

September 2021



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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FROM THE EDITOR

2021 SOSA Special Edition



Welcome to the SOSA Special Edition, which marks the release of the The Open Group Technical Standard for Sensor Open Systems Architecture (SOSA) Reference Architecture, Edition 1.0. This magazine is the first of what will be an annual issue, highlighting editorial content on

SOSA from the pages and website of Military Embedded Systems Magazine, as well as the products aligned and conformant to the technical standard – all put together exclusively by our staff. Learn about it all in the 2021 SOSA Special Edition!

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TOP STORY

Technical Standard for SOSA Reference Architecture, Edition 1.0 released AI



The Open Group Sensor Open Systems Architecture (SOSA) Consortium published the new Technical Standard for SOSA

Reference Architecture, Edition 1.0.

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TOP STORY

COTS-based RF assemblies to equip F-16 Viper Shield digital EW suite



CAES, provider of mission-critical electronic solutions, has been selected by L3Harris Technologies to develop radio frequency (RF)

assemblies for its new Viper Shield all-digital electronic warfare (EW) suite.

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TOP STORY

Mercury Systems agrees to acquire Avalex Technologies



Mercury Systems reports that it has signed a definitive agreement to acquire mission-critical avionics provider Avalex Technologies, which is based in Gulf Breeze, Florida.

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[Immediate Availability of Higher Bandwidth Gen 3 RFSoc Solutions](#)

The [QuartzXM Model 6003](#), 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 QuartzXM Model 6003 is ideal for 5G and LTE wireless, SIGINT, EW, communications and radar applications in SWaP-critical environments. Measuring only 2.5 by 4 inches, the QuartzXM Model 6003 8-Channel A/D & D/A Module includes the circuitry needed to maximize the performance of the Gen 3 RFSoc. The Model 6003 can be used as a QuartzXM module, SOSA aligned 3U VPX, 3U VPX, PCIe and a SFF Rugged Enclosure.

[Download Datasheet](#)

MARKET RESEARCH

Military EO/IR systems market to reach a value of \$12.9 billion by 2031, study says



The global military electro-optical/infrared (EO/IR) systems market, valued at \$9.2 billion in 2021, is anticipated to reach a value of \$12.9 billion by 2031, a combined annual growth rate (CAGR) of 3.43%, according to a new study from GlobalData, "Global Military Electro-Optical/Infrared (EO/IR) Systems Market to 2031."

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TOP STORY

Sensors for U-2 planes from Collins Aerospace get nod from U.S. Air Force



Collins Aerospace has won an indefinite delivery/indefinite quantity (ID/IQ) sustainment contract for the U.S. Air Force (USAF) U-2 reconnaissance aircraft program with a ceiling value of \$493 million to support the USAF's installed U-2 electro-optical/infrared (EO/IR) sensors.

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SPECIAL REPORT

Automation, digitization, and GaN drive shipboard radar upgrades



Threats facing the U.S. Navy and U.S. Marine Corps are evolving rapidly, making innovations in early-warning architectures critical. Shipboard radar systems are progressing far quicker than what was previously possible because of the exploitation of modern-day technologies like gallium nitride (GaN) components and continuous software deployment, automated testing, and digitization. To better enable the development of these systems, naval researchers and electronics providers are looking to utilize commercial off-the-shelf (COTS) products, open architectures, and even artificial intelligence (AI) and machine learning (ML).

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MIL TECH TRENDS

MOSA provides the flexibility the DoD needs to modernize the battlespace



Faced with operating across an increasingly complex and contested battlespace, the U.S. Department of Defense (DoD) must innovate at pace to successfully counter emerging threats around the world. Central to the DoD's multidomain strategy is the Modular Open Systems Approach (MOSA) – a concept enabling the U.S. Army, Navy, and Air Force to rapidly integrate best of breed subsystems on board any platform type in any operational environment.

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TOP STORY

T7 robots by L3Harris chosen to protect global U.S. Air Force bases



The U.S. Air Force has chosen L3Harris Technologies robots to help protect its bases around the

world with a 10-year, \$85 million, IDIQ contract to produce up to 170 T7 robots to replace its existing 20-year-old Explosive Ordnance Disposal (EOD) system, which mitigates explosive threats at bases.

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Small Form Factor VPX Packaging



Conduction cooled packaging for EW and ISR applications

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LCR

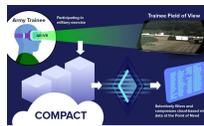
EMBEDDED SYSTEMS, INC.

