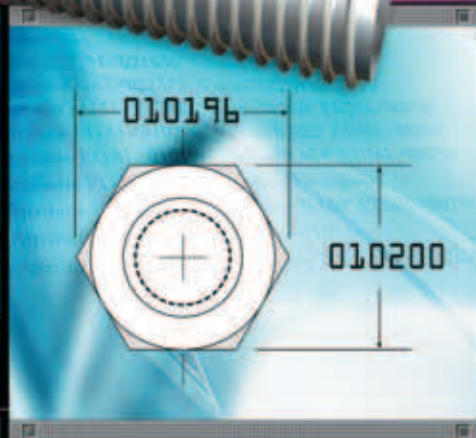


# Defense Standardization Program Journal

April/June 2005

Qualification  
and

Conformity  
Assessment



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*Front cover: Some images courtesy the Department of Defense.*

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For 11 years, program offices have had to obtain permission from their milestone approval authority before they could cite military detail specifications or process standards as requirements in contracts. That requirement has been rescinded. (See page 38.) Some think that this signals open season for citing extensive and restrictive product details, required DoD-unique management practices, and costly manufacturing processes. Let me disabuse you of that notion, and maybe explain a little bit of how we got where we are.

Prior to MilSpec Reform, DoD had approximately 40,000 military specifications and standards. Many of the specifications called out specific design, manufacturing, material, and finishing requirements—requirements that limited the ability of commercial products to compete with the uniquely designed MilSpec products and that limited the ability of commercial manufacturers to offer their best designs to the Department of Defense. Many of the standards dictated DoD-designed processes for configuration management, management of technical data, parts management, quality management, supplier management, reliability prediction, maintainability, and on and on. Contracts, system specifications, and statements of work were too often assembled at copy machines, the end result being that MilSpecs were blindly called out on contracts, for mandatory compliance.

MilSpecs, as the whole system of documentation came to be known, were blamed for increased cost and complexity, reduced flexibility in the way contractors could respond to core contract requirements, and ultimately, for reduced

## APPLYING SPECIFICATIONS— THE INTELLIGENT WAY

system performance at increased prices. Though exaggerated, there was enough truth to the allegation to warrant dramatic action.

In 1994, Secretary Perry set out to end the automatic and unthinking imposition of MilSpecs on our contractors. In order to do so he imposed a severe discipline. While recognizing that there were times when MilSpecs were the only, or the best way to ensure the needed quality, performance, and reliability for military equipment, the secretary wanted to ensure that they were used only where they were really needed. To enforce that, he decreed that in order



**Gregory E. Saunders**  
Director, Defense Standardization Program Office

to use a MilSpec as a mandatory requirement in a new or major modification to a weapon system, approval must be obtained from the Milestone Decision Authority—the executive charged with acquisition or development approval authority for DoD. The requirement had a dramatic effect. Contracts went from having hundreds of required specifications and standards to having only a few, if any. Some thought this was progress; others thought this was the harbinger of disaster. As it turned out, this was a catalyst for a thorough review of the body of MilSpecs, conversion to nongovernment standards, and revision of performance specifications. The military departments and defense agencies took very seriously the direction to review all documents and to cancel, convert, or revise them. The result was a body of documents that had been pretty well scrubbed to ensure that they were necessary, that they reflected commercial practices as much as possible, and that they were written in performance terms to the greatest extent practical.

Today, we rely on a mix of more than 30,000 military, federal, NATO, and industry standards, including performance specifications, international standardization agreements, nongovernment standards, prescriptive specifications, and commercial item descriptions. Because of our success in transforming military specifications and standards and the way that we apply them on contracts, it is no longer required to obtain a waiver from the Milestone Decision Authority to cite military specifications or standards in solicitations and contracts. However, elimination of the waiver requirement should not be perceived as a return to the “old way of doing business.” Every program office should continue to assess requirements and apply only those specifications and standards—military, federal, nongovernment, or international—necessary to define essential needs and manage risk. Program executive officers, program managers, and others in the acquisition and technical communities should ensure appropriate use of specifications and standards in their programs.

To help identify the appropriate standards to use for given circumstances, weapon systems, or subsystems, our office developed a Program Manager’s Tool, or PMT (see the March/June 2003 issue of the *DSP Journal*). This is the implementing tool for the Joint Materiel Standards Roadmap. The Roadmap, initiated in October 2002 in response to Under Secretary of Defense direction, defines a course to ensure that standards used by program managers continue to support warfighters’ operational requirements for interoperability and logistics, as articulated in the force-centered logistics enterprise. The objective of the roadmap is to reduce the number of standards to those required to support these objectives and to assist program managers with selecting and applying appropriate standards.

John McAdams, one of my mentors when I first came into the Defense Standardization Program, said that there are two percentages of standardization that are always wrong—0 percent and 100 percent. We came very close to having 0 percent through misunderstanding and overapplication of MilSpec Reform. Today, we benefit from the comprehensive scrub of documents, the refreshment of technical requirements, and the move from military documents to nongovernment standards engendered by that reform. But we also suffer from overexuberance in canceling documents that should have been retained, eliminating clearly stated and verifiable requirements in excessive pursuit of performance requirements, and a diversion of resources away from development and maintenance of DoD’s valuable technical documentation to support weapon system design, systems engineering, configuration management, and logistics support—essential technical support of our warfighters.

We are now trying to dampen the wild oscillations of our philosophical pendulum. The PMT is a tool to be used in that effort. Elimination of the waiver requirement empowers our program managers to make smart decisions about the application of appropriate MilSpecs in their programs.

# One Standard—One Test— One Acceptance

## The Conformity Assessment Value Equation

By Lane Hallenbeck



## Terms and Definitions



Conformity assessment encompasses activities such as accreditation, certification, inspection, registration, supplier's declaration, and testing. *National Conformity Assessment Principles for the United States* (approved by the ANSI Board of Directors on September 24, 2002) includes a set of definitions that are based on ISO/IEC Guide 2, *Standardization and Related Activities—General Vocabulary* (the latest edition was published in 2004). In different contexts, the same term can mean very different types of activities. Some variances, noted in italics, occur where the term is not in Guide 2 or has another specific meaning in the United States.

**Accreditation**—Procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks. (*These tasks include sampling and testing, inspection, certification and registration.*)

**Certification**—Procedure by which a third party gives written assurance that a product, process, service or person conforms to specified requirements.

continued on next page

Everyone entering the global marketplace does so with a set of preconceived expectations. Buyers anticipate that suppliers will offer products and services that fulfill their needs. In turn, providers anticipate that products or services designed to meet customer-defined specifications will result in sales. The confidence of both parties can be built through a variety of means, including the assessment of conformity to standards.

### What Is Conformity Assessment

In the everyday dialogue of industry and government, the word “standards” is used frequently—often to impart ideas about quality, safety, or elements of design. A standard is a document—usually established by consensus and approved by a recognized body—that provides rules or characteristics for activities or their results. Most standards are considered to be guidelines and are used on a voluntary basis; standards become mandatory only when they are adopted or referenced into laws and technical regulations, or when referenced in the technical requirements of a contract or specification.

In 1994, then-Secretary of Defense William Perry announced that one of DoD's top priorities would be to move away from military-unique specifications and standards and toward reliance upon private-sector standards. “Moving to greater use of performance and commercial specifications and standards is one of the most important actions that DoD must take to ensure we are able to meet our military, economic, and policy objectives in the future,” explained Perry.

Since then, thousands of MilSpecs and MilStds have been replaced with American National Standards, international standards such as those from the International Organization for Standardization (ISO) or the International Electrotechnical Commission (IEC), or standards developed by other standards bodies led by private-sector entities.<sup>1</sup>

The standards address needs in all fields. Those fields range from nuclear energy to information technology, from material handling to electronics, and from textiles to aerospace engineering to the emerging nanotechnology industry.

### Importance of Conformity Assessment

Once a standard is developed, approved, and accepted, the next step is often the evaluation of how a related product—a material, process, person, service, or system—conforms to that standard. Test methods should be ca-



pable of evaluating the conformity of a product to the specified requirements in a manner that produces test results that are within an acceptable accuracy range. Results should be consistent from test to test; results should also be reproducible. This speaks to the phrase “One Standard—One Test—One Acceptance” (often referred to as the “1–1–1 equation”). This evaluation process, which is officially known as conformity assessment, is defined as “any activity concerned with determining directly or indirectly that relevant requirements are fulfilled.”

Conformity assessment has become increasingly important to DoD—one of the leading procurement agencies of the federal government—as well as to suppliers, consumers, and regulators. The importance of conformity assessment will continue to increase with DoD’s increasing reliance on standards developed in collaboration with the private sector.

### **ANSI’s Role in Conformity Assessment**

As the readers of this journal probably know, the American National Standards Institute (ANSI) is the private, nonprofit organization that administers and coordinates the voluntary standardization system within the United States. ANSI’s role in the coordination of the nation’s conformity assessment programs, however, may be less well known. As the U.S. member body of ISO, and via the U.S. National Committee of the IEC, ANSI represents U.S. interests in the international standardization community and promotes the adoption of globally relevant standards and conformity assessment programs. The one dimension of conformity assessment in which ANSI is directly engaged is accreditation, especially in product and personnel areas.<sup>2</sup>

### **Conformity Assessment Programs**

ANSI’s accreditation programs are in accord with ISO/IEC Standard 17011:2004, as verified by government and peer review assessments. Used by organizations that carry out conformity assessment activities, ISO/IEC guides and standards contain voluntary criteria that represent an international consensus on what constitutes best practice.

An organization or body that certifies a product, system, or person will often use an independent, neutral third-party accreditation body to attest to the competence of its certification process. Given its coordination role, ANSI is well suited to serve in this neutral capacity, not only for parties in the United States, but also internationally.

**First, Second, and Third Party**—The first party is usually the supplier. The second party is usually the customer. The third party is that person or body that is recognized as being independent of the parties involved, as concerns the issue in question.

**Inspection**—Conformity evaluation by observation and judgment accompanied as appropriate by measurement, testing or gauging.

**Registration**—*Procedure used to give written assurance that a system conforms to specified requirements. Such systems include those established for the management of product, process or service quality and environmental performance.*

**Sampling**—*Selection of one or more specimens of a product, process or service for the purpose of evaluating the conformity of the product, process or service to specified requirements.*

**Supplier’s Declaration**—*Procedure by which a supplier gives written assurance that a product, process or service conforms to specified requirements.*

**Test Method**—Specified technical procedure for performing a test.

**Testing**—Action of carrying out one or more tests.

**Test**—Technical operation that consists of the determination of one or more characteristics of a given product, material, equipment, organism, person’s qualification, physical phenomenon, process or service according to a specified technical procedure (test method).

For more information, please see [www.ansi.org/ca](http://www.ansi.org/ca).

