IRSE 9th ASPECT Conference
28 – 29 November 2017

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at irse.info/aspect
**Tuesday 28 November**

**WELCOME AND KEYNOTE ADDRESS**
Professor Cham Tao Soon, Singapore Rail Academy

**SPECIFICATION OF SYSTEMS**
- Delivering a World-Class FAO System for MTR South Island Line – Challenges and Solutions
  Terence Law, MTR Corporation, Hong Kong
- How Looking Beyond the System Boundary Benefits Everyone
  Paul Barnsley, ALIRE Consultants NZ Ltd, New Zealand
- Developing Specifications and Defining Performance for the Unmanned Railway
  Robert Cooke, Land Transport Authority, Singapore
- Development of a National Train Control Centre for Railways – Key Stages and Considerations During the Development of the Tender Documents
  Paul Manning, Ricardo Rail, UK

**MIGRATION**
- Migration – Operational Challenges
  Ajai Menon, Ricardo Rail, Qatar
- Challenges in Implementing a New Signalling System to Replace an Existing Signalling System While Maintaining Normal Train Service
  Choo Siew Aun, SMRT, Singapore
- CBTC in a Brownfield... But Is There Any Guidance?
  Nick Thomson, MTR Corporation, Hong Kong

**INTEGRATION, TEST & COMMISSIONING**
- Integration? It's All About the Operator!
  Jim Claxton, SNC-Lavalin, Australia
- Test and Commissioning Strategy for Implementation of CBTC Technology on a Brownfield Metro Site
  Monish Sengupta, Ricardo Rail, UK
- Eglinton Crosstown Light Rapid Transit Signalling – Hybridisation to the Core
  Colin Williams, SNC-Lavalin, UK
- Rail Signalling and Telecommunication System Interface Management
  Min Khang Ho, Perunding Eagles Engineers Sdn Bhd, Malaysia

**CONFERENCE DINNER**

**Wednesday 29 November – ASPECT**

**TECHNOLOGY EVOLUTION: RAILWAY SYSTEMS**
- Indonesia Train Control System for Metro Lines, Conventional Lines and High Speed Lines in the Future
  Ahmad Sugiana, Telkom University, Indonesia
- Development of KRTCS (Korean Radio Based Train Control System) for Conventional and High Speed Railways
  Lee Key-seo, Railway Signal Research Association, Republic of Korea
- New and Added-Value Features in ERTMS Solutions for the Asia-Pacific region
  Vincent Passau, Alstom, Belgium
- Hyperloop: The Dawn of a Step Change in Land Transport
  Bassam Mansour, HSS Engineering, Malaysia
- Improvement of Capacity, Efficiency and Maintainability on High Speed Rail Lines Using ETCS
  Francisco Lozano, Siemens, Spain

**PROFESSIONAL DEVELOPMENT, TRAINING & COMPETENCE**
- Beyond Professional Development & Competency – The Community of Practice
  Alex McGrath, Siemens, Australia
- SMRT Train Engineer Professionalisation
  Pang Shi Yun, SMRT, Singapore
- Maintaining Knowledge of the Use of Signalling Relays
  Jens A Schulz, Swiss Federal Railways, Switzerland
- Technology Forecasting – Signalling, Train Control and Communication Systems
  Portia Xaba, Gautrain Management Agency, South Africa

**SAFETY INTEGRITY**
- Confidence Assessment on Safety Case of High Speed Rail Signalling Systems
  Chao Liu, Beijing Jiaotong University, China
- An Evaluation Method of GSN Safety Argument Development and its Application to Railway Signalling Systems
  Yuji Hirao, Nagaoka University of Technology, Japan
- Framing Guidelines for Safety Assessment Activities in Indian Metro Projects: Regulating Safety Assessment
  Nikhil Swami, Kolkata Metro Rail Corporation Ltd, India

**TECHNOLOGY EVOLUTION: TRACKSIDE SIGNALLING ELEMENTS**
- Reliability Improvement on Point Machines with Solid State Relay Control
  Hashim Abdullah, SBS Transit, Singapore
- New Shinkansen Position Correcting Ground Coil for Further Speed Increases
  Naoki Hashimoto, East Japan Railway Company, Japan
- Shifting Spectrum – Revolutionising Cost: The New Fibre-Optic Based Axle Counter
  Joachim Janle, Thales, Germany

