



NDIA ATC Meeting Commercial Liaison Report

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AGENDA

- News (Mergers/Acquisitions/Spin Offs/Announcements)
- Technology Trends
- PXI, VXI, AXIe, LXI Updates

NEWS

Keysight Technologies Acquires Thales Calibration Services

Company is now the largest calibration and support services organization in Australia

SANTA ROSA, Calif., August 13, 2018

Thales Calibration Services is a world-class commercial calibration facility specializing in dimensional, pressure, mass, and temperature metrology. Located in Melbourne, Thales Calibration was originally established to provide dimensional support, but expanded its capabilities and accreditation over the past several decades. It is now the largest commercial non-electronic metrology lab in Australia servicing the defense, commercial, medical, petrochemical, and pharmaceutical industries.



Teradyne and Mobile Industrial Robots (MiR) Announce Teradyne's Acquisition of MiR, Leader in Collaborative Autonomous Mobile Industrial Robots

The logo for Teradyne, consisting of the word "TERADYNE" in a bold, blue, sans-serif font.

NORTH READING, Mass. and ODENSE, Denmark, April 25, 2018 (GLOBE NEWSWIRE) -- [Teradyne, Inc.](#) (NYSE:TER) and the shareholders of Mobile Industrial Robots (MiR) today announced the acquisition of privately held MiR of Odense, Denmark for €121 million (\$148 million) net of cash acquired plus €101 million (\$124 million at current exchange rate) if certain performance targets are met extending through 2020.

MiR is a leading supplier of collaborative autonomous mobile robots (AMRs) for industrial applications. The AMR market is an emerging category within the approximately \$1.1 billion logistics systems segment of the professional services robot market and is expected to grow rapidly in the years ahead.

NEWS

Themis Acquired by Mercury Systems

FREMONT, CA, United States, 2/1/2018 – Themis Computer®, a leading designer and manufacturer of rugged SWaP optimized computing systems, confirmed today that it has been acquired by [Mercury Systems](#).

“We are excited to be joining the Mercury Systems family,” said Bill Kehret, CEO of Themis Computer. *“This merger will help Themis expand its footprint in Industrial and Defense markets, by bringing new, complementary technology and services to the ‘One Mercury’ product portfolio.”*



United Technologies Says Rockwell Deal, Breakup Decision on Track

[United Technologies](#) Corp. [UTX 1.68%](#) Chief Executive Greg Hayes said that he expects to close the \$23 billion acquisition of [Rockwell Collins](#) Inc. [COL 1.31%](#) by the end of the month, and that in the meantime the industrial conglomerate is forging ahead with plans for a possible breakup.

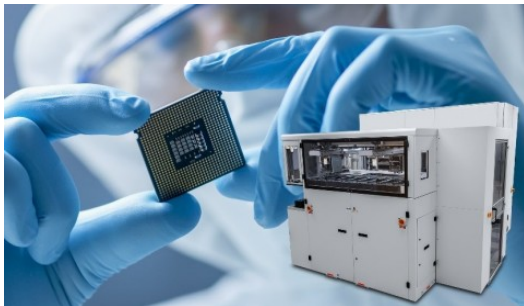
The company has previously talked about a possible three-way split with its aerospace business, including Rockwell Collins, combining with jet engine maker Pratt & Whitney. The Otis elevator business would be separate, as would its Climate, Controls & Security division, which owns Carrier air conditioners.



NEWS

Marvin Test Solutions Marks 30 Years of Making Test Easy

Since its founding in 1988, Marvin Test Solutions' singular focus has been to Make Test Easy for automated functional test customers by creating innovative solutions with unrivaled long-term support. With three decades of hardware, software and system design expertise, MTS has been at the forefront of the latest technology advances, providing ATE (Automated Test Equipment) hardware, software, and integrated test solutions that combine quality, performance, reduced footprint, and ease of use, while meeting and exceeding the demanding test requirements of today's complex military, aerospace, and manufacturing applications.



Astronics Test Systems Ships 2,000th Semiconductor Tester

EAST AURORA, N.Y.--(BUSINESS WIRE)--Jul. 10, 2018-- [Astronics Corporation \(NASDAQ: ATRO\)](#), a leading supplier of advanced technologies to the global aerospace, defense, and semiconductor industries, through its wholly owned subsidiary, [Astronics Test Systems](#), announced the shipment of its 2,000th semiconductor tester and that its equipment has tested more than 10 billion semiconductor devices to date. For the past two decades, Astronics Test Systems has served as a partner to the world's largest semiconductor device manufacturers, helping to ensure that critical electronics go to market with zero defects.

