IRF

Kingdom of Saudi Arabia
Ministry of Transport

Riyadh Municipality

Hosted by the Kingdom of Saudi Arabia
under the kind auspices of
King Abdullah bin Abdulaziz Al Saud

17th World Meeting & Exhibition

Delivering Global Prosperity

Riyadh, Saudi Arabia November 10-14, 2013

www.IRFnews.org

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About the Event

The International Road Federation convened the 17th IRF World Meeting & Exhibition, a global summit for road and transportation stakeholders, in Riyadh, Saudi Arabia on November 10-14, 2013 at the invitation of H.E. Eng. Abdullah A. AL-MOGBEL, mayor of Riyadh and IRF chairman.

IRF World Meetings have constituted important focal points for the sector ever since the first World Meeting was held in 1952 in Washington, D.C. The 17th edition continued this proud tradition and set new standards for scope and international relevance.

2,086 industry professionals from the private sector, academia and government, representing an unprecedented 92 countries from six continents took part in discussions that highlighted the impact of transport on economies and societies worldwide.

26 official country delegations led by 15 ministers of transport and public works provided tangible evidence of the IRF's convening power and its ability to develop a global forum for top level discussions.

More than 300 speakers delivered presentations and peer-review papers across 38 executive-level sessions and 74 technical & scientific podium sessions, as well as 6 interactive (poster) sessions spanning the sector's strategic challenges and investment priorities.

88 IRF Fellows, from Classes 1964–2013, joined as ambassadors of the IRF Fellowship Program, a cornerstone in the work of the International Road Federation resulting in grants to more than 1,300 graduate engineers over the course of its distinguished history.

These Highlights present key moments of the 17th World Meeting & Exhibition, and are not intended as a comprehensive record of discussions and deliberations. Delegates and other interested parties are invited to consult www.IRF2013.org for access to the full proceedings of the event.

Opening Ceremonies

Beyond the World Meeting

Presented by: **H.E. Eng. Abdullah A. AL-MOGBEL**, Mayor of Riyadh, IRF Chairman

It is a source of great pride that Riyadh hosted the premier event for transportation professionals in 2013, and one of the most successful IRF World Meetings to date. Indeed, the 17th World Meeting & Exhibition set a number of records, which include the volume of abstracts received, the number of countries represented and the most sponsors and supporting organizations.

The enormous success of the 17th World Meeting is further evidence that we need to preserve and amplify the IRF's flagship event, even in this era of seamless communications.

We are now in a position where we can take stock of five days of intensive, high-level discussions among policy-makers, practitioners and academics. During the Ministerial session, we heard of the value of international collaboration around strategic questions the sector faces. These include addressing the crisis of road traffic injuries and finding new ways to finance, build and operate our road network.

But we have also given ourselves another objective: to help the road community and singularly the IRF chart a course to 2020. This vision needs to drive our policy and research agenda for the years to come. I myself will certainly be paying close attention to it in my dual capacity as Mayor of Riyadh and Chairman of the IRF.

What is the best use we can make of these World Meeting outputs? Each one of us holds part of the answer. Will it be a new research project? A national policy initiative? Improved design and construction processes? Saudi Arabia too will benefit from the World Meeting outputs as we step up plans to connect our major cities and enhance our residents' mobility options.

To all our international guests, I hope this World Meeting has given you a sample of what Riyadh has to offer, as well as our exciting plans for the future.

It All Starts With a Road

Presented by: **Inger ANDERSEN**, Vice-President: MENA Region, The World Bank; 2013 IRF Professional of the Year

The World Bank Group is now unified behind the clear mission of ending extreme poverty by 2030 while at the same time boosting the income of the bottom 40 percent in every country. If we listen to the voices of the poor, one clear demand emerges. They all want roads.

Roads open the door to transformational shifts enabled by technology. People and goods need to move for an economy to grow, for wealth to be created, for prosperity to be shared.

In short, it all starts with a road. Mobility is a precondition for development. Much as a dynamic economy depends on the movement of goods and services, people rely on roads to access employment, education and health. The fact that 1.2 billion people worldwide still lack access to an all-weather road underscores both the scope and urgency of the demand.

The results of our investments in roads have shown how transformative an infrastructure they can be. Our support for the rehabilitation and construction of rural roads in Morocco, through the First National Rural Roads Program, helped double the primary education enrollment and the frequency of hospital visits in the beneficiary communities.

Roads and transport services are fundamental building blocks for human and economic development but they also pose risks. To realize the full potential of this transformative infrastructure, steps must be taken to ensure they are inclusive and to mitigate their negative effects on the environment and public health.

Roads can be made safer. The World Bank Group actively supports the United Nations Decade of Action for Road Safety and will do its utmost, through its Global Road Safety Facility, to help halve the expected death and injury rates on the roads of the developing world.

For the sake of future generations, and to gain the maximum benefit, roads need to be made safer and cleaner. Road construction today must incorporate technical developments that will reduce emissions from expected traffic, along with investment in low-emission modes of transport that will avoid a lock-in to high fossil fuel intensity and costs for the future.

Roads are a common good and need to be approached as such. Their impacts transcend national borders. We need to commit to sharing this common good for development and poverty reduction, and for the benefit of all.

Better Roads. Better World.

Presented by: **C. Patrick SANKEY**, President & CEO, International Road Federation

Organizing an event of this caliber has been an extraordinary experience for my team and myself. We were very fortunate in working with such highly committed partners, notably Riyadh Amana and the Saudi Ministry of Transport.

In many ways, the World Meeting has successfully embodied the IRF's irreplaceable role in promoting the development of better, safer and more sustainable roads by gathering expertise and best practices spanning regions of the world and transport disciplines.

The World Meeting was carefully assembled around a set of game-changing outputs for our sector and for the IRF.

We wanted it to contribute to setting a policy and research agenda to 2020 that builds on the sum of knowledge and shared aspirations of the global industry stakeholders. Our network of 24 global partners has played an essential role in the delivery of this agenda - and I want to repeat my sincere appreciation for their support.

We also wanted it to lead to productive discussions among the 92 countries represented in Riyadh. Knowledge transfer is the core of the IRF's mission. It leads to cost-effective innovation. In some cases, it also helps avoid costly mistakes.

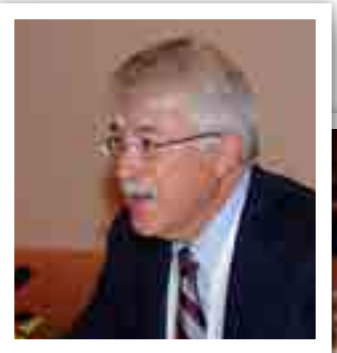
And lastly, we wanted this week to be an investment in the future. An unprecedented 2,000 road professionals have converged on Riyadh to benefit from, and share in, the vast global pool of knowledge gathered during the World Meeting. There is much for us to learn from one another. Our host country, for instance, has developed considerable expertise in megaproject management which we can all learn from.

What can this mean for the future of the International Road Federation itself? We aspire to go on playing a leading role as a global knowledge forum and clearing-house, and this World Meeting has been the ultimate example of that aspiration.

Tangible evidence of this is the concurrent launch of three IRF Regional Affairs Committees covering Latin America & the Carribbean, the Middle East and Sub-Saharan Africa. Each Committee will be tasked with identifying and addressing the needs of IRF members active in these regions, as well as developing bespoke capacity building programs that leverage our know-how.

While there is no denying we live in challenging times for the industry, I prefer to think that that we live in interesting — indeed exciting — times, because knowledge is now, more than ever, shared across borders. The IRF is at the core of this process.

Ministerial Session



15 ministers debate a world of transport challenges

During the 17th IRF World Meeting & Exhibition, the IRF convened a global session for ministers and other senior policy-makers representing 26 countries to address key challenges faced by the sector, and discuss a long term agenda that builds on successful policies and programs.

The session was hosted by Saudi Arabia's Minister of Transport H.E. Dr. Jobarah E. AL-SURAISRY and moderated by PIARC President and former Undersecretary for Infrastructure in Mexico's Ministry of Transport and Communications Eng. Oscar de BUEN.

Highlighted global issues included road traffic injuries, responsible for 1.3 million deaths a year, the highway infrastructure funding gap, estimated at nearly US $16 trillion, and the need for more robust transport data as a basis for sound policy-making.

The ministerial session was one of the high points of the five-day World Meeting and provided tangible evidence of the IRF's ability to act as a meeting place for top level discussions.

"Transport is the backbone of economic development in any nation," noted Minister AL-SURAISRY. "Our transport sector is facing many challenges on account of fast-growing demand."

Interventions by the transport ministers of Turkey, Bahrain, Burkina Faso, Egypt, Kosovo, Morocco and South Korea, among others, underscored how seriously the world's top policy makers take these challenges and the value of cooperation across borders.

"There are huge gaps between advanced countries and developing countries in terms of the level of mobility, convenience and benefits that the public can enjoy through access to infrastructure," said Korea's Vice-Minister of Transport Hyung-ku YEO. "I am confident that the IRF can lead in integrating currently scattered efforts."

"Governments need to assign a certain level of budget to road safety. In 2014, we need to evaluate progress to date and establish a roadmap to the second half of the U.N. Decade of Action," noted Burkina Faso Infrastructure Minister Jean-Bertin OUEDRAOGO.

"Turkey has an ambitious target of being in the 10 most developed countries in the world by 2023. To keep up with this target, we plan to realize investments amounting to US $200 billion in the next 10 years, of which US $80 billion will be realized by public private partnerships," according to Binali YILDIRIM, Turkey's minister of transport and telecommunications.

Setting the stage

Introducing the ministerial roundtable discussion, three guest orators presented a summary analysis of global industry issues, and the means to overcome them through determined efforts to build capacity, boost the productivity of infrastructure investments, and strengthen international cooperation in the areas of policy and research.

