



OFFICIAL SHOW PREVIEW

**AEROSPACE
TESTING[®]
2011**

5 – 7 April 2011
Hamburg Messe
Germany

www.aerospacetesting.com

Avionics – Certification – Composites Engineering & Materials – Data Acquisition – Design – Engine Testing – Flight Testing – Ground Testing – Hardware & Instrumentation – Non-Destructive Testing – Sensor Technology – Structural Testing – Systems Engineering – Telemetry – Testing Software

EUROPE'S LEADING MEETING PLACE FOR THE AEROSPACE TEST ENGINEERING COMMUNITY

Organised by

 Reed Exhibitions
Aerospace & Aviation Group

www.aerospacetesting.com



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Aerospace & Aviation Group

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WELCOME

Now in its ninth year, Aerospace Testing Expo returns to the Hamburg Messe from 5-7 April 2011 to bring together the active core of the industry

Attending the Expo 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 a concentrated source of industry expertise for aerospace test engineering.

Seminar programme

The focus this year is on increasing the level of information available to you during your visit to the show, especially as we understand you have limited time to spare within your busy work schedule. Beyond the usual array of exhibitors for you to meet, the 2011 event will once again host a free programme of technical seminars covering a wide range of testing disciplines. We welcome speakers from organisations including ACRA Control, BAE Systems, National Aerospace Laboratory, MOOG, MTS, the Society of Flight Test Engineers and a host of other innovative companies, each of which will provide you with a rich source of new ideas and techniques which you can take back to your workplace to help improve and streamline your own operations.

Over the three days, sessions are grouped into key subject areas, including structural testing, engine testing, NDT, avionics, materials and composites engineering, data acquisition, sensor technology and ground testing.

Aircraft Interiors Expo

Another important attraction to maximise your visit to Hamburg is the co-located Aircraft Interiors Expo. Running alongside Aerospace Testing, Aircraft Interiors is the launch pad for new cabin programmes

with over 500 leading suppliers showcasing tomorrow's designs, in-flight entertainment, connectivity and avionics solutions.

What's more, over 50 companies at Aircraft Interiors Expo provide test, measurement and certification solutions for the aerospace industry, providing visitors to Aerospace Testing with even more to see during their visit to the show. These exhibitors include Diehl, GOM, Panasonic Avionics, Rockwell Collins, TÜV SÜD, Zodiac Aerospace and a host of other leading suppliers.

All visitors to Aerospace Testing Expo can gain free entry to the Aircraft Interiors Expo throughout the 3 day event.

With over 100 suppliers of testing solutions on show in Hamburg to help you with your business needs, I would urge you to make the most of your visit by using Aerospace Testing 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.

On behalf of the Aerospace Testing Expo team, I look forward to welcoming you to Hamburg between 5-7 April.

Kind regards



Jonathan Heastie
Exhibition Director



GET THE MOST FROM YOUR VISIT

Attend the Technical Seminar Programme

Once again the Aerospace Testing technical seminar programme offers visitors a valuable opportunity to be informed about the latest ideas and techniques across a range of testing disciplines.

With key organisations including ACRA Control, BAE Systems, National Aerospace Laboratory, MOOG, MTS, the Society of Flight Test Engineers and many more providing sessions, there are plenty to choose from. So make sure you find time to attend the programme and take back your new knowledge to your workplace.

View the programme on page 6.

Source more suppliers at Aircraft Interiors

Visitors to Aerospace Testing can also benefit from the 50 plus companies providing test, measurement and certification solutions for the aerospace industry at Aircraft Interiors. Visitors to Aerospace Testing can gain free entry into the co-located show to see exhibitors including Diehl, GOM, Panasonic Avionics, Rockwell Collins, TÜV SÜD, Zodiac Aerospace and a host of other leading suppliers.

See page 10 for the full list of suppliers.

