SPECIAL ANNIVERSARY EDITION

State of the Defense Standardization Program Report

Special Edition

70 Years

of Making Systems Work Together

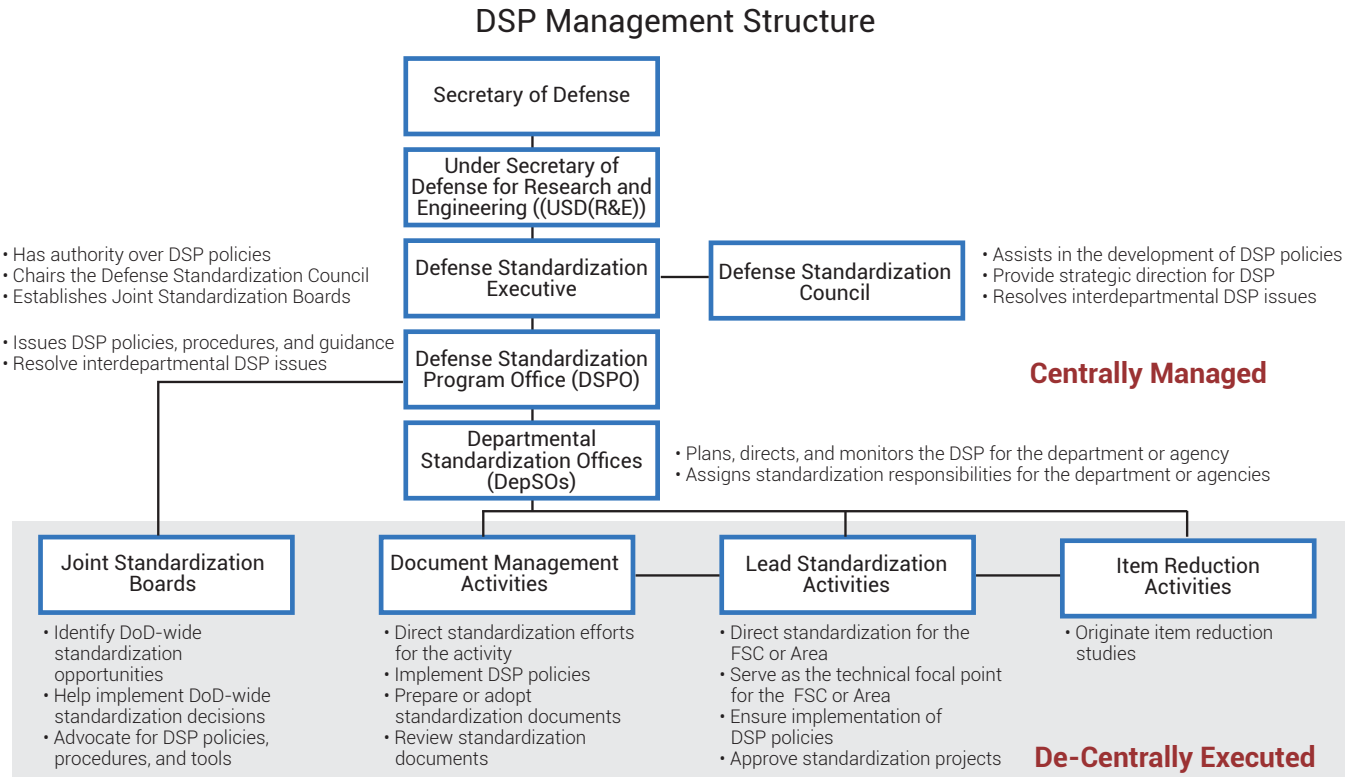
Foreword

The DSP that exists today originated with the 1952 signing of the Cataloging and Standardization Act, which directed the Secretary of Defense to establish a single, unified standardization program for the development and maintenance of specifications and standards. It requires DoD to achieve the highest practicable degree of standardization of items and practices. DoD Instruction 4120.24, "Defense Standardization Program (DSP)," implements the provisions of the act. This instruction's fundamental policies call for a single, integrated standardization program in DoD, use of non-government standards in preference to developing and maintaining government specifications and standards, and the development and maintenance of standardization documents in accordance with DoD Manual 4120.24, "Defense Standardization Program (DSP) Procedures."

The authority, direction, and control of the DSP have been delegated to the Defense Standardization Executive who oversees DSPO. As outlined in DoD Manual 4120.24, the DSP is a centrally managed and de-centrally executed program, designating Departmental Standardization Offices responsible for overseeing implementation of the DSP in each Military Department or Defense Agency. More than 100 different offices across DoD implement DSP policies and procedures, technical decisions, and the development, maintenance, and management of standardization documents.

The goals of the DSP are to improve military operational readiness, reduce total ownership costs, and reduce cycle time. To improve military operational readiness and maintain technological superiority, capabilities must support interoperability with multinational partners, secure information superiority, and accommodate rapid technology insertion. These objectives are achieved through the standardization of physical, electronic, and functional interfaces, data, and performance requirements and the development, approval, and publishing of standardization documents establishing commonality in products, materials, and processes.

DSP Management Structure



THE UNDER SECRETARY OF DEFENSE
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RESEARCH
AND ENGINEERING

May 31, 2022

Congratulations on the 70th Anniversary of the Defense Standardization Program!

This milestone is an opportunity to reflect on the past, anticipate the road ahead, and to recognize the hard work of the men and women in the DoD whose dedication contributes to our ability to embark upon technological innovation, pursue interoperability, and improve operational effectiveness.

Since the creation of the Defense Standardization Program (DSP) on July 1, 1952, when the 82nd Congress passed the "Defense Cataloging and Standardization Act," the DSP has remained steadfast in its mission. Over the past seven decades, as the pace of innovation and technology accelerated, the DSP constantly adapted its policies, procedures, guidance documents, and tools. As the world continues to race towards the next generation innovative technology, such as artificial intelligence, autonomous weapons systems, big data, biotechnologies and quantum technologies, standards have become more important than ever before. Despite changes in leadership, administrations, and system and operational requirements, the DSP continues to adapt to the needs of the Department.

The DSP provides the framework from which the research, engineering, logistics, and acquisition communities can foster standards development and engage with non-government standards bodies in support of innovation. Program initiatives, such as the Government Industry Data Exchange Program; Parts Management; Diminishing Manufacturing and Materiel Shortages; Qualification Program; and Joint Standardization Boards enable the Department to advance cutting-edge engineering technology and practices to ensure our U.S. warfighters have the best technology and systems available to defend our Nation.

On this very special occasion, I extend my sincere congratulations to the DSP on the celebration of the 70th anniversary of its creation!

Sincerely,

Heidi Shyu

Under Secretary of Defense
Research & Engineering

Executive Summary

The comprehensive, integrated Defense Standardization Program (DSP) links the DoD acquisition, operational, sustainment, and related military and civil communities. The Defense Standardization Program Office (DSPO) carries out the day-to-day management of the DSP, under the oversight of the Defense Standardization Executive and Defense Standardization Council, for the centrally managed and de-centrally executed DSP. The DSP finds, influences, develops, manages, and offers access to standardization processes, products, and services for warfighters, the acquisition community, and the logistics community to promote interoperability, reduce total ownership costs, and sustain readiness.

DoD, with non-government standards bodies, is developing technical standards to support innovation, insert rapidly changing technology into weapon systems, and address evolving security and capability requirements. The "State of the DSP" report provides an overview of the DSP's programs, tools, and training while outlining the capabilities, challenges, and initiatives of the DSP in maintaining and modernizing the tools, processes, and standardization documents and leveraging modern technological capabilities to better serve the needs of engineers, logisticians, and acquisition workforce. This report serves as a snapshot of DSP programs and initiatives and as a reference and introduction for standardization professionals, engineers, logisticians, and acquisition professionals new to the DSP.

The "State of the DSP" briefly describes each of the programs of the DSP. Each section begins with a "Scope and Purpose" and closes with a candid view of "Challenges." Between those, the report describes relevant statistics, tools, processes, and other aspects relevant to the program.

DEFENSE STANDARDIZATION PROGRAM

The 28,559 active and 114,658 total documents of the Defense Standardization Program are the technical, engineering documentation that undergirds our weapon systems—design, acquisition, support, quality assurance, and so forth. With more than 3,000 document transactions each year, including an average of 2,500 revision, notices, or new documents, most documents are current, relevant, and accurate. Under the leadership of the Departmental Standardization Officers, standards management activities reduced the total overage documents to 3,772, resulting in a 68% decrease in the number of documents requiring maintenance. Although standardization management activities validated over 2,000 documents in the past two years, work still is needed to better manage our portfolio of standards as well as projects that remain open long past their planned completion date. Overall, DSP policies and procedures facilitate providing the documents needed by the Military Departments and Defense Agencies, but we can do better to ensure they are up to date.

PROGRAMS

Non-Government Standards

DoD leads all federal agencies in using non-government standards in accordance with Public Law 104-113, the National Technology Transfer and Advancement Act, and Office of Management and Budget Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities." The DoD has adopted 8,172 non-government standards, which constitutes about one-third of all the documents in the standardization program. We are implementing requirements to use non-government standards whenever possible to avoid development of government-unique documents, and DoD personnel participate in non-government

standards activities at all levels. The costs of participating in non-government standards bodies, licensing, and gaining user access to needed standards continue to be stumbling blocks to further implementing non-government standards.

International Standardization

Standardization deepens cooperation and facilitates the availability and interoperability of materiel and supplies used by our armed forces, allies, and partners as we train and execute multinational force operations. ASSIST provides DoD personnel and defense contractors with access to 2,780 active international standardization agreements (ISAs) for materiel, operations, and administration, covering a variety of subjects, such as unmanned aerial vehicles, fuel, and intelligence, surveillance, and reconnaissance (ISR). While DSPO has facilitated the development of NATO standardization policy, hosted training, and worked to enhance DoD's coordination on ISAs, monitoring and tracking implementation remains a challenge.

Data Item Descriptions

Data item descriptions (DIDs) are prepared and approved by the Military Departments and Defense Agencies to be placed on contract to identify the content and format requirements for data to be prepared for use by the government. Of the 1,789 DIDs in ASSIST, 1,225 are active and 564 have been canceled. While document validation procedures have improved the general quality of DIDs in ASSIST, ensuring that only relevant and required DIDs remain active in ASSIST is a consistent challenge.

Modular Open Systems Approach

A Modular Open Systems Approach (MOSA) is an integrated business and technical strategy to achieve competitive and affordable acquisition and sustainment over the system life cycle. In the development of Department of Defense (DoD) systems, MOSA is an acquisition and design strategy, consisting of technical architectures, that adopts open standards and supports a modular, loosely coupled, and highly cohesive system structure. MOSA implies the use of a modular design, including system interfaces designed according to accepted standards with which conformance can be verified. To further the use of MOSA in defense programs, the Office of Under Secretary of Defense for Research and Engineering (OUSD(R&E)) leads a collaborative Modular Open Systems Working Group (MOSWG), whose participants represent multiple segments of the defense engineering and acquisition community, including Program Executive Offices, Program Managers, engineering, and science and technology proponents. The MOSWG promotes modular open engineering principles through the Services and other agencies and can assist in advancing modular open practices. Information on MOSA-enabling standards and related standardization tools are available in ASSIST.

Additive Manufacturing

Although companies have used additive manufacturing (AM or 3D printing) in their design process to make three-dimensional solid objects from a digital file for decades, this practice has become commonplace for the fabrication of end-use items, drawing the attention of DoD. As AM technology evolves and the concept gains more momentum as a method for producing parts, standards must keep pace to ensure compliance with quality and performance requirements. Standards are essential to the evolution of AM technology. To coordinate DoD-wide efforts and participation in AM standardization, DSPO works with Military Departments and Defense Agencies to ensure DoD-wide collaboration on AM standardization endeavors, including engaging with non-government standards bodies on the development of commercial or industry standards.

Qualification

Through DSP's Qualification Program, buyers gain confidence that qualified products meet specification requirements whose expensive test equipment or length of time for testing make testing at the time of purchase impractical. The 754 qualified products lists (QPLs) cover approximately 19 million part numbers. As authorized exemptions to competition, QPLs require careful monitoring and control. Of the 754 QPLs, less than 30 percent have one or fewer sources and our buying commands continually seek to qualify additional sources.

Parts Management and Diminishing Manufacturing Sources and Material Shortages

Parts management, as an engineering discipline for selecting the optimum parts for use in DoD systems (or equipment), considers the design, production, operation, support, and disposal of systems throughout their life cycle. These considerations include application, standardization, technology, qualification, producibility, performance, cost, DMSMS risk, reliability, maintainability, supportability, cyber weaknesses and vulnerabilities, supply chain risk, susceptibility to counterfeit and tampering, use of hazardous materials, and other factors. The questions considered during parts selection, when deciding whether to use a part or not, vary as a function of criticality, the application of the part in the design, program duration, risk that the program office is willing to accept, and other factors.

All systems are susceptible to DMSMS issues. A DMSMS issue is the loss, or impending loss, of manufacturers or suppliers of items, raw materials, or software. DoD loses a manufacturer or supplier when that manufacturer or supplier discontinues production or support of needed items, raw materials, or software or when the supply of raw material is no longer available. Consequently, DoD needs robust, risk-based DMSMS management to mitigate these issues. DMSMS management is a multidisciplinary process to find issues resulting from obsolescence, loss of manufacturing sources, or material shortages; assess the potential for negative impacts on schedule or readiness; analyze mitigation strategies; and then implement the most cost-effective strategy.

Government-Industry Data Exchange Program and Counterfeit Parts

The Government–Industry Data Exchange Program (GIDEP) supports about 450 government sites and 3,000 industry sites, promoting and facilitating sharing of technical information between government agencies and industry partners to increase system safety, reliability, and readiness, and reduce system development, production, and ownership costs. Throughout the course of the program, members have reported over $2 billion in cost avoidance due to information sharing. GIDEP recently completed a technical refresh of its aging IT infrastructure. The changes streamline the GIDEP reporting process and the screening of information in GIDEP.

An important part of GIDEP is the exchange of reports on nonconforming parts, including suspect counterfeit parts. Each year, GIDEP members report hundreds of suspect counterfeit parts that they have discovered that could be in other systems used by or on behalf of the governments of the U.S. or Canada. Creating and selling counterfeit parts is a growing criminal enterprise. As a result of this growth, many DoD organizations and defense industry prime contractors have counterfeit prevention leads and share their knowledge across DoD. Like hacking, counterfeiting is inherently difficult to keep up with as counterfeiters adapt to new detection methods. Further complicating efforts, counterfeiting is no longer mostly confined to the refurbished and reclaimed parts market, with new production counterfeits having been detected.

Joint Standardization Boards

The Defense Standardization Executive has chartered six active Joint Standardization Boards (JSBs) to make acquisition, standardization, and sustainment decisions while supporting and facilitating multi-Service standardization programs. The six groups cover the following topics: aerial refueling systems, expeditionary basing systems, fuze and initiation systems, intermodal equipment, mobile electric power, power source systems, and tactical shelters. Challenges include awareness of standard sets and catalogs for items, such as shelters and generators, and compliance or general enforcement of standardization.

