



18th International Zurich Symposium on Electromagnetic Compatibility

WS-1 on Friday September 28

Title workshop	EMC Management and Assurance in Railway
Organizer's name	Ade Ogunsola
Organizer's affiliation	Parsons Group International Limited, UKI

Speaker	Ade Ogunsola
Affiliation	Parsons Group International, UK
Title	Railway EMC Management from Requirement to Delivery
Abstract	The EMC management and assurance process of a typical railway project will be discussed. The application of functional safety, signalling compatibility, and safety assurance as well as requirements definition and analysis will be covered.
Speaker	Chris Marshman
Affiliation	York EMC Services, UK
Title	The issues raised for the Railway industry by the New EMC Directive, 2004/108/EC'
Abstract	<p>The new EMCD raises a number of issues for the Railway Industry: for equipment suppliers conformance will now include preparing Technical Documentation; for infrastructure controllers the Fixed Installation (FI) requirements must be addressed and the responsible person identified – this will impact contractual arrangements and maintenance of documentation whilst the FI remains in operation.</p> <p>Supplier conformance requirements will be addressed, specifically the Technical Documentation and information requirements. The supply side will also address components for further manufacture and clarify responsibilities.</p> <p>The FI definition and its application to the Railway will be considered and the issues identified. Particular attention will be paid to identifying the responsible person and the contractual issues. Apparatus not otherwise placed on the market will also be considered and the 'grey' areas identified.</p>

Speaker	Gerhard Zimmer
Affiliation	Siemens Germany
Title	Rolling stock approval processes and requirements
Abstract	National and European rolling stock approval processes will be summarized and the impact of the European Directive of Interoperability will be discussed. Related EMC requirements of different infrastructure operators will be presented and evaluated.
Speaker	Diego Bellan and Sergio A. Pignari
Affiliation	University of Turin, Italy
Title	Distributed parameter modelling of a railway line for the characterisation of open area test sites for radiated emissions measurement
Abstract	An approximate distributed parameter model of a railway line is developed. The model is based on TL theory and used to investigate the influence of geometrical/electrical characteristics of the infrastructure on the emissions radiated by a rail vehicle running along the line. The model is validated by comparison with numerical 3D electromagnetic simulations of the structure under investigation. The analysis is aimed at providing guidelines for proper identification of open-area test sites, and for the assessment of specific conditions foreseen by the international standard EN 50121.
Speaker	Leonardo Sandrolini
Affiliation	University of Bologna
Title	Application of Circuit Modelling to Rolling Stock Power Supply
Abstract	The assessment of the state of the art regarding circuits modelling of rolling stock power supply systems and the coupling phenomena generated by such system. Choice of the most suitable computing tools for modelling

Time Schedule: Friday September 28

9:00 - 9:10 Welcome/Introduction (Ade Ogunsola)

9:10 - 10:10 EMC Requirement Specification (Ade Ogunsola)

10:10 - 11:10 Impact of the New EMC Directive (Chris Marshman)

11:10 - 11:30 Tea Break

11:30 - 12:30 Rolling Stock Approval Processes and Requirement (Gerhard Zimmer)

12:30 - 13:30 Lunch

13:30 - 14:30 Signalling Compatibility and EMC Safety (Ade Ogunsola)

14:30 - 15:30 Application of circuit modelling to rolling stock power supply
(Leonardo Sandrolini)

15:30 - 15:50 Tea Break

15:50 - 16:50 Distributed parameter modelling of a railway line for the characterisation of
open area test sites for radiated emissions measurement (Sergio A. Pignari)

17:00 End