MEDIA AND ASSOCIATION PARTNERS

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www.aviatic.com



www.qmtmag.com



www.reinforcedplastics.com



www.sfte.org



www.sensorreport.ch

FREE SEMINAR PROGRAMME

Tuesday 5th April 2011

Ground Testing

- 09:45-10:15 **Bre-TeCe: Distributed System Testing**
Kishore Duganapalli, System Engineer, ExpertSystems GmbH
- 10:30-11:00 **Challenges in Testing Complex Mechatronic Systems**
Dr Carl Hans, Department Manager, BIBA - Bremer Institut für Produktion und Logistik GmbH
- 11:15-11:45 **Accelerated GVT Testing through an integrated GVT process. A combination of test and simulation leads to an increased testing efficiency**
Jan Debillé, Aerospace Solutions Manager, LMS
- 12:00-12:30 **Real-time System Simulators**
Johannes Kremp, Head of Test Systems, FTI Technologies GmbH
- 12:45-13:15 **An Overview of the 1.2m High Speed Wind Tunnel Refurbishment Program**
Phil Liston-Smith, Specialist Engineer, BAE Systems

Avionics

- 14:45-15:15 **Aligning Model Based Development and Test Systems**
Peter Hermle, Key Account Manager Aerospace, SILVER ATENA Electronic Systems Engineering GmbH
- 15:30-16:00 **Automated Model-based Testing of a Complex Avionics Algorithm for the NH-90 helicopter**
Edwin van de Sluis, Senior Scientist Avionics Software, National Aerospace Laboratory - NLR
- 16:15-16:45 **Using Real-time Signal Analysis Technology to Debug EMI/EMC Problems in Aerospace, Radar and Avionics**
Joern Hoepfner, RF Product Specialist EMEA, Tektronix GmbH

Structural Testing

- 10:00-10:30 **New Dimensions of Fuselage Panel Testing**
Mirko Sachse, Head of Fuselage Panel Test, IMA Materialforschung und Anwendungstechnik GmbH
- 10:45-11:15 **Successful Structural Testing**
Jan Peter Veldhuizen, Test Systems Manager, MOOG
- 11:30-12:00 **On-line Full-Scale Testing**
L.C. Ubels, Principal Project Engineer, National Aerospace Laboratory NLR
- 12:15-12:45 **Test Acceleration Methodologies**
Arlin Nelson, Sr. Systems Engineer, MTS Systems Corporation
- 13:00-13:30 **Qualification Testing on Space Flight Hardware. Case study on the Herschel space telescope, tested at ESA/ESTEC**
Jan Debillé, Aerospace Solutions Manager, LMS

Data Acquisition

- 14:30-15:00 **When Test Controllers and Data Acquisition System Work Together**
Jan Peter Veldhuizen, Test Systems Manager, MOOG
- 15:15-15:45 **Case Study of a Networked Data Acquisition System in Space**
Milos Melicher, Principal Engineer - Space & Ground Stations, ACRA CONTROL
- 16:00-16:30 **The EGSE for ESA VEGA Launcher: Characteristics and highlights of a new approach**
Giulio Troso, Project Manager, Vitrociset S.p.A



Wednesday 6th April 2011

Flight Testing

- 10:00-10:30 **Case Study in the Challenges and Solutions for Complex Gigabit FTI Networks**
Nikki Cranley, Principal Engineer - Networks & Recorders, ACRA CONTROL
- 10:45-11:15 **In-flight Structural Dynamics Testing of Very Large Aircraft. Excitation and data analysis techniques**
Jan Debille, Aerospace Solutions Manager, LMS
- 12:15-12:45 **Flight Testing - A Part of the Road to NVG Introduction in SwAF**
Jonas Linde, Linde, Saab Electronic Defence Systems

Material & Composites Engineering

- 14:00-14:30 **High-temperature Materials Testing**
Andrej Mahr, Applications Engineer, MTS Systems Corporation
- 14:45-15:15 **Structures and Materials**
Dany Paraschivoiu, Manager, Operations, National Research Center, Canada
- 15:30-16:00 **The Value of Collaborative Approach to Collecting Cyclic Stress-Strain and Strain-Life Data for Aerospace Materials**
Andrew Brown, Product Development Director, IHS ESDU
- 16:15-16:45 **Construction of a CUBESAT using Additive Manufacturing**
Livia Cevolini, Marketing and Sales Director, CRP Technology