**ASSET MANAGEMENT**
- Innovative Asset Management and Metro Technologies
  Steve Boshier, Auckland Transport, New Zealand
- Opportunities for the Control and Signalling Industry
  Julian Francks, Continuous Kaizen Solutions, UK
- Infrastructure Health: a New Approach and a Real-time Network View
  Peter Bradley, Frauscher Sensortechnik, Austria
- Data to Determine the Most Suitable Signal Maintenance Strategies
  Colin McVea, Northern Ireland Railways, Northern Ireland

**PERFORMANCE & OPTIMISATION**
- Should Secondary Train Detection be Installed in Metros Utilising CBTC Signalling Systems?
  Jiancheng Zeng, Land Transport Authority, Singapore
- A Real-Time Train Cooperative Control Method for Energy-Saving in Urban Rail Transit Systems
  Fan Liu, Beijing Jiaotong University, China
- Performance Modelling of ETCS Level 3 Applied to Main line Railways Providing Metro-Type Train Frequencies
  David C Gill, Siemens, UK

**NETWORKING DRINKS RECEPTION**
Thursday 30 November – Optional Half-day Technical Visits

Option 1 – SMRT Kim Chuan and Bishan Depots
By 2018, SMRT’s NSEWL Operation Control Centre (OCC) and the Maintenance Operations Centre (MOC) will be relocated to Kim Chuan Depot, right next to the existing Circle Line (CCL) OCC to form the Integrated Operations Control Hub at one of the world’s largest underground depots. This migration will come together with full implementation of CBTC signalling system on the NSEW Lines. Bringing the control centres under one roof paves the way for a more holistic approach to planning, implementing, operating and maintaining SMRT’s rail network. At Bishan Depot delegates will see the NSEW on-board CBTC equipment and the current Maintenance Operations Centre.

Option 2 – Gali Batu Depot – Downtown Line Signalling
SBS Transit will be hosting this visit to see the fully automated Downtown Line depot which opened for service in December 2015 as part of Downtown Line Stage 2. Delegates will see both the trainborne and trackside equipment as well as the operational control centre for the line. The line uses Siemens Trainguard Sirius CBTC technology configured to operate in GoA4 driverless unattended mode.

Option 3 – Singapore Technologies Electronics Ltd – Platform Screen Doors
Delegates will visit STE’s facilities in Ang Mo Kio where they will have the chance to see in detail various technologies. The visit will focus on the following areas: Platform screen doors that provide safe and efficient platform separation from the running rails, their C3 control centre system that combines command, control and communications, the Enterprise Asset Management System and Automatic Fare Collection systems.

Friday 1 December – Australasian and Singapore Sections Seminar
High Performance Metros – Learning from the Singapore Experience

Platform Screen Doors
The separation of the running lines and platforms by the use of platform screen doors is standard for all MRT lines in Singapore, providing safety, security and environmental separation. The presenters will talk about the functional and safety requirements of a modern PSD system. They will look at how the technical requirements are realised and tested before the PSDs are accepted for installation at site. The operator will talk about the challenges of operating and maintaining PSD equipment ensuring that the system remains safe, available and with optimised door operation.

Maintenance in the Tunnel Environment
Fully automated railways are very hazardous places to work and with headways of around 90 seconds, maintenance can only be effectively carried out at night. Technology is emerging as a major tool for the maintainer, whether it be condition monitoring, maintenance planning, fault recording or failure trend analysis. The use of the emerging technology will be explored and users will explain how maintenance improvements are achieved. Tunnels are constrained places and the signal engineer is only one of many systems that require maintaining. How can system design reduce the maintenance required for signalling and telecoms, reduce the potential access conflicts and reduce staff access improving maintainer safety?

Train Detection Methods for CBTC
Modern CBTC technology uses sophisticated speed and location equipment to determine train positions. Should there be secondary train protection? If so, what form should it take, axle counters or track circuits? The panel will look at the systems that are now used for speed and location measurement and how this can be used for the individual system functions such as train position reporting, locking etc. The panel will also discuss whether back-up systems should be provided and whether the advantages are real or perceived.

Presidential Address
Peter Symons will present his Presidential Address for the Australasian and Regional (Singapore, Malaysian and Indonesian) sections.

Call for Papers
The IRSE invites experts from Singapore, Australasia and from around the world to take part. If you would like to contribute to one of our expert panels please submit your 300-word abstract to peter.burns@irse.org.au by 30 June 2017.
PRICING

There are three events that make up this week of content around ASPECT 2017 and we welcome delegates to sign up to one, two or all three of these. The price of each event is shown in the table opposite.

