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AUTOMOTIVE TESTING EXPO INDIA 2025

India's biggest full-vehicle and component testing and validation technologies and services show returns – with two halls of new solutions to enhance product quality

Automotive Testing Expo India returns to the Chennai Trade Center on April 8, 9 and 10, 2025, with this year's show the biggest one yet! Over 170 exhibitors are already confirmed and, for the first time in its history, the event will span two exhibition halls.

A highlight of this year's event is the addition of the Automotive Leadership India Summit, created by SAE India and UKi Media & Events. Limited to 150 senior automotive professionals, the high-level summit will provide a dynamic platform to showcase India's capabilities in manufacturing, innovation, sustainability and technology while fostering critical discussions on challenges and opportunities.

On the exhibition floor, visitors can explore the latest software, technologies and services within the world of automotive testing, evaluation and quality engineering, including crash testing, occupant/pedestrian safety, ADAS and autonomous test and development technologies, electric and hybrid powertrain testing, battery and range testing, battery analysis, data storage, electric powertrain evaluation, calibration, dynos, NVH, test rigs, durability analysis, emission measurement systems, test chambers and proving grounds. Exhibitors will include Aptiv, Dewesoft, Dewetron, dSPACE and Keysight Technologies.

The ATS Forum will be running again at this year's expo, along with the Innovation Showcase. Attend special short sessions highlighting innovative concepts, emerging technologies, prototypes and future trends in automotive testing. Presentation themes and the speaker line-up will be announced soon.

ARAI has been the knowledge partner for Automotive Testing Expo India ever since the show was launched, and it has been a wonderful friend as we have established and grown the event.

We look forward to welcoming everyone to the Chennai Trade Center this April for another wonderful three days.

Turn the page for a sneak preview of what's in store…


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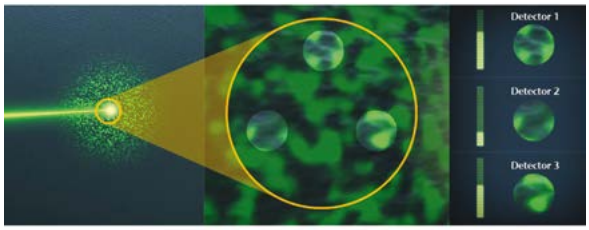


REVOLUTIONIZING VIBRATION MEASUREMENT

Polytec

Learn how QTec is redefining automotive vibration testing at Polytec this April in Chennai. QTec's multipath interferometry is a groundbreaking advance in non-contact vibration measurement technology, setting new standards in precision and reliability. It addresses challenges posed by surfaces with low reflectivity, high roughness or complex geometries, ensuring accurate measurements where traditional systems falter. This technology enhances signal-to-noise ratios, providing unparalleled performance for demanding applications across industries including MEMS, aerospace and automotive.

QTec technology integrates seamlessly with Polytec's scanning vibrometer, enhancing its capabilities by providing full-field vibration visualization. This combination enables detailed analysis of dynamic behaviors across entire surfaces, allowing engineers to capture precise vibration patterns that were previously difficult to measure. With optimized signal quality, the system operates flawlessly under challenging conditions, ensuring highly accurate results even in noisy or complex environments.

QTec technology is transforming testing processes in the automotive sector. It enables precise vibration analysis of critical components – including engines, transmissions, suspensions and interior cabin structures – ensuring superior performance, durability and passenger comfort. By visualizing and quantifying vibrations across entire surfaces, engineers can identify potential issues early, optimize designs and enhance safety standards.

Booth 4038

CONVENIENT SOLUTION FOR MOBILE APPLICATIONS

Dewetron

The DEWE3-M8s is a portable, DC- and battery-powered system for mobile automotive applications such as in-vehicle power and efficiency measurements, durability tests, WLTP and e-charger tests. It supports all high-speed TRION(3) modules for various sensor inputs, including voltage, current, vibration, strain gauges, thermocouples and CAN. Synchronization is easy with external time sources such as GPS, PTP or IRIG. By swapping in TRION(3) power modules, nearly all Dewetron DAQ systems can be turned into mobile power analyzers with a basic accuracy error of only 0.03%.

For applications without Windows OS, a Linux-based firmware can convert the DEWE3-M8s into a front-end system, connected to a host PC via LAN. Integrated Oxygen measurement software enables data retrieval, processing and storage.

