The FM-RAIL-BOK Workshop in Madrid 23 September 2013

10:00-11:00 Joint FMICS / FM-RAIL-BOK Keynote
Twenty-Five Years of Formal Methods and Railways: What Next? Alessandro Fantechi, Università di Firenze

11:00-11:30 Coffee Break

11:30-13:00 Motivation and Presentations of Papers

1. **Motivation**
BoKs and Engineering Knowledge
*Tom Maibaum, McMaster University*

2. **Ontologies**
Ontology for complex railway systems: application to ERTMS/ETCS system.
*Olimpia Hoinaruo, Georges Mariano and Christophe Gransart*

3. **Verification of Data and Designs for Railway Control Systems**
Verification of Scheme Plans using CSP||B.
*Philip James, Faron Moller, Hoang Nga Nguyen, Markus Roggenbach, Steve Schneider, Matthew Trumble, Helen Treharne and David Williams*

Applied Bounded Model Checking for Interlocking System Designs.
*Anne E. Haxthausen, Jan Peleska and Ralf Pinger*

Data Formal Validation of Railway Safety-Related Systems: Implementing the OVADO Tool.
*Robert Abo and Laurent Voisin*

13:00-14:30 Lunch Break

14:30-16:00 Presentations and Group Work

1. **Verification of Interlocking Programs Expressed in Ladder Logic**
Validation of Railway Interlocking Systems by Formal Verification, a Case Study.
*Andrea Bonacchi, Alessandro Fantechi, Stefano Bacherini, Matteo Tempestini and Leonardo Cipriani*

Verification of solid state interlocking programs.
*Phillip James, Karim Kanso, Andy Lawrence, Faron Moller, Markus Roggenbach, Monika Seisenberger, Anton Setzer and Simon Chadwick*

2. **ECTS/ERTMS Modelling**
Formal Modelling of Train Control Systems with Petri Nets.
*Michael Meyer Zu Hörste and E. Schnieder*

3. **Group Work** (15:15-16:00)

16:00-16:30 Coffee Break

16:30-18:00 Group Work continued and ending with a plenum session.