THE McHALE REPORT

January 2022

MOSA VIRTUAL SUMMIT

Army's Giorgio Bertoli to keynote MOSA Virtual Summit Feb 23

Giorgio Bertoli, Assistant Director for the Spectrum Dominance and Intelligence portfolio, within the U.S. Army's C5ISR Center, will keynote the MOSA Virtual Summit, being held Feb 23 at 11 am Est. Other sessions include MOSA for Military Aviation Platforms, Bringing MOSA to Electronic Warfare Applications, and Applying a MOSA Strategy Across Multiple Domains.

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PODCAST

Semiconductor supply chain, radar & electronic warfare designs, engineering talent

Complex radar and electronic warfare systems drive innovation from RF and microwave designers while supply chain shortages continue to give them headaches. In this podcast, Bryan Goldstein, VP, Aerospace and Defense, Analog Devices, tackles these trends while also exploring how the defense industry will begin adopting 5G technology and where it will likely deploy first.

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TOP STORY

AI-powered voice and video tech to support NASA's Artemis 1 mission

Lockheed Martin, Amazon, and Cisco have teamed up to integrate human-machine interface technologies into NASA's Orion spacecraft aiming to provide an opportunity to learn how future astronauts could benefit from far-field voice technology, artificial intelligence (AI), and tablet-based video collaboration.

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TOP STORY

JADC2 supporting capabilities demoed by Northrop Grumman with Army

Northrop Grumman Corporation programs have completed testing and demonstrations as part of U.S. Army's Project Convergence, which is a campaign to pursue an artificial intelligence and machine learning-enabled battlefield management system and is the Army's contribution to Joint All Domain Command and Control (JADC2).

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3U VPX synchronizer for phase-coherent signal acquisition

The Model 5503 is a SOSA aligned COTS module that simplifies complex synchronization tasks for beamforming and phased-array applications used in radar, electronic warfare, and communications, maximizing reception and transmission of signals and reducing development costs and design time. The module can synchronize up to 32 channels across four RFSoC Quartz® modules, satisfying the growing need for synchronization in multi-element systems with

high channel counts. The Model 5503 is highly integrated and optimized for RFSoC designs, allowing engineers to focus on the application itself, saving valuable development time and cost. Its SOSA aligned architecture facilitates interoperability, re-use, and rapid technology insertion.

[Download Datasheet and Request a Quote](#)»

MARKET RESEARCH

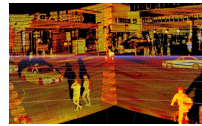### Airborne ISR market to grow to $26.8 billion worldwide by 2026, study says

The global market for airborne intelligence, surveillance, and reconnaissance (ISR) -- estimated at $19.7 billion in the year 2020 -- is projected to reach $26.8 billion by 2026, growing at a combined annual growth rate (CAGR) of 5.1% over the study period, according to a new report from Global Industry Analysts, "Airborne Intelligence Surveillance and Reconnaissance (ISR) -- Global Market Trajectory & Analytics."

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TOP STORY

Next-gen optical sensor design in development for autonomous vehicles

Innoviz Technologies announced that the company will be using Ansys simulation solutions to drive the technology behind their automotive-grade LiDAR sensor to achieve autonomy for their customers.

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PRODUCT OF THE WEEK: Alta Data Technologies' NLINE-U1553 Adapter

This week's product, Alta Data Technologies' NLINE-U1553 MIL-STD-1553 USB 3 SuperSpeed adapter, brings users all the advanced 1553 bus controller (BC), multi-RT (mRT), and bus monitor (BM) controls of card-board-based products via USB connection. It comes in a small, rugged cable assembly that enables the customer to easily connect with standard 1553 jack connectors, or make their own custom cable with a Lemo break-away standard.

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PRODUCT OF THE WEEK: Abaco Systems SOSA aligned, rugged 3U VPX single-board computer

This week's product, the Abaco Systems' SOSA aligned rugged 3U VPX SBC3511 single-board computer (SBC), brings users variability by aligning with defense standards while improving lifecycle and supportability, lowering the total cost of ownership, and reducing risk. The SBC3511's alignment with the SOSA standard, its leading-edge performance, its innovative thermal management, and its monitoring/reporting functionality make it ideal for mission-critical signal-processing applications.