DSP TOOLS

ASSIST

The primary user interface for the DSP is the ASSIST Online suite of tools, which offers many more functions today than when it first began providing online access to defense standards and specifications. At the core of ASSIST is a repository of 28,559 active standardization documents adopted by DoD and a system of analytical and workflow tools used by DoD to create, maintain, search, and implement standardization documents. Over the years, additional functions and tools—such as the Qualified Products Database (QPD), the Weapon System Impact Tool (WSIT), and Pin Point—have been integrated with ASSIST to automate processes and analysis for those who use standardization documents.

Qualified Products Database

The QPD—the official source for DoD qualification data—includes qualified product lists (QPLs) and qualified manufacturers lists. Although only a small number of documents require qualification—about 3 percent of the active standardization documents in ASSIST—the QPD serves a critical role identifying and minimizing single-source and no-source QPLs.

Weapon System Impact Tool

The WSIT enables users to trace the use of standards and specifications by weapon systems and parts. With WSIT, users can assess the impact of document changes on weapon systems.

Pin Point

Pin Point, a government-only query engine for researching parts in the federal supply chain, provides users with access to structured data on government-approved component parts across the supply web.

As legacy systems, DSP tools face significant challenges from modernization, resource shortfalls, and ensuring they continue to meet the needs of current and future users.

DSP Website

The DSP website offers defense standardization news and information to the public and standardization stakeholders worldwide. The Defense Media Activity, DoD Public Web program hosts the website, which receives approximately 234,000 visits annually.

CONTENTS

Introduction

Specifications, standards, handbooks, and the associated documents, tools, and programs are the essential technical data and engineering descriptions for the products that make up and support DoD weapon systems and support equipment. They define technical requirements, lessons learned, acceptability criteria, and performance requirements and aspirations. The Defense Standardization Program (DSP) establishes the policies and procedures and creates and maintains the infrastructure to develop, maintain, and use these essential documents and tools. It has been doing so with increasing effectiveness and efficiency for 70 years. While the DSP has an enviable record of success, it continues to work towards overcoming challenges as the needs and capabilities of DoD evolve and adapt to address changes in threats, operational environments, and technology. The purpose of the DSP—to champion standardization throughout DoD, reduce costs, and improve operational effectiveness—is as relevant today as ever. DoD faces rapid advances in technology, evolving threats, and a looming transformation of the engineering and standardization workforce.

Standards and technological advances interact in three ways.

1. Standards create a structure for introducing new technologies while maintaining interoperability with legacy systems. Increasingly, standards form the basis for frameworks for modular solutions and open system approaches.

2. Completely new technologies and new uses of technology often drive the need for updates to existing standards or the development of new standards.

3. We can leverage technological advances to improve management and implementation of standardization documents.

As we moved forward in 2022, we entered a new phase in the modernization of DSP tools and evaluating tools to transition standardization documents to machine-readable documents. These capabilities will support developments in digital engineering practices and modeling tools, and modular open system approaches, to furnish defense engineering, acquisition, and logistics experts with more efficient tools to design, acquire, and sustain systems that enable a ready, lethal force—one capable of fighting alongside our allies and partners.

Programs related to the DSP and managed by the Defense Standardization Program Office (DSPO) enhance our capabilities and offer further support to the entire acquisition system. These include the Government-Industry Data Exchange Program (GIDEP); the Diminishing Manufacturing Sources and Material Shortages (DMSMS) program, to reduce readiness and cost risks; and initiatives to address the increasing threat of counterfeiting. Integration of these programs with others in the DSP leverages strengths and increases our capability.

Standardization is an essential enabler for the warfighter, regardless of the changes in threat systems, operational environments, and types of warfare. Throughout the history of the United States, from the Revolutionary War to today, senior leaders have recognized how essential standardization of parts, ammunition, fuel, and arms is to effective warfighting. No matter who, what, or where the threat is, standardization makes possible the rapid insertion of new technology, information superiority, and interoperable equipment among the Services and with allies and partners.

Standards and related documents are essential tools of the acquisition system, with the engineering knowledge and contract shorthand to ensure that the things we buy meet our needs at optimum value to the American taxpayer.

This report provides DSP stakeholders with the current state of the DSP, including an overview of programs managed by DSPO, challenges, and future and focus areas. As we face changes in our technology, competition, and people, we must refine our tools, processes, and skills to support military readiness, strengthen alliances, and bring business reform to DoD. We are always encouraged by the dedication of the standardization management activities and engineers across DoD, as well as our industry and international partners and the non-government standards bodies that develop and maintain the standardization documents that furnish the warfighter with interoperable, reliable, technologically superior, and affordable equipment.

Purpose

We champion standardization throughout DoD to reduce costs and improve operational effectiveness.

Vision

DSP is a comprehensive, integrated standardization program linking DoD acquisition, operational, sustainment, and related military and civil communities.

Mission

We identify, influence, develop, manage, and provide access to standardization processes, products, and services for warfighters, the acquisition community, and the logistics community to promote interoperability, reduce total ownership costs, and sustain readiness.

TYPES OF STANDARDIZATION DOCUMENTS

The DSP procedures define nine main types of standardization documents, distinguished by their originating authority and purpose. Those that describe processes, practices, procedures, and methods are referred to as "standards," whereas documents that identify specific technical requirements for products or processes are referred to as "specifications."

1. Defense Specification—a specification that describes the essential technical requirements for military-unique materiel or substantially modified commercial items.
   Examples: MIL-PRF-32562, MIL-C-17/179B, and MIL-DTL-5541F.

2. Defense Standard—a standard that establishes uniform engineering and technical requirements for military-unique or substantially modified commercial processes, procedures, practices, and methods. There are five types of defense standards: interface standards, design criteria standards, manufacturing process standards, standard practices, and test method standards.
   Examples: MIL-STD-810, MIL-STD-961, and MIL-STD-130.

3. Defense Handbook—a handbook that provides standard procedural, technical, engineering, or design information about the materiel, processes, practices, and methods covered by the DSP.
   Examples: MIL-HDBK-116, MIL-HDBK-251, and MIL-HDBK-2189.

4. Data Item Description (DID)—a completed form that defines the data required of a contractor. DIDs define the data content, preparation instructions, format, and intended use.
   Examples: DI-TMSS-80007, DI-QCIC-80203, and DI-ILSS-80483.

5. Federal Specification—a specification issued or controlled by the General Services Administration (GSA) for commercial or modified commercial products, which contains requirements or tests too extensive for a commercial item description (CID).
   Examples: O-I-1279B and W-L-101/37B.

6. Federal Standard—a standard issued or controlled by GSA that covers processes, procedures, practices, and methods for use by all federal agencies.
   Examples: FED-STD-313 and FED-STD-H28.

7. Commercial Item Description—a simplified product description managed by GSA that describes, by functional or performance characteristics, the available, acceptable commercial items satisfying the government's needs.
   Examples: A-A-180C and A-A-1889.

8. International Standardization Agreement (ISA)—the record of an agreement among several or all the member nations of a multinational treaty organization to adopt like or similar military equipment, ammunition, supplies, and stores.
   Examples: AOP-52 and STANAG-7098.

9. Non-Government Standard (NGS)—a national or international standardization document developed by a private-sector association, organization, or technical society that plans, develops, establishes, or coordinates standards, specifications, handbooks, or related documents. This term does not include the standards of individual companies. ASSIST lists NGSs adopted by DoD.
   Examples: ASME-B16.18, IPC-T50, ASTM-B166, ISO8535-1, and SISO-STD-013.

Table 1 shows the number of active standardization documents in the ASSIST database as of April 12, 2022. These numbers can fluctuate daily, as documents are revised, inactivated, or added.

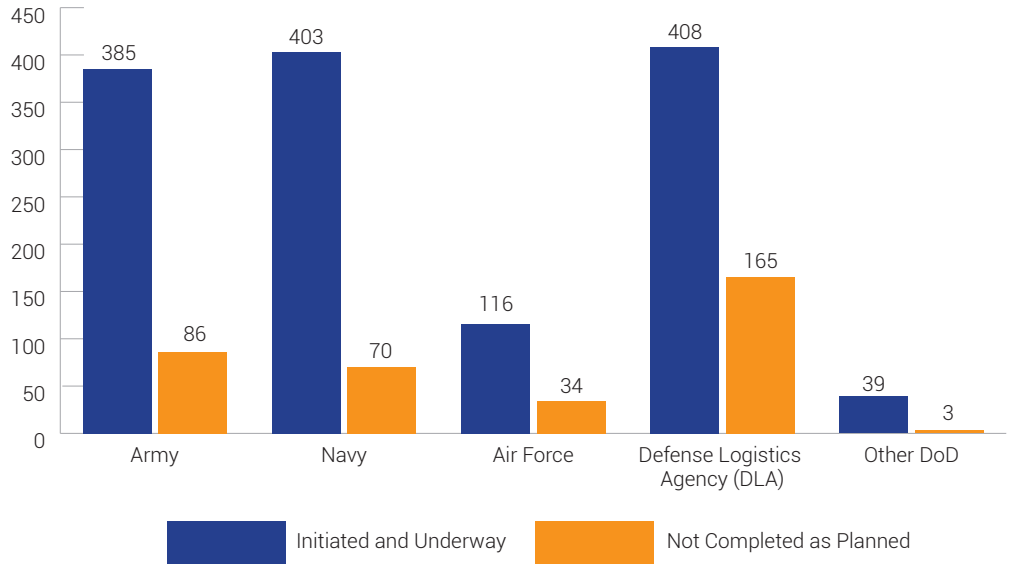
Table 1. Number of Active Standardization Documents in ASSIST

Standardization Documents	*Abbreviation*	*Active*	*Total*
Defense Standardization Documents			
Defense Standard	MIL-STD	494	2,671
Defense Specification	MIL-SPEC	10,170	57,870
Defense Handbook	MIL-HDBK	302	653
Data item Description	DID	1,225	1,789
International Standard Agreements			
International Standard Agreement	ISA	2,780	4,884
Nongovernmental Standards			
Nongovernment Standard	NGS	8,333	14,130
Federal Standardization Documents			
Federal Standard	FED-STD	78	1,018
Federal Specification	FED-SPEC	570	7,521
Commercial Item Description	CID	2,820	8,592
Other			
Other Document Types	—	1,787	15,530
Total Documents		*28,559*	*114,658*

Figure 1 summarizes open standardization projects by Military Department or Defense Agency, and the number overdue. In April 2022, 1,264 projects were initiated and underway, 334 of which were beyond their planned completion date.

Figure 1. Projects Initiated and Underway and Overdue

Project Status by Military Department and Defense Agency
(as of April 2022)

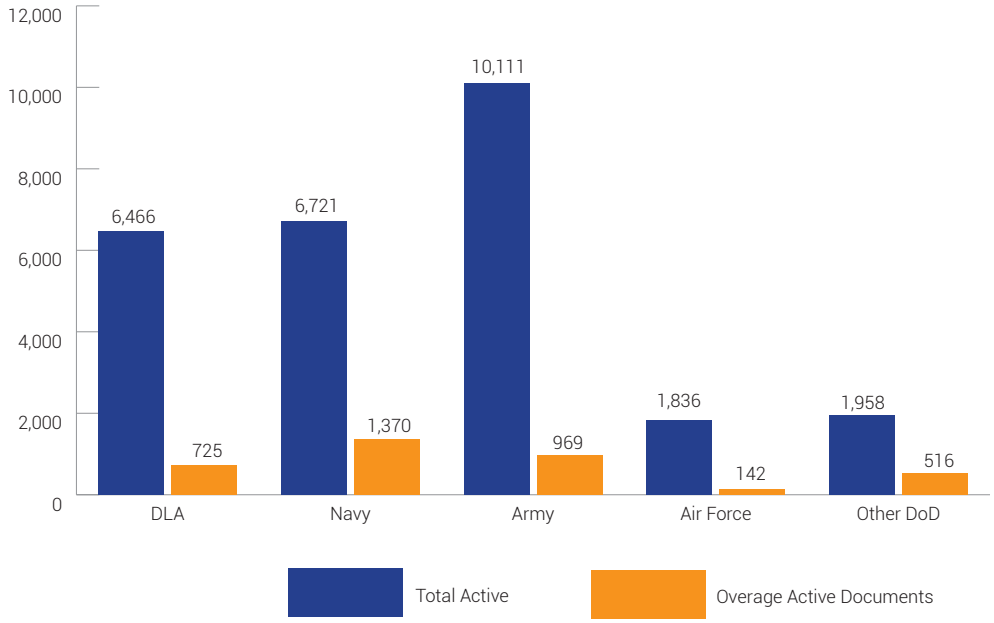


Note: ASSIST automatically discontinues projects 13 months after their completion date.

Similarly, Figure 2 depicts the total active documents by Military Department or Defense Agency, and the number overage. Overaged documents are overdue for validation, cancellation, or revision. Documents remain valid for 5 years, or 10 years when categorized as stable. Under the leadership of the Departmental Standardization Officers, standards management activities reduced the total overage documents to 3,772, resulting in a 68% decrease in the number of documents requiring maintenance.

Figure 2. Overaged Documents

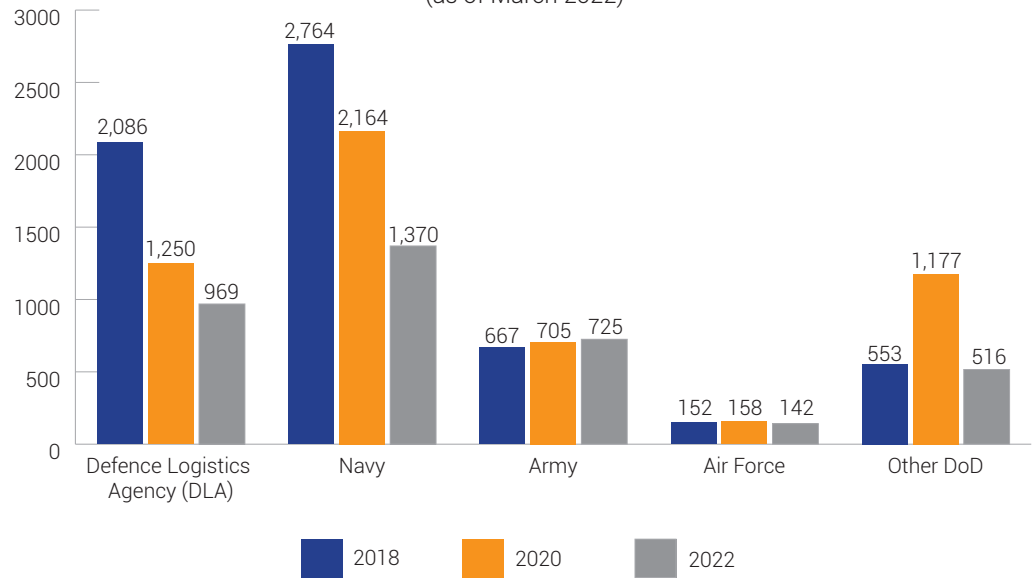
Project Status by Military Department and Defense Agency
(as of April 2022)



The Overage Documents by Component diagram shows the validation effort each component has put into its overaged documents since the stabilized maintenance policy came out in 2019 (refer to Figure 3).

