

ICAS 2010

27th Congress of the International Council
of the Aeronautical Sciences

CALL FOR PAPERS



Nice, France, 19-24 September 2010

Please submit your abstract online at
www.icas.org before 31 July 2009

hosted by





27th ICAS CONGRESS – Nice, France 19 - 24 September 2010

CALL FOR PAPERS

The challenges facing aeronautics have changed and are continuing to change. Today, a difficult global economic situation combined with growing concerns over climate change is increasing political awareness of aviation and is setting the research agenda for the next decade. It has never been more important for the benefits of aviation to be communicated to politicians, decision makers, leaders of industry and the general public.

The international aviation system is a primary enabler for global wealth creation with some of the world's poorest countries being amongst the greatest beneficiaries. Aviation creates new markets and broadens access to existing markets. In addition, air travel promotes international awareness, understanding and tolerance and it improves the quality of life for millions of people. However, aviation is currently one of the sources of the pollution that is producing climate change. Therefore, in order to guarantee that the benefits of air travel can be fully exploited by society and that aviation can grow, without limitation, to deliver increased global wealth creation, practical solutions to a number of central problems are needed. Amongst these are improvements in aviation safety and security, reductions in noise and emissions and increases in airspace and airport capacity. The design, development and manufacture of an aircraft and its systems requires complex, multidisciplinary process optimization, involving a worldwide supply chain. These problems are arguably the greatest yet faced by the aeronautics and aviation communities and the solutions will require the generation of radical ideas.

To be able to respond to these challenges, the aerospace and aviation industries must attract the most able engineers and scientists in the face of increasingly strong competition from other industries. These people must be motivated, trained and educated. However, to be most effective, they must be exposed to the international issues and to the views and ideas of the international aeronautics community.

In an intensely competitive world facing differential resource scarcities, international collaboration becomes increasingly important. The ICAS Congress provides a unique forum for scientists and engineers, researchers and designers, manufacturers and managers and university faculty and students from all over the world to meet, to learn, to debate, to share ideas and technical information and to build those relationships that are critically important to the advancement of our profession and our industry.

In light of their increasing importance, in addition to our regular topics, we are particularly interested in receiving contributions in the following areas:

- Environmental issues
 - Safety and security
 - Air transport system efficiency
- and
- Aircraft design, systems and systems integration

As a guide to authors, the list of ICAS 2010 topic headings is appended. However, this list should not be regarded as exhaustive and papers from other relevant areas are welcome.

Authors are invited to provide an abstract for a potential paper before 31 July 2009



Congress Programme

The ICAS Programme Committee will assemble a Congress programme containing a number of parallel sessions and poster exhibitions. Student presentations (see page 4) will be embedded in the technical sessions. Based upon the experience of previous Congresses, the final programme is expected to contain over 400 oral presentations. In addition, there will be a number of high quality, invited lectures on topics of particular importance and general interest in the technical sessions. A number of "General Lectures" on subjects of major importance, delivered by leading experts, will be included in the morning and afternoon plenary sessions.

Congress Proceedings

All papers accepted for presentation (oral, standby and poster) will be included in the CD-ROM.

Congress venue

The 27th Congress will be held in Nice, France. The host and local organizer is the **Association Aéronautique et Astronautique de France (3AF)** — the ICAS Member Society in France. More information about the venue and the logistic arrangements is given on page 6.

We look forward to receiving your abstract and to welcoming you in Nice for ICAS 2010.

Ian Poll

President

Detlef Müller-Wiesner

Chairman Programme Committee

What is International Council of the Aeronautical Sciences?

