



The McHale Report, by [militaryembedded.com](http://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.

**KONTRON DEFENSE SYSTEMS**

- ▶ Boards
- ▶ Mission Computers
- ▶ Integrated Systems

**kontron**  
S&T Group

**LEARN MORE**

### PODCAST

## Capturing data from ultra-wide band radar systems



Ultra-wide band radar systems are generating unprecedented amounts of data and require storage systems that can handle the high bandwidth and what can seem like information overload. In this podcast, Chris Tojeira, Recording Systems Director at Pentek discusses the Department of Defense's current ultrawideband radar requirements, how to capture signal data, PCI Express, FPGA advantages, and latency issues. He also takes a look at the future for signal recording and shares an old Commodore 64 story.

[Read More +](#)

### SPECIAL REPORT

## Hypersonics: Making MACH 5 and beyond detectable and defendable



Threats facing the U.S. military are evolving fast – hypersonically fast. At speeds of MACH 5 and greater, hypersonic weapons are becoming increasingly challenging to detect, deter, and destroy. Military-technology manufacturers, however, are refusing to let these light-speed advancements become the Achilles heel for the U.S. Department of Defense (DoD). The methods through which companies in the hypersonic sector plan to ensure domestic confidence in this arena are said to be dependent on innovations like early detection, robust sensor systems, and a better understanding of what exactly makes a hypersonic weapon so lethal.

[Read More +](#)

### TOP STORY

## Open-architecture processors and sensors to equip Army combat vehicles



Lockheed Martin announced that the company will soon begin supporting formal integration and testing of the U.S. Army's combat vehicle protection system intended to keep warfighters safer and more secure from battlefield threats.

[Read More +](#)

### EDITOR'S PERSPECTIVE

## Virtual ETT: Familiar faces, SOSA, VPX



Shared perspectives from embedded COTS suppliers at the annual Embedded Tech Trends (ETT) conference and networking event typically flavor my January/February column each year. Back-to-back twenty-minute press briefings in three-hour periods not only provide column fodder but also help us plan editorial contributions for the coming year.

[Read More +](#)

# [Quartz RFSoc Rugged Small Form Factor Subsystem Ideal for Custom Integrations](#)

The [Models 6350S and 6353S \(Gen 3 RFSoc\)](#), 8-channel A/D and D/A converter subsystems in rugged SFF, utilize the Xilinx Zynq® UltraScale+ RFSoc FPGA and are very suitable for SIGINT, COMINT, EW countermeasures, Radar, SATCOM, LiDAR, 5G wireless applications. The 635xS subsystems cover an input signal bandwidth up to 6 GHz using a 5 GSPS 14-bit A/D with additional decimation settings. The D/A rate is up to 10 GSPS and IP-based decimation filters provide overall DDC decimation from 2 to 128.

[Download Datasheet](#)

## MARKET RESEARCH

### Growth in military ISR technologies driven primarily by rising demand for UASs, study shows



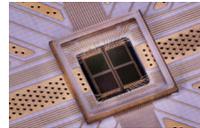
The major growth driver for the global military airborne intelligence, surveillance, and reconnaissance (ISR)

technologies industry has been the rising demand for military drones or unmanned aerial systems (UASs), according to a new study by Visiongain, "Military Airborne Intelligence, Surveillance & Reconnaissance (ISR) Technologies Market Report 2021-2031."

[Read More +](#)

## UNIVERSITY UPDATE

### Unlocking the terahertz band to aid military communications



The clamor for more bandwidth for military use grows louder all the time, especially as 5G [fifth-generation wireless] networks

promise to boost access to mission-critical communications, improve virtual reality/augmented reality tools for troops, and better support autonomous vehicles. In fact, the U.S. Department of Defense (DoD), in its May 2020 report outlining the government's 5G strategy, called 5G broadband a "critical strategic technology" that the U.S. telecommunications industry must master so as to gain "long-term economic and military advantage."

[Read More +](#)

## TOP STORY

### Virtual FACE/SOSA TIM event March 23



Officials from the Future Airborne Capability Environment (FACE) and the Sensor Open Systems Architecture (SOSA) Consortia will

be leading the Open Group FACE and SOSA Consortia Expo & Technical Interchange Meeting (TIM) virtual event next month on March 23, 2021 from 11 am to 4 pm Est.

[Read More +](#)



## TOP STORY

### Adacore acquires Componolit in move to broaden cybersecurity range

## TOP STORY

### Next-gen sonar suite to equip French Navy's ballistic-missile submarines



Software development and verification-tool maker AdaCore announced that it acquired Componolit (Dresden, Germany), effective February 1, 2021.

