



AIDAA News #10

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1 AIDAA Webinars Announced

The Italian Association of Aeronautics and Astronautics (AIDAA) is pleased to announce a list of webinars covering soft and hard skills for aerospace students and professionals. The following webinars are confirmed, and others may be added:

- Giacomo Colombatti, Università di Padova—Tethers in space: deorbiting and power generation—4 h—21–22 April 2021—<https://www.aidaa.it/2021/03/25/tethers-in-space-deorbiting-and-power-generation/>
- Michele Guida, Università di Napoli—Aircraft impact dynamics—4 h—25 e 28 Maggio 2021—<https://www.aidaa.it/2021/04/14/aircraft-impact-dynamics/>
- Navid Zobeiry, University of Washington, Marco Petrolo, Politecnico di Torino—Composite materials: modeling, processing, and characterization—12 h—8–11 June 2021
- Adriano Calvi, ESA—Structural dynamics: theory and practice in the space industry—8 h—29–30 June 2021
- Lorenzo Olivieri, Università di Padova—An overview on space debris protection best practices—4 h—June 2021
- Calogero Orlando and Stefano Valvano, Università Enna Kore—Sound transmission control through optimized composite sandwich lattice panels—8 h—8–15–22–29 October 2021
- Alessio Aboudan, Università di Padova—Planetary probes entry and descent science—4 h—September/October 2021
- Daniele Pavarin, Università di Padova, Francesco Barato and Elena Toson, T4i, TECHNOLOGY FOR PROPULSION AND INNOVATION SPA—Innovative propulsion system in service of small satellites—4 h—September/December 2021

- Carlo Bettanini, Università di Padova—Introduction to the design of LEO nanosatellite orbits for local coverage—4 h—November 2021
- Andrea Alaimo and Antonio Esposito, Università Enna Kore—Full flight simulator: testing and research platform—8 h—3–10–15–20 December 2021
- Alfonso Pagani, Politecnico di Torino—Challenges and opportunities for the aerospace frontier research offered by the ERC and the MSCA program—4 h—February 2022

Details concerning the registration. Learning objectives and organization of the courses are available on the website of AIDAA, <http://www.aidaa.it>.

2 AIDAA, ASI, and LEONARDO Submitted Milan's Candidature for IAC2024

AIDAA, a founding member of the International Astronautical Federation, together with the Italian Space Agency (ASI) and Leonardo, submitted Milan's candidature as the host city of the 75th International Astronautical Congress (IAC) to be held on October 11–18, 2024. The Milano Convention Centre (MICO), the largest Convention Centre in Europe and one of the largest conference facilities worldwide, is the proposed venue.

Various academic and non-academic institutions granted support for this bid, including Thales Alenia Space, Altec, OHB, the Italian industrial clusters, many Universities, and local entities. IAC2024 will gather some 6000 delegates and 100 exhibitors, amounting to 200 scientific sessions and 5000 sqm of exposition. IAC2024 would be the fifth edition held in Italy after Rome (1956 and 1981), Turin (1997), and Naples (2012) (Fig. 1).

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Fig. 1 Logo of the Candidate city for the 75th IAC

3 Aerotech Academy

The Aerotech Campus, at Pomigliano d'Arco site, is part of the network of Leonardo Labs, specifically Leonardo's technological innovation laboratories, and is one of the centers of innovation on materials and production processes for the entire Group.

The campus promotes innovation and openness to new technological solutions in line with market trends, with the support of the University of Naples "Federico II".

With this objective, the 2nd edition of "Aerotech Academy", the joint project between Leonardo and the University of Naples "Federico II", is going to start at the Aerotech Campus.

The Aerotech Academy is an advanced training course on cutting edge engineering subjects, designed jointly by Leonardo and the University, in order to provide theoretical knowledge, operational and practical skills that can be immediately spent in advanced technology industrial sectors.

It is an interdisciplinary path in which advanced research topics and applications of interest to the manufacturing

industry are analyzed and integrated, all organized with innovative teaching and learning methods.

The training activities, in English, are developed over 9 full-time months, including 6 months of classroom training dedicated to research and higher education in the aerospace sector and 3 months of projects work on the analysis, application and evolution of case studies of real work experiences.

