

OpenVPX™ Industry Working Group

FAQ from Mercury Computer Systems, Group Steward

OVERVIEW

The **OpenVPX Industry Working Group** is an industry initiative being launched by defense prime contractors and COTS systems developers, to take a proactive approach in solving the interoperability issues associated with the VPX family of specifications. The Group is tasked with developing a comprehensive system specification (formerly referred to as a System Design Guide) that will define a systems architecture for VPX, and describe how a subset of the VPX specifications can be bundled to implement interoperable components.

The OpenVPX Industry Working Group is committed to an aggressive timeline as mandated by industry partners and defense contractors, and thus is initially working outside of the VITA Standards Organization (VSO) to meet this goal. Once the OpenVPX system specification is complete, it will be transitioned to the VSO for ratification.

This document provides answers to frequently asked questions about the OpenVPX Industry Working Group. For more information, please contact Bob Grochmal at (978) 967-1518, or visit www.mc.com/openvpx.

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Q What are the critical success factors for the OpenVPX Industry Working Group?

A The indisputable mandate from many of our industry partners and several Defense contractors is that **the OpenVPX system specification must accomplish the following to be successful**: 1) resolve interoperability issues, 2) become an open standard that is merged into the VITA specifications, and 3) be completed quickly.

Q What interoperability issues are you referring to?

A The VPX family of specifications has a number of board-level options, each of which enables an aggregation of components into a unique systems architecture. Because these systems architectures are often not compatible with each other, it is very difficult to address growing requirements for a

system-of-systems approach to C4ISR. Customers, and for that matter the end user, must accept either a longer time to deployment stemming from the custom integration of VPX components, or accept the cost penalties associated with proprietary solutions. Down the road, upgrades and tech refreshes will be subject to the same unfortunate tradeoff.

Q What will the OpenVPX system specification do?

A We believe the OpenVPX system specification will provide clear guidance to defense contractors and COTS systems developers on how to build interoperable computing and communication components, by defining a scalable architecture to support the new and evolving mission computing and communications requirements. We are leveraging our previous experience gained in a similar situation, in the transition from cPCI (PICMG2.0) to ATCA (PICMG 3.0). As a result, the ATCA specifications were written at the system level.

Q How will this help the defense contractors and embedded computing suppliers?

A The OpenVPX system-level approach will enable prime contractors and embedded computing suppliers to greatly reduce the time required to create integrated COTS system solutions in 3U and 6U form factors. It will also lower the risk of adoption, and expand the addressable market for VPX solutions, while accelerating deployment into real-world applications.

Widespread adoption of the OpenVPX system specification would ultimately create a more robust supplier community of interoperable components and systems, providing customers with the benefits of reuse, choice of best of breed, faster time to market, lower-risk technology refreshes, and a more competitive marketplace.

Q What prompted the initiation of this group?

A The defense contractors and DoD have made it clear that VPX interoperability is a critical issue that impacts their technology investment, application performance, and competitive advantage in current implementations and future migration to VPX-based solutions. After polling many industry leaders, including defense contractors, the DoD, COTS system providers, and more, we discovered a groundswell of support, further validating the efforts to develop a system-level specification.

Q What makes this group qualified to lead such an initiative?

A Based on similar successful experiences with other trade association initiatives, for example RapidIO and ATCA, the composition of the groups was critical to the success. The involvement of the defense contractors in defining the performance and system-level requirements, with the contributions from the COTS suppliers in identifying what can be implemented, provides an optimal collaborative environment for this Group, in which to discuss and debate requirements, and to develop a support plan in a timely manner.

In addition, the COTS suppliers involved, including Mercury, are leveraging their expertise and the proven underlying scalable architecture, including advanced system management technology, as the foundation for contributions to the OpenVPX Industry Working Group. In the end, the combination of these contributors will provide the structure necessary for the success of the OpenVPX organization.

Q Who is driving the OpenVPX Industry Working Group initiative?

