AEROSPACE 09
TESTING • DESIGN • MANUFACTURING

21-23 April 2009
New Munich Trade Fair Centre
Germany

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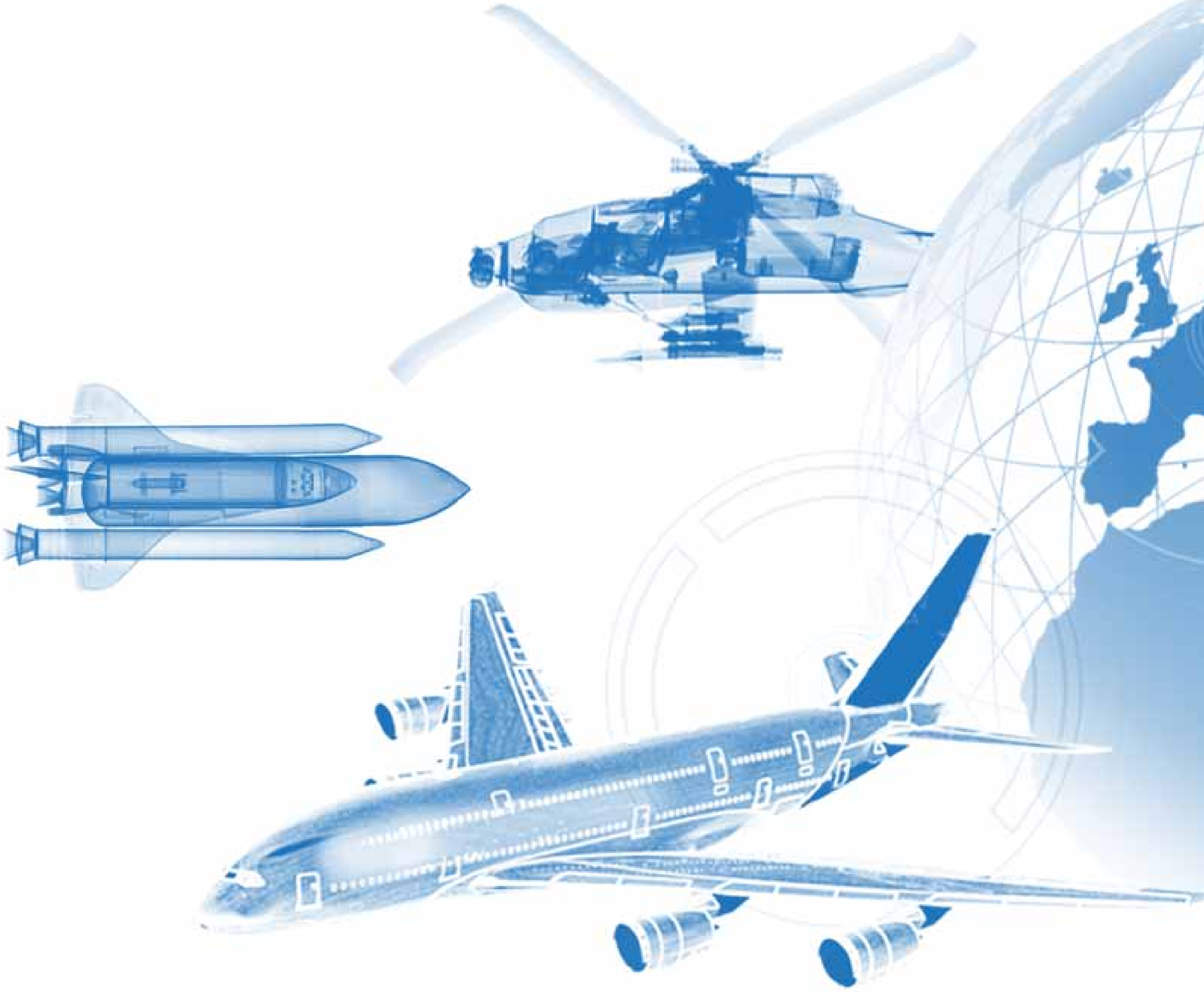
Design
Testing
Evaluation
Compliance
Pre-production
Manufacturing
Assembly
Quality



Official Show Preview

The Global Market Place for the Aerospace Engineering Development Community

ORGANISED BY
Reed Exhibitions
Aerospace & Aviation Group

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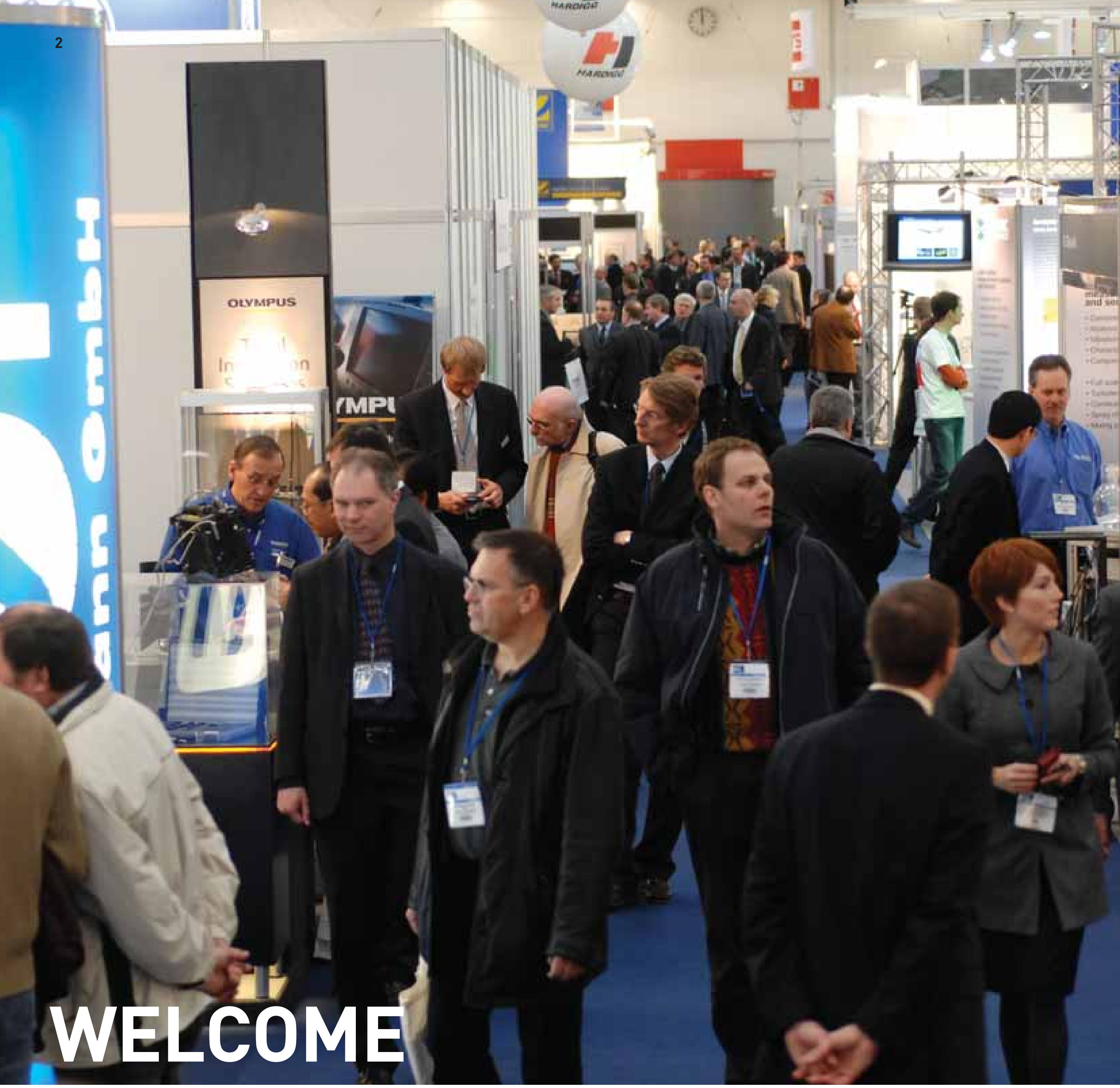

