

A professional home



In the last IRSE News George Clark, asked the important question “Where are the future engineers?” and talked about the

shortfall of engineers within the transport sector. He described some of the initiatives being undertaken within the UK to tackle this. George talked about the need to build a workforce consisting of diverse and creative people to find solutions to complex problems.

In this month’s edition Josef Doppelbauer has written about future 4th generation control, command and signalling systems harnessing capability of new technologies, not just within the railway sector but also from beyond.

Specialist technological areas such as wireless connectivity, big data, artificial intelligence, safety critical software, cloud computing, sensors, internet based interfaces and intermodal transport integration are mentioned within Josef’s

article. These areas, with their associated skill sets, are critical to future command and control systems for both main line and metro railways. With this mind, there exists a great opportunity for the IRSE to be the professional home for individuals that have these skills, or for young engineers that are potentially interested in developing their careers in these areas. In doing so, the IRSE can tap into these critical skills – many of which exist today and are flourishing outside of the railway transport sector.

Consider for example Transport for London (TfL), an integrated multi-modal transport authority covering metro, railways, trams, highways, buses, cable car and river boat services. Working within TfL, it is apparent that many skills sets are common across the transport sector, and not limited to railway application. Being a vertically integrated business across some sectors, it can be seen how individuals working in areas such as 4G wireless deployment in tunnels, cyber-security, development of passenger ticketing systems and CCTV data analytics can offer vital capability to future command and control applications. The IRSE as a professional

engineering community can offer an interesting home to these professionals to benefit the whole transport sector, not just rail.

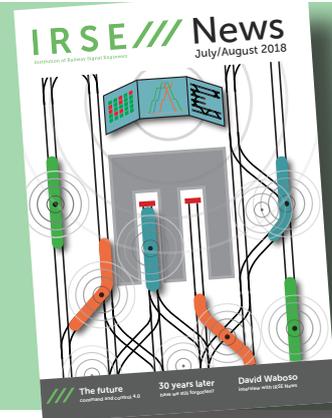
So how could IRSE attract those individuals and what would be they gain from joining an institution such as the IRSE? The IRSE White Paper on Digital Railway, published last year, naturally focused on the railway sector. Consideration should be given firstly to extending the scope of this digital white paper to cover the interfaces to the wider transport sector. Secondly the scope of ‘Digital’ should cover performance and reliability improvements for existing transport systems as this could bring benefits to passengers in shorter periods of time than other longer-term objectives. Being part of the IRSE will not only provide a professional home for these individuals, but more importantly will provide interesting challenges in an industry sector that they can easily relate to, and enable them to apply their digital engineering expertise in the transport community.

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Cover story

Signalling and train control is going through one of the fastest periods of technical change we’ve seen since the introduction of interlocking technology in the 1850s. As described in this month’s presidential paper (page 2), advances in computing power, networking capability and data communications are opening up the potential to move towards

radically different solutions to the basic architecture we have been familiar with for nearly 150 years. Our cover shows just one view of the future, with automated trains communicating with one another, switches and traffic management systems over high speed vital links. Whilst what the railway of the future will look like isn’t clear, it is certain that change is happening.



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