**MIL TECH TRENDS**

## Making software FACE-conformant and fully portable: Coding guidance for Ada

BENJAMIN BROSGOL, ADACORE

The FACE [Future Airborne Capability Environment] approach to reducing life cycle costs for the military is based on reusing software components across different platforms and airborne systems. The FACE Technical Standard addresses this issue through a reference architecture and data model, well-defined interfaces, and widely used underlying industry standards (IDL, Posix, ARINC-653).

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**SPECIAL REPORT**

## COM-HPC for military: Opportunities and challenges

JOHN REIS, ADVANTECH

The U.S. military is constantly in search of technology that will lead to improving military capabilities while minimizing the risk to the warfighter. The COM-HPC standard promises to increase the functionality of edge computing and usher in new applications that will forever change the way military operations are conducted. There exist multiple opportunities as well as some challenges related to the adoption of COM-HPC for military use.

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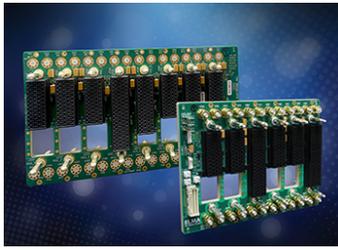
TECHNOLOGY UPDATE

## Commercial Solutions for Classified (CSfC) – A primer

JONATHAN KLINE, STAR LAB

The National Security Agency's (NSA's) Commercial Solutions for Classified (CSfC) program enables integrators to leverage two distinct CSfC-approved commercial off-the-shelf (COTS) components to protect classified data at rest or in transit. Prior to the introduction of CSfC, programs with classified data requirements had to either develop or use an existing Type-1 solution.

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PODCAST

## Short VPX and the military's demand for smaller form factors

JOHN MCHALE, EDITORIAL DIRECTOR

Reduced size, weight, and power (SWaP) requirements

are pervasive throughout defense electronics platforms. Electronic footprints continue to shrink so much that traditional small form factors like 3U VPX or 3U CompactPCI are considered too big. So, it's not surprising that the VITA Standards Organization (VSO) is looking at new form factors, such as Short VPX. In this podcast, Jay Grandin, Vice President of Product Development at Annapolis Micro Systems discusses demand for small form factors, how Short VPX can meet that demand and how it fits into the Open VPX ecosystem.

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**GIVING BACK**

## Giving Back -- ThanksUSA

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**

## Virtualization: A FACE lift for vehicle control

WILL KEEGAN, LYNX SOFTWARE TECHNOLOGIES

As a testament to the celebrated success of FACE (Future Airborne Capability Environment), mandatory conformance requirements for mission-system software have flowed down for nearly every applicable military program since the publication of FACE 2.0. But even as FACE informs and guides all aspects of software design for tactical mission systems (communications, flight control, flight map and planning, cockpit displays, etc.), the world of vehicle control harbors reservations about FACE adoption. The imperative to deliver safety critical, hard real-time control systems has raised concerns about technical feasibility impeded by the complexities inherent to the FACE multicore Operating System Segment (OSS).

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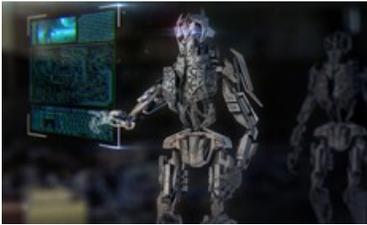


**BLOGS**

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

RAY ALDERMAN, VITA TECHNOLOGIES

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 drone pilot, and the weapons officer controlling the two on-board Hellfire missiles, were sitting in a trailer on the grounds of CIA-headquarters (HQ) in Langley, Virginia.

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## Development Tactics and Techniques for Small Form Factor RF Signal Recorders

PENTEK

This paper describes the engineering considerations and design techniques used to develop a small form factor rugged recorder that can handle the extremely high data rates associated with very wide bandwidth RF signal recording. It is intended to provide engineers with ideas on how to bring this capability into confined and often extreme environments while focusing on military specification compliance, SWaP and ease of use with confidence.

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## Electronic Warfare Sensor Processing in a SWaP-constrained Environment

ABACO SYSTEMS

Electronic warfare relies extensively on sensors across the electromagnetic spectrum – signals such as radio, infrared or radar – to provide 360-degree situational awareness and advanced signals intelligence while denying the enemy the opportunity to do the same or to prevent the enemy from disrupting friendly use of the spectrum.

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