NDT

- 10:15-10:45 **Hi-end X-ray Inspection - No Longer for Labs Only**
Dr. Malte Kurfiß, Product Manager, YXLON International GmbH
- 11:00-11:30 **Fiber Optic Sensors - Not Only for Structural Health Monitoring**
Anja Dreher, Owner, AHE engineering
- 11:45-12:15 **FANTOM FP7 Project: Innovative NDT Technique Development. Single sensor for simultaneous temporal and spatial full-field thermography and deformation measurements in structural tests**
Dr. Marc Georges, Head of Laser Techniques Activity, Centre Spatial de Liège - Université de Liège
- 12:30-13:00 **Shearography - NDT on Aerospace Material**
Raphael Schoen, International Sales Manager, Steinbichler Optotechnik

Telemetry

- 14:30-15:00 **The Use of a Wireless Telemetry Backbone in Aerospace Ground & Flight Test Applications**
Brian Duffy, Global Application Engineering Manager, Honeywell
- 15:15 - 15:45 **Wireless Sensor Networks for Use in Aircraft Systems Monitoring**
Michael Sessinghaus, System Engineer, SILVER ATENA Electronic Systems Engineering GmbH

Note: seminars are subject to change.

Visit www.aerospacetesting.com/seminars for the complete, up to date programme



AEROSPACE TESTING 2011 EXHIBITORS

ACRA Control Ltd	J40	Laser Technology Inc	K25
AeroBrief Marketing und Werbung		LaVision GmbH	J21
Aerospace Manufacturing		LMS International	K41
Aerospace Testing International	G45	Meggitt Sensing Systems - Measurement Group	H25
AIM GmbH	J45	MIC Mass Interface Connections GmbH	K21
Air Force Institute of Technology - Poland	N21	MOOG	VIP Lounge
ATS Comp GmbH	N29	MTS Systems Corporation	H22
Aviatic Verlag GmbH	L19	National Aerospace Laboratory	G22
BCSA Gear	L21	NDT Expert	L10
BreTeCe (FTI, BIBA, ExxpertSystems)	M35	PCB Piezotronics Europe GmbH	L24
Bruel & Kjaer Sound &		PHOENIX TESTLAB GmbH	K30
Vibration Measurement A/S	J50	Projektron GmbH	J60
Clemessy Group	L21	QMT Magazine	
Composites Europe		Reinforced Plastics	
CONTROLLERSOLUTION GmbH	J51	Schulze Radio Systems	K10
Dantec Dynamics GmbH	H44	Sensor Report	
Dayton T Brown	M31	SFTE - Society Flight Test Engineers	J22
DGA - Direction Technique	K35	SILVER ATENA Electronic Systems	
Digital Engineering Magazine		Engineering GmbH	J54
Doosan Babcock	N25	Sonaxis	L21
dSPACE GmbH	K31	SQS Software Quality Systems AG	J55
ECA SINTERS	L21	Steinbichler Optotechnik GmbH	K54
EM Test GmbH	L16	Techconnect GmbH	M25
EMCC DR. RASEK	G54	TechSAT GmbH	G41
Fabreeka GmbH Deutschland	H24	Tektronix GmbH	H41
Honeywell Sensing & Control -		Testem GmbH	J20
Sensors for Test & Measurement	K40	TORNERIA SCAPOLAN SRL	L17
IMA Materialforschung und		trimetric 3D Service GmbH	J24
Anwendungstechnik GmbH	J51	UBifrance	L21
IncoTest	J41	Vector Informatik GmbH	K11
Interface Inc	K50	VPC - Virginia Panel Corporation	K21
ITP - Industria de Turbo Propulsores SA	N30	XSENSOR Technology Corp	K50
iXMotion	L21	YXLON International GmbH	H45