The U.N. Decade of Action for Road Safety

Presented by: **Marc SHOTTEN**, Senior Transport Specialist, The World Bank

Road safety is an unacceptable, and underfunded, international public health crisis, and fast becoming an obstacle to sustainable development. With rapid urbanization and increasing motorization rates, emerging economies are confronted with a growing challenge to their public health systems and development objectives.

By 2030 road crashes are forecast to become the fifth leading cause of death rising to 2.4 million fatalities per year. By 2020 the world's motor vehicle fleet will double to reach 2 billion. Car sales will reach 120 million per year with emerging markets taking a 61% share. This unprecedented growth in motorization is a huge road safety challenge.

In an effort to alter the status quo, a U.N. Decade of Action for Road Safety was launched on May 11, 2011 supported by over 100 countries, with a goal of preventing 5 million road traffic deaths and 50 million serious injuries globally by 2020. The launch of the Decade has energized governments around the world to develop and implement national action plans around safer road users, safer road infrastructure and safer vehicles.

The debate about the post-2015 Sustainable Development Goals is on the agenda and a unique opportunity to raise the public profile of, and funding for, this international crisis.

How To Save $1 Trillion a Year

Presented by: **Nicklas GAREMO**, Infrastructure Practice Manager, McKinsey & Co.

Insufficient or inadequate infrastructure — and the resulting congestion, power outages, and lack of access to safe water and roads — is a global concern. Typically, the debate about the growing need for infrastructure focuses on whether financing is sufficient to meet it. But, in fact, there are clear ways to create more and better infrastructure for less.

Just keeping pace with projected global GDP growth will require an estimated $57 trillion in infrastructure investment between now and 2030. That's nearly 60 percent more than the $36 trillion spent over the past 18 years. But given widespread fiscal constraints in the wake of the global financial crisis, even assembling the minimum investment required to meet growth predictions is a challenge.

Yet practical steps could boost productivity in the infrastructure sector — a long-time laggard — by as much as 60 percent, thereby lowering spending by 40 percent for an annual saving of $1 trillion. Over the next 18 years, this would be the equivalent of paying $30 trillion for $48 trillion worth of infrastructure.

The potential to boost infrastructure productivity is so large because of failings in addressing inefficiencies and stagnant productivity in a systematic way. On the whole, countries continue to invest in poorly conceived projects, take a long time to approve them, miss opportunities to innovate in how to deliver them, and then don't make the most of existing assets before opting to build expensive new capacity.

Policy, Data and Research: An International Collaboration Framework

Presented by: **Jose VIEGAS**, Secretary General, International Transport Forum

Analysis is only as good as data: quality of transport infrastructure is a key determinant of performance in the transport sector. A recent report, "Understanding the Value of Transport Infrastructure," reviewed existing sources, definitions and coverage, identified critical data gaps, set priorities for future data collection, developed definitions and methods for measuring investment and capital stock.

Collaborative Research: Representatives of research institutes from International Transport Forum member countries select topics where international collaboration provides added value ("common value topics"). Experts nominated by member countries form a Working Group with a two-year project cycle leading to a report with policy conclusions and recommendations.

Collaboration in Policy: The ITF's annual summit is a Ministerial-level Meeting built around key components: Ministers' Roundtables, Panel Discussions with Ministers, Industry, Research, Civil Society, Bilaterals and Networking, and an Exhibition. Summits are themed around strategic questions: the role of innovation transport, transport and society, and connection across modes, to name a few.

Local government leaders address 21st century mobility

With the acceleration of rural to urban migration, it is becoming increasingly important to manage today's — and prepare for tomorrow's — urban transportation challenges. In larger cities and communities, multi-modalism and "smart cities" are concepts that are gaining momentum where there exists an opportunity for well-integrated services.

H.E. Eng. Fahd Bin Mohammad ALJUBAIR, mayor of the Eastern Province Municipality of Saudi Arabia, said, "Today's travelers are expecting greater and improved mobility with better-managed congestion, cleaner transport alternatives, reliable and real-time journey information, and of course safer roads."

Mayor of Riyadh H.E. Eng. Abdullah A. AL-MOGBEL

In meeting these aspirations, we face variety of institutional and at times technical challenges. But at the end of the day, leadership prevails and champions succeed. It is not so much financial matters as institutional issues and cooperation across agencies that present the greatest impediments to implementing integrated urban transport strategies. Several mayors in the panel also noted that, significant advanced planning, and well communicated planning involving all the stakeholders based on realistic estimates of needed resources, budget and schedule are also key.

Building a "smart city" requires a significant and diligent planning and a carefully monitored implementation process, but more importantly — success is largely dependent on the intervention of a strong and well-informed "champion" with a clear vision and political will.

Moderator Abbas MOHADDES, president & CEO of Iteris, said, "During the 17th IRF World Meeting, we had the privilege of meeting and listening to these distinguished mayors, the true "champions" that will lead their respective municipalities to success for the betterment of their residents."

Eng. Saleh AL AHMAD, Mayor of Al-Qassim Municipality

Eng. Fahd Bin Mohammad ALJUBAIR, Mayor of Eastern Province Municipality

Eng. Faris Bin Mayah AL SAFAK, Mayor of Najran Municipality

Eng. Abdul Monem AL RASHED, Mayor of the Northern Province

Highway directors emphasize the role of innovation

Highway agency directors are the chief architects and implementors of national road infrastructure programs. The IRF invited nine agency directors and deputy directors to present and share their visions and programs in a lively roundtable ably moderated by Frederick "Bud" WRIGHT, Executive Director of the American Association of State Highway and Transportation Officials.

AASHTO Executive Director and session moderator Frederick "Bud" WRIGHT

Contributions were delivered by Hathlool AL-HATHLOOL, Deputy Minister for Roads, MOT (Saudi Arabia), who also served as host of the session; Hua LI, Director-General of Highway Department, Ministry of Transport (China); Cahit TURHAN, General Director of Highways (Turkey); Anastasio MUGUNHE, CEO, National Roads Administration, Ministry of Transport and Communications (Mozambique); Babatunde EKUNSUMI, Director Highways, Federal Ministry of Works (Nigeria); Rame QUPEVA, Director of Road Infrastructure, Ministry of Infrastructure (Kosovo); Andre KILIAN, Deputy Director General: Roads, Department of Roads and Transport, Province of Gauteng (South Africa); Nazir ALLI, Chief Executive Officer, The South African National Roads Agency (South Africa); and Lahcen AIT BRAHIM, Road Director, Ministry of Equipment, Transport and Logistics (Morocco).

The directors presented a broad and rich palette of infrastructure priorities resulting from different economic and geographic realities. Nigeria has seen its vehicle fleet triple since 2005, with a road network struggling to keep up pace and budget allocations currently at a third of funding requirements.

In South Africa's Gauteng Province — one of the country's economic engines — an estimated 82% of roads are older than their original design life of 20 years, leading to escalating maintenance costs. Propelled by a vibrant domestic economy. Turkey's heavy vehicles now account for 27 percent of traffic volume, a 42 percent increase over the last decade, leading to saturation at key trade nodes.

These trends have challenged traditional approaches to network planning and funding. Everywhere, highway agency directors are tailoring their programs to changing patterns in road use, and aggressively pushing for enhanced participation by the private sector in the construction and upkeep of portions of the road network.

The panel found many areas of convergence in the areas of strategic network planning, comprehensive road network management systems and supportive regulations.

Above all, the directors reaffirmed their commitment to good governance principles, in the areas of value for money, risk allocation, stakeholder consultation and transparency, and expressed their appreciation to the IRF for convening the session and making it possible for their diverse experiences and accomplishments to be shared across nations and continents.

Laying the foundations for KSA economic development

KSA Deputy Minister for Roads (MOT) Hathlool AL-HATHLOOL

- The Saudi Arabian Ministry of Transport is building an 85km expressway connecting Makah to the International Airport in Jeddah. The first phase of the project, costing US $40m, was completed in early June 2013, while the second phase, worth US $80m, is to start as soon as a contractor is selected.
- The 750km Oman-Saudi direct road link will reduce the travel distance between Saudi Arabia and Oman by around 1,200km. Currently, the only road linking the two Arab countries travels through the UAE.
- In 2005, the Saudi Ministry of Interior announced the introduction of the Advanced Traffic Vehicle and Monitoring (ATVAM) project. In September 2012 the ATVAM project required an estimated investment of over US $1.5b over a 6-year period.
- In December 2011, the Saudi Arabian Ministry of Transport published the ITS Deployment and Integration Plan for Saudi Arabia.

Business Meetings

IRF expands committee structure and networking opportunities

Since its establishment in 1948, the IRF has acted as a business network for its members, providing vital introductory services to external institutions and government agencies, and acting as a thematic forum for national road associations, advocacy groups, companies and institutions dedicated to the development of road infrastructure globally.

IRF Committees give special attention to the development of concrete responses to specific road problems. The IRF's current committees on Road Asset Management, Road Safety, Road Financing and Intelligent Transportation Systems have all created a wealth of resources including data, best practices in addition to providing members with access to government decision-makers who are ready to hear their voice.

During the 17th IRF World Meeting & Exhibition, regional affairs Committees were established to serve the needs of IRF members and help drive the industry agenda in Africa, Latin America & the Caribbean and the Middle East.

IRF Committee Meetings

African Affairs
Latin American & Caribbean Affairs
Middle Eastern & North African Affairs
Road Safety
Asset Management
Intelligent Transport Systems

IRF Governance Meetings

Executive Committee
Board of Directors
General Assembly

An IRF matchmaking service was launched, for individuals and groups, in an effort to foster professional relations between global companies, universities and national delegations. Representatives of Saudi agencies, including Riyadh Municipality, Ministry of Transport and Arriyadh Development Authority participated in this World Meeting first.

