Development of the Front-End Environment for a Ride-Parcel-Pooling Smart Phone Application

Background Information
Passenger and freight transportation is increasing at rapid pace, which is especially noticeable in big cities due to poor traffic quality and lack of space. Vehicle automation, digitalization and connectivity enable the operational combination of freight and passenger traffic. So far, these two forms of transport were treated independently from each other in previous research projects. However, the combination of both enables, especially in urban areas, to exploit unused capacity of passenger transportation for logistic services in order to optimize capacity utilization and reduce the overall mileage within the urban transport networks. With increasing connectivity, data availability and the rising trend towards on-demand mobility (ODM), the operational integration of ODM and city logistic, in the following denoted by Ride Parcel Pooling (RPP), becomes possible. This could improve the overall traffic situation and by that, reduce air pollution and noise emission, leading to a more liveable city environment.

Task Description
This Ride-Parcel-Pooling project includes the front-end development of a smartphone app for the service. The task is to design and implement two apps that should be able to process transport orders and provide the drivers with routing information, respectively. The driver app should show the assigned routes and the processes that are related to the stops in the route. Different stop symbols should indicate whether to pick-up / drop-off customers or parcels. The customer app should allow requesting passenger and/or parcel transportation (possibly with time constraints), receiving offers, booking, and a data-privacy conform tracing of parcels and routing. The app will communicate with a backend, which is developed in another IDP. Therefore, coordination of two IDP projects to define the interface might be necessary.

Contact:
Fabian Fehn, M.Sc. (fabian.fehn@tum.de)
Roman Engelhardt, M.Sc.(roman.engelhardt@tum.de)
Lehrstuhl für Verkehrstechnik
Arcisstraße 21, 80333 München
Tel. +49 89 289 28594
www.vt.bgu.tum.de