ANSI's accreditation program for product certification bodies covers more than 40 distinct program areas, ranging from bottled water and fresh produce to appliances and plumbing products. ANSI has been recognized by the National Institute of Standards and Technology as an accreditor of telecommunications certification bodies operating under Federal Communications Commission guidelines; these accreditations are often recognized by other governments, such as the recognition that now exists with Industry Canada.

ANSI's newest accreditation program was launched in 2003 with the publication of ISO/IEC 17024, *General Requirements for Bodies Operating Certification Systems of Persons*. The program is designed to harmonize personnel certification processes worldwide and create a more cost-effective global standard for professionals. Six organizations have already been accredited and 20 more are now involved in the accreditation process.

In the area of management systems, ANSI, in partnership with the American Society for Quality (ASQ)—has accredited more than 100 quality and environmental management systems certification bodies around the world to the requirements of ISO Guides 62 and 66. (This accreditation program is through an entity called the ANSI-ASQ National Accreditation Board, or ANAB.) Domestically, the automotive, aerospace, and telecommunications sectors—each of significant interest to DoD—have sustained the most growth and long-term involvement in management systems certification.

## **ANSI-ASQ National Accreditation Board, LLC**

ANAB was established on January 1, 2005, replacing the ANSI-RAB National Accreditation Program. The origin of that program was the American National Accreditation Program for Registrars of Quality Systems, which was established jointly by ANSI and the RAB (Registrar Accreditation Board, a wholly owned affiliate of the American Society for Quality) in 1991. Five years later, with the release of new ISO 14000 Environmental Management Systems standards, the ANSI-RAB National Accreditation Program was formed, superseding the original joint program.

ANAB was formed in response to the adoption of ISO/IEC 17011, *Conformity Assessment—General Requirements for Accreditation Bodies Accrediting Conformity Assessment Bodies*, which requires that a national accreditation body be a legal entity. The ANSI-RAB National Accreditation Program did not meet those requirements. ANAB will also be divorced from RAB's personnel certification programs, because ISO/IEC 17011 prohibits a body from engaging in both accreditation and certification activities. By meeting the requirements of ISO/IEC 17011, ANAB will satisfy concerns within the International Accreditation Forum, the global organization of national accreditation bodies, and remain in good standing as a signatory to the forum's multilateral recognition arrangements for both quality and environmental management systems.



## Analyzing the Value Equation

To supply products and services to companies, organizations, government agencies, or individuals that operate in the global marketplace, sellers are expected to demonstrate that their products and services conform to accepted standards or specifications. Though first- or second-party conformity assessment activities can assist with building confidence that the buyer's requirements are fulfilled, third-party programs usually address the risk/confidence balance in a manner that is acceptable to both the buyer and the seller.

Much like Secretary Perry's "MilSpec Reform" initiative in the 1990s, many other government agencies have recognized the efficiencies that can be achieved through the referencing of voluntary consensus standards and conformity assessment programs rather

# ANSI's newest accreditation program was launched in 2003 with the publication of ISO/IEC 17024, *General Requirements for Bodies Operating Certification Systems of Persons.*

than pursuing the development of a new document or process that may replicate—or, in some cases, even contradict—a standard or procedure that has been developed in the private sector. Remember, it's not just a standard that must be globally recognized, but also the test and the certification mark.

Stakeholder involvement is instrumental when selecting the appropriate solution to the 1-1-1 equation. Increased participation in and awareness of international and regional standards development and conformity assessment activities by all stakeholders (government, industry, local standards developers, and consumers) are critical for global recognition and the successful elimination of unnecessary duplication and overlap.

There is no need to "reinvent the wheel" if an acceptable solution already exists.

<sup>1</sup>ANSI is the only organization that can designate a document as an American National Standard.

<sup>2</sup>The accreditation of conformity assessment bodies operates under distinct and separate procedures from ANSI's accreditation of standards developers and U.S. Technical Advisory Groups.

## About the Author

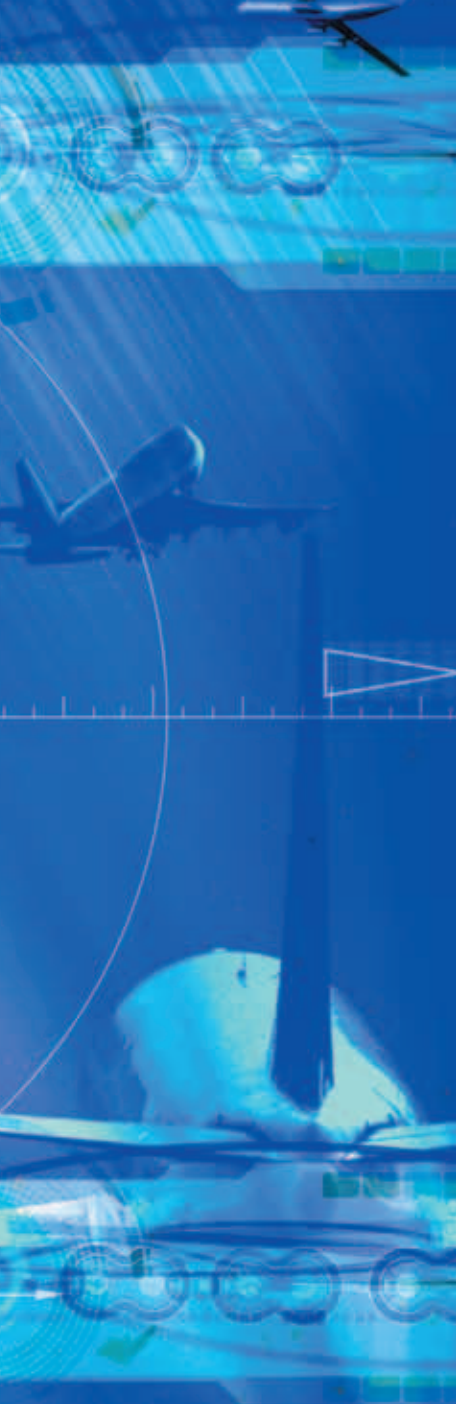
Lane Hallenbeck is ANSI's vice president of accreditation services, responsible for the direction of internationally recognized accreditation programs. His experience includes many years of technical leadership, including vice president of a management systems registrar, program manager in the aerospace industry, and president of the Independent Association of Accredited Registrars.✱



# DOD

## An Essential Constituent of the Performance Review Institute's Qualification, Certification, and Accreditation Programs

By Jeff Conrad and Seema Saleem



The Performance Review Institute (PRI) was established to provide international, unbiased, independent manufacturing process and product assessments and certification services. Through such assessments and services, PRI can add value, reduce total costs, and facilitate relationships between prime contractors and suppliers.

Created in 1990 by the Society of Automotive Engineers (SAE), PRI is a not-for-profit organization. It exists to advance the interests of the mobility industries (air, land, sea, and space) through development of performance standards and administration of quality assurance, accreditation, and certification programs for the benefit of industry, government, and the general public.

PRI oversees two industry-managed programs: qualified product list (QPL) program and Nadcap. Both programs involve representation from DoD at key levels of the decision-making process.

### **The PRI QPL Program**

The purpose of the QPL program is to list manufacturers whose products have been certified by PRI as meeting specific standards. Certifications issued by PRI are for specific product designations and plant locations.

The need to maintain QPLs for critical specifications resulted from DoD's acquisition reform initiative, in particular, DoD's effort to transfer military standardization documents to non-government standards. Military specifications that contained QPLs were a problem to convert because non-government standards organizations did not have a mechanism to manage QPLs.

In 1996, PRI, in coordination with DoD, undertook a pilot program for industry-managed QPLs. This pilot program, consisting of SAE technical committee volunteers, culminated with guidelines, to be used by standard-development organizations, for preparing mandatory qualification to requirements in standards and technical specifications. PRI launched its QPL program in 1998.

For many, the establishment and usage of PRI QPLs for industry standards have provided a vital mechanism to transfer QPLs associated with government standards that are converted



to industry standards. Without this mechanism, there would be no way for industry standards to have industry QPLs. In the age of combining the resources of government and industry to share costs and standardize, the PRI QPLs are a necessary component. Government usage of industry standards would be severely crippled without the PRI QPLs. The program, although the number of QPLs is still small, is vital to the adoption of industry standards by the government.

Currently, 36 industry specifications require the use of PRI QPLs for critical aerospace products such as fluid fittings, fluid hoses, elastomeric seals, sealants, and organic coatings. These 36 specifications cover thousands of qualified parts contained on the PRI QPLs.

The shared investment has the potential to significantly reduce qualification infrastructure costs for the supplier, industry, and government. As an example, for sealants, benefits have been realized by replacing government laboratory testing (which in some cases could take up to 9 months) with new observation and surveillance procedures. The new procedures have extended the shelf life of these materials from 3 months to 12 months and allow shipments to occur weekly. Savings of approximately \$300,000 per year can be attributed to this alone.

The PRI QPL organizational structure consists of technical qualified product groups (QPGs) with direct reporting to the Qualified Product Management Council (QPMC), which handles the strategic and tactical operations of the program. The QPGs, which comprise technical experts from the standard technical committees, are responsible for determining qualification requirements, developing operational program documents, reviewing and accepting test plans and test results, and making the final decision to list a company and product on the PRI QPL. Government representatives on the QPGs and QPMC come from all branches of the U.S. armed services, the Defense Logistics Agency (DLA), and the General Services Administration (GSA).

## The Nadcap Program

Nadcap is the leading worldwide cooperative program of major aerospace companies. The program's purpose is to manage a cost-effective consensus approach to special processes and products and to provide continuous improvement within the aerospace and automotive industries. The concept was initiated in a 1985 conference on government and industry as equal partners. The conference participants recommended a consensus solution to duplication of supplier quality assurance systems. Over the next several years, these entities worked closely together to define program operation details. The resulting program—Nadcap—was officially launched in 1990.

Specifications established by government, prime contractors, and industry are utilized when creating PRI audit criteria and SAE standards for each specific special process or product to ensure, through procedural and compliance job audits, that customer requirements are being met. Nadcap special processes include non-destructive testing, heat treating, materials testing, chemical processing, coatings, welding, nonconventional machining, and surface enhancement. Nadcap special products include composites, fluids, elastomeric seals, and sealants. In 2004, the number of Nadcap audits totaled 2,855.

To ensure a robust industry-managed program, Nadcap's organizational structure has three levels: strategic (Nadcap Executive Strategic Planning Board), tactical (Nadcap Management Council), and technical (task groups). DoD plays an important part with representation at each level. Government technical and quality experts include representatives from the Navy, Air Force, DLA, Defense Contract Management Agency, and GSA.

## The Future

The PRI QPL program continues to expand, with interest being generated from committees involved with propulsion lubricants, propulsion systems, greases, and

composite repair materials. As new or revised specifications include the PRI QPL requirements, it is imperative that DoD and industry representatives work together to define the technical and qualification requirements for products that will meet the end-item performance requirements.