[Read More +](#)



Thales has announced that with the launch of full-scale development of France's third generation of nuclear-powered ballistic-missile submarines (SNLE 3G), the company is developing a new sonar suite based on disruptive technologies.

[Read More +](#)

TOP STORY

## DoD supply chain to be protected under cybersecurity program



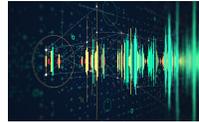
NSF International Strategic Registrations (NSF-ISR) has been authorized by the Cybersecurity Maturity Model Certification

Accreditation Body (CMMC-AB) to offer a new cybersecurity assessment to companies from the aerospace and defense, technology, and software provider industries within the Department of Defense (DoD) supply base.

[Read More +](#)

SPECIAL REPORT

## Redefining sensor-edge processing



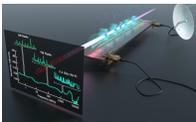
Today's sensor-based systems often fail to perform at their full potential due to loss of fidelity in data processing or discarding data

due to analog bandwidth limitations from the performance trade-offs required to meet size, weight, and power (SWaP) constraints. In addition, the most effective radar and electronic warfare (EW) response techniques demand extremely low latency as the signal transitions from analog RF to digital and back to RF. Heterogeneous 2.5D system-in-package (SiP) technology, a new trend in microelectronics that includes multiple die inside the same package, is proving to be an excellent match for sensor-edge processing requirements, as it integrates high-performance chiplets to support direct digitization of wideband RF signals.

[Read More +](#)

TOP STORY

## Quantum receiver developed by Army researchers detects full RF spectrum



Army researchers at the U.S. Army Combat Capabilities Development Command (DEVCOM) have developed a new

quantum sensor capable of analyzing the full spectrum of radio frequency (RF) and real-world signals, creating new potential for soldier communications, spectrum awareness, and electronic warfare.

[Read More +](#)

## Chassis Manager Optimized for Security and VITA 65 & SOSA™ Profiles

The WILD WABGM0 Chassis Manager is a secure VITA 46.11/SOSA-aligned chassis manager that implements a Xilinx UltraScale+ Zynq and latest Microsemi PolarFire FPGA. Support for MIL-STD-1553 is included.

[Read More +](#)

TOP STORY

## AeroVironment's acquisition of Arcturus UAV to expand unmanned ISR portfolio

AeroVironment, Inc., company specializing in unmanned aircraft systems, announced it had

TOP STORY

## Defense Electronics Consortium launches with U.S. DoD award

Research and development firm Advanced Technology International (ATI) and the U.S. Partnership for Assured Electronics (UPSAE) have created what they call the



completed its acquisition of Arcturus UAV, Inc. a designer and manufacturer of high-performance unmanned aircraft systems (UAS).

The transaction totaled to be approximately \$405 million.

[Read More +](#)

TOP STORY

## Warship sonar domes in development for U.S. Navy and allies



The Naval Surface Warfare Center has awarded Collins Aerospace Systems, a unit of Raytheon Technologies (RTX), a seven-year, \$64 million Indefinite Delivery, Indefinite Quantity (IDIQ) contract to provide sonar domes for surface combat ships for the U.S Navy and Allied forces.

[Read More +](#)

TOP STORY

## LongShot UAV program by DARPA awards initiating contracts



LongShot program, which is developing an air-launched unmanned air vehicle (UAV) with the ability to employ multiple air-to-air weapons, has awarded contracts to General Atomics, Lockheed Martin, and Northrop Grumman for preliminary Phase I design work.

[Read More +](#)

TOP STORY

## Automotive radar for autonomous eVTOL cars funded by USAF



Metawave Corporation has won a prime, Phase One contract by the U.S. Air Force (USAF) to provide a high-precision, all-weather sensing solution for electric Vertical Take-Off and Landing (eVTOL) aircraft.

[Read More +](#)



Defense Electronics Consortium (DEC), an alliance between leading industry and academia experts in the U.S. with the

mission of helping the government identify challenges, needs, and opportunities in defense electronics.