NEWS

Keysight Streamline Series USB Products

[The new Keysight Streamline Series](#) is comprised of compact USB instruments: vector network analyzers (VNAs), oscilloscopes and an arbitrary waveform generator (AWG) that leverage trusted Keysight technologies, measurement algorithms, and application software.



NI Announces Industry's First Remote Control Solution for PXI Systems with Thunderbolt™ 3

The new PXI Remote Control Module augments the portfolio of low-cost PXI Controllers

NI (Nasdaq: NATI), the provider of platform-based systems that enable engineers and scientists to solve the world's greatest engineering challenges, announced today the [PXIe-8301](#) remote control module, the industry's first solution for laptop control of PXI systems using Thunderbolt™ 3.

NEWS

NI Releases New Infrastructure for Deployed Systems Management

SystemLink™ helps improve operational efficiency and uptime while decreasing overall system maintenance costs.

AUSTIN, Texas – May 8, 2018– NI (Nasdaq: NATI), the provider of a software-centric platform that helps accelerate the development and performance of automated test and automated measurement systems, today announced [SystemLink](#), application software for distributed systems management. SystemLink helps improve operational efficiency and decrease maintenance costs through a centralized interface for automating tasks such as software deployment, remote device configuration and system health performance monitoring.



Teledyne LeCroy Releases World's First PCI Express® Gen 5-Ready Protocol Analyzer

Milpitas, CA, June 5, 2018 – Teledyne LeCroy Inc., the worldwide leader in protocol test solutions and a business unit of Teledyne Technologies Incorporated (NYSE:TDY), today announced its Summit™ M5x PCIe Protocol Analyzer/Jammer, the world's first platform to support the still nascent PCIe 4.0 specification as well as the next-generation PCIe 5.0 (32 GT/s) specification. With the industry's first PCIe 4.0-compliant jamming test capability, the Summit M5x delivers test functionality long sought after by engineers trying to ensure improved reliability. Moreover, the Summit M5x can modify, replace, insert, or delete traffic between a PCIe root complex and endpoint to verify adherence to design specifications and identify potential errors in protocol behavior.



NEWS

Keysight Technologies Spotlights Solutions that Accelerate Innovation in Autonomous Vehicles, Connected Cars

Keysight Autonomous Driving Solutions

- Automotive radar testing solution performs analysis and generation of automotive radar signals across full frequency ranges for legacy 24GHz, and new 77 GHz and 79 GHz bands.
- Radar target simulator provides a fast, accurate and reliable test solution for product test engineers that balances throughput and quality, and enables design and verification engineers to quickly validate the performance of their radar products.



<https://about.keysight.com/en/newsroom/pr/2018/29may-nr18061.shtml>

NI Announces New mmWave Radio Heads Targeted at 5G NR Research and System Prototyping

NI ([NATI](#)), the provider of a software-defined platform that helps accelerate the development and performance of automated test and automated measurement systems, today announced two series of new millimeter wave (mmWave) radio heads for the mmWave Transceiver System. The new radio heads, which cover spectrum from 24.5 GHz to 33.4 GHz and 37 GHz to 43.5 GHz, are targeted at wireless researchers prototyping 5G New Radio (NR) systems.



INDUSTRY/TECHNOLOGY TRENDS



5G



Drivers:

Higher Data Throughput

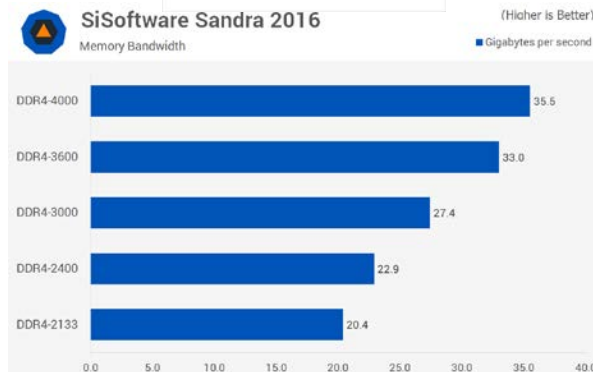
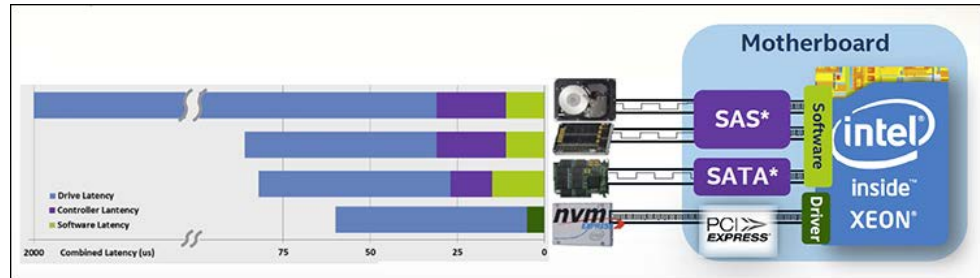
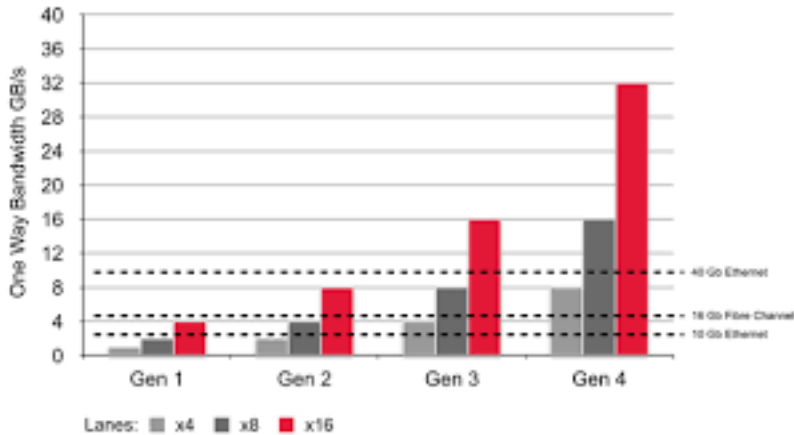
- Streaming
- Storage

