Defense Standardization Program
Journal
October/December 2012

Non-Government Standardization

The Best Standards for the Best Results

Circular Reasoning

Improving the Battery Acquisition Process for Army Communications–Electronics Equipment

Gatekeeping in the 21st Century

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Director's Forum

I've written before in this column about DoD's use of non-government standards (NGSs). For many years, we have had both a solid NGS policy and robust practice in place within the Department. Over 9,000 NGSs have been adopted by DoD, and many more are used without having been formally adopted.

Many people think that our use of NGSs began with the so-called Perry initiative, the historic MilSpec Reform of the mid-1990s that was kicked off by Secretary of Defense William Perry's five-page memorandum on "A New Way of Doing Business." While that certainly added impetus and top-level support, it was not the beginning.

DoD has had policy encouraging the use of NGSs since 1962, and it has been a federal government-wide policy since 1982 when the Office of Management and Budget first issued Circular A-119, "Federal Participation in the Development and Use of Voluntary Standards and in Conformity Assessment Activities." Both in the case of DoD and government-wide policy, establishing NGS guidance was a way for policymakers to catch up with effective business practices already widely exercised. The earliest example we can find of DoD relying on NGSs dates to 1917, when the Army began using an SAE International standard for sparking plugs used on internal combustion engines. Our NGS policy was far from being an innovation dreamed up by ivory-tower policy wonks in Washington; rather, it was the identification and generalization of a best practice long before "best practice" was a common buzz phrase. And—as you will read in Dr. McKiel's article, "Circular Reasoning," on the history of OMB Circular A-119—government-wide policy grew out of DoD's already-established policy; the circular simply gave legitimacy and top-cover to what was a standard practice in many areas of government procurement.

OMB is looking to issue its fourth revision of the circular. As times and circumstances change, it is appropriate to update policy issuances, and though the principles in the original circular are virtually unchanged, the time is right to revise and update. As I thought about writing my message for this issue of the *DSP Journal* on non-government standards—the third time we have devoted an issue to this topic—it occurred to me to wonder whether this policy was still, in fact, the embodiment of a best practice. Are people in DoD blindly following policy, or do they find this a good way of doing business for other reasons.

I asked my staff to ask a few people at DoD activities that rely on NGSs. I found their answers both interesting and reaffirming.

Gregory E. Saunders
Director
Defense Standardization Program Office

Would you choose to use NGSs even if there was no policy? Jim Colson of the U.S. Army's Acquisition Logistics Center said this:

> Non-Government Standards are a very valuable source of business practices. We have a lot of common practices with industry; therefore, why create a separate standard for unique military use if we can take advantage of practices that are already in place in industry? The big incentive to continue to use Non-Government Standards is that separate standards for unique military processes create additional government expenses because industry must create the unique processes to meet the requirements. There is no reason to duplicate a standard that already exists.

Steve Geusic, director for engineering criteria and programs at the Naval Facilities Engineering Command, focused on the benefits of using NGSs:

> Products that comply with NGSs typically have better availability, shorter lead times, and more sources for parts and repair. Additionally, by using NGSs, we can increase the number of products and manufacturers available that can meet the specification and thus increase competition with better pricing. Another benefit from the facilities side of the house is that contractors and testing labs are more familiar with NGSs than government unique standards.

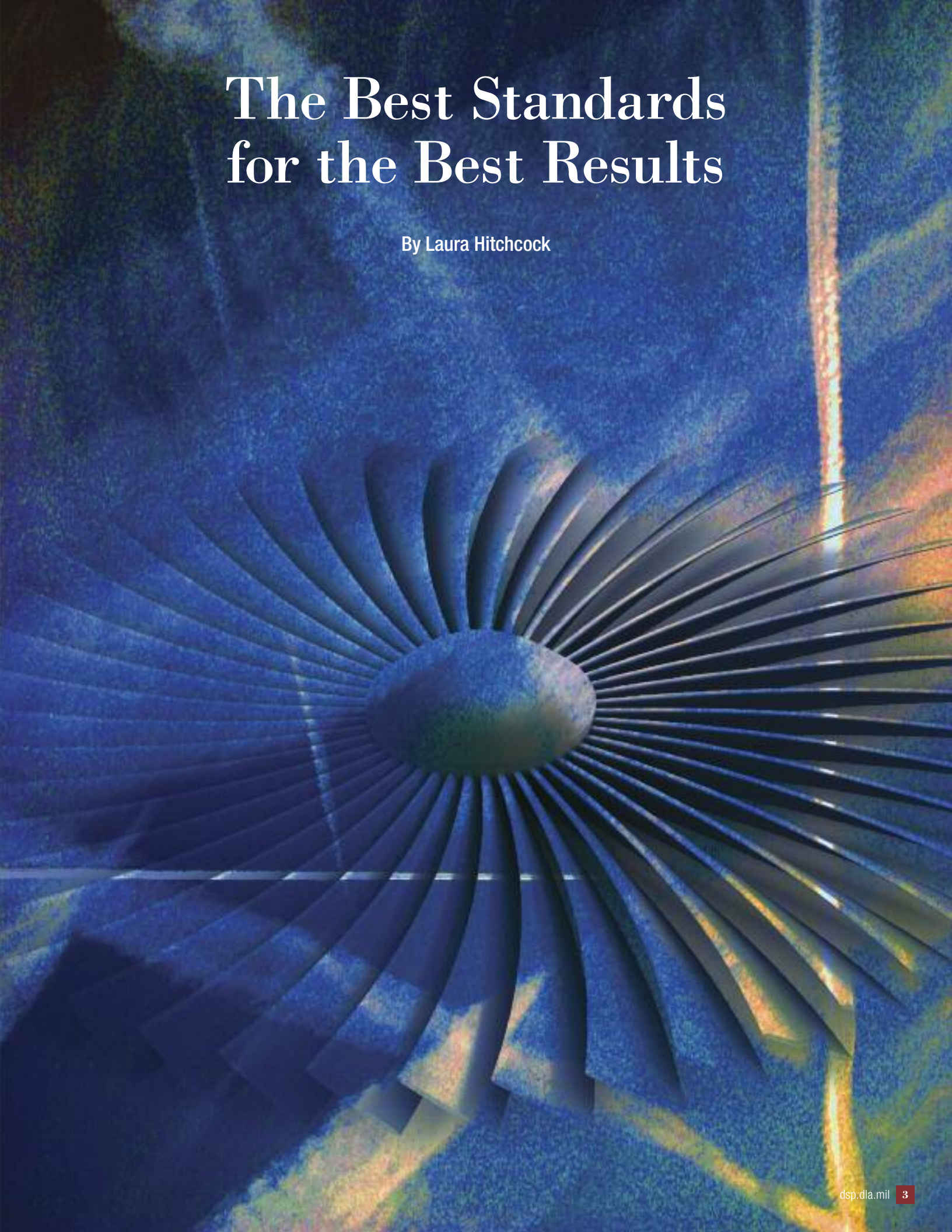
Mike Stewart of the Space and Naval Warfare Systems Command had this to say:

> It's both policy and good business practices. Information Technology is designed and built using industry standards. The development of these IT standards within government would be prohibitively expensive and less innovative. One of the reasons it's more expensive for government is our acquisition process timeline; ten years from concept to sustainment. The government gets a better deal by leveraging and influencing the development of industry standards (there are thousands of IT standards) since industry pays most of the development and implementation costs.

There's nothing scientific about this short survey. In fact, we asked people in activities in which we knew NGSs were being used a great deal. But the answers were just what we hoped for: affirmation that NGSs continue to be valuable sources of business practices. Appropriate reliance on NGSs continues to contribute to reducing costs and to improving availability, maintainability, sustainability, and interoperability in every possible circumstance. The challenge of maintaining participation in NGS committee work while being forced to cut travel budgets poses difficulties. But standards developing organizations and participants from government and industry are working together to drive improvements in various areas, such as offering virtual meetings. We need to maintain our partnership with industry to leverage our resources. The benefits we derive from using NGSs make this an essential part of our standards policy.

The Best Standards for the Best Results

By Laura Hitchcock



Our warfighters deserve the best equipment and platforms possible to support mission requirements while protecting them from harm. One way to ensure the best equipment is to design and build the vehicles, weapon systems, aircraft, ships, etc., fielded by our troops using technical standards selected as the best standards suited to producing safe, reliable, and technically excellent products. The policy of selecting the best standards suitable to the design, manufacture, or operation of a product based on the technical merits of the standards may seem like such an obvious goal that it should be relegated to just common sense. However, customers and equipment manufacturers have become increasingly concerned that options for choosing standards may be limited by well-meaning but potentially restrictive policies.

In an attempt to ensure that products procured by government agencies and ministries of defense can be used, integrated, and supported as widely as possible (be it by the most number of people or across the widest number of geographic regions), there has been a growing trend to require the use of international standards, with the assumption that mandating international standards will ensure a product will be internationally accepted and used. And while the goal of striving for things such as global interoperability and global trade for goods and services is laudable, simply mandating the use of a certain type of standard may not guarantee the desired result.

The focus for the selection of standards should be placed back on the requirements for the product. Manufacturers, working in cooperation with government customers, should select those standards that will ensure the resulting product or process is of the highest quality and reliability, is as safe to use as possible, and meets the needs of the marketplace and any applicable laws. The resulting set of standards used for a particular product may end up being a mixture of standards from a wide variety of sources: government agencies, voluntary consensus standards developers, consortia, and even company-unique standards. What's important is that it's the right set of standards to manufacture a product that meets the customer's needs and ensures the safety of the users.

In the United States, the National Technology Transfer and Advancement Act, Public Law 104-103 (NTTAA), encourages the reliance on standards and conformity assessment solutions developed or adopted by private, voluntary consensus standards bodies. This policy for using non-government standards (NGSs) is documented in Office of Management and Budget (OMB) Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities." However, the circular does not establish a preference among standards developed in the private sector and refrains from implying that the standards from any one standards setting organization are preferred over another.

For NTTAA purposes, a "voluntary consensus standard" is a standard developed or adopted by voluntary consensus standards bodies, both domestic and international, using agreed-upon procedures. Voluntary consensus standards bodies are further characterized as having the following attributes:

- Consensus (including an attempt to address all comments by interested parties)
- Openness
- Balance of interest
- Due process
- Appeals process.

OMB Circular A-119 differentiates between voluntary consensus standards and other types of NGSs developed in the private sector but not using a full consensus process. These NGSs can include non-consensus standards, certain types of industry standards, company standards, or de facto standards. But again, the policy does not establish a preference between consensus and non-consensus standards developed in the private sector.

The current policy also does not establish a preference between domestic and international voluntary consensus standards. And while it does encourage agencies to consider international standards in the interests of promoting trade and to facilitate the implementation of international treaty agreements, there is no further definition of what constitutes an "international" standard. Among the public comment responses to a *Federal Register* request for information conducted by OMB on March 30, 2012 (77 FR 19357) on possible improvements to Circular A-119 were a number that suggested the potential need for further guidance regarding international standards. Some included statements urging that "international standards" should not be narrowly defined as those coming from only a few select standards developers whose processes are based on a one-nation/one-vote model, but should include all venues that develop globally relevant standards.

