

THE McHALE REPORT

June 2020



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.

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PODCAST

PODCAST: End of Moore's Law, small sats, custom microelectronics



Small satellites and their reduced size, weight, power, and cost (SWaP-C) requirements are challenging microelectronics

suppliers to deliver the performance of commercial technology while also maintaining reliability. In this podcast, I discuss these challenges with Tom Smelker, vice president and general manager for Mercury Systems Custom Microelectronic Solutions in Phoenix, Arizona. We also cover how artificial intelligence will impact future space applications and what Smelker calls the end of Moore's Law.

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TOP STORY

Advanced sensor, AI, autonomy contract for troops won by BAE Systems



BAE Systems' FAST Labs research and development organization won a contract worth \$3.5 million from Lockheed Martin

to provide Mission Intelligence for Tactical Systems (MITS) advanced sensor fusion, artificial intelligence, and autonomy capabilities for the Defense Advanced Research Projects Agency (DARPA) Squad X program.

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TOP STORY

GaN-based missile defense radars to be produced under Raytheon contract



Raytheon Missiles & Defense, a Raytheon Technologies business, received a \$2.3 billion U.S. Missile Defense Agency production

contract for seven gallium nitride (GaN)-based AN/TPY-2 radars as part of the Terminal High Altitude Area Defense (THAAD) system, which is designed to protect against incoming ballistic missile threats.

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INDUSTRY SPOTLIGHT

Contested space, small sats, and the gamble on COTS in space



Contested space, where nations compete for military dominance outside Earth's atmosphere, is driving many military space

platforms, but commercial space and small satellites continue to change the way the military suppliers of space electronics approach radiation-hardened component design from testing to deployment.

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[Record only signals of interest with ArchiTek FPGA Development](#)

The [Architek™ FPGA Development Suite](#) allows FPGA design engineers to add custom IP to Pentek's Talon recording systems. FPGA IP can be added to the recorder to provide real-time, on-the-fly digital signal processing during the data acquisition process, greatly reducing the time associated with post-processing recorded data. Architek provides a simple development environment that allows engineers to add FPGA IP such as threshold detection, spectral filtering, digital downconversion, demodulation or any other digital signal processing technique required.

TOP STORY

Satellite comms contracts under Blackjack program awarded by DARPA



The Defense Advanced Research Projects Agency (DARPA) has awarded contracts worth a combined \$30.4 million to build payloads and platforms for DARPA's Blackjack program, a project that aims to prove the military utility of low-Earth orbit constellations and mesh networks of low-cost satellites.

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MARKET RESEARCH

U.S. defense budget to remain steady for now, forecast says, with added caveats



Market research firm Forecast International has warned in the past that the impending end of sequestration budget caps would not result in a new spending surge for the Department of Defense (DoD), and this prediction seems to be coming true, according to a statement from the company.

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TOP STORY

U.S. Army directed-energy initiative moves ahead with new contract



Applied Technology Associates (ATA) has won a contract as part of the U.S. Army Directed Energy Maneuver Short Range Air Defense (DE-MSHORAD) prototyping initiative to supply the Independent Target Acquisition and Tracking System (ITATS) for the future system.

FROM THE EDITOR

LIVE: New Military Embedded Systems website

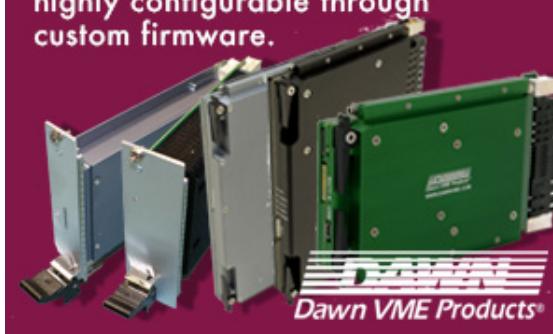


Our new website and new URL: [MilitaryEmbedded.com](#) are now live. We are very excited. A big thank you to our development team, production team, and editorial staff for bringing our new online home together. Check out some highlights and key categories below and then browse away.

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Dawn Powers VPX

Wide range of standard features, highly configurable through custom firmware.



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EDITOR'S PERSPECTIVE

Space market buzz: SpaceX launch, military funding steady



Spaceflight is exciting again. Not that it ever stopped being exciting, but the launch of the Dragon by SpaceX and enthusiasm about watching a new type of rocket take humans into space again might be just a little more inspiring than, say, launching satellites into orbit.

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First F/A-18 Block III Super Hornets delivered to Navy for flight test



Boeing delivered the first two F/A-18 Block III Super Hornets to the U.S. Navy for flight testing. One jet is a single-seat E model and the other is a two-seat F model.

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SpaceVPX and the world of interconnect



Open standards have been driving innovation more quickly to the end user in aerospace and defense applications for decades and now space systems are truly embracing them. A perfect example is the SpaceVPX standard, which leverages the OpenVPX architecture through the interconnect solutions defined in VITA standards. This piece from SpaceVPX founder Patrick Collier and Michael Walmsley of TE Connectivity, the designers of the VPX and SpaceVPX interconnect, covers the basics of SpaceVPX, recent changes, and the importance of the standard interconnect.

