

ICAS 2006

ICAS 2006

25th Congress of International Council of the Aeronautical Sciences Call for Papers



**Hamburg, Germany
3 – 8 September 2006
Convention Centre Hamburg (CCH)**

**Please submit your abstract online at
www.icas.org before 31 July 2005**

Hosted by



**German Society for Aeronautics and Astronautics
DEUTSCHE GESELLSCHAFT FÜR LUFT- UND
RAUMFAHRT – LILIENTHAL-OBERTH E.V.**

25th ICAS CONGRESS – Hamburg, Germany 3 - 8 September 2006

CALL FOR PAPERS

Challenges facing aeronautics have changed and continue to change. The future will require different approaches as to how we as a world provide air mobility and air transportation to meet the quality of life expectations of all people. The integration of the existing and new disciplines will create a new generation of vehicle systems and processes for the design, manufacturing, maintenance and operation of these vehicles and the systems in which they function.

International cooperation in all of these endeavours will become increasingly more important. Educating and attracting a new generation of scientists and engineers for aeronautics and aviation will be significantly affected by how these challenges are addressed.

During the last years, several visionary and strategic documents on the future of aeronautics have been developed world-wide. What they all have in common is a focus on societal needs and some key challenges for aeronautics to meet those needs. Among these key aviation challenges are to increase aviation safety and security, reducing noise and emissions, and increasing airspace and airport capacity. The design, development and manufacturing of the aircraft and all its systems have become an even more multidisciplinary optimization task involving a world-wide supply chain. To comply with this, the session tracks of the ICAS 2006 congress will cover:

- Technologies and methodologies
- Aircraft design, systems and systems integration
- Air transport system efficiency
- Safety and security
- Challenge of the environment

A list of topic headings is appended as a guideline to those wishing to present papers, but it should not be regarded as exclusive or as strictly defining the various sessions of the Congress.

Authors are invited to provide an abstract for a potential paper before 31 July 2005.

Congress Programme

From the submitted abstracts the ICAS Programme Committee will set up a Congress program with eight parallel technical sessions, as well as poster presentations. Student presentations (see page 4) will be embedded in the sessions. Following the experience of recent ICAS Congresses the number of oral presentations in the Final Programme is expected to be about 300 selected by the Programme Committee. There will also be a number of invited lectures, on topics of general importance and wide interest (around 50 at the last Congress). Some lectures, the “General Lectures”, are held in the first session in the morning, in front of all delegates; others are placed at the beginning of the appropriate parallel sessions.

Congress Proceedings

All papers that are accepted for presentation (oral, reserve and poster) will be included in the CD-Rom proceedings if delivered before the deadline 15 June 2006.

ICAS 2006

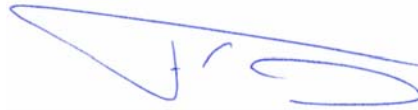
Congress venue

The 25th Congress of the International Council of the Aeronautical Sciences (ICAS) will be held in HAMBURG, Germany. The ICAS Member Society in Germany, German Society for Aeronautics and Astronautics (DGLR), will act as ICAS host Society. More information on the venue and practical arrangements are provided on page 6.

We hope to see you and welcome you at the ICAS 2006 in Hamburg.



Jerry Hefner
President



Fred Abbink
Chairman Programme Committee

What is ICAS - International Council of the Aeronautical Sciences ?

- ICAS was founded by Theodore von Karman in the mid-fifties as a non-government not-for-profit scientific organization to encourage the free international exchange of information on aeronautical research and technology
- ICAS currently serves as the only international support organization to representative aeronautical engineering professional societies, affiliated societies, and associated organizations and their members in 33 countries
- ICAS organizes a biennial Congress to present useful, high quality work from world-wide research and technology organizations to all interested engineers and scientists
- 570 engineers and scientists from all over the world attended the last ICAS Congress in Yokohama, Japan, where around 350 high quality papers were presented
- ICAS provides a unique opportunity to meet and discuss with colleagues and experts from all over the world. ICAS also provides a global platform for young engineers and students to begin to develop an international network of colleagues

Handling of abstracts

Please submit your abstract online at ICAS website www.icas.org before 31 July 2005.