How best to guide government agencies in the selection and use of standards is not an issue unique to the United States. The European Parliament has also been engaged in efforts to set policy to allow the use of the most globally relevant standards. Until now, European Union (EU) government procurement has tended to reference standards from only the following entities:

- International organizations: ISO, International Electrotechnical Commission (IEC), or International Telecommunication Union (ITU)
- European regional standards bodies: European Committee for Standardisation,

European Committee for Electrotechnical Standardization, and European Telecommunications Standards Institute

- European national standards bodies: Deutsches Institut für Normung e.V., Association Française de Normalisation, or British Standards Institution, among others.

This policy has meant that the EU's definition of international standards is more restrictive than that found in the World Trade Organization's (WTO's) Agreement on Technical Barriers to Trade (TBT). The WTO TBT agreement establishes principles for international standardization processes using attributes similar to those used in the OMB circular to define a voluntary consensus standard. By meeting these criteria, global standards setting organizations such as SAE International, ASTM International, and ASME are also recognized as developing international standards. The current EU policy of looking only to ISO, IEC, and ITU for international standards has hampered the ability of European government agencies to reference widely used and accepted standards for public procurement produced by other standards setting organizations, even when those standards were developed by processes that met the WTO's criteria.

This restriction on the selection of standards based on source, rather than technical merit, has proven especially limiting for public procurement in the areas of information and communication technologies (ICT). The technologies that govern networks, data transfer, Internet protocols, video formats, and so on, are extremely dynamic. The traditional standards development processes used by the international, regional, and European national standards bodies were determined—in the European Parliament's *Report on the Future of European Standardization* (October 2010)—to be too slow and were therefore inhibiting technological innovation. In addition, given that specifications being developed by industry forums and consortia at an international level (such as the Institute of Electrical and Electronics Engineers, Internet Engineering Task Force, OASIS, or World Wide Web Consortium) are playing a growing role in the ICT community, it was becoming a significant barrier to trade for these standards to be off-limits for referencing in public procurement tenders.

Therefore, on September 11, 2012, the European Parliament adopted text in a proposed European standardization regulation that would allow forum and consortia standards to be referenced in ICT government procurement. To bring things more in line with the WTO TBT agreement, the proposed standardization regulation states that

> public authorities should make best use of the full range of relevant standards when procuring hardware, software and information technology services, for example by selecting standards which can be implemented by all interested suppliers, allowing for more competition and reduced risk of lock-in.[1]

Allowing the broader range of applicable standards to be considered is expected to increase the choice European government agencies have when defining their ICT needs and should reduce procurement costs by allowing harmonization with global ICT solutions.

Both the United States and the EU recognize the role standards play in ensuring high-quality and cost-effective technical solutions for public and private enterprise. And there is certainly agreement on the value of using relevant international standards as a basis for technical regulations when practicable. But when public procurement tenders do not specify a particular standard, industry should be free to select the most relevant standard from any source to be used in the design, manufacture, and operation of products and services.

Given the critical safety aspects of military platforms such as aircraft and other critical equipment, consideration of which standards to use should be based on the suitability to meet performance, safety, and quality needs while taking into account national and international regulations and certification requirements appropriate to the product and the intended use of the standard. And when government agencies reference or adopt specific standards for regulations or for public procurement, it is hoped that those standards will be selected from the wide assortment of voluntary consensus, forum, and consortia standards based on technical merit and suitability for meeting the intended requirements. The freedom to choose standards based on technical merit will help ensure the best standards for the best results.

[1]See http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2012-311.

About the Author

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Circular Reasoning

By Mary McKiel

A few years ago, I was on a panel at the annual conference of the Society for Standards Professionals. Panel members were supposed to speak on how to encourage the next generation of standards professionals. I decided that candor is best, so my presentation was titled "The Top Ten Reasons to Avoid a Career in Standardization." Here they are:

10. Your high-school grammar teacher will haunt you for consensus writing.
9. You are forced to speak in alien phrases (D-60 WG 3, ISO TC207 FDIS, etc.).
8. Your concept of basic food groups revolves around airline cuisine.
7. You can never tell your family what you do…they fall asleep.
6. Your boss keeps asking you lots of questions about what it all means.
5. Your boss stops talking to you altogether.
4. The government shows up.
3. You undergo an involuntary Meyers-Briggs change.
2. You can never retire.
1. You are forever anticipating the next revision of OMB Circular A-119.

Were you expecting the number one reason? No? Well, let me explain.

The Federal Circle of Standards

Office of Management and Budget (OMB) Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities," is a basic standards policy for the federal government.[1] A-119 guides and directs federal agencies, but the policy affects the private sector as well. Public/private cooperation in the standards arena goes round and round in a continuously evolving circle. This is especially true where national and global interests demand innovation, new technologies, greater security, and improved environmental and human health conditions. Federal regulations and acquisitions play an important role in these interests, all of which depend on standards.

For years preceding even a glimmer of thought about A-119, U.S. federal agencies used private-sector standards and contributed to their development. The landscape is too expansive to view in this one article, but I believe that there is a benefit to having the entire picture at some point. For now, my intention is to present a modest sketch of Circular A-119 from its beginning to the present. In no sense does this pretend to cover all of the influences, issues, or inputs that have shaped the policy through the years. Many significant bits and pieces are not even included, and each could be the subject of additional articles, but this is a start. Right up front, I wish

to thank Gregory Saunders, director of the DSP, for his assistance in preparing this perspective. Greg's involvement in the evolution of the circular goes back to its very beginnings.

DoD used standards from the Society for Automotive Engineers (now known as SAE International) for spark plugs as long ago as the early 1900s. By 1960, there was sufficient activity and use of private standards that DoD issued "Instructions on Use of Standardization Documents Issued by Industry Groups."[2] I have not read the instructions—that's on my bucket list—but the title is straightforward enough. Voluntary and consensus were not significant blips on the radar. Industry groups produced some or even most of these standards by working within standards developing organizations, such as SAE, ASTM International (originally the American Society for Testing and Materials), ASME (founded as the American Society of Mechanical Engineers), and others. DoD and other federal agencies have participated in private-sector standards committees that often were and are characterized by a consensus process. Resulting standards are available but not mandatory unless plopped into a contract or a regulation. In 1976, DoD revised its instructions to read "Development and Use of Non-government Specifications and Standards." The change came about in conjunction with the first draft of OMB Circular A-119.

The Circular Hits the Road

I cannot verify when the Interagency Committee on Standards Policy (ICSP) began, but by 1970 or so, the Department of Commerce had a voluntary standards program and chaired the ICSP, which consisted of standards managers or executives from federal agencies. Eventually, the ICSP came under the care of the National Institute of Standards and Technology (NIST), which is part of the Department of Commerce. Liberal foreign trade was a key issue in the 1970s, and trade policy centered heavily on reducing barriers and tariffs. A new economic paradigm was shaping up as evidenced by the landmark 1974 trade act that helped U.S. industry to be more competitive in overseas markets. Goods in trade depend on standards. The federal government is the largest procurer of goods in the country. Procurement is based in part on standards. Let's all do the math. The ICSP members must have wrestled with everything from how to go metric in standards to how to coordinate interests across the federal government, since each agency was basically autonomous in its approach to standards.

The revised DoD instructions came to the fore as a good model for how agencies could manage their standards activities. DoD already managed thousands of military specifications and standards. The difference was how to manage and coordinate input when working outside government confines and how to do this across government agencies. The ICSP embraced the concept of the DoD model and sought to use it as a basis for a federal-wide policy. Use of standards in acquisition was more of a driver than regulatory

use at this point. So, working with or within the ICSP, OMB drafted Circular A-119 in 1976.

In 1978, the Administrative Conference of the United States (ACUS) issued a lengthy set of policy recommendations regarding federal use and participation in the development of non-government standards. ACUS identified the recommendations' scope as "directed toward the manner in which agencies should interact with non-governmental organizations that develop voluntary consensus standards and the manner in which agencies should utilize such standards for health and safety regulation."[3] The ACUS report acknowledged the benefit of government use of private standards, but federal participation in private standards bodies was couched in very cautionary terms. The report did usher in the "voluntary consensus" phrase that eventually became more prominent on the federal policy horizon. Two years after the ACUS report and following many conversations and debates both inside and outside government, OMB issued the first Circular A-119.

It's a sure bet that the initial 1976 draft circular that had been largely based on the DoD instructions underwent major changes to incorporate the ACUS recommendations. I don't have a copy of the 1980 A-119, so I can't verify this. But there is some evidence, because 2 years later, on October 26, 1982, then-OMB director David Stockman signed into existence a revision of the circular. Stockman stated that the purpose was to "eliminate the costly, unnecessary, and burdensome aspects of the Circular while continuing to encourage agency participation in the development of private sector standards."[4] The 1982 revision was 7 pages long and expanded the scope to include regulatory activities. According to this revision, agencies had to report to Congress via the Secretary of Commerce every 3 years on two things: (1) the nature and extent of participation in standards development and (2) the effectiveness of the circular. Along with transmitting the 1982 revision, Stockman included a letter from the Department of Justice signed by Ronald Carr, the acting assistant attorney general at the time. Carr supported the revision of the circular and especially the removal of restrictions to federal participation in outside standards organizations.

Rolling Forward

By the 1980s, federal acquisition agencies were deep into procuring off-the-shelf items using a form of specification called a Commercial Item Description or CID. Regulatory agencies were adopting and referencing (better terms than "plopped") private-sector, non-governmental voluntary consensus standards into rules. That said, Senator Carl Levin and Representative John Kasich were less than impressed with just how the commercial purchasing was going, so they tacked on an amendment to the Defense Department Authorization Bill in 1987 to put the force of law behind the policy. OMB again decided to revise Circular A-119 in part to support the emphasis on commercial acquisi-

tion as contained in law and enunciated in Circular A-76, "Performance of Commercial Activities." On October 20, 1993, the revision was signed by Leon Panetta, who was OMB director in 1993–94. Agencies were now required to report every year instead of every 3 years. Oh, and the number of reporting requirements doubled.

The big bang in the federal standards world occurred with the enactment of the National Technology Transfer and Advancement Act (Public Law 104-113), Section 12(d). Known as the NTTAA and signed into effect in 1996, the law codified the basic message of OMB Circular A-119, namely, that federal agencies should use voluntary consensus standards in regulatory and procurement activities and should participate in their development. Appropriate exceptions ensued. The law also specifically identified NIST as coordinator of federal conformity assessment activities. Naturally, OMB undertook a revision of Circular A-119, published in 1998, to incorporate the NTTAA. OMB used a question-and-answer format for the revision and expanded the sections on definitions and on participation in voluntary consensus standards organizations. For the first time, the title of the circular included conformity assessment and thereby put down a marker for NIST's role. And did I mention that the reporting requirements doubled again?

