

TOP TEN

Dung Nguyen-Dinh

Budapest University of Technology and Economics

Category: Airborne

Country: Hungary

Research Area 2: Green Mobility & Decarbonisation

Idea Number: 12

Design and Development of Drones as Novel Transportation Systems

Science and technology are ready to develop and produce an extensive series of low-cost, small, remotely controlled, or autonomous air vehicles as drones (generally UAV, UAS, including even small pilot-less air vehicles, air taxis). The existing air traffic management system cannot control the predicted amount of drones operated at low altitudes in the urban area between large buildings and complex environments (with, e.g., reflection), due to the limitations in the system capacity, the required workforce, the expected cost, and the required duration of the system development. In addition, given the anticipated large amounts of drones and widely varying performance characteristics, it is far beyond the capabilities of conventional air traffic management systems to deliver services for drones in a cost-effective manner. Hence, integrating drones in smart city transportation is an essential task, which requires innovative, highly automated, autonomous solutions. The main objective of the project is to develop an intelligent total transportation management system for integrating drones into a smart city environment. This objective is divided into four sub-objectives, including: (i) to develop the concept of an intelligent total transportation management system for future smart cities; (ii) to analyse and develop an air traffic management and flight control for managing drones or a group of drones; (iii) to improve a method for managing drones based on drone-following models and the internet of things and the Internet of Drones technologies; (iv) to investigate the landing process of UAVs.