μWave/mmWave

- Rapid prototyping
- Small form factors
- Modular



INDUSTRY/TECHNOLOGY TRENDS



INDUSTRY/TECHNOLOGY TRENDS

Modular RF

X-MWblocks™

Modular System Building
Blocks and Innovative Probe
Station Offer Quick Path
from Concept to Prototype
to Production Hardware.



[Learn More](#)



[MACOM and X-Microwave Collaborate to Enable Faster, Easier Design of High-Performance RF Systems](#)



microwave

"Modular By Design"

RF and MICROWAVE SOLUTIONS to 50 GHz

INDUSTRY/TECHNOLOGY TRENDS



Sensor Fusion and Autonomous Systems

- Automotive Driver Assistance Systems
 - 100's of sensors
 - Interdependencies
 - Large amounts of Data
 - Multiple ECUs
 - Machine Learning
 - Artificial Intelligence

Artificial Intelligence – the science of computers emulating humans

Machine Learning – The method behind which machines learn from data

INDUSTRY/TECHNOLOGY TRENDS



DARPA Announces \$2 Billion Campaign to Develop Next Wave of AI Technologies

DARPA's multi-year strategy seeks contextual reasoning in AI systems to create more trusting, collaborative partnerships between humans and machines

How will test have to evolve when the capability is defined through the interoperability or collaboration of many devices and the Software?

INDUSTRY/TECHNOLOGY TRENDS

Sustainment through modernization



iOS 12 [brings a ton of improvements to the iPhone](#), but the biggest changes will come in the form of speed and performance — even on older devices.

INDUSTRY/TECHNOLOGY TRENDS

Sustainment through modernization



INDUSTRY/TECHNOLOGY TRENDS

Sustainment through modernization



[First look at Tesla's version 9 software update with new UI, features, and more](#)

VXI and PXI Update



- VXI Bus Consortium:
 - 13 Members
 - > 1500 Products
 - 394 Mfg. ID's issued
 - VXI 1 Revision 4.0
 - <http://www.vxibus.org>
 - Products at <http://vxibus.org/products.html>



- PXI Systems Alliance (PXISA):
 - 68 Members (10/2/2015)
 - PXI-7: PXI Multicomputing HW Spec, Rev 1.0
 - PXI -8: PXI Multicomputing SW Spec ,Rev 1.0
 - PXI-9: PXI & PXI Express Trigger Management Spec ,Rev 1.0
 - www.pxisa.org

PXISA Board and Annual Meetings at AUTOTESTCON 2018

09/19/2018 5:00-6:30 PM

Marvin Test Solutions conference room,
Magnolia 3 in the Gaylord National
Convention Center

AXIe and LXI Update

AXIe Consortium:



- 11 Members
- 29 Products
- AXIe 1.0 Base Arch Spec, Rev 2.0
- AXIe 2.0 Base Software Spec, Rev 1.0
- AXIe 3.1: Semiconductor Test Extension, Rev 1.0
- AXIe-0: Low Cost Instrumentation and Switch Architecture
- AXIe Wide PCI Express available soon
- www.axiestandard.org for overview presentation

LXI Consortium:



- 53 Members
- >3,000 products
- LXI 1.4 (Core + 7 Extended Functions)
- New LXI Reference Design
 - Soon to be released
 - Available to members only
- <http://lxistandard.org>

[LXI General Meeting & Plug Fest;
October 15 - 17, 2018; Boston, MA](#)