Catapult ourselves from 1998 to the present. The ensuing years are chock full of major social, political, trade, and economic changes, many of which can affect federal policies on standards. Focus on regulatory use of voluntary standards has arguably eclipsed focus on standards in procurement when it comes to policy considerations. Global markets are the norm, and the World Trade Organization's Technical Barriers to Trade agreement puts singular emphasis on use of international standards. The Office of the Federal Register, which publishes the Code of Federal Regulations, has recently been petitioned to require that standards referenced in regulations be made freely available. If granted, the petition could have major consequences for how federal agencies incorporate standards or even participate in standards committees. In 2011, ACUS adopted another set of recommendations on the same issue.[5] In a separate initiative, NIST is revising its guidelines on conformity assessment for federal agencies. This short list barely scratches the surface. It's no wonder that OMB is again considering whether Circular A-119 needs revision.

Coming Full Circle

To date, OMB has not announced a decision to revise Circular A-119, but the Office of Information and Regulatory Affairs at OMB is certainly considering the possibility. In March 2012, OMB issued a *Federal Register* notice seeking input on several questions that affect federal interface in standardization.[6] OMB followed up the notice with a May 15 open workshop at NIST. Speakers from government, industry, and standards organizations here and abroad addressed the OMB questions and spoke on the increasing chal-

lenges in meeting national and global needs for high-quality standards in a timely manner. Responses to the *Federal Register* notice and the workshop overwhelmingly support continued government participation in standards development.

Two areas stand out in the current policy considerations: (1) guidance on the incorporation by reference in regulations and (2) guidance on the use of standards and obligations under the trade laws. These are hefty issues to grapple with for sure. I'm going to assume that world events will continue to evolve regardless of when the circular is next updated. Those of us in the federal sector recognize that A-119 will continue to adapt. If you are considering a career in standards, it's only fair that you know this.

[1]See http://www.standards.gov for copies of OMB Circular A-119 and the National Technology Transfer and Advancement Act.

[2]For further information on the instructions, please contact DSPO.

[3]"Federal Agency Interactions with Private Standard-Setting Organizations in Health and Safety Regulation," Recommendation 78-4 (adopted on December 15, 1978).

[4]Existing and proposed revisions to circulars can be found at http://www.whitehouse.gov/omb/circulars.

[5]"Incorporation by Reference," Recommendations 2011–5 (adopted on December 8, 2011).

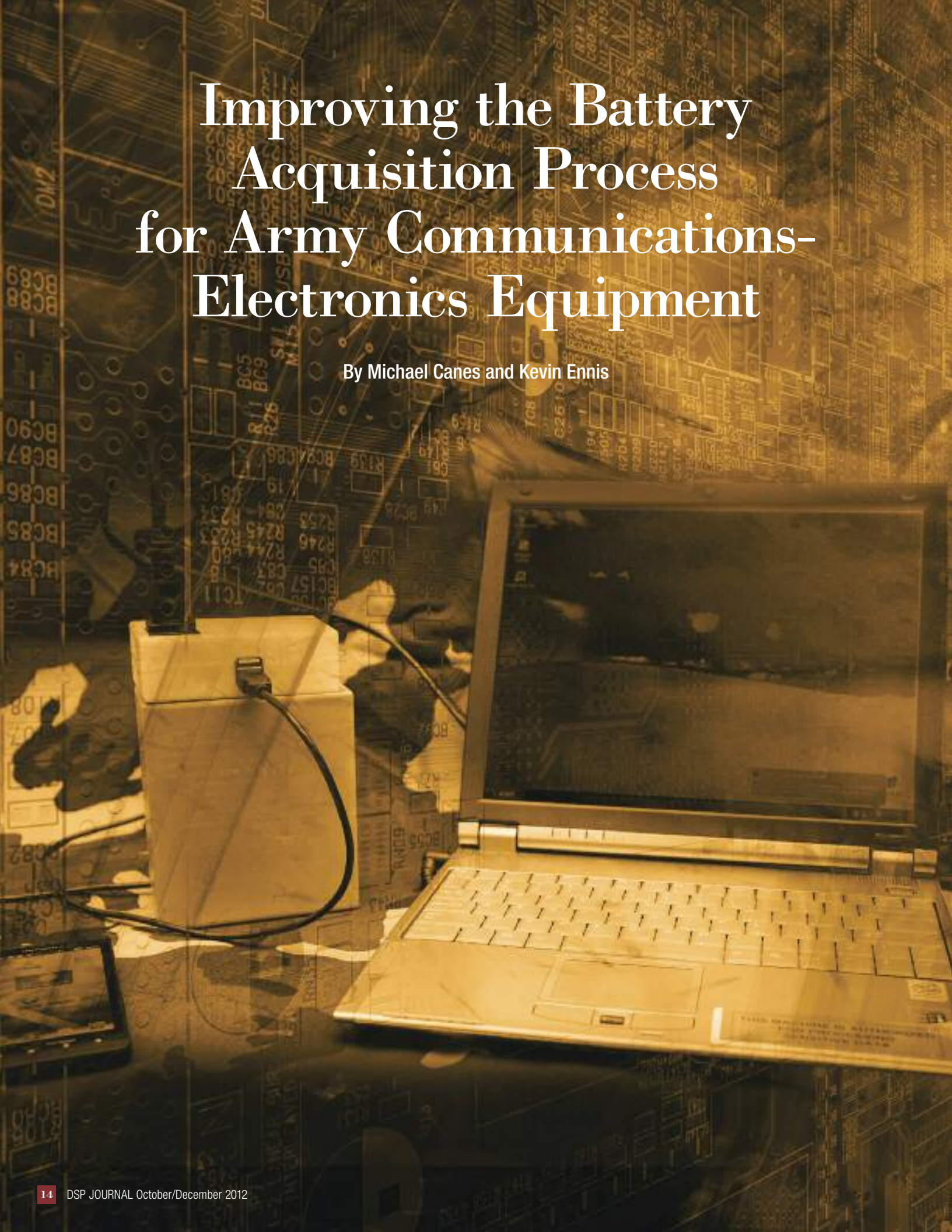
[6]"Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities," http://www.regulations.gov/#!docketDetail;D=OMB-2012-0003.

About the Author

Mary McKiel, PhD, is the standards executive for the U.S. Environmental Protection Agency (EPA). She has served in the federal sector for over 37 years and is currently responsible for guiding EPA's implementation of the NTTAA and OMB Circular A-119. In conjunction with her work at EPA, Dr. McKiel is vice chairman on the Board of Directors for ASTM International. She also serves on the board of directors for the American National Standards Institute (ANSI) and chairs ANSI's Government Member Forum and its ISO Council.

Improving the Battery Acquisition Process for Army Communications-Electronics Equipment

By Michael Canes and Kevin Ennis



The U.S. Army increasingly relies on communications and other electronic equipment to aid its warfighting capabilities. Among other things, these systems enhance the Army's ability to perceive threats, coordinate responses, and, ultimately, defeat the threats. The development of sophisticated communications-electronics (C-E) systems has enhanced the Army's fighting capabilities, but the systems require a power source, which generally takes the form of batteries. (Fuel cells offer an alternative power source but generally are not used for larger C-E systems.) For many years, the Army has sought to improve soldier access to and use of power. The importance of doing so has only increased with time, because soldier power has become central to effective ground operations. However, the Army has struggled with an ongoing issue: how to limit the numbers of C-E battery types through greater standardization.[1] In this article, we describe the problem and suggest means for its resolution.

Military Batteries

A battery is a device that converts stored chemical energy into electrical energy. Battery chemistries differ in the quantity of electrical energy delivered, length of time it is delivered, ability to supply a large amount of power instantaneously, weight, cost, and other characteristics. The chemistry chosen usually relates to the battery's function.

Batteries are produced as cells, which can be combined into battery packs. The general term "military batteries" refers to battery packs that are shaped and sized to fit into particular systems. Individual cells interconnect, so the power capacity of a pack is the combined capacity of the individual cells. The pack connects with the system it powers through its touch points, which can vary in quantity, size, and shape. The critical features of battery packs include size (dimensions), weight, voltage, and chemistry. Many military batteries use lithium ion cells, which are relatively light and have a high energy density. A particular battery pack can contain two, four, six, or more such cells, depending on the power needs of the particular C-E system and its size.

There are two general types of batteries: primary (disposable) and rechargeable. Recharging allows reuse of the battery pack, but requires a charger to repower it. Battery packs use adapters to enable the use of chargers, as well as other purposes, including conversion between AC and DC power.

In addition to individual cells, rechargeable battery packs contain electronics that monitor and control their temperature, balance the state of charge among the cells, and calculate and report data. Battery packs are sealed with metal or plastic sheathing to protect the electronics and cells from the elements and to ensure the safety of C-E system users.

Proliferation of C-E Battery Types and Their Costs

Some of the batteries used to power C-E systems are standard commercial or preferred Army batteries, but many are unique batteries designed for a specific system. (Preferred Army batteries have been designated by the Army as acceptable for inclusion in new systems; non-preferred battery types must be cleared via an exception process, which is described later in this article.) The Army maintains lists of C-E systems and the battery types that power them. The lists contain most C-E systems currently in use and a handful of systems that are not themselves C-E, but that use batteries designed for such systems. According to a recent version of such a list, approximately 330 items (radios, computers, sensors, and other gear) use batteries designed for C-E systems. The batteries range from standard commercial types (AA or D, for example), purchased by the tens of thousands annually, to highly specialized types, purchased in small numbers.

The Army's Logistics Innovation Agency (LIA) surveyed Army C-E systems by national stock number to estimate the number of unique battery types used. LIA identified 118 different battery types in use in FY06–10; of those, 93 were non-preferred. LIA also looked beyond C-E systems to all battery types used by the Army. It found that the Army uses more than 200 different non-preferred types of rechargeable batteries. For more than 40 of those, demand exceeded 500 per year.

According to LIA's data, the Army is spending more than $125 million annually on batteries, including around $50 million on C-E batteries alone. The Army's actual annual battery costs are probably considerably higher, because individual units purchase batteries with International Purchase Merchant Authorization Cards (IMPACs) and unit credit cards, but card purchase data are not collected.

This proliferation of battery types has forced Army units to stock multiple types of spares and to transport greater quantities to the front, and it has forced soldiers to carry greater quantities of batteries on missions. These factors add to logistics burdens and reduce operational effectiveness. Analysts at the Naval Postgraduate School developed a method for estimating the fully burdened cost of delivering batteries to the front lines.[2] The burdened cost includes not only the purchase cost of a battery but also that of logistics resources such as trucks and personnel used to deliver the battery to where it is used, at the front lines. According to their analysis, the burden above purchase cost of supplying a battery the size of a BA-5590 (2.25 pounds and 5 by 4.4 by 2.45 inches in size) with no protection for the convoys is about $7. If assets are used to protect the convoys carrying the batteries, this burden rises to about $17.50 per battery. The implication is that substantial costs, which may include the diversion of defense assets, are involved in shipping large numbers of batteries to the front.