With versatile power supply options, the DEWE3-M8s features an isolated wide-range input (11-32V DC), external AC power, UPS functionality and integrated hot-swap battery bays, ensuring continuous mobile operation without an external power source. An Oxygen plug-in monitors battery status during testing.

Booth 3004

INTEGRATED TESTING SOLUTIONS

Siemens Digital Industries Software

Siemens Digital Industries Software helps organizations to digitally transform using software, testing hardware and services from the Siemens Xcelerator business platform. Siemens' software, testing solutions and comprehensive digital twin enable users to optimize their design, engineering and manufacturing processes to create sustainable products.

Simcenter physical testing integrates physical and virtual testing methods to reduce reliance on expensive, time-intensive physical prototypes, fostering stronger collaboration between OEMs and suppliers and enabling faster, smarter and earlier testing. It allows users to evaluate hundreds of vehicle configurations before building the right one with advanced virtual prototyping tools. Data collection is streamlined from instrumentation to validation, and insights are available anywhere, even in extreme conditions.

Testing workflows can be automated to avoid costly reruns, offload data and validate quality. Integrated CAD and simulation make structural tests more efficient and enable users to correlate simulation results with real-world data.

A hybrid, cost-effective approach replicates operating conditions to validate complex system performance.

For more information, visit the Siemens booth in Chennai.

Booth 4012

PORTABLE VIDEO BORESCOPES

Theiakshi Enterprises

Yateks G series portable video borescopes are high-quality systems used for remote visual inspections of aircraft, automotive and diesel engines. Lightweight and nimble, G series industrial borescopes make component and system inspections easy and efficient.

G series models feature a five-inch touchscreen with an intuitive user interface; removable video probes with diameters ranging from 1.2mm to 6mm and robust HDMI connectors to easily swap out for different applications or keep a backup video probe on-site to minimize downtime; a slip ring that enables unrestricted 360° probe rotation for orbital weld inspections of the inner diameters of tubes and pipes; and bright illumination. Versatile mobility makes this product line ideal for various applications; and the high light compensation inhibits light reflections to improve picture quality.

Booth 3002

E-DRIVE END-OF-LINE TESTING

HBK - Hottinger Brüel & Kjær

HBK will showcase Discom, which uses high-precision acoustic measurement methods to locate production-related errors, demonstrating quality assurance on all levels.

Drives in electric cars pose special challenges for end-of-line testing systems. For quiet electric cars with e-drives, possible production inaccuracies in electric motors and their power transmissions can cause significant disturbing noise. To avoid this, the individual components and their correlation must be analyzed. Background noise can be transferred to the interior acoustics and perceived as significant static noise.

Due to the seamless integration of hardware and software, Discom acoustic testing can analyze the causes of errors in production and provide high-precision quality control. Errors are pinpointed exactly, down to the smallest gear wheel. Thanks to the 'early warning system', these errors will no longer continue into series production. The use of acoustic measurement technology increases production efficiency and manufacturing quality in the direction of zero errors.

As a technology leader, Discom continues to monitor safety with high-precision measurement methods in the production of modules including e-drives and electronic drive units, electric motors and transmissions and motor gear units.

The acoustic measurement method unravels noises, making them 'visible' with the aid of software and precisely pinpointing the source of error. Discom measures all operating states (ramping up rotational speed, braking, etc), analyzes the background noises and compares the measurement results with a large number of parameters from its extensive database and self-learning algorithms. Automated operation of the measurement sequences keeps the use of personnel low.

For more information, speak to the team on-site in Chennai.

Booth 2066

HIGH-PRECISION BATTERY HIL

A&D

A&D's latest battery HIL system simulates cell voltage with high precision at ±0.3mV and can simulate up to 384 cells. The current output capacity has been increased to 1,000mA, and the system is equipped with a noise superposition function to recreate a more realistic environment. This system also supports third-party battery models.

The turnkey system can be immediately operational upon delivery, tailored to users' needs, from model integration to wire harness creation, test creation and automation.

Booth 8012

VIBRATION AND SHOCK TESTING SOLUTIONS

Spectral Dynamics USA

Spectral Dynamics is a leading global supplier of systems and software for vibration and shock testing, structural dynamics and acoustic analysis. The company's products include vibration/shock test control systems; electrodynamic shakers (110 lbf to 66,000 lbf); small to large slip tables and head expanders; dedicated shock test systems for small to large DUTs with varied g/pulse duration/pulse shapes; and modal data acquisition/analysis systems.

