



ADVANCING
PUBLIC
TRANSPORT

UITP Training Programme on Automated Metros

20-22 November 2019, Istanbul, Turkey

Day1, 20th November

9.00 Welcome & introduction to UITP

9.30 Session 1: Introduction – What is metro automation?

[Laurent Dauby, Rail Director, UITP]

A real induction in the world of train automation, this session will take participants through the basic concepts in metro automation, present the history and state of the art in unattended train operation and address strategic considerations in the choice for automation:

- Grades of Automation – from driving on sight to running trains without staff on board
- Overview of fully automated metro systems worldwide
- Analysis on the historic evolution of automated metros
- Future growth, trends and challenges
- The choice for automation: What added-value and benefits for operators, authorities and customers?

10:30 *Coffee Break*

11.00 Session 2: Basics on train control command concepts and automation technologies

12:30 *Lunch*

After Lunch, participants will join to Technical Visit with the Automated Metro Committee at Metro Istanbul

13:30 Departure from the venue for the Technical Visit – Metro Istanbul

14:30 Case Study: Metro Istanbul

15:50 Technical Visit to Automated Metro M5 Line, Üsküdar – Çekmeköy

17:00 *End of day*



Day 2, 21st November

09:00 Session 3: Project Management for Automated Metro Lines - from Designing to Running (Planning, Design, Tendering, Construction)

[Carlo Bianco, Operation Director Automated Metro Lines, Azienda Trasporti Milanesi - ATM, Milan Italy]

Approaching an automated metro line project requires thinking outside the box of conventional rail – What are the key elements to take into account? In which ways does it differ from a conventional metro project? What kind of expertise is needed in house and what can be outsourced? Which players need to be involved when? This session will map the complexity of an automated metro line project, offering an overview of the key project phases, highlighting the specific areas in which automation projects differ from conventional ones.

10:30 *Coffee break*

11:00 Session 4: Operation and Maintenance of Automated Metros

[Laurent Dauby, Rail Director, UITP]

Building on a selection of automated operation models and scenarios, this session will show participants the potential -and limits- of automation technologies, in order to make the most of automated operation. It will also reflect on the impact of automation technologies in maintenance – identifying the key areas to consider and analyzing how to make best use of the technologies, smart tools and staffing model of an automated metro line.

12:30 *Lunch*

13:30 Case Study: Building and Operating Automated Metros; Copenhagen

14:30 *Coffee break*

15:00 Group Workshop

[Laurent Dauby, Rail Director, UITP]

17:00 *End of day*



Day 3, 22nd November

09:00 Session 5: The Human Factor & Customer Services – The Case of Milan

[Carlo Bianco, Operation Director Automated Metro Lines, Azienda Trasporti Milanesi - ATM, Milan Italy] – to be confirmed

While technology usually takes the spotlight in metro automation projects, the human factor is in fact as central to the success of an automated metro line as the technology itself, and can even be more challenging in the case of a conventional system considering automation. The characteristics and operation model of an automated metro line require specific staffing models, with typically less staff, but more qualified and deployed in polyvalent roles along the line - What are their tasks and responsibilities? Is there an ideal staff profile and for an automated metro line? This session will present examples of staffing models for automated metro lines, highlighting some of the key challenges in finding, training, managing and keeping staff in automated metro lines.

10.30 *Coffee break*

11:00 Session 6: RATP Case Study – Upgrade of a conventional line into automated metro

This session will analyse one of the most complex scenarios in metro automation projects: that of the conversion of a conventional line to fully automated operation. To date, only Nuremberg and Paris have taken this step – which many systems are considering. This session will offer a comprehensive overview of automated lines conversion, building on the successful experience of Line 1 conversion - from the project organization to the technical challenges faced and the human resources and social impact of a conversion.

12:30 *Lunch*

13.30 Wrap Up & Group Presentations

Certificate Ceremony

14:30 End of the programme

**UITP reserves the right to make amendments to the programme or any related activity*