

INDIA'S ONLY AUTOMOTIVE TESTING, EVALUATION AND QUALITY ENGINEERING TRADE FAIR

automotive testing expo 2010

INDIA

2,3,4 FEBRUARY 2010

HITEX EXHIBITION CENTRE, HYDERABAD, INDIA



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AUTOMOTIVE TESTING EXPO ARRIVES IN INDIA!

Automotive Testing Expo India 2010 is set to deliver a host of the world's greatest automotive testing technologies into India, with a brand-new show opening its doors in Hyderabad on 2, 3 and 4 February 2010.

Following the same proven formula of the established sister events in Stuttgart, Germany; Novi, USA; and Shanghai, China, Automotive Testing Expo India 2010 will bring together over 100 of the world's leading test equipment manufacturers and service providers for an intensive three-day technology-sharing event in one of the world's most exciting automotive markets.

Automotive Testing Expo India covers all aspects of testing, evaluation and quality engineering technologies, services and equipment, including test simulation, NVH analysis, occupant and pedestrian safety, engine and emissions testing, truck simulation and laboratory testing, dynamometers, vehicle dynamics testing, materials testing, aerodynamic and wind tunnel testing, vibration and shock testing, acoustic, environmental, mechanical and hydraulics testing, electrical system testing, reliability and lifecycle testing, test facilities and their design, and all the latest simulation software and equipment.



Automotive Testing Expo India 2010 promises to be as much of a success as its sister events in the USA, Europe and China, which regularly attract thousands of visitors

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NOT TO BE MISSED...

BOOTH 1010



Sound source localisation

Expo visitors can see demonstrations of **HEAD VISOR**, a perfectly matched hardware and software package for the real-time localisation of sound sources, enabling users to expand their senses and employ a new approach to acoustic problem solving.

Its high-quality, functional design enables high mobility. Mounted on a stand, Head Visor can be used almost anywhere. Transporting the system is very easy, too, as the arms of the array can be removed quickly and easily by hand. The cameras integrated into the array determine the distances to individual measurement objects, thus increasing the accuracy of the localisation.

Immediately after turning the system on, the user is continuously provided with real-time source mappings, analysis results and audio signals. Head Visor shows

all interesting frequency bands simultaneously in several source maps. The influence of modifications and analysis can be monitored immediately without even starting a recording.

The last 20 seconds are buffered continuously, regardless of whether the user is recording to hard disk or not, and is available for repeated viewing and analysis.



What the OEMs say



Dave Shemmans, CEO, Ricardo Group: "As one of the fastest-developing emerging markets and boasting some of the world's leading industrial companies, India is extremely important for Ricardo. The launch of Ricardo India will bring us closer to our customers in India and enable us to offer an improved and more responsive level of service. An integral part of the global Ricardo network of offices and technical centres, Ricardo India will also enable us to more effectively support our Indian customers as they increasingly aspire to enter regional and global markets."

MATERIALS TESTING SPECIALIST

As a company focusing solely on materials testing, ABS Instruments Pvt has been supplying the best in materials testing from around the world to its customers in India. The company will be informing visitors about its laboratory, which is accredited to NABL for the calibration of UTMs (force, displacement and extensometry), hardness testers (Rockwell, Brinell, Vickers and Micro Vickers), Shore Durometers and IRHD testers. Customers include Maruti, Hyundai, Tata Motors, Ashok Leyland, and more.

▶ VISIT BOOTH NUMBER 2045

What the OEMs say



Karl Slym, president and managing director, General Motors India: "GM will continue to remain aggressive in India in order to take advantage of opportunities as they arise. Our goal is to continue to provide the best cars to our customers across the country while taking advantage of the extensive global resources offered by the new General Motors Company."

THE LATEST TEST RIG TECHNOLOGY

CFM SCHILLER will be displaying test-rig components in standard and tailor-made designs, for testing labs performing static and dynamic tests. Experienced engineers, the latest designs and development tools, as well as the company's own dynamic test lab and verification tools, guarantee high-quality products.

