

# automotive testing technology international

Nov/Dec 2007

# XF

"By using parts that perform as well as they do on XK, such as the suspension, we had a great platform to build on. This gave us reliability and confidence in the prototype phases"

## IN THIS ISSUE...

### Crash 2028

Discover what safety labs will look like in 20 years

### Motorsports

Porsche Motorsport and Andretti Green Racing teams talk testing

### Expo review

Automotive Testing Expo North America 2007 in Novi



# And the winner is...

automotive  
**testing**  
technology international  
awards '07

The votes have been counted and the triumphant companies and individuals can be revealed in the Automotive Testing Technology International Awards 2007. To find out the identity of the winners, turn the page

## CRASH TEST COMPANY OF THE YEAR

### MIRA



After winning the Dynamics Development of the Year in 2006 with its Virtual Proving Ground, MIRA makes it back-to-back wins in the Automotive Testing Technology International Awards thanks to the operation of one of the most established suites of safety development facilities in Europe. In 2007 MIRA reached the milestone of crashing over £1 billion worth of vehicles in its

history. The landmark was reached after a busy start to the year saw the company embark on an intensive test program for Jaguar/Land Rover, where over 40 crashes were completed.

The site has also seen ongoing investment in its digital camera technology helping to compile a more accurate and complete set of data from inside the vehicle. As the company continues to grow, it remains intent on expanding the crash testing business, to the point of running the complete test program for a customer.

#### Shortlisted

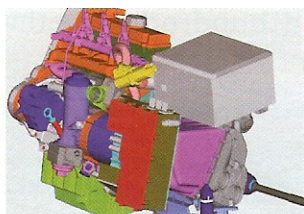
ACTS, ARRI and Kistler

**"MIRA has consistently been there for auto makers"**

Keith Read, European correspondent

## ENGINE DEVELOPMENT TEAM OF THE YEAR

### AVL



At a time when every auto maker is looking to push the envelope for next-generation powertrain sources, AVL is keen to make people aware that suppliers are working for a cleaner tomorrow too. Awards judges recognized developments such as AVL's ECO TARGET, a diesel mild hybrid vehicle that is powered by a 60kW conventional engine, together with a 10kW electric

motor. The concept hybrid engine claims a number of positives such as low CO<sub>2</sub> (98g/km in NEDC) and adopts specific NOx reduction strategies. AVL's concept also offers torque assist during shifting, start/stop technology and regenerative braking. This concept looks to be the first of many, as AVL has indicated its intention to expand the company's range of hybrid powertrain test equipment in the coming months.

#### Shortlisted

Menard Competition Technologies (MCT), Horiba and GIF

**"Realising the need for hybrid specific test platforms"**

Kyle Fortune, freelance

## DYNAMICS DEVELOPMENT OF THE YEAR

### Mechanical Simulation's CarSim 7



Arguably the most important release of the dynamics and performance testing software from Mechanical Simulation, CarSim 7 represents the biggest step forward for the technology first seen in 1996.

The latest version of the software, which debuted in April 2007, allows K&C simulation data to be obtained in a matter of a few commands in the new VehicleSim (VS) Command Language. This feature – one

of hundreds of new features introduced in this version, overcomes the problem of K&C test conditions being different from the road tests that CarSim initially offered. The co-founder of Mechanical Simulation, Thomas Gillespie, confirms: "We have made a substantial improvement to the architecture of the simulation environment, resulting in an expanded capability for customizing and extending the models."

#### Shortlisted

Tesis DYNAware, Fluidon, Accelerating Developments International, Anthony Best Dynamics

**"CarSim 7 takes dynamics simulation to the next level"**

John Challen, editor-in-chief

## CHIEF PROGRAM ENGINEER OF THE YEAR

### Jürgen Gagstatter, Ford Mondeo



When Ford decided to give the Mondeo the biggest overhaul of its 15-year life, who better to put in charge than the man responsible for the outgoing vehicle, one that is seen by many of Ford's rivals as a standard to attain. Jürgen Gagstatter has a lot of experience from his 15 years spent at Ford, and made the best possible use of the resources around him. In leading the development of CD345, he called on expertise from sister companies Land Rover and,

to a greater extent, Volvo. Spending as much as half of his time with colleagues from the Swedish marque meant that Gagstatter could use resources and the two brands could work together on producing the best products with the lowest possible cost outlays. The result? Not only did Ford create a vehicle that easily met all of its expectations, the development costs for the whole program were cut by over 30%.

#### Shortlisted

Jean-Luc Brossard, Maserati GranTurismo; Patrice Ratti, Renault Laguna; Ben Scott-Geddes, Caparo T1

**"Reward for the man behind the best all-round car of 2007"**

Graham Heeps, contributor

## ENGINEERING DIRECTOR OF THE YEAR

### Harald Wester, Fiat Group



There are few car makers around the world that have had more activity over the past decade than

Fiat. Recruited from Magna Steyr, Wester was given the role of chief technical officer as well as the job of turning around the Fiat development group in November 2004. He was tasked with masterminding a product offensive that saw new ground up developments of core volume models – the Grande Punto and Bravo – and the introduction of the 500, viewed by many as the car that would turn around the

fortunes of Fiat. Test programs for Bravo and 500 were of particular note as they were, under Wester's leadership, developed in just 18 and 19 months respectively. In the year and a half-long evaluation, Bravo being the first Fiat product to be built without the use of physical prototypes, and thanks to such virtual engineering, saved 5% from the total budget. More recently, the 500 has been praised for its build quality as well as performance.

