



A new SIG in town

Announced at last fall's ESC Boston, the SFF-SIG preps to roll out its inaugural standard

First question: What's the most popular open standard board type used in open standards-based systems? Answer: the personal computer, both in desktop and laptop sizes. But if we narrow the question to "rugged, deployed, and industrial systems," you'd primarily find PC/104 and its ilk, Computer-On-Module (COM), EPIC, and a bunch of other small form factors too numerous to mention. For the past 15 years or so, PC/104 and its brethren have dominated rugged, deployed systems.

But PC/104 was designed around the ISA bus, followed by PC/104-Plus and PCI-104 geared toward the PCI bus. Both of these buses are getting long in the tooth as the mainstream computer market switches exclusively to PCI Express. Also, the limited physical size of PC/104 with its connector "keep outs" constrains the available board space for high-density CPUs, complex routing, multiple DC-DC converters, and any specialty cooling mechanisms. With an eye toward PC-based, low-cost, modular, industrial and military systems, the brand-new Small Form Factor Special Interest Group (SFF-SIG) is getting ready to go public with their plans within a few weeks of our press date¹. We recently got a special sneak preview that I thought would interest our readers. If successful, the results of the SIG's efforts may wind up in your next rugged system.

The companies behind SFF-SIG are still in stealth mode because many participate in other standards bodies, some of which may perceive the SFF-SIG to be competition. Of these, the PC/104 Consortium has probably the most to lose since 100 percent of the SFF-SIG companies do or have participated in the PC/104 Consortium in its 15-plus year history². The companies kicking off the SFF-SIG include Samtec, Octagon Systems, WinSystems, Tri-M Systems, and VIA. According to

the SIG's president, Colin McCracken, there are three board members (VIA, Octagon, and WinSystems), seven members, and more in discussion.

SFF-SIG has three working groups – SBCs, Stackables (like PC/104 or PMC mezzanines on VME), and Computer-On-Module (such as PICMG's COM where the CPU resides on the mezzanine card plugged onto an I/O-laden carrier board). This year, the SIG plans to work on all of these three areas with a special emphasis on a new stackable spec it plans to reveal prior to ESC Silicon Valley. In the meantime, the SFF-SIG is following in the PC/104 Consortium's footsteps with its "Adopt a Spec" policy whereby existing SFF board types of value become standardized for multivendor adoption and market competition.

As memory serves, this is how EBX, PC/104-Plus (which added PCI to the ISA bus), and EPIC became PC/104 Consortium standards some years ago. I maintain a list of more than 60 different small form factors – some open, most proprietary – which should provide fertile ground for open standards adoption by the SFF-SIG. According to McCracken, some of those SFFs are already under discussion by the SFF-SIG. This is particularly exciting news for low-power and low-cost military and industrial systems, as many of these SFFs were designed for semi-rugged consumer applications such as long-battery-life handsets or "dropable" portable mobile devices.

Key to achieving the SIG's mundane-sounding goals will be a combination of focused marketing efforts and a VME VITA-like rule book that crisply brings topics up for a vote so that they don't become "over-engineered, academic corner cases," says McCracken. We like the sound of that. One of VME's strengths

has long been its VITA Standards Organization (VSO), which is aggressively run both technically and administratively. Additionally, the SFF-SIG recognizes that it's market success that matters over technical success. Hence, the charter focuses on "rapid ecosystem growth" with a "divide and conquer" plan to combine the strengths of worldwide leaders.

On the technical side, right now the group is focused on creating a slightly larger-than-PC/104 SFF that is I/O-centric. Part of the problem with many of those 60 SFFs I mentioned earlier is that they were designed around the CPU (AMD, ARM, Intel, VIA ... pick one), and the CPU's bus also becomes the board's bus. If the CPU changes, then the standard is in trouble.

Instead, the SFF-SIG wants to make its first new standard I/O-centric, expressly looking at forward and backward migration between processors and even other SFFs. This means that the proposed new standard would accommodate many of today's (and tomorrow's) CPUs and peripherals, while paying attention to system aspects of tech refresh and spiral insertion strategies. For the military, this is translated to code portability and Pre-Planned Product Improvements (P3I). This is a page right out of VME's rule book, and one that resonates very well in defense because 10-year upgrades are just business as usual.

But small form factors come and go, as do their sponsoring companies. The same might happen to the SFF-SIG. Will it be around next year or the year after? We don't know, but we hope so. Personally, I like what I'm hearing. I can't wait to tell our readers about their first SFF when it's unveiled in late March. Check out our forthcoming Spring issue for the scoop on this new interface technology.

¹ Full disclosure: I personally helped catalyze the formation of the SFF-SIG, although I have no direct interest in it. OpenSystems Publishing, PC/104 and Small Form Factors' publisher, is an unofficial sponsor of the SFF-SIG.

² By the way, VITA and PICMG memberships overlap by at least 40 percent.