



an eegis company

بروجاكس للتدريب والتطوير
Projacs Training and Development

Definition and Deployment of an “Automatic Train Operation” System

التعريف وانتشار نظام "التشغيل التلقائي للقطارات"

13 – 17 September 2020

Dubai / United Arab Emirates

A Member of:



PROJACS ACADEMY



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Introduction

The main function of the Automatic Train operation system (ATO) is to run the trains in between stations automatically without the intervention of Train driver. The ATO system generates speed control to the traction and braking system of the train with respect to the computed speed profile. The ATO system ensures that the train achieves timely, accurate and smooth station stops or stopping ahead of a restrictive point. The ATO system also controls the train doors during station stops under the supervision of the ATP system without the intervention of the train driver. The basic requirement of ATO is to tell the train approaching a station where to stop so that the complete train is in the platform. This is assuming that the ATP has confirmed that the line is clear.

Automatic train control (ATC) is the general designation for a variety of techniques by which machines regulate the movement of rail rapid transit vehicles for the purposes of safety and efficiency. Functionally, ATC includes:

- **Train Protection (ATP):** prevention of collisions and derailments
- **Train Supervision (ATS):** direction of train movement in relation to schedule
- **Train Operation (ATO):** control of train movement and stopping at stations
- **Communication:** interchange of information among the elements of the system

Objectives

By the end of this course practitioners shall learn to:

- Have the knowledge about the main functions of Automatic Train Operation
- Study the different of the Automatic Train Operation Modes
- Study the methods of developing the ATO system on trains
- Operate the trains with the ATO system
- Achieve the safety procedures due to ATO

Who Should Attend?

- Railway Operation Engineers
- Railway Communication Engineers
- Masters of Railway Stations
- Operation Technicians

Course Outline

DAY 1:

- Automatic Train Control Systems
- Modes For Train Operation
 - ATO Mode
 - ATP Mode
 - Cut-Out Mode
 - Run on Sight Mode

DAY 2:

- Track-Circuited Overlaps
- Operating with ATP
- Distance-to-Go
- Speed Monitoring
- Speed Code Transmission

DAY 3:

- Fixed Block ATP Operation
- Fixed Block ATO
- Moving Block ATO
- Beacon Transmission
- Operation With Beacons

DAY 4:

- Metro Station Stops
- Multi Home Signalling – Approach
- Multi Home Signalling - Run In
- ATO/ATP Multi Home Signalling
- ATO Docking and Starting

DAY 5:

- Application examples of Automatic Train Operation on:
 - Metro lines
 - High Speed Trains
- Evaluation Assessment

Training Method

- Pre-assessment
- Live group instruction
- Use of real-world examples, case studies and exercises
- Interactive participation and discussion
- Power point presentation, LCD and flip chart
- Group activities and tests
- Each participant receives a binder containing a copy of the presentation
- slides and handouts
- Post-assessment

Program Support

This program is supported by interactive discussions, role-play, and case studies and highlight the techniques available to the participants.

Schedule

The course agenda will be as follows:

- | | |
|---------------------|------------------|
| • Technical Session | 08.30-10.00 am |
| • Coffee Break | 10.00-10.15 am |
| • Technical Session | 10.15-12.15 noon |
| • Coffee Break | 12.15-12.45 pm |
| • Technical Session | 12.45-02.30 pm |
| • Course Ends | 02.30 pm |

Course Fees*

- **2,950USD**
**VAT is Excluded If Applicable*