



Managing CBTC Projects

Programme Schedule

Day	1	2	3
9:00am - 10:30am	Purposes and Principles of CBTC	Greenfield Projects Implementation I	Project Management
10:30am - 10:45am	Tea Break		
10:45am - 12:15pm	Technology Trends and Benefits & Risks Analysis	Greenfield Projects Implementation II	RAMS & Standards
			Concluding Remarks (12:00 - 12:30pm)
12:15pm - 2:00pm	Lunch		
2:00pm - 3:30pm	Technical Visit & Simulation Experience	Brownfield Projects Implementation I	
3:30pm - 3:45pm		Tea Break	
3:45pm - 5:15pm		Brownfield Projects Implementation II	

Delivery mode: Lectures and Case Sharing.



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Managing CBTC Projects

Programme Overview

Communication Based Train Control (CBTC) has become the main stream signalling system approach adopted by the modern railways around the world, in both brownfield and greenfield projects. As one of the globally recognised railway operators, the MTR Corporation has acquired rich experience in implementing CBTC in its system with various generations of technologies over the last two decades. Riding on our track record of success, the MTR Academy is offering this corporate programme to share our lessons and experiences in CBTC projects and facilitate exchanges and discussions on the growing demand of CBTC implementation.

This Corporate Programme is uniquely designed to cover the topical issues of CBTC projects and their management, supported by the successful practical experience and supplemented by a site visit to a MTR depot, for the participants to learn managing a CBTC project in general with the appropriate approaches, processes and technologies. Practising signalling engineers and CBTC project managers from railway operators are the intended participants who will be able to reap benefits from the exchanges of knowledge, experiences and good practices in the programme and take leading roles in the CBTC projects in their workplaces.

The programme is scheduled for 2.5 days, providing insights on purposes and principles of CBTC, management of Brownfield and Greenfield project cycle. The programme will take the participants from project requirements, design, risk management to testing and commissioning, as well as reliability growth demonstration and maintenance. The site visit will allow inspection of a real-life CBTC systems and discussions on the challenges in its implementation. The programme consists of a series of presentations, case reviews and interactive discussions which are facilitated by MTR's senior managers with relevant in-depth experience and knowledge.

Subsidiary of MTR Corporation

caring for life's journeys



Programme Objectives

The Programme aims to

- Encourage knowledge, experience and good practices exchanges on CBTC technologies and projects among practising railway signalling professionals
- Pursue and advance railway service and operational excellence of the railway industry worldwide
- Facilitate interaction and networking among railway signalling professionals and managers

Topics

1. Purposes and Principles of CBTC
2. Technology Trends and Benefits & Risks
3. Greenfield Project Implementation
4. Brownfield Project Implementation
5. Project Management
6. RAMS and Standards

Language

English

Duration

2.5 days

Who should attend

Practicing signalling engineers and project managers

Certificate of Completion

Participants will be presented with a certificate.



Programme Outline

Purposes & Principles of CBTC

- Introduction of the main objectives of adopting CBTC for railway operations.
- Introduction of generic building block of CBTC system. Descriptions of various means to realise continuous communication between train and wayside.
- Contribution of CBTC to RAMS aspects, railway performance and operational flexibility.

Technology Trends and Benefits & Risks

- Understanding of the operating needs and benefits to be realised by the CBTC technology including maximising the throughput and passenger carrying capacity and providing maximum operational flexibility.
- Comparison with traditional signalling system to illustrate the advantages of CBTC and how it suits the 21st century transportation.
- Evolution of CBTC technologies in MTR, from West Rail Line to South Island Line.
- Evolution of CBTC technologies from Train-Track communication to Train-Train communication platforms.

Greenfield Project Implementation I

- Consideration throughout the project V-cycle, including Design, installation, Verification & Validation (V&V), System integration, Testing & Commissioning (T&C).

Greenfield Project Implementation II

- Case study on the first 3 CBTC applications in MTR, covering West Rail, Ma On Shan Rail and Disneyland Resort Line from 2003 to 2005; and the latest CBTC on South Island Line delivered in 2016.

Brownfield Project Management I

- Introduction of Closer Pre-ownership Arrangement (CPA) and Change Impact Risk Assessment (CIRA) as the control measures in addressing brownfield risks arising from Signalling Replacement Projects.
- Additional concerns on Brownfield Project Management, covering identification and mitigation of brownfield risks.

Brownfield Project Management II

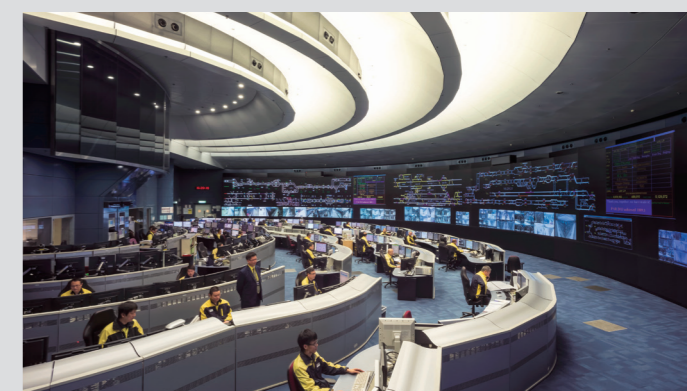
- Case study on Brownfield CBTC Projects implemented on East Rail Line and Tsuen Wan Line.

Site Visit

- Wong Chuk Hang Depot: Fully Automatic Operation depot/ Mainline operations



- Operations Control Centre for CBTC operations on West Rail Line, Ma On Shan Line and South Island Line



Concluding Remarks

- MTR's 18-year experience on project management (design and build), operating and maintenance of CBTC systems as the valuable lessons in the CBTC implementations for other railways worldwide.

RAMS and Standards

- Establishment of RAMS targets with reference to the available statistics and standards.

Project Management

- Setting up of project organisations for implementing CBTC projects in MTR, from flexibility study to completion of the contract.
- Introduction of the Design and Build of CBTC projects in MTR covering both the greenfield and brownfield environments.