Causes of the Proliferation

We have analyzed the Army's battery development process to isolate the reasons for the proliferation of battery types. Our findings indicate that fragmentation in the development and fielding of batteries and an imperfect review process have led to this proliferation.

The Army employs a multifaceted C-E system battery development process. The Army itself, through the Communications-Electronics Research Development and Engineering Center (CERDEC), researches improvements in chemical properties, electronic capabilities, durability, and other qualities of batteries. In addition, the Army (as well as the other services) tracks battery improvements made in the commercial sector and incorporates them into military batteries where possible. Over time, these efforts have resulted in longer-lasting, more powerful batteries in the field.

However, although the development process has improved battery technology, it has not resulted in satisfactory battery standardization. The Army encourages, but does not mandate, C-E system developers and program managers to choose preferred batteries, and often they do not. In many cases, battery pack design is subordinate to C-E system design, meaning the battery is shaped to optimize the functionality of that system, not to conform to Army battery standards.

Battery Design Review Process

Figure 1 shows the Army's current battery review process. A need for a new C-E system arises; the system, including a battery pack, is designed; if the pack is non-preferred, it goes to the Army's Power Sources Center of Excellence (PSCOE)[3] for review; and if concurrence is not forthcoming, the developer and project office are expected to redesign the system, presumably to accept a standard or preferred battery pack, or else accept the risk that the Army Acquisition Executive will adversely factor the non-preferred battery design into its decision whether to proceed with development of the system.

The process described in the figure has not worked well for at least three reasons:

- The Army's battery development process is not well aligned. Battery types are designed by C-E system developers, who have little interest in the Army's difficulties with battery proliferation. Further, they often approach PSCOE too late in the C-E system development process to realistically alter the battery design.
- The structure of the Army's power source review involves an inherent contradiction, because some of those in a position to withhold concurrence with a non-preferred design are financially conflicted from doing so. Figure 2 shows this inherent financial conflict of interest. Money flows from the program offices to the Army Power Divi-

sion (APD), whose personnel are part of PSCOE. Any refusal on APD's part to concur on battery type is unlikely to be welcomed by those very offices.

- The risk tends to be small that the Army Acquisition Executive will forestall development of a new C-E system because of a non-preferred battery type.

Figure 1. Army C-E Battery Choice Process

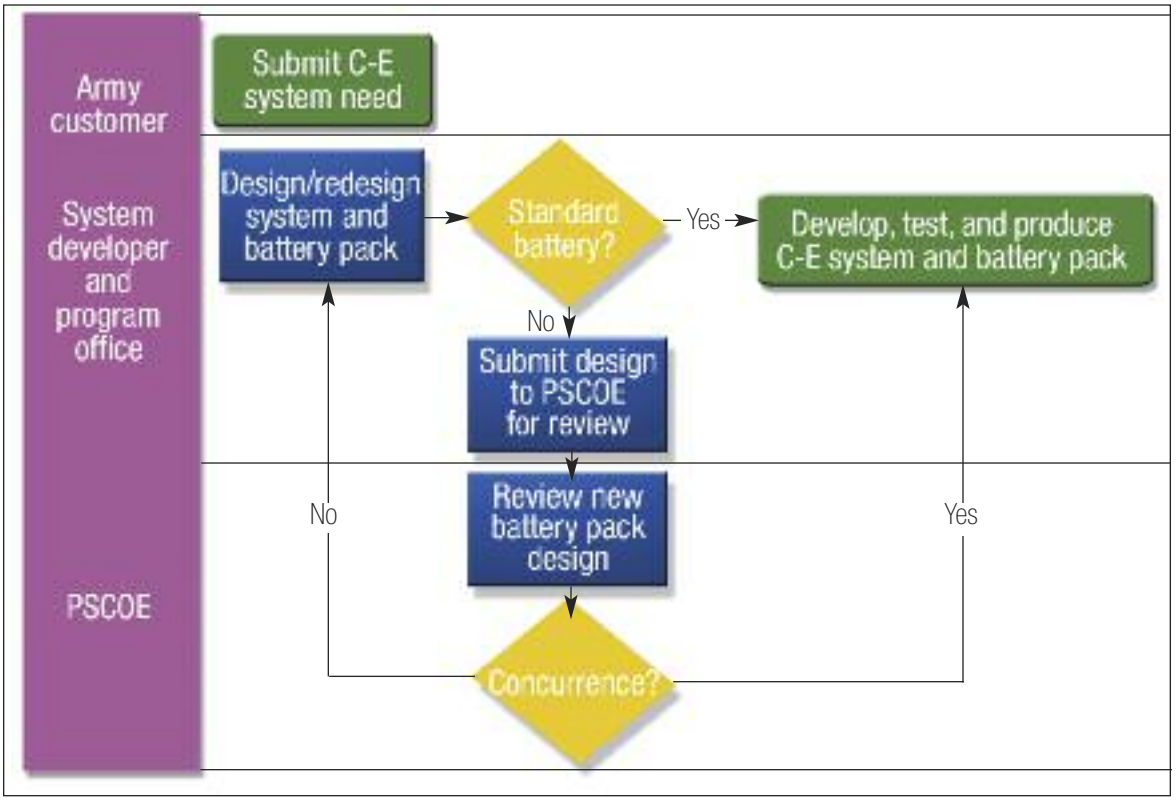
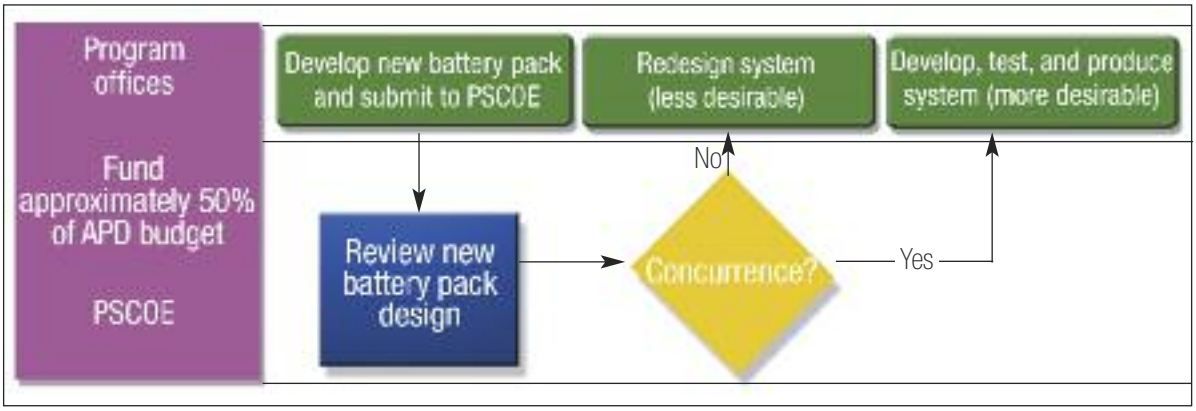


Figure 2. Conflicted C-E Battery Concurrence Process



A meaningful correction to the proliferation of battery types requires better alignment of the battery development process with Army objectives and must deal with the inherent weaknesses in standardization review.

Example of Potential Gains from Reforming the C-E Battery Development Process

Two military radios, the AN/PRC-148 Multiband Inter/Intra Team Radio (MBITR) and the AN/PRC-152 Falcon, use rechargeable battery packs that are very similar in function, size, and voltage but have different touch points, so they are not interchangeable. Had the two radios instead used a common battery pack, only one such pack would have had to be developed and tested, greater production economies of scale would have been realized, and fewer spares would be needed for the two systems combined. In addition, only a single charger and adapter for the batteries would be needed rather than two distinct types. In fact, a difference in battery pack touch points is a fairly simple design matter, easily fixed had the Army strictly enforced its policy to minimize battery types.

The potential gains from standardization of these particular batteries could have been even greater. A third battery pack, for the AN/PRQ-7 Combat Survivor Evader Locater (CSEL), appears functionally similar to the MBITR and Falcon, and similarly sized. Like the other two, it is a rechargeable pack, but there is an important institutional difference. Under the Army's arrangement with the developer, the CSEL primary battery is competitively supplied, and the rechargeable version somewhat so, whereas the MBITR and Falcon are proprietary, supplied only by the makers of those particular battery packs. Table 1 compares the physical characteristics of the battery packs.

Table 1. Comparison of the Physical Characteristics of Three Army Battery Types

Characteristic	MBITR	Falcon	CSEL
Size	2-5/8" × 1-1/2" × 3-1/4"	2-3/4" × 1-7/16" × 3-5/16"	3-3/10" × 1-4/5" × 3-1/5"
Weight	0.80 lb	0.79 lb	0.86 lb
Pack shape	Rectangular	Rectangular	Rectangular
Voltage	12	10.8	10.8
Cells/chemistry	6 lithium ion 18650-type	6 lithium ion 18650-type	6 lithium ion 18650-type

The three packs differ slightly in makeup, but they are similar in that all use six of the same type of lithium ion rechargeable battery cells and all are rectangular, similarly sized, and have similar voltages. The main difference among them is their interfaces to the systems they power and to their chargers. Their costs to the Army, however, differ significantly. Table 2 shows their unit costs, 1-year production quantities, and total DoD purchases through January 2011.

According to these data, the MBITR battery pack was 47 percent more costly per unit than the CSEL, while the Falcon battery pack was 70 percent more costly, even though

Table 2. Comparison of Battery Costs and Quantities

Characteristic	MBITR	Falcon	CSEL
Unit cost to Army	$277	$319	$188
Production quantity (March 2010–February 2011)	42,955	15,742	4,970
Total DoD purchases through January 2011	226,537	186,729	50,000[a]

[a]As of October 2011, DoD had acquired 50,000 CSEL radios, with a presumably larger number of battery packs. The Army alone had acquired 21,287 of these packs through September 2011.

fewer CSELs have been produced. Had DoD been able to purchase a common battery pack for the three C-E systems, and had that pack cost no more than $188 apiece via competitive solicitation, it could have saved around $5.9 million between March 2010 and February 2011, as much as $44.6 million over the lifetime of the systems, and even more if IMPAC and individual unit purchases, as well as chargers and adapters, were included.

Optimizing Army Battery Development

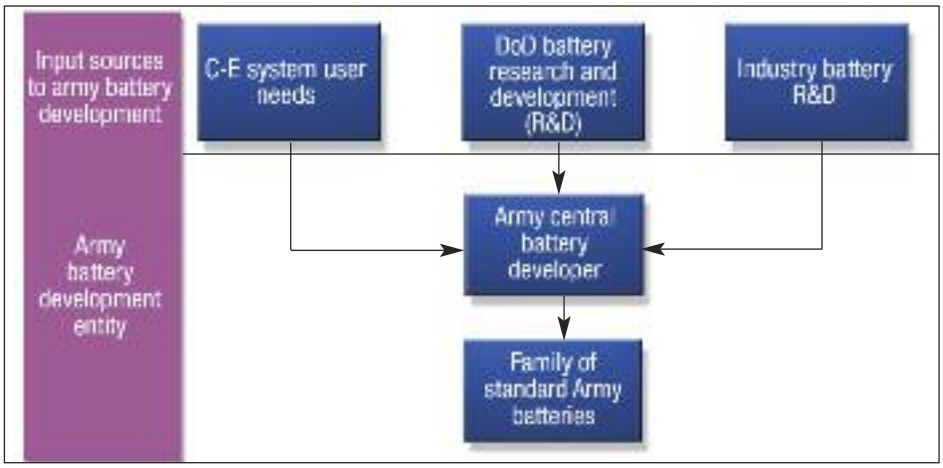
An optimum Army C-E battery development structure would move toward establishment of a "family" of preferred Army batteries, the members of which would be worked out between a central Army battery development entity and the C-E program offices and the system developers they oversee. A family of batteries would fulfill the Army's needs with a minimum number of battery types, sufficient to cover a range of functions, but small enough to ensure commonality to gain economies in numbers of spares and replacement costs and gains in power reliability.

