THE McHALE REPORT

July 2020

The McHale Report, by militaryembedded.com Editorial Director John McHale, covers technology and procurement trends in the defense and aerospace electronics community.
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MIL TECH TRENDS

Tackling the AI paradox at the tactical edge

Artificial intelligence (AI), as the general public understands it, is frequently associated with alluring – and sometimes alarming – ideas of talking robots, champion chess-playing computers, and sentient technology humans shouldn't trust. In the defense industry, however, AI is on the path to becoming a loyal companion to the warfighter and manufacturers alike. As technology progresses, so does the range of defense capabilities that AI could not only supplement, but eventually manage.

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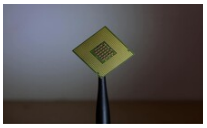
TOP STORY

Analog Devices to buy Maxim Integrated Products in $21 billion all-stock deal



Semiconductor maker Analog Devices, Inc. (ADI) announced that it will buy Maxim Integrated Products for about $21 billion in an all-stock deal.

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TOP STORY

AI, data-analysis framework from BAE Systems gets contract nod from U.S. Army

BAE Systems has signed an initial order with the U.S. Army under the service's Distributed Common Ground System (DCGS) Capability Drop 2 Program -- a multiple-award, indefinite delivery/indefinite quantity contract worth up to $823 million -- under which BAE Systems will provide systems enabling enhanced intelligence to see and better understand threats and other relevant aspects of the operational environment.

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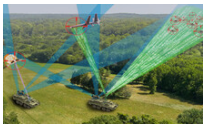
TOP STORY

Counter-UAS system for U.S. Army garners $426 million contract for SRC



Technology and engineering firm SRC has won a contract from the U.S. Army -- worth up to $426 million over the next five years -- to supply the Army with mobile systems that use radar, cameras, jamming technology, and other sensors to detect, track, identify, and defeat hostile unmanned aerial systems (UASs) on the battlefield.

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Accelerate 100GbE Recording with New Talon Recorder for Quartz RFSoC

The RTR 2757 4U 19-inch rackmount recorder complements Pentek's Quartz RFSoC products that stream digitized wide bandwidth signals across 100 GbE. The RTR 2757 captures these streams in real time at rates as high as 12.5 GB/sec. The recorder was designed with performance and rugged environments in mind. It includes up to 122 TB of NVMe storage, removable data drives and operating system drive.

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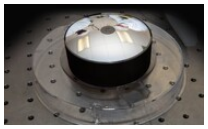
TOP STORY

Small telescopes for nanosatellites subject of research and development agreement



Lawrence Livermore National Laboratory (LLNL) and Tyvak Nano-Satellite Systems (Irvine, California) have reached a cooperative research and development agreement (CRADA) to develop innovative compact and robust telescopes for nanosatellites; it is hoped that In the future small satellites will use the advanced optical imaging payloads to collect information for remote sensing data users.

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MARKET RESEARCH

EW, cognitive technologies key to military embedded systems market over next 10 years, study predicts

Methods that leverage electronic warfare (EW) techniques -- together with the use of artificial intelligence (AI), machine learning (ML), and deep learning (DL) technologies -- will be key to developing autonomous systems that offload some of the data and operational from the warfighter, according to a new market study from Visiongain, "Military Embedded Systems Market Report 2020-2030."

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TOP STORY

AI technology development for combat wins DARPA contract

Aviation research firm Calspan has won a four-year, $14.1 million contract from the Defense Advanced Research Projects Agency (DARPA) to develop full-scale air combat experimentation infrastructure for its Air Combat Evolution (ACE) program.

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TOP STORY

Aircraft simulators now linking F-35 pilots with other platforms

An advance in aircraft simulators, allowing F-35 pilots to link with pilots of other aircraft, was announced on Wednesday by Lockheed Martin. For the first time, Lockheed, the F-35 Joint Program Office, and the U.S. Air Force connected F-35, F-22, F-16, and E3 airborne warning planes in a simulated environment, according to Lockheed Martin.

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MARKET RESEARCH

Technology theft one of biggest challenges for defense industry, study says

The total global defense budget -- estimated at around $1.8 trillion in 2020 -- is expected to grow to more than $2 trillion by 2028, at a combined annual growth rate of

around 3%, according to a study by Market Forecast, "Global Defense Budget Analysis - Forecast to 2028."

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TOP STORY

Cyber research and development contract with Carnegie Mellon extended by DoD, has $2.7 billion value

Carnegie Mellon University has extended its contract with the U.S. Department of Defense (DoD) regarding operation of its Software Engineering Institute -- for an additional term of five years with a value of up to $2.7 billion -- thereby ensuring that the federally funded research and development center (FFRDC) will continue to support national security by advancing and transitioning the science, technologies, and practices needed to make software a strategic advantage for the DoD.

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TOP STORY

COTS EO/IR monitoring solution supporting U.S. warfighters contracted by Space Force

Small-satellite company ASTRA [Atmospheric & Space Technology Research Associates] has won a contract from the U.S. Space Force's (USSF) Space and Missile Systems Center (SMC) to develop and demonstrate an electro-optical/infrared (EO/IR) sensor-driven low Earth orbit (LEO)-based cloud characterization solution using commercial off-the-shelf (COTS) technology to support U.S. warfighter operations.

