

# What's New at

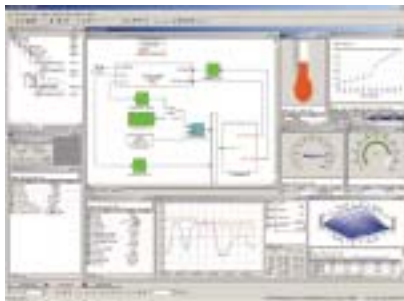


# SAE 2003

*The SAE 2003 World Congress provided industry suppliers the opportunity to showcase their products, services, and technologies to the global automotive community. Reviewed below are some items pertinent to off-highway engineers and designers.*

## Powertrain development

**Accurate Technologies Inc. (ATI)** and **The MathWorks** have partnered to develop a powerful rapid-prototyping and calibration capability for powertrain design. Vision-RP provides an inte-



grated tool for rapid prototyping and calibration, allowing users to acquire data from electronic control unit (ECU) software and Simulink diagrams simultaneously using the same Vision graphical user interface. By configuring xPC TargetBox, the MathWorks industrial PC hardware system for rapid prototyping of embedded control systems, with the Vision-RP universal vehicle/ECU calibration and data-acquisition system, powertrain engineers are provided with seamless integration between the calibration and rapid prototyping capabilities. Thus, engineers can calibrate and acquire data from base ECU software, ECU strategy data items, and Simulink

bypass models, while the control system is running in real time.

*For information, circle 23*

## Industrial panel computer

The Panel 1060-935 from **Axiom Technology** is a fan-less, 5.7-in QVGA Color STN (Super Twisted Nematic) RISC (Reduced Instruction Set Computer) panel. The compact size allows the device to be placed in space-limited applications. The unit's LCD features resistive



type touch-screen support and five function keys. The front metal bezel is NEMA 4/12 certified. The firm's SBC9350 system board runs the panel. The SBC features a 206-MHz **Intel SA1110** processor, which is a highly integrated, low-power, and high-performance 32-bit StrongARM processor that is based on RISC architecture. Other features include 32 MB of onboard SDRAM and 16 MB of onboard Flash memory.

*For more information, circle 24*

## Vision guidance

**Braintech, Inc.**'s eVF is designed for developing, operating, and supporting vision-guided robotics that perform complex assembly operations. Working closely with **Ford's** Advanced Manufacturing Technology Department, the firm has successfully deployed robots guided by



eVF vision software to perform complex and precise engine assembly tasks such as loading/unloading engines from dunnage bins and engine head decking (shown). These deployments resulted in significant gains in quality of assembly and equally significant reductions in labor-related injuries by removing workers from dangerous and injury-prone operations and relocating them to other positions.

*For more information, circle 25*

## Imaging system

NAC's lightweight Memrecam fx RX5 camera offers high-speed imaging flexibility and performance in onboard automotive testing. The system can simultaneously capture up to four views and is suitable for use in confined spaces such as footwells or engine compartments. It provides a mega-pixel camera system that



can be modified to accept multiple cameras, thereby providing the user with alternative systems that help reduce the added weight of instrumentation systems in an onboard impact test environment. For single camera operation, the fx RX camera head records images at 1000 pps with 1280 x 1024 pixel resolution (optional recording rates up to 10,000 pps); the Memrecam Micro camera head records at 500 pps. Cameras can be mounted up to 18 m (60 ft) from the Digital Recording Processor.

*For more information, circle 26*

## Ultracapacitors

Maxwell's BMOD0115 ultracapacitor module has a capacitance of 145 F at 42 V and a 195 x 265 x 415-mm (7.7 x 10.4 x 16.3-in) enclosure; the firm's BMOD0117 module has a capacitance of 435 F at 14 V and an enclosure size of 195 x 265 x 145 mm (7.7 x 10.4 x 5.7 in). Both modules are suitable for automotive subsystems, hybrid-electric solutions, and UPS/backup power. These modules also work with batteries for applications requiring a constant low power discharge for continual function and a pulse power for peak loads.

*For more information, circle 27*

## Engine torque simulation

A dynamometer system from Schenck Pegasus enables virtual engine realization in powertrain and FEAD (front-end

accessory devices) testing. The company has taken a proven set of math models of the combustion process and developed software that runs in real time with any change in input speed or simulated throttle position. An adaptive, closed-



loop (with measured feedback), real-time controller takes the calculated torque demand that produces the IC engine torque signature and realizes it at the shaft of an ac dynamometer within a few shaft revolutions. Closed-loop control on dynamic torque assures accurate, repeatable, and reliable reproduction of torque in a wide range of frequencies. By delivering the Engine Torque Pulse from a Simulation (ETPS) of a combustion engine, the firm has realized the virtual engine in the laboratory.