WELCOME

Aerospace Testing Design Manufacturing Expo 2009

Welcome to the Show Preview of Aerospace Testing, Design & Manufacturing Expo 2009, the global meeting place for the aerospace engineering development community.

I am delighted to see that you are thinking about visiting the show to help your business gain a competitive advantage in these challenging times. Your attendance in Munich will provide you with an extremely time-efficient way to keep up to date with the latest innovations and solutions from across the market, connecting you with the most comprehensive source of industry expertise within aerospace testing, design and manufacturing.

Your visit to the show will also keep you abreast of the latest industry developments through our free educational programme, providing you with a rich source of new ideas and techniques which you can take back to your workplace to help improve and streamline your operations.

This year heralds the introduction of a career dimension at the show, connecting job seeking engineers with exhibitors looking to recruit new skills to strengthen their business.

Despite the economic challenges, we are proud to remain the focal point for the aerospace engineering community, with hundreds of businesses exhibiting. I would urge you to make the most of a visit by using the Expo to make new contacts, develop existing relationships, and to capitalise upon the free knowledge and insight on offer to ensure your business remains competitive over the next 12 months.

I look forward to welcoming to Munich between 21-23 April.

Jonathan Heastie
Event Director

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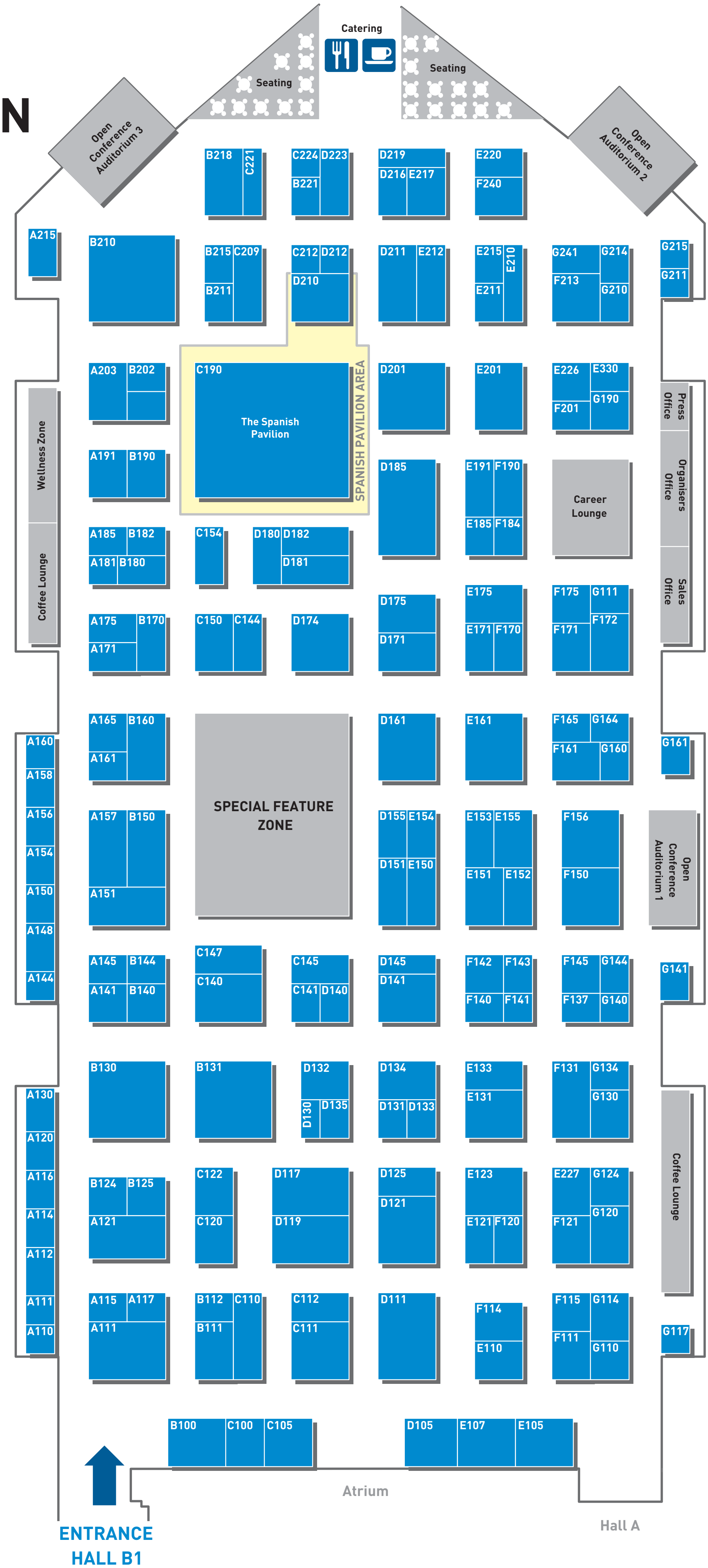
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SEMINAR PROGRAMME

