



FACE™ Exhibit Agenda



Tuesday, 17 October 2017

Booth #2-#3: US Army AMRDEC & US Army PEO Aviation

Description: PEO Aviation (and the AMRDEC serving as their engineering agent) demonstrate a series of efforts aligned to the FACE Technical Standard that mature the Army's understanding of applying and evaluating capability enabled by FACE aligned software. These demonstrations include the Crew Mission System, the Future Open Rotorcraft Cockpit Environment, the internationally-focused Alignment of Open Systems Architectures, and others.

Booth #4: Lockheed Martin

Description: Lockheed Martin will be demonstrating several integrated software components targeted to the Sikorsky S-97 RAIDER™ helicopter. The exhibit will include a flyable simulator complete with seat, controls, and out the window display. The simulator will showcase elements of the pilot vehicle interface, aircraft systems management, and tactical situation. All software components are developed in alignment with the FACE Technical Standard and integrated using models and tools built to the draft FACE 3.0 Standard.

Booth #5: DornerWorks

Description: DornerWorks Virtuosity™ Hypervisor provides system isolation (CPU, memory, I/O) for cybersecurity, enables multiple simultaneous guest OSs (Linux, VxWorks 7, FreeRTOS, uC/OS), and is aligned to the FACE technical standard. Virtuosity passes the FACE Verification test suite and is supporting integration with US Army FACE BALSAs, USAF R-GEI, GE Aviation Track Manager and Flight Management UoPs. Health Management functionality includes fault logging, guest application destruction, and application restart on multicore embedded platforms. For more information:

www.Xen.world.

Booth #6: AFRL

Description: The USAF booth will be a demonstration of capabilities through SOSA Proof of Concept (SPOC) 1. The demonstration will include a component of AgilePOD that is based on SOSA electrical/mechanical interfaces for EO/IR/SAR fast re-configurability, sample cables and adaptor plates for mechanical components. Additionally hardware processing cards from SOSA (CMOSS/HOST) SBC's, RF Switches, other cards in a OpenVPX chassis that is based on draft specifications from Hardware Working Group being demoed later on this year. Additional 3D printed models may be presented as well.

Booth #7: Infinite Dimensions Integration (IDI)

Description: Infinite Dimensions is demonstrating the Resilient Embedded GPS/Inertial Navigation System (INS) Plug Test Architecture based on the FACE Basic Avionics Lightweight Source Archetype Framework. A hands-on demonstration using the popular Raspberry Pi platform, mounted on a test airplane (a 90-in fixed-wing air vehicle), will be shown utilizing the INTEGRITY-178B tuMP on ARMv8.

Booth #8: Green Hills Software / Mercury Systems

Description: Green Hills Software and Mercury Systems, industry leaders in Mission and Display Computing solutions will be demonstrating their high assurance graphics and multicore software products on Mercury's DO-254 certifiable ROCK-2 BuiltSAFE™ multicore hardware platform. Designed to meet the highest levels of safety-criticality, Mercury's BuiltSAFE GS Multi-Core Renderer and OpenGL Library have been optimized for Green Hills' industry leading INTEGRITY-178 tuMP multicore RTOS, the only RTOS that meets ARINC-653 Supplement 4's requirement for multicore operation (Section 2.2.1). INTEGRITY-178 tuMP is FACE v2.1 aligned for both the Safety Base and Security



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Booth #9: Textron

Description: Textron Systems presents Synturian, a modern control software capable of controlling multiple unmanned vehicles simultaneously. Synturian is developed as a collection of services respecting OA principles while providing scalability and flexibility to handle multiple domains of unmanned vehicles (e.g Air, Surface). Synturian's modular and intuitive control and collaboration technologies empower situational awareness and deliver situational understanding to the point of action.

Booth #10: Esterel Technologies

Description: Esterel provides SCADA System, based on the FACE metamodel, to describe the architecture, SCADA Suite to design controls UoPs, and SCADA Display for HMI UoPs. The SCADA code generators are certified for DO-178C. Esterel provides a complete solution for developing ARINC 661 user applications and the automatic generation of the A661 server within the graphical services.