*For more information, circle 28*

## CAN devices

CAN products from RM Michaelides Software & Elektronik GmbH include CANview Bluetooth, CANview Bluetooth TCP/IP, CANview USB, and CANview GPRS devices. CANview Bluetooth allows users to exchange CAN data between devices with a Bluetooth interface via the serial port profile. A CANview Bluetooth TCP/IP version provides access to the Web. The firm's CANview USB has a USB interface that allows data to be exchanged quickly with a PC. Data can be transmitted unfiltered to a PC from CAN bus systems with baud rates of 1 Mbit and a high bus load. The CANview GPRS device allows users to transfer data in packets so the user is only



billed for the amount of data actually transmitted. It supports downstream transfer rates of up to 57.6 kbaud. An integrated TCP/IP protocol stack enables communication with the connected CAN bus system via Internet services and protocols such as e-mail, FTP, and basic TCP/IP client/server.

*For more information, circle 29*

## Data acquisition

The Win600e high-speed streaming data-acquisition system from Hi-



Techniques,

Inc. has features such as streaming to disk, remote monitoring of live data, remote control of the data-acquisition system, and multi-system control. The system combines high-speed, high-resolution digitizing of analog signals with deep buffering memories and complete processing capabilities. Along with the keyboard and mouse, the built-in touch display allows easy control of the system. Sample rates from dc to 20 MSps are combined with per-channel memories of up to 128 Megapoints per channel. Complete data analysis, macro-programming capabilities, and report generation are standard on each system.

*For more information, circle 30*

## Pressure transducer

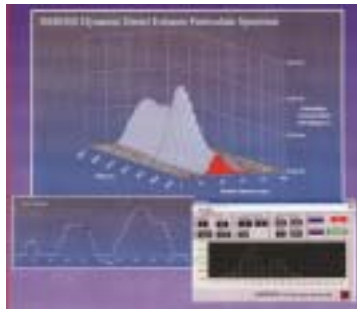
Viatran Corp.'s Model 148/248/348 is a durable, high-accuracy, pressure spike resistant gauge and absolute pressure transducer in a 1.5-in (38-mm) diameter stainless steel machined housing with a NEMA 4X rating. Features include accuracy greater than 0.15%; 3X overpressure rating; vibration and shock resistant; all-welded design; watertight/submersible design; pressure ranges from 3 to 15,000 psi (0.02 to 103 MPa); and 4 to 20 mA, 0-5 V, 2 mV/V output.



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### Particulate spectrometer

The DMS500 fast-response instrument from Cambustion Ltd. is designed to yield particle size information and is based on the principle of electrical mobility classification. The unit can measure particles in a single size range of 5 to 1000 nm (0.2 to 39



µm) with a 10-90% response time of 200 ms; it may be used for transient particle size measurement on existing CVS dilution systems and drive cycles. Identification of nucleation mode (liquid-based) and accumulation mode (solid) particles can be discerned with information useful for diesel particle filter size calculation and optimization of other engine control parameters.

*For more information, circle 32*

### Thermal imager

The TVS-8500 integrates CMC Cincinnati's cutting-edge defense technology and InSb focal plane array architecture to provide a multi-use platform. Five



moveable cursors, as well as vertical and horizontal profile lines, are presented on the built-in, 5-in liquid-crystal display. Dynamic digital image enhancement and auto temperature ranging allow users to follow critical temperature over quickly changing scenes. Real-time recording allows for 120, 30, 10, 5, 2, or 1 frame/s recording and playback of the thermal image. The file can be copied to the compact flash card for permanent or temporary off-line storage.

*For more information, circle 33*

### Bonded composites

Dimension Bond Corp. applies bonded composite, anti-friction materials to sliding or rotating parts. The material is applied with high accuracy, so the finished parts are all within a tight tolerance range even if the raw parts vary substan-



tially in size. The wear characteristics of the bonded composites are said to be better than those for conventional inserted bushings and wear bands. The firm offers more than 40 bearing-grade, direct-bonded composites ranging from bronze/PTFE to composite/nanocomposite, high-strength, high-temperature materials.

*For more information, circle 34*



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