



# PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 38th cycle

**PNRR\_352 Research Field: INNOVATIVE APPLICATIONS, SERVICES AND BUSINESS  
MODELS FOR THE NEW SPACE ECONOMY: DEVELOPMENT OF A CONCURRENT DESIGN  
APPROACH**

Monthly net income of PhDscholarship (max 36 months)
<b>€ 1450.0</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	
<p><b>Motivation and objectives of the research in this field</b></p>	<p>The Italian National Plan for Recovery and Resilience puts great emphasis on the development of new added value services and business models based on satellite technologies, targeting different industries and a wide set of application domains. As for Earth Observation (EO) services, either directed to institutional or business organisations, they have been traditionally developed through a sequential process.</p> <p>This sequential approach proved to be largely unsuccessful and represents one of the major barriers to a faster growth of the New Space Economy in Europe. The issue is rooted in two main weaknesses of the purely sequential approach:</p> <ul style="list-style-type: none"> <li>- in the early stages of technology development and proof of concepts, researchers largely lack of well-defined requirements, coming from industrial and commercial end users, that can inform the R&amp;D process.</li> <li>- on the other side, innovative companies and start-ups, interested in the capabilities offered by EO technologies, struggle to design piloting and validation projects of new EO-driven services.</li> </ul> <p>The project is aimed at designing and testing a novel multi staged methodology for the concurrent (i.e. in parallel) development and validation of innovative EO applications and services. Based on the expected results, actors of the Italian Space Economy will be provided with a third-party methodological platform supporting the co-development</p>



	<p>and co-innovation processes in a pre-competitive environment.</p>
<p><b>Methods and techniques that will be developed and used to carry out the research</b></p>	<p>The research project will adopt a research by design approach, leveraging on a tight collaboration and the direct involvement of the candidate in the development activities of the partner company (ThalesAleniaSpace). Specific methods and techniques will be selected and put together in a coherent methodology to cover the following stages:</p> <ul style="list-style-type: none"> <li>- The voice of the end user: through a framework for the collection of unstructured users' needs and their transformation into technical and performance requirements.</li> <li>- Data Management: analyzing the data collection process, aggregating, combining, labelling, pre-processing, quality evaluation and governance.</li> <li>- Service piloting. The design and implementation of a robust piloting phase for new EO services is crucial for a fast and reliable go-to-market decision. A novel methodology, documented in a standardised procedure, will be developed and tested for the purpose.</li> <li>- Techno-socio-economic assessment. An innovative semi-quantitative assessment model will be developed to support the post-piloting evaluation of the proposed EO application and related services.</li> </ul>
<p><b>Educational objectives</b></p>	<p>The research is multidisciplinary in nature: the candidate will develop advanced research skills in the areas of complex projects and programme management, system engineering, and business model innovation. She/he will learn how to design and conduct a research project, adopting the proper methodologies for data collection and analysis, and to present and publish results in both academic and practitioner outlets.</p>
<p><b>Job opportunities</b></p>	<p>The successful completion of the programme will open several job opportunities in both academia and companies, in research, consulting and managerial roles.</p>
<p><b>Composition of the research group</b></p>	<p>2 Full Professors 2 Associated Professors 2 Assistant Professors</p>



	3 PhD Students
<b>Name of the research directors</b>	Paolo Trucco, Giorgio Locatelli

<b>Contacts</b>	
paolo.trucco@polimi.it	

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

<b>Scholarship Increase for a period abroad</b>	
<b>Amount monthly</b>	725.0 €
<b>By number of months</b>	6

<b>National Operational Program for Research and Innovation</b>	
<b>Company where the candidate will attend the stage (name and brief description)</b>	ThalesAleniaSpace
<b>By number of months at the company</b>	6
<b>Institution or company where the candidate will spend the period abroad (name and brief description)</b>	The PhD student will spend a period of at least 6 months abroad to interact with researchers and participate in joint activities potentially foreseen in the project, according to specific needs. Indeed, the project is highly interdisciplinary, and this favors the collaboration with foreign research centers where the candidate can acquire in-depth knowledge on the theme.
<b>By number of months abroad</b>	6

<b>Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information</b>
<p><i>Funding for educational activities: 4.900,00 Euros for three years.</i></p> <p><i>Teaching assistantship: There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.</i></p> <p><i>Desk availability: shared use Computer availability: individual use</i></p>