For delegates at ASPECT or the Australasian and Singapore Section Seminar, there is the option to add one of the technical visits available on Thursday 30 November, this will be at an additional cost of $S35. These are limited in capacity and therefore if one particular visit is of interest we recommend early booking.

All payments must be in Singaporean Dollars and payment will be accepted by Paypal (using credit/debit cards) or by Bank Transfer.

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<th>Introductory Day</th>
<th>ASPECT Conference</th>
<th>Australasian and Singapore Section Seminar 1 December</th>
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<td></td>
<td>27 November</td>
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<td>IRSE/IES Member</td>
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BOOKINGS must be completed online by 1 November 2017, but spaces are limited so book early to avoid disappointment. If you book and are unable to attend, a refund will be made less a $S200 administration fee as long as you inform us before 1 November 2017. After this date refunds will not be possible but you will be able to transfer the booking to a colleague – please inform us at aspect@irse.org if this is required.

Online booking at irse.info/aspect.

RESERVE PAPERS

For the ASPECT conference a number of reserve papers have been selected and their authors will be invited to present a short synopsis of their paper within the relevant sessions of the conference.

EXHIBITION

Alongside the conference papers being delivered on 28 and 29 November, ASPECT will feature an exhibition of products and services from large and small suppliers. The exhibition will take place in a marquee outside the main auditorium, where refreshments will be served, and the session breaks and lunches will give good opportunities for delegates to explore the exhibition and network with each other.

If you are interested to know more about exhibiting at ASPECT to make the most of this cost-effective and targeted opportunity, please do email on aspect@irse.org to discuss the options. Demand for exhibition space is limited and so it is advisable to contact us soon to reserve your space.

VENUE

This series of events will be held at the Land Transport Authority Headquarters in Singapore. The closest MRT station is Little India, which is on both the North East Line and the Downtown Line. Directions to evening socials will be provided for delegates in advance of the event.

BURSARIES

Hewlett-Fisher travel bursaries will be available to support the conference fee, travel and accommodation expenses for a number of Younger Members, please apply using the separate application form before booking for this event. Applications must be received by 31 July 2017, successful applicants will be notified by 31 August 2017.

SPONSORSHIP

We are very grateful for the support we have received from sponsors for this event, if your company is still interested in sponsoring then we do have some packages still available – please email us on aspect@irse.org for further details.

THE INSTITUTION OF ENGINEERS SINGAPORE

The IRSE is organising this series of events with the support of The Institution of Engineers Singapore (IES) and we plan to sign a Memorandum of Understanding between the two organisations at ASPECT 2017. We welcome IES Members to join these events and are delighted to offer member rates to members of both organisations. This event is PDU(PEB) pending for the purposes of Continuing Professional Development recording.

SOCIAL EVENTS

All social events are included in the price of the event they are tied to, but extra tickets can be purchased for some – please see the booking site for further details.

- Monday 27 November: After the Introductory Day, a networking drinks reception will be held. We welcome delegates from the Introductory Day to join to continue discussions from the day’s papers.
- Tuesday 28 November: The ASPECT Conference Dinner will be held at The Si Chuan Dou Hua Restaurant situated on the 60th storey of the iconic UOB Plaza in Downtown Singapore.
- Wednesday 29 November: An informal social with buffet style dinner and networking drinks will be held after the formal close of ASPECT 2017. We welcome all ASPECT Delegates to join this social whether or not you are attending the technical visits the day after.
- Friday 1 December: The Australasian and Singapore Section Seminar will be followed by a buffet style dinner and drinks at The British Club, transfers to and from the venue will be included.

ACCOMMODATION

Singapore has a wide range of accommodation to suit all tastes and budgets, so no group reservation has been made, but an option worth considering is the Hilton Garden Inn Singapore Serangoon. This hotel is re-opening in August 2017 following refurbishment, and is currently taking bookings for November and offering good value rooms approximately 5-10 minutes walk away from the conference venue. Transport for the Technical Visits will be coordinated from this hotel, but delegates are welcome to stay wherever they wish and meet at this hotel if attending the Technical Visits.

TOURISM

For more information about what Singapore has to offer during your stay, activities to consider whilst in the country or more details on the cultural offerings www.visitsingapore.com can be a good place to start.

EXCHANGE RATES

For reference, the exchange rates for Singapore Dollars (correct on 13 June 2017 according to www.xe.com) are:

$S1 = 0.65 EUR = 0.96 AUD = 0.72USD = 0.57GBP

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