The IRF also organized five host sessions, which showcased ongoing and future infrastructure projects in the Gulf, thus helping delegates understand business opportunities and draw lessons from the main engineering projects in the region.

Additionally, the IRF convened a meeting for representatives from National Highway Associations to encourage open dialogue among peers, for the purpose of exchanging national best practices.

Program Highlights

An ideal platform to discuss industry solutions

The 21st century has already been marked by a rapid pace of technological change and growing mobility aspirations that need to be met through supportive policies. There is enormous potential in cooperative systems, cloud computing, big data processing and connections across modes — all of which are key to modern traffic management. Significant challenges also exist, chief among which the crisis of road traffic injuries, responsible for 1.3 million deaths and fast becoming an obstacle to economic development in many parts of the world.

To take stock of these challenges, and discuss the appropriate level of policy response, the IRF World Meeting hosted 30 executive-style roundtables bringing together top level officials and the highest global and local experts around dynamic topics: What can we learn from successful efforts to tackle road injuries in countries with growing motorization rates? How can highway engineers factor changing weather patterns in the design of new roads? Where are the obstacles to deploying industry innovation?

The following formats were used throughout the World Meeting:

IRF Executive sessions were developed by IRF staff and Committee heads to address key topics at the core of the IRF's mission.

Safer Roads by Design™ sessions were developed and adapted by IRF members and staff from the IRF's own extensive catalog of road safety training courses and workshops. These sessions introduced engineering concepts, best practices and state-of-the-art technologies to prevent road crashes and reduce the severity of accidents, in order to address the specific needs of highway agencies and road operators.

Partner sessions were developed by the IRF's network partners and member organizations from all over the world, to address special interest topics, from tunneling technologies to accessible transport. These sessions underlined the IRF's role as the global "network of networks" for the industry.

Host sessions were developed by major organizations from the host country and the Arabian Gulf region, with a focus on major projects, both ongoing and in the pipeline, from the point of view of showcasing engineering achievements and ongoing and emerging business opportunities.

IRF Executive Sessions

Smart Cities: Mobility, Efficiency, Safety and Sustainability
U.N. Decade of Action - Part 1
U.N. Decade of Action - Part 2
Innovation in 21st century transport
Roads & the Sustainable Transport Agenda
How to Sell ITS
Bridging the Funding Gap
Highway Agency Directors' Roundtable
Road Asset Management Today
Highway Planning in Latin America and the Caribbean

Safer Roads by Design™ Sessions

Safer Roads by Design™
Roadside Safety Applications
Safer Workzones - Positive Protection Applications
End Treatment Applications
Safer Workzones - Driver Safety Applications

Partner Sessions

New Tunneling Technologies (ITA)
From Transport to Intelligent Mobility (ERTICO)
Road Asset Management Approaches & Trends (PIARC & ERF)
Successful Strategies for PPPs Delivery Worldwide (AEC)
ITS Innovation: Strategies & Solutions (ITS America)
ITS in Fast-Expanding Environments (ITS South Africa)
Smart Ticketing for Sustainable Transport (Calypso Networks)
Disaster Mitigation and Recovery (Japan Road Association)
National Workshop on the Benefits if the TIR System (IRU)
Facilitating Road Transport in the Arab World (IRU)
Procurement and Projects Delivery (PIARC)

Host Sessions

Saudi Arabia Transport Projects
GCC Region Showcase
Riyadh Project Showcase
Megaproject Management

"The IRF has consistently pursued its mission to encourage and promote development and maintenance of better, safer and more sustainable roads through the exchange of knowledge and ideas".

Manfred SWAROVSKI

Swarco founder
Recipient of 2013 IRF Lifetime Achievement Award

Setting the industry agenda to 2020

The 17th World Meeting & Exhibition set the stage for one of the IRF's most comprehensive efforts to assemble original research and technical innovation, spanning 11 major transportation themes from highway asset management to new developments in road safety.

Under the leadership of Dr. Essam RADWAN, chair of the Technical & Scientific Committee, the IRF launched a call for papers in late 2012 with two objectives in mind: to attract the best technical contributions worldwide, and to generate a constructive, forward-looking dialogue around issues that are relevant, recent and significant to the profession.

More than 600 technical abstracts were submitted, each undergoing a rigorous peer review process, with 300 full papers ultimately being accepted. These contributions represent input from almost 60 countries, marked by notable interest within the host region translating into more than 100 technical papers.

Technical & Scientific Committee Chairman Dr. Essam RADWAN

The World Meeting was also highly successful in its endeavor to encourage a multidisciplinary dialogue bridging all facets of highway development, as well as their connections with other modes of transport and the wider economy.

Lastly, the World Meeting preparation was marked by a high level of engagement from all of members of the Technical & Scientific Committee. These experts each devoted many person-weeks of their own time to development the components of the technical program, review and evaluate numerous abstracts and technical papers, and provide valuable feedback to the authors and IRF staff.

The following pages present summary findings of each World Meeting track.

To find out how to access to the official World Meeting proceedings, please visit www.IRF2013.org.

Transport Policy & Economics

Presented by: **Frederick "Bud" WRIGHT**, Executive Director, AASHTO

There can be no doubt the mobility provided by well-functioning transportation systems is the foundation upon which economic prosperity and societal vibrancy are built. Investments such as the U.S. Interstate Highway System, the motorways of Europe, the many excellent roadways here in our host country Saudi Arabia and the recent major investment in transportation infrastructure by China all have and will continue to provide for economic growth and societal well-being if maintained and operated effectively.

Yet even as the importance of our transportation networks in our daily lives is obvious, we nonetheless face major challenges as we look to the future.

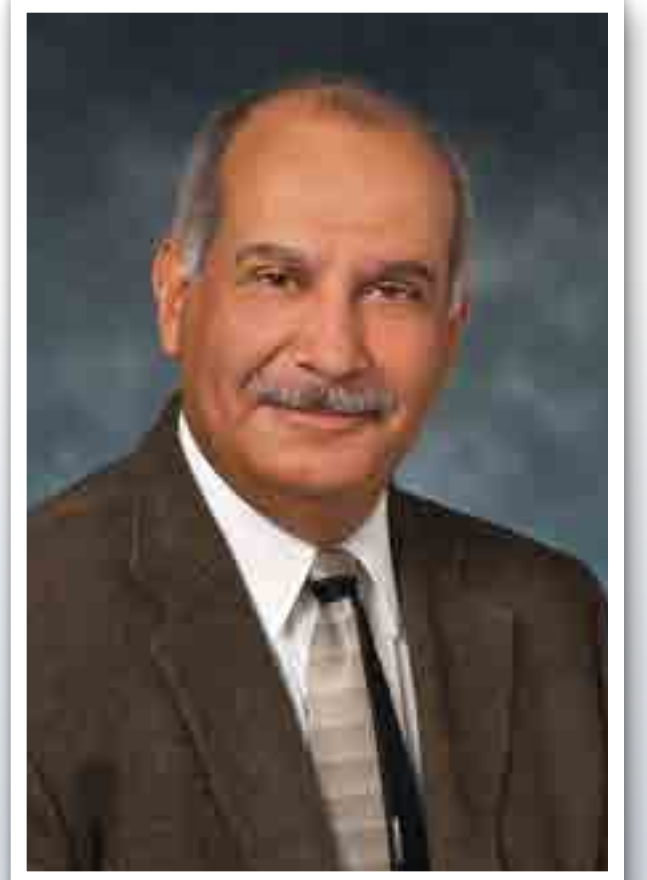
First and foremost is a lack of financial resources to adequately invest in transportation services.

In addition to finding the political will to invest in transportation using traditional means, we must tap into innovative approaches to roadway finance and contracting, including greater use of PPPs. Additionally, we cannot allow those who die on the roadways to just become statistics — we can and must do better.

The world around us is rapidly changing. Technological innovation enables us to use the latest approaches for constructing and operating our transportation systems, whether making investments in ITS to improve safety and traffic flow, using new construction materials and techniques to build stronger and longer lasting bridges and pavements or using the latest software to better plan out investments.

Road Safety

Presented by: **Dr. Akram ABU-ODEH**, Research Scientist: Roadside Safety & Physical Security Division, TTI



The technical & scientific component comprised 17 sessions for a total of 69 presentations. Focal themes included the benefits of road safety audits & accident analysis, protecting vulnerable road users particularly in urban environments, new road technologies that positively affect driver behavior, advances in barrier systems, road safety standards & policies, low-volume road safety and safety improvements in work zones.

The IRF also held a very productive meeting of its road safety Committee that resulted in the approval of a five year strategic plan to 2018.

Moving forward, we have to make progress on discussions to determine innovative and effective means to ensure road owners, designers, consultants and researchers are aware of global road safety developments, and are using them in their designs. A number of high risk issues still need more work, such as unprotected roadside trees, vehicle rollovers and cross-lane crashes.

Pavements & Materials

Presented by: **Dr. Kamil KALOUSH**, Professor, Arizona State University

Pavements, as we all know, are the backbone of our transportation network. During the World Meeting, sessions covered long term pavement performance, flexible pavement design, new methods and concepts for asphalt pavements, advances in concrete pavement design, new techniques for soil-rock mixtures, road bases and sub-bases, as well as innovations in quality control, equipment and methods.

The authors represented a wide range of geographic and industry interests. What resonated from the presentations is a continued effort for modified pavement systems that will provide the best short and long term impacts supporting further growth in transportation while mitigating environmental concerns.

What does this mean for the industry agenda to 2020?
We will continue looking into performance-related issues, including long term durability, safety and ride comfort. We see a trend of increased life cycle assessment of environmental impacts and interactions, affecting air quality, energy savings, recyclability of materials, and storm water mitigation. Promising technologies include asphalt rubber surface already in use in many parts of the world.

