

Boeing keeps costs from soaring with Test Equipment Management Program Standardizes on Fluke

Application Note



Boeing's Huntington Beach Test Equipment Management Center. From left to right: Rob Parchinski, TEMC Manager; Jim "Smitty" Smith, Senior Quality Engineer and Francisco Narez, Instrumentation Resource Coordinator

Boeing Co.'s Integrated Defense Systems, headquartered in St. Louis, with dozens of reporting sites across the Continental U.S. and Pacific Rim, is a \$25 billion business. Their product line stretches from the latest in jet fighters/air mobility and the space shuttle/International Space Station, to real time combat integration and a multitude of space and defense programs. IDS capabilities encompass everything from defense and intelligence systems to worldwide communications and space programs,

combining sophisticated communications networks with air, land, sea and space-based platforms for global military, government and commercial customers.

These complex programs necessitate high confidence measurement, accuracy and support. That's one reason why, when you walk into the IDS Test Equipment Management Center (TEMC) in Huntington Beach, Calif., you might think you've walked into one of Fluke Corporation's test labs or distributor showrooms.

There's a Fluke banner conspicuously hanging in the customer service center and a selection of Fluke equipment ready for use, supported by TEMC test equipment engineers ready to answer any questions. "People walk in and say, 'Is this still Boeing?'" said Boeing's TEMC manager Rob Parchinski with a laugh.

Center will serve entire IDS Division

The Test Equipment Management Center is part of an ambitious initiative to organize

and deploy General Purpose Test Equipment (GPTE) across the giant aerospace and defense company's Integrated Defense Systems division. The industry term is equipment management and the concept is simple. Rather than having hundreds of engineers and support personnel purchasing GPTE for a particular lab or project, most of which are needed only occasionally or for a short duration, equipment is pooled into hold sites and checked out only as required. This greatly reduces costs, allows standardization of equipment and frees employees to concentrate on core work responsibilities. The Center operates much like a central "hub and spoke" library system, only orders and deliveries are all coordinated on-line behind Boeing's corporate firewall.

The benefits are obvious: reduced equipment purchases, less redundant equipment inventory, lower calibration and maintenance costs, and greatly reduced support labor. But try to invent a system that provides GPTE efficiently to engineers and technicians across a geographically diverse, technology dependent company whose culture is based on priority deadlines, and you run into a quagmire of complications. How do you select the equipment to include in the pool? How do you make sure a specified piece of equipment is available at the times required? How do you keep track of pooled equipment that is traveling from site to site? How do you keep "old school" technologists from hoarding test equipment when it is not in use? And how do you convince the user base to embrace this process instead of acquiring their own personal inventory?

"Our team thought through multiple scenarios, many of them over and over again" said Parchinski, one of the program's Southern California founders. "Every time we thought we had hit a roadblock, we found a way around it through out-of-the-box thinking."

Lower cost, greater efficiency

Today the TEMC program is saving Boeing money in lower required test equipment purchases, inventory and storage costs and greater efficiency. Parchinski won't say how much the program is saving the company, only that "we've more than doubled what we promised to save every year and beat our 'lead time to delivery' goals by more than 300 percent."

Parchinski and his core team began researching the idea of an equipment pool about six years ago under McDonnell Douglas for a "site only" program. A year later, when Boeing was in the middle of integrating its merger with McDonnell Douglas and finalizing its acquisitions of Rockwell International, the time was right to proceed. Still later Boeing acquired Hughes Aerospace, the world's largest manufacturer of satellites, increasing the opportunities for test equipment sharing.

"We struck while the iron was hot," Parchinski said. "As soon as we merged, we put our business case together with folks around the enterprise. The data was so powerful, and the support of the company leadership at such a high level that it provided the right mix of people at the action level."

Today Boeing IDS employees can reserve GPTE from the company's online inventory right from their desktops or any Boeing Intranet accessible computer up to a year in advance. They can review equipment availability specs and capabilities to determine what test equipment they'll require and set up delivery instructions. Powered by an Oracle database, the online system finds the test equipment, reserves it for the requested dates and charges a cost center for the use of the equipment using a daily rental rate.

The system currently carries thousands of different makes and models of equipment. "We can get equipment from all over the company," Parchinski said. "We have equipment deployed all over the U.S. and throughout the Pacific, at all the launch sites and even at supplier and customer sites where Boeing representatives are performing testing or providing support."

Concept expands to other divisions

Connexion by Boeing, an internal Boeing business unit that provides broadband Internet service and e-mail to commercial aircraft passengers, began operations using the TEMC process. Initial research showed the Connexion people that historic channels could not support their needs for cutting edge GPTE, some of which was still in the demonstration phase and not available. The long lead times and competition with others showing interest in the market made this a difficult proposition. Again TEMC, using its supplier interfaces, was able to deliver ahead of time with

Connexion receiving its ordered test equipment even before it received its lab furniture, he said. "We sent their state-of-the-art equipment directly from the suppliers to Puget Sound for use."

When we started the program our physical inventory showed that "Boeing (or one its organizations) had bought one of everything anyone ever made," Parchinski said with a laugh. "Now we work daily on "right-sizing" the inventory with only necessary and reliable technology."

"The program doesn't make money. By design it collects all associated costs then passes those along via a usage chargeback across the entire base," he said. "Emphasizing this process we've been able to avoid buying capital assets for three and a half years."

The program, showcased at the Huntington Beach center, is being rolled out throughout IDS. "Our goal is to make this like McDonalds," Parchinski said. "You walk into Kent and you'd think you were in Auburn or Anaheim."

Fluke's partnership in this process is as a strategic supplier to the program. "How many companies make handheld meters?" Parchinski asked rhetorically. "Everybody." At the end of an extensive business evaluation, however, the company selected Fluke test and calibration tools for the program. "We looked at which company had the best features for what we needed, the best price, quality and support," he said. "That was Fluke, hands down." Working with local and corporate contacts and building a supplier base of distributors, Fluke and Boeing were able to place thousands of cost efficient units into the hands of end users.

The program stocks Fluke handheld, bench and rack meters, a selection of handheld and automated calibration equipment, temperature tools/probes, IR thermometers, and multiple Hart Scientific (a Fluke wholly owned subsidiary) models to compliment the many requirements that Boeing faces daily. The TEMC process has also standardized on a number of Fluke models for general applications, removing other assets from the inventory. This again allows Boeing to reduce ownership costs. At one time the company had more than 38 models of handheld digital multimeters from a variety of manufacturers. Today it has four, three of which are Fluke.

Getting used to the new system took a while. People traditionally like their own test tools nearby. The initiative had to prove the Web-based program could deliver what requesters needed when they needed it. You can't keep a rocket booster waiting while you wait for a temperature probe to arrive.

That's one of the advantages of Huntington Beach's Test Equipment Management Center. The carpeted customer service center with its wide counters may make you think you're in an office environment, but there's serious technology there. "You can often walk in and pick up what you need or find a demonstration or test in progress, our area is climate controlled and monitored plus it has a secured and bonded area" Parchinski said. "There is training available and areas for suppliers to set up product demos."

After almost four years in full operation, the system has proved its ability to outperform its initial objectives and continues to save the aerospace giant labor, budget and support costs, all with the help of suppliers like Fluke.

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Fluke Corporation

PO Box 9090, Everett, WA USA 98206

Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa (31 40) 2 675 200 or
Fax (31 40) 2 675 222
In Canada (800) 36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: <http://www.fluke.com>

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