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IRF was founded in 1948 to encourage better road and transportation systems worldwide. IRF is a non-profit, non-political service organisation which helps in the application of technology and management practices to produce the maximum economical and social return from national road investments. Some 500 governments, companies and associations around the world are members of IRF and provide financial support to the three offices in Geneva, Brussels and Washington DC. National and regional road associations around the world make up the Federation. IRF is an accredited transportation consultant to the United Nations, the Council of Europe, and the Organisation of American States, and works closely with other international institutions in the transportation field.

Innovation, safety & environment are the key issues...

On the eve of the ConExpo event, IRF in Geneva interviewed Johann N. Schneider-Ammann, Chairman of the board of the Ammann Group, and Hamid Lavassani, Road Construction Manager with Caterpillar Corporation. Here are their views on where roadbuilding is, and where it is headed

IRF: Apart from the rather obvious objective of maximising shareholder value, is there one over-riding corporate objective that you have, in relation to the future of the road construction industry?

Johann N. Schneider: Ammann delivers solutions for several important process steps in road construction: plants for the preparation of aggregates, the mixing of asphalt and the production of concrete, as well as machines for compacting asphalt and soils. Providing such a comprehensive portfolio of solutions along the road construction process, we support our customers by innovating in three main areas: ecology, safety and reduction.

We allow road construction to become more ecological: to name

one example of many, innovative foam bitumen processes and our optimised concerted system of own-manufactured burner, asphalt dryer and de-dusting module enable our clients to lower the asphalt mixing temperature. So, energy consumption can be lowered significantly.

Road construction is highly complex: we increase its safety and process reliability: a variety of raw materials has to be prepared, mixed, stored, laid and compacted. As one example, Ammann offers a real-time compaction measuring which allows an inline assessment of the realised compaction. As another example, our plant control system monitors the whole process of mixing asphalt, ensuring a constant asphalt quality at minimum cost.

Reduction leads to sustainable



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Johann N. Schneider-Ammann



and economical solutions: therefore, we reduce the time needed for compaction by automatically adjusting the optimal vibration mode of the rollers. On the production side, a reduction of the use of materials is achieved by applying latest production and engineering technologies.

Hamid Lavassani: Caterpillar aims at providing a single, convenient point of contact bringing major benefits to the customers' business in terms of purchasing, maintenance and support.

For this, Cat offers the most complete range of road construction machines including rotary mixers, track-type tractors and loaders, motor graders, soil compactors, cold planers, asphalt planers, asphalt compactors, excavators, scrapers and medium wheel loaders. The product offering is supported by exceptional financial incentives and an outstanding dealer network, which provides professional advice, or takes prompt action, to resolve any situation, giving the customer more time to concentrate on business.

IRF: *Are there new technologies and/or new materials on the immediate horizon, or is it a case of doing things better within the existing framework?*

Johann N. Schneider: The road construction industry faces several challenges today - like rising prices

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Caterpillar is still the only OEM to integrate Machine Control and Guide technologies at the factory while supporting the total solutions through our worldwide dealer network”

Hamid Lavassani

of raw materials and energy, higher quality requirements and a constant will to improve ecological performance. Ammann applies new technologies for its customers to face these trends: One of the most recent innovations is the Ammann Compaction Expert (ACE), which automatically selects the optimal vibration mode of our rollers, plates and trench rollers. As an option, the measured data is linked to the actual position of the machine using the Global Positioning System (GPS). The result: the highest quality requirements can be met securely in the minimum time.

Being aware of the high requirement of long-term reliability in the road construction industry, we intensively test new technologies to ensure they meet the demanding quality standard during the whole lifetime. For example, our drying system for asphalt plants combines the outstanding de-dusting know-how with the long-term expertise in combustion technology. Our software solutions for asphalt and concrete mixing plants combine decades of process experience with cutting-edge information and communication technologies.

Hamid Lavassani: Caterpillar invested US\$1.4 billion in R&D in 2007: that's more than \$5 million each working day. It focuses on developing new technologies to deliver integrated solutions, which provide the best return on investment to the customers. That means increased performance, reduced owning and operating costs and site management tools. This is done through better integration of components and machines enabled by the advances in hydraulics, electronics and communication technologies.

This can most notably be seen in our quickly expanding AccuGrade site level solutions. Caterpillar is still the only OEM to integrate Machine Control and Guide technologies at the factory while supporting the total solutions through our worldwide dealer network. AccuGrade technologies are now deeply integrated into the backhoe loader, track-type tractor, motor grader, excavator and compactor product lines. These technologies not only affect machine productivity they also greatly affect overall site level profitability. We recently completed an in-depth production study comparing a conventional road construction job with an AccuGrade equipped fleet. The AccuGrade technologies enabled a 100% productivity gain and a 43%

savings in fuel, while resulting in a better finish grade and a safer working environment.

