

Seminar Objective: The seminar is intended to give a fairly detailed overview of some important innovative technologies developed in the European project TUNCONSTRUCT (www.tunconstruct.org). This four-year integrated project, which finished in November 2009, involved 36 partners from industry and academia and had a budget € 25 Million. More intensive workshops may be offered on specific topics of interest. The seminar is of interest to owners, designers construction engineers, supervisors, managers and operators.

Tentative Programme

Day 1

Session 1: Planning and design

09.00-09.45: Welcome and Opening: ITA and concerned country representatives

- Registration
- Opening
- Information on ITA activities
- Information on local projects

09.45-10.30: Overview of TUNCONSTRUCT innovations

10.30-11.00: Coffee Break

11.00-11.45: Integrated optimisation platform for underground construction (IOPT)

- Computer support of design procedure

11.45-12.30: Innovations in numerical simulation

- Hierarchical material models
- Innovative procedures for the determination of input parameters

12.30-14.00: Lunch

14.00-14.45: Innovations in numerical simulation

- Bored tunnels

14.45-15.30: Innovations in numerical simulation

- Conventional tunnels

15.30-16.00: Coffee Break

Session 2: Equipment

16.00-16.45: Tunnel boring machines

- Monitored disk cutters
- Cutter optimization
- Large diameter TBM

16.45-17.30: Roadheaders

- Instrumented road headers
- Tool optimisation

17.30-18.00: Questions and Answers

Day 2

Session 3: Materials

9.00-9.45: Innovations in materials, Segments

09.45-10.30: Innovations in materials, Shotcrete

10.30-11.00: Coffee break

Session 4: Processes

11.00-11.45: Underground construction information system (UCIS)

11.45-12.30: Innovations in monitoring

- KRONOS tunnel information system
- Use of virtual reality

12.30-14.00: Lunch

14.00-14.45: Innovations in monitoring

- Optical fibre sensing cable

14.45-15.30: Computer assisted steering of TBMs

15.30-16.00: Coffee Break

Session 5: Maintenance and repair

16.00-16.45: Future developments

- Use of robotics in maintenance

16.45-17.30: Round table discussion "Tunnelling towards 2020"

17.30-18.00: Summary and Closing of the course