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### 1. Message from the Chairman



Dear members of ITA COSUF,

In the continuity of the last years, 2015 is very active year for ITA COSUF with two promising events on the agenda.

The first event will be the ITA-COSUF Workshop on “Aging Tunnels – Safety in operation and during refurbishment” (26 May 2015) as part of the World Tunnelling Congress 2015 in Dubrovnik. This event includes the General Assembly 2015. The speakers from all over Europe will show case studies, new technologies and new approaches. Risk levels will be discussed and common problems and their possible solutions are going to be presented. And like in previous years the ITA COSUF Award 2015 is granted to a young talent who has recently completed an outstanding research work in the area of operational safety of underground facilities. Section 2 will

give you more details on the programme and registration. In fall 2015 a Private Workshop in Hamburg will be organised with a visit to the Elbe tunnel.

In order to organise so many events, to support the activity groups, and to endorse other activities like ISTSS 2016 and ISAVFT 2015 (see section 3 and 4) the ITA COSUF Steering Board (SB) has met in Cologne in the beginning of this year. One of the focus points is also to improve ITA COSUF website functionality.

In section 5 the new handbook on Tunnel Fire Dynamics issued by (ITA COSUF member) SP Fire Research is presented. This book covers valuable information and a wide range of issues that are closely related to our ITA COSUF reason of existence.

Finally I would like to invite you to take part in the ITA COSUF Workshop on 26 May 2015 in Dubrovnik!

I am looking forward to meeting you there,

Best regards,

Roland Leucker - ITA COSUF Chairman



## 2. ITA-COSUF Workshop on “Aging Tunnels – Safety in operation and during refurbishment” (WTC 2015)

The open ITA COSUF Workshop 2015 is organized in conjunction with the World Tunnel Congress in Dubrovnik. This offers unique opportunities for interaction among the participants of the two events. We thus strongly recommend participating in this COSUF Workshop the more that we have put together a program with well reputed speakers and experts.

The topic of workshop is ‘Safety in operation and during refurbishment’. User safety, structural reliability and security during tunnel operation are clearly a part of the main focus of each tunnel owner. For tackling all the corresponding questions lots of research has been done during the past 15 years, providing decision-makers with sophisticated approaches and a steadily growing set of infrastructure and operational safety measures to make our tunnels a safer environment. Since a major part of our infrastructure is aging, the refurbishment and safety upgrading of the existing building stock becomes more and more the centre of attention. Some imminent questions are usually brought-up:

- How can one rehabilitate a tunnel and keep up the availability of the infrastructure?
- What about risk levels during rehabilitation? Are they possibly increasing?
- Is safety during rehabilitation only a matter of working space safety or are there lingering problems that were not part of past risk assessments of the tunnel?
- Are our safety systems safe enough to deal with incidents during rehabilitation works?
- Is there any measure for a temporary upgrade of tunnel system’s safety?

These and others questions will be tackled during the ITA-COSUF workshop which is especially devoted to the safe operation of underground facilities in times of rehabilitation and refurbishment.

The General Assembly and Activity Group Meetings of ITA COSUF are integrated in the Workshop. Registration is possible through the WTC 2015 website: <http://wtc15.com/>. If you wish to attend only the ITA COSUF workshop please register only for the one day participation on 26 May 2015. The venue of the workshop is the Valamar Lacroma Dubrovnik Hotel.



## 3. 16th International Symposium on Aerodynamics and Ventilation and Fires in Tunnels 2015

The Steering Board of ITA COSUF has decided to endorse the 16th International Symposium on Aerodynamics and Ventilation and Fires in Tunnels, Seattle, 15th-17th September. The programme deals with many topics within our ITA COSUF scope and we feel that ISAVFT16 (2015) is of interest for the vast majority of our members.

In the aftermath of the severe downturn in the world's economies, governments throughout the world are still investing in infrastructure, of which tunnels are an important component. There is therefore an enormous worldwide demand for engineering services and products relating to tunnels in general, and tunnel ventilation in particular. With this demand there is inevitably increased pressure upon designers and engineers to develop more cost-effective



solutions for tunnel construction without compromising safety. BHR Group's International Symposium on Aerodynamics, Ventilation and Fire in Tunnels has been the premier international event providing delegates with opportunities to discuss new research and developments, to consider innovative solutions and to explore technology breakthroughs. Its technical quality makes this event an essential diary date for everyone concerned with tunnels and tunnelling. Worldwide participants include Owners, operators & regulators, research institutes, universities, consultants and designers, contractors, suppliers and manufacturers, policy makers and future technologists

ISAVFT16 will provide the opportunity to explore operational issues, maintenance and plant failure, and experiences from tunnel fires and similar events. These and many other topics will be addressed – don't miss this opportunity to network with the world's leading experts at this event!

More information: to the [ISAVFT 2015](#)

#### 4. International Symposium on Tunnel Safety and Security 2016

The 7th International Symposium on Tunnel Safety and Security will be held in Montreal, Canada, 16 - 18th March, 2016.

