CAPGEMINI IN RAIL SIGNALING

ENSURING SMOOTH AND SAFE OPERATIONS

INTRODUCTION

Railway operators today are required to increase transport capacity, safety, and frequency - helping to relieve road congestion and meet carbon reduction targets.

At the same time, they must also renew the existing aging network and rolling stock fleet. Meeting these demands is a huge challenge for the railway industry in light of increased cost pressures, technical competition, and borderless operations.

The UK Government's commitment to fund £48Bn in Control Period 7 for the operation, maintenance and renewals of rail infrastructure demonstrates the vital role of the Railways in supporting the UK's economy. And this sum doesn't include the additional funding for network enhancements - which are considered on a case-by-case basis.

DIGITAL CHANGES IN THE RAIL INDUSTRY

The rail industry is under enormous pressure to change. Some key drivers accelerating the transformation include:

- A growing number of passengers, due to increased urbanization
- Higher expectations around comfort and safety
- Increasing competition among operators
- A move towards 'anything as a service' (XaaS) business models
- Many drivers are pushing railway operators to replace or modernize their rolling stock, and to build efficient and modern signaling systems. Consequently, operators must ensure that they can:
    - Deliver cost savings through digitalization
    - Handle a growth in traffic – the increased use of existing infrastructure and higher safety requirements drive the need for improved signaling equipment

In light of this increased use, modernization is the key to improving network safety and capacity.

OUR SOLUTION

Capgemini Engineering is at the forefront of Signaling - we support our clients in project engineering by leveraging our strong Signaling team, who hold licenses from the Institution of Railway Signal Engineers (IRSE).

We also have cross-sector experience in bringing technologies from other industries to the railways, and offer the global capability to deliver all of this both locally, and at the best cost.

Signaling is a safety critical system, essential for the control of trains. It has undergone several technological changes over the decades to the current modern digital technology, like the European Train Control System (ETCS). Whilst the ETCS can deliver significant improvements to railway performance, most of the UK train control systems across the network still use conventional signaling, which must be maintained under the Strategic Business Plan for Control Period 7.

We are fully equipped to support our clients with conventional signaling renewals and ETCS work, and offer the following services:

PRELIMINARY DESIGN

- Technical Specifications
- Application Manuals
- Signaling Scheme Design
- Signaling Control Tables
- Scheme Design Log & Safe Braking Reports
- Site Survey Reports

BIDDING

- Evaluation of RFP
- Technical Bid Support
- System Architecture Design
- Bill of Materials
- Risk Evaluation

INSTALLATION SUPPORT

- Site Correlation Data Update
- Update of Designs
- Configuring Network Equipment
- Loading the Tested Data in Site Equipment

DETAILED DESIGN

- Onboard System Design
- Trackside Data Design
- Signaling Equipment Room Layout Design
- Cable Schematics
- Signaling Equipment Room & Wayside Interconnection Designs
- Mechanical Installation & Assembly drawings

POST COMMISSIONING & INTERFACE MANAGEMENT

- Preparation of As-built Drawings
- Interfacing Between Customers, Suppliers & Other Vendors