Big Data for Resilient Logistics (DATAREL)
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The application of Operations Research techniques in the field of Supply Chain & Transportation Management is well developed and has resulted in many successful implementations of planning and control mechanisms. These mechanisms typically heavily rely on the operational data stored in classical databases. Nowadays, data comes in from a wide variety of sources at a fast rate, resulting from developments such as the Internet of Things, mobile devices, cloud computing, data centres, etc. These Big Data sources require an extension of classical Operations Research techniques, using various data science methods (e.g., Data Mining, Machine Learning and Artificial Intelligence), but provide unprecedented opportunities to improve supply chain operations. DATAREL aims at advancing the extant logistic knowledge with novel Internet of Things and Big Data solutions for detecting emergence, which is used to improve the quality control and multimodal planning in terms of resilience, real-time response, efficiency and dynamics. The research activities include the development of methods and tools supporting resilient planning of supply chain operations, including a framework that combines the scientific disciplines of Supply Chain Management & Transportation Management, Big Data, Artificial Intelligence and Operations Research.