TUESDAY 21 APRIL 2009 - DAY 1

Auditorium 1 - Day 1

10.00-10.30	**Avionics** Mobile All-in-one AFDX/A350 Test Tool Suite, *Techsat*
10.30-11.00	**Avionics** RF problems on Aircraft, *Aeroflex International Limited*
11.00-11.30	**Avionics** 'In-line Data Corruption' on Avionics Databuses, *AIM GMBH*
11.30-12.00	**Avionics** MEMS Sensors for AHRS application, *Colibrys*
12.00-12.30	**Avionics** Embedded solutions for development tests, component tests and system integration in the test center, *EADS Military Air Systems*
12.30-13.00	**Avionics** Germany's Mission Equipment Carrier - a successful Co-operation between Government and Industry, *ESG Elektroniksystem- und Logistik-GmbH*
13.00-14.00	**LUNCH**
14.00-14.30	**Data Acquisition** LAN-XI – A New Concept for Data Acquisition Systems, *Brüel & Kjær Sound & Vibration Measurement A/S*
14.30-15.00	**Data Acquisition** A versatile and scalable system for small and large channel count data acquisition, *m+p international Mess- und Rechnertechnik GmbH*
15.00-15.30	**Data Acquisition** Practical TED's Use in Strain Gage Applications, *VXI Technology Inc.*
15.30-16.00	**Data Acquisition** Synchronisation in Data Acquisition Systems, *Pi Research Ltd*

Auditorium 2 - Day 1

10.00-11.00	**PRESS CONFERENCE**
11.30-12.00	**NDT** Digital Radiography in Aerospace, *DÜRR NDT GmbH & Co. KG*
12.00-12.30	**NDT** Airbus A320 Family - Testing Beyond the Limits, *IAB GmbH*
12.30-13.00	**NDT** Improving Reliability and Cost Effectiveness of NDT, *Olympus Industrial Systems*
13.00-13.30	**NDT** Shearography - Full-field NDT for Sandwich structures, *Steinbichler Optotechnik GmbH*
13.30-14.00	**LUNCH**
14.00-14.30	**Design** Beyond black metal: CAE driven optimization of composite lamiantes, *Altair Engineering*
14.30-15.00	**Design** Improving engineering and test with model based techniques, *Berner & Mattner Systemtechnik GmbH*
15.00-15.30	**Design** MEMS High Amplitude Shock Sensors, *Measurement Specialties, Inc.*
15.30-16.00	**Design** Protocol Aware ATE with FPGA's, *National Instruments*

Auditorium 3 - Day 1

10.30-11.00	**Telemetry** Turbine telemetry, *Manner SEnsortelemetrie GmbH*
11.00-11.30	**Telemetry** Miniaturization of telemetry equipment, *EURILOGIC*
11.30-12.00	**Telemetry** Design Of A Dual Channel Monopulse Autotracking Antenna, *JDA Systems*
12.00-12.30	**Telemetry** Test of Distance Measurement Equipment (DME) Transponders Using External Measurement Equipment, *Rohde & Schwarz*
12.30-13.00	**Telemetry** Flight Test Instrumentation Demonstration for Military UAS, *Spiral Technology, Inc.*
13.00-14.00	**LUNCH**
14.00-14.30	**Testing Software** Comminicating Across The Methods, *GE Inspection Technologies*
14.30-15.00	**Testing Software** Software tools to prepare and operate structural tests with high channel count systems, *Hottinger Baldwin Messtechnik GmbH*
15.00-15.30	**Testing Software** Industrial solutions for in-flight & offline experimental flutter analysis on A380, *LMS international*
15.30-16.00	**Testing Software** Acoustic data analysis in Airbus France, *ORME*

WEDNESDAY 22 APRIL 2009 - DAY 2

Auditorium 1 - Day 2

10.30-11.00	**Engine Testing** Identify counterfeited spare parts worldwide using online digital imaging technology, *AlpVision SA*
11.00-11.30	**Engine Testing** Aircraft engine electrostatic monitoring and active charge compensation; checking of spark plugs, *CIAM*
11.30-12.00	**Engine Testing** Performance Based Logistics (PBL) / Contracting For Availability, *Giode Ltd*
12.00-12.30	**Wind Tunnel** Improving Measurement Precision in the Low Speed Wind Tunnel at RUAG Aerospace, *RUAG Aerospace*
12.30-13.00	**Wind Tunnel**
13.00-13.30	**Wind Tunnel** Wind tunnel automation and efficiency improvement, IMTECH
13.30-14.00	**LUNCH**
14.00-14.30	**Metrology & Quality Assurance** New modules for aircraft power system control ADMM-2, *BETA AIR JSC*
14.30-15.00	**Metrology & Quality Assurance** Internet Tracking and Quality Control of Manufacturing, *Integrated Manufacturing Inc.*
15.00-15.30	**Metrology & Quality Assurance** Noncontact Blade Vibration and Tip Clearance Measurement System for Axial Compressor Application, *MTU Aero Engines*
15.30-16.00	**Metrology & Quality Assurance** High resolution at High Speed, *PCO AG*