(Opening of the website to submit abstracts will take place in May, 2005).

Authors are invited to pay careful attention to the presentation and content of their abstract. Knowing that there are more candidates than possible presentations, paper selection for the ICAS Congress is done based on the quality of the abstract only. Some important criteria for the abstract to be selected are scientific/technical relevance, importance to the field and actuality.

Abstracts should be written concisely; include a preliminary title and the opening sentences should indicate the subjects dealt with and the objectives. The abstract should be intelligible and complete in itself. Abstracts should ideally have a length of about two pages including figures and diagrams. When uploading your abstract you will be requested to upload also a short version (about 50 words) to be used in the Congress final programme. Please indicate for which ICAS topic area the paper is intended.

Your abstract should also include author(s) name, affiliation, complete mailing address, telephone and fax numbers, and email address. The number of authors should be limited to three (use acknowledgements if applicable).

At the uploading of your abstract, you should indicate if your paper is intended as an oral or as a poster presentation. Furthermore, it should be indicated if your paper is intended as a student paper.

Poster Presentations

Poster sessions will be organized for the cases where this mode of presentation is preferred by authors or considered more appropriate by the Programme Committee. There is in principle no limitation in number for poster papers and they are selected on their merit only.

Student Presentations

Undergraduate or postgraduate students, who will not have completed doctorate studies by the date of the Congress, may submit an abstract on any topic of the Congress. As far as possible, students must ensure before accepting selection in November 2005 that they can cover their travel and hotel expenses. The two best student papers will be awarded with the ICAS McCarthy Award. To be eligible to take part in the competition for the ICAS McCarthy Award, the abstract and subsequent paper are to be authored and presented by students only.

Abstract review by Member Societies

The abstracts will be made available to the national Member Societies by the ICAS Secretariat for screening and evaluation and the Member Societies will be asked to submit their recommendations (not supported, supported, strongly supported) to the ICAS Programme Committee for final evaluation and selection. Papers will be considered for presentation in one of the parallel technical sessions or in a poster session.

Note: If there is no national ICAS Member Society in the country, the abstracts will be evaluated only by the ICAS Programme Committee.

The authors will be informed about the acceptance or not of their paper in November 2005.

Full papers should be delivered by 15 June 2006 for inclusion in the CD-Rom proceedings.

Paper review (optional)

For those authors who would wish it, ICAS will provide a paper review by experts from the ICAS Programme Committee. Authors have to indicate when uploading their abstract if they are interested in this process. Papers will be reviewed based on technical content, importance to field, completeness, style and clarity. Papers that successfully pass the review will obtain an ICAS Recommendation letter. Note that, due to the length of such a process, candidates will be requested to supply their full paper by 15 March 2006. This process will enable a feedback from the reviewer(s) in time to make it possible for the author to improve the quality of the paper.

ICAS 2006 TOPIC AREAS

1. Aircraft and Systems Integration

- Subsonic and Supersonic Transport Aircraft
- Military Aircraft and Missiles
- Non-Conventional Aviation Systems and Concepts
- Unmanned Air Vehicles
- Hypersonic Aircraft
- Commuter and General Aviation Aircraft
- Rotorcraft
- Sailplanes and Ultralight Aircraft
- Multidisciplinary Optimization
- Design for Survivability
- Design Education
- New Aircraft Concepts - Military, Civil
- Trans-atmospheric Vehicles

2. Aerodynamics

- Subsonic
- Transonic and Supersonic
- Hypersonic Aerothermodynamics
- High Angle of Attack, High Lift
- Computational Fluid Dynamics
- Transition and Turbulence
- Wind Tunnel and Flight Testing
- Experimental Facilities and Techniques
- Aeroacoustics
- Flow Control
- Biologically-inspired flight

3. Materials and Structures

- Composite Materials and Structures
- Applications and Issues
- Metallic Alloys
- High Temperature Materials and Structures
- Structural Mechanics
- Fatigue and Damage Tolerance
- Structural Dynamics and Aeroelasticity
- Dynamic Loading, Acoustic Loading and Impact
- Structural Testing
- Nanotechnology

