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1. Message from the Chairman

Dear friends,

In the continuity of the last years, 2012 is very active for ITA COSUF with quite a number of events on the agenda.

The year started with the 2nd European Forum of Road Tunnel Safety Officers organised on 18 January in Brussels by ITA COSUF activity group 4 in co-operation with the European Commission and PIARC (the World Road Association). More than 40 Safety Officers from 18 countries took part in the debates and concluded on the importance of holding such forums on a regular basis (see section 3 below for more information).

Our most important event in 2012 will be the activity group meetings, general assembly and open workshop which will take place on 21-22 June in Rome. In the current context of economic crisis and limited infrastructure budgets, the theme of the workshop is quite topical, since it will deal with “Safety versus Economics: Cost-efficiency of tunnel safety measures”. This workshop is open to all, members and non-members of ITA COSUF. Simultaneous English-Italian translation will favour cross-fertilization between foreign attendees and Italian parties. The workshop will be the opportunity to deliver the ITA COSUF Award 2012 and listen to a presentation of the last advances on tunnel fire dynamics given by the winner (see section 2 below).

Several other very interesting events are also planned. ITA COSUF organises a half-day session at the Safety of Life in Tunnels (SOLIT) conference on 27-28 June in Berlin, devoted to integration of fire-fighting systems. The second 2012 meeting of the activity groups will take place in Madrid on 25-26 October, in conjunction with a workshop on safety in complex underground facilities co-organised with the Spanish Tunnelling Association (AETOS), the Spanish Technical Road Association (ATC-AIPCR) and PIARC. Finally, ITA COSUF will organise a one-day workshop during the ACUUS conference on 7-9 November in Singapore, devoted to “Underground Space Development – Opportunities and Challenges“ (see section 6).



In order to organise so many events, support the activity groups, and follow up the other activities, the ITA COSUF steering board (SB) has improved its organisation and working methods and discussed the partial renewal of its members. As mentioned at the Amersfoort workshop last November and in the last issue of this newsletter, candidates could apply until 29 February. SB members are elected for a 4-year mandate and half of them are renewed every two years. They can be re-elected once. The renewal of half of the SB members will take place during the General Assembly on 22 June in Rome (see section 2).

Finally, I would like to wish all the best to the new PIARC Technical Committee on Road Tunnel Operations, now numbered TC3.3. As you certainly know, COSUF is a committee of ITA also supported by PIARC. Close co-operation is ensured by a Memorandum of Understanding between ITA and PIARC. After a very successful World Road Congress in Mexico City last September, PIARC have just started a new four-year work cycle. The new PIARC committee TC3.3 held their first meeting last March in Paris and discussed their work programme. Quite a lot of results are expected before the next World Road Congress, which will take place in Seoul in November 2015 (see section 4).

My last words will be to invite all readers to take part in the ITA COSUF events on 21-22 June in Rome.

Looking forward to meeting you there,

Best regards,

Didier Lacroix

2. Next ITA COSUF AG meetings, General Assembly and Workshop (Rome, 21-22 June 2012)



As already announced, the next meeting of the ITA COSUF activity groups will take place in Rome on 21 June afternoon. More information will be given to the members by the activity group leaders.

The following day, 22 June, will start with the ITA COSUF General Assembly, which will take place before the open workshop. The agenda will include reports on the development of ITA COSUF since the last General Assembly, which was held in Helsinki in May 2011, and outlook into the future. The activity group leaders will outline the progress in their respective fields and the budgetary aspects will be discussed. An important topic will be the partial renewal of the Steering Board members. In addition to the retirement of Evert Worm (RWS, Netherlands), the most ancient members of the current Steering Board have volunteered to resign: Kees Both (Efectis, Netherlands), Niels-Peter Hoj (Hoj Con-



sulting, Switzerland) and Jan Mijnsbergen (CUR Bouw & Infra, Netherlands) and will be thanked for their active involvement in the development of COSUF. Before the deadline of 29 February, four candidates have applied to replace them and will be presented for election by the General Assembly: Roberto Arditì (SINA, Italy), Johan Bosch (RWS, Netherlands), Haukur Ingason (SP, Sweden), Max Wietek (Hagerbach Test Gallery Ltd, Switzerland).