Auditorium 2 - Day 2 - *Sponsored by SAE*

10.30-11.00	**Materials & Composites Testing** 1:8 Scale Wind tunnel model of the external fairing of the European TILTROTOR, *CRP Technology*
11.00-11.30	**Materials & Composites Testing** 'Innovative approaches to non-destructive testing of composite structures'', *Bodycote Testing Group*
11.30-12.00	**Materials & Composites Testing** Detection Capabilities of Optical Measurement Technologies, *Dantec Dynamics GmbH*
12.00-12.30	**Materials & Composites Testing** Fracture Mechanical Testing of Foam Core Materials for Sandwich Structures, *Fraunhofer Institute for Mechanics of Materials*
12.30-13.00	**Materials & Composites Testing** Aircraft Fuselage Panel Test with Internal Pressure, Tension, Compression and Shear Loads, *IMA Materialforschung und Anwendungstechnik GmbH*
13.00-14.00	**LUNCH**
14.00-14.30	**Pre-production** Mechanical test up to 15000 kN and high productivity solutions on aeronautical composite structures, *Applus+ LGAI*
14.30-15.00	**Pre-production** The use of load cells in Aerospace Ground & Flight test applications, *Honeywell*
15.00-15.30	**Pre-production** Reengineering of the Aging Helicopter Components with Lightweight Composite Materials, *VX Aerospace Corporation*

Auditorium 3 - Day 2 - *Society of Flight Testing Eng.*

10.30-11.00	**Flight testing** Low Cost to High-End Approaching System for Flight Tests, *Eurocopter GmbH / Hasotec GmbH*
11.00-11.30	**Flight testing** Development and Testing of Innovative Laser Remote Sensing Techniques, *Italian Air Force*
11.30-12.00	**Flight testing** Flight testing at WTD 61 using the example of the Anti Tank Missile PARS3LR, *Mr. Markus Ohlschmid*
12.00-12.30	**Flight testing** Microflown based acoustic testing methods for aerospace, *Microflown Technologies*
12.30-13.00	**Flight testing** Unmanned Systems Testing at NEAT, *NEAT*
13.00-14.00	**LUNCH**
14.00-14.30	**Flight testing** The current Flight Test Safety Program of the EADS-MAS Test Centre, *EADS-Defence & Security*
14.30-15.00	**Flight testing** Virtual Aircraft Testing, *MSC Software*
15.00-15.30	**Flight testing** GNSS Data Processing for Attitude Determination and Control of UAVs and Satellites, *Italian Air Force Flight Research and Test Centre*
15.30-16.00	**Flight testing** Qualification and Certification of Self-Guided Airdrop Systems (SGS), *WTD61 - German Military Flight Test Centre*

SEMINAR PROGRAMME

THURSDAY 23 APRIL 2009 - DAY 3 - *Exclusively designed by the Aerospace Engineers Themselves*

From a selection of presentations which were available on the website, online visitors have chosen the top 12 presentations they'd like to hear on Day 3, creating their own conference.