In 2019, Spectral Dynamics acquired L.A.B. Equipment, which manufactures packaging test machines to meet ISTA and Amazon standards (drop testers, incline impact testers, hydraulic random vibration testers and shock test systems).

The Jaguar MIMO control system can excite and control 18 actuators of any force rating, providing X/Y/Z/pitch/roll/yaw motion. Jaguar is the preferred choice for aerospace companies where adaptive and accurate control is paramount.

Jaguar is also a proven controller for acoustic testing of aerospace hardware using controlled noise-impinging techniques employing speakers.

In addition, Lynx is a popular choice for economical 4/8/12/16-channel vibration test control systems.

Finally, Spectral Dynamics has launched the modern Windows 11-based Panther control system, which offers stepped/swept sine, random, shock, SRS, SOR, ROR, road simulation, modal and other testing capabilities. Find out more in Chennai.

Booth 2004

COMPACT, RUGGED VEHICLE DATA COLLECTION HARDWARE

Aptiv Connected Services

Aptiv Connected Services, a global leader in vehicle preproduction validation solutions, will showcase its latest vehicle data recorder (VDR) — the EP-800 — to help with vehicle validation challenges.

Measuring 154 x 122 x 42mm, the EP-800's compact size, rugged design and advanced analytic capabilities make it ideal for situations where space is at a premium, such as in passenger vehicles, scooters, motorcycles, boats, ATVs, trailers and agricultural equipment. With its IP68 rating, it can handle even the toughest weather conditions.

The EP-800 includes a quad-core processor, data collection from up to four CAN channels, a built-in 6D accelerometer, a unique OLED display, and support for automotive Ethernet, LIN and DoIP.

Aptiv Connect Edge software analyzes data locally on the VDR, transmitting only selected data to the cloud. Where other loggers collect CAN data at a down-sampled rate, the EP-800 captures thousands of signals with microsecond precision. Infinitely reconfigurable over the air (OTA), customers can adjust data collection strategies remotely, without physical interaction.

Booth 3034

automotive testing expo INDIA

DEBUGGERS FOR SAFETY-CRITICAL V2X SOFTWARE DEVELOPMENT AND TESTING

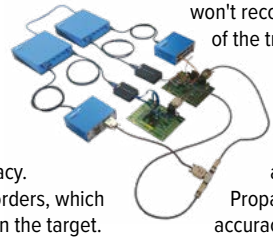
Tasking

FNet Bridge Multi SoC synchronization enables coordination of two BlueBox debuggers via the FNet communication network. This facilitates synchronous debugging and tracing, achieving low-latency synchronization within microseconds.

Synchronized debug start/stop operations and trace clock propagation ensure systems are coordinated, for accurate, efficient system analysis and debugging. This requires:

First, alignment of BlueBox time offset, for trace visualization in profiler timeline view. Time 0 is aligned to the first trace recording in each profiler timeline. It does not influence trace synchronization accuracy.

Second, the start of both trace recorders, which starts generation of trace messages on the target. As the BlueBox recorder is set to ON Trigger, it won't record trace data until the occurrence of the trace trigger.



Third, a trace trigger can be injected either on the slave or on the master winIDEA. The trigger is propagated via FNet to the master and slave BlueBox trace recorders. Propagation delay does not influence the accuracy of trace synchronization.

Booth 3064

ENVIRONMENTAL SIMULATION WITH CO_2 REFRIGERANT

Weiss Technik

Weiss Technik is converting its test chambers to a new refrigeration technology utilizing CO_2. The EU's F-gas Regulation has placed restrictions on the use of refrigerants with a GWP level of more than 150, meaning that from January 1, 2025, test cabinets and chambers sold in the EU by any manufacturer must have a GWP level of less than 150.

The new Weiss Chamber with CO_2 refrigerant produces GWP 1. It is safe, economical and standard compliant.

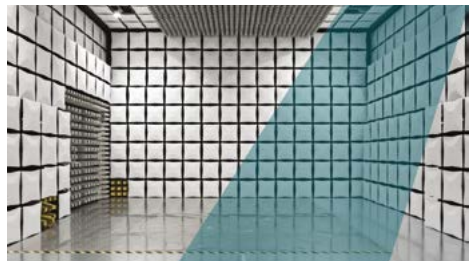
Weiss Technik has already installed standardized refrigeration circuits in various test chambers and thoroughly tested them, including rigorous temperature-change tests.