Continued government involvement in these programs is essential because the transition from military specifications to non-government standards carries responsibilities. To ensure that military requirements continue to be supported, DoD engineers must participate with the various committees engaged in updating non-government standards. They must be willing to contribute to the constant maintenance and improvement of the standards. DoD engineers must be willing to carry their fair share of the standardization workload along with their industry and academic counterparts.

Nadcap is dynamic and is driven by government and industry needs. Any source can suggested that new task groups be established. A value assessment is then undertaken to determine government and industry interest. Technical experts are then assigned to develop the audit criteria and standards and to define auditor qualifications. Two new developmental Nadcap task groups, electronics and fasteners, have target dates for a formal launch in 2005. Existing task groups urge continual improvements with timely revisions to operating procedures, audit criteria, and standards to meet the goals of reducing risk and improving supplier responsiveness.

## Conclusion

The PRI QPL program and Nadcap have many similarities. Both rely on industry/government teaming, and both are technically driven. And their goals are to provide quality products. As an association, PRI is committed to providing industry and government a unique and unbiased forum so that meetings and results focus on quality and safety. It is important to note that the liability of the users—government agencies and prime contractors—does not shift with the utiliza-

tion of these industry-managed programs. These programs are a tool for the users in their supplier management structure (supplier quality, purchaser quality, and user surveillance). They can be viewed as integral supplements using industry standards, procedures, oversight, and core values.

In the course of daily operations, if you hear the PRI QPL program or Nadcap mentioned, know that DoD is represented at all levels of these industry-managed programs. By visiting the PRI website, [www.pri-network.org](http://www.pri-network.org), you can learn more about the industry-managed programs managed by PRI and find key points of contact from DoD. If you have questions about program operations, technical requirements, quality requirements, or becoming more involved, please contact PRI at 724-772-1616.

## About the Authors

Jeff Conrad is a program manager at PRI. His responsibilities encompass all activities associated with the diverse and complex industry-managed programs that accredit suppliers and distributors, evaluate best manufacturing practices, enhance technical standards, and qualify products. He also has experience in supplier quality, including conducting laboratory assessments and supporting material substitution activities at design, manufacturing, and remanufacturing locations that affect DoD and NASA systems.

Seema Saleem, director of PRI's European operations, has 10 years of marketing experience in international business-to-business products and services. She is responsible for ensuring that the Nadcap brand remains consistent with emphasis on continual improvement within regional sectors. Ms. Saleem works with European prime contractors and suppliers to ensure understanding of best practices leading the way to improved quality and product safety. ✨



# Certification and Qualification of Offshore DoD Suppliers

## An Overview

By Robert Evans





Most DoD weapon systems are filled with electronic and mechanical components whose correct functionality is critical to proper system performance. The most critical of those components are items covered under the Defense Standardization Program through fully coordinated military specifications and the subsequent product qualification. Until the late 1980s, these components were manufactured exclusively within the United States, but changes to procurement policies—and the continuing move to a global economy—have prompted the move of much of this production to offshore facilities. This article provides an overview of the qualification process and how it applies to components manufactured offshore.

Each of the military specifications has a preparing activity (PA) to establish and coordinate the performance requirements with the affected military departments and industry. Once the standardization document is finalized and released for use, the qualifying activity (QA) is responsible for finding suppliers willing and able to produce and qualify the product. This qualification process includes an assessment by the QA of the supplier's quality system, production capabilities, and testing procedures to ensure that they can repeatedly produce a product that meets all the performance characteristics required in the specification. This assurance comes from a thorough document and process review and an on-site facility audit. Once this "certification" process is complete, the manufacturer's quality system, production facility, and test laboratory are "certified" as being capable and can begin production of the components.

The manufacturer will then use its certified process to produce the components that will be submitted to the test laboratory to undergo the qualification testing required in the specification. The

resultant test data will be submitted to the QA for review and approval. Once the QA is assured that the components meet the performance requirements of the specification, the product and supplier will be listed on the associated qualified products list (QPL) or qualified manufacturers list (QML). The QPL/QML is used by both government and industry to procure components for weapon system production and the subsequent logistics support of the systems.

In recent years, as the component manufacturing base has become much more global, the qualification process has had to follow suit in order to remain current. To do this, the standardization policies were changed to allow for offshore manufacturing of DoD standardized components (QPL and QML items). As a result, the qualification process had to change to accommodate these new provisions. This was accomplished through a series of international standardization agreements (ISAs) with NATO and other countries, which set up rules for reciprocal qualification processes between various countries and DoD.

For the offshore manufacturer, the audit and certification process is handled a bit differently. If an ISA exists between the United States and another country, each of the countries interested in pursuing qualification will appoint a national qualifying activity (NQA). For the United States, the military PA/QA is normally appointed as the NQA.

The NQAs of the two countries work together to establish a working arrangement on how the audit and certification process will work between the two parties and which of the NQAs will be responsible for which parts of the process. In the case of the U.S. military QPLs/QMLs, the U.S. QA will work with the NQA of the other country to help them

gain a clear understanding of the standardization program requirements, the specification requirements, and the qualification process. This is done to ensure that the qualification process is conducted in the same manner for these offshore manufacturers as for those in the United States. This process typically includes manufacturer audits conducted jointly by the two NQAs, joint test report reviews, and other training situations to ensure that both NQAs understand and apply the requirements uniformly. This assumes that the foreign NQA is willing to learn the requirements and adequately resource and perform this work. Once compatibility is assured, the U.S. NQA will begin to withdraw from the offshore part of the process and turn more of that responsibility over to the offshore NQA.

The most recent offshore activity is the expansion of many industries into countries that do not have an ISA with DoD. In such cases, the U.S. NQA administers the entire process. All audits, test reports, certifications, and the like, are the responsibility of the U.S. NQA, and the process is the same as that for a manufacturer located within the United States. The added costs for the offshore travel are the responsibility of the manufacturer requesting the qualification.

The move into this global supplier base coincided with the explosive growth of the components market into a largely commercial operation, especially in the electronics area, making DoD procurement a much smaller share of total market sales. To keep the DoD supplier base interested in providing qualified products to fulfill DoD needs, the qualification process had to again adjust accordingly. This time, the process looked to use the quality system that the supplier already had in place and make use of it however and wherever possible (i.e., best commer-

cial practices). This enabled suppliers to produce and supply products to meet DoD's needs without having to make major changes to the processes and systems they already had in place, provided the minimum requirements of the specification were adequately addressed in some way. As a result, the product standardization and qualification systems made the timely adjustments to keep them viable methods for defining and procuring critical components for DoD weapon system platforms.

These changes have allowed for the certification and qualification of offshore manufacturers to be somewhat simplified, as well as less resource dependent. In highly complex technologies such as microelectronics, the specifications have been written to allow for, and to encourage, the use of these best commercial practices. This allows the QA to observe and make use of the existing systems that the manufacturer has in place for quality, production, and testing. At their option, diligent suppliers can even extend these practices to the point that they are approved to implement and qualify their own process changes through their own technical review board without having to first notify the QA. To get to the point of having this level of confidence in the manufacturer's system can take some time, but once attained, the day-to-day interfacing with the QA is significantly lessened, and many of the initial decisions are made by the technical review board. Other benefits are that the frequency of audits and the quantity of technical actions required for a manufacturer to retain qualification are lessened through use of these newer techniques.

In the microcircuit area alone, the number of offshore facilities has increased dramatically in recent years. Currently, 51 suppliers are responsible for 470 lines in the microcircuit program. Of those lines,

178—42 fabrication lines and 136 assembly and test lines—are in offshore facilities. These facilities are located throughout the world, but the majority are concentrated in Southeast Asia.

Despite such diverse locations, the continued compliance of these products to the military's specified parameters continues to be assured. These standard qualified components that result from this ongoing process have been proven over the years to be at least an order of magnitude more reliable, as well as much easier to procure than nonstandard components. As such, these components are most often favored for use by weapon system program offices, original equipment manufacturers, and government logistics procurement offices.

Product or manufacturer qualification under the DoD standardization program has proven through the years to be flexible both to the needs of the warfighter and to the changes in the global marketplace. Components procured under this program have proven to be of the highest quality and reliability. In addition, they are easier to procure, with reduced lead times and improved product availability, and the incidence of diminishing manufacturing sources is dramatically reduced. All in all, the qualification process for components used in DoD weapon systems has demonstrated throughout the years to be the best way to ensure continued product compliance and weapon system performance.

#### **About the Author**

Robert Evans is a supervisory electronics engineer and has held various positions within the DoD standardization program during his 28-year career. He currently is the chief of the Sourcing and Qualifications Unit at the Defense Supply Center Columbus. His office oversees qualification for over 300 QPLs and QMLs covering a wide variety of electronic and hardware items being produced at more than 900 manufacturing sites.✱



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# Federal Catalog System Proposed as New ISO Standard 22745 A Breakthrough in e-Commerce

By Steven Arnett and Peter Benson

**S**tandards have always played an important role in economic development, but never more so than today because they are fundamental enablers in the new electronic age. Standards serve as the bridges between systems from the physical connections to the organization of the data itself. They are an example of commercial cooperation and take many forms, from component interface design (plugs and sockets), to data formatting (DVDs and CDs), to business practices (electronic data interchange and ISO 9000 quality management).

One of the last challenges to standardization is semantics. Standards are all about removing ambiguity from descriptions. This has proven to be a major challenge, but one that the team developing ISO Standard 22745 is well on the way to conquering. Like all major challenges—and standards are always challenging—it is often said that rewards come not necessarily to the swift but to the farsighted. If this is true, then ISO 22745 is the model for patience and perseverance.

The seeds of this new ISO standard were sown some 60 years ago when, reflecting on the potential for major logistical failures in World War II, President Roosevelt asked, on January 18, 1945, that “procedures be examined to improve goods management for the efficient pursuit of war as well as for business in peacetime.” This request led to the commission that was to trigger the creation of one of the world’s largest managed inventories. In 1952, the Defense Cataloging and Standardization Act (Public Law 82-436) mandated a single supply cataloging system. That system matured to become the federal/NATO cataloging system. Today, the NATO Codification System (NCS) represents more than 5,000 man-years invested in cataloging. It is used in over 50 countries to manage millions of item specifications referenced by globally unique national/NATO stock numbers.

At an ISO meeting in San Francisco in 2001, a representative from the Defense Logistics Information Service (DLIS) and a representative from the Electronic Commerce Code Management Association (ECCMA) happened to sit next to each other. DLIS is part of the Defense Logistics Agency and manages the U.S. Federal Catalog System (FCS). The FCS is the basis for the NCS, which is managed by NATO Allied Committee 135. From that meeting in San

Francisco, the ECCMA Open Technical Dictionary (eOTD) was born. It is an open standard dictionary that combines the expertise and work of ECCMA members with 50 years of cataloging experience from the federal and NATO systems to develop content standardization with the industry. The eOTD is an example of collaboration between government and industry and can enhance supply chain management and provide an opportunity for the creation of millions of standard web catalogs.