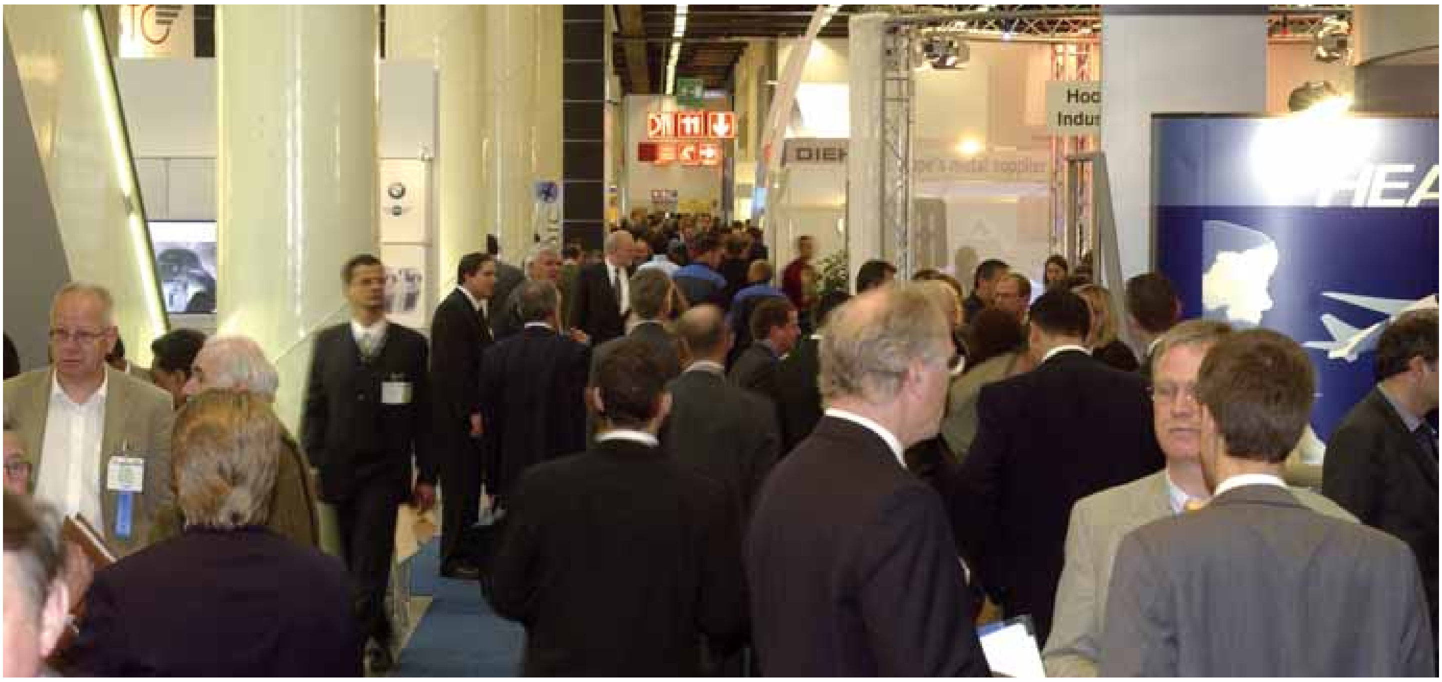
Auditorium 1 - Day 3 - *Community Day*

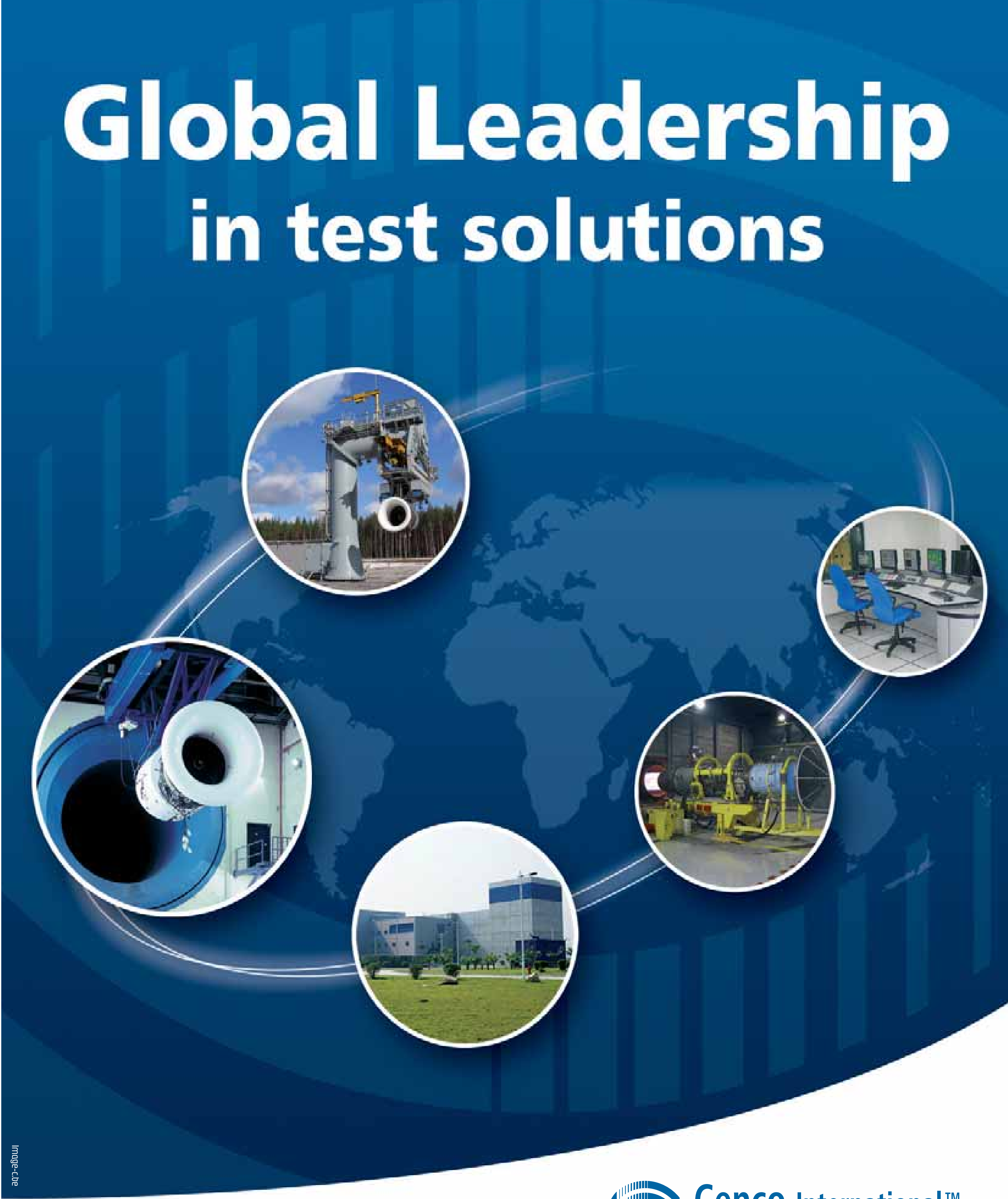
10.00-10.30	**Avionics** Development of COTS based engine control system and intelligent actuators for small aircraft, *UNIS a.s.*
10.30-11.00	**Data Acquisition** Time-based synchronization techniques, *National Instruments*
11.00-11.30	**Data Acquisition** Flap simulation and testing system, *imc Meßsysteme GmbH*
11.30-12.00	**Data Acquisition** Flexible configurations for system integration facilities, *EADS Military Air Systems*
12.00-12.30	**Flight testing** Ground vibration testing of an F16 aircraft: excitation techniques and modal parameter estimation, *LMS International*
12.30-13.00	**Flight testing** HD video for aerospace applications, *Ampex Data Systems, Inc*

Auditorium 1 - Day 3 - *Community Day*

10.00-10.30	**Engine Testing** Subsonic flow measurements at high temperatures, *MTU Aero Engines GmbH*
10.30-11.00	**Engine Testing** The mathematics behind life cycle and product testing, *Societe de Calcul Mathematique SA*
11.00-11.30	**Engine Testing** Advanced testing methods for efficient development of aero engines, *MTU Aero Engines GmbH*
11.30-12.00	**Pre-production** e-manufacturing - next generation of production technology, *EOS GmbH*
12.00-12.30	**Pre-production** Applied process monitoring and control in composites material production, *Nat. Techn. Univ. Athens*
12.30-13.00	**General** Multicore and parallel testing techniques to improve test system performance, *National Instruments*

Correct as of 08/03/2009




Global Leadership
in test solutions

NEWS

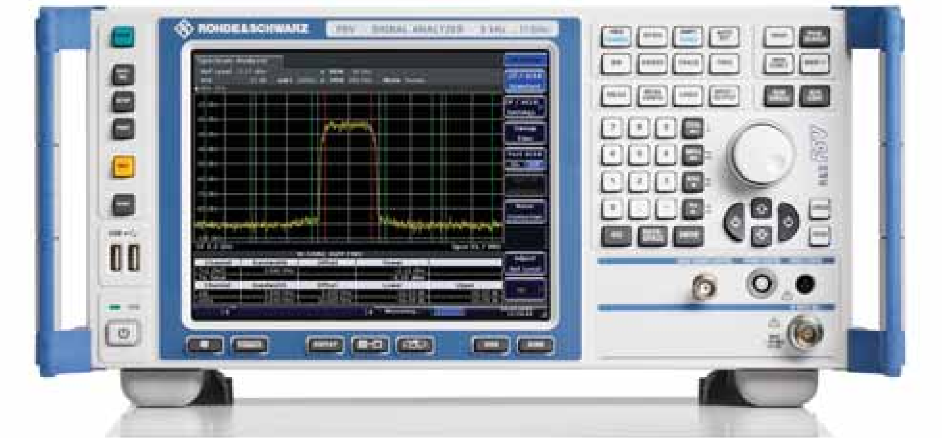
ANALYSE THE LATEST MODELS

Rohde & Schwarz (R&S) are presenting their latest microwave models at Aerospace Testing, Design & Manufacturing Expo.

