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MIL TECH TRENDS

SOSA Technical Standard will benefit systems of all kinds

ANDREW MCCOUBREY, CURTISS-WRIGHT

The standards currently being defined by the Sensor Open Systems Architecture (SOSA) Consortium will deliver many clear benefits to system integrators designing embedded sensor-processing systems. The SOSA Technical Standard will define common pinouts that foster and ease interoperability. Greater system flexibility will come from the ability to place a variety of module types into the same system slot, while convergence on common interconnect technologies (such as backplane Ethernet) will ease the integration of modular systems.

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SPECIAL REPORT

Hypersonics: Making MACH 5 and beyond detectable and defensible

EMMA HELFRICH, TECHNOLOGY EDITOR

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.

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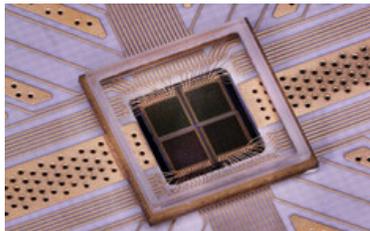
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TECHNOLOGY UPDATE

Unlocking the terahertz band to aid military communications

LISA DAIGLE, ASSISTANT MANAGING EDITOR

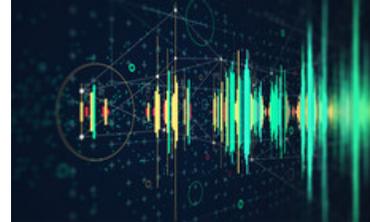
The clamor for more bandwidth for military use grows louder all the time, especially as 5G [fifth-generation wireless] networks promise to boost access to mission-critical communications, improve virtual reality/augmented reality tools for troops, and better support autonomous vehicles. In fact, the 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."

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Redefining sensor-edge processing

TOM SMELKER, MERCURY SYSTEMS

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.



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GIVING BACK

Giving Back -- Purple Heart Homes

LISA DAIGLE, ASSISTANT MANAGING EDITOR

Each issue, the editorial staff of Military Embedded Systems will highlight a different charitable organization that benefits the military, veterans, and their families. We are honored to cover the technology that protects those who protect us every day. To back that up, our parent company – OpenSystems Media – will make a donation to every group we showcase on this page.

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TECHNOLOGY UPDATE

The path to 5G for military use

REZA MOHAMMADI, PER VICES

With ever-improving user mobile devices, network infrastructure must also be improved and developed at a similar rate. Every generation of communication standards has improved data throughput and latency, and 5G is no different. This new standard will pave the way for new applications and increase data throughput of cellular networks tenfold. 5G for the military is expected to – among other uses – improve intelligence, surveillance, and reconnaissance (ISR) systems and processing; enable new methods of command and control (C2); and streamline logistics systems for increased efficiency.

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MIL TECH TRENDS

Emerging threats drive RF and microwave component design trends for electronic warfare

SALLY COLE, SENIOR EDITOR

To address emerging electronic warfare (EW) threats, which are becoming increasingly more agile and moving up the spectrum, radio frequency (RF) and microwave component designs are also evolving.

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Increasing Density in Defense Electronic Systems

OMNETICS CONNECTOR CORPORATION

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.

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Mil Tech Virtual: Solving cybersecurity, AI, and open architecture challenges in defense electronics

AITECH SYSTEMS

In this episode of the Mil Tech Virtual Toolbox, we spoke with Duc Huy Tran, VP of Global Marketing with Aitech Systems about tools for enabling cybersecurity in military embedded systems and how artificial intelligence (AI) and open architecture initiatives such as the Sensor Open Systems Architecture (SOSA) are changing the defense electronics landscape.

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Consider Embedded Electronics When Planning Next Aircraft Design

ABACO SYSTEMS

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.

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