The eOTD is based on the principles and data architecture of the FCS and NCS. It is a collection of open technical dictionaries designed to support a central dictionary of standard property names and definitions. It is these properties that are key to creating unambiguous descriptions. Essentially every person, organization, and location and all goods and services can be described using property-value pairs. In fact, as any database designer will tell you, it is difficult to store data without labeling the data. These data labels are the properties that are defined in the eOTD.

Today, moving data from one system to another can be a painful exercise in data mapping. For example, what is labeled in one system as “Date of Birth” may be labeled “DOB” in another. Although this may appear trivial, there is the data format to consider: is the date in MM/DD/YY or DD/MM/CCYY format? Multiply the thousands of data elements by their many possible representations, and then add the problem of the lack of definitions of the labels themselves, and you get the proverbial “what did you mean by...?” and “was that in inches or centimeters?”

In the computer world, the saying “lost in translation” can often be literal, with critical data falling through the cracks as data move from one system to another even within the same organization. In the best-case scenario, the data become meaningless and it needs to be recaptured. In the worst-case scenario, you lose a billion dollar satellite when the systems fail to detect a data error introduced by incorrect mapping. Every day, we are relying more heavily on the quality of our data, so the timing of ISO 22745 could not be better.

ECCMA provides eOTD maintenance in the form of an efficient web-based democratic voting process in which volunteer domain experts from around the world vote on additions to the dictionaries. The process is managed by a small permanent technical staff in Bethlehem, PA, funded through a combination of membership fees and research projects.

In the hope of ultimately being able to reduce cataloging costs through better integration between the catalogs of its buyers and suppliers, ECCMA undertook a pilot project to create a standard catalog builder and standard query builder based on the eOTD. Both applications are available as open source from ECCMA’s website: [ECCMA.org](http://ECCMA.org).

Although there are clearly benefits to the ways the government performs cataloging, industry is also seeing widespread savings from inventory rationalization ranging anywhere



Machine Bolt; Product Number: 3225020037; Nominal thread diameter: 1/4 inches; Width across flats: 0.450 inches; Width across corners: 0.484 inches; Head height: 0.150 inches; Head type: Hexagonal; Count per pack: 10; Pack price: \$0.80




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Rendered

Attribute Coded

Attribute Expanded

**A machine bolt described in the language of the eOTD.**

from 5 to 20 percent. When you add the associated reduction in storage and shrinkage costs, inventory rationalization projects can begin to look very attractive indeed.

“The most significant benefit to optimizing a cataloging system is not the reduction in operating expense, but the optimization and reduction in inventory investment,” according to a study KPMG did for DLIS. In its report, KPMG provided two examples of projects that showed an average 17 percent reduction in inventory value as a result of simply developing and implementing a standard description system and eliminating duplicate items. In the examples provided by KPMG, the average cost to identify a single line item was \$9.50, and both projects took close to 2 years to complete. Although the benefits of inventory rationalization are clear, what was needed was a better mousetrap to reduce project costs.

How can one possibly not know what is in an inventory? The truth of the matter is that the owner probably knows the manufacturer name and part number but not what is included in the item. For example, is the item in question a collar, a shim, a washer, or a spacer; is it plasterboard, sheet rock, or dry wall? Answering these apparently simple

questions turns out to be literally the \$64,000 question and explains why identifying an inventory of 100,000 items can take over 100 man-months and cost up to \$500,000.

ISO 22745 seeks not only to standardize the process and procedure for the maintenance of the eOTD, as well as the naming convention and the design rules for definitions, but also to provide guidelines for the incorporation of the eOTD tags into computer-aided design applications. Ultimately, this will allow supply chain systems to capture item descriptions at their very source using a standardized language that everyone can understand—a goal well worth going after.

To learn more about DLIS, go to [www.dla.mil/dlis](http://www.dla.mil/dlis) and follow the cataloging links to reach the International Cataloging page or call 877-DLA-CALL. For more information about the NATO Codification System, go to [www.nato.int/structur/AC/135/welcome.htm](http://www.nato.int/structur/AC/135/welcome.htm).

### **About the Authors**

Steven Arnett is deputy chief of the DLIS International Division in Battle Creek, MI. Before being appointed to that position in June 2004, Mr. Arnett managed international policies and procedures for 15 years for DLIS and represented the United States at many meetings of NATO Allied Committee 135.

Peter Benson is the executive director and chief technical officer of ECCMA. He is an expert in distributed information systems and content encoding. From 1994 to 1998, Mr. Benson chaired the American National Standards Institute Accredited Committee ANSI ASCX12E, which is responsible for developing and maintaining EDI standards for product data.✻



Voice



Finger



Face



Eye



Hand

# DoD Biometric Conformity Assessment Initiative

By John Woodward and Sam Cava



The comprehensive discipline of conformity assessment involves conformance testing activities and the certification of information systems to ensure that adopted standards are met. This article provides an overview of conformity assessment, and details the steps the DoD Biometrics Management Office (BMO) and its subordinate technology center, the DoD Biometrics Fusion Center (BFC), have underway to establish such a conformity assessment program for the implementation of interoperable biometric technologies. With such a program implemented, DoD components will adhere to DoD policies that emphasize the need for conformity assessment activities to ensure the interoperability of forces, equipment, and processes.

### **Interoperability and Conformance Testing**

Achieving greater interoperability among forces, services, and components—human and technical—is a DoD priority. Advances in biometric technologies, combined with the growing needs for physical and information security and support for U.S. efforts in the global war on terrorism, have furthered the importance of the effort. The interoperability of products and systems relies heavily on the application of

developed standards in the design and manufacture of system components, as well as in the testing and validation of these components, to provide evidence of interoperability before acquisition and deployment.

Conformance testing stems from the global standardization effort. The American National Standards Institute (ANSI) and its international counterparts, the International Organization for Standardization (ISO) and International Electrotechnical Commission, continue to develop numerous standards for a wide range of activities in a variety of industries and disciplines. By having products, programs, and processes meet these standards, DoD will achieve greater reliability, quality, and interoperability.

### **Benefits of Conformity Assessment for DoD Biometrics**

A comprehensive conformity assessment program helps ensure that DoD's biometric products are interoperable. A conformity assessment program can do the following:

- Verify that biometric products have been developed or modified to meet the appropri-

## **DoD Policy Documents Affecting Conformity Assessment**

Several DoD-wide policy documents include provisions that affect or imply that conformity assessment programs are required to adequately meet DoD testing requirements:

- DoD Directive 4630.5, *Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)*, January 2002.
- DoD Instruction 4630.8, *Procedures for Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)*, June 2004.
- Chairman of the Joint Chiefs of Staff Instruction 6212.01C, *Interoperability and Supportability of Information Technology and National Security Systems*, November 2003.
- National Security Telecommunications and Information Systems Security Policy 11, *National Information Assurance Acquisition Policy*, revised July 2003.



ate ANSI or ISO standards mandated within DoD

- Determine whether considered biometric products have been sufficiently tested to meet the adopted standards
- Confirm that testing activities and test results are complete, reproducible, and verifiable
- Determine that the performance of testing facilities and instruments meets accepted industry standards
- Provide accreditation to testing laboratories that are performing properly to accepted, recognized national and/or international standards
- Determine the qualification of personnel who perform conformance testing
- Disseminate lists of properly tested and certified vendor products for DoD community consideration.

## Steps Underway to Establish a Conformity Assessment Program

### CONFORMANCE TESTING

Conformance testing ensures that standards adopted by a program are met. To enhance their credibility, product conformance testing procedures should follow well-designed testing methods that detail accuracy and variability requirements. Test methods alone are not sufficient tools for testing. Instead, test methods should be executed in the form of conformance test suites (CTSs), which are automated tools used to determine products' conformance to standards.

Three general approaches are used for conformance testing:

- First-party testing, which is performed by vendors on their own products. The primary risk associated with first-party testing is that consumers have less confidence in testing results because consumers do not control the testing

process. The concern is that a potentially biased tester may influence the testing results.

- Second-party testing, which is performed by the consumer organization. The primary risks associated with second-party testing are that it may add cost and responsibility to the consumer organization. However, because the consumer has control over the product sample, testing environment, testing staff, and testing processes, the consumer has greater confidence that tested products will conform to approved standards. This allows the testing results to be more readily accepted.
- Third-party testing, which is conducted by a trusted testing laboratory independent of both producer and consumer groups. DoD views third-party testing as the least feasible option due to its primary risks—the time and higher costs it often requires. For example, if the testing of a specific version of product takes a significant amount of time, it is likely a newer version of the same product will be available before the older version is fully tested. This will place DoD (the consumer) in the position of having to choose either an approved older version of a product or a newer, but untested version of the product. The higher costs associated with third-party testing are typical in contracting agreements with third parties.

### LABORATORY ACCREDITATION

Laboratory accreditation is granted by an authoritative body, which certifies that a laboratory is competent to perform testing. For example, if the National Institute of Standards and Technology (NIST) accredits a laboratory, the laboratory is recognized as being capable of certifying products through testing or other procedures. Laboratory accreditation is, of course, not a guarantee that the facility will competently test products at all times. It is for this reason

that independent verification and certification of test results are also recommended.

## PRODUCT CERTIFICATION

Certification provides another level of assurance through independent verification and validation that a product conforms to a standard or specification or that an organization is competent to perform a certain task. As with conformance testing, there are three types of certification:

- First-party certification, which is implemented by a vendor to guarantee that its products meet one or more standards. Use and acceptance of a first-party certification system require a consumer to depend on a vendor's claims of conformity. The obvious risk is that a vendor may only partially conform to a standard while claiming to conform to that standard completely.
- Second-party certification, which is the use of the consumer's own certification authority to ensure that a desired product conforms to one or more standards. Test results may come from first-party, second-party, or third-party testing laboratories (as explained above), but the validation, verification, and certification activities are performed by the consumer's organization or certification authority.

- Third-party certification, which is the use of a technically and otherwise competent certification body—not controlled or influenced by the consumer or the vendor—to validate a product's conformity to one or more standards. As an example, NIST has accredited eight common criteria testing laboratories to perform test methods following Federal Information Processing Standards (FIPS) 140-1 and 140-2, *Security Requirements for Cryptographic Modules*. (For more information, see [http://niap.nist.gov/cc-scheme/testing\\_labs.html](http://niap.nist.gov/cc-scheme/testing_labs.html) and <http://csrc.nist.gov/cryptval/>.) These accredited laboratories act as third parties and validate that security products conform to FIPS 140-1 and 140-2. Credibility given to a certification from a third party generally depends on three factors: (1) the number and types of testing and inspection methods used to ensure product conformance, (2) the vendor's quality control system, and (3) the competence of the laboratory.