Additions to the family or new versions of existing members also would incorporate technology developments from Army sources such as CERDEC, non-Army DoD entities, and the private sector. The family would cover many C-E system needs, but likely not all, because some C-E systems have unique structural features or energy needs. Figure 3 depicts the development process.

In the reformed process, the initiative for battery design would come from an entity—other than the C-E program offices—whose responsibilities include development of a family of standard batteries. Presumably, this battery development entity would work closely with C-E developers, program offices, and technical sources to ensure the family met as many C-E system needs as possible while incorporating best available technology. That entity also would seek to attain these qualities at competitively determined costs.

The process of choosing which batteries to include in new C-E systems also would differ. Offices overseeing the development of new C-E systems either would choose a battery from the family or seek concurrence for an exception, with the central battery entity deciding whether or not to grant such concurrence and registering its decision with the Army Acquisition Executive. The battery developer presumably would not be funded by program offices, but rather as a freestanding entity, so its decisions regarding

Figure 3. Central Development of Army Batteries



battery exceptions could be made without fear that its funding would be reduced. Also, because the battery development entity would have an interest in promoting members of its family, it likely would engage in careful scrutiny before granting such exceptions. Figure 4 shows the envisioned review process.

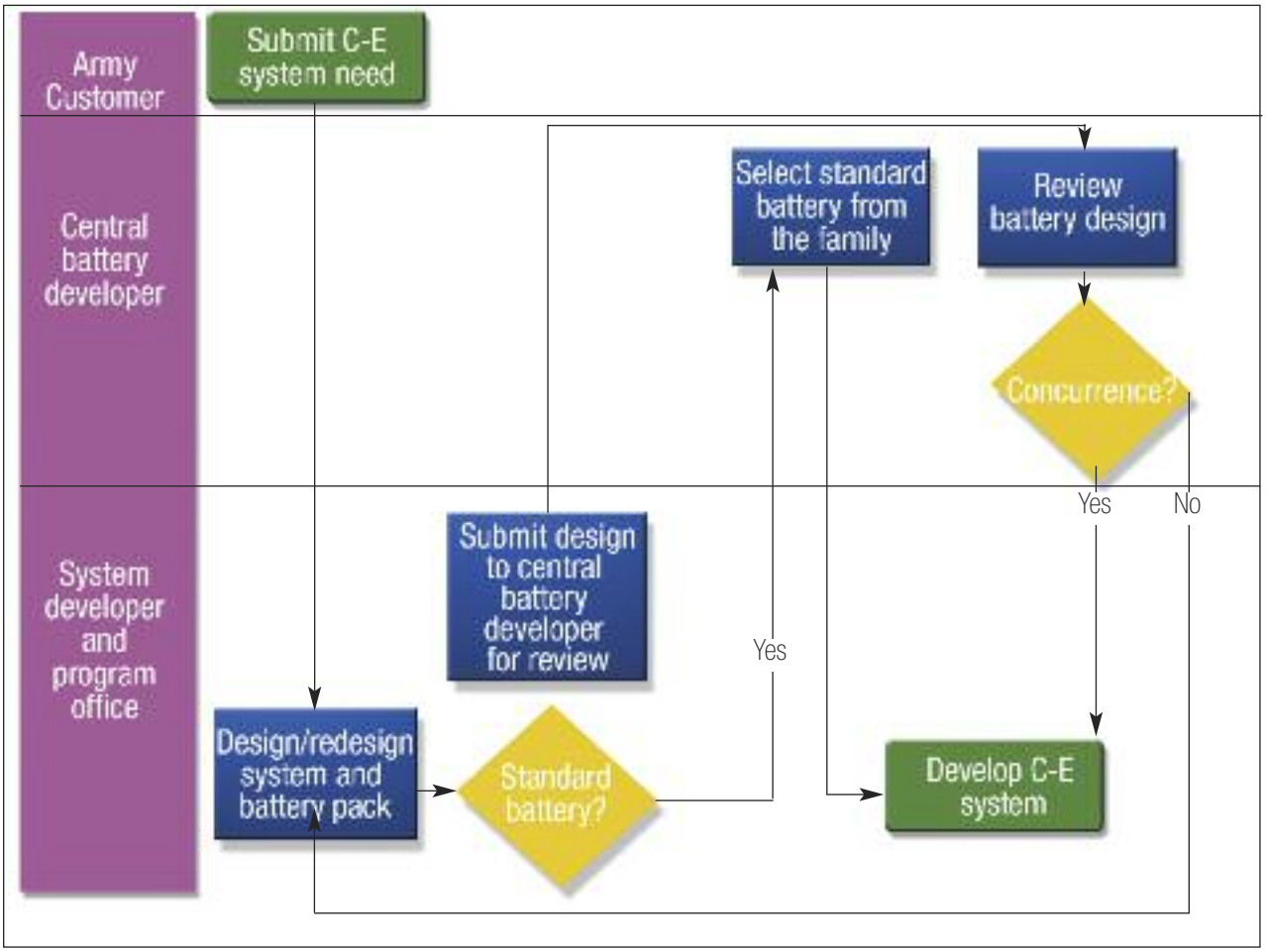
Challenges

The Army would gain from centralized development of a family of batteries, but challenges could arise as well. For example, by reducing the number of battery types, the type most suitable for a given C-E system might not be optimal for that system. In some cases, the most suitable available battery might provide more energy or use more expensive materials than needed for a C-E system, while in others, the closest existing battery type might provide less energy or be slightly larger than optimal. In arriving at an optimum family of battery types, the battery developer would need to balance economies gained from standardizing Army battery types with their costs.

The battery development entity might be overly incentivized to deny exceptions to program offices in order to encourage use of the standard family. If so, the revised process would reduce the Army's battery-type proliferation problem, but might encourage too strict adherence to the family in the sense that, in some instances, a unique battery type might have been the more cost-effective choice. However, program offices presumably could appeal their case to the Army Acquisition Executive, and the battery development entity would not want to be exposed making poor decisions. Given the fully burdened costs of supplying unique battery types to field operations, putting a stronger burden on program offices to justify unique battery types seems the lesser error.

Establishing and maintaining a central Army battery development entity would require funding. Presumably, such an entity would include a set of experts on battery design and development, as well as a management structure. However, the Army already funds battery expertise, and some of this might be utilized without incurring incremental costs.

Figure 4. Proposed Army C-E Battery Review Process



Also, the battery development entity would replace the PSCOE as the exceptions decision-making entity, thus saving resources.

Conclusions and Recommendations

Redesign of the Army's battery development and acquisition process for C-E systems offers significant potential gains through reducing the proliferation of types, with consequent reductions in logistics and other costs associated with supplying batteries and chargers to the field and increases in the reliability of power supply. Such redesign also should expedite incorporation of improved technology into batteries used in C-E systems. All of this should materially reduce the operational and cost burdens that battery development and use now impose.

In our view, the Army should consider forming a centralized entity to develop a family of battery types that take advantage of advancing technologies to cost-effectively fulfill the needs of most Army C-E systems. The central entity would seek to encourage technological progress in batteries to meet the needs of C-E system users; work with Army components such as CERDEC and the Communications-Electronics Command and

with private battery researchers to incorporate new technologies as they become feasible and practical for use; and enforce the Army's policy of minimizing the development and use of unique battery types for C-E systems.

Under this approach, program offices would be encouraged to use members of the standard family of batteries in new C-E systems. If an office still thought it necessary to develop a unique type, it should approach the central entity early in the design phase of the C-E system development process to obtain concurrence.

The battery development and procurement process would be further enhanced through implementation of the following improvements:

- The Army Acquisition Executive should review program office decisions to proceed with C-E system development despite non-concurrence with battery type before allowing system development to proceed beyond early milestones (A or B).
- The Army should retain technical data concerning any new battery developed for its C-E systems so that incremental procurements can be obtained through competitive processes.
- The Army's standard battery policy enforcement entity should not be financed by program offices. Instead, a central C-E battery developer with responsibility for policy enforcement might be financed by an Army budget line item. This would remove the conflict that now exists within the Army's C-E battery design review process, in itself an important step toward improving Army battery acquisition.
- Battery commonality among legacy C-E systems could be improved, potentially saving logistics resources and cutting costs. However, because that likely would require redesign of such systems, attempts to secure commonality probably would be most cost-effective when system redesign was under way for other purposes.

[1]The Army uses batteries for a wide variety of functions, including aircraft, ground vehicles, and biodetection and other equipment. However, this article focuses only on C-E systems, for which battery-type proliferation has been a more serious problem.

[2]This concept is analogous to the fully burdened cost of fuel (FBCF), which refers to the total cost of delivering fuel to where it is used for military purposes. The FBCF has received wide attention in the defense community as it became clear that fuel resupply was imposing significant burdens on warfighting efforts.

[3]The PSCOE is made up of personnel from the power divisions of CERDEC and the U.S. Army Communications-Electronics Command's Life-Cycle Management Center. The CERDEC representatives make up the Army Power Division.

About the Authors

Michael Canes is a Distinguished Fellow and Kevin Ennis is a Research Fellow at LMI in McLean, VA. Dr. Canes works on operational energy initiatives, alternate fuels, options for power supply, and cost-effectiveness analyses. Mr. Ennis conducts research and analysis on a variety of topics relating to energy management, emerging energy technologies, climate change, and sustainability.

Gatekeeping in the 21st Century

New Anti-Ram Standard Enhances Safety and Security

By Dean Alberson

In the Middle Ages, gatekeepers had it relatively easy. Castles were considered the pinnacle of defensive warfare technology. To stymie the enemy, you simply drew up the gate or, if there was no moat, lowered the iron portcullis to keep the enemy out. Then gunpowder was invented, and soon holes blasted in castle walls made the moat moot. Medieval strategists had to reevaluate their old way of thinking to deal with the new way of warfare.

A similar change has occurred following terrorist attacks of the last couple of decades. The United States has reevaluated its approach to gatekeeping near its installations to better defend against what has become the symbol of terrorism worldwide: the car bomb.

Anti-ram barriers are typically used around government buildings, airports, military installations, embassies, United Nations facilities, ports and waterways, power plants, or any location where terrorist activity is a threat. These barriers keep vehicles as far away from buildings as possible to minimize damage should a car bomb explode.

