



I recently attended ASPECT 2017 in Singapore. This highly successful and sold out event justified our decision to hold the 9th ASPECT Conference away from London for the first time, kudos to the organising committee and the Singapore Section for hosting.

On the opening day I signed a Memorandum of Understanding on behalf of IRSE with Er Edwin T F Khew, President of Institution of Engineers Singapore (IES), this MOU in short, is to promote, facilitate and extend professional links between IRSE and IES, for the benefit of the members of both organisations and the benefit of the general public, and to assist in advancing the quality of engineering practice.

Highlights from the ASPECT presentations for me were that rail system operation was about millimetres (mm) and the related fractions of a second.

Examples were for metro operational tolerances in mm due to short safety distance margins under automatic operation. Also measured in mm was the need to accurately align train doors with passenger screen doors. The level of system engineering to achieve these stopping tolerances extended to having a deep understanding of the vehicle braking systems.

Other integration, typically by the signalling supplier of the Platform Screen Door (PSD) sub-system was focussed on minimising the "wasted" technical time between the train stopping and the train doors/PSD opening, that required interfacing with the rolling stock supplier and signalling supplier's systems.

Another presentation dealt with the development of a new approach to the ground coil (balise) used by the Shinkansen, in Japan. This was 30-year

old technology and was not capable for speeds above 350 km/h. Analysis of the position of the ground coil was again a case of correct placement in mm to avoid from interference from rebar in the track.

Finally, to the wheel-rail interface. Two different ways were outlined for new axle counter wheel sensor developments using fibre optic technology; one detecting very small changes in the shear stress in the rail, another using sound waves. Both of these were using measurements related to the bending of light and colour in the fibre.

All of these instances further convinced me that the devil is always in the detail and modern systems have complex interactions with other systems that need to be well designed and integrated to achieve the desired performance.

Peter Symons
President

Cover story



The Ordsall Chord in Manchester went into service in December 2017. The new chord will allow trains from the east of Manchester to be routed around the north of the city via Manchester Victoria and Oxford Road to the airport. This will remove the need to cross the path of other trains from the south using Manchester Piccadilly and eliminate the need for trains to reverse. The benefits will be new direct links to Manchester Airport from across the north of

England and the congestion currently experienced at Manchester Piccadilly will reduce by a quarter. Straddling both the River Irwell and Trinity Way, the new bridge, beyond the signals on the cover photo, sits alongside Stephenson's Bridge – a masterpiece designed by George Stephenson and built in 1830. The new 1,600 tonne single-span network arch bridge is the second longest in the world to carry twin heavy-rail tracks. Photo John Manock.

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