## Approach to Implementing Conformity Assessment within DoD Biometrics

As illustrated in Figure 1, the BMO and BFC are key components of the proposed approach for implementing a conformity assessment program. Under this approach, the BFC is the testing laboratory that

## Biometrics Management Office

The DoD BMO is responsible for leading, consolidating, and coordinating the development, adoption, and use of biometric technologies for the combatant commands, services, and agencies, to support the warfighter and enhance joint service interoperability. The BMO reports to the Army Chief Information Office, which acts on behalf of the DoD Executive Agent for Biometrics, the Secretary of the Army. The recently formed Identify Protection and Management Senior Coordinating Group provides senior-level, DoD-wide strategic guidance to the BMO, given its mission to oversee efforts in the areas of biometrics, public key infrastructure, and smart cards.

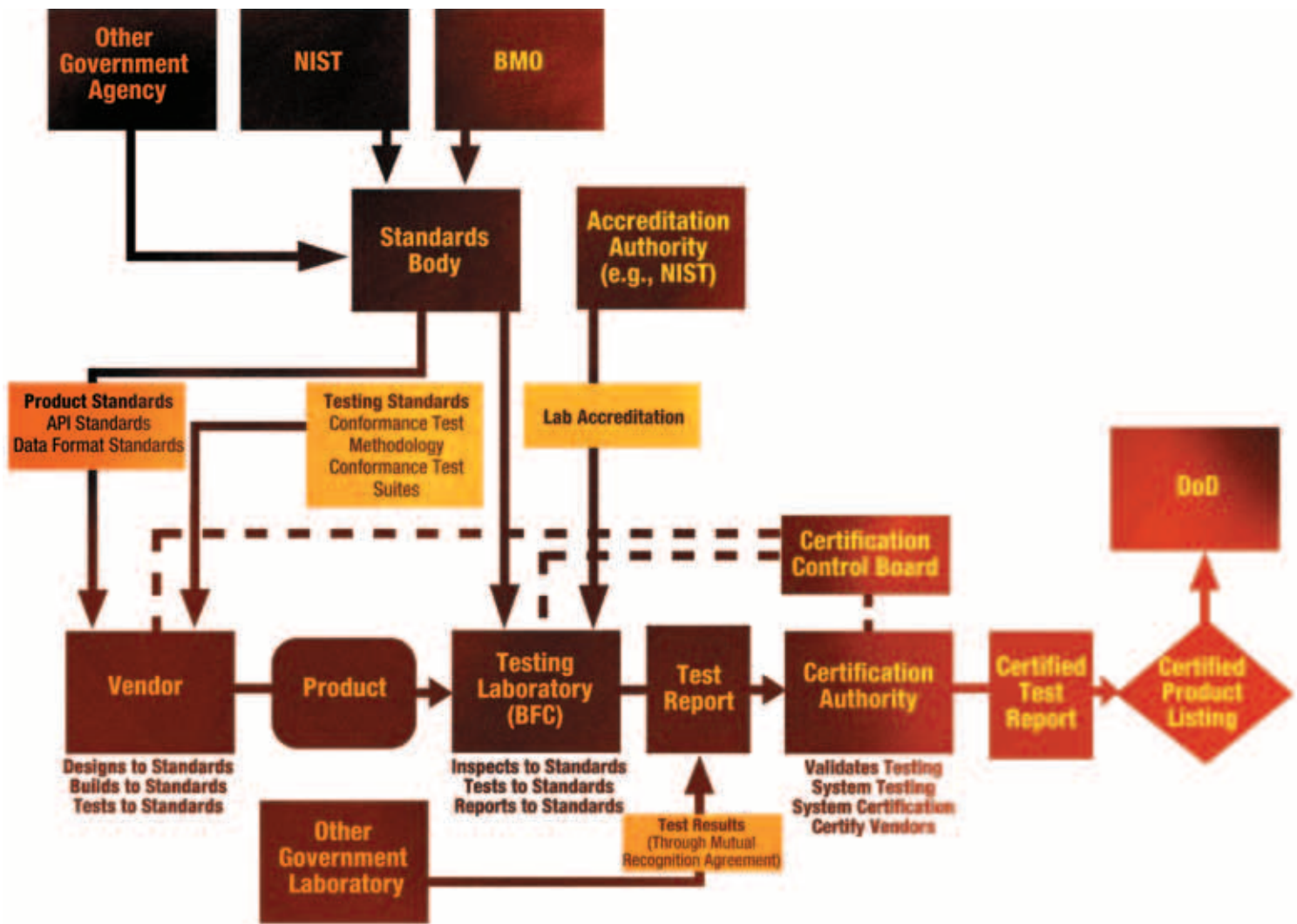


FIGURE 1. Proposed Conformity Assessment Approach.

determines the conformance of biometric technologies to relevant national and international biometric standards. To realize this approach, the BFC is working to establish itself as an accredited DoD biometric conformance testing laboratory. Once certified by an accreditation authority (e.g., NIST), the BFC will provide testing to determine whether vendors' products actually conform to biometric standards.

A certification authority will provide the necessary validation of the BFC's test results and the certification of products or technologies. The certification authority may also provide system testing when necessary to prove the interoperability of multiple technologies that have been combined into one system. Test reports and a list of certified biometric

products will be made available to DoD through an appropriate interface.

The proposed conformity assessment approach also includes a certification control board—with representatives of the certification, testing, client, and vendor communities—that would provide a necessary interface between conformity assessment program components.

Under this proposed approach, the BMO (along with NIST and other government organizations) will continue to provide input to the development of product and testing standards for biometric technologies. These standards will be available to vendors and testing laboratories alike. Vendors of biometric tech-

nologies will be able to design, build, and self-test their products with respect to these standards.

## **Efforts in Motion**

### **DEVELOP BIOMETRIC STANDARDS**

Nearly every aspect of biometric technology must be standardized to ensure the interoperability and interchangeability of data, systems, and components. The BMO and BFC have begun work in this effort with acceptance of the Biometric Application Programming Interface (BioAPI) standard. Other standards, such as data interchange format standards for biometrics and DoD application profile standard, are being developed. These efforts are essential to the integration of biometric technologies for DoD. They are the building blocks of a solid conformity assessment program.

### **DEVELOP CONFORMANCE TEST STANDARDS**

To ensure interoperability, and conformance of biometric products to national and international standards, standardized conformance testing methods must be developed and recognized. The BMO and BFC are currently working on several conformance testing methods in collaboration with national and international standards bodies. We are in the beginning stages of development, recognition, and subsequent implementation of the necessary standards for conformance testing of each related biometric technology.

### **DEVELOP CONFORMANCE TEST TOOLS**

Conformance testing methods, in and of themselves, are not sufficient tools for testing. If testing organizations, such as BFC, are to perform the validation and verification of the biometric products, an executable CTS must be implemented. The BMO and BFC are working to identify existing tools. In addition, the BMO and BFC are developing tools that will implement the standardized conformance testing methods. For example, the BMO and BFC are developing a

BioAPI CTS following the methods outlined in draft national and international BioAPI conformance testing standards. The goal of the BMO and BFC is to make conformance test tools—like the BioAPI CTS—publicly available. Vendors will then be able to determine if their products meet the selected standards.

## **Efforts for the Near Future**

### **APPLY STANDARDS TO CONFORMANCE TESTING**

With conformance testing methods and test suites appropriate to the specific technology involved, the BFC can incorporate full accountability and visibility into its objective and subjective testing methods, providing a higher degree of incontrovertible test results. It is well known that the cost of correcting mistakes increases as products move beyond research and development and into implementation phases. The greater use of recognized industry standards also allows DoD conformance testing to push the costs of faulty or non-interoperable biometric system components toward a preemptive, early error detection and correction phase. Vendors can concentrate more efficiently on development to meet the standards adopted by DoD. Testing and certification processes will move with greater ease and expediency.

### **ACCREDIT TESTING LABORATORIES**

Testing laboratory accreditation, by a respected independent accreditation body, will provide the stamp of conformance to widely recognized laboratory standards to which the BFC should understandably be held accountable. This accreditation will give the BFC greater credibility with vendors and other testing laboratories. Accreditation is a necessary step toward obtaining the benefits that mutual recognition agreements provide.

## **Longer-Term Efforts**

### **CREATE OR IDENTIFY A CERTIFICATION AUTHORITY**

Having an independent certification authority verify and validate test results will provide added confidence



## Biometrics Fusion Center

The DoD BFC is establishing itself as the biometric technology center of excellence for the DoD. The BFC tests and evaluates biometric products, supports the development of standards and performance measures, provides biometric repository support, and provides technical implementation and integration support to DoD organizations.

The BFC recently moved into a new facility in Clarksburg, WV, that significantly expands its capabilities. The BFC has a state-of-the-art demonstration center that highlights current and future biometric applications of interest to DoD. For more information, visit [www.biometrics.dod.mil](http://www.biometrics.dod.mil).

in the products and systems tested. The certification authority's attached certification control board will be able to resolve technical questions or disputes that may be related to the testing process. The certification authority is able to provide certificates of validation, conformance, and interoperability to products, systems, vendor quality systems, and personnel.

### ESTABLISH MUTUAL RECOGNITION AGREEMENTS

Mutual recognition agreements (MRAs) allow accredited testing laboratories and product acceptance systems to recognize the testing results of other laboratories as being in conformance with applicable, recognized standards. This reduces the costs of testing and approval processes by eliminating redundant testing—testing that has already been completed by a competent laboratory whose findings DoD will recognize as valid. Establishing MRAs to recognize the certified results of other certification authorities outside of the direct DoD system is also possible.

### Conclusion

With the open promotion and integration of recognized product and test standards, the accreditation of testing laboratories, and the implementation of accepted test validation and product certification by an independent agency, DoD will have greater confidence in the interoperability of biometric systems.

Expediency and best efforts are required to protect facilities, people, and information and to address the relatively new challenges for identification and tracking in the global war on terrorism. A conformity assessment program established within DoD will help increase efficiency and accuracy of validation and verification of interoperability for biometric technologies, devices, and data. Tested and validated interoperability will provide logical security for DoD information systems; physical security on bases, mobile platforms, and other installations; and tracking of friendly personnel, as well as enemy combatants, common criminals, and potential terrorists—for now and in the future.


### About the Authors

John Woodward is the director of the DoD Biometrics Management Office. Before joining the BMO, Mr. Woodward worked for the RAND Corporation under the authority of the Intergovernmental Personnel Act, which permits movement of personnel between qualifying organizations. At RAND, he served as a senior policy analyst.