Some barriers are designed to admit pedestrians but not vehicles, while other barriers are designed to let vehicles pass intermittently. Striking a balance between utility and safety-challenged medieval strategists, and it's still a challenge when designing barriers today.

History of Anti-Ram Barrier Standards

In 1985, the U.S. Department of State created an anti-ram standard for protecting its embassies. Essentially, the standard was designed to stop a medium-duty, single-unit truck and accounted for three levels of penetration: L1 (50 feet), L2 (20 feet), and L3 (3 feet). But as the new millennium approached, embassy bombings, like those in Kenya and Tanzania in 1998, demonstrated the need for a new standard.

Characteristics of a medium-duty, single-unit truck (1985 standard)

- Ballasted with rigidly attached steel plate
- Gasoline engine
- 2.5-ton capacity
- 15,000 pounds ±200-pound test weight

Consular facilities, such as embassies in foreign countries, are frequently located in populated urban areas, staffed with prominent administration or military personnel, and often squeezed into high-traffic areas on small lots. So in 2003, the State Department revised its standard to better meet the threat at that time.

Essentially, the 2003 standard limited penetration concerns to 3 feet, thereby acknowledging the tight-quarters reality of embassy placements around the world. It also reconstituted the standard for a diesel (rather than a gasoline) truck, because diesel trucks more closely represented vehicles in the field that were structurally superior to gasoline trucks. This revised standard met the changing needs of the State Department, and other agencies—like DoD and the Department of Energy—found it useful … but incomplete.

Military bases are typically surrounded by wide-open spaces, which create a much greater stopping distance for enemy vehicles. The safety of building occupants is enhanced with every foot of space between the facility and a terrorist's bomb.

DoD, for example, liked the 2003 standard but decided to keep the original penetration ratings from the 1985 version, which acknowledged the potential for bombings outside a 3-foot range. Other concerns cropped up as well. For example, the 2003 standard assumed a terrorist would use a 2.5-ton diesel truck to carry out an attack. But recent realities in Iraq, Afghanistan, and other countries make it clear that practically any vehicle will do as a delivery mechanism.

Development of a New Standard

The U.S. Army Corps of Engineers expressed interest in creating a more flexible standard, so ASTM International invited interested parties to its fall 2003 meeting. I led a team in the ASTM standard development effort.

The team developed a new standard—ASTM F2656-07, "Standard Test Method for Vehicle Crash Testing of Perimeter Barriers"—that reintroduces more penetration ratings, adds design flexibility to cover a wide range of vehicles, and specifies different impact velocities for some vehicle categories. The development process took 4 years from start to finish, and the standard was codified in August 2007. The State Department adopted ASTM F2656-07 in October 2008 and activated it on February 1, 2009.

Unlike its predecessors, under ASTM F2656-07, equipment testing is no longer overseen by the State Department. Accredited labs like Texas A&M Transportation Institute's (TTI's) Proving Ground Research Facility—which has run approximately 100 of these tests—must issue a mandatory report on how the equipment performed. Companies, then, are going to have to become familiar with—and respect—the new standard if they want their products considered for securing U.S. and international facilities worldwide.

A post-and-beam system successfully stops a diesel truck at TTI's Proving Grounds Research Facility.



Researchers are currently reevaluating and updating the standard. Additional test vehicles and testing requirements are being defined and minor deficiencies addressed. Balloting of the standard will occur this fall and will likely become F2656-13 in spring 2013.

For more information about ASTM F2656-07, contact Dr. Alberson at d-alberson@tamu.edu or 979-458-3874.

Note: Earlier versions of this article appeared in the *Texas Transportation Researcher* (July 2009) and in *STRUCTURE* (August 2009). The article has been updated for this publication.

About the Author

Dean Alberson is a research engineer, program manager, and assistant agency director for TTI and chairs the ASTM working group that created ASTM F2656-07. Dr. Alberson is a registered professional engineer and a full-time researcher in highway safety devices and anti-ram barriers and gates. He has overseen dozens of standards tests at TTI's Proving Grounds Research Facility.

Program News

Topical Information on Standardization Programs

DSPO Fosters Common Defense Interests with Germany

Constant preservation of foreign relationships is pertinent to DoD's successes. The Engineer and Scientist Exchange Program (ESEP) is a professional development exchange program that allows the United States to maintain such relationships through career-broadening work assignments offered to foreign nationals in U.S. defense establishments and to U.S. personnel in foreign defense establishments.

ESEP was established in 1964 between the German Federal Defense Administration and the U.S. Armed Forces. The basis for this exchange is a memorandum of understanding, "Engineers and Scientists Exchange Program," which was signed by both nations a year before. The aim of the agreement is to utilize the scientific and technical resources of both countries in an effort to realize common defense interests. The tasks assigned by the host agencies are intended to be used for applying and deepening expert knowledge in the respective fields. In addition, knowledge about organizational and work processes of the host nation is to be conveyed to the visiting professionals.

Throughout the past year, DSPO had the opportunity to utilize this program and welcomed German foreign national Mirko Sohn to the team. Mirko spent his time with DSPO working on significant projects such as revising the "International Pocket

Guide," performing analysis of overaged military specifications and standards, and preparing for and participating in the 2012 International Standardization Workshop.

Before Mirko's assignment with DSPO ended, he took some time to answer a few questions about his experience while working here in the United States:

Q: What is your favorite thing about America?

MIRKO: The beautiful nature/countryside and that you have such a big amount of national/regional parks. Starting with the Niagara Falls in the north and ending with the "Dry Tortuga NP" in the very south.

Q: What surprised you the most about living in America?

MIRKO: That a lot of Americans have been to Germany once, or their heritage is German, or at least have someone in their family who lived/lives there.

Q: What about living in Germany do you think would surprise Americans the most?

MIRKO: That most of the prejudices about Germans are true! Compared to the USA, everything in Germany must look tiny to Americans (that includes the parking lots!). The area of Germany is less than Montana. Also, the high gas prices!

Q: What did you see and do during your free time? And what did you enjoy the most?

MIRKO: My wife and I liked to explore the countryside, so we spent quite some time hiking in the nearby Shenandoah National Park and recreational parks, and we used the opportunity to see the Niagara Falls and Miami/Key West. Those are great!! Besides that we liked the fact that our apartment complex had the amenity of an outdoor pool, where you can relax in the evenings.

Q: Who was the most interesting person you met?

MIRKO: That is hard to answer, because everybody we met is special. But, if I have to choose one, I will name Joe Delorie, because no matter what topic you are talking about, he seems to be an expert in everything. It is a real pleasure to listen to him and discuss with him about various topics.

Q: Name some of your "firsts" here in America:

MIRKO: I watched the Super Bowl and went to my first baseball game. I also got a "Speeding Ticket" in Pennsylvania.

DMSMS Working Group Recognizes DMSMS Management Achievements

The management of Diminishing Manufacturing Sources and Material Shortages (DMSMS) is critical to the sustainment of our modern military and commercial systems. Effective DMSMS management requires a synergistic effort by many individuals and teams across several disciplines and communities, including acquisition, parts management, standardization, logistics, and sustainment.

Over the years, individuals, teams, and organizations have developed numerous tools, publications, processes, policies, and procedures to mitigate DMSMS and promote proactive DMSMS management. And each year, the DoD DMSMS Working Group, which sponsors the awards, holds an awards ceremony to publicly recognize the most significant DMSMS management accomplishments. The awards are open to teams and individuals from both DoD and industry.

When evaluating the nominations for the 2012 awards, the panel focused on DMSMS activities exhibiting

- exceptional DMSMS management of a defense system or enterprise,
- significantly improved quantifiable readiness levels,
- substantial cost avoidance or savings,
- exceptional warfighter support related to or realized through a DMSMS issue, and
- creation or implementation of a DMSMS best practice demonstrating high impact on the warfighter.

The 2012 DMSMS achievement awards ceremony was held on November 26, 2012, at the Marriott Orlando World Center in Orlando, FL. The awards, presented by Mr. Nicholas Torelli, Director for Mission Assurance within the Office of the Deputy Assistant Secretary of Defense for Systems Engineering, included two lifetime achievement awards, one individual achievement award, four team achievement awards, and one enterprise achievement award. In addition, two individuals were given special recognition for their contributions to the DMSMS community.

Congratulations to this year's winners!

Lifetime Achievement Awards

Ms. Lynne Marinello—chief of the Army's Electronics Obsolescence Management Branch of the Manufacturing Science and Technology Division at the Aviation and Missile Research, Development and Engineering Center (AMRDEC)—received a lifetime achievement award for her overall management and technical direction in support of more than 15 aviation and missile program management offices across the Aviation and Missile Command, as well as other organizations and services. She is widely recognized as a leader and a subject matter expert in electronics obsolescence management throughout DoD and the industrial base community, and she is an active member of the DoD DMSMS Working Group. Ms. Marinello also supports multiple platforms on a day-to-day basis. Upon Ms. Marinello's entry into this branch of AMRDEC, she was one of only approximately 7 team members. She now leads the group of 15, and much of that growth is due to her dedication, vision, and unfaltering leadership. She has led the branch, through its support of multiple missile and aviation platforms, to capture over $300 million in cost avoidance over the past 5 years. This accomplishment was achieved by effective and efficient use of a centralized data clearinghouse, standardized practices, collaboration with other services and industry, and automation of research and data management processes to minimize the impact of obsolescence, reduce the logistics footprint, and lower the cost of ownership. Ms. Marinello displays mission excellence in all she does.

Pictured above are, left to right, Mr. Kevin Dean, U.S. Army Research, Development and Engineering Command, accepting the award on behalf of Ms. Marinello, and Mr. Torelli.

LIFETIME ACHIEVEMENT AWARDS, continued

Mr. Ron Wong, manager of DMSMS programs at NCI Information Systems, Inc., received a lifetime achievement award for his many years as a leader in the DMSMS community. As an Air Force officer starting in supply chain management and working budget and financial issues, through a federal career as a program manager responsible for logistics requirements on C-5, C-17, C-130, and propulsion systems, he has provided his skill and experience to many Air Force, Army, and Navy customers. A significant contribution was the development of the DMSMS Center of Excellence (COE) to provide government and commercial information and a multitude of related data for anyone performing obsolescence analysis. He was instrumental in developing the COE into the DMSMS Knowledge Sharing Portal, which recently went online on the Defense Acquisition University (DAU) website. His experience working sustainment logistics in the Pentagon provided him the DoD perspective for obtaining and sharing obsolescence guidance, potential resolutions, and data and assisting congressional committees to fund supporting logistics programs. Mr. Wong managed three DMSMS teams that won team achievement awards, one in 2008 and two in 2010. He was in the original group of functional experts that developed the first DMSMS Plan Building Module with the Army's Logistics Support Activity. His support of the DoD DMSMS Working Group and his participation in the DoD Parts Standardization Management Committee as the DMSMS Subcommittee chair helped to bring two functional disciplines closer together. At NCI Information Systems, he continues to be an integral part of the DMSMS and parts management communities within DoD, providing immense benefits to our warfighters worldwide.

