

HUMAN FACTORS IN TRANSPORT AUTOMATION: ENGINEERING AUTOMATED SYSTEMS FOR HUMAN OPERATION

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Institution of
**MECHANICAL
ENGINEERS**

Safety and Reliability Group
Workshop

5 December 2017
One Birdcage Walk, London

KEY SPEAKERS INCLUDE:

Mike Carey, Head of Ergonomics
Network Rail

Mikael Söderman, HMI-specialist
Volvo Group Trucks Technology

Mark Cund, Autonomous Vehicle Control Manager
Jaguar Land Rover

Simon Roberts, SMS programme Lead
Civil Aviation Authority

Alice Monk, Senior Human Factors Specialist
RSSB



SUPPORTING ORGANISATIONS:



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www.imeche.org/humanfactors

HUMAN FACTORS IN TRANSPORT AUTOMATION: ENGINEERING AUTOMATED SYSTEMS FOR HUMAN OPERATION

5 December 2017, One Birdcage Walk, London

HUMAN FACTORS IS THE ONLY CROSS-SECTOR FORUM THAT ADDRESSES THE CHALLENGE OF INTEGRATING HUMAN-SYSTEM INTERACTIONS INTO THE DESIGN AND OPERATION OF TRANSPORT AUTOMATION.

With the unprecedented growth of development in automated systems, ensure you are taking into account human factors to mitigate against potential human error. Discover safe and cost effective design solutions to prevent incidents.

Attend this workshop to hear from those paving the way in automation in the **rail, automotive and aerospace industries**. Be a part of the discussions shaping the future of transport automation engineering at expert-led round tables.

Take back successful strategies to better incorporate human factors into your automated system design that will increase user safety and reduce the risk of incidents.

KEY TOPICS INCLUDE:

- **Volvo Group Trucks Technology** provide an exclusive update on the outcomes of their truck platooning project.
- **Network Rail** share key insights into the introduction of automatic train operation (ATO) onto the Great Britain Network
- **Jaguar Land Rover** address the challenges of human machine interface (HMI) for autonomous vehicle design
- **Civil Aviation Authority** outline their plans to incorporate human factors in autonomous systems into aerospace regulation

WHO SHOULD ATTEND?

All Directors, Managers and Engineers who are involved in the following areas are strongly recommended to attend:

- System Design
- Safety
- Reliability
- Risk Management/Prevention
- Human Factors
- User Interface design
- Telemetry systems
- Testing
- Accident Investigation

ATTEND THIS EVENT TO:

- Benefit from cross-sector transport organisations including **Network Rail, Volvo Group Trucks Technology, Jaguar Land Rover and Civil Aviation Authority** about their integration of human factors into automated systems
- Hear the lessons learned by the rail industry taking into account human factors in **automatic train operation (ATO)** design to take back to your organisation
- Gain best practice in designing **human-machine interfaces** in autonomous vehicles from the automotive sector
- Share ideas with your peers about how to best integrate human factors into the design process through our interactive panel and round tables

ORGANISING COMMITTEE:

Safety and Reliability Group
Institution of Mechanical Engineers

MEMBERS CREDITS:

John Mount, Technical Specialist -
Human Factors,
Rolls-Royce, Submarines

**EARLY BIRD ENDS 10 NOVEMBER 2017.
BOOK YOUR PLACE TODAY AND SAVE 10%**

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TERMS AND
CONDITIONS APPLY

PROGRAMME

TUESDAY 5TH DECEMBER 2017

08:30	REGISTRATION AND REFRESHMENTS
09:00	CHAIR'S OPENING REMARKS John Mount, Technical Specialist – Human Factors, Rolls Royce Submarines
	CURRENT STATUS OF HUMAN FACTORS IN TRANSPORT AUTOMATION
09:10	HUMAN FACTORS INTEGRATION IN TRANSPORTATION: THE MORE WE AUTOMATE, THE MORE IMPORTANT THE OPERATOR BECOMES Alex Morley, Senior Human Factors Consultant, Energy, Atkins
09:35	THE BENEFITS AND CHALLENGES OF AUTOMATION IN AVIATION Simon Roberts, SMS Programme Lead, Civil Aviation Authority
10:00	HUMAN MACHINE INTERFACE (HMI) AND AUTOMATED TRUCKS: CHALLENGES FOR SAFE AND EFFICIENT DRIVING Mikael Söderman, HMI-specialist, Volvo Group Trucks Technology
10:25	QUESTION AND ANSWER SESSION
10:40	NETWORKING REFRESHMENT BREAK
	OPERATION OF AUTOMATED SYSTEMS
11:10	ADDRESSING HUMAN FACTORS CHALLENGES OF AUTOMATION IN RAILWAY CONTROL SYSTEMS Mike Carey, Head of Ergonomics, Network Rail
11:35	THE IMPACT OF TRANSITIONS TO AND FROM EUROPEAN RAILWAY TRAFFIC MANAGEMENT SYSTEM (ERTMS) OPERATION ON DRIVER PERFORMANCE AND SAFETY Alice Monk, Senior Human Factors Specialist, RSSB
12:00	QUESTION AND ANSWER SESSION
	CROSS-INDUSTRY CHALLENGES
12:10 PANEL DISCUSSION	DESIGNING AUTOMATION FOR THE HUMAN OPERATOR <ul style="list-style-type: none">• How can we ensure automation supports the person in the system, and what happens when it fails?• How can we ensure that system design takes the human into account?• How can we reverse the trend of systems design being seen as more important than designing for the human?
12:55	NETWORKING LUNCH
13:55 ROUNDTABLE DISCUSSIONS	UNDERSTANDING THE HUMAN MACHINE INTERFACE Delegates select a table to join and share their ideas around the topic with their peers in a lively discussion led by our expert facilitators. This provides a unique opportunity to share problems, opinions and concerns with other workshop attendees. <ul style="list-style-type: none">• What is the impact of automation on the role of the human, and how will this affect human reliability?• How can we ensure that both the machine and the human understand the capability of each other?• How can we improve HMI design?
14:55	POST-ROUNDTABLE DISCUSSION Discussion leaders share the most pertinent findings from each roundtable during a final feedback session.
15:15	NETWORKING REFRESHMENT BREAK
	DESIGNING FOR AUTOMATION OPERATION
15:45	AUTONOMY: AN AUTOMOTIVE PERSPECTIVE Lee Skrypchuk, Human Machine Interface Technical Specialist (ER-13) Research & Technology, Jaguar Land Rover Mark Cund, Autonomous Vehicle Control Manager, Jaguar Land Rover
16:10	TECHNOLOGY DESIGN FOR EFFECTIVE OPERATIONS IN AEROSPACE Nick McDonald, Associate Professor, Psychology, Trinity College Dublin
16:35	QUESTION AND ANSWER SESSION
16:45	CHAIRMAN'S CLOSING REMARKS
17:00	END OF WORKSHOP

For the most up-to-date and detailed programme for the event, please visit www.imeche.org/humanfactors

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.

HOW TO BOOK YOUR PLACE

FEES AND CHARGES

Fees and charges	Early Bird Rates until 10 November 2017	Standard Rates
Member, IMechE/supporting organisation	£260 + VAT	£295 + VAT
Non-member	£295 + VAT	£350 + VAT
Student/Retired	£100 + VAT	£100 + VAT

Group booking discounts are available. Contact us for more information.

THREE WAYS TO BOOK

- 1 Online:
www.imeche.org/humanfactors
- 2 Email:
eventenquiries@imeche.org
- 3 Phone:
+44 (0)20 7973 1251

Please read the information listed below as each booking is subject to the Institution's standard terms and conditions.

CONDITIONS OF BOOKING

Completed application forms should be returned to the address above, along with the correct payment. Attendance at the event will be confirmed on receipt of the full balance. All participants are advised to bring a copy of their confirmation with them on the day, to ensure the fastest possible entry.

SPECIAL REQUIREMENTS

Please inform us of any special requirements, ie dietary or access, on the relevant section of the booking form or email eventenquiries@imeche.org

CANCELLATION

For a refund (minus £25+VAT admin charge), cancellations must be received at least 30 days prior to the event. Replacement delegates are welcome at any time. The Institution reserves the right to cancel any event. In this case, the full fee will be refunded unless a mutually convenient transfer can be arranged. In the event that the Institution postpones an event for any reason and the delegate is unable or unwilling to attend

on the rescheduled date, they will receive a full refund of the fee paid. The Institution is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. The Institution shall assume no liability whatsoever if this event is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, unforeseen occurrence or any other event that renders performance of this conference impracticable, illegal or impossible. For the purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergency.

Please note that while speakers and topics were confirmed at the time of publishing, circumstances beyond the control of the organisers may necessitate substitutions, alterations or cancellations of the speakers and/or topics. The Institution reserves the right to alter or modify the advertised speakers and/or topics if necessary without any liability to you whatsoever. Any substitutions or alterations will be updated on the event's webpage as soon as possible.

LIABILITY

The organisers do not accept liability for any injuries or losses of any nature incurred by delegates and/or accompanying persons, nor for loss or damage to their luggage and/or personal belongings.

CONFERENCE VENUE

Institution of Mechanical Engineers
One Birdcage Walk
Westminster
London
SW1H 9JJ

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1 Birdcage Walk
Westminster
London
SW1H 9JJ

T +44 (0)20 7222 7899
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OTHER EVENTS TO LOOK FOR



INTERNATIONAL EV BATTERIES 2017

21-22 November, Twickenham

International EV Batteries 2017 will address the critical challenges being faced by electric vehicle OEMs globally.

www.imeche.org/evbatteries



ANNUAL DINNER 2017

23 November 2017, London

The Institution of Mechanical Engineers Annual Dinner will take place at the Science Museum in London to celebrate the engineering profession.

www.imeche.org/annualdinner

The Institution of Mechanical Engineers organises over 120 events a year, including lectures as well as conferences, seminars, annual luncheons and dinners. Please visit www.imeche.org/events for the complete list of events.

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