. You will see Oberbaum Brücke, Oberschleuse, Science Museum, Charlottenburg Palace, Spreebogen, Bellevue Palace, Government Quarter, Reichstag (Seat of the German Government), Charité, Museum Island, Berliner Dom, St.-Nikolai Quarter, Palast der Republik and more. On board, you will have the opportunity for having lunch (not included in the tour fee).

The boat trip will finally take you to the well-known Friedrichstraße. Here, you can go on your own individual shopping tour or join us in the afternoon`s programme: a guided tour to the famous Kaufhaus des Westens (KaDeWe) at the Boulevard Kurfürstendamm.

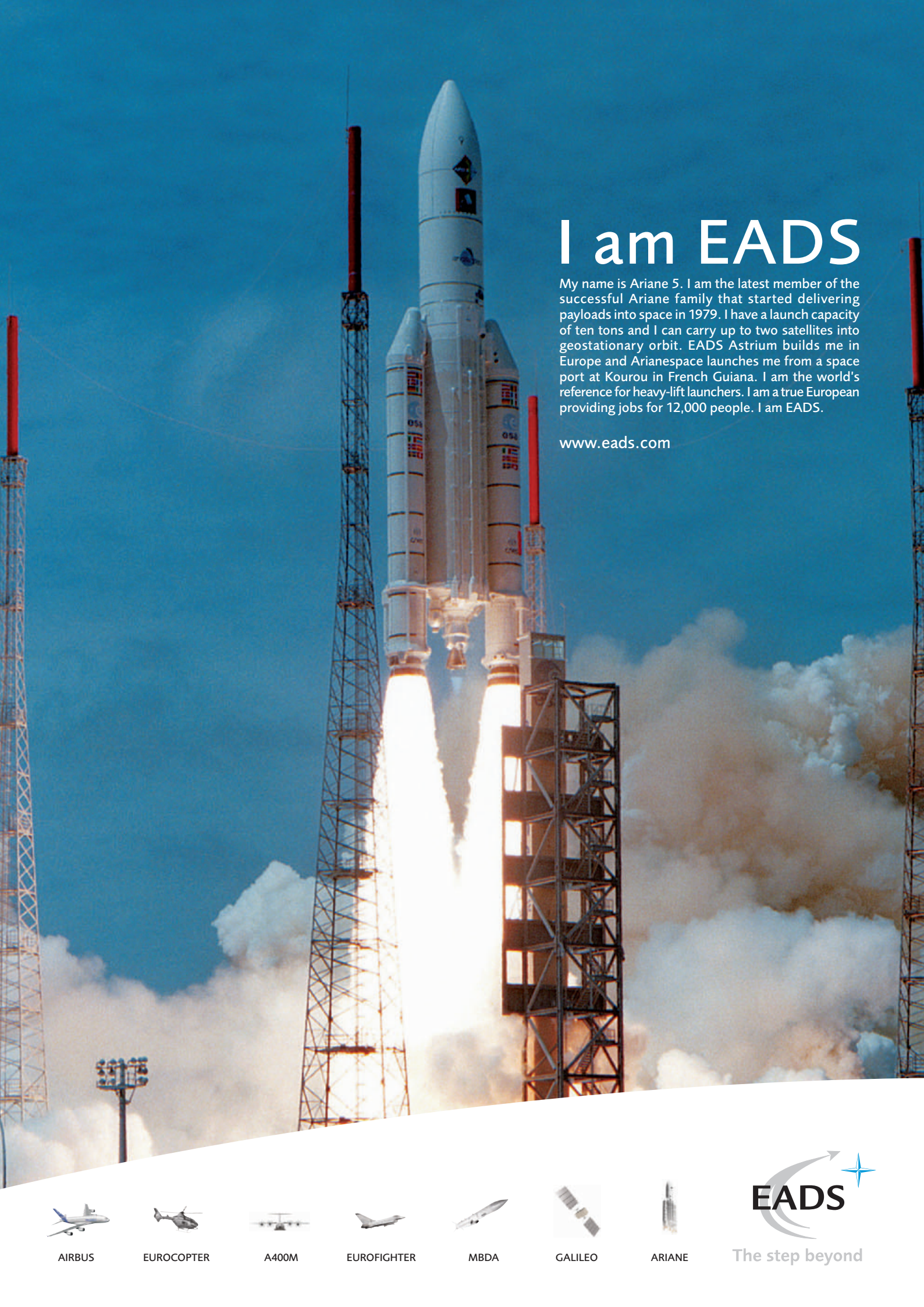
14:00 – 16:00 hrs

The famous KaDeWe (Kaufhaus des Westens) – a guided tour through the Palace of Shopping

5 € per person

The Kaufhaus des Westens (Department store of the West, commonly abbreviated KaDeWe) is a department store in Berlin and the second largest in all of continental Europe.
Its sheer size, large selection and fame for excellent quality as well as its central location in the heart of Berlin at the famous Boulevard Kurfürstendamm makes it a must for every tourist visiting Berlin.

On this tour, we would meet at 14:00 h at the Information Point on the groundfloor in the entrance hall of the KaDeWe, directly behind the main entrance. The 5,00 € fee has to be paid on-site and will be given back to you in the form of a coupon ("Wunschkarte").



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Technical Tours Friday 14 September

The following Technical Tours at a cost of 10 Euro per person are possible to attend for Full Delegates and Students *(subject to availability*) – due to the limited capacity, reservations will be taken on a first-come, first served basis. A refund of the cost sharing is not possible. Only registered persons may participate in these tours.

These technical tours have been arranged by the DGLR. The tours include coach transfers.
Please indicate your preference in the registration form.

A:

10:00 – 16:00 hrs