SOSA

OpenVPX

TOP STORY

Virtual reality architecture developed for Army by Charles River Analytics



Charles River Analytics developed a Compressed Parallel Architecture for augmented reality (AR)/virtual reality (VR) training in data-constrained terrain (COMPACT) for the U.S. Army.

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TOP STORY

Active Flow Control tech by BAE Systems selected by DARPA for CRANE program



The U.S. Defense Advanced Research Projects Agency (DARPA) awarded a contract to BAE Systems to design a full

scale demonstrator concept with Active Flow Control at its core. The aircraft's ability to maneuver in flight without conventional flight control surfaces could enable improved performance, maintainability, and survivability.

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INDUSTRY SPOTLIGHT

Semiconductor supply-chain challenges



Military suppliers, being essential businesses, weathered the pandemic and economic shutdowns admirably thanks to strong defense funding. Yet even this stalwart industry is feeling the ill effects of the global chip shortage and the consequences of its reliance on offshore semiconductor manufacturing. The U.S. government is committed to returning chip production to the States, but whether that move will be enough and in time to save the industry is yet to be determined.

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TOP STORY

Open architecture ground-based weapon system in development for Army



Dynetics, a wholly owned subsidiary of Leidos, has won a contract by the U.S. Army Program Executive Office Missiles

and Space for the Enduring Indirect Fires Protection Capability (IFPC) to produce its mobile ground-based weapon system.

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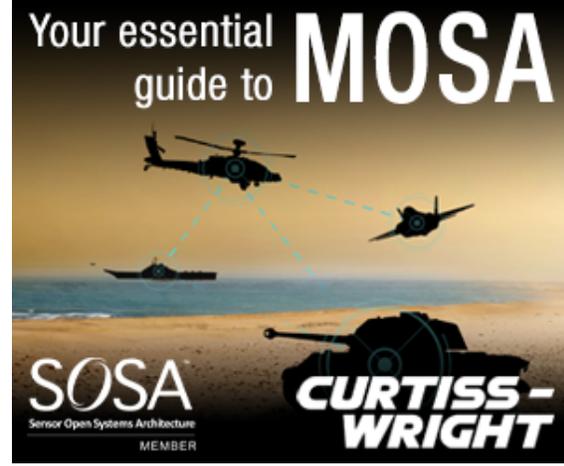
TOP STORY

5G and edge computing maritime solutions to be researched by AT&T and NPS



AT&T and the Naval Postgraduate School (NPS) have entered into an agreement to explore and develop 5G and edge computing-based maritime solutions aimed at benefitting national defense and homeland security among others.

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TOP STORY

Multi-orbit, software-defined SATCOM capability demoed by Hughes and SES



Hughes Network Systems and SES announced the first demonstration of a new multi-orbit satellite communications

(SATCOM) capability for remotely piloted aircraft (RPA).

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TOP STORY

Thermal management contract for NASA's VIPER mission won by ACT



NASA has awarded Advanced Cooling Technologies, Inc. (ACT) a \$3.7 million contract to finalize the design and fabricate the flight thermal control system for the Volatiles Investigating Polar Exploration Rover (VIPER).

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INDUSTRY SPOTLIGHT

Demand for digital is on the rise and military organizations are responding in quick time



Despite an uncertain business climate, defense spending in the upcoming years is forecasted to remain in alignment with previous years; in some regions the figure is even escalating. Three specific initiatives will drive the future of defense logistics and build that all-important digital backbone for military – live-asset usage data, disconnected or “anywhere” military operations, and sustainability goals.

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TOP STORY

Radio reconnaissance system to be delivered to NATO countries



The sensor solution provider HENSOLDT announced it is supplying a mobile system for tactical radio reconnaissance to two NATO countries. A corresponding order worth an undisclosed amount has now been signed.

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TOP STORY

AI-powered electro-optical sight to provide intuitive combat info



Elbit Systems announced the unveiling of the ARCAS, a built-in computerized artificial intelligence (AI) powered system that

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 --

interfaces with the rifle's electro-optical (EO) sight, with a helmet mounted eyepiece and with the rifle's assemblies, to provide soldiers with real-time intuitive actionable combat information.

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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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SPONSORED WHITE PAPER

Small and Mighty Solutions for Armed Forces



As the World accelerates deeper into the Information Age, emerging technologies are unlocking game-changing capabilities for armed forces seeking to conduct multi-

domain operations, particularly against peer and near-peer adversaries.

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