Application of IDeS (Industrial Design Structure) to Sustainable Sharing Mobility: Case Study of an Inclusive Autonomous Vehicle

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Abstract

According to recent analyses, it has been found that the motorization rate, which has risen to 66.6 vehicles per 100 inhabitants, is reflected in worsening traffic conditions in cities. As a result of the pandemic, awareness of the sanitation problem has grown and private vehicles have been preferred for travel at the expense of public transport and sharing. In response to this negative trend, European policies have also moved to incentivize and innovate more sustainable mobility. For this reason, the developed project aims to achieve more connected mobility and more comprehensive environmental, social and economic sustainability. The proposed vehicle offers a new way of getting around the city, reducing the importance of private car use. It appeals to a wide audience since it can be used without a license and by people with disabilities independently. Following the IDeS method, the object was the development of an inclusive and sustainable self-driving urban micromobility vehicle, and through the application of innovative methodologies, it was possible to analyze the state of the art of the segment under consideration, arriving at the design of a vehicle that goes to fill the gaps in urban mobility. These design methodologies, characterized by the combination of different techniques used in the industry, made it possible to create a design that goes to solve the problems of travel in the near future and create new opportunities for mobility.

Keywords

Industrial Design Structure (IDeS), Quality Function Deployment (QFD), Stylistic Design Engineering (SDE), Sharing Mobility, Design for All.

Biography

Giulio Galiè is a PhD Student at DIN - Department of Industrial Engineering at Alma Mater Studiorum - University of Bologna. He is involved in the study of issues related to design planning, car design, 3D printing, and the implementation of innovative technologies such as AR/VR within design paths.

Martina Aldrovandi, Silvia Franco, Elisa Rana are students of Advanced Design at Alma Mater Studiorum - University of Bologna. Their main interests are in innovative technologies inside design projects and systems.