Sustainable Transport

Presented by: **Gordon KELLER**, retired, U.S. Forest Service

There were more than 30 presentations specifically related to the topic of sustainability, but nearly half of all presentations related at least indirectly to sustainable transport in one way or another.

The reason for the growing emphasis on this theme is that sustainable transport aims to strike a balance between the short and long term transportation needs of society, the cost-effective technology to achieve those needs and environmental stewardship considerations.

At project level, much can be done to enhance the sustainability and climate resilience of transport networks. Good environmental planning and public participation involving the stakeholders, energy saving measures built into the design of new roads, increasing the share of recycled materials and renewable resources as well as promoting synergies across the modes, are all examples of positive actions that can be taken by the industry.

Mitigation also plays an important role, whether it is stormproofing existing roads, protecting water quality, reducing sediments, or providing crossings for wildlife. To achieve this, we need good technology combined with sound engineering practices and social and environmental consciousness.

Integrated Mobility & ITS

Presented by: **Glenn HAVINOVISKI**, Associate Vice-President, Iteris

Integrated mobility is one of the most exciting topics in the industry, so exciting in fact that many presentations related to it could be found in other tracks. During the World Meeting, we all heard a lot of buzz phrases, "smart cities", "big data", "connected vehicles", "active management" - what's important is the underlying trends.

For many years, emphasis had been on stand-alone systems, single source data informing vehicle trips, often on a reactive basis. An important conceptual shift is now taking us to a place where data are being collected from a variety of sources, fused, mined and ultimately exploited across a variety of applications and devices.

As a result, we are seeing data — both historic and real time — increasingly used to conduct predictive and adaptive traffic control strategies and better manage our assets while offering users a greater palette of choices with much less need for investments in new physical infrastructure. This trend will continue, particularly if it is aided by dynamic road and parking pricing to manage demand, greater synergies between transport and land use planning and a cultural shift by the users towards greater acceptance of shared rides.

Disaster Mitigation & Recovery

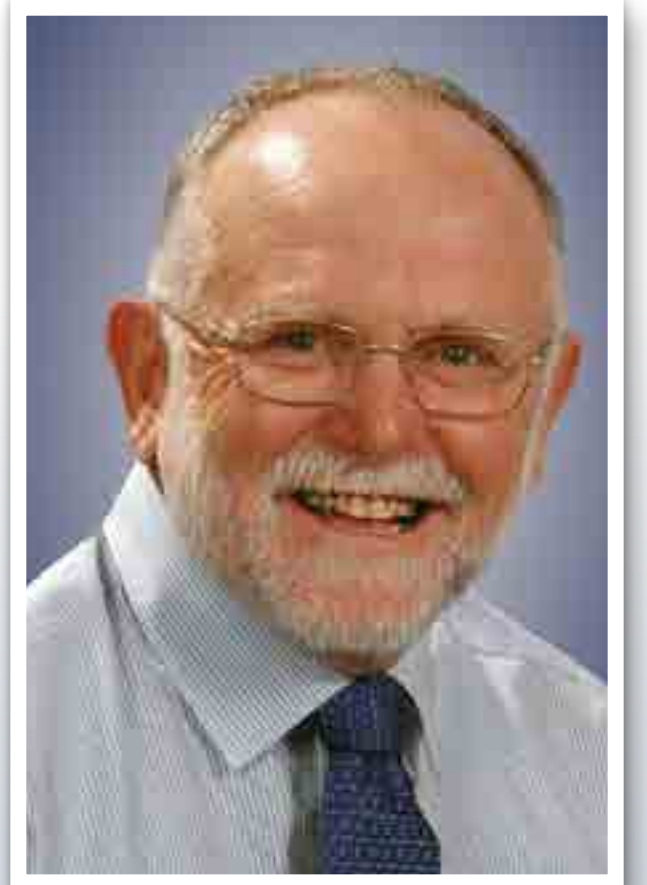
Presented by: **Moriyasu FURUKI**, Executive Director, Japan Society of Civil Engineers

The Great East Japan Earthquake of 2011 and the Indian Ocean Tsunami in 2004 both underscored the role of resilient transport networks in supporting evacuation plans and putting affected countries on the path to recovery.

An increased prevalence of destructive weather events and tectonic plate movements must urge all transport planners to consider these scenarios carefully. Contingency plans and continuous exercises are indispensable and have proved their effectiveness. Using data and simulation in design and evacuation plans under "worst condition" scenarios are critical to taking effective preventive measures.

Asset Management

Presented by: **Tony PORTER**, Director, Global Asset Management Team, Opus International Consultants Ltd.



The World Meeting further confirmed the appeal of asset management, which received the second highest number of papers overall and drew considerable audiences in each of the eight sessions. It is in the context of such meetings that we can both share our experiences and expand our visions – so much of what we do is interrelated with broader transport planning concerns.

There is broad consensus that demands placed on the highway system are increasing around the world. We are asking more of our assets, but at the same time funding is not keeping pace with needs, even in developed economies which are often faced with severe cuts in budgets. Asset management is the idea that a reasonable level of service can be delivered cost-effectively, by taking care of what we already own, managing for the long term, and focusing on the outcomes delivered to road users.

The move towards performance based management as a means to embedding good asset management principles into the delivery is now widespread. Inspection practices, technological innovations and the ability to make a sound business case for service levels as a function of road investment are trends which will support this shift. Through its Committee on Asset Management, the IRF is in a position to continue its indispensable supportive role by expanding its program of webinars, workshop, and specialized professional development courses.

Road Construction & Operations

Presented by: **Dr. Amr EL-HAFNAWY**, Consultant, Riyadh Municipality

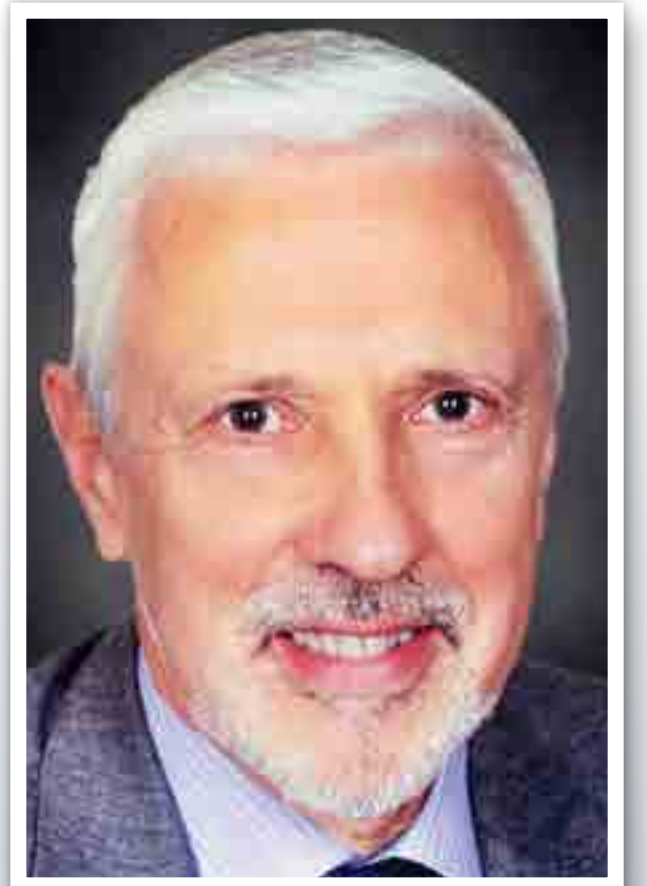
Value engineering has its foundations in the idea that the functionality of design is maintained for the least cost. Before a contract has been awarded, the opportunity exists to enhance value for money through incentives to value-engineer the contract and share profit with the client, making it a mutually beneficial process.

Experience suggests contractors will buy into the process and adopt cost-effective engineering practices when the right set of incentives is in place, sufficient time is allocated to the process and senior management is committed to achieving the desired end results.

Some criteria to select projects for value engineering include high costs and/or high priority projects, as well as other important projects that currently fail to meet a transport agency's budget parameters and which can be value-engineered to bring them in line with funding constraints.

Tunnel Construction & Operations

Presented by: **Pierre SCHMITZ**, Past President, PIARC Technical Committee on Road Tunnels Operations



Road tunnels are increasingly used to cross natural barriers, such as rivers or mountain ranges, but they also constitute a solution — sometimes the only one — when dealing with urban environment constraints. The construction and maintenance of urban road tunnels is always a challenge, and their realization requires the use of drilling techniques and monitoring tools that are increasingly sophisticated.

The World Meeting also hosted discussions on the application of safety guidelines at all stages of tunnel design, construction and operations. An overview of the implementation of Europe's tunnel safety regulation shows that after an initial period of uncertainty, industry has embraced new practices from the early stage of tunnel design to real time safety management of tunnels open to vehicular traffic. As tools and procedures become more complex, periodical inspections of the operators' skills and the availability of global knowledge resources will play a growing role.

PPPs & Road Financing

Presented by: **Jean Francois CORTE**, Secretary General, PIARC

Public Private Partnerships have become a well-known tool used by road authorities and operators worldwide — there is a wide palette of good and bad experiences which have resulted in a number of operational guidelines and a more efficient use of the respective resources of private and public actors.

However, there is still room for improvement and a need to constantly adapt to a changing economic and regulatory context. During the World Meeting, we heard different perspectives on PPPs and innovative forms of financing in such areas as ex-post assessments, tying in road safety ratings, as well as the benefit of land value capture which have all been successfully applied in different parts of the world.

Actors recognize the need for increased emphasis on preserving our road assets, as well as our industry's own responsibility towards the next generation of users. But they must also recognize the role of ethics and good governance in underpinning public confidence and framing our actions.

