

13.00 PLENARY BROADCAST

13.10 Strategic round table discussion

In a round table set-up decision makers from public infrastructure managers will engage in a dialogue with representatives from the EC, industry and supporting research organisations on setting the direction for innovation collaboration over the next ten to twenty years. Common issues to be addressed include:

- **Resolving the many current knowledge gaps** in order to transit from reacting to unexpected incidents to predictive maintenance and renovation from a lifecycle, risk-based approach.
- **Harvesting benefits from digitalisation** in order to reinforce resilience and sustainability of tunnels
- **Reinforcing professional competence development** across the delivery chain in anticipation of changing societal needs and demands, such as smart mobility and cybersecurity.

13.30 BREAK

13.35 THEME Asset management

Trond Michael Andersen, deputy director manager at the department of technology, operation and maintenance at the Norwegian Public Road Administration shares his views on predictable maintenance, life cycle thinking, the changed role of the tunnel manager, etc.

13.40 THEME Predictive maintenance

The first results of the tunnel programme 2030 are introduced. This joined effort by The Netherlands and Flanders lets 22 tunnels get a structural health analysis to bring more focus in the renovation task and close structural knowledge gaps. A virtual practice environment is launched, to play and practice with instruments. This system has been arranged by TNO/Deltares. **Tom Roelants** (DG Flanders) en **Wouter van Dijk** (ProRail) will respond to the demonstration.

13.55 THEME Tunnel safety

ITA Cosuf and the PIARC tunnel committee work together on future tunnel safety challenges like new energy carriers. The highlights of this cooperation and the new vision paper on tunnel safety by ITA COSUF are discussed with **Ingo Kaundinya**, chair of PIARC TC 4.4 'Tunnels', and **Max Wietek**, president of ITA COSUF. **Claude Van Rooten**, president of PIARC, will share his view as well as **Jürg Röthlisberger** on behalf of CEDR.

14.05 BREAK

At the table:

- **Jürg Röthlisberger**, CEDR president, ASTRA/FEDRO, Switzerland
Representing the common perspective from the Swiss situation as director of the Federal Roads Agency as well as the 29 national road authorities in the Conference of European Directors of Roads.
- **Jan Slager**, programme director Rijkswaterstaat, The Netherlands
Representing the perspective from the Dutch national programme for infrastructure replacement and renewal.
- **Michael Ebbesen**, director of operations and maintenance, and **Gert Didriksen von der Ahé**, director of technology, Denmark
Representing the Danish Road Directorate and the administrative authority for the Fehmarnbelt tunnel consortium.
- **Stefan Maurhofer**, president of the EUTF, Switzerland
Nine countries collaborating on a joined action plan/research agenda for tunnel innovation (both rail and road).
- **Robert Missen**, head of unit, research and innovation, DG Mobility and Transport, European Commission
Representing the European Commission DG MOVE.

14.10 THEME Lessons learned

Monitoring and inspection have to be brought to a higher level considering the huge renovation task. How does the Italian tunnelling community cope with this challenge? Interview with **Andrea Pigorini**, president of the Italian Tunnelling Society and responsible for the infrastructure engineering department at Italferr (the engineering society of the Italian state railways group).

14.15 THEME Adding value in tunnel renovations

Interview with **René List**, project leader renovation of 54 tunnels by ASFINAG/ASECAP (Austria). The renovations were combined with implementing cutting edge innovations in sustainability. He will discuss their experiences with **Jan Slager** from Rijkswaterstaat and **Robert Missen** on behalf of DG MOVE.

14.25 Wrap-up: Bring your own tunnel

Back to the beginning: launching the European network. The process for a working programme for CEDR will be explained as well as the alignments of national programmes to a European programme. There will also be a ceremonial signing of a (renewed) MOU between CEDR and PIARC by **Jürg Röthlisberger** (president CEDR), **Claude Van Rooten** (president PIARC), **Steve Phillips** (secretary-general CEDR) and **Patrick Mallejacq** (secretary-general PIARC).



Your hosts on the main stage will be Karin de Haas (COB) and Steve Phillips (CEDR)

14.40

BREAK / PUBQUIZ / SPONSOR SESSIONS

15.00

PARALLEL SESSIONS

Next page >

16.30

NETWORK CAROUSEL

Get on the carousel and talk to colleagues from all over Europe. A fun, fast and informal way to reflect on the sessions and look forward.