Two additional models have been added to the R&S FSV family: one up to 13.6 GHz and one up to 30 GHz. The R&S FSV13 and R&S FSV30 combined signal and spectrum analysers stand out particularly due to their sensitivity and large-signal immunity.

Especially in the microwave range, sensitivity is an important criterion when selecting a spectrum analyser. For spurious emissions up to 12.75 GHz in wireless communications equipment and systems, as well as in higher frequency ranges as is the case with satellites or military systems, the requirements are very stringent. A low displayed average noise level (DANL) yields measurement results that are more accurate because the signal-to-noise ratio is greater. Featuring a DANL of less than -148 dBm (1 Hz) at 13 GHz and less than -144 dBm (1 Hz) at 30 GHz as well as a third order intercept of 15 dBm, the R&S FSV can hold its own even alongside high-end instruments.

For users from the aerospace and defence sector, the new R&S FSV models offer a removable hard drive and USB interfaces that can be deactivated. Sensitive data from high-security areas thus remains safe and sound.



SIGNAL GENERATION MADE EASY

dSPACE's DS2302 Direct Digital Synthesis Board is now available with more options to generate demanding signal forms such as those required for intelligent wheel speed sensors.

The new APU slave interface (APU = angular processing unit) for each channel on the board, together with the Fast Analog Capturing Module, an optional extension, obtain an even more precise measurement of injection control voltages. This makes it easier to calculate the injection quantities for direct-injection engines, even with variable valve lift.

The board's enhanced performance boost is derived from its enlarged memory and from new signal processors (TMS320VC33) that push its speed up to two and a half times faster than that of its predecessor.

The DS2302 Direct Digital Synthesis Board has six digital signal processors (DSPs) and is designed for the fast, flexible generation of curve behaviours. It computes each signal sample just-in-time and outputs it immediately. The signal parameters can easily be changed on-the-fly by a master processor board or from the host PC. Data exchange between the main application and an application running on one of the six DSPs is done by C programs, which users can either create themselves or put together from a range of existing programs.

ALL IN ONE

AIM GmbH is launching the PBA.pro™ Databus Test & Analysis Tool at Aerospace Testing, Design & Manufacturing Expo.

The tool will support customers requiring to test, simulate and monitor data from PCM Telemetry streams in conjunction with Avionics databusses and many other interfaces in one system.

The addition of the PBA.pro-DECOM resource has been driven by their customers wanting this capability whilst using PBA.pro™ for Flight Test Instrumentation applications such as 'quick look' for pre-flight check out and bench testing / certification of FTI systems prior to installation into the target platform such as aircraft, helicopters, UAV's and RPV's.

Jo Schuler Head of PBA.pro™ developments at AIM explains "Our first step has been to integrate and create a PBA.pro component for the all new GTS/DEC/003 10Mbps bit synchroniser & PCM decommutator from our expert partner ACRA Control. Taking their single card PCI solution, we have available the ability to set-up the GTS/DEC/003 board and resources with a XidML file. The resource manager has access to all PCM decom functions including a Monitor Mode where entire PCM frames are captured in real time."

ONE FOR ALL

The world's first Multi-field Microphone Type 4961, a high quality measuring microphone with uniform response in any sound field, will be shown for the first time at Aerospace Testing, Design & Manufacturing Expo.

Brüel & Kjær are introducing Multi-field Microphone Type 4961, which basically is a 1/4" measuring microphone with the sensitivity (50 mV/Pa) and noise floor of a 1/2" microphone. The 4961 features an integral DeltaTron preamplifier with SMB socket, and supports TEDS (Transducer Electronic Data Sheet).

Until now acoustic engineers have been forced to make a choice between a microphone optimised for either free, diffuse or pressure field. This choice is often made without preceding knowledge of the sound field.

In real life many applications do not really represent well-defined conditions. These unknown factors result in a potential risk of measuring errors, which may exceed 10 dB at 20 kHz. As a result of this, the uncertainty imposed by the microphone alone, may far exceed the system tolerances as specified for instance in IEC 61672.

But now, errors and uncertainty due to the microphone chosen will no longer be a problem. The introduction of a novel concept called the "Multi-field Microphone" will make the choice of microphone very simple. Now one microphone suits all tasks where 20 kHz bandwidth is sufficient.

The Multi-Field Microphone is suitable for all applications where a high quality measuring microphone with uniform response in any sound field is required, for instance for cabin noise measurements for the aerospace as well as automotive industry.

UNDER PRESSURE

Visit the Kulite stand to see the first public appearance of the Kulite Multi Pressure Scanner (KMPS).

The unit offers a high performance acquisition unit for multiple pressure measurements of non-corrosive gases. Ideally suited for the aerospace market, applications include wind tunnels, aircraft engines, gas turbines, aircraft ground and flight testing and aerospace research.

The unit integrates up to 32 Kulite miniature pressure transducers in a compact and rugged box. Pressure sensing technology is based on Kulite's piezo-resistive technology using dielectrically isolated, silicon-on-silicon devices with high natural frequency, low hysteresis and superior thermal characteristics. Pressure transducers are individually replaceable for quick factory turn around.

Operational modes include absolute or differential measurement with auto-zero capability. Differential mode uses an integrated purge. The scanner offers both high accuracy analogue and digital outputs, allowing the scanner to be used with legacy analogue systems and new digital systems. Standard output configuration utilises a High Speed RS-485 digital output.

The KMPS can be used over a wide temperature range of - 55 °C to + 120 °C thus minimising the costly need of sample gas conditioning.

COMBUSTION INSTABILITY IN ROCKET MOTOR RESEARCH

Rocket motor combustion instability is a problem that reduces engine performance, induces structural vibration, and possibly leads to catastrophic failure of the exhaust motor or its components

Combustion instability is an interaction between internal combustion and flow processes with natural acoustic resonances of a rocket motor. It is caused by pressure fluctuations and acoustic resonances in the combustion chamber, is difficult to model in three dimensions, and hard to eliminate during motor design, even with modern computing power. Acoustic modes are primarily a function of combustor geometry or liquid fuel injector patterns, while solid motors may be affected by un-burned propellant passing through the motor, or a sudden increase in burning surface area due to propellant voids.

