# THE McHALE REPORT

**July 2022**

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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**PODCAST**

## Defense supply chain issues, COTS procurement, MOSA, and more

The procurement challenges facing defense technology companies range from a slow U.S. Department of Defense (DoD) acquisition process to supply chain headaches to when and where to leverage commercial-off-the-shelf (COTS)technology and open architectures. In this podcast, Mike McCormack, President & CEO of CP North America and Mark Kempf, VP Of CP technologies & CP Systems at CP North America discuss these challenges as well as military COTS procurement, the DoD's MOSA mandate, and more.

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**TOP STORY**

## Supersonic aircraft to be built by Northrop Grumman and Boom Supersonic

Northrop Grumman and aviation designer Boom Supersonic (Denver, Colorado) agreed to collaborate on a new supersonic aircraft aimed at enabling quick-reaction aviation capabilities to the U.S. military and its allies.

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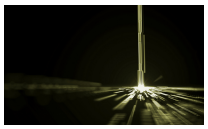
**MIL TECH TRENDS**

## Ruggedization, space constraints an ongoing challenge for military data-at-rest



The battlefield is filled with people, drones, and other systems gathering reams of critical data. Unlike in the commercial environment, there isn't a big, sprawling data center with lots of fans to keep the equipment cool while providing multiple layers of security to protect this data from falling into the wrong hands. This situation creates challenges that many companies are hard at work trying to solve.

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**TOP STORY**

## UAS controlled by laser gets demo

Defense-technology company Qinetiq demonstrated what it says is the world's first successful demonstration of an airborne uncrewed platform (or unmanned aerial system -- UAS) that was controlled by way of a laser communication system.

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GS/sec 14-bit ADCs and eight 10 GS/sec 14-bit DACs, both supporting analog signals up to 6 GHz. Each data converter has built-in digital downconverters or upconverters with programmable decimation and interpolation up to 40x and independent tuning for increased RF flexibility and frequency planning. The Model 7053 is ideal for 5G and LTE wireless, SIGINT, EW, communications and radar applications.

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MARKET RESEARCH

## Global airborne sensors market to reach $14.5 billion by 2030: report

A new report predicts that the global airborne sensors market will grow from $9.2 billion in 2021 to $14.5 billion in 2030, a compound annual growth rate (CAGR) of 5.3%.

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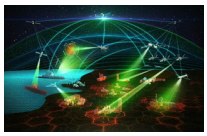
GUEST BLOG

## Key to JADC2: Converging strategic and tactical communications



In March 2022, Deputy Defense Secretary Kathleen Hicks signed the Joint All Domain Command and Control (JADC2) Implementation Plan, noting that JADC2 will be critical as the military works to keep pace with the volume and complexity of data in modern warfare.

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SPECIAL REPORT

## Data in the military metaverse: enterprise terrain management for training

In order to create terrain for high-fidelity simulations used in military training, developers must find accurate source data, build to multiple terrain formats utilizing the same source data to support multiple runtimes, store the data, synchronize the data between customer sites, and adjust the terrain as required by the training scenario. In the past, this has necessitated complex and bespoke terrain development pipelines, and long lead times – but newer solutions are emerging.

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TOP STORY

## Second hypersonic weapon flight test completed by Raytheon, Northrop Grumman

Raytheon and Northrop Grumman have completed a second flight test of the scramjet-powered Hypersonic Air-breathing Weapon Concept (HAWC) for the Defense Advanced Research Projects Agency and the U.S. Air Force, Raytheon Missiles & Defense said in a statement.

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INDUSTRY SPOTLIGHT

## Unified network communications management: the next step to realizing MOSA

The vision of hardware interoperability at the tactical edge, from air platforms to ground vehicles to base stations, is now being realized. Because MOSA [modular open systems approach] is an approach and not itself a standard, solutions that support this vision can be achieved

through many different means as long as interfaces and communications protocols are based on open standards. There remains a key area to address, though, to achieve seamless interoperability between heterogeneous systems.

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VIRTUAL EVENT

## Navigating the legalities of autonomous systems

Leveraging commercial technology and managing risk in military unmanned systems is the subject of a live Q&A with David Michleson, Program Manager, Defense Innovation Unit (DIU); James Poss (Maj. Gen USAF Ret.); and Dawn Zoldi, (Col., U.S. Air Force, Ret.), Founder & CEO of P3 Tech Consulting LLC, in Colorado Springs, Colorado, during Law-Tech Connect Workshop (LTCW) Online virtual event.

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TOP STORY

## Lockheed Martin delivers 1st modernized rocket launch system to U.S. Army

Lockheed Martin has delivered the first Multi Launch Rocket System (MLRS) M270A2 launcher to the U.S. Army, the company announced in a statement.

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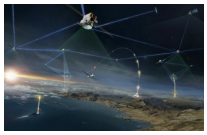
TOP STORY

## Airbus to supply 42 satellites for U.S. military connectivity



Northrop Grumman Corporation has announced that Airbus U.S. Space & Defense Inc. will be the commercial provider of 42 satellite platforms for its proliferated-LEO (low earth orbit) constellation, Northrop announced in a statement.

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INDUSTRY SPOTLIGHT

## Dealing with a real-world thermal triple threat

As increasing numbers of embedded systems are deployed on small platforms, thermal overdesign – or designing for a physically impossible worst case of simultaneous maximums – is becoming a significant issue. It can be addressed, without compromising system viability, by using a real-world focus to define combinations of thermal triple-threat specifications.

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GUEST BLOG

## The Air Force, ABMS, and the Kill Web

So far, we have covered the Army (IBCS), the Navy (CEC), and the Space Force (SF-ABMS) programs. So now it's time to explore what the Air Force is doing to

TOP STORY

## F/A-18 controls 3 UAVs in Boeing-Navy joint test

Boeing and the U.S. Navy recently completed a series of flight tests in which a Block III F/A-18E/F Super Hornet controlled three unmanned aerial vehicles

join the Kill Web. Their primary effort is called ABMS (Advanced Battle Management System), that seeks to connect all their aircraft, weapons, and sensors together into a tactical mesh network where they can talk to each other in real time.

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(UAVs), Boeing said in a statement.

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TOP STORY

## New IFF systems to be integrated into Israeli air defense radars

Sensor company HENSOLDT will deliver Identification-Friend-or-Foe (IFF) products to a subsidiary of Israel Aerospace Industries Ltd. to be used in military air defense radars operated by several nations, HENSOLDT announced in a statement.

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## U.S. Air Force will use P6 Combat Training System at all ranges

The U.S. Air Force (USAF) will use the Collins Aerospace/Leonardo DRS P6CTS as its official air-combat training program and selected the Collins Aerospace Tactical Combat Training System – Increment II (TCTS II) as its preferred solution.

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## Poor Thermal Design Will Cripple Truck-Mounted AI for Autonomous Driving


Overlooking thermal design in today's truck-mounted advanced driver assistance systems can cripple performance, cause critical safety problems, and expose vehicle operators and vendors to liability.

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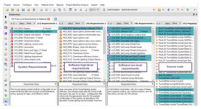
## DO-178C: Get on a High with your Software Development



The guidance document DO-178 "Software Considerations in Airborne Systems and Equipment Certification"1 2 was first published in 1982, re-written in 1992 as DO-178B and updated in 2011 as DO-178C, to reflect the experience accrued to meet today's aviation industry needs.

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## Cooling Systems: Removing Heat from Embedded Electronics Systems

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