Master Thesis – Data Needs in Logistics Carbon Footprint Assessment

Background
Transport utilization is a key performance indicator when assessing the efficiency of logistics, and it directly impacts the carbon footprint of the transportation segment. Optimizing the utilization is an important step towards more sustainable transportation and understanding the cost of individual parcels is an important step in incentivizing and enabling that optimization. Consequently, logistics companies face demands to present carbon budgets and calculations, which is a major challenge in multi-actor, multi-pickup, and multi-drop scenarios.

Thesis Description
This thesis is jointly supervised by Ericsson and Scania, as part of a larger project within Software Center (www.software-center.se) to explore opportunities in combining connectivity and logistics technology to further improve the sustainability of transports.

The focus of the thesis is the question of what data would be needed to accurately determine the energy consumption and carbon footprint for the end-to-end logistics of an individual unit of goods, and which levels of approximation are appropriate at different stages in that transportation chain.

If time allows, the scope may be expanded in dialog with the thesis students to address e.g., data collection methods and impact, and/or connectivity technology requirements. The thesis is proposed as one of two complementary MSc theses, planned to run in parallel in an international collaboration context.

Qualifications
This project is intended for students in communications, transport, and infrastructure, specializing in sustainability and/or data collection, management, and analysis.

Extent
2 students, 30hp each

Location
To be decided

Preferred Starting Date
Spring 2023

Keywords
Logistics, Sustainability, Carbon footprint, Connectivity, Data collection, Data analysis

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