

Seminar Objective: Objectives : Introduction to the Maintenance and Operation process throughout a project cycle from planning, designing, construction and implementation with specific focus for Owners and Decision Makers, Consulting Engineers, Contractors and others with an interest in Maintenance and Operation activities:

Tentative Programme

Day 1

Session 1 : Introduction and Overview on Operation & Maintenance (O&M) including Repair

- 09.00 – 09.15 : Welcome Notes and Opening of ITA CET Training Course
- 09.15 – 10.15 : Objectives, philosophies, safety concepts and basis for Operation & Maintenance Works
- 10.15 – 10.45 : Coffee Break
- 10.45 – 11.30 : Owners perspective on Operation & Maintenance Activities – organization and staffing
- 11.30 – 12.30 : Planning of modern road tunnels – principles and basic requirements and constraints
- 12.30 – 14.00 : Lunch

Session 2 : Optimum Design of Structures and Installations for modern Tunnels Introduction to Inspection Systems – Tunnel Management Systems (TMS)

- 14.00 – 14.30 : Durability Design of Structures – Basic Requirements including examples
- 14.30 – 15.00 : Modern Design of Mechanical and Electrical installations (M&E) – Basic Requirements Including examples
- 15.00 – 15.30 : Planning and Design of Intelligent Transportation Systems (ITS) – Basic Requirements including examples
- 15.30 – 16.00 : Coffee Break
- 16.00 – 16.30 : Planning of systematic Operation & Maintenance activities in the Operation Phase
- 16.30 – 17.00 : Inspection of structures and installations – types and data collection
- 17.00 – 17.30 : Introduction to Tunnel Management Systems – Basic Modules
- 17.30 – 18.00 : SCADA systems – monitoring and management of daily tunnel operation tasks

Day 2

Session 3 : Operation & Maintenance Works - Execution

- 09.00 – 09.30 : General lifetime considerations of structures and installations including typical costs for Operation & Maintenance activities
- 09.30 – 10.00 : Repair strategies, Optimization and Priority Ranking of activities
- 10.00 – 10.30 : Budgeting and Action Plans
- 10.30 – 11.00 : Coffee Break
- 11.00 – 11.30 : Typical Operation, Maintenance and Repair works for structures and installations
- 11.30 – 12.00 : Recommendations for planning and execution of works based on experience - examples
- 11.30 – 12.30 : Execution of O&M Works – management, QA, control and feedback
- 12.30 – 14.00 : Lunch

Session 4 : Repair of Tunnels - Examples

- 14.00 – 14.45 : Case: Repair of Immersed Tunnel – Denmark. Planning, Design, Execution and Costs
- 14.45 – 15.30 : Case: Repair of Drill & Blast Tunnel – Norway. Planning, Design, Execution and Costs
- 15.30 – 16.00 : Coffee Break
- 16.00 – 16.45 : Lessons learned from experience to bring in to new tunnel design
- 16.45 – 17.30 : Questions and Answers
- 17.30 – 18.00 : Summary and Closing