On Caterpillar's new pavers, the engine cooling air flow is directed towards the front of the paver, which protects the operator from the fumes. A fume extraction system also sucks the fumes in front of the screed and directs it into the engine exhaust pipe to protect the person at the screed.

Another example of new technologies is the new M-series motor graders, which went from controls with 12 - 14 levers to two joysticks with major gains in ease of operation visibility and productivity.

IRF: *What is the corporate experience/what are the corporate objectives, in relation to re-cycling?*

Johann N. Schneider: Road constructors are confronted with high volumes of reclaimed asphalt as valuable raw materials. Ammann's new asphalt mixing plants products allow them to recycle these natural resources in a way that combines environmental protection with cost-effectiveness. Therefore, our plants are able to process high ratios of reclaimed asphalt while reaching the tightest emission standards. Currently, one of our goals is to increase the percentage of reclaimed asphalt in the hot mixing process to as much as 100%.

Hamid Lavassani: In very recent years, the prominence and importance of re-manufacturing as a sustainable repair option has dramatically increased. Customers and dealers are seeking repair and service options that not only make good financial sense, but also deliver high-quality service and are environmentally sound. Re-manufacturing offers to customers original, same-as-new components at a fraction of the cost; in addition, it carries the same-as-new warranty.

As one of the world's largest re-manufacturers, Caterpillar re-manufactures more than 2 million units and recycles more than 139 million pounds of products yearly at its fifteen facilities in North America, Europe and China. Its re-manufacturing business grew 67% between 2001 and 2006 and it is the leader in this \$100 billion global industry that conserves non-renewable resources and provides cost-effective repair options for customers. With an increased focus on the environment, sustainability, and corporate governance, we anticipate the re-manufacturing sector will continue growing.

Specifically in the field of road construction, for more than 30 years Caterpillar has supported the process of road reclamation, in which the existing road structure is pulverised and mixed in place to create an improved upgraded road base. When designing the new stabilisers/reclaimers RM-300 and RM-500, Caterpillar has kept in mind that road reclamation is the most cost effective and environmental friendly road maintenance process.

IRF: *Does the corporation feel under particular "green" pressure (perhaps in certain countries), or does the need to live with more stringent environmental standards open up new business opportunities?*

Johann N. Schneider: For several decades, Ammann has taken its ecological responsibility seriously and enabled its customers to do so. For example, our heating equipment in the asphalt plants are now able to burn, at high efficiency, a variety of fuels - significantly reducing both fuel consumption and emissions. In addition, our latest bitumen storage technology allows customers to maintain the temperature of hot bitumen over many hours without wasting heating energy. If we take a look at our asphalt compaction line, an integrated temperature sensor ensures that compaction takes place in optimal temperature ranges. Thanks to this, the operators can optimise the compaction route and save fuel and precious time.

All these measures have allowed us to increase the sustainability of the products over recent years. The increasing importance of the ecological perspective proves our long-term technological developments to be right and encourages us to go on developing ecological innovations.



Hamid Lavassani: Caterpillar believes the sustainability of the world and the sustainability of the business are inseparable. Caterpillar works to provide solutions that make customers' businesses more viable. As examples:

"We invested more than \$2 billion over the last ten years developing cleaner products, including ACERT Technology and SoLoNOx (introduced in 1992 as a low emissions option for gas turbines). These are solutions that dramatically reduce diesel engine and gas turbine emissions, while meeting customer expectations for durability, fuel efficiency and performance.

"We continue to work with governments to promote the use of alternative fuels such as landfill gas, coal seam methane and digester gas for distributed power generation. About 5% of Caterpillar's Solar gas turbines, for example, currently operate on gases such as these, which are often wasted and potentially harmful. Increasing the ability to convert these gases into clean energy not only reduces greenhouse gas emissions, but also represents a significant opportunity for growth ■

Ammann reduces compaction time and allows real-time measurements

Caterpillar circulating products

Tracking & tracing applications becoming a reality

The MENTORE (Implementation of GNSS Tracking & Tracing Technologies for EU Regulated Domains) partners launched Phase II of the project on 30 January, by validating the three pre-selected pilots and selecting two additional ones. The five live trials will then be tested in real-life situations until spring 2009.