Figure 3. Overage Documents by DoD Component

(as of March 2022)



STANDARDIZATION TOOLS

Although the DSP has multiple tools to support the standardization process, our main tool is ASSIST. More than a repository for federal and DoD documents, ASSIST is a workflow tool for managing standardization projects, coordinating documents for review, and publishing those documents. It offers analytical tools for tracking standards and their use and influence on defense systems. Today, ASSIST contains more than 28,000 active documents, down from more than 45,000 before MilSpec Reform (1994–2001), the majority (more than 30,000) of which were defense standards and specifications. For more information on MilSpec Reform and the preference for NGSs, see the "Non-Government Standards" section.

Since ASSIST was launched, several additional tools and capabilities have been added and continue to be improved to automate processes and enable analysis. The Qualified Products Database (QPD) and the Weapon System Impact Tool (WSIT) are now integrated into ASSIST Online. QPD is the official source for DoD qualification data, including qualified products lists (QPLs) and qualified manufacturers lists (QMLs). WSIT enables tracing of the use of standards and specifications by weapon systems and parts. For more information on other DSP tools, such as Pin Point, and ASSIST modernization plans, see the corresponding section of this document.

DSP ACTIVITIES AND PROGRAMS

For the Defense Standardization Program, DSPO is responsible for several standardization and standards-related programs and serves as the DoD proponent for standardization training courses. DSPO manages the Parts Management Program, the DMSMS program, and GIDEP and is involved in efforts to reduce the infiltration of counterfeit parts into the DoD supply chain. The Defense Standardization Executive charters six Joint Standardization Boards as a DoD-wide forum for cross-cutting standardization issues, new or rapidly evolving technology areas, and other standardization issues. The following sections describe each of these activities and programs, and DSP training in partnership with the Defense Acquisition University (DAU).

Programs

DEFENSE SPECIFICATIONS, STANDARDS, AND HANDBOOKS

Scope and Purpose

Section 2452 of Title 10, U.S.C.,[1] delineates the Secretary of Defense's authority and responsibility "to establish, publish, review, and revise within the Department of Defense, military specifications, standards, and lists of qualified products." DoD uses defense specifications and standards (MIL-SPEC or MIL-STD) to establish requirements for military-unique products, processes, procedures, practices, or methods or to modify non-government standards to meet military-unique requirements. Office of Management and Budget (OMB) Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities," and Section 12 of the National Technology Transfer and Advancement Act of 1995, Pub. L. 104-113, further clarify to limit the development and use of defense specifications and standards to military-unique products and processes.

A third type of military-specific standardization document, the defense handbook (MIL-HDBK), offers additional guidance on procedural, technical, design information or selection, or application criteria for products, processes, practices, and methods. Defense handbooks are developed and used in much the same way as defense specifications and standards; however, they serve as guidance only and do not specify mandatory requirements.

Tools

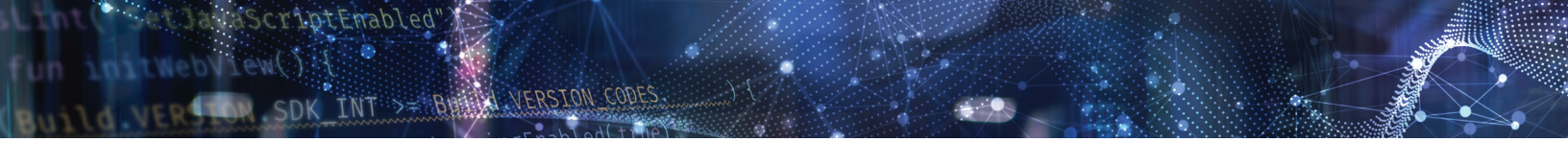
The official source for specifications and standards used by DoD is ASSIST. For a more complete description of ASSIST and its capabilities, see the ASSIST summary in the "DSP Tools and Capabilities" section. Defense specifications are written in accordance with MIL-STD-961," Defense and Program-Unique Specifications Format and Content," while defense standards accord with MIL-STD-962," Defense Standards Format and Content," and defense handbooks accord with MIL-STD-967, "Defense Handbooks Format and Content."

Status

Under MilSpec Reform (1994–2000), more than 29,000 defense specifications and standards were assessed—with 6,100 canceled without replacement, and 3,500 superseded by non-government standards, performance specifications, commercial item descriptions, or guidance handbooks. Since 1995, the Defense Standardization Council has authorized reinstatement of only four of those canceled defense standards. From 2010 to 2022, only 17 new defense standards have been approved.

In 2018, the Defense Standardization Program Office issued a memorandum to standardization management activities (SMAs) with instructions on addressing overage issues attributed to referencing superseded or canceled documents, adoption notices of canceled non-government standards, and uneditable PDF documents. Over the past four years, these efforts have led to a 68% decrease in the total number of overage documents. From 2020 to 2022, 1,732 overage documents were validated, progress attributed to the implementation of this guidance.

[1] United States Code, Title 10, "Armed Forces," Section 2452, "Duties of Secretary of Defense," 2013.



Future

DoD will always have specialized or unique, modified, and sensitive or classified equipment requirements that cannot be addressed by non-government standards. However, the use of non-government standards remains a preferred approach for lowering life-cycle costs, enabling the rapid insertion of new technology, improving reliability, and increasing the availability of parts and logistics support from the commercial industrial base.

The future entails adapting our portfolio of standardization products and packaging standards in the most useful format for users. We must shift to address emerging and disruptive technologies, support innovation, and enhance interoperability across the Department and with our allies. A few of these changes include digital models, architectures, and implementation guidance.

Challenges

Although policies and training programs have improved the currency of standardization documents and reduced the total number of overage documents, their combined influence could take a few more years to be noticeable. DoDM 4120.24 requires review of standardization documents every 5 years for currency and need. We must continue the momentum of reviewing and validating overage documents using the guidance issued in the 2018 memorandum.

In March 2020, in-person training, conference, and events were canceled or cut back due to the 2019 novel coronavirus (COVID-19) outbreak, thus requiring us to develop new ways of working. From transitioning our conference from an in-person to a virtual event in 2020 and to a hybrid event in 2022, cohosting standardization webinars, and working with the Defense Acquisition University to offer the Defense Standardization Workshop in a virtual setting, we continued to develop and maintain a standards-savvy workforce despite pandemic-related restrictions.

SMAs and technical experts have several resources for developing and honing standardization skills but these development opportunities lack sufficient prioritization. We must ensure awareness, availability, and funding so personnel can benefit fully from these resources.

Our adversaries and competitors are working as hard as we are and we must maintain the technical advantage. DoD needs up-to-date requirements documents and a highly skilled workforce to meet these demands.

NON-GOVERNMENT STANDARDS

Scope and Purpose

The Non-Government Standards (NGS) program guides implementation of federal and DoD NGS policy. The program establishes procedures for understanding the roles and responsibilities for DoD personnel participating in non-government standards bodies (NGSBs) and provides direction for evaluating the appropriateness of developing or using an NGS (rather than a military-unique document) for meeting DoD requirements. The NGS program sets forth processes for NGS adoption and practices relative to DoD's involvement in developing or using NGS documents. Importantly, the program fosters relationships with NGSBs so they can better understand DoD's priorities and its policies, practices, and procedures for adoption and use of NGS documents.

The National Technology Transfer and Advancement Act of 1995 and Office of Management and Budget (OMB) Circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards in Conformity Assessment Activities," established the preference for non-government standards. DSPO maintains the DoD policy and guidance, implementing it in DoD Manual 4120.24 and SD-9, "DoD Guidance on Participation in the Development and Use of Non-Government Standards."

Tools

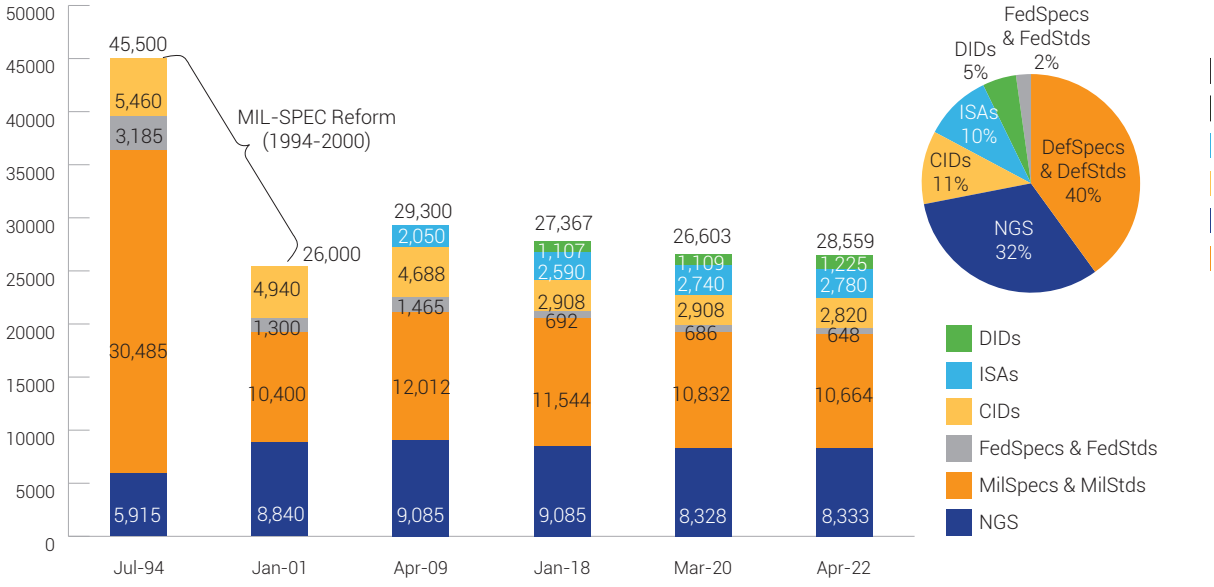
ASSIST contains adoption notices for NGSs. For a more complete description of ASSIST and its capabilities, see the ASSIST summary in the "DSP Tools and Capabilities" section.

Status

DoD began promoting the use of NGSs in 1962, when the DSP brought the first 12 NGSs into its document system. Since the early 1980s, governmental policies have increasingly directed DoD to use existing NGSs or support the revision or development of an NGS to meet DoD needs in preference to using defense or federal documents, when feasible and consistent with the law and regulations. The types of documents that DoD uses to meet its requirements have changed throughout the years. Prior to the DoD Acquisition Reform initiative, most documents were military standards and specifications. From 1994 to 2000, at the direction of the Defense Standardization Improvement Council, the Military Departments and Defense Agencies reviewed 100 percent of defense specifications, standards, and handbooks before transferring hundreds of dual-use military documents to NGSBs and enacting policies, procedures, and training to ensure NGS use or development priority over reliance on military-unique documents.

Because of the consistent application of policy and guidance, DoD has made tremendous strides in embracing, adopting, and using NGSs. Figure 4 shows the dramatic decrease in reliance on military standards and specifications and the increase in adoption and use of NGSs. Since MilSpec Reform, NGSs have consistently equaled about one-third of the standardization documents used by DoD.

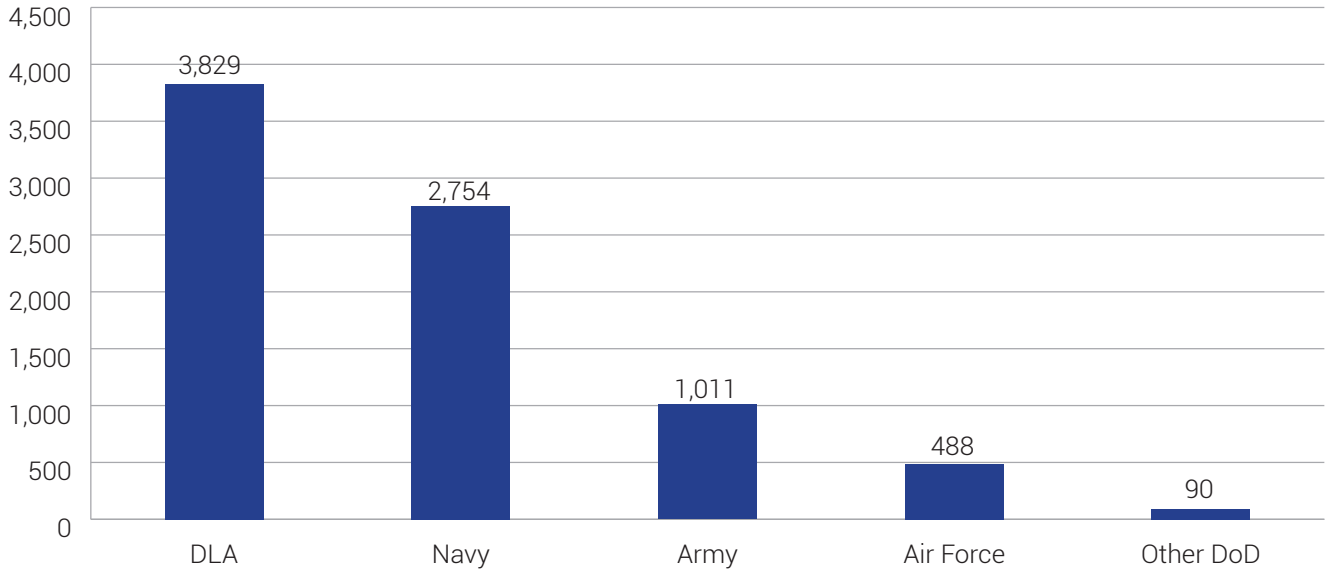
Figure 4. ASSIST Holdings by Document Type[a]



[a] Subtotals are estimates (+/-1%).

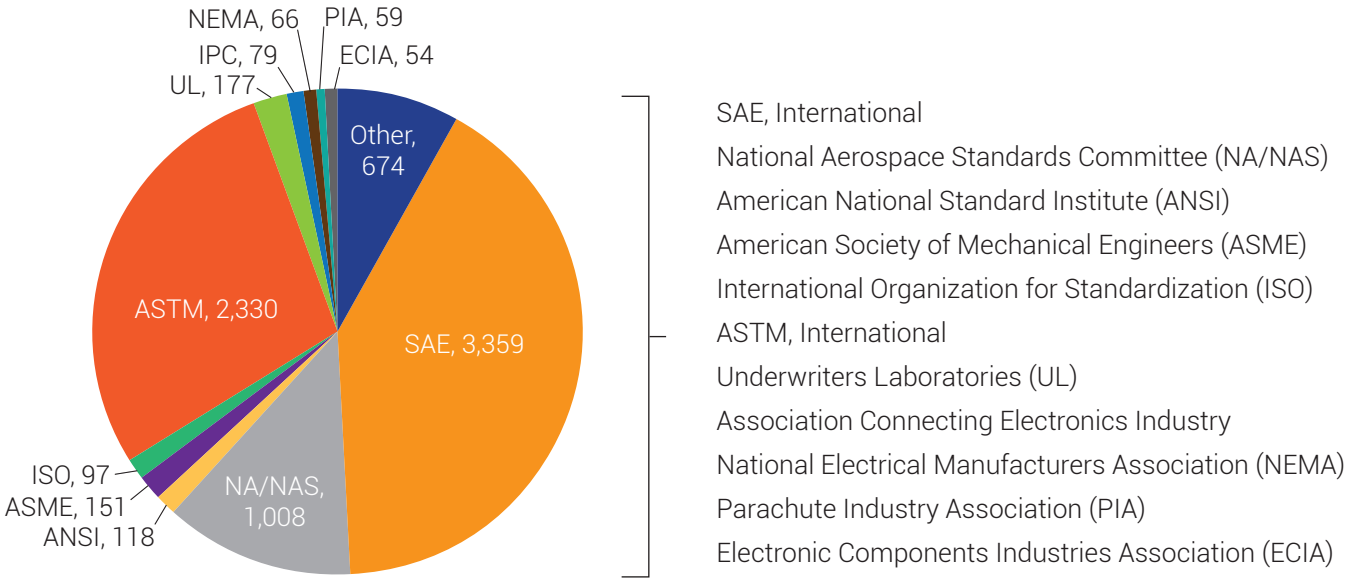
Various commodity groups lend themselves more readily to reliance on NGSs as procurement vehicles and each Service and Defense Agency interprets and implements NGS policy and guidance differently. Therefore, the number of NGS adoptions varies among military organizations. Figure 5 shows the 8,172 active NGS adoptions by Service or agency. Because of the types of items procured by DLA, almost half of the total NGSs used by DoD have been adopted by this agency.

