



PhD in INGEGNERIA AEROSPAZIALE / AEROSPACE ENGINEERING - 39th cycle

THEMATIC Research Field: INNOVATIVE CONCEPTS FOR NEXT-GENERATION AIRCRAFT

Monthly net income of PhDscholarship (max 36 months)

€ 1400.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field

Today, the development of electric propulsion and other innovative aircraft technologies in larger vehicles is one of the main challenges towards a more sustainable air transportation. The investigation of multiple interaction and integration problems related to adopting new, often disruptive, technologies in future airframes is of paramount importance for the viability of new solutions to air transportation. This must be pursued through the development of dedicated modelling, design and analysis methodologies, building on the experience and skills conceived and implemented at the Flight Mechanics and Flight Systems research laboratory (FMSlab), Department of Aerospace Science and Technology.

Methods and techniques that will be developed and used to carry out the research

The PhD project shall continue to strengthen and push forward the methodologies that have been recently introduced at the Flight Mechanics and Flight Systems research laboratory (FMSlab), Department of Aerospace Science and Technology, related to conceptual and preliminary aircraft and aircraft system design, the investigation of system performance (such as distributed electric propulsion, boundary layer ingestion, etc.) when integrated on an airframe, the operational implications, and the prediction of the environmental impact. Building on previous successful EU-funded project results (MAHEPA, UNIFIER19, SIENA), the PhD project aims at extending the capabilities in modelling and analyzing innovative aircraft configurations and their potential applications.



Educational objectives	Expertise in the development of design, operational analysis and performance analysis methods for hybrid-electric and unconventional configuration aerial vehicles.
Job opportunities	Research project investigator/manager. Senior aeronautical engineer for manned/unmanned aircraft design, analysis and testing.
Composition of the research group	0 Full Professors 2 Associated Professors 1 Assistant Professors 0 PhD Students
Name of the research directors	Lorenzo Trainelli

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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	700.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
The PhD candidate will receive a desk, possibly through a hot-desking procedure, and a personal computer, if needed. Apart from the compulsory ones, the PhD candidate will have the opportunity to follow additional courses and receive economic support to attend summer schools and participate in conferences. There will be the possibility of paid teaching assistantship.