



# 30<sup>th</sup> Congress of the International Council of the Aeronautical Sciences

## CALL FOR PAPERS



Hosted by



# ICAS 2016

Please submit your abstract online  
at [www.icas.org](http://www.icas.org) before **15 July 2015**

# **CALL FOR PAPERS**

*For over 55 years now, the International Council of the Aeronautical Sciences (ICAS) has provided for the world's aerospace engineers, scientists, technologists and managers, the pre-eminent forum to present and discuss the latest developments in aeronautics. This remarkable apolitical organization founded by Theodore von Kármán and his international colleagues, continues to build on its impressive heritage, to be even more relevant to the global aerospace industries. This world congress staged biennially by ICAS is the key opportunity for those committed to serving those industries to meet, present, discuss and create opportunities that can only be done in such an international environment.*

*The pace of technological developments and the diversity of business challenges facing those working in aeronautics are greater than ever today. The knowledge, skills, facilities and finance necessary to progress our profession and associated businesses are no longer found in one place or even close to home. Therefore, in such an environment with seemingly limitless availability of unfiltered information from a diversity of sources, ICAS Congresses represent unique opportunities every two years to learn and interact with the leaders in the field from around 40 countries.*

*The topics addressed at ICAS Congresses are typically diverse and reflections of the challenges and opportunities of the day. The foundations of the industry, the aeronautical disciplines of aerodynamics and performance, stability and control, materials and structures, and propulsion and systems, always feature strongly, however every Congress brings new topics. In recent times, there has been considerable growth in sessions on air traffic management and systems, manufacturing and the supply chain, safety and security, and of course the environment and operations. As we prepare for the next Congress, it is clear that there will again be increased focus on unmanned air vehicles and systems, and operational challenges for the global air transport system.*

*The 30<sup>th</sup> ICAS Congress is to be held in Daejeon, and this is the first time the Congress will be held in Korea. Following the great success of the most recent Congress held in St. Petersburg, Russia, for which a record number of abstracts were submitted, we anticipate that there will be very strong interest in participating in this next historic meeting.*

*It is therefore with great pleasure that we invite you to consider participating in the 30<sup>th</sup> ICAS Congress, and at this time, to commence the preparation of an abstract detailing your most important work conducted over the past two-year period. As a guide to authors, the list of ICAS 2016 topic headings is appended. However, this list should not be regarded as exhaustive and papers from other relevant areas are welcome.*

*We look forward to receiving your abstract and to welcoming you in Daejeon in 2016.*

*Christian Mari*  
President

*Susan Ying*  
Chair Programme Committee

**Authors are invited to provide an abstract for a potential paper before 15 July 2015**

## **Congress Programme**

The ICAS Programme Committee will assemble a Congress programme containing ten or more 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 more than 450 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 Congress Proceedings online and on a data medium which will be published in a national library.

## **Congress venue**

The 30<sup>th</sup> Congress will be held in Daejeon, Korea. The host and local organizer is the Korean Society for Aeronautical and Space Sciences (KSAS) – the ICAS Member Society in Korea. More information about the venue and the logistic arrangements are given on page 6.

### **What is the International Council of the Aeronautical Sciences?**

- It was founded by Theodore von Kármán 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 around 30 countries.
- It organizes a major biennial Congress presenting timely, high quality work from the world-wide research community covering all aspects of aeronautical science and technology and their application to both military and aviation.
- More than 800 engineers and scientists from all over the world attended the last ICAS Congress in St. Petersburg, Russia, and about 450 papers were presented.
- All papers presented at the congress are included in the electronic publication available at the Congress. In addition, the ICAS electronic archive, containing over five thousand documents, is freely available to the world-wide aeronautics community.
- 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:**

Axel Probst – Executive Secretary  
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E-mail: [icas@icas.org](mailto:icas@icas.org), Web: [www.icas.org](http://www.icas.org)

**Please submit your abstract online at ICAS website [www.icas.org](http://www.icas.org) before 15 July 2015.**

(Opening of the Website to submit abstracts will take place in May 2015)

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 content, importance to the field, style/clarity, and completeness.

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 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 by 30 November 2015.**

**Full papers must be delivered at the latest by 1 July 2016 for inclusion in the Congress 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. Students must ensure before accepting selection in November 2015 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 to be authored and presented by students only.

