

Informa Connect

Academy



Overview of ERTMS/ETCS

This course provides engineers, managers and others involved in European Rail Traffic Management System (ERTMS) projects with a detailed understanding of the fundamentals of ERTMS supported by a competency-based structure.

BLENDING LEARNING/ONLINE PROGRAM | 5 Self-Paced Modules + 3 Live Interactive Sessions

29 April - 31 May 2024 | 16 September - 18 October 2024



Online Program

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Course Information

Key Learning Objectives

- A full understanding of the basics of ERTMS, what it is, how it originated and why it exists
- A working appreciation of ERTMS' architecture, including traffic management, operating rules, ETCS and GPRS
- A knowledge of the various ERTMS functions and language
- The different ERTMS levels
- A detailed knowledge of Trackside architecture Level 1/L2/L3 and Train-borne architecture Level 1/2/3
- Understand ERTMS train modes
- Gain knowledge of the driver-machine interface and how this impacts operations and training
- The issues regarding Train-focused and infrastructure-focused implementation strategies
- What Future developments might be and how they will affect design and implementations
- Appreciate the complexity of ERTMS implementation
- Understand the impact that ERTMS has on safety and operations
- Have a means to access relevant information regarding ERTMS standards
- An appreciation of safety assurance challenges

About the Course

This blended learning ERTMS/ETCS training course provides engineers, managers and others involved in European Rail Traffic Management System (ERTMS) projects with a detailed understanding of the fundamentals of ERTMS supported by a competency-based structure.

ERTMS is being rolled out across Europe and Worldwide. ERTMS will require new skills and ways of operating in the rail sector. Informa's on-line training course, 'An Overview of ERTMS', provides attendees with critical insight into the system, its technologies and operational requirements.

Attendees will leave with a firm knowledge of trackside and onboard systems, trackside architecture and the meaning of levels 1/2/3. The opening module provides introduction to ERTMS and an overview of the context. Functions and levels are then explained along with train-borne and track-side architecture.

The language of ERTMS and the various modes are then covered. The information is underlined with a real application case study of ERTMS and some of the learnings. Finally, the ERTMS/ETCS course covers the driver machine interface followed by the review & conclusions.

Our online railway courses combine presentations from our industry experts with exercises, review sessions and explorations of any topical issues. There is a short multiple-choice examination at the end of each course part to fully reinforce learnings.

Who Will Benefit

Any member of staff – decision makers, project managers, engineers, safety specialists, systems engineers, line managers, software specialists, system integrators, designers and others who are dealing with ERTMS implementation.

The course will enable attendees to have the right tools to facilitate a structured and robust approach to implementing and managing ERTMS railway projects.

Recommended Prerequisites:

Participants should have a general understanding of engineering and project management principles and practice on the railway



"Nice overview presented. Howard brought a lot of technical experience with him."

Principal, Shakti Corp P/L

"Very knowledgeable with significant and relevant experience. Approachable and gave excellent examples of practical application."

Manager Rollingstock Engineering, Public Transport Services

Meet Your Course Directors



Dr Howard Parkinson, Chartered Engineer

Howard is a chartered engineer with over 20 years of experience in the international railway industry, more recently as an independent consultant, researcher and trainer. He has experience in signaling, rolling stock,

infrastructure and railway systems projects at a senior level and has just finished an assignment in Australia working on systems integration for automatic train protection.

His project positions at senior levels have included systems assurance manager, senior project manager, lead safety assessor, and head of systems engineering and safety. He has had experience in metro, tram and heavy rail (conventional and high speed).

Howard has expertise in systems engineering, compliance, safety /notified body assessment, safety and reliability engineering, the latest safety standards, European interoperability and UK legislation.

His current research interests include safety engineering in the railway, accident investigation and systems engineering. Howard has been deployed internationally in countries including: Australia, Korea, Germany, The Netherlands, UK, Croatia, Saudi Arabia, Canada and China. In addition to his consulting and research work, Howard designs, develops and delivers training to industry in the areas of engineering, safety and risk management.



Clive Osman

Clive is a rail systems engineer and consultant with 36 years of systems development and deployment experience including 27 years in UK and international metro, mainline and high speed rail projects. Experience covers command

and control system development, signalling control system delivery, re-signalling scheme development and delivery, metro automation, engineering process development, engineering controls and engineering assurance management.