Figure 5. Number of DoD-Adopted NGSs by Military Department and Defense Agency



DoD collaborates with many NGSBs and DoD personnel participate in the development of hundreds of NGSs. DoD adopts documents from a diverse set of NGSBs, from the American Dental Association and Pipe Fabrication Institute to the Truck Trailer Manufacturers Association. However, as noted in Figure 6, DoD adopts NGSs primarily from 11 NGSBs with documents in areas vital to DoD interests. The active documents per NGSB are noted after each organization's name.

Figure 6. DoD Adopts NGSs from 128 Organizations with 90% from 11 NGSBs



Since the inception of the DoD NGS program, adoption and use of NGS documents has progressed. The policies and procedures enacted since the 1990s ensure that the Department does not overly rely on military-unique documents to meet its requirements. The DSP remains committed to the use of NGSs through continual oversight and leadership involvement in standardization activities, resulting in steady adoption and use of NGSs in DoD procurements.

To identify crucial NGSs in the DoD adoption system, the Department initiated a two-tiered system, implemented in the September 2014 revision to DoD Manual 4120.24. Tier I applies to documents of such high importance to DoD that, with each revision, reevaluation occurs to ensure that user requirements are met. Tier II document adoptions occur once and updates to these documents do not need additional review. In most cases, we want to use the latest editions of documents describing commercially available products and processes, so DoD categorizes the vast majority of adopted NGSs as Tier II documents.

Future

DSPO and the Departmental Standardization Officers (DepSOs) are further consolidating NGS access agreements and extending access to meet the needs of the acquisition and engineering experts across DoD better.

Challenges

- **Enterprise-wide access to NGS.** Costs and inefficient purchasing processes prohibit many activities from purchasing NGSs individually from an NGSB or document distributor. While licensing agreements between the holder of NGSs and a user organization can grant access to documents, many industry organizations and a few DoD entities have purchased enterprise-wide licenses to NGSs to ensure their personnel can use NGSs cost effectively. However, these agreements may not accommodate all user requirements and, when aggregated, costs for access by large enterprises can add up to very large, lump-sum contracts.

  While DoD enterprise-wide access to NGSs has been studied and discussed for over 16 years, it has not occurred, primarily due to funding limitations. Because of budgetary priorities, ad hoc funding for individual activity access is more palatable for the Services and Defense Agencies. In some instances, a few Service or Agency activities banded together to establish licensing agreements. The outcome of these grassroots initiatives resulted in lower costs and greater access.

- **DoD participation in NGSB activities.** Restrictions on attendance at conferences and funding for travel have contributed to a decline in DoD personnel participation in NGSB activities. DoD subject matter experts dwindle in vital technology fields, thus DoD NGSB participation in these areas suffers. Active participation in NGSB committees and NGS development ensures the preservation of DoD interests. Added language to 2017 National Defense Authorization Act (NDAA) Section 875(d), "Development of Non-government Standards," directing the Under Secretary for Research and Engineering (USD[R&E]) to partner with appropriate industry associations to develop NGSs, could encourage DoD to support greater participation in NGS activities.

More recently, the Defense Standardization Executive, Ms. Stephanie Possehl, issued a memorandum to Service and agency standardization executives encouraging participation in the activities of NGSBs. This November 19, 2021, memorandum further reinforces DoD participation in the development and use of NGS, as codified in Public Law 104-113, "National Technology Transfer and Advancement Act of 1995," and OMB Circular A-119, "Participation in the Development and Use of Voluntary Consensus Standards and Conformity Assessment Activities."

INTERNATIONAL STANDARDIZATION

Scope and Purpose

The International Standardization Program (ISP) supports DoD's active involvement in activities to develop and implement international standardization to cooperate and engage with our allies and coalition partners. Standardization is a key enabler to the United States' ability to engage in multinational force operations and executive missions that span the globe.

The ISP focuses on policies, procedures, and guidance documents to help the Department manage and stay abreast of standardization documents generated by military and non-military multinational organizations, including the North Atlantic Treaty Organization (NATO); Five Eyes Air Force Interoperability Council (AFIC); the American, British, Canadian, Australian and New Zealand Armies (ABCANZ); the European Union; and European Defense Agency–related standardization activities. DSPO's ISP efforts center on developing or adopting materiel standards for multinational force operations.

According to the 2017 National Security Strategy, "Allies and partners are a great strength of the United States. They add directly to the U.S. political, economic, military, intelligence, and other capabilities."

Status

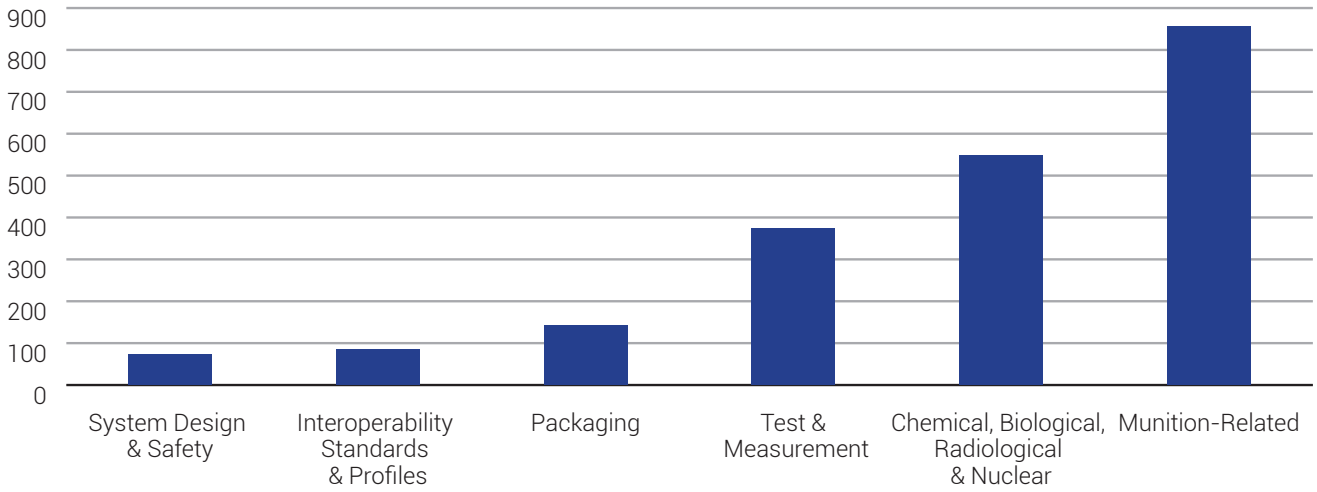
ASSIST provides DoD personnel and defense contractors with access to ISAs to enable international engagement and cooperation. The DSP offers access to U.S.-ratified ISAs in ASSIST with availability based on the user's credentials (see Table 2).

Table 2. Total Number of ISAs in ASSIST

Multinational Treaty Organization	*Active*
ABCANZ	126
AFIC	189
NATO	2,309
Other	156

Figure 7 shows the most downloaded ISAs by subject matter, with munition-related standards the most downloaded.

Figure 7. Top ISAs Downloaded in ASSIST in 2021 by Subject Matter



The most downloaded ISAs were related to munition safety by subject matter; however, Table 3 shows that ATP-45, "Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operators Manual)," was the most downloaded document in 2021. ATP-45 is an allied technical publication developed and maintained by the NATO Military Committee Joint Standardization Board, Joint Chemical Biological Radiological and Nuclear Defence Capability Development Group.

Table 3. Top 10 Downloaded ISAs in 2021

Document ID and Title	*Downloads*	*Multinational Treaty*
ATP-45, "Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operators Manual)"	525	NATO
AECTP-500, "Introduction to Electromagnetic Environmental Verification and Tests"	349	NATO
STANAG-4517, "Large Calibre Ordnance/Munition Compatibility, Design Safety Requirements and Safety and Suitability for Service Evaluation"	289	NATO
AOP-39, "Policy for Introduction and Assessment of Insensitive Munitions (IM)"	240	NATO
QSTAG-1150, "Glossary of Packaging Terms and Definitions"	171	ABCANZ
AOP-4719, "Energetic Materials, Specification for TEGDN (Triethylene Glycol Dinitrate)"	116	NATO
STANAG-4147, "Chemical Compatibility of Ammunition Components with Explosives (Non-Nuclear Applications)"	97	NATO
STANAG-4556, "Explosives, Vacuum Stability Test"	89	NATO
ADATP-34, "NATO Interoperability Standards and Profiles"	79	NATO
AECP-2, "NATO Naval Radio and Radar Radiation Hazard Manual"	73	NATO

DSPO contributed to the development of standardization policy, procedures, and standards guidance documents in NATO, hosted virtual training webinars emphasizing the United States' coordination on international standardization agreements, and remained engaged in the standardization efforts of our allies and partners. Since the publication of the last "State of the DSP," the ISP continues to work with Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD[A&S]), DoD components and Defense Agencies, and multinational organizations, treaty and non-treaty based. The program's recent accomplishments include the following:

1. Updated ISA policies, procedures, and guidance documents.
    - Department of Defense Manual 4120.24, "Defense Standardization Program Procedures" (revision underway)
    - SD-3, "A Guide for DoD Personnel Participating in NATO Standardization Activities"
    - "International Standardization Agreement (ISA) Pocket Guide"
    - Participated in the NATO Standardization Management Group (SMG) writing team to develop AAP-03.2, "Advice on the Development of the Implementation Paragraph for Inclusion Within STANAGs"
2. Increased coordination within and outside of DoD.
    - Coordinated with Military Departments and Defense Agencies to support the development, review, and ratification of materiel ISAs and initiatives that affect materiel standardization.
    - Cohosted the quarterly Defense Standardization Roundtable with OUSD(A&S) to share information with lead agents, international program offices, and DoD personnel who represent the United States at NATO and other multinational fora.
    - Provided one-on-one training to lead agents' action officers on the procedures for submitting national ratification responses and methods of monitoring and reporting implementation details.
    - Led an ad hoc working group comprised of Department of the Army, Air Force, and Navy personnel to revise and reinstate SD-3.
    - Continued engagement with the ANSI International Organization for Standardization (ISO) Council and International Policy Advisory Group (IPAG) to stay abreast of international standardization activities outside of the scope of multinational military-based organizations.
3. Championed using civil (non-government) standards to satisfy standardization requirements.
    - Participated as a member of the NATO Standardization Management Group writing team to develop AAP-03.1, "Facilitating the Development and Use of Civil Standards." This document provides NATO allies and partners with guidance on participating in and engaging with non-NATO standards development organizations (SDOs).
    - Educated DoD and NATO standardization stakeholders on the benefits of using non-government standards.

- Served as guest speaker at the 2020 NATO Civil Standards Workshop hosted by Greece. This engagement offered the United States an opportunity to engage with allies, partners, and SDOs about NATO's use of civil standards.

4. Made unclassified ISAs and metadata for classified ISAs available in ASSIST.
    - Developed a process for updating ABCANZ and Five Eyes AFIC standardization documents in ASSIST.
5. Hosted webinars to train DoD personnel participating in the development, review, approval and ratification, and implementation of ISAs.
6. Strengthened our relationships with NATO and non-NATO partners and allies.
    - Supported the Republic of Colombia in its efforts to revitalize its standardization program and its quest to align other South American nations with the principles of standardization in NATO.

Challenges

In support of the DSP's mission, DSPO has contributed to DoD's efforts to standardize materiel and equipment with our allies and partners. Nevertheless, more work remains. The following list notes the top challenges that DSPO seeks to address over the next two years.

- **ISA implementation.** The United States ratifies NATO standardization agreements (STANAGs) and subscribes to approved standardization documents; however, no mechanism for documenting implementation details exists. To address this concern, we are planning to associate implementation details and guidance with U.S.-ratified ISAs housed in ASSIST. For example, if a STANAG is critical to capability development, then this information would be made available to ASSIST common access card users.
- **Training and education.** In response to the COVID-19 pandemic, we hosted training in a virtual setting to enable work-life balance due to travel restrictions and health concerns. The virtual educational events benefitted all through their convenience, offering busy professionals an affordable option to learn amid the pandemic. Now that SD-3 has been published, DSPO is developing training to address specific challenges that lead agents, heads of delegation, action officers, and others encounter as they manage ISAs. This training will be hosted annually and tailored to the learning experience and unique needs of participants attending the workshop.
- **Emerging and Disruptive Technologies (EDT).** The United States and its NATO allies and partners need to increase engagement with SDOs to capitalize on innovative solutions developed in the commercial marketplace. To keep pace with advances in technology and emerging threats and to mitigate the effect of disruptive technologies, DoD must increase its participation or engagement with standards development outside of the defense industry. This environment creates renewed interest in finding, reviewing, and gaining access to NGS's required to implement U.S.-ratified ISAs.

  For the United States to be a key player in EDT, we must not only participate in standards development with industry but gain access to the resultant standardization products. See "Enterprise-wide access to NGS" in the Challenges of the preceding section on NGS for a description of barriers to NGS access.

DATA ITEM DESCRIPTIONS

Scope and Purpose

DIDs define the content and format requirements for data prepared for the government under the terms of a contract and ensure that the data requirements are specified in ways that will meet the contract objectives. Data format and content requirements must be clearly stated. Whenever possible, contractor format should be allowed. Mandatory formats are required only when a specific format is required to meet interface requirements. Each DID covers a single deliverable data product. If a single work task generates more than one deliverable data product, a separate DID is selected or prepared for each product. There are two types of DIDs: (1) repetitive-use DIDs, approved for repetitive use, and (2) one-time DIDs, when a data requirement is a one-time requirement or when time constraints preclude preparation and approval of a repetitive-use DID. Both types are prepared in accordance with MIL-STD-963, "Data Item Descriptions." MIL-STD-963 complies with the provisions of Public Law 104-13, "Paperwork Reduction Act of 1995."

In accordance with Enclosure 12 of DoD Manual 4120.24, DoD preparing activities must create DIDs to define the data content, preparation instructions, and format of data required of a contractor.