The workshop that will follow will be hosted by the Italian National Council for Scientific Research (CNR) and is co-organised with the Italian National Committee of PIARC, under the auspices of the Italian Higher Council of Public Works. The theme of this bilingual workshop (Italian and English) is *Safety versus Economics: Cost-efficiency of tunnel safety measures*. A correct understanding and a suitable management of risks related to tunnel operation are key for the safety of the users and the safeguard of the infrastructure and the environment. While various incidents may happen, major events are possible even though with a very low probability. Managing safety requires that Authorities, Administrations, rail and road Operators make choices and investments after assessing risks in a scientific and realistic way. The financial crisis of the late 2000s resulted in the collapse of large financial institutions, the bailing out of banks by national governments and downturns in stock markets around the world. Because of this, infrastructure owners are facing a decrease in budgets which may hamper the continual process of improving the operational safety of tunnels. Thanks to new knowledge, competences and technologies, it is more and more possible to predict phenomena and adopt new technologies and cost-efficient countermeasures when building new infrastructures and refurbishing existing ones. Critical choices have to be made to find an optimal balance between prevention of incidents and mitigation of their consequences, to define the most cost-effective measures to meet the operational and safety goals, and also to optimally organize and run operation and maintenance. These choices cannot be only technical, but must take full account of the economic constraints. Whereas it is certainly not acceptable that measures needed to reduce risks are not implemented only for budgetary reasons, neither is it acceptable that during the current period of increasing limitations in public budgets, resources are wasted where there is no plausible risk to be prevented.

The workshop is aimed at all those who wish to understand the current trends and cutting edge evolution on decision-making for safety in road, rail and metro tunnels. It will cover information and training of users and emergency personnel, cost-efficient operation and refurbishments as well as new knowledge on fire design.

The ITA COSUF Award 2012 will be handed over at the end of the workshop, and the winner will be invited to give a presentation on his most prominent results.

Due to the size of the room, the number of participants is limited to 95 people. Seats will be allocated on a first registered/first served basis and registration will be acknowledged. It is recommended to register by 25 May using the instructions which will be posted on the ITA COSUF website. For more information see this website: <http://cosuf.ita-aites.org>



3. Report on the 2nd European Forum of Road Tunnel Safety Officers (Brussels, 18 January 2012)

An international meeting to discuss how to make European road tunnels safer



Like the first forum held in Lyon in 2009, this second forum was organised by ITA COSUF in co-operation with the European Commission and the World Road Association (PIARC). It was intended and reserved for Road Tunnel Safety Officers (TSOs). More than 40 of them, coming from 18 European countries, met to find out how to make road tunnels safer across Europe and discuss key priorities, lessons learnt and technical aspects from safety inspections.

Three presentations were given on *Strategic issues regarding tunnel safety officers' tasks and functions*. André Stein (Ponts et Chaussées, Luxembourg) looked into the safety documentation, with a focus on the description of the organisation of the tunnel manager and the related instructions.

Bernt Freiholz (Swedish transport administration, Sweden) made the audience aware of the duties that a TSO faces during the use of a road tunnel. His presentation on the process of continually improving tunnel safety showed not only the challenges but also provided directions for solutions. At the end of this session, Hélène Mongeot (CETU, France) shared her insights into the issue of minimal operating requirements for road tunnels, a topic of great interest for the TSOs because every operational tunnel is facing failures of systems and it must be established to what level these are acceptable.

