Solving for Diminishing Manufacturing Sources and Material Shortages (DMSMS) Using Data-Driven Solutions

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Diminishing Manufacturing Sources and Material Shortages (DMSMS) is an increasingly difficult problem to solve and a threat to mission capability.

DMSMS endangers the life-cycle support and viability of weapon systems or equipment when a specific part is designed out, or the company's specific product line is replaced with the next generation.

One cannot afford to be reactive. Taking a reactive approach may lead to a combination of schedule delays, readiness degradations, and higher costs.

Overview

Today's rapid technological developments are driving electronic component suppliers to abandon low-demand, older technology products at a faster pace, now more than ever. Meanwhile, the U.S. Department of Defense (DoD) seeks to prolong the life of weapon systems. These conflicting trends cause DMSMS problems when repair parts or materials disappear before the end of the weapon system life cycle. In short, DMSMS is a threat to system supportability.

The DoD requires proactive obsolescence measures to find replacement parts for obsolete ones or find new manufacturers for those parts as soon as possible.

The Challenge

All systems are susceptible to End-of-Life (EOL) issues. Managing the availability of EOL parts in the supply chain to ensure uninterrupted operations can be challenging and costly in terms of capital and resources.

DoD applications are often a complex combination of Commercial-Off-The-Shelf (COTS) parts and custom parts from the supplier.

DMSMS risks arise from the following areas:

- Component Obsolescence
- COTS Obsolescence
- Material Availability
- Rules & Regulations Changes

- Supply Chain Mergers / Acquisitions

Over the past three decades, the life cycle of semiconductor components has been dramatically decreasing, creating a vast amount of challenges to maintain, repair, and operate warfighting equipment.

Additionally, varying information from different semiconductor suppliers makes it difficult to obtain necessary information, such as the exact life cycle and the last time buy date for specific parts, to make critical decisions.

All of these factors can lead to costly system redesigns, and/or penalties and fines as the result of delayed delivery of mission-critical components.

The Solution

Using internally developed lead-time historical data and advanced machine learning forecasting methods, data-driven solutions offer reliability during unplanned semiconductor supply chain disruptions.

AS9120, AS6081, and QSLD certifications and membership of the Government Industry and Data Exchange Program (GIDEP) allow distributors to deliver solutions to the DoD manufacturing supply chain and its partners.

Distributors with centralized information hubs have easy access to last-time-buy (LTB) and not-recommended-for-new-design (NRND) notifications to provide life cycle analysis on the needed electronic components.

By using data-driven solutions, strategic partners can identify EOL risk, often well ahead of the obsolescence period, and source the electronic components they need — fast.