

# CIVIL AND ENVIRONMENTAL ENGINEERING

## DIATI - Geomatics techniques for precise positioning within the SPACE IT UP! project

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| <b>Funded By</b>                                      | MINISTERO DELL'UNIVERSITA' E DELLA RICERCA [Piva/CF:97429780584]<br>Dipartimento DIATI<br>A.S.I. - AGENZIA SPAZIALE ITALIANA [Piva/CF:03638121008]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Supervisor</b>                                     | DABOVE PAOLO - paolo.dabove@polito.it                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b>Context of the research activity</b>               | The research activity will mainly focus on Geomatics techniques for precise positioning, even using GNSS low-cost instrumentation, to be carried out within the SPACE IT UP! project founded by the Italian Space Agency's Call for "Space Activities".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Objectives</b>                                     | <p>The research activity will mainly focus on Geomatics techniques for precise positioning, even using low-cost instrumentation, to be carried out within the SPACE IT UP! project founded by the Italian Space Agency's Call for "Space Activities" (topic 15), related to MUR call n°341 of 03/15/2022, for "Partnerships extended to universities, research centers, companies for the financing of basic research projects" (Prot. CI-2022-DSR-042 of 18 July 2022) financed by Decree of Award of the Italian Space Agency n. 53 of 01/26/2024 - CUP E53C24000300006. "Earth Observation Fund - Financing from the Presidency of the Council of Ministers pursuant to Art. 1, paragraph 254, of law 160/2019. The reference year 2024".</p> <p>progetto SPACE IT UP! presentato nell'ambito del Bando dell'Agenzia Spaziale Italiana per le "Attività spaziali" (tematica 15), di cui all'avviso MUR n. 341 del 15/03/2022, per "Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base" (Prot. CI-2022-DSR-042 del 18 luglio 2022) finanziato con Decreto di Aggiudicazione dell'Agenzia Spaziale Italiana n. 53 del 26/01/2024 - CUP E53C24000300006.</p> <p>"Fondo Osservazione della Terra - Finanziamento dalla Presidenza del Consiglio dei Ministri ai sensi dell'Art. 1, comma 254, della legge 160/2019. Anno di riferimento 2024"</p> |
| <b>Skills and competencies for the development of</b> | <p>The PhD student should be able to:</p> <ul style="list-style-type: none"> <li>- acquire and process GNSS data;</li> <li>- manage and address the fusion of satellite data, opportunity data and Wireless Sensor Networks (WSN).</li> </ul> <p>The PhD student will also have to develop methods related to the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

**development of  
the activity**

implementation of low-cost GNSS technology (mass-market and smartphone) for both atmospheric and landslide monitoring and data fusion algorithms involving WSN networks.