

PROJECT: DEEP CARBON SHIFT – Alliance for Deep Tech Education towards Decarbonized Cities

SCIENTIFIC DIRECTOR: Konstantinos Kepaptsoglou

DURATION (MONTHS): 36 months

DEPARTMENT: Department of Infrastructure and Rural Development

FINANCIER: educational project

DESCRIPTION: Urban multimodal transportation systems integrate different modes and services to provide seamless transportation to travelers. Mobility hubs are a transformative solution to address challenges related to the efficiency and connectivity of multimodal transportation systems, as they expand the role of public transport hubs, by serving as pivotal nodes of a multimodal network. The PUZZLE project aspires to revolutionize planning and operations of urban multimodal transportation systems, by developing an integrated framework and innovative tools for planning and evaluating core aspects of mobility hubs. The project envisages to introduce a novel approach for identifying prominent mobility hubs, setting up their operations and assessing their performance. The underlying motive is that of improving the performance of multimodal transportation systems, by planning and developing efficient mobility hubs. The overall methodological framework project framework will comprise three main pillars: The first pillar will involve identifying prominent transport interchanges and establishing mobility hubs along with their jurisdiction areas. The second pillar will focus on developing control and operational strategies of different modes and services at the mobility hub level. The third pillar will leverage agent-based simulation and optimization methods to evaluate the performance of these hubs at the network level. The framework will be implemented and tested in a real-world case study of a multimodal transportation network.