Webcast Titles & Abstracts

Avionics

Hardware/Software Reuse Solutions for Modern Avionics Systems

Modern and future avionics systems for commercial and military applications are based on open architectures and will be leveraging reuse of hardware and software elements via common interfaces for hardware and common application programming interfaces (APIs) for software. Driving this trend are Initiatives borne out of the U.S. Department of Defense such as the Future Airborne Capability Environment (FACE) for software, the Hardware Open Systems Technologies (HOST) and Sensor Open Systems Architecture (SOSA) for hardware. This webcast of industry experts will detail how these reuse initiatives can benefit avionics systems from a hardware and software perspective, reducing long-term life cycle costs and speeding up technology insertion.

Managing avionics safety and security requirements

When ensuring digital cockpit systems are properly certified for safety and meet cybersecurity guidelines one has to start with requirements. The complexity of avionics systems will only increase as more technology is added whether due to navigation, connectivity, synthetic vision, and other tech improvements. Marry that with shorter time-to-market demands from integrators and you have not only design a challenge but cost and time pressures as well. This webcast of industry experts will look at solutions that help designers get safety and security requirements right at the beginning, common errors to avoid, cost saving methods, and more.

Reaching DAL A Certification for COTS Hardware, Software to DAL A

Designers of modern avionics systems are leveraging technology such as multicore, graphics processing, and other key commercial-off-the-shelf (COTS) technologies. The performance benefits these innovations bring to the flight deck are game changing, however challenges remain when it comes to the safety certification process — getting these technologies and systems certified to Design Assurance Level (DAL) A. This webcast of industry experts will cover methods for certifying COTS technology such as multicore solutions, GPU hardware, avionics graphics applications, and more.

Unmanned aircraft safety certification and requirements challenges

Enabling safety certification and getting the requirements right for unmanned aircraft continues to be a challenge as the civilian authorities still do not have consent on what the rules will be for drones that fly in national airspace -- be they military or civilian. the avionics and other flight control-related electronics will have to comply with FAA safety certification standards such as DO-178 C for software and DO-254 for hardware. Hurdles still remain for getting these systems certified and this webcast of industry experts will discuss these problems and methods for solving them.

Unmanned aircraft and safety certification: What to do

It's safe to say the genie is out of the bottle and drones are part of the airspace as the FAA and other international civil agencies try to keep pace in terms of regulations and safety requirements. Flight control technology for manned aircraft is well established and has many processes in place for enabling safety certification of avionics hardware and software via standards such as DO-178C and DO-254 aircraft. But what about unmanned aircraft systems (UASs)? They are now part of the national airspace, but the requirements when it comes to safety certification are not well defined. This webcast of industry experts will cover how to navigate this undefined space for avionics suppliers and enable certification solutions for UAS platforms.

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Military

Air Force, Army, Navy Convergence on Military Open Architectures

The defense acquisition community is looking to reduce costs and development time via open-architecture principles in a practical and consensus-driven way with all three services Air Force, Army, and Navy working together. This tri-service convergence effort set itself up for success since it is driven by the end user in the acquisition community, tied to specific programs. Open architecture initiatives such as the Hardware Open Systems Technologies (HOST) and Modular Open Radio Frequency (RF) Architecture (MORA) are all feeding into the Sensor Open Systems Architecture (SOSA). This webcast with Naval Air Systems Command (NAVAIR) representative Michael Hackert and Jerry Gipper, Executive Director of the VITA Standards Organization will cover how these efforts will reduce life cycle costs and enable reuse. Expert Speakers: Michael Hackert, NAVAIR and Jerry Gipper, Executive Director of the VITA Standards Organization.

CSFC: Protecting Classified, Top Secret, and Secret Data Via Commercial Solutions

Commercial Solutions for Classified (CSfC) is part of the National Security Agency's (NSA's) commercial cybersecurity strategy to leverage commercial technology to protect national security systems. CSFC simultaneously implements two compliant commercial security components in a layered solution to protect the data. This webcast of industry experts will discuss how CSFC enables use of commercial-off-the-shelf (COTS) solutions to reduce long-term costs, enable faster deployments, improve flexibility and transparency while also leveraging open architectures and open standards.

Driving the heat out of embedded military systems: Reducing thermals

Radar, electronic warfare, and intelligence, surveillance and reconnaissance (ISR) systems all depend heavily on superior signal processing solutions that often leverage commercial processors, graphics processors, FPGAs, etc. These devices provide unprecedented performance but also create headaches for military embedded systems designers when it comes keeping the systems cool enough for intensive military processing applications. Reducing the thermals in these systems is critical in military applications that ever-shrinking size, weight, and power (SWaP) requirements. This webcast of industry experts will discuss the thermal challenges in modern military electronics applications and how to overcome them.

Enabling Artificial Intelligence in Military Systems

Artificial intelligence (AI) and machine learning are revolutionizing many industries, but how are they improving the efficiency of warfighters and the electronic systems they rely on to their jobs such as in managing the data generated by communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) technology across multiple domains – air, cyber, ground, sea, and space. This webcast will cover how embedded electronics and open standards enable artificial intelligence solutions in embedded military systems such as radar, sensor processing, electronic warfare, C4ISR.

