Military EMBEDDED SYSTEMS

E-Letter
DECEMBER 2021

MIL TECH TRENDS

CMOSS: Building-block architecture brings speed, cost benefits

SALLY COLE, SENIOR EDITOR

The C4ISR/Electronic Warfare Modular Open Suite of Standards (CMOSS) enables engineers and developers of systems used by the warfighter to move toward much faster technology insertions and refreshes, with a corresponding reduction in long-term life cycle costs.

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SPECIAL REPORT

Soldiers in GPS-denied environments require sensor-powered navigation tech

EMMA HELFRICH, TECHNOLOGY EDITOR

Knowing your exact location, how you got there, and how to get back are luxuries that the military on the move doesn't always have the option to exercise. The satellite-based Global Positioning System (GPS) – such a staple of modern navigation – is undeniably a technological feat but can become an exploitable weakness when manipulated by an adversary. Technologies designed to operate in GPS-denied environments are being engineered in response to the U.S. Department of Defense's (DoD's) need to operate in areas where navigational infrastructures simply cannot exist.

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TECHNOLOGY UPDATE

GPS-denied navigation expands the threshold for mission-critical drone use cases

CHAD SWEET, MODALAI

Conducting reconnaissance in inhospitable environments is nothing new for the U.S. military. Yet as foreign threats on the ground become both more sophisticated and more remote, the challenge of gathering intelligence in dangerous, hard-to-reach locations requires an approach that maximizes critical data collection while minimizing risk to live personnel.

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SPECIAL REPORT

Preserving operational capabilities by hardening GPS

JUSTIN WYMORE, BAE SYSTEMS

The modern battlespace has changed over the past decade, and the military use of GPS to deliver critical

positioning, navigation, and timing (PNT) information to warfighters faces challenges from adversaries' threat systems. GPS continues to be relevant for the U.S. military and its allies, even when used in a GPS-denied environment. Existing and future military GPS solutions must especially consider those uses designed for handheld and ultrasmall applications where size, weight, power, and cost (SWaP-C) are all key considerations.

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GIVING BACK

GIVING BACK: Veterans Coalition for Vaccination

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.

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FROM THE EDITOR

Mike Hopper's impact on media and VME's beginnings

JOHN MCHALE, EDITORIAL DIRECTOR

We're on the eve of celebrating of OpenSystems Media's 40th anniversary with the 40th birthday of our first

publication, VMEbus Systems, which directly follows the 40th anniversary of the VMEbus standard this year. However, the celebrations are bittersweet as we also mourn the loss of one of our company's founding partners and the father of our current President Pat Hopper: Mike Hopper. Mike passed away on October 24. He was 84.

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MIL TECH TRENDS

Securing telemetry data with commercial encryption standards

PAUL COOK, CURTISS-WRIGHT

Telemetry data from military flight tests often needs to be secured, not only when at rest, but also while in motion across a network or a telemetry link.

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New Supercomputer Enables Rugged, Real-Time AI at the Edge

ONE STOP SYSTEMS (OSS)

The current generation of AI compute platforms fail to integrate and optimize high performance computing with compact, rugged form factors. They force program managers to trade performance for rugged design or vice versa. OSS designed the new Rigel: Edge Supercomputer to overcome these shortcomings.

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PODCAST: Delivering semiconductor supply chain integrity through industry partnerships

MICRON TECHNOLOGY & MERCURY SYSTEMS

Experts from Mercury Systems and Micron Technology sat down to discuss how they deliver memory products with semiconductor supply chain integrity in the Mercury Now Podcast, titled Delivering semiconductor supply chain integrity through industry partnerships.

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Anti-Tamper Benefits of Encrypted Helper-Data Images for PUFs

RAMBUS

PUFs are mixed-signal circuits which rely on variations unique to a specific chip to self-generate a digital “fingerprint.” Most PUFs require a “helper-data” image that is generated during the initial digitization process, also known as Enrollment.

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