The next session was on *Feedback from experience*. Joachim Ollé (SGS TECNOS Barcelona, Spain) shared his experiences on coordination with emergency services, one of the main duties of a TSO. Based on experiences with several full scale emergency exercises the importance of coordination between different stakeholders was shown. The importance of having up-to-date tunnel safety documents was also mentioned. The second presentation was given by Johan Bosch (Rijkswaterstaat, the Netherlands) and focussed on the increasing complexity of road tunnels due to the large number of installations and the required software to manage these systems for the different states of tunnel operation.

The last topic was *Tunnel safety inspections*. In this presentation Marius Hofseth (Norwegian Public Road Administration, Norway) shared his experience having more than a thousand tunnels to inspect, which differ greatly in age, condition, shape and number of installations.

After each session there was a lively discussion with the participants and at the end of the day the plans for the future were discussed. The participants expressed their wish to continue and to strengthen this fruitful cooperation with the support of the European Commission and have a



biannual Forum. Suggestions were made for the programme of the 3rd forum such as having workshops and more time for individual contacts to share experience.

More information can be found on: <http://www.ita-aites.org/?id=699>

4. The new PIARC Technical Committee on Road Tunnel Operations for the cycle 2012 – 2015



The World Road Association was created under the name "Permanent International Association of Road Congresses" (PIARC) on 29 April 1909, a few months after the 1st World Road Congress was held in Paris. While at that time the subjects of concern focused on the design of infrastructure suited to motor vehicles, today the key issue driving PIARC work is access to safe, environmentally-friendly and sustainable mobility for all. Climate change, which seems to cause increasingly frequent natural disasters, reminds us of the need to gather and share research results, knowledge and experience.

The World Road Association principal means for achieving its outputs are through the activities of its Technical Committees that undertake studies and prepare reports and papers on various topics related to roads and road transport issues. In addition, the Technical Committees arrange seminars in order to promote one of the World Road Association's main aims: knowledge sharing and exchange among member countries. The activities of PIARC are organised in four-year cycles. The 2008-2011 cycle was concluded by the very successful World Road Congress held in Mexico city in September 2011. A new 2012-2015 cycle has just started and will end with the next World Road Congress, which will be held in Seoul in November 2015.

The need for bringing together the experiences gained in the field of tunnel operations already goes back to several decades. This is why, in 1957, PIARC created a devoted committee to address the range of aspects concerned in the use of road tunnels, such as geometry, equipment and its maintenance, operation, safety and the environment. Since then, supervised by successive presidents and with the help of its secretaries, this committee has produced technical recommendations across all these various fields. These recommendations are substantially followed worldwide and they are even often used as the basis for contractual specifications in many countries.

The World Road Association (PIARC) has formal alliances with other international organisations in the form of Memorandums of Understanding (MoUs). The purpose of these MoUs is to facilitate and strengthen the collaboration between PIARC and other organisations in addressing issues of local, regional and international importance. The Association has formal alliances with regional organisations of road administrations, International Organisations (e.g. the World Bank) and technical and scientific organisations.



In 1974, ITA (the International Tunnelling and Underground Space Association) was created to address aspects of the construction of all types of underground works, including road tunnels. In 2005, a Memorandum of Understanding was concluded between PIARC and ITA to foster synergies and avoid overlaps between the actions of the two associations.

Outputs of the Committee on Road Tunnel Operations during the 2008-2011 cycle

After numerous previous reports, which can be downloaded free of charge from the virtual library of PIARC (<http://www.piarc.org/en/publications/>), several new reports were prepared along the last cycle and will be available in the following months:

- Recommendations for strategic tunnel safety management
- Best practice for road tunnel emergency exercises
- Recommendations on management of maintenance and technical inspection of road tunnels
- Life cycle aspects of tunnel equipment
- Current practice for risk evaluation for road tunnels
- Assessing and improving safety in existing road tunnels
- Recommendations regarding road tunnel drivers' training and information
- Road tunnels: Vehicle emissions and air demand for ventilation
- Design fire characteristics for road tunnels

In addition, the Committee prepared and completed the Road Tunnels Manual, an online compendium which represents a more accessible tool to explore the large quantity of information disseminated in the reports and articles already published by the Committee. It can be accessed at the Internet address: <http://tunnels.piarc.org>.