#### Shortlisted

Ulrich Hackenberg, Volkswagen; Kiyotaka Ise, Toyota; Graham Townsend, MIRA

**“The turnaround in product quality has been remarkable”**

Richard Stobart, columnist

## VEHICLE DEVELOPMENT PROGRAM OF THE YEAR

### Ford Mondeo



Replacing what was considered by many to still be a benchmark product was never going to be easy. But, thanks to some insightful leadership by the recipient of the Chief Program Engineer of the Year Award 2007, Jürgen Gagstatter, as well as a useful adoption of group resources, the test program of the new Ford Mondeo was deemed to be the year's most

impressive by our judges. Aside from measures such as testing at the same time as Volvo in Finland (an event that saved six months from the total test program time) and the joint development with Volvo and Land Rover to define the crash structure, Mondeo featured some revolutionary test techniques for the Blue Oval. Gagstatter's team, for example were the first recipients of state-of-the-art analytical tools to speed up and simplify validation.

#### Shortlisted

Maserati GranTurismo, Mercedes-Benz C-Class, Renault Laguna

**“Ford's use of the synergies within marques has paid off”**

Brian Cowan, freelance

## INNOVATION OF THE YEAR

### Photron's FASTCAM MH4



Highlighting the auto market's growing need for high-speed imaging and test results, Photron's FASTCAM MH4 was the first camera that the firm has designed specifically for the industry. The judges voted the camera the most important innovation of the past 12 months, and the best of a plethora of high-speed video cameras that have come onto the market in that time period.

With its compact dimensions (35 x 35 x 35mm) FASTCAM MH4 can be easily placed in those hard to reach locations within a vehicle being crashed.

The camera operates at 1,000fps and has 2GB memory. The small DC-powered processor can support four camera heads, with flexible cable lengths from 1 to 10m without repeaters or power, Gig-E interface, battery backup or operation and a whole host of new features too.

#### Shortlisted

Hänchen Hydraulik's Series 326 test cylinder, LDS' Dimension 4i, and Polytec's 5500 Series rotational

**“2007's most important new product in vehicle testing”**

Dean Slavnich, deputy editor

## AUTOMOTIVE TESTING COMPANY OF THE YEAR

### ACTS



Building on the great strides in the world of vehicle evaluation, in 2007 ACTS devised new test systems designed to evaluate for beyond the next generation of legislation within Europe. As well as a packed crash testing schedule – ACTS conducted over 300 impacts in 2007 – ongoing investment is a key factor in the company's success. The past 12 months

have seen major development within the ACTS test center with new test and measurement opportunities being devised, in passenger car development and areas that are relatively new to the company such as truck and motorsports testing.

ACTS considers itself one of the most modern automotive test facilities around the world, and 2007's strides toward a zero failure rate in its development projects confirms that it is committed to quality and customer satisfaction.

#### Shortlisted

Mechanical Simulation, Horiba and PCB Piezotronics

**“ACTS has grown at an incredible rate”**

Graham Johnson, managing director, UKIP Media & Events

# Winning lines

**Joseph Benjamin** talks with some of the winners about what's next after triumph at the Automotive Testing Technology International Awards 2007

## PHOTRON

Involved in the high-speed imaging market since the 1970s, Photron's first product that has been specifically designed for the automotive industry proved a massive success with customers as well as jurors on the Automotive Testing Technology International Awards panel. FASTCAM MH4 was praised for its small camera head, which enables it to be placed in hard-to-reach locations. "For our first foray into the automotive camera market we were very keen to avoid the easy option and do what other people had done," says Andrew Hilton, director at Photron Europe. "We went for an area of the business that is not the biggest but one that was important and hadn't been explored before."

With one award-winning camera on the market, there seems no stopping Photron's research and development people, as 2008 will see two more cameras launched onto the market specifically for automotive testing. "We have looked at offboard cameras with a higher resolution than MH4," explains Hilton. Eager to please his customers, the director has done his research in the area: "We have identified that one problem crash teams have is with light sensitivity, so we are working on cameras that are not so sensitive to the light that is projected around the crash area. Users also want cameras that can undertake multiple functions or be placed onboard, offboard, or even be attached to a rig or sled."

As well as the actual number of products, Hilton reveals that the company is set to increase the number of staff working on high-speed imaging from 180 to around 200. "We are planning to taking on more support personnel and applications. It is critical for us to provide customers with an exceedingly high level of support," explains Hilton. Geographically, the company has its own specific goals for growth in the coming months and years: "In Europe, automotive is probably the largest application sector, while in Japan and the US it is not as big," says Hilton. "This is something we are keen to alter in the near future."

