
Guest editorial: The 11th EASN international conference special issue: “emerging technologies & innovative concepts in aviation and space”

The 11th EASN International Conference on “Innovation in Aviation & Space to the Satisfaction of the European Citizens” was successfully held on September 1 to 3, 2021. Because of pandemic-related restrictions, the EASN Conference took place virtually. The event included nine keynote lectures given by distinguished personalities of the European Aviation & Space Community and more than 370 technical presentations distributed in 69 virtual sessions. Important is also to underline that 85 Aviation and Space projects have disseminated their latest research results as well as the future trends on the respective technological field. In total, more than 420 remote participants from 31 countries worldwide joined the 11th EASN International Conference. These facts make the 11th EASN Conference one of the largest events in the series of the EASN Conferences. More information regarding the 11th EASN Conference can be found in the following link: <https://easnconference.eu/2021/home>.

The aim of this yearly gathering was dual: to function as a forum where innovative ideas, breakthrough concepts and disruptive technologies are presented, while in parallel to be the place for disseminating the knowledge and results achieved in the frame of research projects of the aviation and space field.

The present Special Issue “Emerging technologies & innovative concepts in Aviation and Space” includes 11 papers based on contributions made in the frame of the 11th EASN Virtual Conference, following peer review. The work of [Rodríguez-Sanz and Rubio-Andrada \(2022\)](#) explored and produced an in-depth understanding of the problem of airport capacity and demand balance by providing a framework, aiming to help policymakers and airport operators when faced with a capacity development decision. In the work of [Ebner and Koops \(2022\)](#), the potential impact of Prognostics and Health Management for Polymer Electrolyte Fuel Cells was demonstrated for the first time, with the focus being on aviation applications. [Mazur et al. \(2022\)](#) investigated the overall framework in which the Urban Air Mobility deployment is expected to be implemented in the near future.

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[Saccone et al. \(2022\)](#) presented the results of an Horizon 2020 programme, whose aim was the improvement of enabling technologies for the multidisciplinary design and development of a future and re-usable hypersonic, civil, airbreathing, hydrogen-propelled passenger aircraft for stratospheric flight with great care to the environmental impact. In “Enabling SAT single pilot operations: Tactical Separation System design advancements in the COAST Project” and in the “Design Advancements for an Integrated Mission Management System for Small Air Transport vehicles in the COAST project”, the ongoing activities of a Clean Sky 2 programme were described by [Di Vito et al. \(2022a, 2022b\)](#). The said programme aims to develop enabling technologies for single pilot operations in the EASA CS-23 category vehicles. [Zamarreño Suárez et al. \(2022\)](#) presented the development of a simulation platform, able to validate an affective-cognitive performance methodology based on neurophysiological factors applied to Air Traffic Controllers. In the work of [Pérez Moreno et al. \(2022\)](#), a preliminary machine learning methodology for the characterisation of the Air Traffic Control sector was presented. Furthermore, [Delgado-Aguilera Jurado et al. \(2022\)](#) aimed to establish a systematic framework to characterise the safety of air routes, in terms of Separation Minima Infringements in en route aircraft. Finally, [Katsiropoulos et al. \(2022\)](#) provided a holistic assessment of a stiffened panel production using a novel thermoplastic material and implementing the induction welding process, whilst [Madia et al. \(2022\)](#) analysed the simulation of the mechanical behaviour of self-healing composite materials.

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Finally, thanks are due to Professor Phil Webb, the Editor-in-Chief of *AEAT*, for offering EASN the possibility to publish several selected articles and for his continuous support in preparing this Special Issue. We hope you will find the contents of the 11th EASN Conference Special Issue interesting and worth reading.

Spyros Pantelakis

*Department of Mechanical Engineering and Aeronautics,
University of Patras, Patras, Greece*

Andreas Strohmayer

*Department of Aircraft Design, Institute of Aircraft Design
(IFB), University of Stuttgart, Stuttgart, Germany, and*

Liberata Guadagno

*Dipartimento di Ingegneria Industriale/DIIN,
University of Salerno, Salerno, Italy*

References

- Delgado-Aguilera Jurado, R., Gómez Comendador, V.F., Zamarreño Suárez, M., Pérez Moreno, F., Verdonk Gallego, C.E. and Arnaldo Valdes, R.M. (2022), “Safety performance functions to predict separation minima infringements in en-route airspace”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-11-2021-0331](https://doi.org/10.1108/AEAT-11-2021-0331).
- Di Vito, V., Grzybowski, P., Rogalski, T. and Maslowski, P. (2022a), “Design advancements for an integrated mission management system for small air transport vehicles in the

- COAST project”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-02-2022-0038](https://doi.org/10.1108/AEAT-02-2022-0038).
- Di Vito, V., Torrano, G., Cerasuolo, G. and Ferrucci, M. (2022b), “Enabling SAT single pilot operations: tactical separation system design advancements in the COAST project”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-02-2022-0042](https://doi.org/10.1108/AEAT-02-2022-0042).
- Ebner, K. and Koops, L. (2022), “Potentials of prognostics and health management for polymer electrolyte fuel cells in aviation applications”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-01-2022-0020](https://doi.org/10.1108/AEAT-01-2022-0020).
- Katsiropoulos, C., Pantelakis, S., Feline, F., Buccoliero, G. and Pappada, S. (2022), “A holistic assessment of a stiffened panel production using a novel thermoplastic material and implementing the induction welding process”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-12-2021-0362](https://doi.org/10.1108/AEAT-12-2021-0362).
- Madia, E., Tserpes, K., Polydoropoulou, P. and Pantelakis, S. (2022), “Simulation of the mechanical behavior of self-healing composite materials”, *Aircraft Engineering and Aerospace Technology*.
- Mazur, A.M., ten Thije, J., Vreeken, J., Hesselink, H., Dziugiel, B., Wyka, S., Liberacki, A., Idzikowska, T., Stanczyk, A.D., Utracka, A., Ginter, P., Czupryn, S., Giannuzzi, M., Melo, S., Witkowska-Konieczny, A., Di Vito, V. and Menichino, A. (2022), “Regulatory framework on the

- UAM operational concepts of the ASSURED-UAM project”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-01-2022-0021](https://doi.org/10.1108/AEAT-01-2022-0021).
- Pérez Moreno, F., Gómez Comendador, V.F., Delgado-Aguilera Jurado, R., Zamarreño Suárez, M., Janisch, D. and Arnaldo Valdes, R.M. (2022), “Dynamic model to characterise sectors using machine learning techniques”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-11-2021-0330](https://doi.org/10.1108/AEAT-11-2021-0330).
- Rodríguez-Sanz, Á. and Rubio-Andrada, L. (2022), “A preliminary framework for managing airport capacity and demand from an economic perspective”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-01-2022-0019](https://doi.org/10.1108/AEAT-01-2022-0019).
- Saccone, G., Ispir, A.C., Saracoglu, B.H., Cutrone, L. and Marini, M. (2022), “Computational evaluations of emissions indexes released by the STRATOFly air-breathing combined propulsive system”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-01-2022-0024](https://doi.org/10.1108/AEAT-01-2022-0024).
- Zamarreño Suárez, M., Arnaldo Valdés, R.M., Pérez Moreno, F., Delgado-Aguilera Jurado, R., López de Frutos, P.M. and Gómez Comendador, V.F. (2022), “How much workload is workload? A human neurophysiological and affective-cognitive performance measurement methodology for ATCOs”, *Aircraft Engineering and Aerospace Technology*, doi: [10.1108/AEAT-11-2021-0328](https://doi.org/10.1108/AEAT-11-2021-0328).