This tool is complemented by the PIARC Dictionary on Road Tunnel operations, which includes more than 200 terms of the PIARC dictionaries and lexicon related to road tunnels.

Focus of the PIARC Road Tunnel Operations committee for the 2012 – 2015 cycle:

For the 2012-2015 cycle PIARC has established four Strategic Themes:

- Strategic Theme 1: Management and Performance
- Strategic Theme 2: Access and Mobility
- Strategic Theme 3: Safety
- Strategic Theme 4: Infrastructure

Among the Committees included in ST3 (Safety) is TC 3.3, which is the technical committee on road tunnel operations. Four issues will be covered during the current cycle:

1. Sustainable road tunnel operations, oriented to the identification of methods for ensuring sustainable road tunnel operations through the review of current practices and consideration of innovative approaches and costs and the consideration of the life cycle both for new and existing tunnels.
2. Integrated road tunnel safety, with the aim of drawing lessons from current practice regarding safety management, the analysis of road tunnel accident and fire data worldwide and application of risk analysis. This issue should also cover other tunnel safety related topics such as the identification of measures to support persons with reduced mobility and real-



time communications with users. In addition, an update on the use of fixed fire fighting systems (FFFS) in road tunnels is expected.

3. Underground road networks, to identify and analyse existing and planned complexes of urban underground road networks with interchanges and multimodal concerns from the point of view of operations and safety.
4. Knowledge sharing on tunnel operations and safety, to upgrade the web-based version of the Road Tunnels Manual and develop training courses on road tunnel operations and safety for emerging countries

To cover all these ambitious topics six Working Groups were established at the first meeting in Paris:

- WG1: Sustainable road tunnel operation, chaired by Jean-Claude Martin (France)
- WG2: Feedback from experience on tunnel safety, chaired by Bernard Kohl (Austria)
- WG3: Interaction with users, chaired by Olivier Martinetto (France)
- WG4: Fire Safety, chaired by Les Fielding (UK)
- WG5: Underground road networks, chaired by Bernard Falconnat (France)
- WG6: Knowledge management, chaired by Pierre Schmitz (Belgium)

The TC3.3 leadership team comprises

- President: Ignacio del Rey (Spain)
- English-speaking secretary: Fathi Tarada (UK)
- French-speaking secretary: Marc Tesson (France)
- Spanish-speaking secretary: Juan Marcet (Argentina)

Further information on the activities, organization and work program for the cycle 2012-2015 can be found on the PIARC website: www.piarc.org

5. Report from the Activity Groups

In the last ITA COSUF Newsletter of December 2011, the results of the Activity Group meetings in Amersfoort were reported. The next meetings of the Activity Groups will take place on 21 June 2012 in Rome, the day before the ITA COSUF general assembly and open workshop. The results of these meetings will be reported in the next issue.

Activity Group 4 (Road Tunnel Safety Officers) organised the 2nd Forum of Tunnel Safety Officers in Brussels on 18 January 2012 as reported in section 3 of this newsletter.



6. Future ITA COSUF events

ITA COSUF workshops and activity group meetings

- 21-22 June 2012** **ITA COSUF Open Workshop 2012 and General Assembly, AG meetings, Rome (Italy)**
- Activity groups will meet on 21 June afternoon.
- The ITA COSUF General Assembly will take place on 22 June, before the workshop. This open workshop will be devoted to “Safety versus Economics: Cost-efficiency of tunnel safety measures”. The COSUF Award 2012 will be given to the winner at the end of the workshop.
- 25-26 October 2012** **ITA COSUF Workshop, AG and SB meetings, Madrid (Spain)**
- Activity groups will meet on 25 October afternoon. A site visit will probably be organised in the evening.
- A workshop on 26 October will be devoted to “Safety in complex underground facilities”.
- June 2013** **ITA COSUF Open Workshop 2013 and General Assembly, AG meetings, Geneva (Switzerland)**
- This event will be organised in conjunction with the ITA World Tunnel Congress, which will take place in Geneva from 31 May till 7 June 2013

