



The McHale Report, by militaryembedded.com Editorial Director John McHale, covers technology and procurement trends in the defense and aerospace electronics community. [View our archive](#) of recent and past issues of the McHale Report e-mail newsletter.

DRIVING VPX MARKET INNOVATION With the SOSA™ Technical Standard



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PODCAST

Hypersonic weapons, AI, and 5G funding outlined in FY 2022 defense budget request



In the second episode of On the Radar, Emma Helfrich and John McHale discuss the first three of six total highlights pulled from the Innovation and Modernization chapter of the FY 2022 budget request and explain how they may influence the trajectory of military electronics. Topics covered include funding for science and technology research, advanced capability enablers, and space-based systems. With an overall goal of maintaining technological superiority over adversaries, Helfrich and McHale chat about how the DoD is preparing to innovate.

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TOP STORY

AI for military aircraft supported with Series D funding for Shield AI



Shield AI, a defense technology company developing artificial intelligence (AI) and self-driving technologies for aircraft,

announced it has raised \$210 million in equity financing as part of a Series D fundraising round, increasing its valuation past the billion-dollar mark.

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TOP STORY

Avionics solution stack aligned with FACE technical standard



United Electronic Industries (UEI) announced an integrated avionics solution stack aligned with The Open Group Future Airborne Capability Environment (FACE) standard using the certified FACE-conformant Transport Services Segment (TSS) product from Real-Time Innovations (RTI).

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SPECIAL REPORT

Exploiting big data for defense



On the battlefield, time can be a dependable driver and a formidable adversary. For this reason, companies supplying

military electronics are viewing the services' all-encompassing decision-making processes through a data-powered lens in hopes of giving the military one thing: Actionable information in the shortest possible time frame.

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[RF Performance](#)

The [Quartz Model 5553](#) 3U VPX board, based on the Xilinx® Zynq® UltraScale+™ RFSoc Gen 3, provides full sub-6 GHz direct-RF I/O support and greater flexibility with more decimation and interpolation options. The Model 5553 is ideal for 5G and LTE wireless, SIGINT, EW, communications and radar applications. Complementing the RFSoc's on-chip resources are the 5553's sophisticated clocking section for single board and multiboard synchronization, a low-noise front end for RF input and output, 16 GBytes of DDR4, a 10 GigE interface, a 40GigE interface, a gigabit serial optical interface capable of supporting dual 100 GigE connections and general purpose serial and parallel signal paths to the FPGA.

[Download Datasheet](#)

MARKET RESEARCH

Sonar and unmanned tech to propel underwater warfare systems during the next decade, study says



Adoption of integrated sonar suites on technologically advanced surface ships and submarines is expected to propel the sonar segment to garner the largest share (49%) of global spending on underwater warfare systems (UWS) over the next decade, according to a recent study from GlobalData.

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TOP STORY

Hypersonic detection goal of battle management system upgrade



The Missile Defense Agency has awarded Lockheed Martin a \$157 million contract to augment the Command, Control, Battle Management & Communications' (C2BMC) engagement support capability for the Ground-Based Midcourse Defense (GMD) system that protects the U.S. from long-range ballistic missile attacks.

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TOP STORY

MOSA-built digital engineering environment to enable next-gen space systems



Redwire has announced initial operational capability for its investment in a digital engineering environment, the Hyperion Operational Space Simulation Laboratory (HOSS).

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TOP STORY

U.S. Army - FACE and SOSA Technical Interchange Meeting (TIM) Sept. 14



The U.S. Army - FACE and SOSA Technical Interchange Meeting (TIM) is still on for September 14, 2021 at the Von Braun Center in Huntsville, Alabama. This year's event will feature a

TOP STORY

Hypersonic aircraft and propulsion in development with Air Force and Hermeus



The U.S. Air Force is investing in the Hermeus Corporation, a United States-based aerospace company, via a \$60 million jointly funded contract intended to accelerate the

Keynote Speaker and expert presentations on Future Airborne Capability Environment (FACE) and Sensor Open Systems Architecture (SOSA) related topics by a cross-section of the defense community, industry, and academia.

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UNIVERSITY UPDATE

Defense-related research and innovation links Texas A&M and U.S. Department of Defense



The Texas A&M University – founded in 1876 in Brazos County, Texas, to concentrate on the teaching of agriculture and mechanical arts (the “A” and “M” in the university’s name) – continues its push for innovation with recent program launches in tandem with the U.S. Department of Defense (DoD).

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MIL TECH TRENDS

Military displays: Balancing innovation and SWaP-C constraints



Military-display designers continue to face stringent size, weight, power, and cost (SWaP-C) constraints while integrating commercial innovations like HD – and soon 4K – into systems that must work with legacy sensors and interfaces while also complying with a variety of open architectures and standards. Meanwhile, researchers plan for military augmented reality and immersive display solutions for warfighters.