CO_2-equipped devices easily pass test standards such as IEC 60068-2-14 Nb for thermal shock tests or ISO 16750-4 for electrical and electronic vehicle equipment. Temperatures as low as -50°C are reliably reached in the company's test space.

The use of CO_2 in the test chambers means that smaller, less expensive components can be used, and the equipment is quieter and more energy efficient than before.

Another advantage is that the technology conforms with the new EU F-gas Regulation without exception, so there are no documentation and leak detection requirements. The new components can handle the higher pressures associated with CO_2, and Weiss Technik guarantees the same service life as previous units. Operating conditions, including coolant and room temperature, also remain unchanged. The CE markings, including the Pressure Equipment Directive 2014/68/EU and DIN EN 378, which have been in place for decades, also remain valid as the regulations for the installation conditions of refrigeration systems.

Booth 3082



DEPENDABLE TEST CHAMBERS

Albatross Projects RF Technology

Albatross Projects believes that testing, analysis and a protective environment must be uncompromisingly dependable. The company develops, plans and builds highly precise, electromagnetically shielded and absorbent chambers, ensuring clear results and efficient protection, both now and in the future. From kits to turnkey solutions, the company's modular designs adapt to the specific needs, products and standards of its customers worldwide.

The company applies the highest standards to materials, construction and installation, guaranteeing a safe investment and secure, convenient test chamber use for the long term. With its long-standing expertise, highly qualified team, comprehensive service and cooperative, reliable work ethic, Albatross Projects creates space for trust.

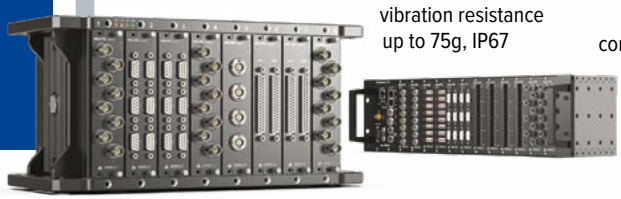
Booth 3024

RUGGED DATALOGGING AND DAQ FOR EXTREME ENVIRONMENTS

Dewesoft India

Obsidian is a cutting-edge datalogging and data acquisition (DAQ) solution designed for reliable and precise data acquisition in the most challenging environments. It functions as a standalone datalogger with onboard storage of up to 1TB, a real-time control system and signal conditioning device with Industry 4.0 connectivity.

The Obsidian R8w system boasts shock and vibration resistance up to 75g, IP67 protection, and operating temperatures from -40°C to 85°C, equipped with integrated wi-fi, a 10Hz GPS/GNSS module and dual CANbus ports. It offers 24-bit resolution data with sampling rate of 20KS/s.



Supporting a range of sensors such as voltage, current, temperature, IEPE, digital I/O and strain, the system includes a EtherCAT databus for real-time data transfer to third-party systems. Standard data interfaces include OPC UA, XCP and CAN.

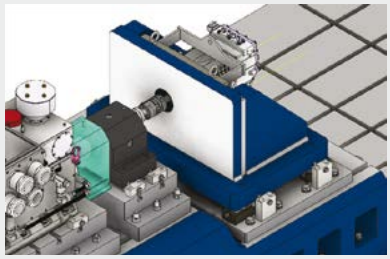
The DewesoftM mobile app allows users to configure and view live measured data on iOS and Android devices, enhancing flexibility and ease of use for on-the-go applications.

Booth 2038

DYNO TESTING FOR ULTRA-HIGH-SPEED TESTING

ADT India

ADT has been a global leader in providing e-mobility and conventional powertrain test systems since 1999. Headquartered in Korea, it has its own setups in the USA, China and India. The company specializes in testing equipment for automotive engines, transmissions, powertrains, motors, EDUs, reducers and batteries – even for components. ADT has supplied over 1,100 test systems to more than 80 customers on four continents.



The company's EOL tester evaluates the functionality and assembly ability of key electric vehicle parts such as the EDU, gearbox and HEV. Various tests carried out automatically on this test bench are for the verification and testing of safety-related items inside the motor of EV/HEVs in static and dynamic state, including the durability performance testing of electric vehicle motors in extreme environmental conditions.

The e-motor dyno machine can test 25,000rpm ultra-high-speed motors, while the environment chamber enables extreme-environment tests.

ADT can test motor performance, durability, efficiency and NVH, and carry out road and climate simulation.