The company is also well known as an expert in the field of vibration

isolation systems based on air-spring and steel-spring isolator technology.

CFM Schiller supplies system solutions for all kinds of seismic masses starting from cast-iron bed plates up to concrete masses of 2,000 tons.

At the expo, the company will be introducing its new Indian agency in Pune, represented by Sundeep Vidwans.



▶ VISIT BOOTH NUMBER 5035



WHO TO MEET:

Wolfgang Peters
CFM Schiller GmbH

Wolfgang Peters, graduate engineer and managing director of CFM Schiller GmbH and Robert Repar, sales engineer, will be representing the company at the exhibition, together with Sundeep Vidwans, their local Indian representative. CFM Schiller is a leading company in the field of vibration isolation systems, and is highly specialised in mechanical engineering for test-system applications.

EXHIBITOR LIST

A&D Technologies	4000	Corrsys Datron Sensorsysteme GmbH	4000	Integrated Process Systems	3015	Minitab Inc	2065	S A M Technologies	4065
ABS Instruments Pvt Ltd	2045	Data Physica Corp	3070	Intertek India Private Ltd	1005	MMM Medcenter Einrichtungen GmbH	4065	SAJ Test Plant Private Ltd	5010
Accurate Technologies Inc	5025	Diversified Technical Systems	5000	Intrepid Control Systems, Inc	4015	MTS Systems Corp	5005	samtec automotive software & electronics GmbH	3075
Adams Technologies Pvt Limited	4030	Ducom Instruments Pvt Ltd	2040	IPETRONIK - Maxsoft India	4075	Mustang Dynamometer	3000	Saraswati Dynamics Pvt Ltd	4070
Agilent Technologies India	6025	DVS India	5020	Isaac Instruments	3065	NI Systems India Pvt Ltd	5040	Sciometric Instruments Inc	2035
Aimil Ltd	1015	Dynamic Testing Systems	4025	JA - Gastechology GmbH	5070	OPAL - RT	3045	Seattle Safety	5000
Alfautomazione SpA	5020	Dynaspede Integrated Systems Pvt Ltd	6030	Kapolnek Gmb	3055	Orion Test Systems & Engineering Inc	6015	SERP Auto Testing Equipment	5060
Anthony Best Dynamics	4000	EASI	2025	KARA Industrial Services GmbH	5030	ORME	4060	Simtec GmbH	2025
AOS Technologies AG	3015	ECON Technologies Co Ltd	2020	Kistler Instruments (PTE) Ltd	4050	Oxford Technical Solutions	4000	SITIA TEST BENCHES	5000
API Com SRL	2010	ETAS Automotive India Ltd	4010	KMT - Kraus Messtechnik & Telemetrie	3015	Panatech Asia	6010	Smart Electronic Development GmbH	5050
Automotive Test Systems	4000	Fabreeka GmbH Deutschland	3050	KNR Systems Inc	3035	PCB Piezotronics	4025	Southern Hemisphere Proving Ground (SHPG)	1025
Automotive Testing Expo	1045	FAIST Anlagenbau GmbH	4020	Kristl & Seibt GmbH	4000	Petrochem Carless Ltd	1035	Structural Solutions Private Limited	4025
AVL List GmbH	2005	FEV India Pvt Ltd	2000	LEMO	5045	Pickering Interfaces	5020	Tesscorn Systems India Pvt Ltd	5000
BEDA Flow Systems Pvt. Ltd	3040	Froude Hofmann Ltd	4045	LMS International	1000	Polytec GmbH	6027	The Modal Shop	4025
BISS Research	2055	Gebr. Liebisich GmbH	4065	Luminy	6010	PT Instruments Pvt Ltd	5045	TmcSolution China	5015
Blue Star India	2070	Geo Informatics Consultants Pvt Ltd	1030	Magtrol India	2050	Q-Lab Corporation	4040	Vector Informatik GmbH	3025
Burke E Porter Machinery Co Ltd	4000	Head Acoustics GmbH	1010	MAHA AIP GmbH & Co KG	3020	Reckers Control India Pvt Ltd	6005	Vibrotech Instruments Pvt Ltd	6027
Cambustion Ltd	4000	Horiba India Pvt Ltd	6000	Matter Engineering	4000	Reich Kupplungen	2030	Walter+Bai	2045
CFM Schiller GmbH	5035	Hottinger Baldwin Messtechnik GmbH	3005	Mechanical Simulation Corporation	2025	Reilhofer KG	1015	Weiss Umwelttechnik GmbH	4025
Chart Chambers	4065	Imatek	2045	MICRO-EPSILON Messtechnik GmbH	3015	Renk Test System GmbH	5010	Young Calibration Limited	5065
Chart Chambers	4065	imc Berlin GmbH	4000	MICRO-EPSILON Messtechnik GmbH	3015	Romax Solutions Pvt Ltd	6020	Zen Microsystems	2060
Cincinnati Sub-Zero Inc	4065			Micrologic Integrated Systems Pvt Ltd	3030	RUMUL	2045		
CM Envirosystems Pvt Ltd	3010			Microsys Technologies Inc	5055				
Cold Testing Lapland	4005								

