
Guest editorial

Special issue devoted to the 7th European Aeronautics Science Network (EASN) International Conference on “Innovation in European Aeronautics Research”

Dear Reader,

It is my pleasure to present this special issue of the *Aircraft Engineering and Aerospace Technology Journal*, dedicated to the topics of unmanned aerial vehicle (UAV) configurations, unmanned aircraft systems (UAS) architectures, performance of remotely control vehicles and systems for pilot support, discussed at the 7th European Aeronautics Science Network (EASN) International Conference on “Innovation in European Aeronautics Research” [1]. The Conference was organized by EASN together with the Institute of Aviation and Warsaw University of Technology (Faculty of Power and Aeronautical Engineering – Institute of Aeronautics and Applied Mechanics), 26-29 September 2017, Warsaw, Poland.

The EASN Association was officially established on 6 May 2008 by 20 founding members (individuals), following two European Commission (EC)-funded Specific Support Actions. EASN is:

- an international association based in Brussels;
- self-funded and self-sustainable; and
- coordinated and run by a board of directors, which is elected by the General Assembly for a three-year term.

Presently, the EASN Association has almost 400 members, including individuals and laboratories, from nearly all European universities dealing with aeronautical research.

The long-term goal of establishing EASN was to build an open, unique European platform to structure, support and upgrade the research activities of the European aeronautics universities, as well as to facilitate them to respond to their key role within the European aeronautical research community in incubating new knowledge and breakthrough technologies. The primary aim of the EASN association is the advancement of the aeronautics sciences and technologies. Any individual with interest in aeronautics and astronautics-related research may become a member of EASN. In addition, entities such as research establishments, small and medium-sized enterprises, industries and universities are welcome to join the EASN. More details about the EASN services, membership types and activities of EASN can be found at its website www.easn.net

Based on the EASN statute and coming from the assumption that dissemination of research results is one of the most important roles of EASN activity we decided to organize workshops, soon after gradually transformed into

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conferences. The first workshop was organized in Paris (2010) and the second in Praha (2012), and in the following years, successive workshops were held in Milano, Aachen and Manchester, and finally the real conferences were held in Porto (2016) and Warsaw (2017) (Figure 1).

During the Warsaw Conference, more than 350 participants attended and about 250 presentations were distributed amongst 45 technical sessions. Numerous papers were developed in current projects funded within the scope of the 7th and 8th Framework Programs (FP7/FP8), and a few of them are included in this *AEAT* Special Issue. Based on the session chairs' assessment, the authors of 83 conference presentations were invited to submit their full length papers for consideration into *AEAT* journal. The scope of this issue (13 papers, Vol. 91, Iss. 5) spans performance improvement of unmanned helicopter rotors, through less-skilled pilot decision support, control and monitoring assistance for pilots, preliminary design of 3D-printed fittings for UAVs, conflict-resolution algorithms for remotely piloted aircraft systems (RPAS) in non-segregated airspace, UAV applications for precision agriculture, 4D-trajectory time windows for uncertainty management, hybridization of training UAV aircraft, multi-rotor UAV sensor fusion for precision landing, research and selection of medium-altitude long-endurance aircraft wing sections, UAV speed polar graphs assessed by conducting flight tests, hybrid energy systems for UAVs, to innovative time-based separation procedures for civil RPAS integration.

In total, 14 papers devoted to stability, control, aero-elasticity and operations were included in Vol. 91, Iss. 3, and the rest of the accepted papers (25 of 52) devoted to aerodynamics, aero-acoustics, thermodynamics, flight dynamics and control, vibrations, operations, materials, structures, health monitoring, surface technology, measurements, UAV/UAS, engines, power plants to space technology and astronautics will be included in regular issues and published in years 2019 and 2020.

Furthermore, distinguished invited speakers updated the delegates about the newest opportunities for carrying out aeronautics related research, on available research infrastructure and novel research results. Amongst the keynote speakers were:

- Clara de la Torre, Director for Transport, DG Research and Innovation, European Commission with keynote lecture “Chances and Challenges for Research in Aeronautics within H2020” (FET, CleanSky 2, SC4 “Smart, Green and Integrated Transport”, Marie Skłodowska-Curie actions);
- Dr Marian Lubieniecki, Managing Director and Site Leader at GE Engineering Design Center (Institute of Aviation) with keynote lecture “Design and Research Philosophy in the Environment of Global Competition”;
- Christophe Hermans, President of the Council of European Aerospace Societies (CEAS) with keynote lecture “Aerospace Europe: Strengthening Collaboration and Knowledge Dissemination”;
- Bruno Sainjon, Chairman of Association of European Research Establishments in Aeronautics (EREA) with keynote lecture “EREA, A Major Contributor to the Implementation of ACARE’s SRIA”;
- Alan Haigh, Head of Department – Horizon 2020 Energy and Transport, INEA Executive Agency – European

Figure 1 The route of EASN workshops (conferences) – from Paris in 2010, through Praha in 2012, Milano 2013, Aachen 2014, Manchester 2015, Porto 2016, Warszawa 2017 and Glasgow 2018



Note: In September 2019, the 9th EASN Conference will be held in Athens

Figure 2 Keynote speakers invited to the 7th EASN Conference in Warsaw



Note: All of them delivered very interesting presentations, well received and widely discussed by participants

Commission with keynote lecture “INEA’s Role in Implementing Aviation Research in H2020: Feedback from 3 Years of Operations”;

- Dr Bruno Stoufflet, Vice-President Scientific Strategic Research and Development and Advanced Projects, Dassault Aviation with keynote lecture “Challenges of Business Jets Technological Developments”;
- Dr Fay Collier, Associate Director for Flight Strategy, Integrated Aviation Systems Program, NASA Langley Research Center with keynote lecture “Accelerating

Market Introduction of Emerging Innovations through Integrated Technology Demonstrations”;

- Hannes Ross, Design Advisor and Consultant for the Swiss Project Solar Impulse with keynote lecture “Flying Around The World With Solar Power – A Success Story”;
- Prof Dr-Ing Mirko Hornung, Bauhaus Luftfahrt e.V. with keynote lecture “Aviation 5.0 – Challenges and Solutions for 2050”;
- Dr Bruce Holmes, Vice President and Executive Director of the Skytelligence Group, SmartSky Networks with keynote lecture “Connected, Networked Aircraft and The Future of On-Demand Air Mobility; and
- Dr Frank Anton, Siemens Next47 Projects, eAircraft with keynote lecture “Electric Propulsion for Aircraft”.

Finally, I would like to express my deep appreciation to Dr Askin T. Isikveren, Editor-in-Chief of the *Aircraft Engineering and Aerospace Technology Journal*, and Stephanie Hull, Senior Publisher in Emerald Group Publishing Limited, for offering to EASN the possibility to publish a number of selected papers and for their continuous support in preparing this special issue. Publishing this volume would not have been possible without the hard work of Beata Wierzbinska-Prus, the Administrative Officer at Warsaw University of Technology. Therefore, at the end of this acknowledgement, I would like to express my sincere gratitude to her for her assistance during the 7th EASN Conference and, thereafter, for the help and organizational effort given for the preparation of this special issue.



I hope you will find this special issue an interesting read.

Professor Zdobyslaw Goraj

Guest Editor and Vice-President of EASN

Zdobyslaw Jan Goraj

Note

- 1 When referencing this editorial please use the citation for the editorial published in *AEAT* volume 91 issue 3 as they form a single editorial for the “Current Trends in Aircraft Design”, which is split into two parts. Part 1 in issue 3 and part 2 in issue 5. [Goraj \(2019\)](#)

Reference

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