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Enabling open architectures in military ISR, radar, electronic warfare systems

Experts from all three services – Air Force, Army, and Navy – are working together with industry to enable open architectures in intelligence, surveillance, reconnaissance (ISR), radar, and electronic warfare systems. Their efforts through initiatives such as the Sensor Open Systems Architecture (SOSA) and the Hardware Open Systems Technologies (HOST) reduce long-term life-cycle costs and development time. This webcast with industry experts cover how these initiatives are reshaping the defense electronics procurement world.

Leveraging GaN technology for military radar applications

Gallium Nitride (GaN) technology is enabling more and more performance benefits for military radar systems especially in active electronically scanned array (AESA) radar systems. This webcast of industry experts will cover the benefits of GaN, how it performs better than other technology such as LDMOS, and how to integrate it into new military radar designs.

Leveraging artificial Intelligence and machine learning for military systems

Innovation in today's military systems – whether flight systems, cybersecurity, electronic warfare, radar, etc., – often comes from leveraging commercial technology. This is very true when it comes artificial intelligence (AI) and machine learning (ML), game changers in many industries. Defense leaders are looking to leverage AI and ML to improve the efficiencies of their systems and help them deal with ever more complex adversaries. This webcast will cover how embedded electronics designers are bringing AI/ML techniques to military systems such as radar, electronic warfare, cyber, etc.

Navigating Safety Certification requirements for COTS Hardware and Software

FAA and EASA safety certification regulations such as DO-254 and DO-178C are getting harder to navigate as embedded designers seek to get commercial-off-the-shelf (COTS) hardware and software such certified to the highest level. Avionics solutions such as graphics boards, multicore products, FPGAs, and other products bring unprecedented capability to the cockpit but also add complexity. This webcast of industry experts will discuss today's safety certification challenges for military and commercial avionics systems and how to overcome them.

Reducing SWaP-C In Electronic Warfare and Radar Systems

Reduced size, weight, and power - cost (SWaP-C) describe nearly every military program’s requirements for electronics — be they tech refreshes or new designs. System integrators want solutions with increased performance, lower power, and lower costs and they want them in the same or smaller footprint as the previous design. This is especially true in electronic warfare and radar systems. This webcast of embedded computing experts will cover how they are handling these challenges as well as the innovations that enable reduced SWaP-C in these applications.

Signal processing and the sensor chain

The military sensor chain that enables effective intelligence, surveillance, and reconnaissance (ISR) missions relies heavily on embedded signal processing systems that are based on open standards such as VPX and others. This webcast of industry experts will cover the how commercial signal processing solutions – be they Intel processors, FPGAs, or custom ASICs – enable increased performance within the ISR sensor chain.

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Signal Integrity in Military Radar and Electronic Warfare Systems

As military radar, signals intelligence (SIGINT) and electronic warfare systems get more complex so does the associated signal integrity challenges. These signal integrity concerns didn't even exist 10-15 years ago. Today as signal density for connectors continues to get tighter as footprints get smaller problems such as crosstalk and geometry of launch greatly affect backplane performance. This webcast with VITA Technical Fellow Bob Sullivan will address these challenges and how VITA standards and open architecture solutions are helping solve them.

Solving Big Data Challenges Through Signal Processing and AI technology

Thanks to modern sensors, networked communications, wearable computing today's warfighter is inundated with data whether piloting a jet, performing Special Operations, or analyzing data from an unmanned aircraft's ISR payload. To avoid being overwhelmed, they need the data to be filtered reliably, and in real-time with useful intelligence, otherwise the warfighter can't perform accomplish mission successfully. This webcast of industry experts details how artificial intelligence (AI) and deep learning solutions fueled by embedded signal processing systems can solve the challenges in collecting, analyzing, and categorizing data.

Consortium

FACE Technical Standard, Solving Portability and Affordability Challenges in Avionics

Currently about 70% to 90% of aircraft avionics capability is implemented in software. That level is unaffordable and unsustainable. The Future Airborne Capability Environment (FACE) Technical Standard was developed to reduce cost and time to fielding of avionics systems via reuse of software APIs. This webcast of industry experts will discuss how FACE accomplishes that, how FACE tackles the multicore challenge, deals with safety certification mandates, and more.

** This webcast is open to members of the FACE Consortium.*

How SOSA Works with OpenVPX To Enable Interoperability In Radar, EW Systems

The Sensor Open System Architecture (SOSA) Consortium — led by the Air Force, Army, and Navy — reduces costs and development time by applying open-architecture principles in a practical and consensus-driven way for new C4ISR, radar, and electronic warfare platforms. The strong ecosystem behind VITA 65 — OpenVPX — is also playing a part in the development of the SOSA Technical Standard. This webcast of industry experts will cover how OpenVPX standards are playing within SOSA and how SOSA is impacting OpenVPX such as SOSA's work on the VITA 46.11 chassis.

** This webcast is open to the members of the SOSA Consortium.*