- It was founded by Theodore von Karman in 1957
- It is a non-government, not-for-profit organization that facilitates and encourages the free exchange of information on aeronautical research and technology at a global level.
- It is the global organization supporting aeronautical engineering professional societies and associated organizations from over 30 countries.
- It organizes a major biennial Congress presenting timely, high quality work from the world-wide research community on a wide range of practical and relevant subjects to an international audience of engineers and scientists.
- Around 750 engineers and scientists from all over the world attended the last ICAS Congress in Anchorage, Alaska, USA, and over 450 papers were presented.
- The ICAS Congress provides a unique forum for engineers and scientists from all over the world to meet, to hear the results of the latest research and to exchange ideas and information. It also provides an opportunity for young engineers and students to develop an international network of colleagues.

ICAS Contact information:

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Handling of abstracts

Please submit your abstract online at ICAS website www.icas.org before 31 July 2009.

(Opening of the Website to submit abstracts will take place in May 2009)

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. Due to limited space in the printed programme 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.

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.

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 2009.

Full papers should be delivered by 15 June 2010 for inclusion in the CD-Rom proceedings.

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 2009 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 is authored and presented by students only.

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 1 April 2010. 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 2010 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 Ultra light 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
- Aero acoustics
- 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 Systems
- Auxiliary and Emergency Power Generation
- Aircraft Fuel Systems
- Lightning, Cabin and Water/Waste
- Ice and rain protection
- Advanced Sensor Systems
- 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 2010 in Nice, France General Information

The 27th ICAS Congress will be hosted by Association Aéronautique et Astronautique de France (3AF) and will be held from 19-24 September 2010 in Nice, France.

About Nice

Located in Southern Europe at the south eastern extremity of France, Nice is a privileged crossroads between the Alps, Provence, Corsica and Italy. The city occupies an exceptional natural site in the heart of the French Riviera. It stretches over a coastal plain open southward into the Mediterranean and bounded from East to West by a succession of wooded hills.

The ancient city "Nikaia" now counts some 350 000 inhabitants and ranks as 5th largest city in France. The dynamic and flourishing economy have given it 2nd position for tourism after Paris.

City of art and culture, Nice has been home to many a Grand Master: Toulouse-Lautrec, Modigliani, Utrillo, Dufy, Renoir, Chagall, Matisse all succumbed to the charm and elegance of the city. A source of inspiration and venue for personal achievement, today Nice offers 19 internationally renowned Museums and a year-round programme of entertainment at the Opera, the Theatre, the new concert-hall Nikaia or on the stage at Nice Acropolis.

For more than a century foreign visitors have strolled along the sea front, and the quaint streets of Nice. Against a back-drop where the colors of the sea, the sun and the surrounding hills are always present, Nice seduces by its liveliness, its beautiful ochre colored facades, its picturesque markets and most of all by its authenticity. An early morning walk through the flower, fruit and vegetable markets of the old city is an important moment of pleasure for the senses: flowery, spicy and sweet perfumes, a festival of colors on the market stalls, tasting local specialties in the sun. More about nice on www.nicetourisme.com.

Congress Venue

The ACROPOLIS Convention Center (www.nice-acropolis.com), where the congress will be held, was named "Europe's number one convention centre" for three years in a row ! Its size, state-of-the art equipment and modular spaces make it one of the most versatile convention and exhibition sites in Europe. It is located in the heart of downtown Nice, just 15 minutes from the airport, with many surrounding hotels of different price levels.

Social Programme

In addition to the Congress receptions and the banquet, the local organising committee will offer interesting visits and excursions for accompanying persons. The present planning is ½ Day tours for Monday, Tuesday and Thursday and a full Day tour for Wednesday.

Technical visits

During the Congress technical visits will be offered on Friday to several aerospace industries and organisations in the neighbourhood of Nice (Dassault, Eurocopter, MoD Flight Test Center). Technical visits to Toulouse (Airbus and Thales) and Turin, Italy (Alenia) are also planned.

Registration fee

The congress registration fee, including the CD-ROM Proceedings, is expected to be around 600 EUR for early registration.

The International Council of the Aeronautical Sciences and the Association Aéronautique et Astronautique de France look forward to your participation in the 27th ICAS Congress.

For further information please check the websites below or contact:

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