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PODCAST

The current state of military hypersonic programs

Hypersonic weapons and the role they will play in modern warfare are evolving rapidly. Key U.S. programs include the U.S. Navy's Conventional Prompt Strike program and the U.S. Army's Long-Range Hypersonic Weapon program. In

the fourth episode of On the Radar, Emma Helfrich and John McHale discuss the concept of the hypersonic weapon, its history with the Department of Defense as it stands entering the new year, current programs, and more.

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TOP STORY

Wind River to be acquired by Aptiv in $4.3 billion deal

APTIV

Mobility-technology company Aptiv has agreed to acquire mission-critical software provider Wind River (Alameda, California) from private-equity firm TPG Capital for $4.3 billion in cash.

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COTS, open architecture to be designed into Navy combat systems with VTG task order

Engineering firm VTG has won a $20 million task order from the U.S. Navy to modernize the Aegis Combat System through its Technical Insertion 16 (TI16) Sustainment, Installation, Procurement, and Engineering Services contract with the Naval Surface Warfare Center Port Hueneme Division, a field activity of the Naval Sea Systems Command.

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MARKET RESEARCH

UAS software market to grow by 5% yearly to 2029, study says

The global market for unmanned aerial vehicle (UAV) software -- which had a market value of $3.48 billion in the year 2021 -- is projected to experience a combined annual growth rate (CAGR) of 5% in the next several years, according to a new market study by Market Forecast, "UAV Software -- Market and Technology Forecast to 2029."

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TOP STORY

U.S. Army networks to undergo modernization with CACI

CACI International Inc. announced that it won a new five-year, single-award task order, with a potential value of $514 million, to provide network modernization of outside plant (OSP) infrastructure and facilities across major U.S. Army locations within the continental United States.

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TOP STORY

Software-defined radios to enable multi-domain ops for USMC

The U.S. Marine Corps has awarded L3Harris Technologies a competitive 10-year, $750 million single-award indefinite delivery,

TOP STORY

AI-powered sensor fusion for F-35 goal of Intelligent Artifacts contract

Intelligent Artifacts, company specializing in machine intelligence solutions for mission and safety-critical systems, has

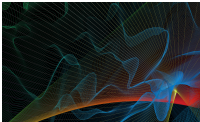indefinitely quantity contract for multi-channel handheld and vehicular radio systems.

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won an Air Force SBIR Phase II award to modernize the mission data file (MDF) build process for the F-35 Lightning II.

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MIL TECH TRENDS

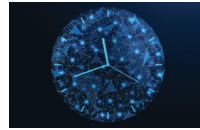## Powering high-performance, ultrareliable RF systems in military electronics

Military radio frequency (RF) systems must be designed to withstand the rigors of the often-harsh environments in which they will be used, while at the same time achieving extremely high performance for mission-critical applications. Low-smoke, zero-halogen, and phase-stable cable assemblies for these RF systems fulfill these high-reliability needs.

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DARPA program seeks to enable timing accuracy without GPS

The U.S. Defense Advanced Research Projects Agency (DARPA) has announced its new Robust Optical Clock Network (ROCkN) program, which seeks to create low size, weight, and power (SWaP) optical atomic clocks that yield timing accuracy and holdover better than GPS atomic clocks and that can be used outside a laboratory.

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Lockheed Martin to support Japan defense with Aegis and SPY-7 integration

Lockheed Martin demonstrated the integration of the AN/SPY-7(v)1 radar into the Aegis Weapon System, completing the processing required to detect, track, and discriminate ballistic missile threats to then guide interceptors to those threats.

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Amphibious Combat Vehicles in development with BAE Systems

The U.S. Marine Corps has awarded BAE Systems a contract modification for the second lot of full-rate production of Amphibious Combat Vehicles (ACVs). The company claims that the contract award of $169 million is for 33 vehicles.

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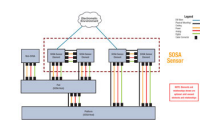## Critical Techniques for High-Speed A/D Converters in Real-Time Systems 12th Edition

An A/D (Analog-to-Digital) converter, frequently abbreviated as ADC, accepts an analog voltage at the input and produces a digital representation of that voltage at the output that's called a "sample".

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Achieving Data Interoperability for Modern Military Forces

Data interoperability (DI), the successful exchange of data between systems, is critical for modern military systems. Without it, actionable information derived from the data cannot be shared among systems and troops, or the shared data may be misinterpreted, such as the identity and/or location of a threat in a battlespace.

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If your supply chain is compromised, the rest of your cyber strategy doesn't matter

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