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LASER SENSOR LAUNCH AT EXPO

The new optoNCDT 1402 laser sensor from **MICRO-EPSILON**, which will be on show at the expo, replaces the company's previous optoNCDT 1401 product. The new sensor provides improved performance and extreme flexibility. This flexibility comes from a brand-new teach-in function, which can be used to limit, or change, the measuring range for each application. In this way, both the resolution and the linearity of the sensor in the pre-set measuring range can be greatly improved. This is of particular benefit in applications where only a small measuring range but high performance is required.

The flexibility of the optoNCDT 1402 is further enhanced by an integrated swivelling cable connector, which can be used to change the direction of the cable output to suit the individual application. By using a CMOS sensor, the optoNCDT 1402 has an increased measuring rate of 1.5kHz, making it suitable for rapid processes.

An RS422 digital interface is provided, as well as analogue current/voltage output. As before, the new series comprises seven sensors, which have measuring ranges of 5-250mm. Together with the integrated controller, the very compact design makes mounting quicker and easier, and installation is possible even in restricted spaces.



▶ VISIT BOOTH NUMBER 3015

What the OEMs say



David Smith, CEO of Jaguar Land Rover: "It is an exciting time to be entering the Indian market, a country with increasing affluence and an economy which is still growing. We believe that the Indian market holds significant growth potential in the long term, and we hope to tap the demand for premium vehicles from discerning customers."

ECU SOLUTIONS

THE ETAS GROUP will be exhibiting its comprehensive and integrated tools and tool solutions for the development and service of automotive ECUs.

The ASCET product family supports the entire function and software development process, from specification to real-time tests on the experimental target, to automatic code generation for the target ECU. The RTA product family delivers real-time operating systems and development tools to support the cost-effective design and production of automotive ECU software.

The hardware-in-the-loop testing system LABCAR represents an essential contribution to quality assurance. PC-based real-time simulation facilitates the testing of ECUs or their diagnostic behaviour in the laboratory.

The software and hardware components of INCA, the de facto standard in automotive measurement and calibration systems, enables developers to quickly perform previously time-consuming steps so that they can concentrate on those tasks of software optimisation that can only be done manually.

The diagnostic service tool portfolio comprehensively covers the full range of software, hardware and services for advanced vehicle diagnostics, ECU reprogramming, and other functions.

ETAS solutions are widely employed at automotive manufacturers, suppliers, and service providers across the world and empower them to drive the innovations required for tomorrow's vehicle technology. With 680 employees, the ETAS Group maintains offices in 14 locations around the globe.