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GUEST BLOG

Three keys to frictionless zero-trust security



The U.S. Department of Defense (DoD) was already headed toward a completely perimeter-less security environment before the COVID-19 pandemic hit. Now, the agency has gone full-fledged into a virtually wide-open landscape where physical constraints that used to exist have been largely eradicated, and new types of threats against its workforce, tools, supply chains, and operations abound.

development of hypersonic aircraft and propulsion systems.

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TOP STORY

Radiation-hardened single board computer for space enters fabrication

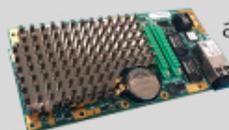


BAE Systems has announced that its radiation-hardened RAD510 System on Chip (SoC) for space-based computing is entering fabrication. Manufactured by GlobalFoundries (GF), the RAD510 SoC will be the core of a single board computer (SBC) designed with twice the performance capability of the RAD750 microprocessor.

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Chassis Manager Optimized for VITA 65/SOSA™ Profiles

The stock VITA 46.11-aligned WABGM0 Chassis Manager enables critical chassis control, maintenance, and security functions, and aligns with the SOSA Standard.



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TOP STORY

OpenLift open architecture avionics suite for UH-60V enters service



The UH-60V Black Hawk helicopter, enabled by the Northrop Grumman Corporation integrated avionics suite, has entered service with the Pennsylvania National Guard's unit at Fort Indiantown Gap.

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TOP STORY

Small Form Factor software-defined radio contract won by Cubic



Cubic Corporation announced its Cubic Mission and Performance Solutions (CMPS) business division won the Small Form

Factor (SFF) Radio Phase 2 task order worth over \$10 million under the U.S. Air Force (USAF) Data Links Enterprise (DLE) indefinite delivery/indefinite quantity (ID/IQ) contract.

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TOP STORY

AI-powered sensing capabilities goal of Sarcos Defense and BAE Systems team



Sarcos Defense, a wholly-owned subsidiary of Sarcos Robotics, and BAE Systems, announced that the companies are partnering to

develop advanced perception and sensing capabilities for autonomous platforms for Air Force Research Laboratory (AFRL), to benefit Department of Defense (DoD) operations.

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TOP STORY

Maxim Integrated Products acquired by Analog Devices to bolster semiconductor production



Analog Devices, Inc. announced the completion of its previously announced acquisition of Maxim Integrated Products, Inc. Under

the terms of the definitive agreement, Maxim stockholders received 0.63 of a share of ADI common stock for each share of Maxim common stock. Maxim common stock will no longer be listed for trading on the NASDAQ stock market.

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GUEST BLOG

The UFO Report, robotic sharks and lobsters, and the Kill Web



On 25 June 2021, the Director of National Intelligence (DDNI) released the much-anticipated UFO report. It's only NINE pages long, and includes the status of 144 UAPs (Unidentified Aerial Phenomena, the new and

improved name for UFOs) collected by the AATIP (Advanced Aerospace Threat Identification Program) from 2004 through the first half of 2021. One of those UAPs was identified as a deflating weather balloon, and the remainder were designated as unknown. There is also a classified version of this report (17 pages long) submitted to congressional Intelligence and Armed Services Committees. I suspect those additional eight pages just contain secret sources and collection

TOP STORY

Global Hawk utilized by Air Force in battle management system exercise



Northrop Grumman Corporation's RQ-4B Block 30 Global Hawk, with imagery and signals intelligence collection capabilities, was utilized by the U.S. Air Force

during Advanced Battle Management System (ABMS) exercises for the U.S. European Command.

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methods rather than additional facts. You can read the unclassified report on the web.

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TOP STORY

Sensor-enabled Camcopter S-100 UAS demoed for the U.S. Navy



Schiebel Aircraft and Areté Associates showcased the CAMCOPTER S-100 unmanned aerial system (UAS) combined with Areté's Pushbroom Imaging Lidar for Littoral Surveillance (PILLS) sensor to the U.S. Navy's Office of Naval Research (ONR).

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TOP STORY

4G-connected UAV shown by Drone Nerds at Xponential 2021



Unmanned-vehicle company Drone Nerds is showing its latest unmanned aerial vehicle (UAV) technology at AUVSI Xponential -- held August 16-19 in Atlanta -- which includes the Parrot ANAFI Ai; Drone Nerds states that the UAV is the first 4G LTE-connected robotic drone.

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SFDR Considerations in Multi-Octave Wideband Digital Receivers



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Electronic warfare (EW) receivers must intercept and identify unknown enemy signals among a congested wideband spectrum of multiple interfering signals without the benefit of dynamic range and sensitivity improvement techniques employed in communications and radar receivers.

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SPONSORED WHITE PAPER

A Security Strategy for Avionics Systems - The Wind River Approach to DO-356A Certification



This paper outlines the principles behind avionics security and shows how Wind River® can help meet the objectives of DO-326A and DO-356A while maintaining strict compliance with DO-178C. The objective of a safe and secure platform is therefore achieved.

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Date: September 8, 11:00 a.m.

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