

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**.