▶ VISIT BOOTH NUMBER 4010

FATIGUE TESTING EXPERTS ON HAND

RUMUL is the most experienced company worldwide with regard to magnet-driven resonant fatigue testing machines.

The main advantages of these testing systems are high test frequencies (approximately 40-250Hz), very low running costs (only 1-2% compared with servohydraulic test machines), no need for maintenance, and no part wear.

Rumul resonant fatigue testers are ideal to perform high-cycle fatigue tests on stiff samples and components. The product portfolio includes machines from 5-500kN load capacities. A wide range of accessories such as fixtures, crack length measurement systems and temperature chambers is available.

In addition to new testing machines, Rumul supplies upgrades for old Rumul, Amsler and Schenck resonant fatigue testing machines to bring them back to very high performance again.

▶ VISIT BOOTH NUMBER 2045

WHO TO MEET:



Sadaf Arif Siddiqui
Agilent Technologies

"As the world's premier measurement company, Agilent works in close collaboration with engineers, scientists and researchers around the globe to meet the communications, electronics, life sciences and chemical analysis challenges of today and tomorrow. The company operates two primary businesses – electronic and bioanalytical measurement – supported by Agilent Laboratories, its central research group. Agilent is committed to providing innovative measurement solutions that enable our customers and partners – the leaders in their fields – to deliver the products and services that make a measurable difference in the lives of people everywhere."

ELECTRONICS EQUIPMENT ON SHOW

AGILENT TECHNOLOGIES

has a particular focus on helping automotive electronics manufacturers to meet aggressive time-to-market goals, despite juggling demands for higher quality, faster throughput and lower costs. The company offers a broad set of robust test tools.

Agilent will be showing its test-bench instruments, which can create a reusable functional test system for low-frequency automotive modules.

The test system uses LAN as an effective and inexpensive way to transfer data among the instruments and connect to virtually any instrument.

The company will also be showing its N6705A DC power analyser, which can provide a simple way to create a variety of transient tests that engineers can run on their own bench. Using the N6705A, users can gain insight into an ECU's operation prior to tying up expensive QC test equipment.