Note: lists correct at time of publication

AIRCRAFT INTERIORS EXHIBITORS

These testing solutions providers can be found in our co-located show

AAR	Avionics	GOM Gesellschaft fuer	
Aeroworks Composites b.v.	Testing	Optische Messtechnik mbH	Testing
Airbase Interiors	Testing	Hutchinson Aerospace	Avionics
Aircraft Technics HAM GmbH	Testing	Intelligent Avionics Limited	Avionics
Altitude Aerospace Interiors	Testing	Isovolta AG	Testing
ARICO Aircraft Interior Products	Avionics	Northwest Aerospace Technologies	Avionics
Arrowhead Products	Testing	Panasonic Avionics Corporation	Avionics
ATC GmbH	Testing	PGA AVIONICS	Avionics
Avionics Services	Avionics	Recticel Aviation	Testing
AXON'Kabel GmbH	Measurement	Rockwell Collins	Avionics
Belgian Aerospace/FLAG	Avionics	Ro-Ra Aviation Systems GmbH	Testing
Bertrandt/Aeroconseil	Testing	Schott AG	Sensors
Blue Box Avionics	Avionics	Servecorp Ltd	Testing
Carlisle Interconnect Technologies	Measurement	SGS Germany GmbH	Testing
Celso	Testing	SWS Certification Services Ltd	Avionics
Chameleon Products	Testing	TIMCO Aerosystems	Avionics
Custom Products Inc	Testing	Treo - Labor für Umweltsimulation GmbH	Testing
Diehl Aerospace	Avionics	TÜV SÜD Product Service Ltd	Testing
Diehl Aerosystems	Avionics	Vaupell Inc	Testing
EAD Aerospace	Sensors	WASP Switches Ltd	Testing
EAD Aerospace	Avionics	Yarwood Leather	Testing
Emteq, Inc	Avionics	Zodiac Aerospace	Sensors
EniT-Engineering and IT services GmbH	Avionics		
European Aviation	Testing		

Plus over 100 companies involved in Aerospace design

Note: lists correct at time of publication

NEWS

AVIONICS FOR HIGH FLYERS

To address the unique and demanding requirements of aircraft and satellite development and testing, dSPACE, in close cooperation with leading aerospace component and system manufacturers, has produced new interfaces for avionics buses.

Extra channels & features and new blocksets have been added to the interface boards for avionics buses ARINC 429 and MIL-STD-1553, along with a new interface board for ARINC 717. The new interface boards are already in action in the Joint Strike Fighter [F35] programme, the NPOESS programme (a US environmental satellite), and other projects. The boards have graphical user interfaces and work with a database, making communication configuration intuitive and easy. Used in conjunction with dSPACE's fast, modular real-time systems, they are ideal for developing and testing components and systems for aerospace applications



NEW FOR INERTIAL SENSORS TESTING

At Aerospace Testing Expo 2011, iXMotion will exclusively present its new EVO-10S system, designed for lighter and smaller payloads.

The MEMS sensor market is growing exponentially while sensor performance is improving rapidly. Therefore, needs in physical testing for MEMS inertial sensors (accelerometers, gyroscopes, inertial systems...) are also increasing. To meet these new test requirements, iXMotion has developed a range of fully automatic equipment specially optimized for MEMS inertial sensors testing and calibration.

iXMotion is a leading manufacturer of motion simulators, offering a range of one to n axis positioning and rate tables with revolutionary control technology. iXMotion motion simulators are designed for inertial sensors, guidance and navigation systems testing and calibration, pointing applications and real time simulation.



ACRA CONTROL LAUNCHES NEW NETWORK FRAMEWORK

ACRA CONTROL has launched the iNET-X Recommendations Handbook that details over 100 recommendations for the next generation of airborne Ethernet data acquisition.

Ethernet is a well proven technology that has millions of users around the world, however airborne Ethernet is a special case with some unique requirements. iNET-X is a collection of technology recommendations made by ACRA CONTROL after consultation with the leading aerospace companies in the world. The published handbook provides a complete framework that can be adopted by anyone seeking to deploy rugged Ethernet based data acquisition.