Tunnel safety and security is a challenge for both private and public sectors. ISTSS provides a forum over 2½ days to discuss current practice and emerging trends and research in the field of tunnel safety and security. Each day will be opened by invited Keynote Speakers, leaders in their field, providing an overview of their topic of expertise as an introduction to the themes of the day.

**Welcome to ISTSS 2016!**  
**16 - 18 March 2016, Montréal, Canada**



#### 5. New handbook on Tunnel Fire Dynamics



ITA COSUF member SP Fire Research has launched a New handbook on Tunnel Fire Dynamics. This book covers a wide range of issues in fire safety engineering in tunnels, describes the phenomena related to tunnel fire dynamics, presents state-of-the-art research, and gives detailed solutions to these major issues. Examples for calculations are provided. The aim is to significantly improve the understanding of fire safety engineering in tunnels.

Chapters on fuel and ventilation control, combustion products, gas temperatures, heat fluxes, smoke stratification, visibility, tenability, design fire curves, heat release, fire suppression and detection, CFD modelling, and scaling techniques all equip readers to create their own fire safety plans for tunnels.

This book should be purchased by any engineer or public official with responsibility for tunnels. It would also be of interest to many fire protection engineers as an application of evolving technical principles of fire safety.

Authors: Haukur Ingason, Ying Zhen Li, Anders Lönnemark

For more information contact: [haukur.ingason@sp.se](mailto:haukur.ingason@sp.se)



## 6. Future ITA COSUF events

### *ITA COSUF workshops and Activity Group meetings*

- |                      |   |
|----------------------|---|
| 22 – 29 May 2015     | <b>World Tunnel Congress 2015, Dubrovnik (Croatia)</b><br>ITA-COSUF will organize a whole day open workshop. AG meetings will take place on the afternoon of 25 May.  |
| 28 – 29 October 2015 | <b>ITA COSUF Workshop, Hamburg (Germany)</b><br>ITA-COSUF will organize a private workshop on 29 October 2015 at the Elbe Tunnel Control Centre with a visit to the Hochbahn Operating Center. AG meetings will take place on the afternoon of 28 October 2015. |

### *Other events organised or endorsed by ITA COSUF*

- |                        |   |
|------------------------|---|
| 15 – 17 September 2015 | <b>16th Int. Symposium on Aerodynamics and Ventilation and Fires in Tunnels, Seattle, USA</b> |
| 16 – 18 March 2016     | <b>7th International Symposium on Tunnel Safety and Security, Montreal, Canada.</b>           |

For all enquiries to ITA COSUF membership please contact Ben van den Horn [ben.vandenhorn@arcadis.nl](mailto:ben.vandenhorn@arcadis.nl)



## 7. ITA COSUF member introduction: COWI

COWI is an international consultancy group founded in 1930. Over the last 85 years COWI have grown to have more than 6,200 employees located in some 100 branch offices around the world. COWI sets out to utilise world-class competencies within engineering, economics and environmental science to create innovative and sustainable solutions for our customers. With our headquarters in Denmark, COWI has a strong presence in the Scandinavian and international transportation market and is recognised for our worldwide activities in bridge, immersed tube tunnelling and marine engineering. The engagement can be seen in that COWI is currently engaged in some 17,000 projects within a wide range of disciplines from the suburbs of St. Petersburg to the top of Mount Everest.



### COSUF and COWI

COSUF originated from a series of European research projects where COWI were part of the driving force in five of these projects (DuraCrete, DuraNet, Uptun, Darts and Fit). After the research projects were completed, COWI was part of the founding members that decided to form a platform in order to keep the momentum going for focusing on tunnel safety, thus giving birth to COSUF. This is in line with the commitment COWI have shown to the international tunnelling community by actively contributing to committee work in COSUF, ITA, PIARC and other related tunnelling associations.

*Did you know that COWI tunnelling trades under these brand names?*

**COWI**



### COWI and Tunnelling

COWI has been involved in tunnel projects all over the world. Our experience covers all types of tunnels including bored tunnels, immersed tunnels, cut and cover tunnels, rock and SCL tunnels. Our services range from professional advice on a specific problem to comprehensive planning and total engineering design and implementation of large-scale projects. COWI's involvement in complex and demanding tunnel projects over the years has led to the development of particular in-house knowledge for which we are internationally renowned. TBM tunnelling under high water pressure and in soft ground, long-term durability of structures, mechanical and electrical installations, tunnel ventilation and safety systems can be mentioned.

Our keen focus on tunnelling have led to COWI now have grown to be the largest tunnelling consultancy company in Europe and the third largest in the world based on the number of specialist within the field. COWI is currently involved in some 20-30 tunnel projects worldwide and the consulting activities occupy more than 300 engineers and other professionals. For one, COWI aims to be a one-stop-shop for all your tunnelling needs.

### Contact

For more information on COWI or COWI tunnelling, please visit [www.cowi.com](http://www.cowi.com), contact Stig Ravn ([stra@cowi.com](mailto:stra@cowi.com)) or write to:

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