Pictured above are, left to right, Mr. Ron Wong and Mr. Torelli.

Individual Achievement Award

Pictured above are, left to right, Mr. Bill Kobren and Mr. Torelli.

Mr. Bill Kobren, director of the Logistics and Sustainment Center at DAU, has made many significant contributions to the DMSMS community. In 2004, he negotiated and executed the DAU-Defense Logistics Agency (DLA) DMSMS training, resulting in nearly a decade of collaboration on DMSMS initiatives. From 2004 to 2007, Mr. Kobren served as the DAU representative to the DoD DMSMS Working Group. During that time, he also coauthored "Mitigating Diminishing Manufacturing Sources and Material Shortages," which was published in *Defense AT&L*. He also proposed the idea for DMSMS Management Plan Tool functionality and, in 2005, engaged the Army Logistics Support Activity to embed DMSMS into the Systems Planning and Requirements Software tool. From 2004 through 2006, Mr. Kobren worked with DSPO to field five web-based DMSMS training modules, which produced a total of some 9,100 graduates by July 2012. Since 2009, he wrote numerous posts on the Defense Acquisition Portal Director's Blog. He moderated the Senior Leader panel at the DMSMS 2007 conference and the Product Support Manager panel at the DMSMS Standardization 2012 conference. In addition, since 2005, he has manned the outreach booth at four DMSMS conferences and integrated DMSMS and standardization information into a range of DAU learning assets.

Team Achievement Awards

Pictured are, left to right, Mr. Kevin Dean, U.S. Army Research, Development and Engineering Command, accepting the award on behalf of the UAS Gray Eagle OWG, and Mr. Torelli. Team members are Mr. Jonathan Hill, AMRDEC; Ms. Brooke Nix, AMRDEC; Mr. Michael McRae, UAS Gray Eagle Product Office; Ms. Heidi Preston, CGI; Mr. Frank Kochanski, AAI; Mr. Wade Ichishita, General Atomics; Mr. David Penic, General Atomics; Mr. George Delabarre, General Atomics; Mr. Kasey Pearce, L-3; Mr. Jeff Felt, L-3; and Ms. Jill Madsen, L-3.

The **Unmanned Aircraft Systems (UAS) Gray Eagle Obsolescence Working Group (OWG)** supports the Army UAS Gray Eagle program, which is currently in low-rate initial production and is scheduled to go into full-rate production by April 2013, with plans to be sustained for 20 years. The UAS Gray Eagle OWG comprises representatives from the UAS Gray Eagle Product Office; AMRDEC; General Atomics; AAI Corporation; L-3 Communications; and CGI Group, Inc. The implementation of a proactive DMSMS/obsolescence approach has helped the program identify risk early, develop cost-effective solutions, and execute mitigations before the program is negatively impacted. Within the UAS Project Office, other product offices have instituted similar OWGs to manage DMS/obsolescence proactively and efficiently as a direct result of the Gray Eagle OWG's success. The OWG monitors the original equipment manufacturers' and suppliers' bills of materials, tracking over 11,000 microelectronic commercial off-the-shelf and government-furnished parts. Through progressive work by the OWG, the team has achieved over $1.2 million in cost avoidance based on 160 cases closed since 2010.

Pictured are, left to right, Mr. Stephan Gallagher, Boeing, and Mr. Torelli. Team members not pictured are Mr. Clark Butner, NAVAIR; Mr. Bill Marko, NAVAIR; and Mr. Caleb Tameling, Boeing.

The **F/A-18 and EA-18G Program Office (PMA-265) DMSMS Team** developed several streamlined processes and unique government/contractor collaborations in response to four changes in the baseline F/A-18 program of record (total aircraft purchased) that ultimately increased by almost 100 aircraft. Fielded by the Naval Air Systems Command (NAVAIR) and The Boeing Company, the team initiated a contract clause allowing the manufacturer to protect parts prior to a contract or funding being in place and, in some cases, to cover up-front costs of obsolete components. This enables PMA-265 to adapt to emergent issues, work a contract strategy, or move funding as appropriate. In addition, in a programwide gap analysis, the team identified 48 potential obsolete parts on the F/A-18 radar system. The team resolved these issues by holding a summit, which combined the efforts into a 2-day obsolescence review board. As a result of the summit, production on some parts was extended or sufficient quantities found to cover the program of record. This information revealed that PMA-265's liability was $38.8 million lower than the original estimate and manageable within the current budget.

TEAM ACHIEVEMENT AWARDS, continued

Pictured are, left to right, Mr. Alan Cunningham and Mr. Torelli. Team members not pictured are Mr. Bill Dodge, Mr. Jeffrey Halvorson, Mr. Michael Jessop, Mr. Ronard Baxter, Mr. Rex Butterfield, Mr. Stanley McFadden, Mr. Dominic Moscarelli, Mr. Ron Wong, and Mr. Steve Rogers.

The **Space and Communications, Command, Control and Intelligence (C3I) DMSMS Analysis and Resolution Team** provided obsolescence solutions for 20 platforms and 80 systems in the sustainment phase, significantly improving readiness by increasing retail stock rates and decreasing the levels of Mission Impaired Capability Awaiting Parts (MICAP). The team, with representatives from the U.S. Air Force and NCI Information Systems, Inc., raised the retail stockage rate for space systems 7.4 percent above last year's average and that for C3I programs 2.9 percent. The team decreased the MICAP level for space systems by 64.7 percent from last year and that for C3I programs by 52.1 percent. The team also developed a comprehensive DMSMS resolution guidebook detailing the analysis and resolution process and providing specifics on the processing of both reactive and proactive DMSMS cases. The team used Resource Analysis Corporation's Supportability Management Assessment Report Tool to access multiple data sources to provide the baseline for analysis. The team achieved 175 percent of the return-on-investment goal, while providing over 35,000 obsolescence solutions in the last 5.5 years and avoiding more than $250 million in costs.

Pictured are, left to right, Ms. Julie Smith and Mr. Torelli. Team members not pictured are Ms. Cady Conklin, Mr. Mark Bramlett, Mr. Greg Wynn, Mr. John Tomanio, Mr. Broderick McDaniel, Mr. Darryl Bartlett, Ms. Britney Brooks, Mr. David Rodgers, Mr. Mike Clark, Ms. Vicki Lundquist, Mr. John Drolette, Mr. Mike Lundy, Mr. Robin Bridges, and Mr. Steve Spanogle.

The Missile Defense Agency's **Terminal High Altitude Area Defense (THAAD) Obsolescence Management Team**, led by Ms. Julie Smith, developed, implemented, and maintained an aggressive obsolescence management program over the past 6 years. The team's efforts have resulted in the identification and mitigation of potential obsolescence issues, eliminating or minimizing impacts on the production program. A critical component to the success of the THAAD obsolescence program was the establishment of an OWG, consisting of representatives from the THAAD Project Office and the prime contractor. Those representatives include experts in engineering, contracts, logistics, program management, and cost estimating and analysis, among others. In FY12, the team completed two obsolescence-related value engineering initiatives and reported over $13 million in cost savings. Over the previous several years, the team reported over $43 million in cost avoidance/savings. The THAAD Obsolescence Management Team is currently managing more than 360 obsolescence cases affecting multiple production buys. Mitigation plans have been developed, funded, and executed to meet the overall master schedule and maintain production, ensuring higher system readiness for the warfighter.

Enterprise Achievement Award

Pictured are, left to right, Mr. Sam Merritt, DLA Land and Maritime, accepting on behalf of the DMSMS/GEM Program Office, and Mr. Torelli. Team members are Mr. Mitchell R. Canty, Mr. Thomas Beckstedt, Mr. Charles Besore, Mr. Loan Chu, Mr. Alan Clark, Mr. Jeffrey Feick, Ms. Marcia Scott, Mr. Nick Cushion, Ms. Jennie Williams, and Mr. Fred Shope.

The **DMSMS/Generalized Emulation of Microcircuits (GEM) Program Office**, within DLA Land and Maritime, has been a leader in DMSMS management and microcircuit emulation activities for well over 30 years. This office has pioneered many DMSMS concepts and best practices and is a highly recognized and integral part of the DMSMS community. This year, the DMSMS/GEM Program Office processed more than 1,600 DMSMS notices, 2,100 national stock numbers, 100,000 parts, and 380 weapon systems, while maintaining $150 million in DMSMS inventory and generating $1.3 billion in cost avoidance this year. The office's implementation of the Shared Data Warehouse DMSMS Management System provides an efficient and effective DMSMS mitigation process for warfighter support. The DMSMS/GEM Program Office also has continually improved DMSMS mitigation processes by establishing innovative state-of-the-art approaches and has developed streamlined and cost-effective GEM processes. This office also has played an integral part in developing and maintaining educational opportunities for the DMSMS community. The DMSMS/GEM Program Office is regularly sought out for DMSMS leadership by DLA, DoD, the military services, and industry.

Special Recognition

Pictured are, left to right, Ms. Nova Carden, Naval Surface Warfare Center Crane Division, accepting on behalf of Mr. Redding, and Mr. Torelli.

Mr. Louis Redding acted to shape the Naval Sea Systems Command's (NAVSEA's) approach to the DMSMS challenge by creating a program that focuses on standardizing processes, improving communication templates, and increasing data collaboration. He established and ultimately become chair of NAVSEA's DMSMS Working Group, which was chartered in February 2011. The working group comprises representatives from NAVSEA Headquarters, key field activities, and NAVSEA's five Program Executive Offices (PEOs). Mr. Redding was the dominant force behind efforts to publish three guidebooks and has implemented an effective knowledge-sharing program. Always alert to implement best practices, Mr. Redding is teaming with a core working group of PEOs and field activities to develop a NAVSEA instruction. The group is focusing on challenges in requirements determination, case resolution, and candidate identification. Mr. Redding's accomplishments have earned him the endorsement of NAVSEA's five PEOs and, more important, have provided him with a platform from which to launch additional changes. Mr. Redding is the unsung hero in NAVSEA's efforts to create a DMSMS program that is both forward thinking and based on common methods.

SPECIAL RECOGNITION, continued

Pictured are, left to right, Mr. Thomas Sharpe and Mr. Torelli.

Mr. Thomas Sharpe, vice president of SMT Corporation, has become the leading voice from the independent distribution sector in the fight against counterfeit components within the electronics industry. Over the past 4 years, SMT has been the first to identify and document several previously unknown counterfeit process threats and the cutting-edge mitigation techniques needed to reliably detect them. SMT has regularly shared this important data with the government, industry, and distributors of electronic parts. Mr. Sharpe was recently called upon by the Senate Armed Services Committee to testify in its formal investigation into counterfeit parts within the DoD supply chains. He provided firsthand accounts of the huge counterfeit trade thriving within China, as well as detailed examples of the constantly evolving counterfeits arriving on U.S. shores within open-market supply chains. Through countless industry presentations and sharing of detailed data about best practice processes, Mr. Sharpe has contributed significantly to increased awareness, throughout the DMSMS community, about counterfeits and, as a result, to products with higher levels of integrity, leading to improved warfighter readiness.