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Counterspace security market to reach \$8.95 billion globally by 2025, study says



The counterspace security market -- defined by the U.S. Air Force as those missions that integrate defensive and offensive operations to attain and maintain the desired control and protection in and through space -- is anticipated to reach \$8.95 billion by 2025, according to a recent report by BIS Research, "Global Counterspace Security Market, 2020-2025."

[Read More +](#)**TOP STORY**

Ruggedized drone detection in development for U.S. Air Force



AeroDefense, provider of drone detection technology that detects and locates drones and pilots simultaneously, announced plans to develop a rapidly deployable and ruggedized drone detection system with the U.S. Air Force.

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6U VPX FPGA Board Captures the Entire Spectrum 100% of the Time



The [WILDSTAR 6XBU](#) utilizes 3 UltraScale+ FPGAs and 100GbE capability to deliver ultra-wide bandwidth digitization and processing in a single 6U VPX board.

It is SOSA-aligned and made in USA.

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Saving power and system cost with commercial parts qualified for space applications



Organizations purchasing satellites are on a perpetual quest to extract ever-increasing value from space assets: We see operators of imaging satellites seeking higher image resolution, faster frame rates, finer channel resolution, and more channels to enable advanced multispectral and hyperspectral imaging.

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TOP STORY

Small UAV SATCOM system introduced by Honeywell



Honeywell has launched its smallest, lightest satellite communications system yet, specifically designed for unmanned aerial vehicles (UAV). Weighing one kilogram (2.2 pounds), the new system is 90% lighter than Honeywell's smallest connectivity system and is designed to bring some of the same connectivity capabilities enjoyed by larger aircraft to smaller unmanned vehicles in the air or on land.

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CHARITY

Iraq and Afghanistan Veterans of America



Each issue, the editorial staff of Military Embedded Systems will highlight a different charitable organization that benefits the military, veterans, and their families. This issue we are highlighting Iraq and Afghanistan Veterans of America (IAVA), a nonprofit organization founded in 2004 by Iraq War veteran Paul Rieckhoff to facilitate bringing resources to and community among post-9/11 veterans across the U.S.

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TOP STORY

Aegis combat system to get \$25.1 million update from Lockheed Martin



Lockheed Martin Rotary and Mission Systems has garnered a contract modification worth \$25.1 million from the U.S. Naval Sea Systems Command (NAVSEA) for the design, development, integration, test, and delivery of Advanced Capability Build 20 for the Aegis Combat System Engineering Agent (CSEA) efforts.

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MARKET RESEARCH

Counterspace security market to

TOP STORY

Digital night-vision aid contract for U.S. Navy, Marines awarded to Collins Aerospace



Collins Aerospace Systems (a unit of Raytheon Technologies) has won a contract with the U.S. government to further develop and build digital night-vision systems for U.S. Navy and Marine Corps rotary-wing and tiltrotor crews, the first of its kind, that will enable advanced night vision and display technology and help increase flight safety and mission effectiveness.

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TOP STORY

UAS enhancements demonstrated by GA-ASI



General Atomics Aeronautical Systems, Inc. (GA-ASI) recently demonstrated several expanded automatic takeoff and landing capability (ATLC) enhancements on the MQ-9A Reaper unmanned aerial system (UAS) as part of the ongoing U.S. Air Force contract for MQ-9A modernization.

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TOP STORY

Life cycle analysis of common avionics provided to USAF



KBR announced that it has been awarded a \$33.5 million task order from the U.S. Air Force (USAF) to provide product and life cycle analysis of common avionics for the 638th Supply Chain Management Group (SCMG) and the Air Force Life Cycle Management Center (AFLCMC).

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TOP STORY

DARPA's Automatic Implementation

reach \$8.95 billion globally by 2025, study says



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GUEST BLOG

Unmanned fighter planes (UCAVs) and the kill web



Unmanned autonomous fighter planes are the most interesting elements in the advanced kill web, even more intriguing than the manned super-stealthy 6G fighter planes we discussed in previous articles. UCAVs (Unmanned Combat Aerial Vehicles) have the potential to render our enemy's A2/AD (anti-access/area-denial) strategies completely obsolete. These platforms appear under different names: Loyal Wingman, ATC (Airpower Teaming System), Dark Sword, Taranis, Remote Carriers, nEUROn, and Sidekicks. To understand how they enhance the kill web, we need to look at their specifications and their missions.

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COTS Rugged Computing Solutions

Reducing SWaP in Vetrynics Applications: How CMOSS Enables SOSA

Date: Date: July 15, 2:00 p.m. ET

Sponsored by: Curtiss-Wright, Milpower Source

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of Secure Silicon program selects Synopsys



Synopsys, Inc. announced that the Defense Advanced Research Projects Agency (DARPA) has selected Synopsys as a prime contractor for the Automatic Implementation of Secure Silicon (AISS) program. According to the company, the program's goal is to automate the inclusion of scalable hardware security mechanisms in IP and system-on-chips (SoCs) to explore security versus other design trade-offs.

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TOP STORY

AI threat-detection system gets \$1 million-plus order from U.S. Navy



Edge-computing specialist One Stop Systems (OSS) has won contracts for more than \$1 million in prototype orders for a military airborne artificial intelligence (AI) threat detection system from a U.S. Navy prime contractor; under the contracts, more than \$676,000 in orders have now shipped, with a purchase order for \$350,000 in additional engineering work underway.

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