

## Technology Evolving Too Fast for DOD?

Written by Nick Sanders

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In September, 2013, the Naval Surface Warfare Center in Port Hueneme, California, issued an RFQ for “180 PowerXpress PPC8A Power PC-based 6U VME [embedded computing](#) boards, made by GE Intelligent Platforms in Huntsville, Ala.” The boards were introduced nine years ago and were designed into several Naval surface warship weapon systems—systems whose design configuration has been frozen. In other words, NSWC cannot make design changes to those systems, even the minimal design changes to substitute more recent products that have the same form, fit, and function. As the folks at Military & Aerospace Electronics [pointed out](#), the original manufacturer (GE) does not carry the boards in stock anymore, preferring to use more recently manufactured boards in current designs.

So when NSWC (and other repair depots) runs out of their stock of nearly decade-old PC boards, they have a problem. The problem is called “technological obsolescence” and it’s a byproduct of moving away from the good ol’ days of MILSPEC and, instead, focusing on using Commercial-Off-the-Shelf (COTS) parts in military designs.

John Keller, Editor-in-Chief of Military & Aerospace Electronics, wrote up a recent [op-ed piece](#) on the pervasive problem. He wrote—

What military program managers and the defense industry face today is a broadly installed base of COTS electronics with capabilities and supportability that is going obsolete rapidly, and with diminishing prospects for being brought back up to date because of crushing military budget cuts. ... Military budget cuts are delaying or eliminating scheduled rounds of component upgrades for military systems. Those COTS components that were supposed to be

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switched out ever five years or so are staying in the field longer than ever. Sometimes only portions of fleets are being upgraded, leaving others to make-do with what they have for indefinite periods.

The results are predictable -- obsolete parts and a complicated logistics chain are exactly what we're seeing today as the military adjusts to a rapid downturn in spending. We have electronic components that are going obsolete quickly, with only spotty long-term support. Obsolete COTS technology can be far more problematic than obsolete mil-spec technology.

We visited the DOD DMEA (Defense Microelectronics Activity) [website](#) and learned a little bit about the official view of the problem. The DMEA folks wrote—

The primary cause of obsolescence is commercial profit motive: when an item is no longer economical to produce, manufacturers stop producing it.

The U.S. Department of Defense also contributes to the problem with its long design-to-acquisition lead times which bring about support requirements for military systems that generally extend from 25 to 30 years, as opposed to the 4-to-7-year support cycle expected for many commercial electronics systems.

Basically, by the time the DOD gets its major weapon systems into production, the original design is already replete with obsolete parts, built by sources who are preparing to end their production and long-term support. Historically the DOD has solved this problem by making large purchases—"life-time buys"—or guaranteeing the manufacturer a certain quantity of purchases, so that a sufficient flow of parts will be there for the weapon system's life cycle. That ability has been impacted by sequestration and looming budget cuts.

Use of COTS parts has, generally, been viewed as a no-brainer. Why spend time and money designing some MILSPEC part that is already being produced by private industry? This is especially true when that private industry-designed part is of a more current design, with better operating features. But we are now seeing the other shoe drop, where DOD's inability to innovate and match the private industry product development cycle is leaving the logistics, repair and maintenance functions with a big headache, as they struggle to source technologically obsolete parts called for by their "frozen" designs.

Here's a tip.

You want to get rich? Find out what COTS parts are designed into the F-35 and stockpile them. In a couple of years, DOD is going to be asking you for those parts, and you'll be able to name

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your price.

Just sayin'....