4. Propulsion

- Gas Turbines
- Propellers and Fans
- Hypersonic Propulsion
- Inlets and Nozzles
- Propulsion / Airframe Integration
- Noise and Emissions (Cf Topic No 10)
- Experimental Facilities and Techniques
- ISABE Supported Session

5. Flight Dynamics and Control

- Flight Dynamics
- Control Techniques and Systems
- Aircraft Handling Qualities
- Flight Testing and Simulation
- Performance and Trajectory Optimization
- Missiles Guidance
- Autonomous operations

- Neural Networks
- System and Parameter Identification

6. Systems, Subsystems and Equipments

- Integration of Equipment Systems
- Power Optimised Aircraft Systems
- Electrical, Hydraulic and Pneumatic Systems
- Avionic Systems
- Landing Gear and Braking
- Auxiliary and Emergency Power Generation
- Aircraft Fuel Systems
- Lightning, Cabin and Water/Waste
- Ice and rain protection
- Advanced Sensors
- Emerging Systems / New Technologies

7. Systems Engineering and Supply Chain

- Integrated Product / Process Development
- Supply chain
- Customer and Product Support
- Life Cycle Value
- CAD / CAM and Computer Integrated Manufacturing
- Information System Technology
- Advanced Information Technology
- Design, Development and Manufacturing
- Engineering Management
- Robotics
- Total Quality
- Automation and Concurrent Engineering

8. Air Transport System Efficiency

- Aircraft Operation and Maintenance
- Flight Management
- ATM and airspace capacity
- Weather effects
- Airport capacity
- Intermodality issues
- SAE Supported Session

9. Safety and Security

- Accident prevention
- Accident survivability, Crashworthiness
- Human-Machine Interface
- Airworthiness and Certification
- Reliability and Maintainability
- Ageing Aircraft
- Aviation Medicine
- Airborne aircraft security
- Airport security

10. Challenge of the Environment

- Reduction of Noise
- Reduction of Emissions
- Alternate fuels
- Operational procedures
- Maintenance and disposal processes



ICAS 2006 in Hamburg, Germany General Information

25th Congress of ICAS will be hosted by the German Society for Aeronautics and Astronautics (DGLR) and will be held from 3-8 September 2006 in Hamburg.

About Hamburg

The **Free and Hanseatic City of Hamburg**, one of the 16 states of the Federal Republic of Germany, is the second largest city in Germany with a population of 1.7 million. In this sense it is a city as well as a state. Hamburg is also culturally and commercially the centre of all of Northern Germany. The metropolitan region is home of 3.5 million people and is a shopping and cultural metropolis. Additionally Hamburg is besides Seattle and Toulouse – one of the three leading locations for civil aviation worldwide. The municipal area with its 755 km² is seven times the size of Paris and 2,5 times that of London. For this very reason Hamburg presents an exceptionally high standard of living and housing. With 30 m² living space per person, Hamburg enjoys the largest average personal living space of all big cities in the world. In fact, 14% of the city is made up of green and recreation areas.

Congress Venue and arrangements

The Congress Venue will be the **Congress Center Hamburg (CCH)**, one of Europe's largest and most modern conference centres. The CCH is ranked among the top venues worldwide for international conferences.

The congress registration fee, including the CD-ROM Proceedings, is expected to be about 550 EUR plus VAT for early registration.

During the Congress, field trips will be arranged to local establishments. The Social programme will include events, such as a welcome reception, the Congress reception and the Congress banquet.

A special programme for accompanying persons will be offered, including guided tours: Hamburg's diversity: "Merchants Pride and Sailors Dreams: the city, waterfront and St.Pauli", "Harbour City", Container Terminal in Altenwerder, Boat trips through the harbour and the Alster, as well as cultural visits of famous musicals. Additionally, there is assistance for the organisation of individual tours.

The International Council of the Aeronautical Sciences (ICAS) and the German Society for Aeronautics and Astronautics (DGLR) look forward to your participation in the 25th ICAS Congress.

Further information can be obtained from:

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