

Research Project

Network Analysis, Accessibility and Resilience: Uni- and Multi-Modal Assignment for Smart Hubs Analysis

Abstract

Urban mobility is nowadays one of the key dimensions analysed within the general framework of sustainable transport. In particular, great attention is given by researchers and practitioners alike to new approaches aimed at diminishing the environmental and social impacts of mobility within urban centres. Among these approaches is the implementation of mobility hubs, allowing users to switch between different modes of transport (public and shared), therefore disincentivizing the use of private transportation.

The project “Smart Mobility Hubs as Game Changers in Transport” (SmartHubs), funded through the ERA-NET Urban Accessibility and Connectivity call of JPI-Urban Europe, examines mobility hubs, in order to assess if a co-designed, user-centric development can enable mobility hubs to act as a game changer towards inclusive sustainable urban mobility, accessibility and connectivity. SmartHubs aims at developing and applying research methods and tools in SmartHubs Living Labs in several European cities. Among the different tools developed in SmartHubs, the University of Bologna (Unibo) will develop an accessibility/connectivity network analysis and resilience tool to examine the impacts of mobility hubs on transport network resilience. Such tool will then be applied to data arising from the SmartHubs living labs.

The holder of the present grant will collaborate with the Unibo team in the following project-related activities:

- Reviewing available methods for urban flows assignment to public transport routes or possibly multimodal options (for example, public transport and micromobility), especially in the case of disruption scenarios.
- Implementing the chosen approach and collaborating with the other members of the team to integrate it within the Unibo team’s proposed tool.
- Applying the planned analyses (accessibility, network, resilience) to the case studies (Living Labs) of the project.
- Collaborating to writing project reports and articles to be published in international journals.

The grant holder will join a team of two faculty members, a software consultant, a post-doc and a PhD student, and will have the possibility of actively participating to the project meetings with the international partners.

Plan of Activities

Within the one-year contract, the grant holder activities could be approximately divided as follows:

- Part 1 (6-8 months): Choice and implementation of the uni- or multi-modal assignment method.
- Part 2 (4-6 months): Collaboration to project reports and articles.