Every passage or chamber has acoustic resonances, the most common example being a cathedral organ. The very nature of the music is created by organ pipes being excited into resonance by air flow. However, the design goal for a rocket motor is to eliminate combustion instability, because it leads to unsteady thrust resulting in structural vibrations, an uncomfortable ride for astronauts or payload, difficulty with guidance systems, and in extreme cases catastrophic failure. Amplitudes of damaging combustion instability can range from a few hundred psi for small motors to the low thousands of psi for large motors. Most damaging frequencies occur in the low Hz to low kHz band.

Analysis Tools

Lacking perfect computation models, design engineers have resolved problems of combustion instability via experimental analysis. Prior to the availability of quartz piezoelectric sensors, test facilities relied on strain gage technology. The limits of this technology were primarily temperature, resolution, and lack of high frequency response. Temperature problems were often solved by use of standoff tubes that moved the sensor a distance away where operating temperatures could be maintained. However, the standoff tube was an acoustic resonator, and therefore was not very useful for the kilo-hertz bandwidth required to study instabilities.

Strain gage technology required the ability to operate near full-scale output to avoid overload damage, yet test engineers desired measurement of pulses only represent a few per cent of full-scale. These devices typically had 20 to 30 mili-volts output at full-scale. Opportunity for noise encountered across long cables compounded the problem, since test cells were remote and signal conditioning was located far from the sensor, making small changes in pressure difficult to detect.

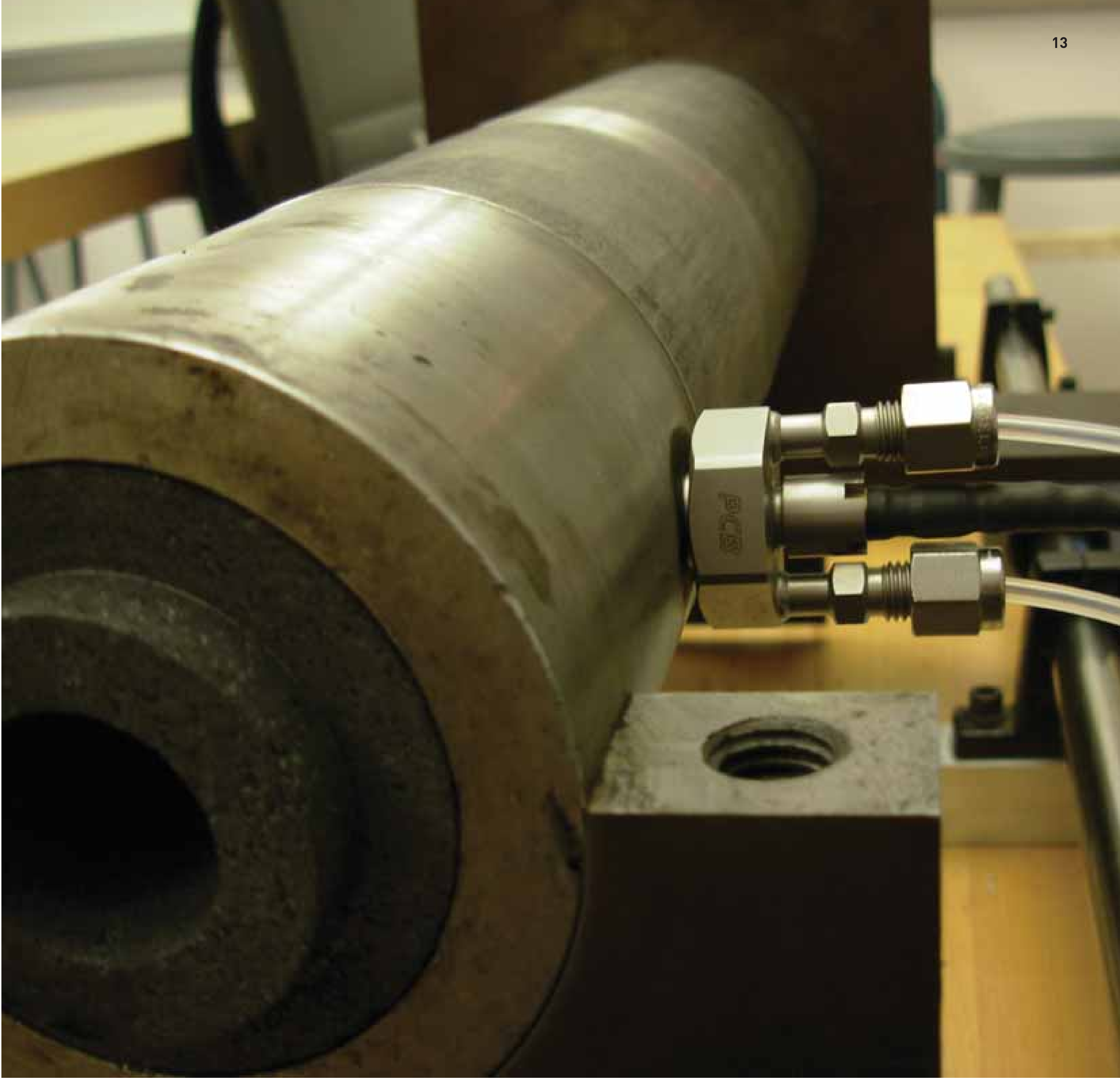
Quartz piezoelectric sensors for rocket motor combustion instability testing were used as early as 1966. ICP® (Integrated Circuit Piezoelectric) output pressure sensors, structured with naturally piezoelectric, stable quartz sensing elements, are well-suited to measure rapidly-changing pressure fluctuations over a wide amplitude and frequency range. The sensors also feature acceleration-compensation for use in high vibration environments. They are designed to operate in very high static pressures; for example, a sensor rated for 1000 psi dynamic pressure, has a maximum pressure rating of 5000 psi and a broadband resolution of 0.020 psi. Solid-state construction, hermetically-sealed housings, and laser-welding provide undistorted high frequency response and durability, even in adverse environmental conditions such as rocket motor combustion.

The maximum operating temperature quartz rocket motor sensors, with ICP® output is 250 °F. However, rocket motors with long burn times can exceed this temperature in tens of mili-seconds. Helium-bleed and water-cooled Series 122, 123 and 124, were designed expressly for measurement of combustion instability in rocket motors.