Other events organised or endorsed by ITA COSUF

- 27-28 June 2012** **International Conference on Safety of Life in Tunnels (SOLIT) – Integration of Fire Fighting Systems, Berlin (Germany)**
- ITA COSUF supports this conference, which is mostly devoted to the results of the SOLIT² research project. ITA COSUF organises the morning session on 28 June.
- 7-9 November 2012** **13th World Conference of ACUUS (Associated Research Centres for Urban Underground Space), Singapore**
- ITA COSUF organises a one-day workshop during this conference, which is devoted to “Underground Space Development – Opportunities and Challenges”.

For all enquiries to ITA COSUF membership please contact Ben van den Horn
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7. ITA COSUF member introduction: SINA



ASTM/SIAS Group is acknowledged as a leader in transports. Its activities are ranging from the operation of main transport infrastructures, to integrated Logistics, to Energy and Telecommunications. The technical means, equipment and staff offer around the clock services which are fully responsive to the needs of the state-of-the-art production and distribution.

The activities of the Group are clearly bound towards a cost-efficient approach, through innovation and research, operating this way in several sectors: motorways (where the holding **SIAS** operates roughly 1,200 km of the double carriageway in the Trans-European Road Network), engineering, transports and logistics, construction, telecommunications and energy.

Who's SINA

SINA (Società Iniziative Nazionali Autostradali S.p.A.) was incorporated in 1962 as an instrument for studying, designing, building and managing new infrastructures in the field of road, rail and telecommunications.

Thanks to its capability in performing a global service in the field of transport infrastructures, SINA used just a few years to reach a leadership position within its own sector. This way, SINA had the opportunity to promote innovative and global services and the opportunity to kick-off a few subsidiaries in order to fill gaps rising in the field of infrastructure design and management.

SINA group is a subsidiary part of the **ASTM** holding. Within the ASTM group, SINA is partnered by SINECO in the engineering for the monitoring and maintenance, by CIV in the management of Public Private Partnership projects for new infrastructures and by L.I.R.A. for the research & development of road safety systems (e.g. safety barriers, etc.). SINECO has a wide know-how in the use of state-of-the art technologies in the field of measurement, including an important laboratory facility - certified ISO 17025 – for material testing.

SINA performed a number of projects for main transport infrastructures. The engineering staff of SINA, normally handles the overall design process through the definition standards and methods. SINA is keen in keeping the cutting edge of knowledge, thanks to a long-lasting cooperation with some of the key research institutes in the world.

SINA developed a deep Customer Care analysis for each activity sector, by constantly monitoring and measuring satisfaction factors adopting the standards compliant with procedures of Management system for quality ISO 9001:2008, promoting also this way innovation and improvement.

SINA implements a policy aiming at a clear and transparent public communication to the scientific community, to the institutions, to the stakeholders and to the users.

Equipment, road safety and tunnels

In equipment and road safety-related matters, SINA shows a solid experience, which nowadays is translated into dozen of kilometres in tunnels. The consequent expertise underpin the capability to face and solve any kind of need concerning safety of the traffic, infrastructures, lighting and ventilation in tunnels, by carrying out specialized studies and articulated equipment engineering activities.

SINA deals with safety in tunnel under all of its aspects (e.g. lighting technique, parametric detection and ventilation) by specific programs, calculation methods and techno/operational design procedures, capable of cresting optimal level safety system.

Only considering tunnels longer 500 m, SIAS group operates road underground facilities for about 140 km of single carriageway i.e. 107 tubes. SINA group performs a wide range of services to monitor, audit, etc., including the activity of the safety officer as defined by European Directive 2004/54/CE.

For more information regarding SINA and operational safety: roberto.arditi@sina.co.it