Booth 2096

THE EVOLUTION OF INFRARED GAS ANALYSIS TECHNOLOGY

Horiba

Horiba's new compact exhaust emission analyzer provides unparalleled accuracy and reliability, addressing modern emission measurement challenges with precision. It uses the company's breakthrough infrared laser absorption modulation (IRLAM) technology, which sets a new standard for emission measurement by leveraging three core components: the QCL-IR laser, the Herriot cell and an innovative concentration calculation algorithm.

The analyzer is suitable for a wide range of applications, from laboratory testing to on-road testing, while remaining as accurate as a MEXA. It offers an 87% reduction in power consumption and an 86% decrease in volume compared with conventional MEXAs, along with a 50% reduction in the number of cables, which simplifies installation. It provides exceptional lifetime value by eliminating the need for external utilities.

It is equipped to test alternative fuels, including hydrogen, supporting the path toward decarbonization.

Booth 3046

NEW HYBRID HPU FOR ENERGY EFFICIENCY

MTS Systems Corporation

The need to maximize energy efficiency and comply with regional and global decarbonization mandates poses daunting challenges for automotive test laboratory managers. To meet these challenges, MTS Systems has engineered the SilentFlo 525 hydraulic power unit (HPU), the company's most energy-efficient HPU to date.

The next-generation 525 features an innovative hybrid approach to hydraulic power generation, employing highly efficient radial flow digital displacement pump (DDP) modules (green) to modulate flow during typical demand, while engaging conventional axial flow swash plate pump modules (blue) as needed to achieve maximum energy efficiency during peak use. This hybrid approach can yield dramatic reductions in energy use of 35% or more compared with older SilentFlo models, while increasing equipment uptime and improving overall lab efficiency.

SilentFlo 525 HPUs can be paired with each other or older HPUs to extend the operating life of existing power-generation infrastructure. Multiple upgrade paths can increase lab productivity and the move toward more modern technologies.

Speak with MTS in Chennai and learn how an energy-efficient SilentFlo 525 can improve the operational efficiency of labs, reduce energy costs and help meet decarbonization goals.

Booth 3072

OPTIMAL MEASURING EQUIPMENT FOR TRAINING AND RESEARCH

AR Brown

Research into eye tracking is becoming increasingly important for manufacturing sites where the transmission of skills and training of workers is essential, and in driving skills training. With AR Brown's system, eye tracking can be easily measured with simple device configuration and calibration. It is important for a human measurement device to be comfortable. This system is the smallest and lightest eye tracking device, making it very comfortable to wear and suitable for long periods of use.

Using MR technology, digital information (text, images, videos and 3D models) is superimposed on a space, enabling educational training to be conducted in an intuitive and highly learning-efficient experiential format. Furthermore, the motion playback function allows the user to check the example of an expert from any angle/viewpoint, enabling them to acquire a sense of the correct movement and speed of the work. This is difficult to achieve using conventional videos and photographs that only allow one viewpoint to be understood.

The system allows for independent learning through repetition, eliminating the need for instructors to be stationed on-site and reducing the time and costs of those who teach.

Booth 4106

automotive testingexpo INDIA

INDUSTRIAL AUTOMATION AND TESTING EQUIPMENT

Zeus Solutions

Zeus Solutions has been a leader in industrial automation and test equipment solutions since 1995, setting industry standards with innovative and efficient offerings. The company specializes in serving enterprises manufacturing automotive electrical components such as starter motors, alternators, wiper motors, blower motors and power window motors, consistently delivering excellence.

Its expertise extends beyond auto-electrical components to cater to manufacturers in various fields, including AC motors, switchgear, oil industries, agro industries, and two-, three- and four-wheeler manufacturers. With the rise of electrical energy (new energy) motors, Zeus actively provides cutting-edge solutions

for BLDC, PMSM and hub motor manufacturers, as well as electric vehicle manufacturers.

Zeus Solutions' portfolio showcases the company's expertise in delivering state-of-the-art assembly lines and test rigs to a diverse array of manufacturers, including hub motor stators, PMSM rotors, hub motor assembly lines, PMSM motor assembly lines, traction motor assembly lines, EV drive assembly lines, PMSM performance test rigs, PMSM stator test rigs, traction motor performance test rigs, hub motor performance test rigs and hub stator test rigs.

Building on its legacy of innovation and excellence, Zeus is at the forefront of industrial automation and testing, shaping the future of manufacturing and energy solutions.