The helium-bleed concept originated from work performed at the Guggenheim Laboratories of Princeton University in 1965. It involves flowing cool helium gas around the body and diaphragm of the quartz transducer. This enveloping gas cools the transducer, insulates it against the hot combustion gases, fills the passage in front of the sensor, and greatly improves the frequency response of the connecting passage by a factor of three. Water-cooling surrounding the sensing element allows for maximum thermal stability and extends sensor operating temperature. Combined with a coating of ceramic on the outer adapter for ablative purposes, the sensor may be used in long motor test durations.

Lacking perfect computation models, design engineers have resolved problems of combustion instability via experimental analysis

Water cooling tests, with a thermal couple inserted into the water-cooled housing where the



quartz sensing element is located showed a cooling flow rate of 0.18 gal/min kept the location of the thermal couple at 192 °F, while soaking in a thermal chamber at 1000 °F. An additional thermal couple was installed in the ICP® area of the water-cooled housing, showing electronic temperatures as low as 100 °F; adequate for ICP® technology.

Gas Passage Resonances

A challenge previously discussed with pressure measurement is how to successfully mount sensors in the combustion chamber to avoid oscillations of a stand off tube. To facilitate water cooling, ICP® pressure sensor diaphragms must be located in a slightly recessed manner. This allows coolant to flow completely around the sensing element. However, the passage leading to the diaphragm has a resonant frequency. The resonance of a simple passage of constant diameter and closed on one end is calculated by knowing that the wavelength of the passage is equal to four times the length.

Using the speed of sound in air, c = 1085 ft/sec, or 13,021 inch/sec, the resonant frequency is 12.5 kHz. Using Helium gas with less density, a faster speed of sound occurs and the result is 36.7 kHz. Helium bleed provides cooling and increases the measurable frequency response of the sensor.

Modern Installations

A recent example was a hybrid engine comprised of solid fuel and liquid oxidizer. Testing used a Series 124A water-cooled sensor mounted in the combustion chamber.

Summary

Combustion instability due to chamber acoustics or fuel supply is a common design problem not easily modeled. Water-cooling and Helium-bleed allows ICP® pressure sensors to operate at extremely high temperatures in rocket motor combustion environments for detection of rapid pressure transients and pulsations. They monitor dynamic pressure while subjected to high static background pressure. ICP® output features on-board electronics to provide conditioned output signal and ease of use. All of these tools assist in finding very small dynamic pressure instabilities, allowing test engineers to find the source and correct design problems.

Words: By Robert Metz, Aeronautical & Astronautical Engineer / PCB Pressure Product Manager, PCB Piezotronics, Inc.

THE FIGHT AGAINST COUNTERFEIT

Manufactured objects can now be identified by individual characteristics, just as humans can be identified by their irises or fingerprints

Using microscopic imperfections generated by the manufacturing process and raw materials used to produce an object, digital imaging technologies can generate a unique "imprint." Therefore, it is possible to identify and to trace any spare part during its entire life.

The technological background

Images of distant planets are received on Earth even though they are sent by extremely low power transmitters millions of kilometres away. During its journey to Earth, which could last several minutes or even hours, the imaging information is polluted by an enormous amount of "noise," which is generated by billions of electromagnetic cosmic sources. The intensity of this "noise" is therefore much greater than the original image signal.

Today, high-tech digital imaging technology is so powerful that it is capable of extracting the useful image out of the mass of noise. The specialists will say that the technology can analyse a signal with low signal-to-noise ratio even though it is like finding an extremely small needle in a big haystack.

Identifying a manufactured object

Machining or moulding leaves unique "imprints" related to the tooling and the raw material (plastics, metals) used to produce an object. These microscopic differences can be used to identify the object, if there is a technical means to capture them. In fact, they are as identifiable and unique as human fingerprints or iris patterns.

Nowadays, consumer electronic devices such as flatbed scanners, digital cameras and camera phones are powerful enough to capture a good image of an object. Although at first glance images of a series of objects may seem identical, high-tech digital imaging can identify "hidden" significant differences by using mathematical algorithms.

To identify a specific object amongst millions, the digital image of an object can be compared with the original "imprint," which is captured when it exits the production line. This process identifies a counterfeit object because its digital image will not be among the images produced by the original manufacturer. Because a genuine individual object can be identified, the process can provide full traceability of an object during its entire life. This patented solution was initially developed to help Swiss watch manufacturers fight against counterfeiting, which is the plague of the 21st century.

Aerospace spare parts as counterfeiting targets

Nowadays, any single object is a potential target for counterfeiting, it will have some value as an individual object or when mass produced. Many solutions have been developed to help manufacturers distinguish their genuine products from fake ones. Marking processes include radio frequency identification, laser engraved encrypted serial numbering and two-dimensional data matrix barcodes. Taggant such as chemical or material tracers can also be included in the manufacturing process.
Unfortunately, the current criminal counterfeiting industry is as well equipped as genuine manufacturers. Therefore, these additional markings can also be duplicated. Additional security marking features also increase the cost of manufacturing. First, security manufacturing processes have to be implemented to manage the security elements. Second, production lines have to be modified to include these features in the process, which could be sensitive to heat, light or other environmental conditions. In the case of taggant or chemical tracers, the verification process requires specific tools or the costly involvement of forensic laboratories.

Using the Swiss watch example

Because watches are metal or plastic based, the solution developed to identify Swiss watches easily applies to any mechanical or electromechanical parts. The manufacturer simply captures a digital image of each manufactured object as it exits the production line "as-is". Once processed the captured images are stored on a secured computer server. Later, anyone in the field who wants to authenticate or identify an object can capture the digital image of the object using an off-the-shelf flatbed scanner, mobile phone or digital camera. This image is sent to the secured server via a secured Internet connection. In only a few seconds, the mobile phone receives the return verdict: "genuine" or "fake".

Digital imaging: a breakthrough technology to fight counterfeiting

Digital imaging technology is part of the numeric revolution which already dramatically affected the way we are consuming films, images and music as well as how we are communicating and getting information worldwide. The constant progress of consumer electronics puts very powerful tools in the hands of everyone. The criminal industry of counterfeiters has well perceived the potential of these technologies to develop their business, but now the same tools will also play a key role in fighting them worldwide.

Words: By R. Meylan, co-founder of AlpVision and Corporate Communications Manager, AlpVision SA