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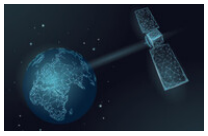
INDUSTRY SPOTLIGHT

Why space needs artificial intelligence



The modern-day revolution in artificial intelligence (AI) is fueled by neural networks, a concept that dates back to the 1950s; this concept has surged in the last decade under its new, much improved, guise called deep learning. Deep learning is empowering systems with unrivaled abilities to perceive their environments visually and to make sense of human language through voice or text. But what do face recognition in family photos or customer-service chatbots have to do with advanced space tech and military intelligence-gathering? Quite a bit, it turns out, and the common denominator is data.

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TOP STORY

RTOS for NASA Dream Chaser cargo spacecraft will be sourced from DDC-I

Mission-critical software provider DDC-I has been chosen to provide its Deos safety-critical real-time operating system (RTOS) for use in a communications subsystem destined for the Dream Chaser Cargo System, which Sierra Nevada Corporation (SNC) is building for NASA.

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TOP STORY

Raven UAS to receive avionics, data link upgrades under Army contract

AeroVironment, Inc., company specializing in unmanned aircraft systems (UAS), announced the U.S. Army exercised the first of three options under the sole source Flight Control Systems (FCS) domain of the Army's multi-year small UAS contract April 28, 2020.

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MARKET RESEARCH

Military GNSS antijam market to grow over next five years, study says

The global market for military GNSS [global navigation satellite system] antijamming systems is forecast to increase at a healthy combined annual growth rate (CAGR) of 7.94% (based on market value) and 10.09% (based on volume) over the years 2020 to 2025, according to a recent study by BIS Research, "Global Military GNSS Anti-Jamming Systems Market."

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TOP STORY

Cybersecurity contract with Corsha signed by USAF to secure mission-critical data-in-motion

The U.S. Air Force's Digital Engineering Enterprise Office (DEEO) has awarded cybersecurity firm Corsha (Tyson's Corner, Virginia) a $1.5 million Phase II Small Business Innovation Research (SBIR) contract for an initiative to deploy the Corsha cloud-native, scalable API Security Platform to secure mission-critical data-in-motion across U.S Air Force platforms.

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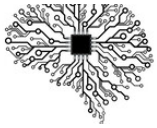
MIL TECH TRENDS

When will artificial general intelligence be ready for smart weapon and sensor systems?



Although AI systems are still quite far from human-like reasoning, recent developments in artificial general intelligence (AGI) are making enormous strides in the right direction. This reality will revolutionize sensors, weapon systems, and other defense embedded systems.

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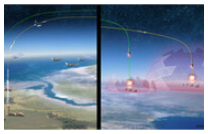
TOP STORY

OpFires program charts another milestone in quest for ground-launched hypersonic missile



Aerojet Rocketdyne reports successful completion of its second series of propulsion-system tests in support of the Operational Fires (OpFires) program, a project spearheaded by the Defense Advanced Research Projects Agency (DARPA) to develop a ground-launched tactical hypersonic missile.

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USAF to get first lot of F-15EX fighter aircraft from Boeing in deal nearing $1.2 billion

The Department of the Air Force has awarded a contract to Boeing -- worth nearly $1.2 billion -- for its first lot of eight F-15EX fighter aircraft, which uses open mission systems architecture to enable the rapid insertion of new technologies intended to keep the aircraft viable for decades to come.

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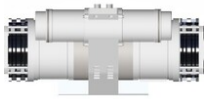
TOP STORY

Hybrid Electric Drive to be integrated

TOP STORY

Heavy UGV can now operate

onto Bradley combat vehicle



BAE Systems has been awarded a $32 million prototype agreement by the U.S. Army's Rapid Capabilities and Critical Technologies Office (RCCTO) to integrate a Hybrid Electric Drive (HED) system onto a Bradley Fighting Vehicle.

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beyond visual line of sight using 5G and 4G

The development of Patria's Heavy Unmanned Ground Vehicles (UGV) has reached a level where the Patria AMV 8x8 vehicle can be operated remotely beyond visual line of sight, utilizing 5G and 4G networks.

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GUEST BLOG

UFOs and the kill web

In late 2013, Combat Aircraft Monthly magazine published an article about the Iranian military's encounters with UFOs (Unidentified Flying Objects). The article states that in November 2004 and again in January 2012, the Iranian Air Force scrambled their fighter planes to intercept unidentified aircraft flying over their secret nuclear facilities.

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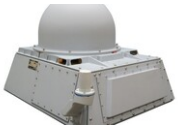
Sharklink communications system to be delivered to U.S. Navy



Cubic Corporation announced its Cubic Mission Solutions (CMS) business division won a sole source, five year contract worth approximately $9 million, from Naval Information Warfare Systems Command (NAVWAR) for the production of Communication Data Link System – Technical Refresh (CDLS-TR) equipment.

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