



# PhD in INGEGNERIA AEROSPAZIALE / AEROSPACE ENGINEERING - 38th cycle

**PNRR\_351\_PUBBL\_AMMIN Research Field: POLICY MAKING FOR URBAN AIR MOBILITY  
ACCEPTANCE**

Monthly net income of PhDscholarship (max 36 months)
<b>€ 1400.0</b>
In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity	
<b>Motivation and objectives of the research in this field</b>	<p>Funded by PNRR M4C1 (potenziamento dell'offerta dei servizi di istruzione: dagli asili nido alle università) Contributes to M1C1 (digitalizzazione, innovazione e sicurezza nella PA)</p> <p>Urban air mobility (UAM) is a novel air transportation system for passengers/cargo designed to operate in the urban environment. This system offers public bodies that develop mobility plans to consider new, greener, and faster mobility to overcome the limits of the current transportation systems in highly congested areas or areas characterized by limited infrastructures achieving the sustainability goals of the PNRR. Critical for the success is the citizens' confidence and acceptance, and the capability of public admins to assess the impact of this transport means: the emitted noise, the aerodynamic and visual impacts, etc. Definition of guidelines for UAM services may improve the planning of the expansion of local mobility systems.</p>
<b>Methods and techniques that will be developed and used to carry out the research</b>	<p>Period abroad: 6 months, FH Aachen University of Applied Sciences Internship: 6 months, Regione Puglia</p> <p>The candidate will start developing simple simulation models that can be used to assess the impacts of usage on UAM vehicles while highlighting the advantages.</p>



	<p>Simple experimental assessments related to noise and aerodynamic impact will be investigated in the laboratories of Politecnico di Milano to validate the models.</p> <p>A full impact assessment tool will be developed including the evaluation of noise, visual pollution, and safety. Virtual and Augmented Reality systems will be used to develop immersive environments that can support the active participation of citizens to impact assessment exercises.</p>
<p><b>Educational objectives</b></p>	<p>Knowledge of Urban Air Mobility vehicles, Air traffic Management systems for the urban environment, Infrastructure for UAM, Flight Dynamics and Simulation, Certification Standards.</p> <p>In addition, by working in a mixed and vibrant academic and industrial context, the candidate will have the opportunity to learn on the job several transferable skills, including communication skills, team working, leadership, and ethical aspects associated with the use of innovative technologies. In support of this, the Ph.D. School of Politecnico di Milano provides a complete and rather diverse offer of courses. Each candidate must include in their syllabus at least 10 ECTS in transferable skills, to complement at least other 5 ECTS in technical disciplines associated with Aerospace Engineering, for a total of at least 20 ECTS.</p>
<p><b>Job opportunities</b></p>	<p>Aeronautical engineer in regulatory bodies, local public administrations, aeronautical companies; simulation engineer</p>
<p><b>Composition of the research group</b></p>	<p>2 Full Professors 0 Associated Professors 1 Assistant Professors 8 PhD Students</p>
<p><b>Name of the research directors</b></p>	<p>Prof. Giuseppe Quaranta</p>

<b>Contacts</b>
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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

National Operational Program for Research and Innovation	
Company where the candidate will attend the stage (name and brief description)	Regione Puglia
By number of months at the company	6
Institution or company where the candidate will spend the period abroad (name and brief description)	FH Aachen University of Applied Sciences
By number of months abroad	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>The Ph.D. candidate will receive a desk and a personal computer. Apart from the compulsory ones, the Ph.D. candidate will have the opportunity to follow additional courses, receive economic support, attend summer schools, and participate in conferences. There will be the possibility of paid teaching assistantship.</p>