Mr. David Davis Receives an NDIA Ferguson Award

Mr. David Davis was presented the National Defense Industrial Association's (NDIA'S) Ferguson Systems Engineering Excellence Individual Award at the NDIA 15th Annual Systems Engineering Conference in October 2012. Mr. Davis works at the Air Force Space and Missile Systems Center, Engineering Directorate. He has also done extraordinary work on the Defense Standardization Council's initiative for standard systems engineering practices.

Events

Upcoming Events and Information

April 9, 2013, Fort Belvoir, VA

DAUAA Acquisition Community Symposium

The Defense Acquisition University Alumni Association (DAUAA) is holding its acquisition community symposium on April 9. This year's theme is "Better Buying Power (BBP) Training to Meet Defense Acquisition Challenges." The symposium will provide training and different perspectives—Office of the Secretary of Defense, military services, and industry—on implementing the BBP initiatives of the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, OUSD(AT&L). Through a series of speakers, panels, and classroom training sessions, the symposium will examine issues such as what the services and industry are doing, in a period of fiscal challenges and technological opportunities, to instill BBP initiatives into business practices and what actions are working and what ones are not. The symposium is also structured to address a DoD 5000.2 update, use of "should-cost" analysis to control costs, employment of appropriate contracting vehicles, and ways to incentivize innovation in industry. The agenda includes a USD(AT&L) keynote address, a Service Acquisition Executive panel, an industry panel, and breakout classroom training sessions keyed to the BBP initiatives. The 1-day symposium will conclude with a dinner in the evening honoring the winner of the 2013 Alumni Association's Acker Award and the induction of new Defense Acquisition University (DAU) Hall of Fame members.

April 23–24, 2013, McLean, VA

PSMC Spring 2013 Meeting

The Parts Standardization and Management Committee (PSMC), chartered by DSPO, will hold its spring meeting at LMI in McLean, VA. The agenda will include presentations on current parts management topics and breakout sessions for subcommittees to work specific tasks. If you are involved in parts management and are interested in participating, please e-mail Donna.McMurry@dla.mil or call her at 703-767-6874. Additional meeting information will be posted on the PSMC website: http://www.dscc.dla.mil/programs/psmc/events.asp.

May 29–31, 2013, Fort Belvoir, VA

Defense Standardization Workshop (SYS 120)

SYS 120 (formerly PQM 103) will be offered May 29–31, 2013, at DAU's Fort Belvoir campus. SYS 120 covers DoD policies and procedures for the development, management, and use of nongovernment standards, commercial item descriptions, and specifications and standards. Individual and group practical exercises emphasize the application of standardization tools, policies, and procedures described in three prerequisite courses: CLE 028, Market Research for Technical Personnel; CLE 064, Standardization in the Acquisition Lifecycle; and CLE 065, Standardization Documents. All three prerequisite courses must be completed before enrolling in SYS 120. For more information or to register, go to http://www.dau.mil; click "Training" and then click "Course Registration/Cancellation." You may also register by calling the DAU Help Desk at 703-805-3459 or toll free at 1-866-568-6924.

People

People in the Standardization Community

Welcome

David Walker recently assumed duties as the Air Force Standardization Executive. Dr. Walker serves as the Deputy Assistant Secretary of the Air Force for Science, Technology, and Engineering in the Office of the Assistant Secretary of the Air Force for Acquisition. We welcome him to the DSP.

Edward Durell recently assumed the position of Air Force Departmental Standardization Officer (DepSO). Mr. Durell also serves as the Air Staff government lead for Diminishing Manufacturing Sources and Material Shortages. With more than 25 years as an Air Force civilian, Mr. Durell has held numerous technical and management positions at both Air Force headquarters and Air Logistics Center functional organizations, as well as within program offices. Among the positions he has held are systems engineer in the B-2 bomber program; program manager in the Operations Safety, Suitability and Effectiveness Logistics Center; and squadron director for KC-135 combat support. We welcome him to the DSP.

Tim Kalt of the Air Force Materiel Command (AFMC) Standardization Office, Wright-Patterson Air Force Base, has been named AFMC Command Standardization Officer (ComSO) understudy. Mr. Kalt will work with long-time AFMC ComSO, Scott Kuhnen.

Anthony Maggio of the Air Force Nuclear Weapons Center was recently named to the newly created Standardization Management Activity.

Derrick Puran is a recent addition to the standardization community. He has joined the Naval Air Systems Command (NAVAIR) Systems Standardization Division after recently graduating with an electrical engineering degree from the Polytechnic Institute of New York University. Mr. Puran brings to work his enthusiasm and zest to implement the DSP in NAVAIR. He will be a valuable addition to our standardization team.

Farewell

Steven Walker, former Air Force Standardization Executive, has departed the Air Force to return to his previous organization, Defense Advanced Research Projects Agency. We wish Dr. Walker well in his new position.

After a long and fabled tenure as Air Force DepSO, **John Heliotis** assumed new responsibilities as a result of a headquarters reorganization.

Mary Saunders has been appointed as the associate director for management resources (ADMR) at the National Institute of Standards and Technology (NIST). Ms. Saunders will oversee all administrative offices and institutional support initiatives within NIST, including information technology, safety and environmental management, facilities maintenance, accounting and finance, budget management, emergency response, and strategic planning. Prior to her selection as ADMR, Ms. Saunders served as the director of NIST's Standards Coordination Office. In that role, she represented NIST and its interests to the international standards and conformity assessment communities and provided guidance to the U.S. Under Secretary of Commerce and director of NIST, among other high-ranking NIST officials, on policy related to U.S. government involvement in standardization.

Nicole Daddario has accepted a new position with Defense Logistics Agency–Pacific, Pearl Harbor, HI. As many of our readers will recall, Ms. Daddario spent 8 months at DSPO overseeing production and publication of the *DSP Journal*, as well as assisting DSPO staff members with completing programmatic tasks. We wish her continued success as she pursues the advancement of her career goals with the federal government.

James Clover, standardization program manager for the Natick Soldier Research, Development and Engineering Center, retired in January 2013 after 39 years of federal service. We wish him well.

Diane Valeri, who worked at Hanscom Air Force Base, Standardization Code 13, passed away on November 29, 2012.

Upcoming Issues
Call for Contributors

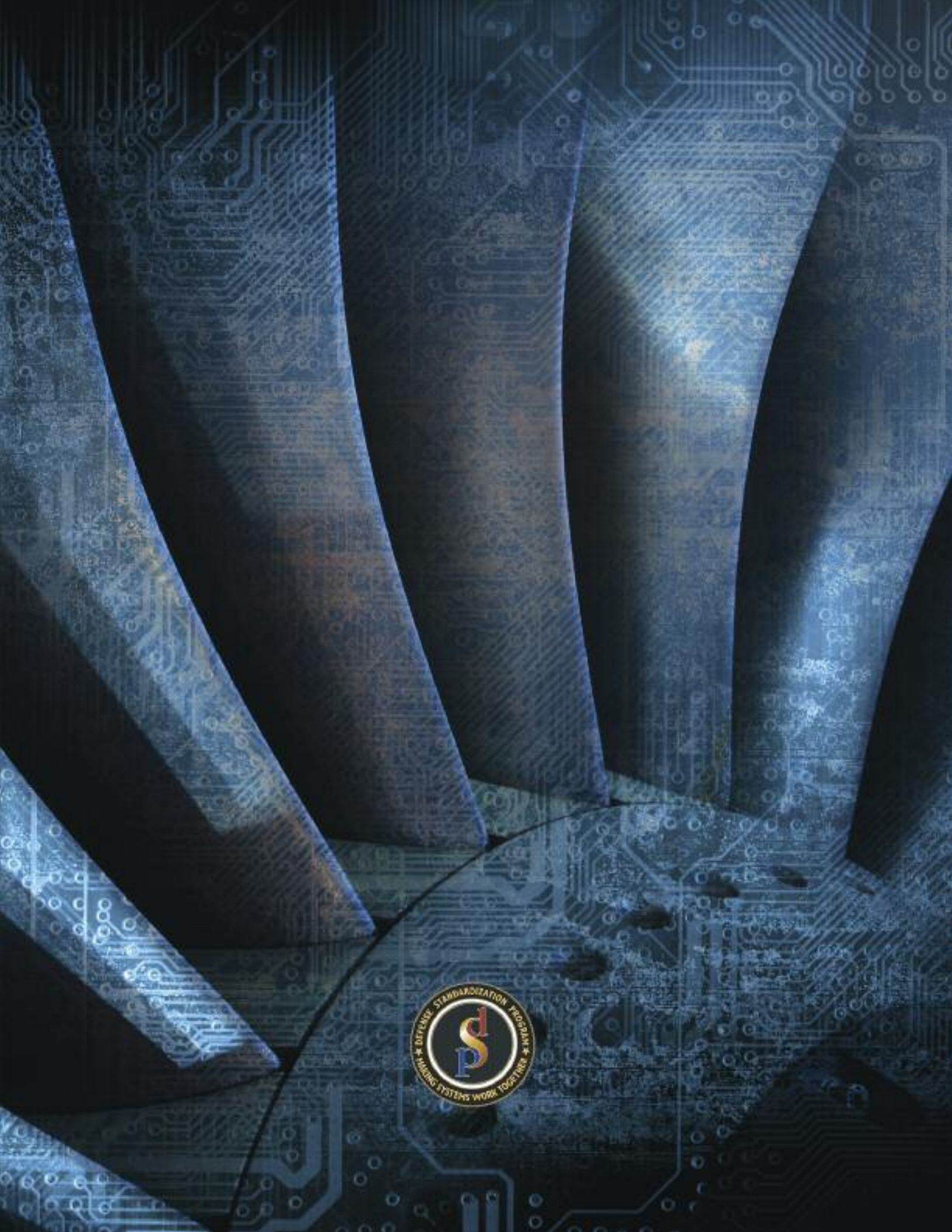
We are always seeking articles that relate to our themes or other standardization topics. We invite anyone involved in standardization—government employees, military personnel, industry leaders, members of academia, and others—to submit proposed articles for use in the *DSP Journal*. Please let us know if you would like to contribute.

Following are our themes for upcoming issues:

Issue	Theme
January/March 2013	Biometrics Standardization
April/June 2013	Standardization Stars
July/September 2013	Interoperability
October/December 2013	Counterfeits

If you have ideas for articles or want more information, contact Tim Koczanski, Editor, *DSP Journal*, Defense Standardization Program Office, 8725 John J. Kingman Road, STOP 5100, Fort Belvoir, VA 22060-6220 or e-mail DSP-Editor@dla.mil.

Our office reserves the right to modify or reject any submission as deemed appropriate. We will be glad to send out our editorial guidelines and work with any author to get his or her material shaped into an article.


DEFENSE STANDARDIZATION PROGRAM
MAKING SYSTEMS WORK TOGETHER