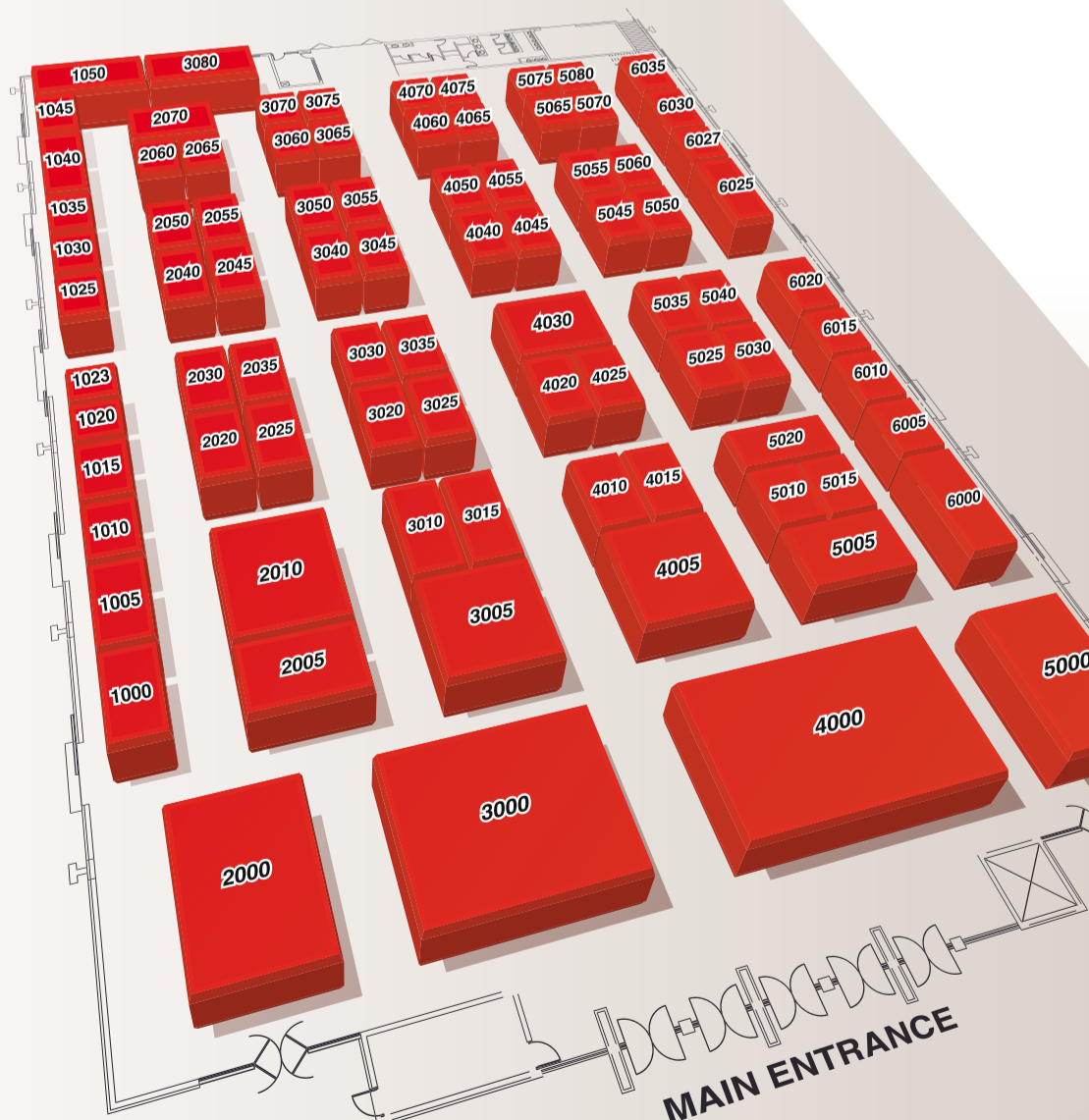
▶ VISIT BOOTH NUMBER 6025

What the OEMs say



Joerg Mueller, president, Volkswagen India: "The significant increase in our sales figures in India reflects our growing presence in the Indian automobile market and highlights the mounting interest of the discerning Indian customer in our cars. It also points to the fact that the various models from Audi, Škoda and VW are aligned to the demands of the market. All brands of the Volkswagen Group are moving ahead on the growth curve in India."

2010 FLOORPLAN



IMPACT TESTERS FOR AUTOMOTIVE APPLICATION

IMATEK, a leading manufacturer of materials testing equipment primarily in the field of impact testing, specialises in high-quality instrumentation and analysis software fitted to all systems, which provides detailed information, graphical and tabular, for the specimen undergoing test.

On show will be Imatek's IM10 mid-range impact testers, suited to performing a wide range of tests including standard QC tests on

polymers, the testing of composites and other alternative materials, characterising the energy-absorption efficiency of polymeric foams, alloy foams and crush tubes for safety applications, dynamic fatigue and resilience testing of rubbers, crush testing of structures and high-rate testing of sheet steels. Imatek also offers integrated high-speed video to enhance the understanding of specimen behaviour during impact tests.

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A HIGHLY FOCUSED TECHNOLOGY WORKSHOP PROGRAMME

The exhibition will include an extensive WORKSHOP programme running throughout the event

Tuesday 2 February 2010

10.30 – 11.30 Hardware-in-the-loop system requirements for hybrid powertrain control

ETAS Automotive India Private Ltd, Srikanthan Krishnan

Hybrid powertrains not only attract high component costs, but also elevated development costs, which are a result of the significant increase in system complexity. In order to successfully explore, implement and validate advanced control strategies, handle system complexity and avoid expensive iterations in the development process, the deployment of state-of-the-art development tools is mandatory.