Booth 4086

MWT 100/200 CELLULAR NETWORK EMULATOR FOR 2G/4G/5G WITH CV2X/ECALL/NGECALL TEST

MaxEye Technologies

The MaxEye MWT100/200 cellular network emulator is a universal wireless signaling tester for the validation of mobile devices based on cellular standards (2G GSM/GPRS, 4G LTE, 5G NR). The product supports emulation of eNodeB, gNodeB, BTS, core network and IMS server. This complete integrated solution supports the simultaneous simulation of two networks and parallel testing of multiple user equipment (UE) or mobile devices, significantly improving test performance, compared with traditional single UE testing.

C-V2X (cellular vehicle-to-everything) is a state-of-the-art wireless technology used in autonomous driving and intelligent transportation systems (ITS) to extend blind spot detection. eCall/NGeCall is an emergency communication system designed to automatically alert emergency services in the event of a car accident. Testing eCall/NGeCall involves verifying the system's functionality, ensuring it can reliably detect accidents, transmit correct data and connect to emergency services. MaxEye Technologies developed its advanced test architecture for testing and validation of safety-critical C-V2X and eCall/NGeCall scenarios in the laboratory. The test setup includes a MWT 100/200 base station emulator combined with NavikEye GNSS signal generator to simulate real road conditions in a user-friendly graphical environment.

CV2X scenarios include FCW (forward collision warning), SVW (stationary vehicle warning), ICW (intersection collision warning), EVW (emergency vehicle warning), HLN (hazardous location warning), CACC (cooperative adaptive cruise control), BSW (blind spot warning), LTA (left turn assist), DNPW (do not pass warning), AVW (abnormal vehicle warning), EBW (emergency brake warning), CLW (control loss warning) and SLW (speed limit warning).

Booth 2042

INNOVATIVE MULTIBUS CONTROLLERS AND TEST SOFTWARE FOR AUTOMOTIVE

Göpel Electronic

Göpel Electronic, a leading manufacturer of automotive test solutions, will present its test and measurement products at Automotive Testing Expo India.

Series 62 multibus communication controllers are primarily used for residual bus simulations and for the test and programming of control units of varying complexity. Numerous configurations and application options are available for optimum adaptation to the unit under test or to the test task.

Also on display will be Video Dragon, with the intuitive Dragon Suite software, as a modular solution for testing camera and display applications. Video Dragon supports the current GMSL, FPD-Link and APIX LVDS video transmission standards, including respective sideband protocols.

Booth 3006

IN ASSOCIATION WITH SAE INDIA Society of Automotive Engineers INDIA

NEW FOR 2025

AUTOMOTIVE LEADERSHIP INDIA SUMMIT

APRIL 8 & 9, 2025 | CO-LOCATED WITH **AUTOMOTIVE TESTING EXPO INDIA**

Limited to 150 senior automotive professionals from across India

The SAE India managing committee has joined up with UKi Media & Events to create a high-end, two-day conference held at Automotive Testing Expo India. The Automotive Leadership India Summit will position India as a global leader in the automotive sector. It will provide a dynamic platform to showcase India's capabilities in manufacturing, innovation, sustainability and technology, and foster critical discussions about the challenges and opportunities involved. It will be a call to action for the industry, government and academia to collaborate and propel India's automotive ecosystem to the forefront of the global stage.

For sponsorship opportunities, please visit www.testing-expo.com/india/en/sponsorship-program.php

The summit's goals and objectives will be to:

1 Position India as a global leader, highlighting advances in manufacturing, innovation and technology
2 Accelerate sustainable mobility, promoting discussions on EVs, hydrogen technologies and green infrastructure
3 Strengthen the ecosystem, enabling partnerships between OEMs, technology providers, suppliers and policy-makers

Visit the website for more details and to register for a delegate pass

Themes will include:

- India's automotive renaissance: Exploring the nation's journey to becoming a global automotive hub
- Sustainability and future mobility: Discussing the pathways to innovative green solutions
- Technology and innovation: Integrating AI, IoT and advanced tools into manufacturing and testing

automotive testing expo INDIA

Instant clarity

For more than five years, Photron has supplied high-performance, high-speed camera systems to the Indian auto sector

WORDS BY **JENNIFER FENLASON**

Working alongside its distributor Tesscorn Systems India and current Photron camera users including Seattle Safety, Ernst, Hude and the Automotive Research Association of India, Photron has been instrumental in bringing cutting-edge high-speed imaging technology into the Indian automotive safety testing industry.