## ACTS

Considering the number of companies that are involved in vehicle development around the world, it's a big achievement for ACTS to be voted the Company of the Year in the Automotive Testing Technology International Awards 2007. The past 12 months may have seen development within the company with regards passive and active safety, but Dirk Babcock, business line testing director at ACTS, a Magna company, believes that the seeds for this triumph were planted many years ago: "We are part of a difficult and rapidly growing market and over the past 10 years we have built up a good name with a high level of quality. ACTS takes pride in being a five-star laboratory

with five-star engineering, and this is the feedback from customers such as BMW, and Ford." The vehicle makers Babcock talks of are European, but he hints that this could change in the near future: "While we are concentrating on the European market for our customer base, we're looking at the Asian market, but it has gone no further than just that."

The growth in the business is concentrated in a number of areas: "We are thinking about ways to integrate active and passive safety into the test program because this is something that the market is very keen on at present. We are also looking for new testing and training methods both in Europe as well as China and Turkey."

## MECHANICAL SIMULATION

Seeing a need for a real-time simulation package to aid the development of dynamics of a vehicle by the replication of said vehicle and its dynamics has been a huge success for Mechanical Simulation Corporation after seven versions of the company's CarSim software. And the key to the success has been found: "We have targeted people that are not computer experts but need to do dynamics evaluations," says Thomas Gillespie, co-founder of Mechanical Simulation.

Gillespie highlights two new areas for growth: "We've helped six companies integrate CarSim into a simulator. The potential is such that on a recent internet search, 50 driving simulators were claiming to be using the software."

On the motorsport side, Gillespie has seen an increasing demand for a system that can accurately simulate race cars' lap times. "There is software that can calculate lap times, but they can be very approximate," explains the co-founder. "The number of people that are able to offer a system that can undertake realistic lap times is about zero, but we believe there are about 10,000 users out there who would want it if it existed." Hold your excitement though, as any such invention may take a little time: "To be accurate you have to have other capabilities, and at the moment we need to do some more work; we have the framework for the technologies, but we need some extra details, to get to a finished product."

### About the Awards

The Automotive Testing Technology International Awards, organized by *Automotive Testing Technology International* magazine, are a non-profit-making enterprise designed to highlight and reward efforts of individuals and companies who have made a difference in vehicle development. All companies involved in automotive development and testing are considered, with every new vehicle and product introduced to any one market from 1 November 2006 to 1 November 2007 being eligible.

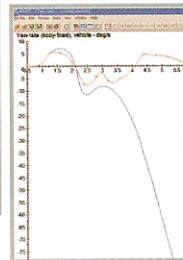
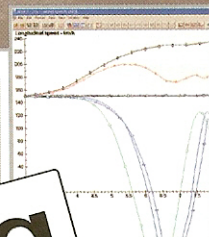
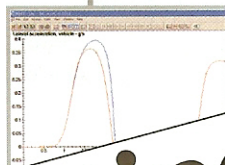
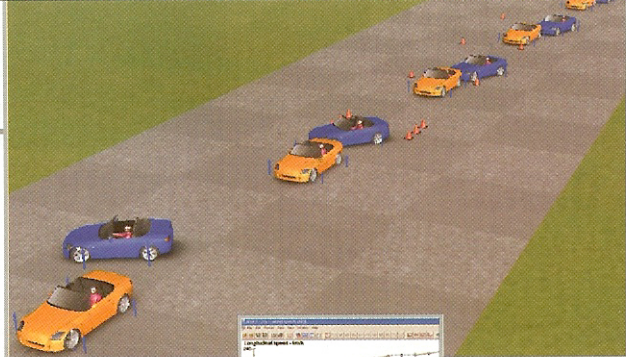
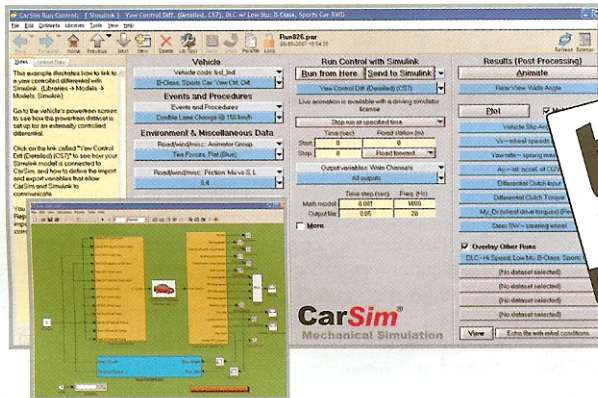
### The judges

John Challen, editor-in-chief; Brian Cowan, Asia-Pacific correspondent; Kyle Fortune, contributor; Adam Gavine, contributor; Graham Heeps, contributor; Graham Johnson, managing director, UKIP Media & Events; Keith Read, European correspondent; Dean Slavnich, deputy editor; Richard Stobart, columnist and Chris Theodore, columnist.

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