Participants will visit Kummersdorf with its historical missiles museum - after that you will have the opportunity to see the construction site of the International Airport Berlin Schönefeld.

B:

10:00 – 15:00 hrs

Participants will visit Berlin-Gatow and the Air Force Museum the way back leads through the Airport Berlin Tegel.

C:

10:00 –13:00 hrs

Participants will visit the construction site of the International Airport Berlin Schönefeld.

D:

10:00 – 14:00 hrs

Participants will visit Berlin-Adlershof (DLR) with its planet research and satellites departments; after that they will see the historical examination ground (GBSL).

E:

10:00 – 13:00 hrs

Participants will visit the Technical University of Berlin and have the opportunity to see the flight simulator A330.

F:

10:00 – 16:00 hrs

Participants will visit Stölln, the place of death of Otto Lilienthal during his flight experiments and they will be guests of the inauguration ceremony of a Lilienthal memorial.

G:

10:00 – 16:00 hrs

Participants will visit the museum of transportation and technics with its exhibition of aeronautics and astronautics.

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MTU Aero Engines

LOCATION AND DATES

The 1st CEAS Congress will be held at the Estrel Convention Center (ECC) Berlin, Germany from Monday, 10 September to Thursday, 13 September 2007 and is hosted by the German Society for Aeronautics and Astronautics (DGLR).

CONFERENCE LANGUAGE

Conference language is English – presentations are therefore preferred in English but also permitted in German.

REGISTRATION FEE INCLUDES

Full Delegates – Attendance at the Congress sessions, coffee/tea during the breaks, Opening Ceremony on Monday Afternoon, Welcome Reception on Monday Evening by the Senate of Berlin, Parliamentary Evening on Tuesday, Final Programme, Proceedings on CD-ROM, Congress bag and name badge.

Students – Same as Full Delegates.

Accompanying Persons – Attendance at Opening Ceremony on Monday Afternoon, Welcome Reception on Monday Evening, Parliamentary Evening on Tuesday Evening, Conference Dinner on Wednesday evening and the possibility to book organized Social Programme.

