Abstract: Real-time Accessibility Platform for Urban Transport

DUT Call 2025, 15-Minute City Transition Pathway
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Summary

- Development of a real-time accessibility map for urban areas
- Real-time and long-term route generation according to 15-Minute City principles
- Data-driven transport insights for private and public transport operators

We propose the development of a *transport intelligence platform* designed to support both private and public transport operators in planning and operating adaptive, data-driven urban mobility systems. The platform integrates multi-source data, including public transport information, passenger flows, event data, demographics and accessibility metrics to analyze long-term demand patterns as well as short-term fluctuations caused by large-scale events or network disruptions.

The proposed system provides a *real-time accessibility map* that models connectivity across the urban area and identifies weakly connected areas and routes. Based on this analysis, the platform provides data-driven suggestions for new transport connections, both in real time and for long-term network planning.

Discrete choice modelling is used to understand and predict how people choose between transport alternatives such as routes, modes, or departure times. Behavioural insights related to time, cost, and reliability are combined with real-time data streams to forecast travel demand. *Adaptive real-time survey tools* are used to update the models, enabling dynamic forecasting and supporting user-centred, demand-responsive transport planning.

By combining predictive analytics and behavioural modeling with dynamic routing capabilities, the solution enhances the resilience, inclusiveness, and efficiency of multimodal transport systems, supporting the realization of the 15-Minute City through improved accessibility and more responsive public transport services.