Hardware-in-the-loop (HiL) systems have played an essential role in the development of ECUs (electronic control units) for conventional internal combustion engines. The presentation provides an overview of current trends and benefits of HiL systems for developing electric powertrains, with a specific focus on hybrid technology. Coverage is also given to real-time simulation of hybrid powertrain including e-motor and battery.

12.00 – 13.00 Microflown PU probes for both acoustic near field far and acoustic far field sound source localization

Adams Technologies Private Limited, Mr. Andrea Grosso – NVH application engineer

Any sound field is described by both its scalar value sound pressure and its 3 D vector value acoustic particle velocity. With the Microflown sensor, acoustic particle velocity has become a directly measurable quantity. The possibility to measure directly acoustic particle velocity enables major improvements in sound source localization techniques, both in the acoustic near field and in the acoustic far field. In the acoustic near field, the direct measurement of both sound pressure and acoustic particle velocity with so called PU probes offers an alternative to acoustic holography, where sheer sound pressure based measurements at a certain distance from the test object are used to compute the sound pressure and the particle velocity at the very surface itself. For sound source localization in the acoustic far field, the very same PU probes can be considered as acoustic vector sensors that offer an alternative to sheer sound pressure based beam forming. Whereas beam forming uses only the phase information of the sound field, acoustic vector sensors also capture amplitude information of the sound field. The theoretical concept of acoustic particle velocity enabled testing techniques will be discussed, and some examples of both near field and far field sound source localization testing results will be presented.

14.00 – 15.00 A strategic plan to meet the conflicting demands of high availability of test equipment and cost efficiency

Smart Electronic Development GmbH, Richard Bronold – sales manager

Advanced control units in modern vehicles require real signals from connected sensors and actuators to achieve their normal operating status. If a control unit does not receive any useful input signals it switches to emergency operation. For the development and testing of control units, this means that the necessary sensors either have to be available or simulated. However, real sensors only represent 'Go' situations and it is therefore not easy to conduct marginal checks or fault testing.

Sensor simulation makes it possible to perform marginal checks and fault testing on control units. Simulation can be implemented by employing standard techniques such as function generators. This standard simulation method is, however, not adequate for dealing with complex signals from the connected

sensors, as is the case with wheel speed signals for example.

The advantage of using wheel speed sensor simulation for the development or testing of application software is that it permits the simulation of limit values and faults in addition to 'Go' situations. The purpose of this presentation is to outline the options available and the resultant user benefits. This includes a description of the standard sensors (of type DF11 and sensors with VDA standardised data protocol) and their various data protocols as well as the corresponding simulation. The presentation is rounded off by practical examples such as utilisation on an automobile manufacturer's vibration test bench or the use of wheel speed simulation in control unit testing (e.g. ABS, ESP).

15.30 – 16.30 Testing networked ECUs right at the developer's workbench

Vector Informatik India Private Ltd, Lokesh Madan – managing director

Electronics and software have become indispensable components in the automobile. Therefore, verification of development results not only covers the mechanical systems, but to a large extent the electronic ECUs and their software as well. The complexity of heavily networked systems places high requirements on the test process and the test tools used. Systematic and comprehensive tests are necessary in all development phases.

The presentation will give an overview of the challenges of testing during the ECU development process. Furthermore, the audience can participate in discussion of best-practice examples of functional testing of automotive ECUs during early development phases.