Urban & Public Transport

Presented by: **Atef GARIB**, Senior Expert, Abu Dhabi Traffic Police

Cities play a decisive and growing role in the economic and social fabric of countries around the world, but their own success is almost always underpinned by efficient public transport systems.

The challenges cities face in delivering on this objective are considerable, in turn creating significant opportunities to develop a supportive framework and industry solutions. For city authorities, this means a comprehensive agenda, shared across sectors and at all levels of decision making, to aggressively tackle chronic urban congestion. Examples of interventions include increasing the private cost of car use through road pricing and parking measures, restricting city traffic, better management of the road network and more effective incident management processes. In parallel, other transport options need to be made more attractive supported by real time journey information.

Given spatial constraints in many cities, the provision of new roads and additional lanes will seldom be an option in the future. As part of the strategic planning process, policy makers have a key role in supporting other means of transport, and it is encouraging to see that many cities in the Gulf region have implemented or are introducing large scale public transport systems.

Showcasing Innovation

Innovation is a watchword for road professionals, and it is an integral part of what the International Road Federation does best. At a time when budget cutbacks have become the new norm, our industry has demonstrated it remains committed to finding affordable ways to meet the needs of a changing world.

With more than 70 exhibition booths and numerous other displays, innovation abounded at the 17th IRF World Meeting & Exhibition. Whether it is safety applications, pavement design, or traffic management systems, the World Meeting offered an integrated showcase of surface transportation programs and technological solutions. Many have been field tested in real-life conditions, often with impressive results; others were launched during the World Meeting.

By bringing together leaders from the public and private sectors, the IRF World Meeting & Exhibition also played an important role in identifying the policies and processes that stimulate deployment of commercially viable road applications for those regions of the world that need them most.

Many of the solutions we need to meet the transport challenges of the future already exist, but only a fraction are deployed on our roads. Our biggest challenge is removing the obstacles to deploying this innovation.

Opening the Exhibition, from left to right: H.E Abdullah AL-MOGBEL,H.E. Dr. Jobarah AL-SURAISRY, H.E. Binali YILDIRIM, Ms. Inger ANDERSEN, H.E. Aziz RABBAH

Riyadh expands transport system

Under the leadership of the ArRiyadh Development Authority, Riyadh is diversifying transportation options with the arrival of a metro system, scheduled to break ground in 2014 and already the world's biggest public transport project. When the 178km 6-line metro system opens to service in 2018, it will be the most modern and most extensive in the region.

Showcasing Innovation

Business meeting at one of the IRF booths

AMS CEO Dr Roberto IMPERO

Saudi Binladin Group booth

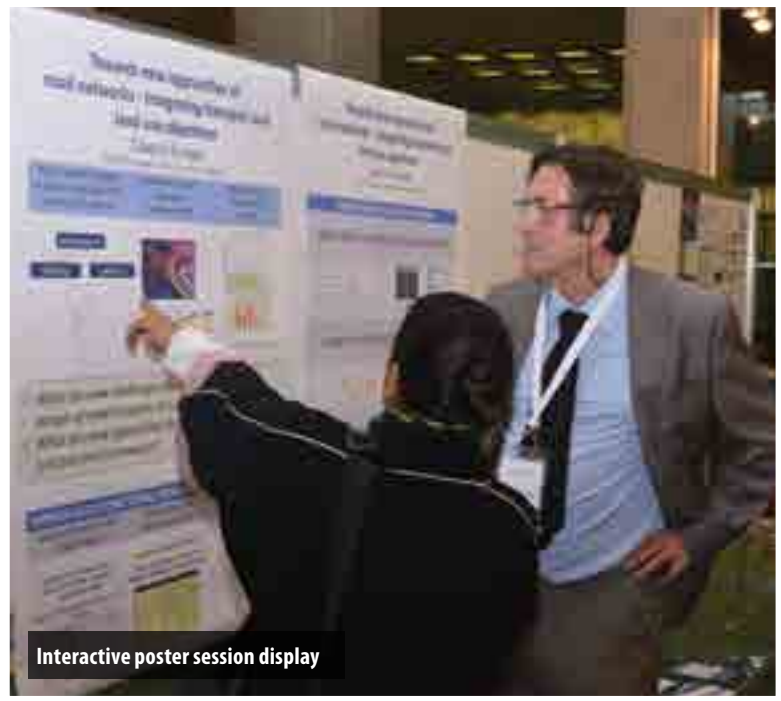
Zydex CEO Ajay RANKA

Majd M. MASARANI of Iteris

Delcan President Lester YOSHIDA

Spanish pavilion

Shibh Al-Jazira Contracting's Osama ARAFEH


Interactive poster session display

3M's creative and attactive booth

Erada Advanced Projects' Mohammad Fouz SALAH, Swarco Mizar's Silvio MERLI (center) and Swarco's Friedrich Peter HOFSTADLER

Exhibition

TM
www.IRF2013.org

FCC

Technical Site Visits

Delegates experience Riyadh's cutting-edge projects

King Abdullah Financial District

VISIT HOST: Rayadah Investment Company

The most important and largest project in Riyadh is the King Abdullah Financial District, located in the north of Riyadh's suburbs. The project consists of more than 100 new, simultaneously constructed buildings, an elevated light-rail system, the largest metro station in Riyadh, numerous freeway interchanges, safe pedestrian crossings, and arterials. Thirty-eight of its buildings — totaling a million square meters — have applied for a Leadership in Energy and Environmental Design (LEED) green building rating. IRF Visitors were briefed about the entire project while viewing a scale model and were also provided a guided tour of a live construction zone in the KAFD complex.

Riyadh Traffic Control Center

VISIT HOST: Traffic Police, Ministry of Interior (MOI)

This visit, hosted by Riyadh's Traffic Police, focused on the new and state of the art Automated Traffic Violations Administering and Monitoring traffic control center, located alongside the old Riyadh traffic control center. The new center is part of Saudi Arabia's ambitious ATVAM project.

The ATVAM project involves the implementation of traffic management, security and violation enforcement systems in 3 regional groups and is the largest and most important Intelligent Transportation Systems (ITS) project in the kingdom.

Wadi Hanifa Ecological Park & Wadi Laban Cable-Stayed Bridge

VISIT HOST: Ministry of Tranport

Wadi Hanifa is literally an oasis in the desert, in a suburban setting, and an outstanding example of an ecological park.

The Wadi Laban cable-stayed bridge at Riyadh crossing was designed by Dar Al-Handasah (Shair and Partners) and completed in 1997. It carries six lanes of highway traffic across a total of 763 meters (2,503 ft). The bridge is 35.8 meters (117 ft) wide and 167.5 meters (550 ft) high; its longest span is 405 meters (1,329 ft).

Awards Program

The IRF Awards Programs are set up to gather information on the exemplary people and projects that place this industry at the forefront of social and economic development. By recognizing such individuals and groundbreaking projects, the IRF seeks to publicize the great positive impact that the road building industry has on the global quality of life. The IRF encourages all companies and organizations in the road development sector to get involved in our Awards Program. By promoting the innovative ideas and successes of our industry, we can provide a road map for others to follow.

Inger ANDERSEN, World Bank Vice-President of the MENA Region, accepts her award as the 2013 IRF Professional of the Year

Inger ANDERSEN: 2013 IRF Professional of the Year

Inger ANDERSEN, Vice-President of the Middle East and North Africa Region for the World Bank, was presented with the 2013 IRF Professional of the Year Award for her work with leaders and stakeholders across the MENA Region in promoting inclusive infrastructure programs and supportive transportation policies that will ready the region's societies and economies for the challenges of the 21st century.

The award, established in 1951, recognizes eminent public, private and educational sector professionals who have demonstrated leadership and commitment to the road transport industry.

This prestigious award takes into account a wide range of criteria, and above all, values the contribution of nominees to our industry.

Nominees must have provided significant contributions to the road transport industry through such initiatives as advocacy efforts, training and educational programs, improved policies, innovations and research.

Furthermore, potential candidates will have made substantial contributions to support the higher education of young transportation professionals.

Past and future winners have utilized their position(s) in the public or private sectors to advance the IRF and its mission of promoting better, safer, and more sustainable roads and road networks, as well as demonstrated commitment to the socio-economic benefits of well-planned infrastructure systems.

Winners will have also offered inspiration and guidance to those involved in building and maintaining roads.

Ms. ANDERSEN was honored November 10, 2013, during the Opening Ceremony of the 17th IRF World Meeting & Exhibition in Riyadh, Saudi Arabia.

IRF Bestows Lifetime Achievement Awards

Delcan Corporation U.S. Infrastructure Operations President Brian STEARMAN and Swarco founder Manfred SWAROVSKI were distinguished with the IRF Lifetime Achievement Award.

"These awards reflect sustained commitment by two of the IRF's preeminent volunteer leaders, who have gone above and beyond in their service and demonstrated leadership for the betterment of the global road community," noted IRF President & CEO C. Patrick SANKEY.

Oscar de BUEN: 2013 Dr. Mino Award of Excellence Winner

More than 1,300 individuals have completed their IRF Fellowship since the first fellowships were awarded in 1949. These Fellows have accomplished some incredible things over the past 64 years, doing so in 116 different countries.

Oscar de BUEN became the third recipient of the IRF Dr. Mino Award of Excellence

The IRF Dr. Mino Award of Excellence, bestowed every four years at the IRF World Meeting, was developed to recognize and honor outstanding graduates of the IRF Fellowship Program who leveraged their educational experience to make outstanding achievements in roadway development and planning around the world.

The winner of the first Dr. Mino Award of Excellence, Mr. Mario LEIDERMAN, is a Class of 1961 IRF Fellow from Argentina. Japan's Mr. Moriyasu FURUKI, a Class of 1973 IRF Fellow attended Purdue University and was named the second winner of the Dr. Mino Award of Excellence.

