



Take Back the Streets: Simulating the Urbanization of the Air.

In winter semester 2019, the Professorship of Urban Design at the Faculty of Architecture will conduct a Master Level Design Studio (Urban Design Research Studio, short: UDRS) with the topic of “Urbanization of the Air”. In the design course, the students will follow the hypothesis that urban traffic systems will at some point work entirely without cars. It will test how the use, atmosphere and character of our cities will change if current person and freight traffic is replaced by more public transport, more (freight-) bicycle transport, and by drones and flying cars.

The ICT project consists in developing a simulation tool for the design studio that is in the first phase is developed in coordination with the Chair of Urban Design and then together with a group of architecture students. The case study of the design studio is planned in Munich.

Context

From air taxis/flying cars to the UAV's; the 'Urbanization of the Air' is a multi faceted issue, with civilian, commercial and civic aspects. In the scope of the UDRS, we are considering their widespread implications on the urban space, where we are going to investigate its re-configured spatial outcomes in two scales: City and neighborhood. For this, we plan to integrate existing open-source maps and transportation data as a basis, integrate datasets and develop configurable scenarios and simulations of their spatialities, which are then tested in neighborhood scale.

Urban Design Research Studio

Urban Design Research Studios are formulated to understand, critically analyze and evaluate the site and its conditions, and propose spatial design alternatives. UDRS's act as an intermediate ground in bringing together of actors and stakeholders, and are also testing grounds for implementing research, and investigating new methodologies through design solutions.

Contact

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Aims & Outcomes

We want to build up a framework for a variety of simulations where elements and factors will be defined within the scope of the UDRS. Here, the main task for the IDP is to create a simulation platform and infrastructure, with longer term development possibilities, and with a visual interface that includes 2D and 3D representations. Its outcome will be a multi-parametric fully customizable simulation model. We want this model to interact with the visual maps and visual data outputs with capacity of configurability with user inputs, through a parameter - input web interface.

Work Packages

The project goes hand in hand with the UDRS in WS 2019, and with the research and inputs of the UD students. Expected workpackages are:

- Defining requirements and developing a suitable software concept.
- Integration of existing open-source databases.
- Integration of the new transport data
- Simulation of the network - mesh model.
- Creation of a GUI with data visualization