Sam Cava is the director of the DoD Biometrics Fusion Center. He is responsible for enhancing the center's test and evaluation capabilities and establishing stronger ties with other DoD organizations and federal agencies. Mr. Cava came to the BFC from West Virginia University, where he was the director of Forensic and Biometric Development. Previously, he served on active duty with the U.S. Air Force, working in several intelligence-related assignments.✱

# Defense Energy Support Center Develops Commercial Standard Enabling Federal Biodiesel Use

By Michelle Kordell, Jessica Glace, and Brian Mansir



*Glycine max  
(soybean)*

When Rudolf Diesel designed his prototype diesel engine nearly a century ago, he ran it on peanut oil. He envisioned that diesel engines would operate on a variety of vegetable oils. But when petroleum-based diesel fuel hit the marketplace, it was cheap, reasonably efficient, and readily available—quickly becoming the diesel fuel of choice. Now, fast-forward to the mid 1970s; petroleum-based fuel shortages spurred interest in diversifying fuel resources and in developing biodiesel as an alternative to petroleum diesel.<sup>1</sup> However, producing biofuel was not cost-effective, so interest waned. Now, increasing concerns about global climate change due to pollutants and dependence on foreign oil are providing impetus to developing biodiesel—an alternative to petroleum diesel that is less polluting.

Like petroleum diesel, biodiesel operates in compression-ignition engines without modification. Because biodiesel is made from feedstocks that take carbon dioxide out of the atmosphere, it helps reduce the buildup of greenhouse gases.

Feedstocks include new and used vegetable oils and animal fats. Fats and oils are chemically reacted with an alcohol (methanol is the usual choice) to produce chemical compounds known as fatty acid methyl esters. Approximately 55 percent of the biodiesel-producing industry can use any fat or oil feedstock, including recycled cooking grease. The other half of the industry is limited to vegetable oils, the least expensive of which is soy oil.<sup>2</sup>

Biodiesel can be used pure (B100) or mixed in any proportion with diesel. Most users choose a blend—called B20—of 20 percent biodiesel and 80 percent diesel. B20 is lower in emissions than conventional diesel, but cheaper than B100. In addition, B20's solvent properties cause fewer clogging problems. In contrast, B100 can loosen accumulated sediments and sludge that form in diesel storage tanks and then clog filters. Finally, compared with blends with a higher biodiesel content, B20 is more compatible with existing rubber seals, gaskets, and hoses.

### **Benefits of Biodiesel**

Biodiesel's physical characteristics—horsepower, acceleration, cruising speed, and torque—are similar to those of conventional diesel, and its energy content is only slightly lower (B20 has 1.7 percent less energy than conventional diesel fuel). Biodiesel offers several important advantages:

- *It is renewable and can be produced domestically.* Biodiesel is a renewable fuel made from domestically grown crops, such as soybeans and mustard seed. It also can be produced from recycled grease. Biodiesel can directly replace petroleum products, reducing the country's dependence on foreign oil.
- *Its emissions are significantly lower than those of diesel.* Polluting emissions from 100 percent biodiesel are much lower than polluting emissions from diesel. Emissions from B20 are not as low as they are from B100, but the reduction compared with diesel is still significant, as shown in Table 1. Moreover, net carbon dioxide is lower when using biodiesel because creating biodiesel takes carbon dioxide out of the atmosphere.
- *Its use does not require engine modifications or new infrastructure.* Biodiesel is a substitute or extender for traditional petroleum diesel and does not require special pumps or high-pressure equipment for fueling. In addition, biodiesel is suitable for conventional diesel engines, so users do not require special vehicles or engines.



TYPE OF EMISSION	INCREASE OR DECREASE (%)
<b>REGULATED</b>	
Total unburned hydrocarbons	-20
Carbon monoxide	-12
Particulate matter	-12
Nitrogen oxide	+2
<b>UNREGULATED</b>	
Sulfates	-20
Polycyclic aromatic hydrocarbons (PAHs)	-13
Nitrated PAHs	-50
Ozone potential of peciated hydrocarbons	-10

**TABLE 1. Average B20 Emissions Compared with Conventional Diesel.**

Source: Environmental Protection Agency.

- *It is safe.* Biodiesel offers safety benefits over petroleum diesel because it is much less combustible; its flashpoint is greater than 150°C, compared with 77°C for petroleum diesel. This makes biodiesel safer to handle, store, and transport.

### Energy Security and Environmental Quality

With the goals of enhancing our nation’s energy security and improving environmental quality, Congress passed the Energy Policy Act (EPAAct) in 1992. EPAAct (Public Law 102-486) encourages the use of alternative fuels—fuels not derived from petroleum—that can help reduce U.S. dependence on imported oil for transportation and provide the impetus for a new alternative fuel industry throughout the United States.

Under EPAAct, 75 percent of a federal fleet’s acquisitions of non-exempt light-duty vehicles must be alternative fuel vehicles (AFVs).<sup>3</sup> As a result, federal fleets have acquired tens of thousands of AFVs, which run on either alternative or conventional fuels. Congress had hoped that EPAAct would spur the growth of an alternative refueling infrastructure

to support the needs of the federal fleet and thereby promote public use of alternative fuels. However, growth has been very slow. Consequently, many of the acquired AFVs must operate on gasoline much, if not all, of the time.

To encourage the use of more alternative fuel, rather than just the acquisition of AFVs, the Energy Conservation Reauthorization Act of 1998 (ECRA) amended EPAAct to allow one AFV acquisition credit for every 450 gallons of pure biodiesel (B100) used and one credit for every 2,250 gallons of B20 used. A fleet can use these biodiesel credits to meet up to 50 percent of its AFV requirements. Using biodiesel in existing diesel vehicles—with virtually no modifications required—not only helps a fleet gain AFV credits, but results in the use of a domestically produced, cleaner fuel.

In April 2000, Executive Order 13149 directed federal agency fleets to further fulfill the intent of EPAAct by requiring that by FY05, petroleum consumption of non-exempt vehicles be reduced by 20 percent from an FY99 baseline. It is proving difficult for agencies to fulfill this requirement because of the

lack of refueling infrastructure for alternative fuels (CNG, ethanol, propane). But dramatically increasing biodiesel usage and introducing biodiesel standards should help improve this infrastructure and the availability of biodiesel in the near future.

### History of B20 Standards

Because of the environmental and regulatory benefits of biodiesel, many federal agencies, including the Department of Defense (DoD), were interested in using the fuel. But B20 standards and infrastructure (production, storage, and fueling stations) were insufficient to support the widespread use of the fuel. By 1998, agencies were contacting the Defense Energy Support Center (DESC)—a field activity of the Defense Logistics Agency—with requests to purchase B20 in bulk for refueling some of their on-site storage tanks for use in their diesel vehicles.<sup>4</sup> One thing stood in the way—a lack of standards to ensure that the B20 purchased from biodiesel manufacturers and distributors would meet appropriate specifications for fuel quality and storage stability.

In 1999, DESC's Product Technology and Standardization Division and Ground Fuels Division began working with the Department of Energy, the Office of the Secretary of Defense, and the American Society of Testing and Materials (ASTM) to resolve a number of issues:

- **Development of a commercial standard.** DESC's efforts focused first on the creation of a consensus-based, non-government standard for B20 biodiesel.<sup>5</sup> By developing a standard that provides a consistent process and product, DESC hopes that both government and industry will use more bio-based fuels in their fleets.<sup>6</sup> Until publication of the standard, DoD and other agencies are using an interim procurement clause. The clause, developed by DESC based on industry input, lists a set of requirements that the B20 product must meet until a commercial specification is available. In October 2001, DESC awarded the first B20 contract for 1.3 million gallons for

use by the Marine Corps, Air Force, Postal Service, Departments of Agriculture and Interior, and NASA. DESC has improved its interim specifications on its successive B20 contracts. For example, in November 2003, DESC changed the purchase specifications for biodiesel to allow yellow grease (used restaurant oils) to be used as a feedstock (instead of only virgin vegetable oil as specified in the first contracts). This change broadened the supplier base and resulted in more competitive pricing by suppliers. DESC also added a specification requiring that all B100 suppliers be registered with the Environmental Protection Agency to help ensure good quality of the biodiesel part of the B20 blend.

- **Customer education.** Education is a key follow-on effort. DESC initiated biodiesel fuel classes for quality inspectors. DESC also is developing a B20 quality and storage standards road show to better inform contracting professionals and fleet managers.
- **Infrastructure support.** Infrastructure support remains an obstacle. Although standards will be in place to facilitate the purchase of B20, federal agencies generally have limited infrastructure to store and pump the biodiesel fuel. If an existing fueling station has multiple storage tanks, it is possible to convert some of the petroleum tanks to biodiesel use. If only a single tank exists, however, DoD must designate investments in additional storage tanks.
- **Price parity.** B20 costs \$0.02 to \$0.20 more per gallon than conventional diesel, as shown in Table 2. DESC and the General Services Administration (GSA) have worked together to ensure that B20 is available to the federal consumer at the same standard price of conventional diesel.

### Trends in the Use of B20

The use of biodiesel has grown dramatically during the last few years since the ECRA permitted federal, state, and public utility fleets to earn AFV cred-

its through the use of biodiesel. DESC coordinates the federal fleet's bulk fuel purchases and is now the largest single purchaser of biodiesel in the United States. The current and projected amounts of B20 purchased by DESC are as follows:<sup>7</sup>

FY03	3.4 million gallons
FY04	5 million gallons
FY05 (projected)	20 million gallons.

Federal fleet usage of B20 continues to rise, as documented in the most recent annual federal fleet reports published by GSA.<sup>8</sup> The usage, measured in gas gallon equivalent (GGE), is shown below:<sup>9</sup>

FY00	568,800 GGE
FY01	1,314,509 GGE
FY02	2,251,945 GGE
FY03	3,752,631 GGE
FY04	6,800,890 GGE.

Among the federal agencies, the largest users of B20 in FY02 were the Departments of Agriculture, Energy, and Interior; NASA; and the Air Force, Navy, and Marine Corps.

Federal fleets may find B20 at some commercial stations—some 200 across the United States carry B20—but most comes from bulk purchases made

on DESC contracts to fill agency-owned refueling storage tanks.

### The Future of B20

Going forward, DESC will continue to assist with the development of a consensus-based, non-government standard that encourages adoption of alternative fuels by government and industry fleets and, ultimately, by owners of private vehicles. In the meantime, DESC is using and improving upon the interim B20 specifications as it establishes additional B20 contracts for federal fleets. DESC also is continuing its education efforts and promotion of additional infrastructure investments.

DESC, in cooperation with ASTM, the American Petroleum Institute, world fuel organizations, and commercial and government entities, is working to facilitate effective and efficient problem resolution with biodiesel infrastructure and availability, as well as to broaden the supplier base and reduce costs.

In 2003, the White House recognized DESC for its promotion of bio-based fuels in the federal government by honoring it with the White House Closing the Circle Award. The award recognizes federal employees across the United States for their outstanding environmental stewardship work.