The IRF presented the third Dr. Mino Award of Excellence to Mr. Oscar de BUEN for his vision, passion and commitment to developing the road infrastructure system of Mexico and making the roads safer and more efficient for all road users, as well as for creating model other road authorities could successfully implement around the world. Mr. de BUEN was honored November 10, 2013, during the Opening Ceremony of the 17th IRF World Meeting & Exhibition in Riyadh, Saudi Arabia.

2013 IRF GRAA winners honored during Gala Dinner

A full house of more than 800 international delegates witnessed the unveiling of the 2013 IRF Global Road Achievement Awards during a ceremony held at the Ritz Carlton in Riyadh, Saudi Arabia. The ceremony, held November 13, 2013 in conjunction with the 17th IRF World Meeting Gala Dinner, celebrated the most comprehensive and well-attended IRF World Meeting in several decades.

Established in 2000, the GRAA program has recognized more than 100 exceptional projects worldwide from across the globe. Mr. C. Patrick SANKEY, president & CEO of the International Road Federation said, "The 2013 GRAA award winners are a testament to the effort, ingenuity and creativity of the some of the world's leading transport organizations. I hope that these winning projects can inspire others to continue innovating and working towards finding cutting edge solutions for our industry."

Construction Methodology

Brisbane Airport Link,
Northern Busway & Airport Roundabout

Thiess John Holland Joint Venture (TJH)

Design

Brisbane Airport Link, Northern Busway & Airport Roundabout

Parsons Brinckerhoff and Arup Joint Venture

Maintenance Management

Abu Dhabi Road Network Asset Management

The Abu Dhabi Department of Transport - Main Roads (DOT-MR)

Program Management

Aceh Road Rehabilitation and Reconstruction Project

United States Agency for International Development (USAID) / Parsons Global Services, Inc

Quality Management

Highway 407 Electronic Toll Route Concession

Delcan Corporation / Ontario Ministry of Transportation / 407ETR Concession Company Ltd

Research

Nano Technology for Chemically Bonded Asphalt Binders

Zydex Industries

Safety

New Zealand Road Assessment Program (KiwiRAP)

New Zealand Tranport Agency / New Zealand Automobile Association

Technology, Equipment & Manufacturing

iiCollector™, Powered by Google® Maps

Resource International, Inc. (Rii)

Traffic Management & ITS

NTS – Trafikverket's National Traffic Management System for Sweden

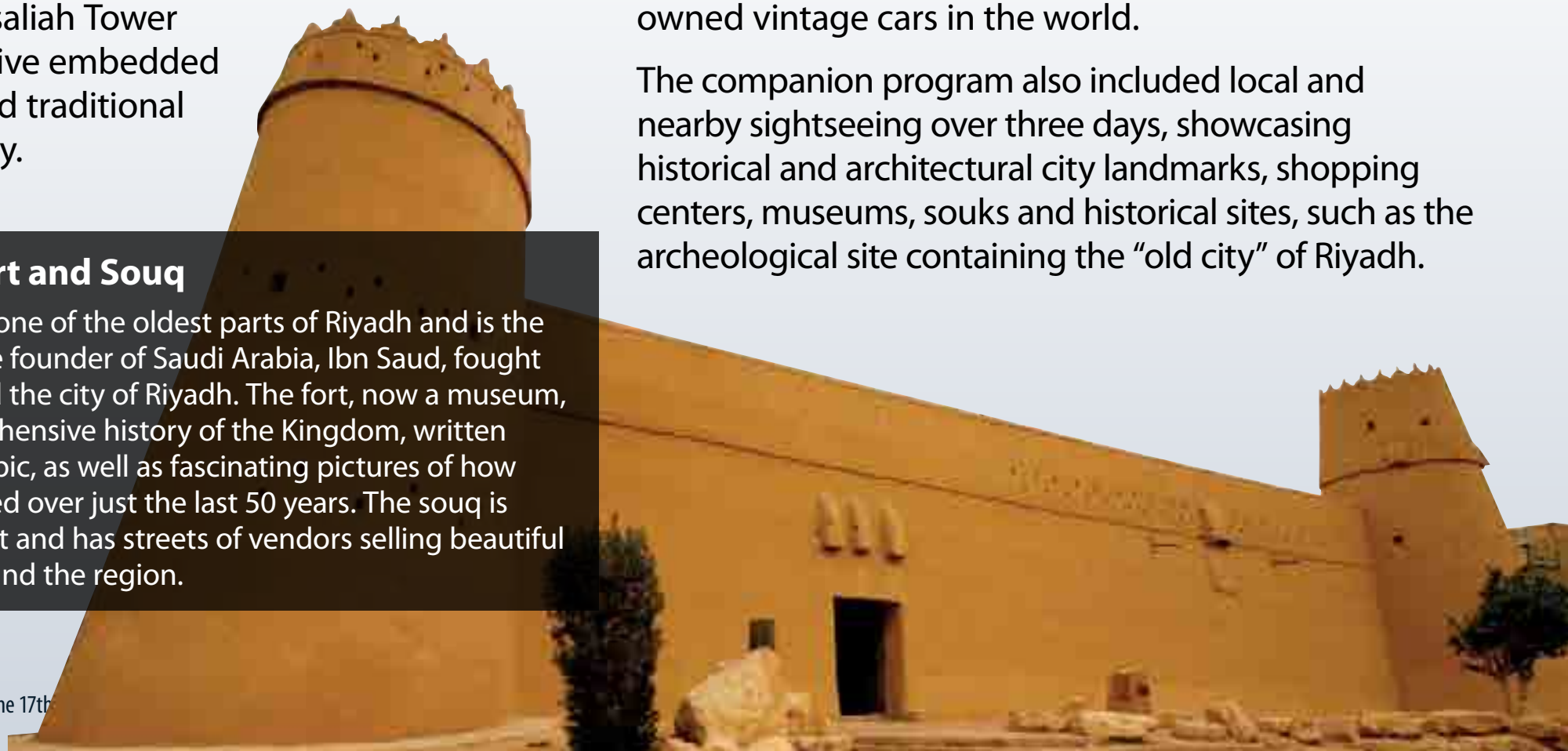
Swedish Transport Administration (Trafikverket)

Social Program

Riyadh offers a number of sites of historical and cultural significance from the King Abdulaziz Historical Center to the Antique Souq characterized by its narrow passageways and offerings of carpets, brassware and traditional daggers. Equally impressive to foreign visitors are recent developments in the urban landscape, and the stunning sights offered by the Kingdom Tower, with its unique double structure and sky bridge; and the elegant Faisaliah Tower with its distinctive embedded glass sphere and traditional Arabian imagery.

During the IRF World Meeting, delegates and their spouses were treated to several opportunities to visit and learn about the beginning of Riyadh. The Chairman's dinner began with a docent-led visit of the historic National Museum reserved exclusively for this purpose, and concluded with demonstrations of popular sword dances. The Gala Dinner saw delegates familiarize themselves with the art of falconry and visit one of the most extensive collection of privately-owned vintage cars in the world.

The companion program also included local and nearby sightseeing over three days, showcasing historical and architectural city landmarks, shopping centers, museums, souks and historical sites, such as the archeological site containing the "old city" of Riyadh.

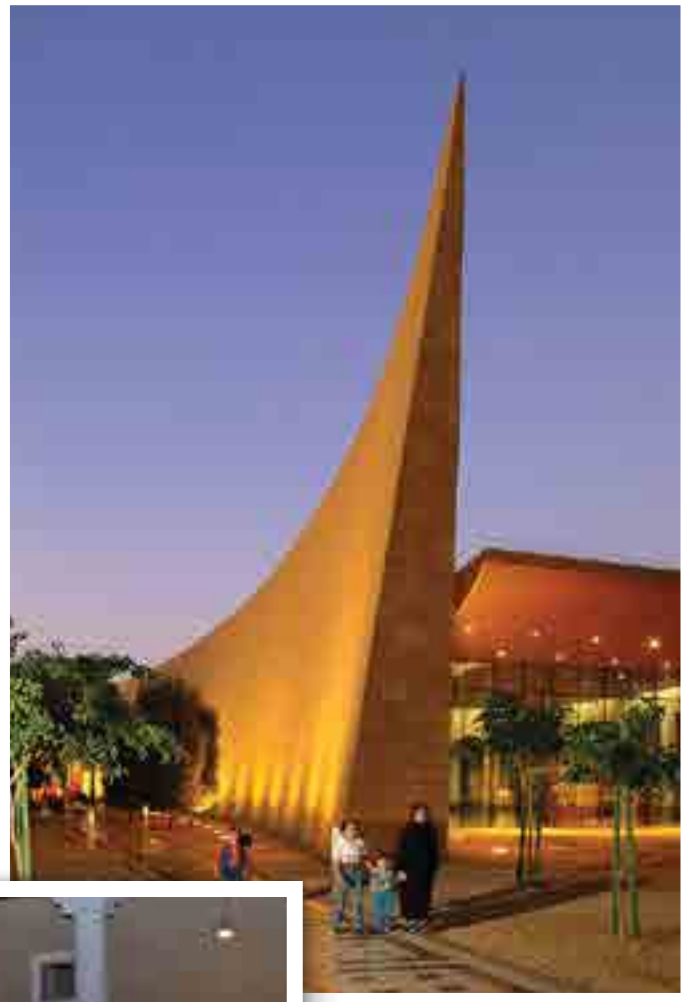


Al Masmak Fort and Souq

Al Masmak Fort is one of the oldest parts of Riyadh and is the location where the founder of Saudi Arabia, Ibn Saud, fought for and recaptured the city of Riyadh. The fort, now a museum, contains a comprehensive history of the Kingdom, written in English and Arabic, as well as fascinating pictures of how Riyadh has changed over just the last 50 years. The souq is adjacent to the fort and has streets of vendors selling beautiful items from all around the region.