The second MENTORE Review Meeting gave the opportunity to present the technical achievements of the project to the Galileo Supervisory Authority (GSA) and to the end-users. With the beginning of the second phase of the project, three out of the 10 MENTORE key applications identified during phase I have been selected for execution in real-life environments. These are Tracking and Tracing (T&T) services for fissile and radioactive/nuclear transport, T&T for livestock management and T&T for dependant persons and children. Furthermore, two more pilots will be validated in the coming days: T&T for city logistics and T&T for Authorised Economic Operator/e-Customs (to be confirmed).

Overall the five service pilot demonstrations will run in parallel, constantly monitored by the project's Applications & Regulatory Observatory. The Observatory welcomes any expression of interest from experts of the applications domains, in order to constitute a database of experts which will be tasked with evaluating all the different user perspectives concerning user requirements dynamics, changing market opportunities and user segments, regulation processes as well as relevant emerging initiatives.

To help in the evaluation process, please visit the MENTORE website section 'Interacting with Us'.

Coordinated by Telespazio and counting on the participation of the IRF Research Council, MENTORE is a research & development project targeting the Commission 'Green Paper on Satellite Navigation Applications.' It introduces EGNOS/Galileo in regulated T&T users' domains and develops Service Provisioning schemes supporting the implementation of National and European regulations integrating GNSS tools.

● For further information on MENTORE, please visit www.gnsstracking.eu



IRF holds 2008 Fellowship Orientation and Executive Leadership Program

The International Road Federation (IRF) Fellowship Program for graduate engineers and transportation managers has been a cornerstone in the work of the IRF for more than 50 years. The Program provides a one-time grant toward the costs of university graduate study in fields related to the development of better and safer roads and road networks worldwide.

Each year the International Road Educational Foundation (IREF) awards grants to graduate engineers and other transportation professionals from around the world in support of full-time academic training.

From 9-19 January, the IRF conducted the 2008 Fellowship Orientation and Executive Leadership Program (FOELP) from January 9 - 19 in Washington, DC. This annual event brings the current class of Fellows together to spend ten days learning about the IRF, being introduced to IRF Members who can help to shape their careers, gain exposure to many of the public and private organisations that are active in the road industry, and hear first hand from top-level executives what it takes to become leaders who will make a difference in the road industry.

The Fellows Class of 2008 consists of 24 students from 19 countries. For the first time in the history of the program, this year's class included two Fellows from the United States. Jeff Reed, President, Valley Slurry Seal Company, and Chairman of IREF said that it is very timely for US students to be involved in this program.



"It's important for US Fellows to experience the interaction with future international leaders in the road industry," said Reed. "And it will also be very helpful to have the availability of the US perspective on a daily basis for the international Fellows."

Throughout the ten-day program, the Fellow's visited The World Bank, the Turner Fairbanks Research Facility, Transportation Research Board meetings, met with associations such as AASHTO and ITE, visited private-sector firms Parsons, Louis Berger, and PB, and made a site visit to the Springfield Interchange to hear a presentation on this massive \$650 million project.

2008 Fellows

"All of the visits helped the Fellows understand the 'real world' of the road industry," said Mike Dreznes, Deputy Director General, IRF-Washington. "One of the goals of the FOELP is to ensure the Fellows receive a practical education about the road industry. The Fellows are already 'book smart' and the FOELP experience will help them gain the practical exposure that will help them translate the academic to the practical." ■

● For more on the 2008 IRF Fellowship Orientation and Executive Leadership Program and the IRF Fellowship Program, please visit www.irfnews.org/fellowships

IRF Announces 13th Annual Seminar on Contract Maintenance and Innovative Financing

The International Road Federation (IRF) has announced the 2008 schedule for the annual Executive Seminar on Contract Maintenance and Innovative Finance. This year's seminar will be held Oct. 14 - 24 in Orlando, Fla. Now in its 13th year, this seminar continues the long tradition of providing information and technology transfer to transportation agencies around the world.

This year's Seminar will focus on strategies for funding a contract maintenance program as well as lessons learned from programs already underway

throughout the world. Experts in the fields of maintenance planning, financing and program development have been scheduled to present the latest information concerning existing and future program initiatives.

This year's seminar will include a five-day program of presentations and discussions about contract maintenance, with sessions on:

- financing maintenance operations
- maintenance management

- innovative maintenance techniques
- contractor performance evaluation
- sustainability

Following the five days of seminar sessions, there will be three days of field trips that include visits to facilities under contract maintenance, local government agencies, contractor operations and other points of interest.

To register for the seminar or to download the brochure, please visit www.irfnews.org