

Safety versus Economics

Cost-efficiency of tunnel safety measures

Workshop organized by ITA COSUF,
in cooperation with the National Italian Committee
of PIARC, under the auspices
of the Italian Higher Council of Public Works

Organizer



ITA International Tunneling and
underground space Association

In cooperation



Under the auspices of



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Safety versus Economics

Cost-efficiency of tunnel safety measures

Opening speech by ITA COSUF chairman

D. Lacroix, Centre d'Etudes des Tunnels (CETU – France)



Organizer



COMMITTEE ON
OPERATIONAL
SAFETY OF
UNDERGROUND
FACILITIES

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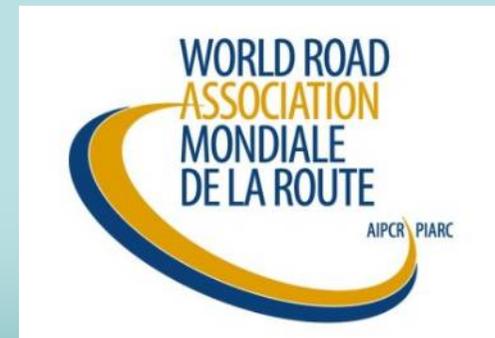
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What is ITA COSUF?

- **A committee of ITA,**
the International Tunnelling and
Underground Space Association
(65 Member Nations,
310 Affiliate Members)
- **Also supported by PIARC,**
the World Road Association
(118 Member Governments,
members in 142 countries)



Origins of ITA COSUF

- 8 European research projects / thematic networks funded under the 5th & 6th Framework Programmes

D • A • R • T • S



which wished to continue co-operation
and were established an ITA committee in 2005



ITA COSUF Scope and Objectives

➤ **Scope**

- **safety** and **security**
- **in operation** (*construction is excluded*)
- **in all kinds of** tunnels (road, rail, metro)
and other **underground facilities**

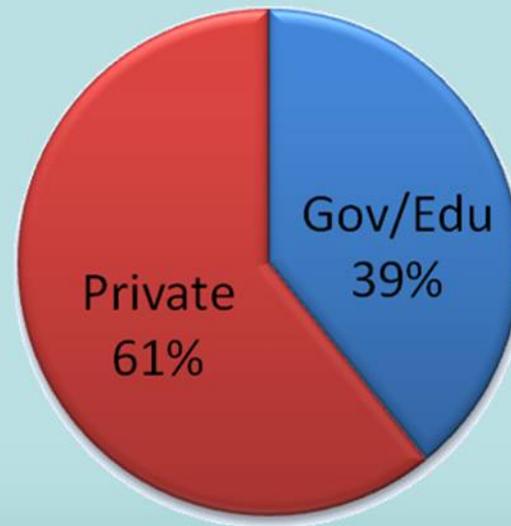
➤ **Objectives**

- Maintain / develop a **network**
(to exchange knowledge & build teams)
- Enhance **R&D** activities and foster **innovation**
- **Promote** underground safety and security
(incl. by supporting improved regulations)



Membership

- **Open to corporate and individual membership**
(currently more than 70 corporate members)
- **Annual fee**
(250€: public/education, companies with < 10 staff, individuals;
500€: others)