Wednesday 3 February 2010

10.30 – 11.30 Noise mapping and sound quantification using spherical array

LMS International, Filip Deblauwe – business development manager NVH Structures & Acoustics

Despite the reliability of the classical transfer path analysis (TPA), it has some disadvantages, the main one being the large measurement efforts. Due to this, a number of different alternative approaches have been proposed in recent years, which aim at reducing measurement time by relying more on operational data. But these often suffer from significant limitations. Therefore a new TPA method was proposed which overcomes these limitations but at the same time still requires less measurement time than TPA. It is a combined operational-experimental approach: besides the operational data, reciprocally measured noise transfer functions are also used. The main idea is to estimate a mount stiffness model instead of estimating the forces directly. The advantage of such an approach is that less data is needed to build up the TPA model, since only a few parameters are used to describe the mount in the whole frequency range as opposed to the traditional inverse force identification method, where the parameter estimation has to be done separately for each frequency line, requiring a much larger amount of data. This makes the new method more robust, faster and scalable, enabling the engineer to use a smaller amount of measurement data for quick troubleshooting.

In this paper, first the basics of the method will be introduced and the different mount models explained. Then a few validation cases will be presented showing the reliability of this new approach.

12.00 – 13.00 Improving quality and reducing cost

Signallink, Dr Choi

As a maker of general and specific turnkey testing analysers, Signallink-Romax's various quality testing methods and solutions for the gearbox systems such as transmissions, axles and transfers, etc. will be introduced, and a special gearbox end-of-line noise test system for gear machining or assembly quality test in the

production lines will be demonstrated. It has powerful features of pinpointing the defect types and location, which help the customers to make repairs. Signallink-Romax's turnkey testing solutions can contribute to improving the quality and reducing the cost with a straightforward method.

14.00 – 15.00 Cost-effective method for gearbox whine noise improvement via full system NVH simulation

Romax Technology, Won Shin – engineering manager

Test-based whine noise improvement is usually time and money consuming and only provides a partial solution, rather than a globally optimised solution for overall operating conditions. Solutions using component-level simulation, such as an analysis of the gear in isolation, are often misleading because system influence is not considered. It is extremely challenging in time and skill to build and analyse a full transmission model in FEA, hence it is not a practical approach.

Romax Technology suggests an alternative method of designing quiet transmission in a cost-effective way using Romax NVH. A case study of the world-leading company's whine troubleshooting is also presented.

15.30 – 16.30 Accelerated vehicle development methods

MTS Systems, Steven Haeg – principal staff design engineer

Economic pressures in today's worldwide economy continue to emphasise the need for rapid vehicle development. This presentation will examine the vehicle development cycle from concept to final product, and discuss available tools for success in this process. Highlights and examples will be provided for the critical steps that combine analytical and physical test techniques.

Thursday 4 February 2010

10.30hrs – 11.30hrs Enhanced quality, reliability and efficiency of vehicles and components by laser vibrometer measurements

Polytec GmbH, Dr George Wirth

Laser vibrometers enable a wide range of applications in NVH, modal analysis and reliability enhancements for the automotive industry. In contrast with traditional transducers like accelerometers, Laser Vibrometers permit non-contact measurement at a large number of measurement locations within a short setup time, without the need for connecting, positioning and cabling transducers at each measurement location. Due to the non-contact and thus reactionless measurement principle by laser light, various measurement tasks can be solved that are not feasible by using traditional transducers. Within the presentation the measurement principle of laser vibrometers is introduced and the different measurement capabilities are described. At the example of some typical and enhanced automotive applications, the wide range of applications in the automotive industry is presented.

12.00hrs – 13.00hrs Low-cost experimentation with FlexRay

Intrepid Control Systems, Dave Robins – president

FlexRay is already making its presence felt in the automotive arena, and this is bound to grow. The presentation will focus on FlexRay technology and how developments in FlexRay can be done without large-scale investments in hardware and software. The presentation will discuss how such technology can be still be leveraged for cost-sensitive markets by providing a unique development environment and platform.



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EXHIBITION OPENING TIMES

TUESDAY	FEBRUARY 2	10.00hrs – 17.30hrs
WEDNESDAY	FEBRUARY 3	10.00hrs – 17.30hrs
THURSDAY	FEBRUARY 4	10.00hrs – 15.00hrs

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