Booth #11: Kihomac

Description: KIHOMAC has participated in the FACE™ Consortium since 2013 including presenting previous work during the February 2016 Exposition/TIM in Huntsville, AL and a current RIF activity. Future activities could involve KIHOMAC's ASPD/Airworks selection. For the NAVAIR event, KIHOMAC will discuss the RMSI sustainment effort aligned to Technical Standard 2.0 and activity in modeling, multicore, high speed data, and Distributed I/O.

Booth #12: Vector Software

Description: Vector Software will be showcasing the VectorCAST suite of automatic test case generation tools for C/C++ and Ada that enable integration testing with the FACE™ libraries and segment interfaces. VectorCAST is widely used on VxWorks 653, GHS Integrity, DDC-I and LynxOS and is processor agnostic. VectorCAST supports regression testing and change-based testing to reduce time to deploy.

Booth #14: DDC-I & OAR Corp / North Atlantic Industries, Inc. (NAII)

Description: DDC-I and OAR are showcasing RTEMS POSIX services running on Deos SafeMC multicore technology. The integration of RTEMS in a Deos time partition delivers the best of both worlds, an RTOS with POSIX and ARINC-653 interfaces targeting the FACE Safety Base Profile in a DO-178C certifiable package. Attend our paper presentation to learn more. "NAI's Custom on Standard Architecture™ (COSA®) provides configurable open system architecture, meeting key principles of OSA, MOSA & SOSA for developing FACE and VICTORY standards.

NAI is developing a product line aligned with the FACE Technical Standard, utilizing DO-178C Certifiable Real-time Operating Systems & Transport Services Segment with NAI's reconfigurable FACE I/O Services Segment and I/O Services Interface to optimize software reuse.

Booth #15: Lynx Software Technologies

Description: A joint cockpit Display demo featuring Balsa will demonstrate the ENSCO Avionics IData® PSSH, the PrismTech Open-Source FACE 2.1 Transport Services Segment (TSS) reference implementation, and the OpenSplice implementation of the OMG DDS standard running on the Lynx Software Technologies certifiable LynxOS-178 FACE aligned RTOS with CoreAVI graphics drivers.



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Booth #16: ENSCO Avionics

Description: A joint cockpit Display demo featuring BALSAs will demonstrate the ENSCO Avionics IData® PSSS, the PrismTech Open-Source FACE 2.1 Transport Services Segment (TSS) reference implementation, and the OpenSplice implementation of the OMG DDS standard running on the Lynx Software Technologies certifiable LynxOS-178 FACE aligned RTOS with CoreAVI graphics drivers.

Booth #17: PrismTech

Description: A joint cockpit Display demo featuring BALSAs will demonstrate the ENSCO Avionics IData® PSSS, the PrismTech Open-Source FACE 2.1 Transport Services Segment (TSS) reference implementation, and the Vortex OpenSplice implementation of the OMG DDS standard running on the Lynx Software Technologies certifiable LynxOS-178 FACE aligned RTOS with CoreAVI graphics drivers.

Booth #20: Presagis USA, Inc.

Description: CoreAVI, Presagis and Wind River have an integrated demonstration of an interactive Ground Control Station avionics display highlighting the use of touch and gestures within a cockpit setting, and running on a completely ready-for-certification environment. Combining Wind River's VxWorks® 7 RTOS foundation with CoreAVI's ArgusCore™ Graphics Suite, the applications execute code automatically generated from Presagis' VAPS XT HMI graphics design tool, requiring no code writing.

Booth #21: Skyl

Description: Skyl invites TIM attendees to engage in an enlightening head-to-head battle – a gamified abstraction of the integration process. Experience The Skyl Phenomenon, and discover for yourself how the Skyl approach slashes costs, time and boosts strategic advantage. Skyl is pleased to announce at this year's TIM the release of Phenom™, a unique online ecosystem of revolutionary integration products including Skyl's UAS Model.

Booth #22: Verocel

Description: Verocel will be demonstrating tools that facilitate FACE™ conformance, DO-178C and DO-330 compliance. Our tools will help FACE™ UoC developers control, test and verify their products. These tools consist of a complete application lifecycle management framework that allows import and export of all UoC configuration items that support safety certification as well as coverage tools that support complete modified condition and decision coverage of source and object code.