These decisions are in line with the developing CTEIP Integrated Network Enhanced Telemetry (iNET) initiative that is pushing the adoption of Ethernet technology for the future of Flight Test Instrumentation. iNET-X provides easy setup and management for networked data acquisition systems and contains comprehensive statements on protocols and standards ensuring a future proof system.

TOOLS FOR AMBITIOUS AEROSPACE TESTING

With the inherent complexity of aerospace testing, data quality is gold. In the lab, in the field, with a PC or recording autonomously, a LMS SCADAS system delivers the data quality required to get the job done right the first time. With flexible master-slave configurability - up to the 1000+ channel level, a reliable LMS SCADAS system is a popular industry choice for ground vibration, flutter and jet engine testing as well as space system qualification and satellite testing.

A natural multi-tasker, the new LMS SCADAS Lab, with its range of signal conditioning and choice of connectors, brings years of proven technology into the lab environment for ambitious jobs like cabin acoustics or structural testing.

The new LMS SCADAS Mobile with GVT support is good news for engineers looking for a smaller-scale and portable solution for business jets or single-engine aircraft.



ADVANCED DIGITAL MEASUREMENTS

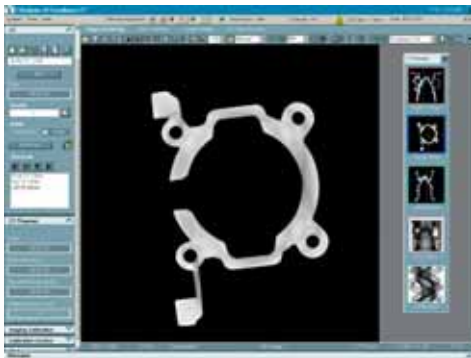
LaVision is presenting StrainMaster DVC, a powerful and novel technique for full 3D strain and deformation measurements across entire material volumes, at Aerospace Testing Expo 2011.

This technique takes volume images of the component in reference and deformed states and then calculates the full 3D displacement and strain map throughout the volume. Images can be imported from X-ray Computed Tomography (X-ray CT) systems, Magnetic Resonance Imaging (MRI) systems, or via optical tomography for transparent media. DVC is a powerful non-intrusive technique for the identification and quantification of sub-surface material deformation, and is capable of identifying defects or discontinuities before they are visible in the volume image itself. Recent applications of the software include the study of cracks in carbon composites, measurements of honeycomb structures, analysis of geological phenomena, and the measurement of displacements in bone implants.

YXLON BRINGS CT INSPECTION INTO PRODUCTION

Y.Multplex CT – The universal solution for a wide variety of radiographic inspection tasks

YXLON International GmbH offers the full-scale integration of computed tomography (CT) into conventional X-ray inspection using the universal



Y.Multplex radiographic inspection system along with the functionality of Y.CT-Inspect. In this system CT images can be included into programmed inspection just like radiosopic images so that any desired mixture of X-raying and CT is possible. The operator no longer has to have specialized knowledge of CT operations. Professionals can view and change all parameters in the manual mode. Work is also substantially simplified for them through the creation of templates and a database for CT findings.

Visualization of the reconstructed tomographic

images already takes place in the system's operator software. The depiction occurs on 3 different sectional levels and permits intuitive navigating into the tomograms themselves. The same options for image processing and measurement that Y.Multplex software allows for X-rayed images are available for analyzing computed tomograms, too. Operations such as measuring distances, areas and making markings become possible as a result. YXLON makes use of Y.QuickScan®, which enables a CT image to be acquired in less than 30 seconds, including tomogram depiction. This, in turn, fulfils the requirements set by production for a high throughput. When desired, the data can be automatically transferred to special analysis software as well, for instance to VGStudio from the firm Volume Graphics, allowing further analysis of a 3D model.

The classic areas for deployment of a universal radiographic inspection system involving CT are applications in which inspection items are predominantly X-rayed using manual or programmed radiographic inspection, however in certain inspection positions a concrete statement via CT is needed regarding the depth of casting flaws. This solution avoids having to perform unnecessary additional work on items that prove to be a problem. For manufacturers, that means a tangible cost savings.