Operational Concept to Working Railway
Developing an effective collaboration between operators and engineers on a major railway upgrade project
Michael Coultharde-Steer, London Underground


Effectively engaging operations personnel in the very earliest stage of railway projects is essential if we are to avoid extensive rework or having to live with operational workarounds for sub-optimal decisions at the beginning.

The presentation will describe how and where significant benefits accrue from involving Operational input in the context of major upgrade programmes. User Requirements Specifications are derived by a small team that includes operational end-user representatives and LU’s system engineers. The User Requirements are aligned with the Operational Concept and the System Definition, and subsequently traced to technical asset specifications.

The presenter will briefly describe the approach used from the Operations perspective, and illustrate how it was applied to the Victoria Line Upgrade (VLU). The VLU provides an exemplar that included the replacement of the entire rolling-stock fleet, the installation of a new signalling and automatic train control system, and the construction of a new service control Operations centre. By looking at specific aspects of the upgrade, the presenters will outline how Operational input on asset improvements and operational changes were integrated. A whole-system approach was used to ensure the co-ordination of transition of assets and operations to deliver the desired service improvements, reliably and efficiently.

The presenter will then proceed to describe how the operational requirements capture approach has evolved in the light of lessons learned and how it is being applied to upgrades now under way, including the Deep Tube modernisation programme and a further increase in service frequency on the Victoria Line.

A number of the challenges encountered will be discussed, focussing on how collaboration between operations and engineering specialists helped overcome them to deliver tangible business benefits to London Underground.

Presenter
Michael Coultharde-Steer is a Lead Operational Development Manager at LU. He has 17 years of experience with LU, spending 7 years in front-line operations, on stations at first, and then as a Duty Manager (Trains). For the past 10 years he has worked as an operational representative working alongside the engineering and project management teams of several major railway upgrades, providing specialist operational knowledge, representing the interests of the end-user, and liaising with front-line operational staff on behalf of the project teams.

Venue and Booking Arrangements
The presentation is being arranged by the South East Branch of the Institution of Railway Operators in collaboration with the INCOSE UK Railway Interest Group.

The presentation will take at London Underground’s offices in 55 Broadway, London, SW1H 0BD. There is no charge for attendance and the event is open to those who are not INCOSE or IRO members but places must be booked in advance.

Please book via the IRO website http://www.railwayoperators.co.uk. To ask any other questions, please contact the RIG Chair, Bruce Elliott at bruce.elliott@incose.org or on +44 (0)7970 694043.
The IRO

The Institution of Railway Operators (IRO) was launched in 2000 and exists for its members and the rail industry, promoting best practice and representing the interests of railway operators at all levels.

The IRO is a focal point for raising standards through operational training, sharing knowledge and expertise to provide our members with the very best developmental opportunities. The IRO also delivers a range of career enhancing courses tailored specifically to the needs of the industry, all of which lead to internationally recognised qualifications.

For further information about the IRO, see www.railwayoperators.co.uk.

INCOSE

The International Council on Systems Engineering (INCOSE) is an international professional society for systems engineers whose mission is to foster the definition, understanding, and practice of world-class systems engineering in industry, academia, and government.

The INCOSE UK Rail Interest Group has been formed:

- To provide a forum for those interested in Systems Engineering in rail to network in a less formal environment, to exchange good practice and to provide mutual support in an area which can require some sustained perseverance;
- To promote, improve and share the practice of Systems Engineering within the rail industry;
- To foster connections with other professional bodies within rail and thereby promote cross fertilisation of knowledge and experience across sectors and community disciplines; and
- To promote awareness of INCOSE UK and encourage membership within the rail industry.

For further information about the RIG, see www.incoseonline.org.uk and follow the ‘Groups’ link.