

AIDAA Educational Series and Academy Integration of Stealth Characteristics to Combat Aircraft Design

26 and 27 March 2024

Overview and General Information:

Modern combat aircraft design is governed by signature reduction requirements, both in the electromagnetic and infrared spectra. At present it is commonly accepted to sacrifice other aspects of the design, such as aerodynamic and propulsion performance, to achieve low observability. Still, the final mission requirements might require a minimum trade-off according to the airframe mission (air dominance, surveillance, strike). In this webinar, the concept of signature reduction/control applied to combat aircraft will be discussed. Attendees will learn to quantify the performance characteristics attainable from different solutions. The basics of radar and infrared signature requirements (applied to aircraft), and their effect on final airframe shape will be analysed, considering the relative importance in current and future designs. The course will end with a trade-off analysis of some current designs.

Learning Objectives:

- Definition of survivability.
- Basic of Radar Cross Section and Infrared signature.
- Design requirements and major challenges in stealth airframe design.
- Trade-off considerations.

Target audience

Doctoral and post-graduate students, aerospace and defence industry professionals, and military officers.

Dates and times:

March 26, 2024. Time: 14:30 – 16:30 (CET)

March 27, 2024. Time: 14:30 – 16:30 (CET)

Speaker

David Bacci is a Senior Research Fellow at the University of Oxford, with experience in Acoustic and Thermofluid-dynamics. He also holds a position of Visiting Research Fellow in Military Aircraft Design at Cranfield University (Defence Academy of the United Kingdom)

His research interests range from combat aircraft development (weapons bays aero-acoustic, combat performance evaluation, integration of aerodynamic design with radar and infrared

signature requirements) to next-generation turbojets (acoustic and thermal analysis, thermal management, cooling).

He is an active consultant in projects of 5th and 6th generation combat aircraft and operates as a technical advisor within the UK aerospace industry (Rolls-Royce, British Aerospace)

Registration and Contacts

Course Code: 20240326-27

This course is part of the 2024 institutional activity for AIDAA members. The **registration** requires the purchase of one of the packages described at www.aidaa.it/package-list/, and the completion of the online form available on AIDAA webpage.

Course platform: Webex, a link will be sent via email as the registration is complete.

At the end of each course, **attendance certificates** will be sent to participants via email.

For further info, please, contact academy@aidaa.it

Figures