Clive has a practical and theoretical understanding of railway system integration and have applied UK and international standards to the management of railway system integration activities across the whole lifecycle from concept development through to handover to operations. He has worked closely with other railway specialisms including business and transport analysts and operational and maintenance experts to ensure engineering solutions address the problem.

Course Outline

MODULE 1

General Introduction to ERTMS

- What is ERTMS?
- Brief History of ERTMS
- Interoperability
- Where is ERTMS used?

MODULE 2

ERTMS Functions and ERTMS Levels

- Where the main functions of ERTMS are specified
- Main Functions of ERTMS
- Speed Supervision
- Movement Authority
- ATP Functions
- Levels (1/2/3)

MODULE 3

Trackside Architecture L1/L2 Train borne

- Trackside L1 Architecture Balise and LEU
- Trackside L2 Architecture RBC and Balise
- Trainborne Architecture
 - Driver Machine Interface
 - EuroAntenna
 - Odometeric System
 - European Vital Computer Architecture L1/ L2

MODULE 4

ERTMS Language and ERTMS Train Modes and the Driver Machine Interface

- Messages
- Telegrams

- Packets
- Variables
- Dynamic Train Modes
- Static Train Modes
- Train Modes (non-leading cab)
- DMI including
 - Full Supervision
 - Speed Limits
 - Targets
 - Supervised Location
 - End of Authority (Target)

MODULE 5

Case study on the application of ERTMS in the UK. Learnings and safety assurance implications.

- Safety Cases, a session review & conclusion
- Safety Cases and approvals
- What is the future for ERTMS?
- Limitations?
- Review
- Conclusions

April – May 2024		
Live Interactive Session:	9 May	17:00 AEST (9 May - 07:00 GMT)
Live Interactive Session:	23 May	17:00 AEST (23 May - 07:00 GMT)
Live Interactive Session:	30 May	17:00 AEST (30 May - 07:00 GMT)

September – October 2024		
Live Interactive Session:	26 September	17:00 AEST (26 September - 07:00 GMT)
Live Interactive Session:	10 October	18:00 AEDT (10 October - 07:00 GMT)
Live Interactive Session:	17 October	18:00 AEDT (17 October - 07:00 GMT)

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Easy Ways to Register



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training@informa.com.au

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Course Code	Location/ Format	Course Dates	Standard Price		Great Savings: When you book 4 or more participants! Call us today on +61 (2) 9080 4399 or email training@informa.com.au to take advantage of the discount offer.
P24GO120N	Online Program	29 April - 31 May 2024	\$2,695.00 + \$269.50 GST	\$2,964.50	
P24GO120N02	Online Program	16 September - 18 October 2024	\$2,695.00 + \$269.50 GST	\$2,964.50	

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Database amendments can be sent to database@informa.com.au or call **+61 (2) 9080 4399**.

ABOUT INFORMA CONNECT ACADEMY

Informa Connect

Academy

Informa Connect Academy is a premier provider of global education and training solutions that caters to a diverse range of professionals, industries, and educational partners. We are dedicated to promoting lifelong learning and are committed to offering learners expert guidance, training, and resources to help them stay competitive in a rapidly changing world.

Our comprehensive range of courses and programmes are tailored to meet the needs of all professionals, from aspiring specialists to seasoned experts. We partner with elite academic organisations and industry leaders with unmatched expertise in their respective fields to deliver an exceptional learning experience.

ON-SITE & CUSTOMISED TRAINING

Informa Connect Academy has a long-standing track record of delivering very successful customised learning solutions achieving real and measurable value for our clients through our senior training consultants. If you have 8+ interested people, an on-site course can be the ideal solution – giving you the opportunity to customise our course content to your specific training needs, as well as attracting significant savings compared to public course costs.

WHY CHOOSE ON-SITE WITH INFORMA CONNECT ACADEMY?

- 1. Custom design** – Together, we will identify the best blended learning solution for your culture, your people and your training objectives.
- 2. Quality assured** – We design market-leading training programs, concepts and methodologies, with a 400+ course portfolio. Our rigorously selected 900+ instructor faculty are recognised experts in their field. Quality of their content and delivery methods is assured through continuous monitoring and evolution.
- 3. On-site training** is a cost effective way to train your people and achieve your defined outcomes.

Speak with **Sushil Kunwar** on **+61 (2) 9080 4370** to discuss your customised learning solution, or email inhouse@informa.com.au



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