Tools

Each Military Department and Defense Agency designates a DID approval authority responsible for approving and processing DID actions (new, revise, and cancel) via ASSIST. ASSIST is the official source for processing and housing repetitive-use DIDs. DIDs in ASSIST are available for use by all the Military Departments and Defense Agencies. One-time DIDs are not processed or available in ASSIST. One-time DIDs are issued at the discretion of the cognizant Military Department or Defense Agency DID approval authority. For a more complete description of ASSIST and its capabilities, see the ASSIST summary in the "DSP Tools and Capabilities" section.

Status

As of December 2021, ASSIST housed 1,776 DIDs, including 1,223 active and 553 canceled DIDs. Canceled or superseded DIDs must not be used on new solicitations or contracts. However, if a DID is canceled or superseded after the release of a request for proposal but prior to the award of a new contract, the canceled or superseded DID can still be cited. Canceled or superseded DIDs that are in use on current contracts can be used on follow-on contracts for the same item when continuity of data format and content is required. When a DID has been superseded, the newer DID should be reviewed for possible application on the new or follow-on solicitation or contract.

In the Paperwork Reduction Act of 1995, DoD, in cooperation with OMB's Office of Information and Regulatory Affairs, established a methodology for controlling the paperwork burden imposed by federal agencies on the public. Compliance with the Paperwork Reduction Act requires assigning an OMB control number to each data requirement imposed on a contractor by DoD. On September 30, 2022, the OMB Control No. 0704-0188, which had been assigned to all repetitive-use DIDs, was discontinued. DSPO will provide additional information on OMB control numbers for DIDs as it becomes available.

Challenges

Since validating DIDs every 5 years is now a requirement, our efforts to ensure the relevance and need for the active DIDs in ASSIST have improved, but this issue remains a consistent challenge. Considering that the calculation of burden hours is based on the number of active DIDs in ASSIST, the more active DIDs, the higher the burden hours to the public. DSPO also periodically reviews DIDs to ensure that they do not reference canceled defense specifications or standards. In such cases, the preparing activity is informed of the need to revise or cancel the DID.

Data managers have concerns about the lack of an update to DoDM 5010.12, "Procedures for the Acquisition and Management of Technical Data," dated May 1993. Washington Headquarters Services (Directives Division) informed DSPO that, although the office of primary responsibility coordinated a revision, a revised version has not yet been issued. DSPO has no timeline for issuance.

Before developing new DIDs, ASSIST must be searched to evaluate whether an existing approved DID can be used as is, tailored down (requirements removed), or revised. DIDs must be canceled when they are no longer needed.

MODULAR OPEN SYSTEMS APPROACH

Scope and Purpose

DoD has employed modular open systems approaches for the last 20 years. Recent legislation (Title 10, U.S.C., 2446a.(b), Sec. 805) mandated MOSA in programs across DoD. OSD needs continued implementation and further development of MOSA-enabling standards to facilitate the rapid sharing of information across domains with quick and affordable updates or improvements to hardware and software components. Under the direction of the Office of the Under Secretary of Defense (Research & Engineering), the director of Systems Engineering and Architecture and the DSPO coordinate with the Services on efforts to improve MOSA efforts across DoD. In accordance with the statutory provision of Title 10, U.S.C., Chapter 145, Sections 2451–2457 of the Cataloging and Standardization Act, DSPO works with the Services and MOSA community to standardize MOSA through flexible, cost-effective, open, and consensus-based standards. DoD mandates MOSA, transitioning away from monolithic closed systems, to facilitate technology refresh, increase competition, encourage innovation, reduce costs, and improve interoperability.

Status

The Services have engaged in significant efforts to advance MOSA. The U.S. Army published a Modular Open Systems Approach (MOSA) Implementation Guide. The U.S. Air Force has created the Open Architecture Management Office, and the U.S. Navy's MOSA path forward includes supporting new programs with MOSA implementation, continuing to monitor programs with MOSA assessments, and creating solutions with partners through contracts. In addition, three administrative notices have been published in the MOSS area describing MOSA-enabling standardization initiatives and products, including architectures, specifications, compliance testing, and other related tools and products.

In January 2019, the Secretaries of the Army, Navy, and Air Force signed and issued a MOSA tri-Service memorandum, noting the successful implementation of MOSA for several programs across all three Services and directing Service standardization executives to uncover gaps, implement changes, and

continue to develop MOSA-enabling standards to the maximum extent possible. The Services and OSD established three MOSA tiger teams (Standards, Implementation Guidance, and Requirements and Programming Functions) under the Modular Open Systems Working Group. These three initial tiger teams were later expanded to eight and retooled to create maturity assessments, formulate MOSA-specific standards, analyze gaps, define standard profiles, and deliver a MOSA standards needs assessment.

In addition, OSD has established and defined a Modular Open Systems Standards and Specifications (MOSS) standardization area, and efforts are underway to populate it with DoD-wide MOSA-enabling standards in ASSIST. To aid in this effort, OSD has developed a consolidated list of MOSA-enabling standards and policy and guidance for standards, architectures, interfaces, and data rights, and tagged each document in ASSIST. Further, the DSPO worked with the Defense Information Systems Agency to federate ASSIST with the DISR database by tagging documents mandated by DISR in ASSIST, and continues coordination to further automate updates between the systems. This ongoing effort includes all mandated documents in the DISR baseline updated twice a year and covers documents not originally in ASSIST.

The FY21 NDAA established additional guidance to "facilitate…access to and utilization of modular system interfaces." In 2022, the Implementing MOSA Tiger Team began working to establish a DoD integrated approach to MOSA Reference Architectures (RA), and the ability for users with approved access to search for and receive access to modular system interfaces. As the repositories are established, DSPO is working with OSD to index the repositories and link users to applicable standards.

Challenges

While MOSA-related definitions have become clearer and efforts, such as those stated in the tri-Service memorandum (which directs acquisition officials to align their programs around a common set of data interchange standards), have gained further visibility, new challenges and questions have arisen:

- Now that we must implement MOSA, how do we evaluate compliance?
- Can MOSA be measured or scored?
- Who would establish such a metric?
- Should such a metric exist if it could make OSD's MOSA goal of helping the Services without program intervention more difficult?
- How are reference architectures used in MOSA?

One of the biggest challenges, thus far, has been leveraging existing and highly successful MOSA efforts without breaking them. Several programs are implementing MOSA in creative and useful, yet different, ways across various platforms (e.g., air, land, and sea). The MOSA tiger teams seek to collect MOSA lessons learned and best practices from DoD program offices to provide a creative environment where another program, with a different service and platform, can implement MOSA. During this process, the teams will address other issues, such as how programs can modify their change management process to incorporate MOSA and whether MOSA is impractical in some situations. Academic institutions, such as the University of Maryland, are studying the cost of MOSA in system lifecycles as well as MOSA feasibility.

ADDITIVE MANUFACTURING

Scope and Purpose

Additive manufacturing (AM), also known as 3D printing, is a rapidly growing and changing discipline. Although the technology and processes have been in use for decades, as AM rapidly advances in capability and expands in applications, the effects of this technology increase. Each DoD component and agency is investing in AM technologies, desiring to use and mature AM for DoD acquisition. Much of this investment is directed at proprietary and specific applications, resulting in duplication of efforts, customized data sets, and, ultimately, slower adoption of the technology across industry and DoD. In spring 2016, America Makes and Deloitte developed AM technology roadmaps for DoD, providing a foundation and framework for focusing collaboration and coordination of DoD's activities in AM to mature the technology systematically and efficiently for multiple DoD applications. Design, material, process, and value chain are the focus areas that utilize standardization.

Status

Standards and specification are essential to the implementation of AM in DoD. In September 2017, OSD chartered the Joint Additive Manufacturing Steering Group and Joint Additive Manufacturing Working Group (JAMWG), which focus on communication and coordination among the Services and Defense Agencies to maximize the application of AM in support of warfighters and sustainers. The JAMWG established four stakeholder councils: Data and Model Sharing, Qualification and Certification, Business Practices, and Workforce Development, all of which standardization will enable. In addition, the DoD Additive Manufacturing for Maintenance Operations Working Group (AMMO WG) was chartered to create an integrated DoD strategic vision and facilitate collaborative tactical implementation of AM technology in support of DoD's global weapon system maintenance enterprise.

To coordinate and accelerate the development of industry-wide additive manufacturing standards and specifications, America Makes and ANSI published "Standardization Roadmap for Additive Manufacturing" (Version 2.0, June 2018), which lists published and in-development standards with recommendations for priority areas with a perceived need for additional standardization and is iteratively updated with progress toward closing gaps. DSPO continues coordination with ANSI to prioritize and address standardization gaps for DoD.

Challenges

Ensuring DoD involvement with the development of industry-wide additive manufacturing standards and specifications to promote the DoD perspective is one of the biggest challenges facing DoD and AM standards development. To achieve this, the DSP must

- maintain awareness of AM standards and specifications developments in non-government standards development organizations,
- recognize where standardization opportunities exist through engagement with events and activities across DoD, including in the JAMWG and AMMO WG, and initiate standardization activity, and
- monitor the implementation of the America Makes/ANSI "Standardization Roadmap for Additive Manufacturing" where relevant to DoD.

QUALIFICATION

Scope and Purpose

Qualification ensures continued product performance, quality, and reliability for long or highly complex evaluations and tests prior to, and independent of, any acquisition or contract. Qualification comprises the entire process of proving that a manufacturer's products or processes and materials conform to the governing specification. Products or processes and materials meeting the qualification requirements enter the QPD as electronic QPLs or QMLs.

Qualification improves the availability of products with the requisite quality, reliability, performance, and safety and shortens the procurement process, thus enhancing readiness. Qualification can reduce costs by eliminating repetitive surveillance audits and tests.

Statute (10 U.S.C., Section 2319) and regulation (Federal Acquisition Regulation, Subpart 9.2) prescribe the DoD Qualification Program. Enclosure 14 of DoD Manual 4120.24, "Defense Standardization Program Procedures," and SD-6, "Provisions Governing Qualification," codify these statutes and regulations.

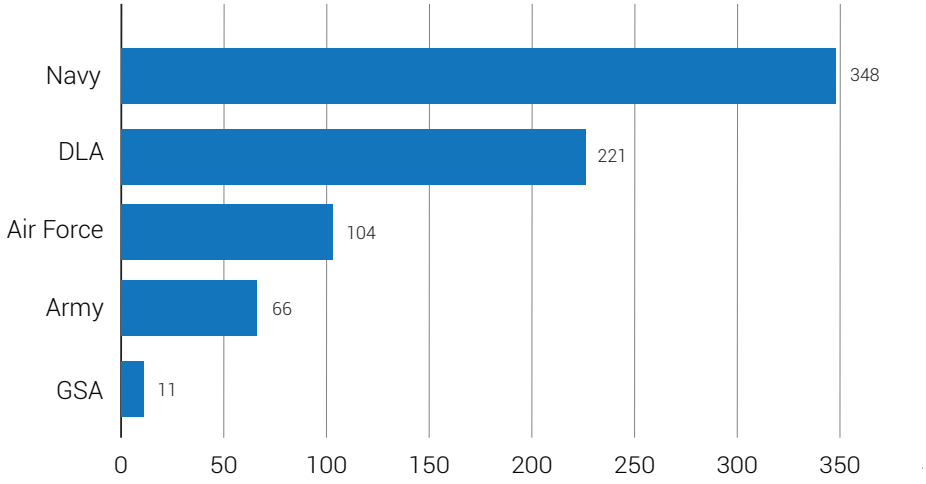
Tools

The Qualified Products Database serves as the official source of DoD qualification data. As a workflow system, the QPD enables qualifying activities to manage QPLs and QMLs in real time. The system tracks retention of qualification data and contains pertinent qualification point-of-contact information for manufacturers and suppliers as well as government and manufacturer part numbers. Integration with the ASSIST Online web-based application enables access to the QPD via the public-restricted ASSIST enclave. See the ASSIST summary in the "DSP Tools and Capabilities" section for more details.

Status

For the 754 QPLs' over 19 million manufacturers' part numbers, 24 qualifying activities manage qualification for the Military Departments and Defense Agencies. Only 2 percent of all documents in ASSIST have a qualification requirement. Of all the Military Departments and Defense Agencies, the Navy has the highest percentage of QPLs, followed by the Defense Logistics Agency (DLA), the Air Force, the Army, and GSA, respectively. Figure 8 shows the number of QPLs stored in the QPD.

Figure 8. Specifications Requiring Qualification by DoD Component and Federal Agency



The QPD alerts the qualifying activities when QPLs require maintenance so that the qualifying activities keep qualification data current. Since 2006, qualifying activities have used this automated system to manage qualification data more effectively, ensuring that buyers in government and industry can purchase QPL parts with confidence. Since the QPD operates in real time, qualifying activity administrators use it to run reports and decide where to shift priorities or expend resources to keep the QPLs under their purview up to date.

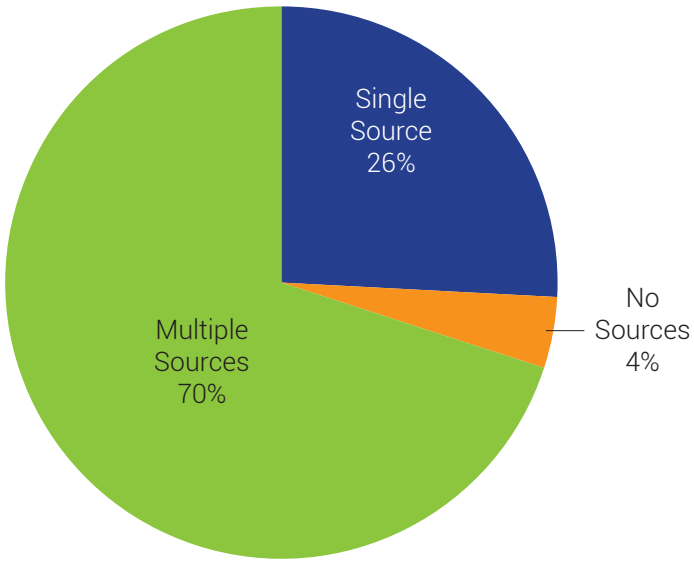
Challenges

Avoiding single-source and zero-source conditions can be challenging for the DoD Qualification Program. A QPL can have a single-source or zero-source condition for various reasons; however, allowing these conditions to exist for an extended period affects the acquisition of parts and logistical support for DoD systems. The more qualified suppliers and manufacturers on a QPL, the more robust the qualification program.

Qualifying activities keep zero-source QPLs to a minimum. If, after 2 years, the qualifying activity has not qualified suppliers to eliminate zero-source conditions, the specification must be modified to permit the qualification of available products, revised to eliminate the qualification requirement, or canceled.

Single-source QPLs become more prevalent as manufacturers and suppliers merge with other companies, get bought by a company already producing a competitive product, or, for business reasons, decide not to manufacture the product at all and request to be pulled from the associated qualification listing (which can also result in zero-source QPLs). These circumstances can leave voids if the manufacturer experiences quality control or supply chain issues. Figure 9 presents the current state of single-source, multiple-source, and zero-source (no sources) QPLs.