Booth #23: CoreAVI

Description: CoreAVI is presenting two graphics demonstrations that are aligned with the FACE™ Technical Standard. One demonstration features CoreAVI's OpenGL ArgusCore SC 1.0 driver running on an AMD E8860 GPU, integrated with Wind River's VxWorks 7 operating system and Presagis' VAPS XT HMI graphics design tool, while the other is integrated with the ANSYS SCADE Suite model-based development environment running on Curtiss-Wright's VPX3-133 SBC and VPX3-716 Graphics Module.

Booth #24: The Open Group / BALSAs

Description: The Open Group will provide FACE Consortium materials and membership information. In addition, members of the FACE Integration Workshop Standing Committee who developed The Basic Avionics Lightweight Source Archetype (BALSAs) will demonstrate a working example of how to develop software aligned to the FACE technical Standard, v2.1. BALSAs is a collection of UoCs which transform position information and aircraft identification to produce the Automatic Dependent Surveillance-Broadcast (ADS-B) messages.



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Booth #25: NAVAIR

Description: NAVAIR will be demonstrating a configurable, reusable TS implementation consisting of a Type Abstraction UoP and a Type Specific UoP, multiple Modeling Tools for FACE, and the Conformance Test Suite. In addition, data modeling experts will be present to discuss the FACE Data Architecture and data modeling challenges.

Booth #26: Honeywell

Description: Honeywell is pleased to showcase its EGI PSSS component aligned to the FACE Balsa Architecture. The EGI PSSS component allows translation of EGI messages from 1553 to a FACE Data Model format, allowing integration of existing EGI hardware into a system that aligns to the FACE Technical Standard.

Booth #27: Wind River

Description: Wind River's VxWorks 653 solution is the first RTOS to be certified conformant to the FACE Operating System Segment (OSS) Safety Base Profile. VxWorks 653 supports simultaneous ARINC 653, POSIX, and VxWorks partitions. Our VxWorks 653 multi-core products support unmodified guest OS partitions, including Linux, creating an ideal platform for integrating both FACE and OMS applications on shared compute platforms.

Booth #28: TES-SAVi

Description: FACE Verification Authority – Sanctioned 2014; WindRiver's VxWorks653 RTOS Feb 2017, Honeywell's EGI Apr 2017. FACE Ecosystem Tool Provider – FAME™ and Data Model Training. FACE Software Developer – Army's R2C2, Link-16, MIS, JCA; IWS Balsa BITS 2017 Cross-Integrations. Presenting FACE Cross-Integration Successes – Honeywell, RTI, TES-SAVi, WindRiver, and Mercury Systems, 2017 FACE BITS Event – Model-based Tools used for Rapid FACE Development and Integrations.

Booth #29: Real-Time Innovations

Description: RTI is demonstrating its TSS implementation that is aligned to the FACE Technical Standard, running with code generated by TES-SAVi's FACE modeling tool. RTI is also showing its powerful run-time tools, which accelerate the debugging, testing, optimization and integration of distributed FACE systems. RTI's TSS software is built on its Connex DDS product for proven performance, scalability, reliability and DO-178C certifiability.

Booth #30-#31: Rockwell Collins

Description: Rockwell Collins exhibits first-in-industry FACE conformant solutions executing on our CAAS and Flight2 Systems that are ready for FACE applications today. Discover how our customers are integrating with our industry leading, affordable FACE Conformance Apps and moving their software into flight.

Booth #32: Liverpool Data Research Associates (LDRA)

Description: LDRA Technology will be demonstrating solutions that facilitate FACE conformance and DO-178C compliance. Topics will cover conformance challenges and solutions including, traceability, verification, static and dynamic code analysis solutions. Best practices when integrating with targets, RTOSes, ALM solutions, and modelling tools will be described to help suppliers efficiently integrate conformance activities into their processes and tooling.



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- **NAVAIR FACE™ & HOST Exhibition Demo**
 - **Demo Agenda**
 - **0900 Demonstration Opportunity #1**
 - **1000 Demonstration Opportunity #2**
 - **1100 Demonstration Opportunity #3**
 - **1300 Demonstration Opportunity #4**
 - **Demo Details**
 - **Card Swipe Demonstration with Visual Results**
 - **Be Mindful of the Rack Perimeter**
 - **Safety Precaution for our Demonstrators, Equipment and Guests**