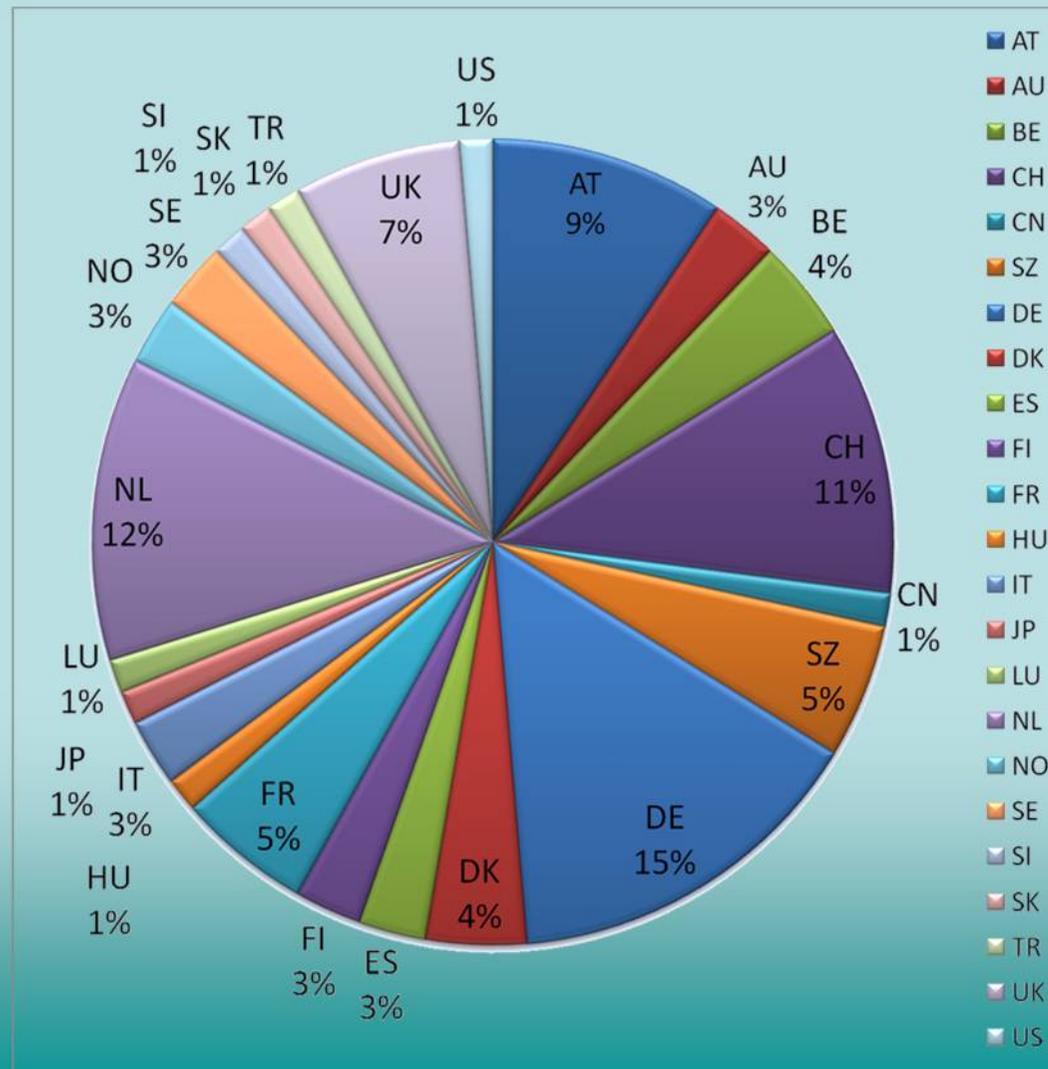


YOU can become a member!

Register at cosuf.ita-aites.org

Membership

➤ 23 countries from 4 continents are represented



Activity Groups

- 4 AGs open to all ITA COSUF members (and only them)
- Each AG meets twice a year, together with ITA COSUF workshops
- Main activities:
 - Exchange **information**,
 - Draft **recommendations & articles**,
 - Organise **workshops**,
 - Etc.



Activity Groups

➤ **AG1: Interaction with European and international activities**

Leader: Ben van den Horn (Arcadis, NL)

➤ **AG2: Regulations and best practice**

Leaders: Stig Ravn (Barbara consult, UK)
Peter Reinke (HBI, CH)

Latest product:

Updated survey of existing regulations and recognised recommendations on road tunnel operation and safety

✓ *Available on COSUF website*

✓ *Data / links from 27 countries
and 3 international organisations*



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Leader: Ben van den Horn (Arcadis, NL)

➤ **AG2: Regulations and best practice**

Leaders: Stig Ravn (Barbara consult, UK)
Peter Reinke (HBI, CH)

➤ **AG3: Research and new findings**

Leader: Götz Vollman (Ruhr Universität Bochum)

➤ **AG4: Road Tunnel Safety Officers**

Leader: Johan Bosch (RWS, NL)