Figure 9. The Current State of QPL Sources



To mitigate issues associated with QPL sources, DSPO reports to the qualifying activities and the Departmental Standardization Officer (DepSO) reports on zero-source and single-source QPLs on a quarterly basis. These reports alert the Services of sourcing issues.

PARTS MANAGEMENT

Scope and Purpose

The DoD Parts Management Program establishes parts management best practices across DoD to increase weapon system availability and reduce total ownership costs. Effective parts management contributes to the long-term success of any program because the item's reliability, maintainability, and supportability depend on its parts.

DoDM 4120.24, "Defense Standardization Program Procedures," states, "Program offices must apply standardization processes to improve parts commonality" and "should ensure that a parts management process is used to reduce the proliferation of parts and associated documentation."

DoDI 5000.88, "Engineering of Defense Systems," states, "The Program Manager (PM) will ensure that a parts management process is used for the selection of parts during design to consider the lifecycle application stresses, standardization, technology (e.g., new and ageing), reliability, maintainability, supportability, lifecycle cost, and diminishing manufacturing sources and material shortages."

To accomplish these goals, we

- review and revise DoD parts management policy and guidance;
- assess the effectiveness of DoD parts management activities across DoD;
- research, find, and promote parts management best practices across DoD and industry;
- prepare and publish SD-19, "Parts Management Guide;"
- prepare and publish Military Standard (MIL-STD) 3018, "Parts Management;"
- promote parts management education and engagement; and
- establish and pursue DoD-wide parts management strategic objectives.

Benefits of Parts Management

Implementing parts management early in the engineering and design phase of a system has multiple benefits:

- **Enhanced reliability, maintainability, and supportability.** Parts that meet contractual requirements and proper design enhance reliability, availability, and maintainability.
- **Reduced acquisition lead-time.** Government and industry avoid the expenses and delays of designing and developing parts by using preferred parts.
- **Delayed or mitigated DMSMS and part obsolescence.** Standardization of parts increases demand and the likelihood of sustained sources.
- **Reduced costs.** Employing parts management during design and production saves design and lifecycle costs for equipment by promoting commonly used or preferred parts.

- **Enhanced logistics readiness and interoperability.** Common components simplify logistics support, enhance substitutability, and translate to savings in procuring, testing, warehousing, and transporting parts.
- **Increased supportability and safety of systems and equipment.** Preferred parts reduce risk, improve the likelihood of reliable equipment performance, and reduce mission failure and loss of life.

Parts Management, Systems Engineering, and the Acquisition Process

As an essential element of systems engineering during the early design phase of the acquisition process, parts management serves a fundamental role in achieving many systems engineering and manufacturing objectives; influences cost, schedule, and performance; and affects acquisition technical reviews. Parts management remains a vital element of the acquisition process through the operations and support phases for system sustainment.

Status

The DoD Parts & Material Management Working Group (P&MM WG) establishes, pursues, implements, and reaches out about strategic objectives to facilitate the implementation of enterprise-wide improvements to parts and DMSMS management. All key stakeholders (more than 400 people) participate in activities associated with these strategic objectives to update and maintain consensus. At every meeting (held in conjunction with the DMSMS management community), working group members present major parts management activities undertaken in their home organizations. Members assess crosscutting issues and propose approaches for the Office of the Secretary of Defense (OSD) and the other components to improve parts management. From an outreach perspective, we plan on hosting our in-person Parts and Material Management Conference in Savannah, GA, on February 6–9, 2023.

The parts management community has been very involved in the Defense Microelectronics Cross-Functional Team (DMCFT). The Deputy Secretary of Defense established DMCFT to "develop a DoD strategy, implementation, and transition plan that will minimize vulnerabilities within the Department's microelectronic supply chain." Common goals enable this collaboration. The DoD microelectronics (ME) community spends billions of dollars on microelectronics each year but has little visibility into the parts purchased and limited insight regarding supply chain issues. Improving parts management at the program level and offering visibility into parts-related information will produce savings and corporate-level improvements to microelectronics supply chain health. Collaboration with the DMCFT and the DoD microelectronics community will improve parts management across DoD.

This collaboration has resulted in a Program Objective Memorandum 23 issue paper to establish an enterprise parts management system (EPMS). EPMS was approved for funding starting in FY23 and preliminary work is being accomplished now. The EPMS will enable program offices to improve parts selection, provide information to better manage their supply chains, and offer better forecasting and management of DMSMS issues. EPMS will also enable higher level organizations to aggregate ME information to enhance supply chains, collaborate on common problems, and improve procurements. The EPMS will provide information on current and projected microelectronics usage as well as all pertinent characteristics of the supply chain for those items. While this system will assist the microelectronics community in enabling access for the ME needs of the warfighter, it will also furnish important capabilities for our community. Although building this coalition and championing the EPMS consumed significant resources in 2021, the P&MM community is now better positioned to pursue its strategic objectives.

The P&MM WG has established eight strategic objectives that form the framework for efforts to assess and improve parts management in DoD. All key stakeholders participate in activities associated with these strategic objectives to maintain consensus on improvements.

1. Policy and guidance. *Objective:* Review of all pertinent policy and guidance documents to discover where to include parts management language and recommend changes to address shortcomings.

   Status: We have added parts management language to the "Defense Acquisition Guidebook" (DAG); DoDI 5000.88, "Engineering of Defense Systems;" the "DoD Systems Engineering Plan (SEP) Outline;" the "Engineering of Defense Systems Guidebook;" and the "Systems Engineering Guidebook." We have updated the DAU training course, Introduction to Parts Management (LOG-0630), to reflect new policies and guidance. We are updating SD-19, "Parts Management Guide;" MIL-STD 3018, "Parts Management;" and SD-26, "DMSMS Contract Language Guidebook," to include parts management language along with any other applicable guidance documents and training courses. An effort is underway to potentially expand the scope of the objective. We are exploring the need for standalone parts management policy and examining the efficacy of consolidating parts management MIL-STDs.

2. Best practices. *Objective:* Evaluate programs with best practices to improve our understanding of what makes them successful and uncover any gaps and challenges they face for improvement.

   Status: We interviewed members of program offices from the Army, Navy, Air Force, and Missile Defense Agency (MDA) to capture best practices and discover challenges. We completed defense industry parts management interviews, enlisting the assistance of the National Defense Industrial Association (NDIA) and Aerospace Industries Association (AIA). A final assessment of the state of parts management in DoD has been completed and is being used as a strategic planning guide.

3. Data management, databases, and tools. *Objective 1:* Assess parts management tools and technical data needs, note where gaps exist, and recommend improvements.

   Status: We assessed current armed Services tools and data requirements. The program offices do not use any tools designed specifically for parts management. This finding led to the second objective.

   Objective 2: Develop requirements for a parts management tool to enable effective parts selection and management throughout the lifecycle of systems. Requirements for the tool include evaluating and managing commonality, protecting against intrusion of counterfeit items, monitoring the supply chain, managing DMSMS, and sharing information in DoD.

   Status: We completed an evaluation of existing tools and program office needs. This led to the effort to develop an EPMS starting in FY23. Preliminary work is being accomplished now with the ultimate goal of developing a tool for enterprise-wide program office use.

4. Contract language. *Objective:* Create best practice parts management contract language for use DoD-wide. This approach levels the playing field among contractors by applying similar customer requirements across all programs to avoid confusion and encourage common processes for efficiency throughout the supply chain. The effort supports the policy and guidance strategic objective with effective contract requirements to ensure inclusion of parts management where needed.

Status: We have completed the first phase of contract language development, with the draft contract language undergoing peer review before incorporation in SD-26, "DMSMS Contract Language Guidebook." The contract language team has completed an initial review of MIL-STD-3018, "Parts Management," and MIL-STD-11991, "General Standard for Parts, Materials, and Processes," and provide recommendations for updates to contract language. The update of SD-19, "Parts Management Guide," will incorporate updated contract language.

5. Metrics. *Objective:* Evaluate the feasibility of creating metrics to capture qualitative and quantitative measures for the benefits (return on investment) of a parts management program.

   Status: A WG subcommittee was formed and is updating metrics in SD-19, "Parts Management Guide," focusing on recordkeeping and feedback to track the costs, time, results, and benefits of implementing parts management as well as updating costs associated with adding parts to a system. These changes will be incorporated in the update of SD-19, "Parts Management Guide."

6. Commercial off-the-shelf (COTS) assemblies. *Objective:* Examine the problems associated with choosing and using COTS assemblies and evaluate implementing common procedures for selecting COTS assemblies throughout the entire program lifecycle.

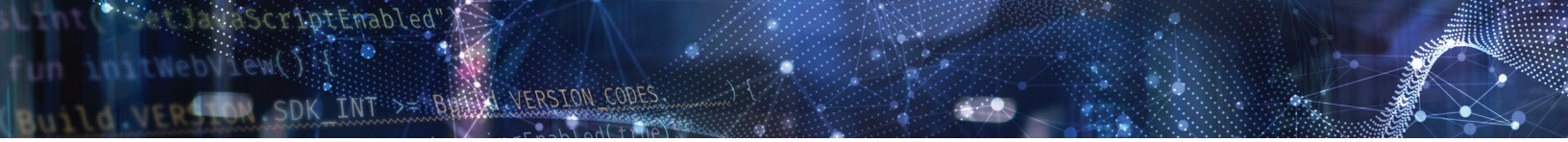
   Status: A team of government and industry representatives developed a COTS checklist for high reliability and safety critical applications and sent it to the entire WG for review. Components of the checklist will be added to SD-19, "Parts Management Guide." SAE has agreed to establish efforts to incorporate the checklist into SAE EIA-933, "Requirements for a COTS Assembly Management Plan." Once published, DoD will consider adopting it. We are exploring automating the checklist and expanding its use to other part types. The finalized checklist has been released and can be found on the Parts Management Knowledge Sharing Portal (https://www.dau.edu/cop/PMKSP/Lists/COTS_Checklist/AllItems.aspx).

7. Item Reduction (IR) program. *Objective:* Reduce the number of generally similar items and eliminate redundant items in the DoD supply system.

   Status: A WG of IR stakeholders evaluated DoDM 4120.24 and guidance from SD-23, "Department of Defense Item Reduction Program," to offer recommendations for the future of the IR program and to update IR guidance. The update of SD-23, in collaboration with the DoD IR stakeholders, was completed in June 2022.

8. Parts and material lifecycle management standardized training. *Objective:* Perform a feasibility assessment to answer the question: Does DoD need a standardized 4- to 5-day instructor-led basic training on parts and material management to complement the approved DAU "Parts and Material Lifecycle Management" credential? Come up with our own approach, if needed.

   Status: We aligned DAU DMSMS and Parts Management courses with new DMSMS policy and guidance. We assessed training across the Services, industry, academia, etc. to create an outline of a 4- to 5-day instructor-led parts and material management course, including estimates of course objectives and instructor hours. The International Institute of Obsolescence Management (IIOM) authorized trainers to train key U.S. stakeholders who assessed its merits and utility. We are evaluating an instructor-led course independent of DAU and IIOM. We interviewed the community to understand the value proposition for training and will compile the results and conclusions.



Parts Management Considerations

The P&MM WG defined an initial set of parts management considerations as key components of parts management programs. These considerations follow:[2]

1. DMSMS and obsolescence
2. Counterfeit
3. Restriction of hazardous substances (including use of lead-free materials and other environmental considerations)
4. Supply chain risk management
5. Standardization (including interoperability, item reduction, interchangeability and substitutability, the Defense Standardization Program, and documentation)
6. Qualification
7. Reliability, availability, and maintainability
8. Emerging technology (including additive manufacturing)
9. Mechanical
10. Manufacturing and producibility. requirements and proper design enhance reliability, availability, and maintainability.

Challenges

Our efforts to mitigate the many challenges faced by the DoD Parts Management Program will improve parts management. The P&MM WG's ongoing review of parts management processes will address some of these challenges:

- **Early involvement in the system acquisition process.** The early stages of system acquisition often lack coordination and involvement between parts management experts and systems engineers and designers. Poor parts selection early in design and engineering of a system contributes greatly to parts management issues, such as DMSMS, later in the lifecycle of weapon systems. Collaboration between parts management experts and systems engineers in the early design phase of acquisition will influence the parts selection process to reduce these issues most effectively. DoDI 5000.88, "Engineering of Defense Systems," approved on November 18, 2020, established a requirement to implement parts management processes in the early phases of the acquisition process. Greater compliance with this requirement will increase the levels of risk mitigation and lower lifecycle costs. A standalone parts management policy may be necessary and is being explored further.
- **Parts management contract language.** DoD has few organizations that require parts management for acquisition contracts. Parts management is primarily a contractor's responsibility and, without the requirement for parts management on contract, it simply will not

[2] While these considerations have their own DoD programs, our mutual success depends on including them in the parts management process and that these programs include adequate parts management in their processes as well.

be done. The P&MM WG has made contract language one of its strategic objectives to address this issue and drafted parts management contract language for inclusion in an expanded version of SD-26 and other guidance documents.

- **Short-term view of costs associated with parts management.** The pressure on program managers to reduce costs and stay on schedule from early design through production creates an inability or unwillingness to expend resources and time to ensure the effectiveness and availability of selected parts upon system deployment. Problems arising during sustainment because of inadequate parts selection, such as part obsolescence, poor quality and security, and supplier and parts shortages, greatly increase maintenance costs and reduce operational availability, decreasing overall system effectiveness. Increasing awareness throughout the acquisition community of the cost implications of requiring versus not requiring parts management disciplines in an acquisition program is the key to addressing this challenge.
- **No tools specifically designed for parts management.** No DoD program office tools are specifically designed to support the parts management process, guide part selection, or evaluate current and future parts needs. To address this challenge, the effort to develop a tool known as the enterprise parts management system (EPMS) for program office use has begun.
- **Training and outreach.** Awareness of the requirement to implement parts management processes as well as the value and benefits of parts management is lacking throughout DoD. This problem is partially due to training and partially due to outreach. As the P&MM WG pursues improving parts management in DoD, we will continue enhancing and updating training offerings, developing new training, and reaching out through seminars and webcasts, with focus areas for offering a clear and persuasive message about more proactive implementation of parts management.
- **No generally accepted guidance or standard for parts management across DoD.** Several guidance documents address parts management in one form or another, ranging from detailed, prescriptive guidance to authoritative guidance employed by some armed Service organizations and Defense Agencies, such as SD-19. The P&MM WG is updating SD-19, MIL-STD 3018, SD-23, and SD-26 in a coordinated effort to offer detailed guidance and a tailorable standard for parts management programs and plans for wide acceptance by industry and government. The goal is to furnish a solid foundation for improved implementation of parts management across DoD.

DIMINISHING MANUFACTURING SOURCES AND MATERIAL SHORTAGES (DMSMS)

Scope and Purpose

A DMSMS issue is the loss, or impending loss, of manufacturers or suppliers of items or raw materials. DoD loses a manufacturer or supplier when that manufacturer or supplier discontinues production or support of needed items, raw materials, or software or when the supply of raw material is no longer available. The DMSMS program facilitates the implementation of proactive DMSMS management throughout DoD to reduce the adverse effects of DMSMS issues on readiness, schedule, and cost. To accomplish these goals, we do the following:

- Create and revise DoD DMSMS policy, guidance, and management strategies.
- Champion proactive DMSMS management best practices, synergies, and standardization through education, training, and outreach in DoD and industry.
- Define and assess DMSMS management effectiveness across DoD.
- Establish and pursue DoD-wide strategic DMSMS objectives.
- Prepare and publish guidance documents.
- Facilitate common, collaborative resolutions to crosscutting DMSMS issues.

