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DIT4TraM - Distributed intelligence and technology for traffic and mobility management

Scientific Responsible
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The transport sector is expected to alter shape in the coming decades. This transition is driven by user-centred mobility services, integrated and intelligent transport networks, automation, as well as public and private innovation. Next to Big Data and Artificial Intelligence, these developments provide major opportunities, but also increase system complexity. The overarching aim of DIT4TraM is to develop a generic distributed control paradigm, applicable at the level of traffic operations, mobility management, demand-supply synchronization and shared mobility, including advanced monitoring and machine learning technology for a variety of novel multi-modal management and mobility concepts operating at all urban scales. A holistic approach to decentralization, distribution and mechanism design for monitoring and control is proposed aiming to achieve social optimality. Our vision is to support the transition to seamless and sustainable connected and autonomous mobility by disentangling the system components to the highest extent possible, yet ensuring sufficient cooperation and emergent coordination by smart system design, leading to livability, safety, resilience, efficiency, as well as privacy, participation, fairness and sustainability on a city scale.