Passive safety features such as seatbelts and airbags have significantly enhanced vehicle safety. Furthermore, by implementing active safety measures such as autonomous emergency braking, it is now possible to prevent accidents or at least reduce their severity by decreasing impact speeds.

This presents an excellent opportunity for engineers to innovate additional features that enhance passenger protection, such as closing windows if a vehicle rollover is detected – to avoid ejection of the passengers. In the future, engineers would ideally like to see the short time phase between the detection of the possible crash and the time of the real impact used to move the passenger seat into the safest position for the upcoming crash.

ABOVE: Photron's cameras integrate seamlessly with other safety analysis tools, such as this high-speed sled at India's Automotive Research Association

BELOW: ARAI relies on the Fastcam MH-6, along with other systems from Photron, at its facilities

Frame perfect

Photron is a close partner of various safety test service providers and equipment developers. For example, Seattle Safety's systems are supported by Photron's cameras. Seasoned engineers at Seattle Safety recognize that merely developing new safety features is insufficient. It is essential that they demonstrate effectiveness alongside all other vehicle safety mechanisms.

The acceleration sled is a key instrument employed by safety engineers. However, since the introduction of AEB, it is no longer adequate to just simulate the impact on the sled. Engineers need insights into how well restraint systems function during up to two seconds of braking before collisions occur. Does a passenger's seating position change under AEB conditions? Is airbag deployment still effective if there's been a shift in posture? Could certain load scenarios render AEB potentially dangerous?

To tackle these concerns, Seattle Safety has developed an innovative addition for the ServoSled that involves a secondary sled known as PIMS. The PIMS carries the body-in-white and passengers, accelerating along the ServoSled rails to preset speeds. It then performs programmed deceleration profiles, followed by full-power acceleration tests, with dummies positioned in various seat configurations.

Time stilled

ARAI, meanwhile, employs high-resolution Photron Fastcam Mini WX50s and Mini WX100s as offboard high-speed cameras for sled testing and full vehicle crash testing, while the compact and lightweight Fastcam MH-6 serves as the onboard camera system. This combination of high-speed imaging technologies enhances the depth and quality of data collected.

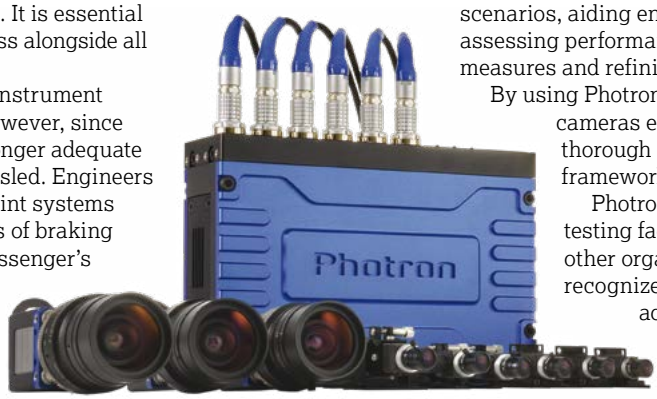
The setup comprises more than 15 synchronized cameras, optimally arranged to document the crash event from various perspectives. The offboard units offer a broader view of these high-speed occurrences, while the Fastcam MH-6, which is directly mounted on the vehicles, gathers vital insights from inside them. This onboard device captures real-time dynamics such as occupant movements, airbag activation timing and how the vehicle's structure responds upon impact.

Combining these camera systems facilitates an in-depth examination of crash dynamics. The rapid frame rates provided by Photron cameras enable capture of ultra-high-speed dynamic events that transpire during collisions – details that often escape human observation. This feature is crucial for unraveling the intricate details associated with collision scenarios, aiding engineers and safety analysts in assessing performance levels, enhancing safety measures and refining overall vehicle design.

By using Photron's offboard and onboard high-speed cameras effectively, ARAI can undertake thorough evaluations that shape regulatory frameworks while spurring auto innovation.

Photron hopes that with new crash testing facilities emerging in India soon, other organizations in the country will recognize what pioneers such as ARAI have accomplished and choose to replicate those initiatives. ❮

Visit Photron at Booth 1070



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WEH · ARAI Progress through Research · ZF · VECTOR · DEWESoft

Join us at India's biggest full-vehicle and component testing and validation technologies and services show, spanning two halls!

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