Status

Because of the synergies between DMSMS management and parts management, the DoD DMSMS Working Group has been informally combined with an analogous parts management organization to form a Parts and Material Management Working Group (P&MM WG). The P&MM WG establishes, pursues, implements, and publicizes strategic objectives to facilitate the implementation of enterprise-wide improvements to DMSMS management. All key stakeholders (more than 400 people) participate in activities associated with these strategic objectives to update and maintain consensus. At every meeting, working group members also share major DMSMS activities undertaken in their home organizations. In addition, members assess crosscutting issues and propose approaches so that the Office of the Secretary of Defense (OSD) and the other components can cooperate on finding and funding resolutions. Finally, the P&MM WG organizes an annual conference to share information on DMSMS management practices, inform the community of major events and changes, provide training, and offer networking opportunities. The next conference is planned for February 2023 in Savannah, Georgia.

DMSMS management activities have received a significant boost from collaboration with the Defense Microelectronics Cross-Functional Team (DMCFT). The Deputy Secretary of Defense established the DMCFT to "develop a DoD strategy, implementation, and transition plan that will minimize vulnerabilities within the Department's microelectronic supply chain." Common goals enable this collaboration. For example the microelectronics community spends billions of dollars on life-of-need buys to resolve DMSMS issues; proactive DMSMS management will reduce those expenditures. The DMSMS management community benefits from the visibility and resources of the microelectronics community.

One very significant result of this collaboration is the approval of funding for an EPMS. The EPMS will provide information on current and projected microelectronics usage as well as all pertinent characteristics of the supply chain for those items. While this system will assist the microelectronics

community with access for the microelectronics needs of the warfighter, it also offers important capabilities to our community. The EPMS will enable us to better forecast DMSMS issues and more effectively consider supply chain risk during parts selection.

Although building this coalition and championing the EPMS consumed significant resources in 2021, the DMSMS community is now better positioned to pursue its strategic objectives in 2022 and beyond. The status of these strategic objectives follows:

1. **DoD DMSMS policy and the DoD DMSMS WG charter.** ***Objective:*** DoD policy and guidance issuances that do not adequately address DMSMS management over the entire life cycle of a system can impede the use of best practices. These shortcomings negatively affect DoD DMSMS WG activities. This strategic objective defines DoD DMSMS policy and guidance needs and aligns them with the DoD DMSMS WG charter.

   Status: On October 26, 2022, USD(A&S) issued DoD Manual 4245.15 associated with DoDI 4245.15 (approved November 5, 2020). This manual includes a formal version of the DMSMS WG charter; the WG has been operating informally for a considerable period. A significant update to SD-22 was released in January 2021, promulgating key strategic DMSMS management concepts, including the following:

   - Creating DMSMS resilience in design to increase the likelihood of finding low-cost options to resolve DMSMS issues and delay their occurrence if they cannot be prevented.
   - Applying an integrated approach to future system modification planning to prevent DMSMS issues.

   Another update of SD-22 was issued in May 2022 to add best practices associated with the DMSMS community's uses of and contributions to product and technology roadmaps. This new version also refined DMSMS resolutions and their average costs. Additional revisions are planned for 2023.

   DMSMS-related changes to DoDI 5000.02, the Systems Engineering Plan (SEP) Outline, the Life Cycle Sustainment Plan (LCSP) Outline, DoDI 4140.01, DoDM 4140.01, the "Defense Acquisition Guidebook," DoDI 5200.39, DoDI 5200.44, the Program Protection Plan Outline and Guidance, the Systems Engineering Guidebook, the Engineering of Defense Systems Guide, the Product Support Managers' Guidebook, Independent Technical Risk Assessment guidance, DoDI 5200.XX, the Anti-Tamper Directive, DoDI 8330.01, DoDI 4140.67, and many others continue to be developed and have been or are being incorporated.

2. **Contracting.** ***Objective:*** When contracts inadequately address DMSMS management requirements at any point in a system's life cycle, some aspects of proactive DMSMS management may not be possible. This strategic objective creates best practice contracting language for proactive DMSMS management.

   Status: In 2019, the DMSMS WG published SD-26, "DMSMS Contract Language Guidebook," to help program offices develop language for DMSMS contractual arrangements. Training is available and an article was prepared for multiple publications to inform program offices of the availability of this new contracting language.

The revised version of SD-26 will primarily add complementary parts management contract language. The parts management subject matter will be based on a new framework for parts management oversight that includes a parts management plan, assurance that the processes in the plan are being followed, and metrics that provide information on the effectiveness of those processes. Changes to the DMSMS contract language will include a new clause for DMSMS resilience and material on the applicability of the existing clauses to all acquisition pathways. Following publication of the revised SD-26, work will begin on developing more extensive and innovative DMSMS and parts management content. One key DMSMS aspect of the new work will be identifying contract language to incentivize industry to optimize both its DMSMS management activities and its associated recommendations to the government based on the life cycle of the system and not just the contract period of performance. Further efforts on this strategic objective could measure the extent to which the language appears in meaningful ways in contracts. DAU can create a contracting tool using this information as a model.

3. Programming and budgeting. *Objective:* In many cases, DoD program offices lack the capability to forecast DMSMS issues (especially for redesigns). The relationship between such forecasts and programming and budgeting is unclear. This strategic objective finds and promotes best practices for formal programming and budgeting of all DMSMS activities throughout the life cycle of a system, justifying funding based on a systematic method and with money earmarked for DMSMS functions.

   Status: We interviewed people from more than 25 program offices to uncover best practices and documented the results. We evaluated how working capital funds (WCFs) can offset some programming and budgeting needs. The new SD-22 incorporates all this material.

   We found several ambiguities in the DoD "Financial Management Regulation" (FMR) about which type of appropriation to use for DMSMS resolutions as well as the extent to which WCFs can be used. Recommendations to clarify the FMR language have been developed and presented to the OSD Comptroller for consideration but the likelihood of a change appears low.

   Programming and budgeting remain concerns. The lack of funding can lead to suboptimal resolutions and workarounds that can increase cost over time. The working group will work to identify new approaches.

4. DMSMS commonality assessment and information sharing. *Objective:* Limited sharing of resolution data leads to lost opportunities for common resolutions. This strategic objective helps convince program offices to share information.

   Status: By documenting parts commonality across program offices throughout DoD, we demonstrated the value of a program office leveraging shared information on DMSMS cases and resolutions as soon as the cases open. The value proposition encompasses reduced costs, improved program schedule, enhanced readiness, and other efficiencies. DoDI 4245.15, "DMSMS Management," requires that program offices report discontinuation notices and resolutions to the GIDEP. Unfortunately, compliance with this requirement has been minimal. We are working with the GIDEP to find ways to collect and compile that information and what metrics we can glean from it. In addition to these efforts, DAU is prototyping a new approach for the use of communities of practice to share information and dialog with practitioners about high-interest subject matter areas. The DMSMS and parts management knowledge sharing portals will be test cases for this new initiative.

5. Metrics. *Objective:* Due to the lack of consensus on what records to keep or metrics to collect for tactical or strategic purposes, the state of DMSMS management across DoD and high-leverage opportunities for improvement remain not well understood. This strategic objective establishes best practices for the types of DMSMS management information to collect and maintain, initiates reporting activities to inform management, and finds areas for process improvement.

   Status: We have finalized best practice record keeping requirements and developed a data dictionary. Examples demonstrate how these records can improve DMSMS management at the program office, program executive office (PEO), Service headquarters (HQ), and OSD levels. The SD-22 updates include all this material but mandatory procedures will not take effect until publication of the new "DoD DMSMS Management Manual." Eventually, reporting of this data to OSD will be required in a future update of the "DMSMS Management Instruction."

   The new parts management contract language (discussed above) associated with the effectiveness of parts management processes opens new opportunities for defining, collecting, and analyzing parts management metrics. These metrics will also provide information on risks that weapons systems face because of inappropriate parts selection. Such metrics will be codified, explained, and expanded in work planned for FY23.

6. Readiness. *Objective:* Readiness issues associated with reactive DMSMS management are difficult to measure because standard readiness metrics cannot be tied to DMSMS issues easily. This strategic objective, in cooperation with the ongoing efforts of the metrics strategic objective, focuses on demonstrating the feasibility of creating qualitative and quantitative measures of the effect of reactive and proactive DMSMS on readiness and issues that affect readiness. The objective will define the data necessary for those calculations, and then establish a requirement to collect that data.

   Status: These efforts have resulted in a new definition of DMSMS cost avoidance and defined metrics that show the number of back orders and days of supply effects avoided through proactive DMSMS management. Another metric illustrates the resolution time saved through proactive DMSMS management. The SD-22 update documents the results. Other additional approaches are under consideration (including the possibility of measuring effects on the production line schedule).

7. Data. *Objective:* Robust DMSMS management begins with an analysis of technical data to select the items to proactively monitor for obsolescence, based on a DMSMS risk perspective, to uncover issues and create and then implement resolutions early. Waiting until an item cannot be purchased results in higher costs as well as readiness and schedule delays. Many systems in sustainment did not purchase the requisite bills of material (BOMs) for proactive DMSMS management. This strategic objective recommends how and when to obtain or create BOMs. In addition, this strategic objective uncovers where the DMSMS community can influence the process to improve the data needed to assess risk and construct BOMs while accounting for intellectual property concerns.

   Status: Efforts are complete with results included in the SD-22 update.

8. Software. *Objective:* With DMSMS management for software in its infancy, most programs do not uncover software DMSMS issues proactively. The lack of a clear definition for software obsolescence (and its connection to hardware obsolescence) results in DMSMS planning tools that cannot forecast software obsolescence or capture the connection between hardware and software. As our weapon systems become more dependent on software and, in turn, more reliant on COTS software, software obsolescence could soon affect readiness uncontrollably. This strategic objective minimizes these ill effects.

   Status: Agencies, academia, and Services collaborated to update best practices, document shortfalls, and create mitigation plans and processes, resulting in training based on software obsolescence best practices used to support weapon systems. The SD-22 update promulgates the results.

9. Research and development. *Objective:* This strategic objective creates and initiates project funding for a prioritized DMSMS research and development (R&D) portfolio.

   Status: We developed two portfolios. The management operations portfolio includes research on which areas to monitor for DMSMS and then evaluate cost-effective resolutions. In contrast with the process focus of management operations, the resolutions portfolio consists of research on specific solutions to DMSMS technical issues. "A Research and Development Investment Portfolio for Diminishing Manufacturing Sources and Material Shortages," June 2018, published the results of the entire portfolio development process. DLA's Logistics R&D Office was presented with the results. Although finding DLA sponsors to use the results of the research has been difficult, DLA continues to request new project ideas. DLA has funded extensions to automate the Electronic COTS Assembly Selection Checklist and apply it to other items. Efforts are also underway to incorporate the checklist into commercial standards.

10. Parts and material lifecycle management standardized training. *Objective:* Perform a feasibility assessment to answer the questions: (1) Does DoD need a standardized 3-day instructor-led basic training on DMSMS management to complement the approved DAU "Parts and Material Lifecycle Management" credential that deployed in 2022? (2) What additional training should be deployed?

    Status: We aligned DAU DMSMS and Parts Management courses with new DMSMS policies and guidance. Training designed to be part of the annual P&MM Conference has been updated.

    We assessed training across the Services, industry, academia, etc. to create an outline of a 3-day instructor-led DMSMS management course, including estimates for course objectives and

instructor hours. IIOM-authorized trainers trained key U.S. stakeholders who assessed its merits and utility. We are evaluating the use of an instructor-led course independent of DAU and IIOM. We interviewed the community to understand the value proposition for training. The results have been compiled and a final summary briefing with recommendations is forthcoming.

To reach a much larger audience of people who need to know about DMSMS and parts management, beginning early in 2023, we will hold a monthly webinar series on proven processes. Plans and topics are still being developed.

11. Manufacturing readiness assessments (MRAs). *Objective:* Throughout the acquisition process, MRAs evaluate the readiness of a program to enter the next stage of development from a manufacturing perspective. The assessments are based on a manufacturing readiness level (MRL) criteria matrix and underlying interactive user's guide. DMSMS considerations affect the material availability, manufacturing cost modeling, parts selection, design, and industrial capability assessments of this process. This objective offers recommendations for revising the DMSMS content in the MRL criteria matrix and its supporting interactive user's guide to improve assessments of manufacturing readiness.

    Status: A team was formed to pursue this objective. While work was underway, the MRL community unilaterally expanded its criteria matrix (and later, the user's guide) to include some of the suggestions being developed. The team accepted these suggestions as the baseline, developing and documenting additional recommendations for changes. Although the DMSMS community unanimously accepted the additional recommendations, the MRL WG did not add any of them to the MRL criteria matrix, only to the user's guide. It is highly unlikely that the insular MRL community will reverse that decision. A technical paper was presented at the March 2022 Parts and Material Management Conference.

12. Intersection of hardware assurance (HwA) with P&MM. *Objective:* HwA represents the processes, practices, or methods employed to achieve a level of confidence that microelectronics function as intended and are free of exploitable weaknesses and known vulnerabilities, intentionally or unintentionally designed or inserted, throughout the lifecycle. The Program Protection Plan (PPP) is the program office's management tool to guide the systems security engineering activities (in government, as defined by policy and, in industry, as defined by contract) associated with HwA. The P&MM community selects the parts for production, recommends resolutions to DMSMS issues throughout the lifecycle, and selects the replacement parts associated with the selected DMSMS resolution. While the P&MM community and security engineering interact during design, development, and production, the adequacy of these interactions is unclear. The interactions and the use and update of the PPP by the P&MM community (and the sustainment logistics community in its entirety) are limited, at best, during the operations and support phase of the lifecycle. This strategic objective assesses what these interactions should achieve, uncovers associated gaps, details the factors causing those gaps, and recommends adjustments to policy and guidance to close the gaps. This objective may be more effectively achieved through the perspective of the broader support community rather than limiting it to the P&MM community.

    Status: A panel during the April 2021 P&MM Working Group meeting highlighted issues, leading to the establishment of this strategic objective. A similar panel and an associated technical paper were included in the March 2022 Parts & Material Management Conference agenda. We interviewed practitioners to develop a better understanding of the situation in program offices.

We provided parts and material management hardware assurance comments for the guidebooks replacing the "Defense Acquisition Guidebook."

New material on this subject has been drafted for a future SD-22 update. In addition, the concepts are being included as criteria to measure the effectiveness of contractors' parts management processes as part of the contracting strategic objective.