European Forums of Road Tunnel Safety Officers

- 1st Forum in Lyon in November 2009
- 2nd Forum in Brussels in January 2012



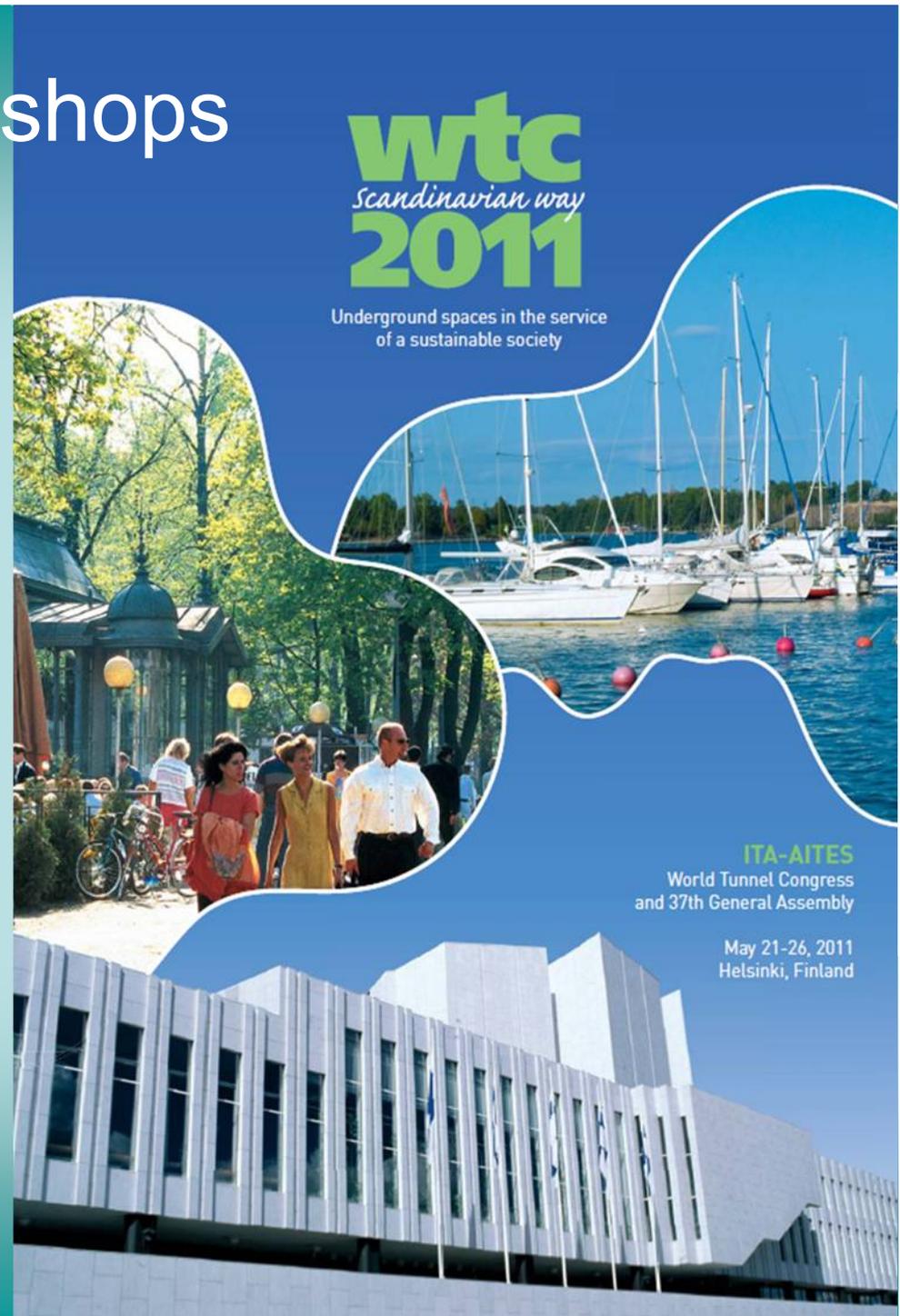
European Forums of Road Tunnel Safety Officers

- 1st Forum in Lyon in November 2009
2nd Forum in Brussels in January 2012
- Co-operation between ITA COSUF (AG4), PIARC and the European Commission (which jointly opened and closed the forum)
- Attended by > 40 Safety Officers from 18 countries
- Exchange of information & best practice
Preparation of recommendations
Forums to be held on a regular basis