REGISTRATION DESK

The registration desk, situated in the rotunda, the passway from the ECC to the Estrel Hotel, will be open during the following hours:

Monday, 10 September:	12:00 - 18:00 hrs
Tuesday, 11 September - Wednesday, 12 September:	07:30 - 18:00 hrs
Thursday, 13 September	08:00 - 17:00 hrs

TOUR RESERVATIONS

ConTour GmbH has arranged the accompanying person´s programme listed on the following pages. Participants who wish to book these tours should contact the registration desk to check whether it is still possible to participate. Credit card payments for accompanying person's tour charges will be deducted in full by machtWissen.de AG.

CONGRESS PROCEEDINGS

The CEAS 2007 Congress proceedings are available on CD-ROM, which are included in the registration fee where indicated. Additional CD-ROM can be ordered with the registration form at a cost of 90 EUR.

For viewing the CD-ROM computers will be available in room 8 (Straßburg) on the ground floor at the ECC venue. If you require hard copies of single papers, they are available for purchase on-site (papers in the CD-ROM only). Orders are made at the registration desk at a cost of 2 EUR per paper (black & white copy only). Ordered hard copies will be available at the registration desk by the following morning.

INTERNET ACCESS

The DGLR has arranged an internet cafe with six PC-stations. The internet cafe is located on the ground floor of the ECC venue in room 8 (Straßburg). Internet access is free of charge for registered persons.

INSURANCE

Participants are advised to take out their own travel insurance and to extend any private policies for personal possessions they may be bringing with them. The Congress does not cover participants against travel, cancellations of bookings or loss/theft of belongings.

USEFUL HINTS

Estrel Convention Center

Berlin, the capital of Germany, is dynamic, cosmopolitan and creative, allowing for every kind of lifestyle. East meets West in the metropolis in the heart of a changing Europe. Germany's largest city is a city of opportunities waiting to be sized in all areas, like entertainment, recreation, economy, science and academic life, as well as in politics. The Estrel Berlin is said to be Europe's largest convention, entertainment and hotel complex. With 1,125 rooms and suites, five restaurants, two bars, a beer garden, the Estrel has plenty to offer to every guest. Beside the Estrel Hotel accommodation will be available in various prize categories.

Currency
The currency used in Germany is European EURO (EUR, €). Notes are available in units of EUR 5, 10, 20, 50, 100, 200, and coins in units of Cent 1, 2, 5, 10, 20, 50 and EUR 1 and 2. Traveller's checks and currencies from most countries can be exchanged for European EUR at major banks and hotels. Only European EUR is accepted at regular stores and restaurants.

Credit Cards
International credit cards such as Master Card, Visa, American Express and Diners Club are widely accepted at hotels, department stores, large shops and restaurants.

Tax and Tipping
In Germany there is the custom of paying 10 percent of the amount of the bill as tipping in restaurants. A 19% sales tax applies to almost all consumer goods sold in Germany.

Climate
Berlin is located in between the changeover of oceanic and continental dominated climate. In the month of September the average daytime temperature in Berlin a comfortable 65°F (18° C). The average number of rainy days is 14 and days of sun 5,2. Participants are therefore recommended to bring normal summer clothing with adequate clothing for cooler and rainy days and evenings.

Electricity 220-230 volts AC, 50-60 Hz

Business Hours

Bank	Mo + Thu	9:00 – 13:00 / 14:00 – 18:00
	Tue + Wed	9:00 – 13:00 / 14:00 – 16:00
	Fri	9:00 – 13:00
	Closed on weekends and holidays	
Post Office		
	Mo – Fri	8:00 – 18:00
	Sa	8:00 – 12:00
Shops		10:00 – 20:00 (typical time)
Restaurants		11:00 – 23:00 (typical time)

Time
CET with daylight saving time at this period.

Mobil phones
For the use of mobile phones in Berlin, Germany, they must be designed for the GSM frequency-bands 900 MHz or 1800 MHz. Additionally the use of UMTS mobile phones in the area of the venue is possible but there is no coverage guaranteed all over Germany

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