A Mercury took the lead in coordinating with the defense prime contractors and other providers of embedded computing systems, and will continue to oversee the Industry Working Group during its formation. Though in its final stage of formation, Mercury is actively chairing the Working Group Steering Committee to maintain momentum, and has developed the initial draft system specification for the Steering Committee review and for the Technical Working Group to complete.

Q Who is involved in the OpenVPX Industry Working Group?

A Working Group members include GE Fanuc Intelligent Platforms, Boeing, Aitech Defense Systems, Hybricon, and Tracewell Systems. Other companies may be named at a later date.

Q Is VITA involved?

A Ray Alderman, Executive Director of the VITA Standards Organization (VSO), strongly supports the OpenVPX Industry Working Group, as noted in our January 30 news release: “One of the great strengths of the VME community has been the ability to combine technologies from many contributors into high-performance systems...In moving to a new generation of standards, like VPX, we’ve lost some of that interoperability. I’m very glad to see a proven systems company like Mercury take the lead in defining a practical approach to restoring that level of design maturity.”

More recently, Ray acknowledged that the approach we’ve taken in forming the Working Group outside of the standards body is not new, and cited similar instances in “the ethernet arena (802.xx), in the internet area (W3C), and in other major standards efforts where significant growth and opportunity are evident.” The completed system specification will be transitioned to the VSO for ratification.

Q Why not leverage the existing specifications within the VSO?

A In November 2008, Ray Alderman of the VSO called for organization members to start pulling all the dot specs together into a top-down systems-level specification. The current VPX base specification (VITA 46 and subsequent dot specifications) provide a good foundation for the OpenVPX Industry Working Group to leverage and utilize during the development of a system specification. Similar in approach to the AdvancedTCA standard, this is expected to benefit the user community. The system specification shall enable development of solutions with true interoperability and high-performance attributes.

Q Why not do it within VITA?

A Defense contractors have expressed a level of frustration with the rate of progress within the VSO. It’s imperative that this work be completed in a timely manner; so to accomplish the Working Group objective, there was general consensus to proceed outside of VITA as an interim solution, with Ray Alderman’s endorsement.

Moreover, we’re compelled by our customers to solve the interoperability issues, as VPX is currently a series of dot specifications lacking a comprehensive, top-down systems-level specification. There are several critical defense programs that could benefit from an improved VPX specification, so it’s

imperative that we work quickly and effectively to bring the OpenVPX system specification to completion.

Mercury has significant experience working inside and outside standards organizations to bring leading-edge technology to market, which is why we are leading this effort. We were one of the first companies to promote COTS within defense; today, there is a thriving COTS community. We worked collaboratively with Freescale, Texas Instruments, Tundra, Ericsson, Nokia, Lucent, Nortel, and a number of other industry partners and customers to help establish RapidIO as a leading switch fabric technology; it has been selected by nearly all the Tier one telecom OEMs and defense contractors for many of their demanding computing applications.

Q Is the OpenVPX Industry Working Group open for others to join?

A Yes. History has shown that an aggressive timeline such as that established by the OpenVPX Industry Working Group can only be met with a small cadre of dedicated leaders and contributors, The OpenVPX Steering Committee, which is in the final stage of formation, is comprised of a set of defense contractors and COTS system providers that have expressed support for the initiative and are motivated to establish the organizational structure in a timely manner.

At its inaugural meeting held in Dallas Texas on February 23-24, 2009, members of the anticipated Steering Committee set forth guidelines for the OpenVPX Industry Working Group's organizational structure, policies, and development of a system specification as previously mentioned, with a completion goal of October 2009. The recommendations were submitted to meeting participants on day two of the assembly.

A call for participation in the OpenVPX Technical Working Group was announced on March 5, 2009. As of this day, any defense contractor or embedded computing supplier that is in good standing with the VSO, and is committed to the OpenVPX Industry Working Group's mission and aggressive schedule for completion of a system specification, is invited to apply for membership. The first open Technical Working Group meeting is planned for March 16-17 in Orlando, Florida, just prior to the quarterly face-to-face VSO meeting.

Q Where can I find more information?

A For more information on the OpenVPX Industry Working Group, visit www.mc.com/openvpx, or contact Bob Grochmal at (978) 967-1518.