Call for Papers, Issue 5/2020

Information Systems in Intermodal Transportation and Traffic Management

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1 Special Issue

The recent industry studies show that current transportation chains are far from fully exploiting the potential which is offered by existing transportation assets and infrastructure as well new technologies in transportation systems. As a result, a speedy reorganization and better utilization of existing assets and infrastructure for breakthrough efficiency is needed. To achieve this, a number of topics need to be addressed in an integrated way. This includes the harmonization of information systems, the establishment of interoperability on technical and regulative levels, the combination of different concepts from the research fields of mathematics, operations research, business administration, law, engineering and IT, but also the adoption of best practices to make them widely accepted. Interoperability between collaborative decision making systems in aviation, shipping and in other domains can support intermodal traffic planning as well as management. Current trends such as synchromodal transport operations or autonomy/

automation on land, in the air and at sea create further opportunities for the optimization of traffic management.

In addition to this, the organization of intermodal transportation chains is increasingly being digitized and thus leads to the generation of various types of big data from different sources and sensors. This in turn requires solutions for automatic collection and management of useful data, and the extraction and utilization of useful information from the dynamic mass of big data. This has recently motivated researchers and scientists to explore new methods and technologies for applications of big data technologies in transportation. Concepts like machine learning, deep learning, knowledge discovery, and data mining can be named as relevant fields of research. Moreover, algorithms for the prediction of the behavior of mobile entities including cargo trains, ships and trucks as well as their loads across inter-organizational transportation chains provide additional support for transport and traffic management and are the basis for the establishment of more reliable time forecasts, exception handling, and even autonomous vehicles.

Apart from creating possibilities in the optimization of transport and better traffic management, digitalization also fosters new business models like Mobility as a Service. The challenge of these new service models is to focus on the integration of new systems into a higher-level System of Systems and service ecosystems. To this end, it is necessary to consider the different perspectives of socio-technical systems during the development of new systems as early as possible. In addition to technical and computational aspects, systems include the consideration of day-to-day business operations, established processes, the human factor and cross-national laws. For this purpose, methodologies and approaches must be provided that take these

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aspects into account at the conception stage of the life cycle of an (information) system.

2 Objective

The objective of this Special Issue on "Information Systems in Intermodal Transportation and Traffic Management" is to present the latest advances and developments of concepts, methods, techniques, systems and tools dedicated to the efficient management of transportation processes. We also invite the presentation and discussion of case studies and real world applications in this issue.

Topics of interest include, but are not limited to the following areas:

- Intelligent applications and services in traffic management
- Sensor data processing and fusion for intelligent offline and online information systems
- Transition of transport systems (Mobility and Transportation as a Service)
- Support for highly automated systems
- Machine learning for decision-making in (semi) autonomous vehicles
- Logistics networks and vehicle routing
- Planning and control of transportation and intermodal activities
- Data analytics, machine learning and AI in intermodal transportation and traffic management
- System of Systems in intermodal transportation and traffic management

- Modeling and simulation systems in transportation
- Formalization of traffic regulations
- Data-driven business models in intermodal transportation

3 Submission

Authors are asked to submit their papers online via Springer's submission system Editorial Manager (http://www.editorialmanager.com/buis/) indicating the special issue. All papers must follow the typing and formatting instructions for Business & Information Systems Engineering (BISE) available at http://www.bise-journal.org. In particular, manuscripts should not exceed 50,000 characters (discounting 5000 characters for each figure/table).

Submitted papers will undergo a double-blind review process and be refereed by at least three domain experts with respect to quality, originality, relevance, and scientific rigor.

4 Schedule

Submission deadline	1 November 2019
Author Notification 1	1 January 2020
Revision 1	1 March 2020
Author Notification 2	15 April 2020
Revision 2	20 May 2020
Anticipated publication date	September 2020