REGION	DIESEL	BIODIESEL (B20)
New England	1.729	No data
Central Atlantic	1.739	No data
Lower Atlantic	1.673	1.69
Midwest	1.683	1.65
Gulf Coast	1.613	No data
Rocky Mountain	1.707	1.83
West Coast	2.026	2.21

**TABLE 2. Comparison of Fuel Prices, Week of March 8, 2004 (\$ per gallon).**

Source: *The Alternative Fuel Price Report*, June 29, 2004.



<sup>1</sup>See [www.eere.energy.gov/biomass](http://www.eere.energy.gov/biomass).

<sup>2</sup>The soy industry has been a driving force behind biodiesel commercialization because of excess production capacity, product surpluses, and declining prices.

<sup>3</sup>Some exemptions are permitted, such as law enforcement and tactical military vehicles.

<sup>4</sup>DoD also is moving toward E85, an 85 percent ethanol and 15 percent gasoline fuel for which a commercial standard already exists.

<sup>5</sup>In 2002, ASTM, a commercial standards organization, published a standard for pure biodiesel fuel (B100). ASTM has a current work item open for blended biodiesel fuel B20—WK6286 Standard Specification for Diesel Fuel Oil, Biodiesel Blend (B20).

<sup>6</sup>B100 and biodiesel blends are sensitive to cold weather (vegetable oil solidifies at a higher temperature than petroleum-based fuels) and may require special antifreezing precautions. Thus far, tactical vehicles cannot run on B20. For example, as NATO migrates toward a single battlefield fuel, it will not adopt the ASTM standard. The introduction of a biodiesel fuel for administrative vehicles would present significant interoperability problems in combined operations.

<sup>7</sup>FY03 and FY04 data were provided by Patricia Knox Bonner, a chemist at the Defense Energy Support Center, Fort Belvoir, VA.

<sup>8</sup>See [www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA\\_DOCUMENT&contentId=13320](http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_DOCUMENT&contentId=13320).

<sup>9</sup>A gas gallon equivalent (GGE) is the volume of fuel it takes to equal the energy content of one liquid gallon of gasoline.

### About the Authors

Michelle Kordell, Jessica Glace, and Brian Mansir are research fellows at LMI. Ms. Kordell has written multiple case studies for the Defense Standardization Program Office, including *Acoustic-Rapid Commercial Off-the-Shelf Insertion*, *AN/PRC-112 Survival Radio*, *Hull Mechanical and Electrical Equipment Standardization Program*, and *Army Battery Standardization*.

Ms. Glace has public and private industry experience in supply chain management and electronic data exchange standards.

Mr. Mansir leads research and analysis projects and provides counsel to senior leaders of the nation's national security and other public-sector organizations.✱

*The authors give special thanks to Pam Serino and her staff for generously providing time for LMI to conduct interviews at the Defense Energy Support Center while researching standardization of biodiesel.*

## Department of Energy Success Stories

### BELTSVILLE AGRICULTURAL RESEARCH CENTER

The Beltsville Agricultural Research Center in Beltsville, MD, decided to conduct a demonstration project to study the impacts of biodiesel in a large-scale operation and help clean the air in Washington, DC. The Center found that B20 is an economical and convenient alternative to diesel fuel. Even though B20 costs \$0.15 to \$0.20 per gallon more than diesel fuel costs, B20 can be used in unmodified diesel engines. And for every 450 gallons of B20 used, the Center earns an EPAct credit. This saves on the potential cost of buying new alternative fuel vehicles. The Center has three fuel dispensers and uses B20 in all of its 150 diesel vehicles and equipment: trucks, tractors, farm equipment, mowers, and bus. Drivers and mechanics are pleased with the fuel's performance and the lack of diesel odor.

For additional information, see U.S. Department of Energy, Beltsville Agricultural Research Center, Vehicle Buyer's Guide for Fleets, Fleet Successes. Available at [www.eere.energy.gov/cleancities/vbg/fleets/progs/success\\_ddown.cgi?23](http://www.eere.energy.gov/cleancities/vbg/fleets/progs/success_ddown.cgi?23).

### RAYTHEON MISSILE SYSTEMS

Raytheon Missile Systems in Tucson, AZ, uses B20 biodiesel in more than 150 vehicles, including forklifts and generators. Raytheon stores its B20 onsite in a tanker. The company is impressed that biodiesel provides about the same miles per gallon rating as petroleum diesel and is the only alternative fuel for heavy vehicles that does not require special dispensing or storage equipment.

For additional information, see U.S. Department of Energy, Beltsville Agricultural Research Center, Vehicle Buyer's Guide for Fleets, Fleet Successes. Available at [www.eere.energy.gov/cleancities/vbg/fleets/progs/success\\_ddown.cgi?85](http://www.eere.energy.gov/cleancities/vbg/fleets/progs/success_ddown.cgi?85).

# 2004 Defense Standardization Program Awards

**O**n March 8, 2005, **Mr. Lou Kratz**, the Assistant Deputy Under Secretary of Defense (Logistics, Plans and Programs) and the DoD Standardization Executive, and **Mr. Gregory Saunders**, Director, Defense Standardization Program Office, presented six awards to recognize one individual and five teams whose standardization efforts demonstrably promoted interoperability, reduced total ownership costs, or improved readiness. The 2004 Distinguished Achievement Award, which includes an engraved crystal Pentagon, went to **Mr. William Carpenter** of the Defense Supply Center Columbus. Mr. Carpenter made a significant contribution to the Defense Standardization Program by developing a new specification to cover “nanominiature” electrical connectors. The issuance of MIL-DTL-32139 on December 16, 2003, was the culmination of 2 years of work—which involved negotiating with connector manufacturers and representatives from the Army, Navy, Air Force, and NASA—to select the best possible component configuration for standardization. MIL-DTL-32139 covers hundreds of new standard parts for use by the military services and their equipment contractors. The conservative estimate is that this specification would preclude the use of 100 non-standard parts annually, which would result in a cost avoidance of more than \$2 million each year in accordance with the DoD Parts Management Program Model. Use of these standard parts will lower procurement costs, shorten procurement lead-times, increase operational readiness, and reduce the logistics footprint.



Pictured above from left to right are Greg Saunders, DSPO Director; Lou Kratz, Assistant Deputy Under Secretary of Defense (LP&P); and William Carpenter, winner of the 2004 Distinguished Achievement Award. Also pictured are Christine Metz, DLA Standardization Executive; MG Mary Saunders; Kathy Cutler, Executive Director, Logistics Operations, DLA; Mark Brown; Bill Lee; Sam Merritt; and David Moore.

The five other winners were as follows:

An **ARMY TEAM**, located at the U.S. Army Edgewood Chemical Biological Center (USA ECBC), has been engaged in standardization and interoperability efforts with the **AMERICAN, BRITISH, CANADIAN, AND AUSTRALIAN (ABCA) PROGRAM'S QUADRIPARTITE WORKING GROUP (QWG)** on Nuclear, Biological and Chemical (NBC) Defense. The team of representatives from across the U.S. Government ensured that the United States was well represented in all areas of NBC defense addressed by the QWG. In the past 2 years, ABCA members have implemented some 10 new or modified QSTAGs and ratified 58 QSTAGs on material, criteria, or procedures. Standardization agreements with ABCA countries significantly advance interoperability, which translates into enhanced safety for the soldier in the field, better communication and confidence in coalition partners, and higher availability of spare parts. All of the ABCA armies have achieved enormous cost savings and increased operational readiness.

Team members: **Dr. George Famini, Mr. Robert Moeller, Ms. Cecelia Ball.**

An **ARMY TEAM** developed a formal quality management system (QMS) for the Critical Reagents Program (CRP). The CRP is tasked with producing and fielding high-quality biological detection assays in support of the warfighter. Military services use CRP production to sample, detect, and diagnose disease caused by pathogenic agents. Through the QMS, the team standardized documentation, formats for exchanging information, methods of production and quality analysis, assay testing procedures, sets of cells and toxins, and systems to control variation and to confirm cell purity. The team also created an integrated digital environment for sharing the best ideas from DoD scientists and integrating them into one joint solution. Today, the program offers biological reference materials derived from standard cells. Newly developed assays are documented in a standard way and are subjected to testing with material drawn from the CRP reference material program.

Team members: **Dr. Peter Emanuel, Mr. Mike Mazza, Ms. Karen Poffenberger, Dr. David Norwood, Dr. Mark Wolcott.**

A **NAVY TEAM**, using reliability as a force multiplier, formed the Integrated In-Service Reliability Program (IISRP) with a headquarters management team and three integrated analysis teams collocated with naval air depots and fleet operations squadrons. The purpose of the program was to improve components reliability, lower fleet operational costs, and standardize and document the processes to accomplish these goals. Through the IISRP, the team generated more than 1,000 reliability improvement recommendations. Those recommendations translate into a cost avoidance of \$113.7 million to the Flying Hour Program. The team was also responsible for the development of standardized processes, analysis methods, and software analysis tools and the reversal of negative trends in reliability and time-on-wing for high-value, mission-critical aviation components. In addition, the team exported the standardized processes, tools, and applications to other DoD and industry users for potential widespread application.

Team members: **Ms. Deborah Vergos, Mr. Les Wetherington, Mr. Bobby Brinson, Mr. Steve Adamczyk, Mr. James Schrope.**



Pictured above are members of the team that helped expand standardization agreements with ABCA countries. From left to right: Lou Kratz; Cecelia Ball; Rick Decker; Dr. George Famini; Robert Moeller; COL Debra Thedford; Ron Davis, Army Standardization Executive; Bill Klein; and Karim Abdian.



Members of the team that developed a QMS for the CRP are shown above. From left to right: Greg Saunders, Lou Kratz, LTC Keith Vesely, Dr. Mark Wolcott, Karen Poffenberger, John Rossi, Dr. Peter Emanuel, Mike Mazza, Dr. David Norwood, KP Kilpatrick, Ron Davis, and Karim Abdian.



Pictured above is the team that created the IISRP receiving their award. From left to right: Greg Saunders; Lou Kratz; Nick Kunesh, Navy Standardization Executive; Debbie Vergos; Les Wetherington; Steve Adamczyk; James Schrope; Bobby Brinson; and Jeff Allan.





Members of the team that developed a data transfer standard to shorten PGM integration time are pictured above. Left to right: Greg Saunders, Lou Kratz, Nick Kunesh, Scott Millett, H. Wayne Willhite, David Neel, and Jeff Allan.

