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Towards an experimental testbed for interoperability analysis of railways regulation policies : methodological experiments and first retex

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Railway track - IESM2015

Special talk

Towards an experimental testbed for interoperability analysis of railways regulation policies : methodological experiments and first retex.

Agnès Lanusse, Alain Faivre

Safety and security are major issues for the generalization of ERTMS (European Rail Traffic Management System) in Europe.

Many studies have been conducted in the past for the analysis and verification of the ETCS (European train Control System) principles underlying onboard equipment and track signaling systems. Fewer works have considered regulation issues and the analysis of interoperability of new European rules with national or local regulations.

The goal of the PERFECT project is to provide a test bed to study such issues, and help regulation authorities to analyze the impact of regulations changes in specific local policies, in the context of potential accident situations. This test bed can be considered as a laboratory to study actual scenarios and help suggest preventive actions or adapt local regulations.

The aim of Task2 is to provide guidelines and experimental tooling composed of a set of complementary evaluation tools to support such studies. In the session three presentations will illustrate experiments conducted in the project using different formalisms (UML/SysML, HPCN, B) and techniques (symbolic execution, model-checking, simulation, proof).

We present how these techniques can be combined and how they can assist expert engineers evaluate regulation policies in specific contexts.