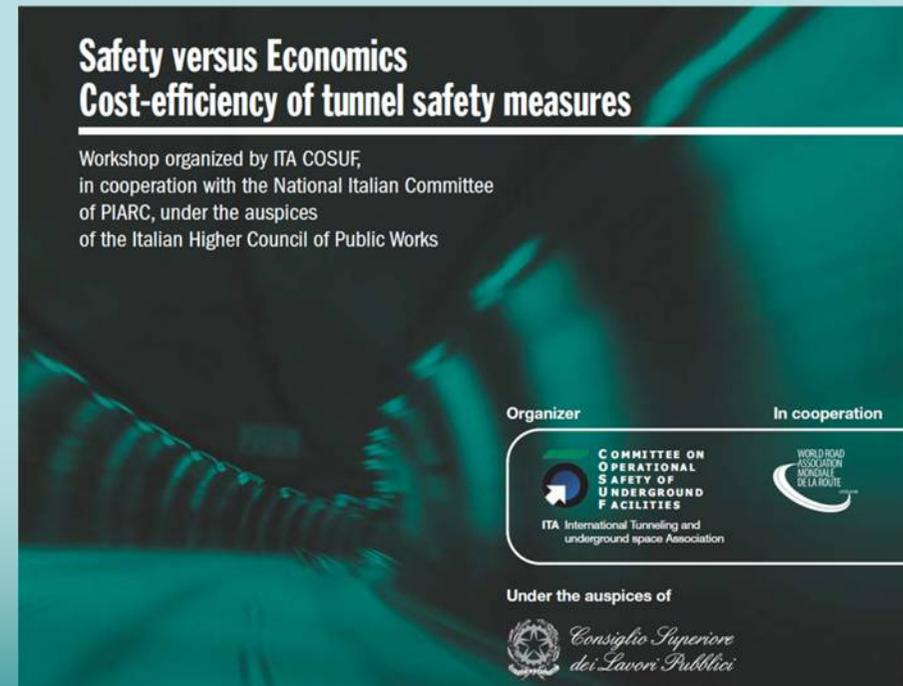
ITA COSUF Workshops

- One open workshop every year (reduced fee for members)
- 24 May 2011 = Helsinki Designing Underground Safety: How far to go?



ITA COSUF Workshops

- **One open workshop every year**
(reduced fee for members)
 - 24 May 2011 = Helsinki
**Designing Underground Safety:
How far to go?**
 - 22 June 2012 = Rome
**Safety vs Economic Crisis:
Cost-Efficiency of Tunnel
Safety Measures**



Safety versus Economics
Cost-efficiency of tunnel safety measures

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Organizer **In cooperation**

COMMITTEE ON OPERATIONAL SAFETY OF UNDERGROUND FACILITIES
ITA International Tunnelling and underground space Association

WORLD ROAD ASSOCIATION
MONDIALE DELLA ROUTE

Under the auspices of
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ITA COSUF Workshops

- One private workshop every year (reserved for members)
 - 14 Nov. 2011 = Amsterdam Metro/rail/road underground projects



ITA COSUF Workshops

➤ One private workshop every year

(reserved for members)

- 14 Nov. 2011 = Amsterdam
Metro/rail/road underground projects

- 25-26 Oct. 2012 = Madrid
Safety in complex underground transport infrastructures

*co-organised with AETOS
& PIARC*



(→ not reserved for COSUF members!)

Other events endorsed by ITA COSUF

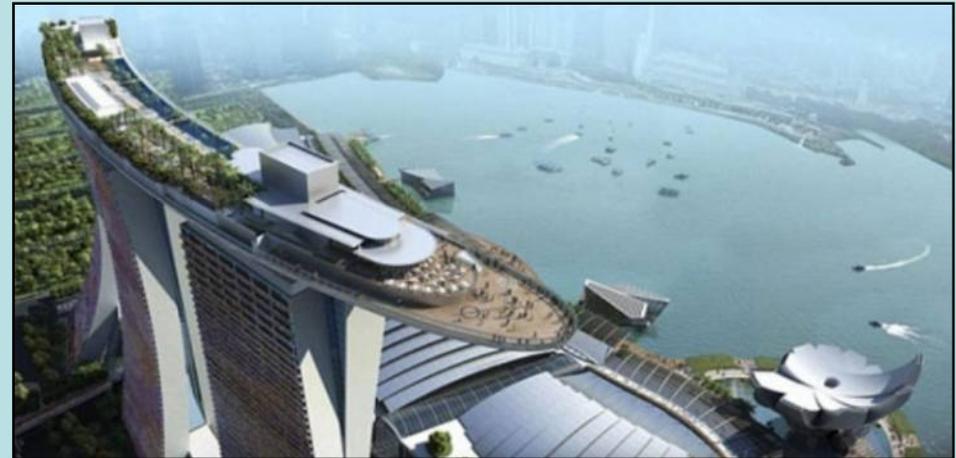
SOLIT² Conference (Safety Of Life In Tunnels – Integration of fire-fighting systems) Berlin, 27-28 June 2012

- Results of large German research project on FFFS
- A session organised by COSUF:
 - Human behaviour vs FFFS
 - NFPA 502
 - Eurotunnel SAFE stations
 - Safety in old metro systems
 - Fire-fighting in underground systems



Other events endorsed by ITA COSUF

13th World Conference of ACUUS (Associated research centres for urban underground space)
Singapore,
7-9 November 2012



- General theme:
*“Underground Space Development
– Opportunities and Challenges.”*
- One-day ITA COSUF workshop
*on safety & security of complex
underground infrastructures*



Today's Workshop

Safety versus Economics: Cost-effectiveness of tunnel safety measures

- Organised in co-operation with:
 - the Italian National Committee of PIARC
 - the Italian Higher Council of Public WorksThanks also to CNR (National Council for Research) for hosting this workshop!
- A topical theme!
E.g. planned upgrade of existing road tunnels:
 - Italy = 1 500 millions € (Directive 2004/54/EC)
 - France = 2 700 millions € (Directive + other tunnels)
- An international panorama,
taking into account different points of view
(including climate change and insurance matters)





I wish you a pleasant and fruitful day!

***Also an opportunity
to better know each other***