The Academy's training activities, recognized by the University of Naples, are provided by university professors and Leonardo experts to students selected through a specific notice of selection and in possession of a qualification at least equal to B.Eng. or B.Sc. degree.

The program of the Aerotech Academy 2021 is organized in three chapters:

- Aerostructures core technologies and beyond
- Industry 4.0 and digitalization for future factory
- Challenges for next-generation aircraft vehicles

More info are available at: <http://www.aerotechacademy.unina.it/>.

4 The WildTrackCube-SIMBA Satellite

The satellite WildTrackCube-SIMBA (System for Improved Monitoring of the Behavior of Animals), a 1U Cubesat conceived as technology demonstrator for an innovative wildlife tracking system for the National Parks in Kenya, was launched from the Baikonour Cosmodrome on March 22, 2021. The satellite was developed by the students and researchers of the S5Lab—Sapienza Space Systems and Space Surveillance Laboratory—coordinated by Prof. Fabrizio Piergentili and Prof. Fabio Santoni from the DIMA and DIAEE Departments at Sapienza University of Rome, in collaboration with Machakos University (Kenya) and University of Nairobi (Kenya). In 2019, the mission has been awarded as winner of the international contest "Win a free launch of 1U CubeSat on the first commercial mission of GK Launch Services" offered by IAF (International Astronautical Federation) and by the launch provider GK Launch Services. The nano-satellite will be able to receive the positioning and health data of the animals provided with a sensor collar, and to down link the data to the ground stations in order to allow tracking and monitoring of the wildlife involved in the experiment. Such data will be received and elaborated in collaboration with the Kenyan Universities participating in the project (Fig. 2).

The satellite is operating nominally after one month from the deployment in orbit. Onboard system detailed calibration and performance assessment is-ongoing (Figs. 3, 4, 5).



Fig. 2 Logo of the WildTrackCube-SIMBA



Fig. 3 The Sapienza students with the satellite in the integration site clean room

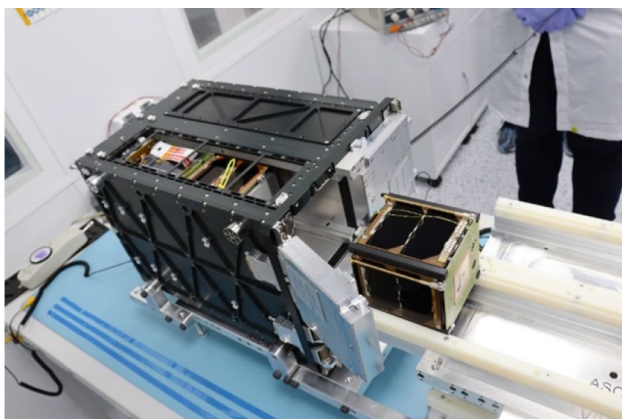


Fig. 4 The WildTrackCube-SIMBA satellite during the integration in the launch deployer (Credit GK Launch Services/Aerospace Capital)



Fig. 5 The WildTrackCube-SIMBA satellite ready for integration

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5 Kick-off of the 2021 Edition of the Drone Observatory of Politecnico di Milano

With the kick-off meeting on April 21 2021 the third edition of the Politecnico di Milano Drone Observatory has started.

Established in 2019, the [Drone Observatory \(https://www.osservatori.net\)](https://www.osservatori.net)—resulting from the combined competences of the Department of Aerospace Science and Technology and of the Department of Management, Economics and Industrial Engineering of Politecnico di Milano—aims to be a stable, separate point of reference for the study and monitoring of the rapidly evolving and constantly changing UAS sector, ensuring a qualified and independent comparison between all players involved. With the 2021–2022 research activities the Observatory aims to:

- Analyse and quantify the professional drone market in Italy (also in view of the Covid-19 emergency) to enable comparisons across the international scenario.
- Map applications at the international level, establishing their degree of maturity and attractiveness.
- Analyse the Urban Air Mobility and Delivery sector at international level and quantify the development potential in Italy.
- Understand technological alternatives available for various sector and application types.



Fig. 6 Public conference of the Politecnico di Milano Drone Observatory

- Monitor the evolution of drone legislative requirements on an ongoing basis (Fig. 6).
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