automotive testing technology international

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Herbert Diess

BMW's development head discusses 'i' cars and working with Toyota

Aerodynamics

Inside Hyundai's wind tunnel, and how turbulence modeling is improving the accuracy of CFD simulations

Emissions

The challenges posed by tougher legislation and increased product diversification

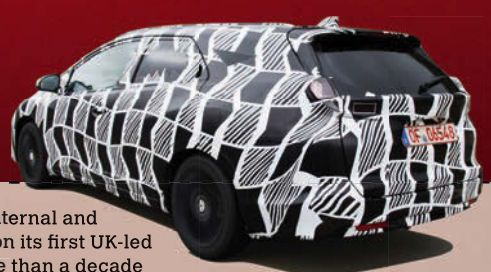
Ford brought real-world tests to the lab to ensure that an aluminum body was tough enough for the USA's best-selling vehicle

Mazda Q&A

Program manager Akihiro Kashiwagi explains how the Mazda3 Hybrid was developed

Crash testing

We visit Ford's crash test laboratories in Dearborn, Michigan



Civic Tourer

How Honda mixed internal and external resources on its first UK-led test program in more than a decade

Inside Mando

High-spec chassis rigs at the Frankfurt technical center

New array microphone

537 PCB's Automotive Sensors division has introduced a new 6mm array microphone that will make it easier for test engineers to locate noise sources in areas such as automotive interiors and engines. The new 130A23 microphone offers features – such as extended dynamic and frequency ranges and a heavy-duty grid cap – often found on condenser microphones, but at a much lower cost. These microphones can also be spaced in a predetermined pattern (and coordinated with software) to project special transformation of a complex sound field and effectively map acoustic energy flow.

The 130A23 array microphone has a maximum dynamic range at 3% distortion capability of 143dB, (150dB before clipping) and an extended frequency range of 20Hz to 20kHz ±2dB, putting its specifications on a par with those of much higher-priced working standard microphones. The sensitivity rating is 14mV/Pa, and it has a low 'noise floor' rating of 30dBA. This meets the TEDS (Transducer Electronic Data Sheets) standard of 1451.4 and enables the user to locate a specific microphone within a large group and obtain traceability data.

PCB Piezotronics

Email: wberghoff@pcb.com

Web: www.pcb.com

Test automation software

538 Today's automotive test facility users and operators face increasing pressure to generate better data in less time to compete successfully in the face of shrinking development budgets. Furthermore, increased operational costs, such as energy, are pressuring test facility owners to find ways to reduce testing times and increase testing throughput.

As one of the largest engineering and technical services companies, Jacobs understands the need to maximize data productivity, accuracy and security, in complex technical facilities. It provides engineering, construction, operations, maintenance and technical support services for automotive, motorsport and aerospace customers to design, construct, commission, operate and maintain complex technical facilities and systems throughout Europe, Asia and North America.

Jacobs' latest software product, Test Slate, provides a critical solution for optimizing testing, capturing the myriad required data points, and allows for reduced testing times and testing costs. Jacobs' Test Slate software is being integrated into client facilities to provide an integrated test facility control and data acquisition environment that provides drag-and-drop ease for configuring new test sequences, incorporating new measurement systems, or improving data visualization/analysis on the fly. In a motorsport wind tunnel, for example, Test Slate fully automates tunnel wind and rolling road speeds, vehicle yaw angle, independent wheel ride height settings, and other model or vehicle-specific controls for maximum test efficiency. Test Slate provides self-optimizing test sequence automation for maximum data quality in the minimal amount of test time and is field proven for monitoring facility and test article onboard data parameters continuously at over 20 million samples per second, while comparing these to user-defined alarm limits to ensure the health and safety of these systems.

Jacobs Technology

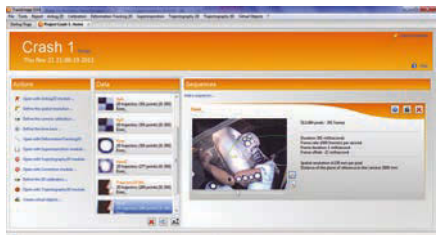
Tel: +1 931 4556 400;
+1 248 633 1440;
+49 89 30 90 71 60

Web: www.jacobstechnology.com;
www.testslate.com

Data analysis and visualization tool

539 Orme has been working for more than 15 years in the automotive industry and particularly in crash testing.

TrackImage software was designed to perform accurate 2D and 3D motion tracking on the videos, and TrackReport was designed on the specifications of automotive test engineers for their data analysis and automatic test reporting. Both software applications are now used by nearly all companies in France in the crash test arena. Orme says its software tools have constantly evolved to take into account the increasing need for more



sophisticated and accurate, though less time-consuming, analyses.

The company recognized some years ago that there was a need for an all-in-one software tool, which would offer state-of-the-art tracking features and a close link to a powerful post-processing software tool. This would enable testers to easily compare data obtained from the tracking in the videos, to data recorded from all other sensors, and synchronize this with the videos.

The new release of TrackImage-TrackReport is now available. Dedicated templates in TrackReport enable testers to automatically process all the data and have the test report completed immediately after the video analysis.

Orme

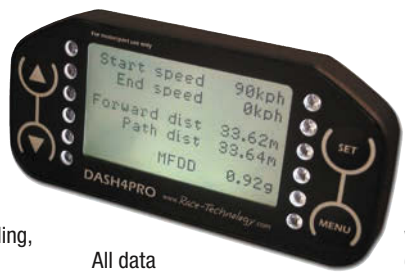
Email: Luc.oriat@orme-toulouse.com

Web: www.orme-toulouse.com

Display screen updates

540 New firmware is now available for Race Technology's DASH4PRO, which, when attached to a SPEEDBOX, provides the ability to display a set of pre-programmed brake test parameters immediately after finishing a brake test. This makes it very easy for test results to be checked in the vehicle without the need for a laptop or tablet PC in the vehicle. Available parameters are: test time, 3D and 2D path distance, forward distance, deviation distance, direct distance, peak acceleration/brake force, average acceleration, MFDD, MFDD start speed, MFDD end speed, initial speed, initial heading, and final speed.

Tests can be triggered based on speed, acceleration, a trigger input from a button or light barrier, or by a button press on the attached DASH4PRO. Accuracies on standard brake tests are very competitive, at just a few centimeters.



All data can be logged to a datalogger for more detailed test analysis during post-processing.

Where such detailed test information is not required, a second test mode in the DASH4PRO enables the user to set test start/end speeds on the display unit directly and scroll through results including speed intervals after every test. This function will also work with the DL1 range or dataloggers, and doesn't require the SPEEDBOX.

Race Technology

Tel: +44 1773 537620

Email: sales@race-technology.com

Web: www.race-technology.com