[Read More +](#)

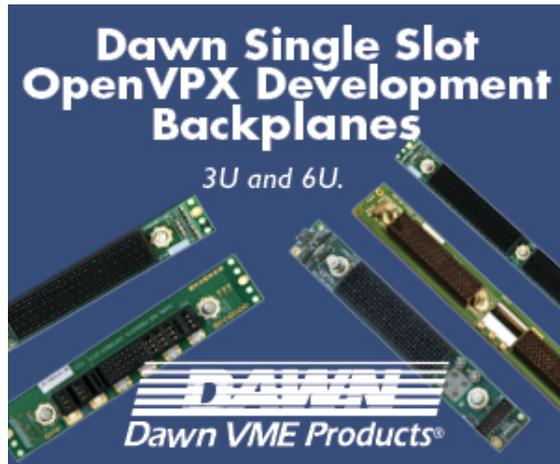
TOP STORY

## AI- and sensor-enabled C-UAS to be reinforced for U.S. Navy



KBR has won a \$92.6 million contract to perform engineering, integration, and sustainment services on counter unmanned air systems (C-UAS) for the Combat Integration & Identification Systems unit within the U.S. Naval Air Warfare Center Aircraft Division (NAWCAD).

[Read More +](#)



TOP STORY

## AI-powered battlefield tools from Elbit Systems will supply British armed services



Elbit Systems UK, the UK subsidiary of Elbit Systems, has won a contract worth approximately \$137 million

(approximately 100 million pounds) with Britain's Defense Ministry to provide the British armed forces with the future target-acquisition solution for Joint Terminal Attack Controllers and Fire Support Teams under the Dismounted Joint Fires Integrators (D-JFI) program.

[Read More +](#)

#### GUEST BLOG

## "Kill TV," decision science, AI, and the Kill Web

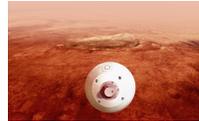


During the night of 7 October 2001, [Central Intelligence Agency] CIA-controlled Predator drone 3034 was flying over a mud-walled compound in Afghanistan, the suspected hideout of Taliban leader Mullah Omar. The infrared (IR) sensors picked-up heat signatures from three vehicles and a motorcycle leaving and heading toward Kandahar. The video images from the Predator were being streamed, via satellite links, to the big flat-screen TVs at Langley, to the offices of military brass at the Pentagon, General Franks' office at central command (CENTCOM) in Tampa, Florida, to the offices of General Deptula in Qatar, and the office of General Jumper, the Chief of Staff of the Air Force. Ordinary soldiers call this video network "Kill TV," for reasons that will become obvious.

[Read More +](#)

#### TOP STORY

## Avionics and comms from L3Harris play role in NASA's imminent Perseverance Rover mission



Avionics and communications technologies from L3Harris Technologies are poised to enable critical links that will connect

NASA's Perseverance Rover -- scheduled to land on Mars tomorrow, February 18, 2021 -- when it lands on the Red Planet and throughout its 10-year life expectancy. Communications tools from L3Harris will transmit data to and from Perseverance by way of relay orbiters that then link with NASA controllers on Earth from up to 250 million miles away.

[Read More +](#)

## 2021 Advantech Partner Connect Event

Our largest AIoT Event of the Year! Over 20,000+ Industry peers expected. Choose Over 21 Sessions over 3 months.

[Register today.](#)

#### GIVING BACK

## Purple Heart Homes



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 Purple Heart Homes, a 501(c)3 public charity that provides housing solutions for service-connected disabled and aging veterans. The nationwide nonprofit organization was founded in 2008 by John Gallina and the late Dale Beatty, two National Guard veterans who had been wounded during service in Iraq.

[Read More +](#)

#### TOP STORY

## Rad-hard integrated circuits by Renesas used on the Hayabusa2 mission



Renesas Electronics Corporation, supplier of advanced semiconductor solutions, announced that its radiation-

hardened (rad-hard) integrated circuits (ICs) were onboard the Hayabusa2 spacecraft that returned asteroid samples to Earth in an armored re-entry capsule on December 6, 2020. Operated by the Japan Aerospace Exploration Agency (JAXA), Hayabusa2 launched onboard the H-IIA rocket from the Tanegashima Space Center on December 3, 2014.

[Read More +](#)

## Increasing Density in Defense Electronic Systems



Defense development technologies and strategies are locked into an international race

for dominance, control and security protection. Effective EW (electronic warfare) systems are dependent upon staying ahead of competitive nations in controlling and protecting data acquisition, information processing, and transmission within the battlefield arena.

[Read More +](#)

## Consider Embedded Electronics When Planning Next Aircraft Design



General computer platform vendors can save aircraft design companies and system integrators

millions in costs and reduce developmental time. These open architecture computing and electronic system suppliers provide blank computer platforms, but perform all the upfront design and processes required to generate all the safety artifacts.

[Read More +](#)

## COTS, C++, and Standards Compliance : Minimize the Pain, Maximize the Quality

**Sponsored by:** LDRA, The Qt Company

[WATCH NOW](#)