16.50

CLOSING SESSION

PARALLEL SESSIONS

	NORWAY Digitalisation	GERMANY New refurbishment techniques	AUSTRIA Tunnel safety and security	ITALY Inspection, investigation and monitoring during service life	FRANCE Sustainability	BELGIUM Challenges for infrastructure asset management	NETHERLANDS Toolbox for the tunnel owner
15.00 INTRO							
15.05 ROUND 1	ICT-based tunnel safety: a case for procedural and parametric 3D modelling of Norwegian road tunnels <i>Naeem Khademi (University of Stavanger)</i>	Renovation tunnels Schiphol - practical lessons of a renovation project <i>Herman Kraaij (Vialis) and Jeffrey Rundberg (Schiphol NV)</i>	New operational road tunnel safety issues <i>Max Wietek (ILF Consulting Engineers) and Ingo Kaundinya (BAST)</i>	Tunnelling 4.0: New technologies and future perspectives for maintenance, refurbishment interventions and upgrading <i>Andrea Pigorini (Italian Tunnelling Association) and Marco Ranieri (PricewaterhouseCooper)</i>	The COB sustainability programme <i>Onno Sminia (COB/Croonwolter&dros)</i>	A strategic asset management framework for improving transport infrastructure <i>Laura Molinari and Elvira Haezendonck (University Brussels)</i>	Case: SHA of the Limfjordtunnel <i>Niels Højgaard Pedersen (Vejdirektoratet)</i>
15.25 ROUND 2	Tunnel Digitalization Center – Digital services for tunnel maintenance <i>Veronika Petschen (Amberg Engineering) and Klaus Wachter (Scout association)</i>	Sprayable geopolymers for improvement of fire resistance and upgrading of underground railway structures <i>Götz Vollmann (Ruhr University Bochum, Institute for Tunnelling and Construction Management)</i>	Cyber security <i>Jasper Kimstra (Kimpro) and Johannes Braams (TEC Tunnel Engineering Consultants)</i>	Damages on lining induced by the construction of a new tunnel and the design of refurbishment: a case history <i>Salvatore Miliziano (University of Rome)</i>	Alternative modes of transport also take precedence in tunnels <i>Guillaume Planchenault and Antonin Gosset (Arcadis)</i>	Asset management of tunnels from the BIM perspective <i>Natasha Blommaert (Agentschap Wegen en Verkeer)</i>	Structural health analysis: getting a grip on the actual residual lifespan of civil structure of tunnels <i>Brenda Berkhout (TEC Tunnel Engineering Consultants)</i>
15.45 ROUND 3	Digital transformation of tunnel renovations. Case: renovation Koningstunnel The Hague <i>Jeroen Groenewegen (Infranea) and Stijn Seuren (Siemens Mobility)</i>	Temporary ventilation and measures to assure air-quality during rail tunnel refurbishment works <i>Peter Reinke (HBI Haerter AG)</i>	From innovation to regulation <i>Kees Both (Etex Group)</i>	Inspection and monitoring for tunnels maintenance: analysis of experimental data <i>Gianpiero Russo (University of Naples)</i>	A green tunnel in the city of light <i>Mathieu Hermen (Metropole de Lyon)</i>	Cost-benefit analysis for fire, life safety and business continuity <i>Melchior Schepers (Fire Engineered Solutions) and Ruben Van Coile (Ghent University)</i>	Instrumentation for the SHA <i>Willy Peelen (TNO)</i>
16.05 ROUND 4	How to exploit rapid digital innovation in safety-critical application areas <i>Rune Winther (Østfold University)</i>	Refurbishment with a water mist system for the Hugh L. Carey Tunnel in New York City <i>Tim Usner (FOGTEC)</i>	Electric vehicle fires in underground infrastructures <i>Michael Kompatscher (Hagerbach AG)</i>	Structural and geotechnical monitoring for infrastructural asset management: new prospective <i>Paolo Mazzanti (NHAZCA)</i>	Innovations in energy savings <i>Séverine Besson (CETU)</i>	Cross-asset, reliability-based life cycle management of tunnels <i>Urs Grunicke (UHG Consult) and Christoph Antony (ASFINAG)</i>	Smart collaboration between tunnel owner and contractors: best of both worlds <i>Arnoud op den Kelder (Municipality of Amsterdam)</i>
16.25 WRAP-UP							