### **Paper review (optional)**

For authors who apply for 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. These 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 2016. This process will enable a feedback from the reviewer(s) in time prior to the Congress.

## **ICAS 2016 TOPIC AREAS**

### **1. Aircraft and Systems Integration**

- Commercial Transport Aircraft
- Military Aircraft and Missiles
- Unconventional Aviation Systems and Concepts
- New Aircraft Concepts - Military, Civil
- Unmanned Air Vehicles
- General Aviation Aircraft
- Trans-atmospheric Vehicles
- Rotorcraft
- Multi-Disciplinary Optimization (MDO)
- Design for Survivability
- Design Education
- Systems Engineering and Integration
- Integrated Product / Process Development
- Model-Based Systems Engineering
- Modelling & Simulation for Design Development

### **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 and Energy**

- Gas Turbines
- Emerging Energy power supply
- Hybridation of propulsion by different power sources
- Propellers and Fans
- Hypersonic Propulsion
- Inlets and Nozzles
- Propulsion / Airframe Integration
- Noise and Emissions (Cf Topic No 10)
- Experimental Facilities and Techniques

### **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
- Integrated Vehicle Health Management
- Emerging Systems / New Technologies

### **7. Manufacturing and Supply Chain Management**

- Supply chain management
- CAD/ CAM and Computer Integrated Manufacturing
- Information System Technology
- Advanced Information Technology
- Design for Manufacturing
- Additive Manufacturing and 3D Printing
- Manufacturing Composite Aircraft Structures
- Engineering Management
- Robotics
- Total Quality Management
- Automation and Concurrent Engineering

### **8. Air Transport System Efficiency**

- Aircraft Operation
- Flight Management
- ATM and airspace capacity
- Weather effects
- Airport capacity
- Intermodality issues

### **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

### **11. Operations and Sustainment**

- Maintenance, Repair and Overhaul
- Logistics and Through-life Support
- Reliability and Risk
- Extreme Environmental Conditions
- Continuing Airworthiness
- Ageing Systems and Upgrade
- Total Lifecycle Analysis
- Customer and Product Support
- Life Cycle Management

# ICAS 2016 – Daejeon, Korea

## General Information

The 30th Congress of the International Council of Aeronautical Sciences will be hosted by the Korean Society for Aeronautical and Space Sciences (KSAS) and will be held from 25 to 30 September in Daejeon, Korea.

## Daejeon is greeting you!

Welcome to Korea and Daejeon—the Central Essence of Korea! Daejeon has successfully hosted 1993 World Expo, 2002 FIFA World Cup and other mega size events. The 2009 International Astronautical Congress was recognized by the organizers as the most successful congress. With all the successes we have already attained, we can assure you that we will do our utmost to make the most successful congress in the almost 60 years of ICAS history.

## Congress Venue

The ICAS 2016 Congress will be held in the Daejeon Convention Center (DCC). The Daejeon Convention Center (DCC) was opened on April 21, 2008 in support of the local convention industry, one of the Daejeon's fastest going industries. The DCC is a state-of-the-art facility with a grand ballroom with seating for up to 2,000 and an exhibition hall with a capacity of 2,600. Covering an area of 29,228 square meters (B1-4F), the DCC boasts 24 professional meeting rooms including eight medium-sized meeting rooms (1F) and four exhibition halls (1F).

## Social Programme

There are numerous local and traditional activities around Daejeon metropolitan area. Full day or half day activities and excursions will be prepared for the participant's social meeting.

## Technical visits

ICAS participants are invited to visit a number of research centers and enterprises of the aeronautical engineering industry, as well as the academic institutes located around Daejeon metropolitan area. Examples of technical tour site include Korea Aerospace Research Institute (KARI), Korea Aerospace Industries (KAI), Korean Air, Korea Advanced Institute of Science & Technology (KAIST) and Aerospace Systems Test and Evaluation Center (ASTEC) of Agency for Defense Development (ADD) at Haemi. Additionally, adjacent Daedeok Innopolis is one of the largest R&D Innovation cluster in Korea with about 30 Research Institutes and 900 corporations.

## Registration fee

The Congress' registration fee is expected to be approximately 606 Euros (early bird registration) for representatives of ICAS member societies and associates, and 738 Euros for non-members. Accompanying persons do not pay the registration fee. The registration fee for students is expected to be approximately 100 Euros.

**For further information please check the websites below or contact:**

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