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ProKapa: Dynamic capacity management to support the development of Physical Internet's framework conditions

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Poster Abstract

Dynamic in freight transport is increasing. Disruptive developments such as „Physical Internet", „Cyber-Physical Production Systems", or „Sharing Economy" bring along consequences for logistics and its stakeholders, which are not yet known. A continuous preplanning and surveillance of transport demand offers potential to react proactively to changing market conditions. Approaches that seize on such potential for logistics service providers or fragmented provider independent carriers are not existing.

ProKapa aims at enabling logistics service providers to react flexibly and adaptably to dynamic market changes and to challenges of „Physical Internet". Transport demand within an abstract transport network is continuously modeled by extensive use of data. According to the transport demand, capacities of transport means and staff are plannend close to real time and resource allocation is optimized within the network. Resulting from remaining capacity constraints, transport demand is smoothed by measures in pricing strategies, horizontal and vertical cooperation as well as sales.

Expected results are suitable methods and tools for the preliminary planning of transports, a stronger interconnection between data sources and recommendations of actions concerning the adjustment of capacity, the allocation of resources and pricing. Furthermore, higher acceptance of integrated planning systems is expected.