**A NAVY TEAM** was instrumental in developing the DoD Interface Standard for Mission Data Exchange Format, MIL-STD-3014, informally known as MiDEF. MiDEF is a standard for the mission data file format for use by joint/coalition weapons. It is a compact, flexible, powerful file format that is independent of communication channel protocols. The team developed the file format and drafted the standard. It developed joint contacts and support for its development. By standardizing mission data transfer formats and armament interfaces, future precision-guided munitions (PGM) integration will be decoupled from aircraft operational flight program cycles. By establishing a common mission data transfer standard and armament interface, follow-on PGM integration time will be shortened by 1 to 3 years, and costs will be reduced by \$20 million to \$50 million.

Team members: **Mr. Scott Millett, Mr. David Neel, Mr. Mark Harrington, Mr. Pierre Miles.**



Shown above are members of the team that developed a standard approach to integrating weapons into command and control networks. From left to right: Greg Saunders; Lou Kratz; Lynda Rutledge; Ron Johnson; Lt. Josef Peterson; Ret Capt. Chris Powers; LCDR Don Parker; James Engle, Air Force Standardization Executive; and John Heliotis.

The **AIR FORCE-LED WEAPON DATA LINK NETWORK, ADVANCE CONCEPT TECHNOLOGY DEMONSTRATION (WDLN ACTD) TEAM**—a cooperative effort with the U.S. Navy and industry—is developing a standard approach to integrating weapons into command and control networks. The team is defining network architectures, interfaces, messages, and tactics, creating the foundation for weapons to function within the networks of today and tomorrow. This effort will provide the warfighter with standard networked weapon data link communications, enabling improved weapon delivery, responsiveness, increased battle space awareness, and the capability to determine a weapon's mission completion. The outcome will be a standard weapon data link architecture to which all future Air Force and Navy network-centric weapons development programs will adhere.

Team members: **Ms. Lynda Rutledge, Mr. Ron Johnson, Mr. Ron Taylor, Lt. Josef Peterson, CAPT Clay Snaza.**



At the 2005 DoD Standards Conference, NATO signed Technical Cooperation Agreements with ANSI, ASTM International, and SAE International (see copy on next page). Signing the agreement are, from left to right, Gen. J. Maj, Director, NATO Standardization Agency; James Thomas, President, ASTM International; Dr. Mark Hurwitz, President and CEO, ANSI; and Raymond Morris, Executive Vice President and COO, SAE International.





## **NATO signs Technical Cooperation Agreements with ANSI, ASTM International, and SAE International**

In March of 2004 NATO adopted a framework for use of civil standards in lieu of NATO STANAGS. Such a policy is not unfamiliar to the Department of Defense – we have been adopting and using nongovernment standards for many years – the policy to do so has been in DoD Directives since 1962, in an OMB Circular since 1982, and in Statute since 1995.

NATO adopted this framework for the same reasons that the US DoD has found this to be a smart policy:

- It helps us to be able to use commercial products;
- It relieves DoD personnel from drafting and maintaining military unique documents;
- It saves money in the procurement process;
- It leverages DoD expertise and knowledge

Upon adoption of the framework, the NATO Standardization Agency (NSA) began to explore appropriate ways to implement the framework. They first worked with partners at CEN (the European Committee for Standardization), CENELEC (the European Committee for Electrotechnical Standardization), and ETSI (the European Telecommunications Standards Institute). NSA signed Technical Cooperation Agreements with each of these bodies ensuring cooperation with European Union nations in development of technical standards to meet NATO requirements.

It was natural for NATO to next look across the Atlantic. The United States has over 600 civil standards developers, but only a relative few develop standards that are adopted for use in the Department of Defense. Of those, it made the most sense to review possibilities for similar kinds of Technical Cooperation Agreements where the US Defense Department has adopted significant numbers of documents. Today, the NATO Standardization Agency will sign Technical Cooperation Agreements with SAE International, ASTM International, and the American National Standards Institute. The agreements mean that;

- Programs of planned work will be shared in both directions
  - NATO will see what standards work is being planned and accomplished in ANSI, ASTM, and SAE;
  - NATO will share priorities and standardization needs with civil standards organizations;
- NATO partners will be welcomed to participate in technical committees to help shape standards that may become the basis for Standardization Agreements
- Civil standards organizations will facilitate the adoption of their standards through cooperative coordination agreements.

In short, the agreements signal the formal beginnings of technical cooperation that will enhance interoperability, lower costs, and improve efficiencies – this benefits US taxpayers, US industry, and our US warfighters, and brings similar benefits to the 26 NATO nations as well as to the NATO alliance.





ACQUISITION,  
TECHNOLOGY  
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

March 29, 2005

MEMORANDUM FOR THE STANDARDIZATION EXECUTIVES OF THE MILITARY  
DEPARTMENTS AND DEFENSE AGENCIES

SUBJECT: Policy Memo 05-3, "Elimination of Waivers to Cite Military Specifications and Standards in Solicitations and Contracts"

On October 14, 2004, the Under Secretary of Defense for Acquisition, Technology and Logistics signed the Defense Acquisition Guidance. Paragraph 11.6 of this Guidance states that "it is no longer required to obtain a waiver from the Milestone Decision Authority to cite military specifications and standards in solicitations and contracts."

We are in the process of preparing a formal change to DoD 4120.24-M, "Defense Standardization Program Policies and Procedures," to eliminate the waiver requirement from this document to be consistent with the Under Secretary's direction. Until such a formal change can be issued by the DoD Directives Office, this policy memorandum deletes Section C3.8 and all of its paragraphs and subparagraphs regarding waivers from DoD 4120.24-M.

I request that you take appropriate action to ensure that everyone in your acquisition and logistics communities is aware that a waiver to cite military specifications and standards in solicitations and contracts is no longer required. As noted in the Defense Acquisition Guidance, however, this waiver elimination should not be interpreted as returning to the "old way of doing business," but as recognition of the cultural change that took place in DoD regarding the proper application of specifications and standards. We need to ensure that those in the acquisition and logistics communities have the flexibility to assess program requirements, make good decisions, and where appropriate, require conformance to military specifications and standards.

If there are any questions about this policy memorandum or the status of the change to DoD 4120.24-M, my point of contact is Mr. Stephen Lowell at (703) 767-6879 or email [stephen.lowell@dla.mil](mailto:stephen.lowell@dla.mil).

Louis A. Kratz  
Assistant Deputy Under Secretary of Defense  
(Logistics Plans and Programs)



### **August 14–18, 2005, Orlando, FL** **SOLE 2005**

Join logisticians from around the world at SOLE 2005. With a theme of “Logistics: Product and Process for Capability,” the Society’s 40th Annual International Logistics Conference and Exhibition will be held on August 14–18, 2005, at the Caribe Royale Resort in Orlando, FL. For the technical program overview and registration and exhibit information, please go to the SOLE website—[www.sole.org/conference.asp](http://www.sole.org/conference.asp)—and click Annual Conference.

### **August 15–16, 2005, Charlotte, NC** **2005 SES Annual Conference**

The 2005 Standards Engineering Society Conference will be held in Charlotte, NC, on August 15–16, 2005. For

more information or to view the conference agenda, please go to the SES website: [www.ses-standards.org/](http://www.ses-standards.org/).

### **October 6, 2005, Washington, DC** **2005 World Standards Day**

The U.S. observance of 2005 World Standards Day will be held on October 6, 2005, at the Ronald Reagan Building in Washington, DC. The event will include a reception, exhibits, dinner, and presentation of the Ronald H. Brown Standards Leadership Award. The administering organization for this year’s event is the American Society of Mechanical Engineers. If your organization would like to participate by hosting a table or would like to have a tabletop exhibit, please contact Ellen Trager Emard at 301-975-4038 or Pam Suett at 212-642-4976.

### **October 24–27, 2005, Birmingham, AL** **DoD Maintenance Symposium and Exhibition**

The DoD Maintenance Symposium and Exhibition will be held on October 24–27, 2005, at the Sheraton Birmingham Hotel and Birmingham-Jefferson Convention Complex. This year’s theme is “Sustaining Weapon System Readiness Through Reliability, Cycle Time, and Continuous Process Improvements.” This symposium brings together government and industry representatives to exchange ideas for improving maintenance practices and procedures via an up-to-the-minute technical program, presentations from senior-level speakers, and a dynamic exhibit. For more information, contact Nancy Eiben by telephone (724-722-8525) or e-mail ([naneiben@sae.org](mailto:naneiben@sae.org)).

## People in the Standardization Community

# People

### **Promotion**

**Samuel Merritt** has been promoted to deputy director of the Operations and Support Group at the Defense Supply Center Columbus (DSCC). Previously, he was the chief of the Standardization Unit for several years. The Item Reduction, Parts Management, and Lead Standardization programs were under his purview. As deputy director, all the standardization programs at DSCC will be under his purview.

### **Farewell**

**Richard Brawley**, Defense Energy Support Center (DESC), retired with 33 years of federal service. He served as the DESC Lead Standardization Activity. Notably, Mr. Brawley won the 1998 DLA Defense Standardization Program Award.

**Al Capiella**, supervisory mechanical engineer and chief of the Design and Qualification Branch of the Engineering and Technical Support Office at Defense Supply Center Philadelphia (DSCP), retired on April 1, 2005, after 39 years of federal service. He was known for his management leadership and successful promulgation of DSCP’s Qualified Suppliers List program. Upon retirement, he was presented the Distinguished Career Service Award for his numerous achievements.

**Darrell Hill**, the deputy director of the Operation Support and Testing Group at DSCC, retired after 33 years of federal service. Through his strong leadership and resourcefulness, Mr. Hill contributed significantly to the accomplishments and the improvements in both the Defense Specifications and Standards Program and the DoD Qualification Program.

### **Passing**

On March 9, 2005, we mourned the loss of **Phoebe Eaddy**, a product specialist in the Subsistence Directorate of the Defense Supply Center Philadelphia. She was a dear friend and colleague in the defense standardization community.

## DAU Courses—2005

	Number	Start Date	End Date	Location
PQM 103—Defense Specification Management	05-702	6/13/2005	6/23/2005	Philadelphia, PA
	05-003	7/12/2005	7/22/2005	Fort Lee, VA
	05-703	8/2/2005	8/12/2005	Columbus, OH
	05-704	8/22/2005	9/1/2005	Philadelphia, PA
PQM 212—Market Research for Engineering and Technical Personnel	05-703	8/16/2005	8/17/2005	Linthicum, MD
	06	1/18/2006	1/19/2006	Kettering, OH



# 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	Deadline for Articles
October–December 2005	The Program Manager	May 15, 2005
January–March 2006	International Standardization	August 15, 2005
April–June 2006	DLA Standardization	November 15, 2005
July–September 2006	Civil Agency Standardization	February 15, 2006

If you have ideas for articles or want more information, contact Tim Koczanski, Editor, *DSP Journal*, J-307, Defense Standardization Program Office, 8725 John J. Kingman Road, Stop 6233, Fort Belvoir, VA 22060-6221 or e-mail [DSP-Editor@dla.mil](mailto: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.

