

Foreword

The International Council of the Aeronautical Sciences (ICAS) (www.icas.org) is a non-government, not-for-profit scientific organisation founded in 1957 by Theodore von Kármán to promote international awareness, co-operation, and collaboration within the international aerospace community, particularly through the exchange of scientific knowledge and ideas. Today ICAS boasts nearly 30 member nations, mainly represented by their national learned societies, and nearly 40 associate members, including many of the major aerospace corporations. The strategic objectives of ICAS are to:

- Facilitate the exchange of ideas, information, and understanding about the body of aeronautics knowledge among the international community so that important research can proceed rapidly.
- Expose the international research community to challenges and issues through lectures by leading experts in aeronautics and related technologies.
- Engage young people in the global aeronautical community through special events and prizes.
- Create a vibrant international network that produces increased understanding, appreciation, and tolerance among participants.

Every two years since 1958, ICAS has organised a major congress in different locations around the world. The ICAS Congress is a multi-disciplinary forum for the exchange of the latest research, operational challenges, and strategic thinking across more than 12 high-level themes in aeronautics ranging from the fundamental aeronautical scientific disciplines through design, systems integration, manufacturing, airworthiness, operations, and aeronautical education. These themes, and the specific topics under each theme, are reviewed for each congress. Since 2003, in odd-numbered years, ICAS also has organised an Emerging Technologies Forum where ICAS member representatives and other invited delegates present and discuss their thoughts on the future direction of the sector. The Emerging Technologies Forum informs the priority themes for subsequent congresses.

September 2018 saw the first ICAS Congress organised in South America. The Brazilian Society of Mechanical Engineering and Sciences (ABCM) hosted the 31st ICAS Congress in Belo Horizonte, Brazil. The Congress involved 637 participants from 29 nations and featured 600 presentations across 141 technical sessions. When planning the 31st Congress, the ICAS Programme Committee decided to accept an offer from *The Aeronautical Journal*, produced by the Royal Aeronautical Society (an ICAS member society) to compile a special issue of papers presented at the Belo Horizonte Congress. The authors of selected congress papers were invited to submit their manuscripts for peer review and the ICAS 2018 Congress Special Issue was born. *The Aeronautical Journal* is delighted that so many ICAS papers have made it through the review process to this special issue, emphasising both the breadth and the quality of the ICAS Congress.

Professor Chris Atkin CEng FREng FRAeS
City, University of London, UK
ICAS Programme Committee Member
Special Issue Guest Editor