Chairman's VIP Dinner

Following a private tour of the National Museum, guests were welcomed to the Chairman's VIP dinner to the sight and sound of traditional Saudi Arabian dance and song. The dinner, held inside one of the renowended Saudi old mud palaces, was an exclusive VIP event featuring local delicacies and the opportunity to interact with local, regional and international decision-makers from across the road transport industry. World Meeting & Exhibition Platinum sponsor SWARCO was the generous benefactor of the dinner.



National Museum

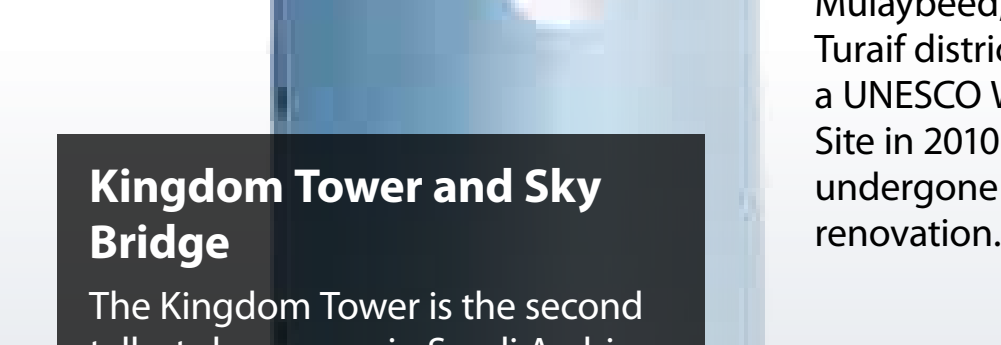
The state-of-the-art National Museum is without question one of the best museums in the Middle East. Its eight floors contain well-designed, engaging and informative displays on Saudi Arabia's history, culture and art, including beautiful, original rock carvings, models and even a full-scale reconstruction of a Nabataean tomb. Films shown on 180° screens complement the exhibits, as do virtual visits to sites and other excellent interactive displays.

Old Diriyah

Diriyah is an area located on the outskirts of Riyadh. It was the original home of the Saudi Royal family and served as the capital of the first Saudi dynasty from 1744 to 1818. Consisting almost entirely of mud-brick structures, the ruins are divided into three districts, Ghussaibah, Al-Mulaybeed, and Turaif. The Turaif district was declared a UNESCO World Heritage Site in 2010 and has undergone extensive renovation.

Kingdom Tower and Sky Bridge

The Kingdom Tower is the second tallest sky scraper in Saudi Arabia, with a height of 302.3m (992ft). It is the third tallest building in the world and contains a hole in the middle. Owned by HRH Prince Al Waleed bin Talal, it contains a hotel, offices, apartments and a shopping center. High speed elevators with LED lighting, some of which are made to look like shooting stars, fly you at 180km/hr to the 99th floor of the iconic landmark. Here you will find the Sky Bridge from where you can experience breathtaking views over the vastness of Riyadh.



Gala Dinner

More than 800 World Meeting & Exhibition guests were treated to an incredible evening at the Ritz Carlton in Riyadh, where the IRF hosted a luxurious Gala Dinner, as well as the 2013 GRAA ceremony. Entertainment included a priceless collection of antique cars, as well as falcons, dancing and a collectables market.

See pages 48-49 for more pictures from the Gala Dinner

King Abdulaziz Historical Center

The recapture of Riyadh on the 5th day of Shawwal 1319AH by the late King Abdulaziz and his brave companions has marked the beginning of a new era in the history of the Arabian Peninsula. Through continuous struggle and perseverance, King Abdulaziz has succeeded in unifying the various regions of Saudi Arabia into a single modern state.

Al-Faisaliah Center

The Al Faisaliyah Center is a commercial skyscraper located in the business district of Riyadh, Saudi Arabia. It is the third tallest building in Saudi Arabia after the Kingdom Tower and Abraj Al Bait. Immediately below it an outside viewing deck; at ground level, there is a shopping center with major world brands. The Al Faisaliyah Center is about 267 meters high and consists of 44 floors.The four corner beams of the Al Faisaliyah Complex join at the top above a golden ball. The design is said to be based on that of a ballpoint pen. Inside the golden ball is a luxurious revolving restaurant.

Gala Dinner

Fellows' Reunion

88 Fellows attend global reunion: Classes 1964–2013 represented

Through the International Road Educational Foundation, the IRF awards grants to graduate engineers and other transportation professionals from around the world in support of full-time academic training. With this the IRF actively supports the future generations who will build the road networks.

More than 1,300 highly skilled, successful and productive transportation specialists from 116 countries have graduated from the IRF Fellowship Program during the past 64 years.

Nearly 100 of these individuals, a great deal of whom are in very influential positions in their respective home countries, converged on Riyadh during the IRF World Meeting to renew acquaintances, make new friends and learn about the latest road and transport technologies, concepts and best practices from around the world.

These Fellows were prominently featured in many of the technical, executive and special sessions, including an invitation for the IRF Fellow Regional and Sector Coordinators to join in the Chairman's VIP dinner. Additionally, a variety of other events centered around the IRF Fellows occurred at the World Meeting.

The Fellows held their own formal reunion on Monday, November 11 — the largest IRF Fellows' Reunion ever. Additionally, IRF Fellow and PIARC President Oscar de Buen was awarded the Dr. Mino IRF Award of Excellence, which is presented to a Fellow based on his or her professional career accomplishments and continuing commitment to the IRF and its vision.

In addition to the multiple opportunities to meet these Fellows during the presentations and social activities, IRF members at the World Meeting had the chance to interact with these Fellows at the special luncheon on Tuesday, November 12. This event used a rapid meet-and-greet format, allowing IRF Members and Fellows to make as many new contacts as possible.

As is often the case in business, it is who you know as much as what you know that defines success. Many of these Fellows are current or future leaders in their countries, and the 17th IRF World Meeting & Exhibition provided the opportunity to establish and nurture relationships that will ultimately lead to fruition of the IRF's mantra: Better Roads. Better World.

Letters from the Fellows

I would like to extend my gratitute to the ladies that helped, escorted, and cared for my wife Susy during the spouse program. She enjoyed the program so very much.

Jorge Pablo Cortes
Class of 1983

Every part of the event was outstanding.
Dimitra Michalaka
Class of 2013

We spent great days, making good relations, sharing knowledge and enjoyintg the excellent hospitality.

Anis Al-Samawi
Class of 1987

I enjoyed every part of the experience. I had a blast working with the communications team and I was able to interface with so many presidents, CEOs and high ranking executives of companies. IRF, you continue to open doors for me and I can't say thank you enough.

Margaret-Avis Akofio-Sowah
Class of 2012

Truly, words fall short of expressing what has been an amazing adventure in Riyadh. The hospitality of our Saudi Arabian host, the camaraderie of the Fellows and the IRF Family members, the tranquility of desert and most definitely the food are just some of the memories firmly etched in my memory.

Patrick Thompson
Class of 2011

It was great to meet many of the bright young Fellows and future leaders. There is an enormous road transportation industry that the International Road Federation has embraced. Thanks to His Excellency Eng. Abdullah Al-Mogbel for sponsoring a world changing Fellowship program, giving the opportunity for learning experiences that will make a difference and add value where it counts the most.

Paul Hambleton
Class of 1983

IRF has established a great network and Im glad to be part of that family. This meeting was an excellent opportunity to meet transportation professionals, to establish new contacts and exchange the views on current issues in transportation. Now, back in Latvia, I feel reinvigorated and ready for new challenges in my career.

Kristine Malnaca
Class of 2000

I would also like to thank all the Saudi organizers who tirelessly worked and helped all participants. Whether they were the ones greeting the delegates at the airport in the middle of the night, the ones assisting at the King Faisal Conference Center, the ones helping during the site visits to the King Abdullah Financial District or the Wadi Hanifa Ecological Park, their efforts are much appreciated.

Jerzy Zemajtis
Class of 1991

My life has changed greatly since I became an IRF Fellow and I owe a big portion of my success to your lessons and the rest of the IRF team.

Yiftu Kebede
Class of 1988

MEETING OTHER FELLOWS FROM DIFFERENT CLASSES WAS AN INVALUABLE EXPERIENCE, AND I PERSONALLY MADE FRIENDSHIPS WITH OTHER FELLOWS THAT I KNOW WILL CONTINUE TO LAST FOR A LIFETIME.

TAYLOR LOCHRANE
CLASS OF 2010

The IRF has invested in us and this trust makes me feel strong and motivated to change my life and life in my country.

