METACITY Project: Revolutionizing Urban Spaces with Digital Twins and Virtual Reality

Purpose of the Project: In an era where our digital and physical worlds are increasingly intertwined, the METACITY project aims to investigate how we understand and interact with urban spaces and their digital representations. By leveraging the latest advancements in Social Virtual Reality (VR) and Urban Digital Twins (UDTs), this project seeks to reimagine urban public spaces for the digital age.

Description of the Research: The project delves into the concept of UDTs—essentially digital mirrors of cities that integrate data from various urban systems like energy, traffic, and buildings. It explores how these digital twins can go beyond mere technical tools to become platforms for social interaction and citizen engagement. The research also harnesses the immersive power of Social VR, envisioning virtual public spaces where people can interact in ways akin to physical urban spaces.The METACITY team plans to investigate how UDTs can represent and enhance urban spaces, determining whether virtual public spaces can function like their physical counterparts. They aim to use Social VR as a testing ground for urban design, assessing how VR-based methods can be applied to study and shape spatial phenomena in both virtual and real environments.

Why This Research Topic Was Undertaken: Urban spaces are not just physical locations but are deeply intertwined with social, political, and emotional facets of our lives. With the rapid digitalization of urban life, it's crucial to understand how digital technologies like UDTs and VR can influence these spaces. The project addresses a critical research gap at the intersection of urban planning, digital geography, and VR technology. It’s driven by the necessity to pivot urban development towards a more participative, inclusive approach where citizens play a central role in shaping their environments.

Expected Effects: The METACITY project anticipates a range of outcomes. One key aspect is the development of a comprehensive theoretical framework that bridges the gap between the physical and digital realms of urban spaces. This framework is expected to offer new insights into how digital technologies can enhance citizen engagement and urban planning practices. The project also aims to contribute to the theoretical and methodological advancements in digital geography and urban planning. By integrating VR and UDTs in urban design, the project expects to open new avenues for participatory urban planning, allowing for more dynamic, responsive, and inclusive urban spaces. Moreover, the research findings are likely to have practical applications in urban planning. They could influence how cities are designed and managed, making them more adaptable to the needs and preferences of their residents. This could lead to urban spaces that are not only more socially efficient but also more meaningful and engaging for the people who inhabit them.