URBAN ASSEMBLAGE: THE CITY AS ARCHITECTURE, MEDIA, AI AND BIG DATA.

• Paper / Proposal Title:
The influence of Artificial Intelligence on Autonomous Vehicle Design and Users’ Lifestyle within Responsive Urban Environments

• Author(s) Name:
Marco Zilvetti, Matteo Conti

• University or Company Affiliation:
Northumbria University

• Abstract (300 words):
Cities today can be regarded as living bodies, in which physical and digital realities overlap each other, changing the way users experience both private and shared spaces in their everyday life.

The widespread of web-based technologies has enabled the utilisation of affordable and portable solutions that allow users to stay connected and access key information through different platforms and apps. Such technological advancement is more often applied to the field of urban mobility, with an increasing number of flexible services for multi-modal transport which enable travellers to subscribe to services and access a range of shared and on-demand rental vehicles at any time.

As a natural evolution of this data-fuelled interactive reality, current vehicles are gradually evolving into connected ‘mobile spaces’ where occupants totally or partially forego the role of driving, by relying on onboard Artificial Intelligence. This digital ‘brain’
is designed to continuously exchange information with the surrounding built environment, and make key decisions accordingly, whilst on the move, and even in extreme situations.

Looking at future mobility scenarios of fully autonomous vehicles (AVs), passengers' attention will no longer be focused on any driving task. This constitutes an unprecedented opportunity to re-think the primary role of fully autonomous interiors from scratch.

The proposed paper suggests a set of key recommendations for the design of the next generation AVs which are founded on human-centred research and design principles rather than on the systematic implementation of cutting-edge information and communication technologies (ICTs). The conducted research outputs involved both final users and experts' insights in order to better understand and respond to travellers' different lifestyles, needs and issues within a smart mobility and city environment.

This represents the latest challenge that society faces in the multifaceted area of smart mobility, which requires new cross-disciplinary approaches to design thinking and concept development.

• Author(s) Biography (200 words each):

Dr Marco Zilvetti is a PhD-qualified product designer with Doctoral degree in transportation design from the Politecnico di Milano. As part of his pluriannual collaboration with Politecnico, Marco has been teaching 3D modelling and virtual prototyping applied to product design, while also collaborating as a tutor for the Master in Transportation and Automobile Design (TAD).

Since 2010 Marco has held positions with a number of major multinational companies, working on several projects in the fields of product, interior and communication design. After obtaining his doctoral degree in 2017, he has actively collaborated with both academia and industry, focusing his activity on the fields of urban mobility and smart cities, exploring the boundaries of different disciplines and the strategic relationship between urban studies and interior design.

Since 2019 Marco is a full-time lecturer for the Interior Design programme at Northumbria University - School of Design, Arts and Social Sciences. As part of his activity, and driven by his passion for the subjects, he has been involved in research projects which explore the potentials of technologies applied to both smart ports and product-service design.
Matteo Conti is a senior lecturer in design innovation, and a specialist in industrial & transportation design practice with a particular research focus on smart mobility, e-mobility, and low carbon vehicles (LCVs).

As an expert in 'usability aesthetics in smart mobility' Matteo has developed a track record of completed live projects in the low carbon vehicles (LCVs) sector (mainly through the High Value Low Carbon design entity) and autonomous vehicles (AVs). Currently he leads the MA/MSc Multi-Disciplinary Innovation course alongside MA Design at Northumbria University.

As a former Senior Tutor at the RCA in MA Vehicle Design, Matteo has acquired considerable experience in coordinating and leading external advanced design projects with the automotive industry as well as contributing to postgraduate teaching and research. Previously, he worked in the marine industry, utilising his design and business capabilities to establish and manage a design consultancy providing a tailored design service to clients, mainly in the yachting area.

His development focuses on ongoing industrial and academic collaboration for research purposes alongside commercial value for business through contracted studio and consultancy projects. This is achieved through creative solutions using strategic innovation to solve real world, complex challenges to social, organisational and commercial issues.