Azzurra Evangelisti
Class of 2013

Volunteer Leadership

Honorary Committee

COMMITTEE CHAIRMAN
H.E. Eng. Abdullah A. AL-MOGBEL, Mayor of Riyadh and IRF Chairman

Oscar DE BUEN Richkarday
World Road Association (PIARC)

Marc JUHEL
The World Bank

H.E. Essam A. KHALAF, Minister
Ministry of Works Kingdom of Bahrain

Dr. Judin Abdul KARIM
Road Engineering Association of Asia and Australasia

Jacobo DIAZ Pineda
European Union Road Federation

C. Patrick SANKEY
International Road Federation

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American Association of State Highway and Transportation Officials

H.E. Ismail VADI
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Mario LEIDERMAN
Asociación Argentina de Carreteras

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Dunia Intermedia

Masato MATSUMOTO
NEXCO-West USA, Inc

Kathy MEJASICH (Staff Liaison)
International Road Federation

Husam MUSHARBASH
Traffic Tech Group: Middle East / Gulf

Christophe NICODÈME
European Union Road Federation

Rik NUYTTENS
3M, Europe

Jose PAPI
Plataforma Tecnológica Española de la Carretera

Pete RUANE
American Road & Transportation Builders Association

Gabriel SANCHEZ
International Road Federation

C. Patrick SANKEY
International Road Federation

Emin SAZAK
Turkish Contractors Association

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Aximum, Road Systems Business Unit

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Technical & Scientific Committee

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Tunnel & Bridges: Construction & Operations

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Virginia Tech
Sustainable Transport

Atef GARIB
Abu Dhabi Traffic Police
Urban & Public Transport

Glenn HAVINOVISKI
Iteris
Integrated Mobility

Richard HUMPHREYS
The World Bank
Public Private Partnerships & Road Financing

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Arizona State University
Pavements & Materials

Omar SMADI
Iowa State University
Asset Management

Mohamed ABDEL-ATY
University of Central Florida

Dr. Ghassan ABU-LEBDEH
American University of Sharjah

Akram ABU-ODEH
Texas Transportation Institute (TTI)

Jorge ACHA
Mexican Transport Institute

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Spanish Road Association

Vinayak DIXIT
University of New South Wales

Magid ELABYAD
International Road Federation

Dr. Amr Amin EL HEFNAWY
Riyadh Municipality (KSA)

Luca FELAPPI
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Bob FERGERSTROM
Transport Consultant

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Supporting Organizations

24 industry organizations partner with IRF

Since its establishment in 1948, the International Road Federation has endeavored to be a global "network of networks," bridging all actors from across the road sector — whether from government, academia or industry.

The 17th IRF World Meeting & Exhibition has embodied this aspiration by bringing together 24 supporting organizations, representing different industry segments and regions of the world, and whose contributions enhanced the technical quality and industry outreach of the World Meeting.

Abu Dhabi Municipality (ADM) seeks to deliver best-in-class efficient and customer centric municipal services by engaging with the community & partners. An additional ADM goal is to be recognized as an efficient world class Municipal System, ensuring sustainable development and enhancing the quality of life for the Emirate of Abu Dhabi.

The American Association of State & Highway Transportation Officials (AASHTO) is a nonprofit, nonpartisan association representing highway and transportation departments in the the United States of America (including 50 states, the District of Columbia and Puerto Rico). Its primary goals are to foster the development, operation and maintenance of an integrated national transportation system in the U.S., and to develop and provide technical services and policies including standards setting.

The Chilean Association of Roads and Transport (Asociación Chilena de Carreteras y Transporte — ACCT Chile), is a nonprofit association that promotes the exchange of experience, dissemination of good practices, knowledge transfer and technological advances in the road sector as an integral part of the transport system of Chile.

The Argentine Road Association is a civil non-profit founded on July 21, 1952, as a result of the concerns of a group of institutions and professionals interested in promoting the rational use of roads and realizing the benefits to society accuring from efficient highway route systems linking all of Argentina.

Established in 1996, the Turkish Asphalt Contractors Association (ASMÜD) is the focal point of asphalt in Turkey. ASMÜD's objectives are to contribute to the promotion of asphalt industry, the implementation of all associated services and the development of policies for the industry both nationally and internationally.

Calypso is the electronic ticketing standard that defines the secured dialogue between cards and terminal. It was developed by a group of European partners from the cities of Brussels in Belgium, Lisbon in Portugal, Konstanz in Germany, Paris in France and Venice in Italy.

Cities Today is the leading magazine on sustainable development of cities. PFD Media launched the magazine at the Third UCLG World Congress of Mayors and Local Governments in Mexico City and at the Mayors' World Summit on Climate.

ERTICO – ITS Europe was founded at the initiative of leading members of the European Commission, Ministries of Transport and the European Industry. ERTICO is the network of Intelligent Transport Systems and Services stakeholders in Europe. We connect public authorities, industry players, infrastructure operators, users, national ITS associations and other organizations together.

The European Union Road Federation (ERF) is a non-profit association that coordinates the views of Europe's road sector and acts as a platform for dialogue and research on mobility issues. Roads are an undeniable source of socio-economic welfare and will continue playing a dominant role in the transport of goods and people well into the 21st century. As a respected transport stakeholder, the ERF regularly offers its expertise and supports European research in a number of key priority areas.

The High Commission for the Development of ArRiyadh (ADA) was established to develop the city of Riyadh in all economic, social, cultural, architectural and environmental aspects. The commission is responsible for developing policies and procedures aiming at raising the efficiency of services and facilities in Riyadh, in order to deliver rising living standards and wellbeing for its citizens.

Founded in 1974 by the initiative of 19 Nations, the International Tunnelling and Underground Space Association (ITA) aims to encourage the use of the subsurface for the benefit of public, environment and sustainable development; and to promote advances in planning, design, construction, maintenance and safety of tunnels and underground spaces, by bringing together knowledge and identifying solutions to challenges.

The Intelligent Transportation Society of America is the leading advocate for technologies that improve the safety, security and efficiency of the United State's surface transportation system. Its members include private corporations, public agencies, and academic institutions involved in the research, development and design of Intelligent Transportation Systems technologies that enhance safety, increase mobility and sustain the environment.

ITS Argentina is composed of partners from the public and private sector, manufacturers and service companies, distributors, universities, professional associations, consultants, freelancers and other institutions interested in intelligent transport systems.

The Intelligent Transport Society South Africa is a membership-based organization representing the public and the private sector. ITS South Africa ensures that ITS and related organizations are kept up to date with the technology revolution, and allows them to harness the technology and receive the benefits.

The International Road Transport Union (IRU) is the world road transport organisation, which upholds the interests of bus, coach, taxi and truck operators to ensure economic growth and prosperity via the sustainable mobility of people and goods by road worldwide.

The Japan Road Association is a public interest incorporated association aiming to study road policies essential to people's daily living and actively promote the diffusion of knowledge on roadways, the development of roads and the progress in transportation through various roles of domestic and overseas roadways.

Ministry of Public Works, formerly called the "Ministry of Settlements and Regional Development" (1999-2000) and the "Ministry of Settlements and Regional Infrastructure" (2000-2004), is a department in charge of the Government of Indonesia public works matters including highway construction.

The Moroccan Association of Roads (AMR) argues for a "long-term visibility" in road projects promoted by the government to sustain the continued evolution currently facing the road construction sector in the Kingdom. The AMR: represents and defends the profession from all public and private organizations; and creates and maintains positive relations among its members, as well as arbitrates disputes.

The Spanish Highway Technology Platform (Plataforma Tecnológica Española de la Carretera — PTC) is a discussion forum under the supervision of the Spanish Ministry for Economy & Competitiveness that brings together science-technology-enterprise stakeholders with a significant role in the promotion of employment, competitiveness and growth of Spanish road infrastructure.

Qatar Mobility Innovations Center (QMIC), formerly known as QUWIC, is the first Arabian Gulf independent research & development center that focuses on using emerging mobility and wireless technologies to deliver locally engineered innovations to the market. These innovations address the needs of a number of important market segments like transportation, environment, utilities, healthcare, and sports.

The Road Engineering Association of Malaysia (REAM) is a national organisation which represents the road engineering fraternity in the country. REAM aims to formulate and establish standards, guidelines and specifications for road engineering in Malaysia.

The Spanish Road Association (Asociación Espanola de la Carretera — AEC), is a non-profit organization founded in 1949 to advocate for and promote highways and roads. Its main objective has been and continues to be to develop a safer, higher quality road network with increased capacity.

Sponsor Recognition

Through the generous support and active engagement of over 50 corporate sponsors, the 17th IRF World Meeting & Exhibition was elevated into the premier event for transportation professionals and the foremost clearing house for road industry innovation in 2013. In turn, the World Meeting was the ideal opportunity for organizations and companies involved in transport or related activities to raise their profile and showcase products, services and other industry initiatives to a high-level global audience.

Mohammed M. BINLADIN, Vice President of SBG's Development Affairs, accepts a crystal trophy honoring his company's role as World Meeting Strategic Partner

"The IRF is deeply grateful for the level of financial support the World Meeting has received" noted C. Patrick SANKEY, IRF President & CEO. "Throughout the World Meeting preparation, we worked closely with our corporate sponsors to define packages that offered optimal levels of visibility. We also engaged with our partners to understand their strategic concerns and ensured these were reflected in the program of sessions and outputs".

The IRF acknowledges the extraordinary level of support offered by the Saudi Binladin Group, a family-owned business, which has grown over the years into a highly diversified group capable of undertaking megaprojects under deadlines that would be impossible for companies of a smaller scale. The Group's portfolio of construction projects is a dazzling array of Saudi Arabia's most iconic landmarks that includes Princess Nora University's new campus, Jeddah's Kingdom Tower and Riyadh's King Abdullah Financial District.

As a strong believer in the contribution of highways to socio-economic development, SBG also places significant value on continuing professional development for highway engineers, and has consistently supported knowledge exchange programs, chief among which the International Road Educational Foundation.

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IRF World Meeting Team

Pictured, left to right: Timothy CORBIN, Ian WHITE, Michael DREZNES, Emilia NINOVA, John DREZNES, Esteban SALINAS, Magid ELABYAD, H.E. Eng. Abdullah A. AL-MOGBEL, C. Patrick SANKEY, Brendan HALLEMAN, Tom ANTONISSEN, Maha HALABY, and Gabriel SANCHEZ

Not pictured: Leslie MILLS, Kathy MEJASICH, Janet TELA

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The International Road Federation Board of Directors is comprised of representatives of organizations who have been elected based on their commitment to the goals and objectives of IRF. The geographic and institutional diversity of the Board reflects the diversity of the global base of members.

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