Challenges

The strategic objectives address many of the challenges to effective DMSMS management. Despite progress, additional challenges persist. The following represent obstacles:

- **Measuring compliance with DoDI 4245.15 and taking the next steps toward improvement.** Almost no quantifiable evidence exists of the extent to which DoDI 4245.15 is being implemented or its effects. We don't know about the use of proactive DMSMS management across DoD. To what extent is DMSMS management fully funded? Have DMSMS budget line items been created? When are DMSMS management activities being started in program offices? How are they being applied to designs? Are DMSMS forecasts being linked to technical refreshes? What benefits have been observed? We need to know which program offices are experiencing barriers to benefitting from the DoDI and lower those barriers. Without this information, we cannot formulate next steps for improving DMSMS management in the program offices that need the most help and addressing the remaining barriers.
- **Funding resolutions to DMSMS issues for programs in sustainment.** New approaches are needed for programming and budgeting for DMSMS management operations and resolutions (e.g., establishing a source of funding independent of current contracts). Programs have trouble obtaining the necessary resources and that leads to increased cost because reactivity is more expensive than proactivity. There are almost never dedicated budget lines for these functions. Consequently, effective DMSMS management performance is at the mercy of other program office funding sources.
- **Lack of tools for parts other than electronic components.** Comprehensive commercial databases exist for showing the obsolescence status of electronic items. Rudimentary algorithms have been developed for forecasting when electronic items may become obsolete in the future. Similar capability does not exist for software, mechanical, structural, and electric items, nor is it available for advanced and raw materials used in the manufacturing process. These areas rely on cumbersome and sometimes ineffective vendor surveys and internet research. The accuracy of demand prediction tools needs to be improved to offer better replenishment strategies for life-of-need buys.
- **The interaction of DMSMS and parts management communities with hardware and software assurance functions is poor.** Program protection plans are not kept up to date, they do not identify all circumstances where protection is needed, and program offices seek to minimize the inclusion of items in them. Implementation of DMSMS resolutions may create vulnerabilities in DoD systems because of the failure to consider protection needs in formulating the resolution or selecting new parts and suppliers.
- **Dedicated funding.** Pursuing strategic objectives requires substantial time and analytical expertise. Funding is essential for effectiveness but OSD funding is available through ad hoc channels only and is insufficient to address the deficiencies.

COUNTERFEIT PARTS

Scope and Purpose

Counterfeit parts have become a significant supply chain risk with consequences for safety, readiness, and reliability. A counterfeit parts prevention program seeks to avoid and detect counterfeits by implementing standard policies, procedures, and best practices. An effective program reduces the infiltration of counterfeit parts into the DoD supply chain.

For DoD, a counterfeit is an unlawful or unauthorized reproduction, substitution, or alteration knowingly mismarked, misidentified, or otherwise misrepresented as an authentic, unmodified item from the original manufacturer, or a source with the express written authority of the original manufacturer or current design activity, including an authorized aftermarket manufacturer. Unlawful or unauthorized substitution includes used items represented as new or the false identification of grade, serial number, lot number, date code, or performance characteristics. In an important distinction from the legal definition, DoD considers authentic used parts sold as "new and unused"[3] to be counterfeit. This difference is essential to protect safety, readiness, and reliability.

Recycled e-waste accounted for most of the early counterfeit parts that DoD encountered (2007–2015). Counterfeiters continue to use e-waste but have found better ways to disguise it. More recently, DoD has uncovered pristine, new-manufacture, cloned devices. Counterfeiters come in all sizes—small businesses in search of an easy profit, criminal syndicates seeking to control the market, and nation states hoping to cripple the free world's critical infrastructure and exploit military system vulnerabilities.

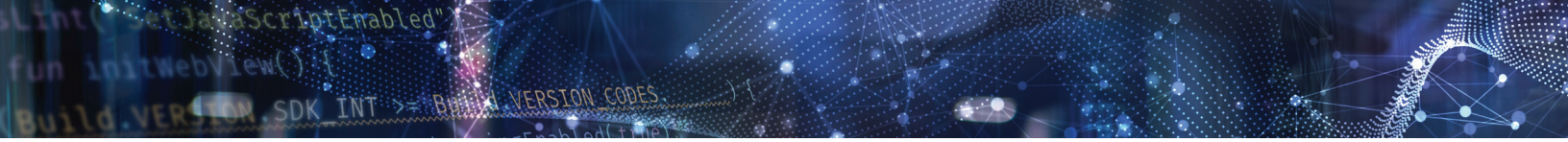
Status

Counterfeiting of parts is a growing business. Estimates by the Department of Commerce showed approximately 5,000 incidents of suspect counterfeits in the defense industrial base in 2008 and 10,000 in 2010. Customs and Border Protection increasingly uncovers attempts to bring counterfeits into the country. DoD has established its expectations for industries that provide systems, subsystems, and parts, including the following:

1. DoD does not accept counterfeit parts, imposing penalties on businesses who willfully do so.
2. Businesses have a system to prevent counterfeit intrusion into the DoD supply chain.
3. Organizations use a risk-based approach to balance the costs with the risks.
4. Suspect counterfeit parts must be reported to GIDEP. As of a November 2019 Federal Acquisition Regulation, all government contracts that include critical items, require higher-level quality assurance, or include electronic parts must contain a clause requiring the reporting of non-conforming or suspect counterfeit items to GIDEP.

DoD actively supports the development of non-government standards to avoid and detect counterfeit parts for all classes of parts. Microelectronics was the first class to be addressed as it made up the preponderance of counterfeits detected.

[3] DoD Instruction 4140.67, "DoD Counterfeit Prevention Policy," April 26, 2013.



A framework of processes extends from DoD to suppliers of piece parts to assist with avoidance, detection, and remediation. Government, industry, and academia are working on additional methods to deter counterfeiters. Most of the Deputy Assistant Secretaries of Defense, all the Military Services, and all prime contractors have counterfeit prevention focal points. Many industry organizations (e.g., the Aerospace Industry Association, the National Defense Industrial Association, and the Semiconductor Industry of America) have counterfeit prevention committees. These organizations share their knowledge across the broader DoD team through meetings and conferences. Through these various teams and committees, DoD seeks common solutions and evaluates which methods work best in each circumstance.

Challenges

Many DoD weapon systems are old, with subsystems that DoD intends to keep (with occasional mid-life upgrades) until the next generation of weapon systems comes online. As a result, supply issues can compromise system availability as manufacturers of parts cease production of older part designs in favor of newer ones. Since the supply chain can no longer rely on the original manufacturer or its authorized distributors, these systems become vulnerable to counterfeit parts during repair and maintenance. This environment, coupled with the new trend of cloned devices, presents a challenge to DoD and its partners in the executive branch (e.g., the Department of Homeland Security and National Aeronautics and Space Administration).

Criticality, cost, urgency, risk tolerance, and other factors drive the wide-ranging solutions in this problem space. For some programs, cost is not a factor given the criticality, while, for others, an 11-cent part going up in price to 12 cents to test for authenticity may be too much.

While organizations across government and industry willingly share their counterfeit prevention methods, reluctance remains to full sharing of business-sensitive information. For example, many businesses that rely on obsolete parts use a single source for screening incoming parts for suspect counterfeits. While this method is extremely effective at preventing counterfeit intrusion, the single-supplier model's success relies on the supplier's purchasing, inspection, and testing techniques and the prime contractor's contract provisions. Many contractors consider the contract provisions to be competition-sensitive information. At the same time, the contractor does not want to reveal its preferred supplier because, without the associated contract provisions, other contractors will not achieve the same level of success.

Another problem facing DoD is that, as counterfeiters learn of new detection methods, they adapt their processes to subvert these advances. Initially, most counterfeits were reclaimed and refurbished products. Now, new production counterfeits suggest the involvement of big business ventures.

GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM

Scope and Purpose

The Government-Industry Data Exchange Program, operated by DoD, promotes and facilitates the sharing of technical information between government agencies and industry partners to increase systems safety, reliability, and readiness and reduce systems development, production, and ownership costs. GIDEP has been designated by OMB as the federal government's central database for receiving and disseminating information about nonconforming and suspect counterfeit products and materials as codified on November 22, 2019, in final rule, FAR, "Reporting of Nonconforming Items to the Government-Industry Data Exchange Program." GIDEP also has a role in parts obsolescence through its centralized database for sharing DMSMS information among DoD and industry groups.

Open to all U.S. federal agencies (e.g., DoD, NASA, the Department of Energy, and the Department of Transportation), the Canadian Department of National Defence, the Canadian Space Agency, and their respective industrial bases, GIDEP enables industry and government to share information. Rather than creating this information itself, GIDEP relies on industry and government participants to share unclassified technical information on common items. Most information concerns piece parts—the lowest common denominator for all complex technological systems.

Status

GIDEP supports approximately 450 government sites and 3,000 industry sites, providing access to more than 11,000 registered users. Every year, GIDEP processes more than 13,000 documents covering more than 500,000 parts. In 2021 alone, the efforts of industry and government leaders in the DMSMS community resulted in the addition of 3,200,000 part numbers.

In an average year, the following occur:

- More than 800 reports of non-conforming and suspect counterfeit parts.
- More than 5,000 DMSMS and product change notices.

GIDEP participants download documents hundreds of times, including more than 100,000 downloads of metrology and calibration procedures. Over the course of the program, members have reported over $2 billion in cost avoidance resulting from information sharing.

GIDEP continues to evolve. Various allied militaries have requested membership in GIDEP (Australia, United Kingdom, and the Republic of Korea), and many others have inquired. Several regulations, instructions, and policies reference reporting to and screening information in GIDEP. The program recently completed a technical refresh on its 1990s-era IT infrastructure.

Challenges

- GIDEP's workforce is aging and succession planning has begun for the GIDEP Operations Center.
- Paradoxically, large organizations need to centrally manage data from GIDEP but their employees remain largely unaware that information they generate is essential for GIDEP's continued success.

Future

- GIDEP has completed the technical refresh of its IT system. The updated features facilitate integration of extended international supply chains in the GIDEP community while maintaining control of the information provided by current members. This technical refresh has laid important groundwork for working with allied nations.
- GIDEP, with key departments across the federal government, will examine the various impediments to import and export of technical information to allied nations, and will draft changes to GIDEP policies and procedures to accommodate international supply chains and allied nations.
- DoD is establishing an executive steering committee for oversight and to ensure compliance with reporting requirements to address the issues highlighted in Government Accountability Office 16-236, "Counterfeit Parts—DoD Needs to Improve Reporting and Oversight to Reduce Supply Chain Risk."

JOINT STANDARDIZATION BOARDS

Scope and Purpose

The JSBs are forums for Military Departments, Defense Agencies, the defense industry, academia, and allies and partners (e.g., NATO) to achieve common, mutually satisfactory standardization solutions.

The JSBs address standardization challenges that

- cut across multiple federal supply classes, federal supply groups, or standardization areas and cannot be handled by a single lead standardization activity;
- cover an evolving technology or commodity that does not have an assigned lead standardization activity; or
- address standardization issues identified by the Defense Standardization Executive that may not result in a standardization document.

JSBs make acquisition, standardization, and sustainment decisions while supporting and facilitating multi-service standardization programs. Each JSB acts as a joint forum for high-level oversight and advocacy of strategic standardization initiatives and defines enterprise-wide standardization objectives and strategies for a designated commodity area. JSBs advance interoperability, logistics readiness, and cost efficiency in their areas of responsibility by furnishing standardization advocacy, guidance, and executive-level support. They offer leadership to address commodity-related issues and needs and establish priorities to help the standardization community allocate resources wisely.

Status

The Defense Standardization Executive charters six JSBs:

1. Aerial Refueling Systems—fulfilled by the Aerial Refueling Systems Advisory Group (ARSAG),
2. Expeditionary Shelters and Basing Equipment (ESBE)—fulfilled by the Expeditionary Shelters and Basing Equipment WG,
3. Fuze and Initiation Systems—fulfilled by the Fuze Engineering Standardization Working Group (FESWG),
4. Intermodal Equipment (IE)—fulfilled by the Joint Intermodal WG,
5. Mobile Electric Power Systems (MEPS)—fulfilled by the project manager (PM), Expeditionary Energy and Sustainment Systems (formerly, DoD PM, Mobile Electric Power [MEP]),
6. Power Source Systems (PSS)—fulfilled by the Joint Battery Technical WG, PSS.

Aerial Refueling Systems

The Aerial Refueling Systems Advisory Group (ARSAG), a not-for-profit organization, was founded in 1978. In 2006, DoD charted it as the Joint Standardization Board (JSB) for Aerial Refueling (AR) Systems to facilitate gathering representatives of NATO nations and Australia twice yearly to develop and update recommendation documents that benefit aerial refueling nations around the world. ARSAG JSB participants, including government, military, and industry representatives, contribute their knowledge and experience to create ARSAG documents. Working group leads and document managers have overcome

recent travel and assembly restrictions by holding remote and virtual meetings; these well-attended meetings, often held monthly, have been effective instruments for completing ARSAG guidance and recommended requirements documents.

ARSAG JSB participants pool their expertise in seven dedicated working groups. The working groups develop recommended standards, specifications, and guidance documents. U.S. Air Force or U.S. Navy security offices clear the completed documents for release in the public domain for use by allied nations around the globe. ARSAG's standardization recommendations have resulted in the aerial refueling technical interface and operational interoperability we enjoy today. ARSAG JSB documents can be adopted as NATO standardization documents, military specifications, and recommendation documents employed by industry and government or military components. The Defense Technical Information Center website posts these documents.

ARSAG JSB working groups:

Group 1. Boom/Receptacle Components & Verification Methods

Group 2. Probe/Drogue Components & Verification Methods

Group 3. Formation Aids, Markings and Lighting

Group 4. Maintenance and Ground Support Equipment

Group 5. Clearance Processes and Procedures

Group 6. Systems Requirements & Verification Methods

Group 7. Automated Aerial Refueling.

KC-135 Refueling a B-52

The ARSAG JSB working groups are actively engaged in developing and/or revising the following documents:

- New performance specifications for Boom-Nozzle Tanker and MA-4 Coupling
- Revisions to MIL-N-25161C Nozzle Spec; MS 24356E Nozzle—Type MA-2; and MIL-PRF-81975C Type MA-2, MA-3, and MA-4 Couplings
- Revisions to ARSAG documents: AR Guides for Formation Aids; Remote Vision; Hose Color & Markings; Technical Interface Data Acquisition, Clearance Process; Boom Receptacle; Modeling & Simulation; Automated AR Interface; Probe-Drogue; Systems Incident Investigation; Automated Concept of Operations; Computer Planning Software; Electromagnetic Environmental-Effects (EEE) on Aerial Refueling (AR); and Ground Support Equipment (GSE).

In addition to publishing ARSAG JSB documents, ARSAG reports its JSB work during annual meetings that gather about 400 government, military, and industry representatives of aerial refueling nations around the globe for senior-level briefings and military status reports. Aerial refueling clearances challenge today's allies and coalitions. Interoperability and standardization have made tremendous strides in recent years; nevertheless, today's environment of international expansion of the aerial refueling community and introductions of new tanker and receiver aircraft, as well as aerial refueling software and hardware, ensure the continued critical need for standardization.

The art of aerial refueling has been with us for nearly 100 years. Coalition operations offer their own challenges. Members of the U.S. and international aerial refueling community are implementing standardized procedures to ensure technical and operational compatibility. They are developing new effective crew training and currency and maintenance procedures while streamlining fiscal and legal arrangements among tanker and receiver operators.

Allied and coalition security depends on the reliable, timely, and safe delivery of defense capabilities to remote areas of the globe. Aerial refueling plays a vital, irreplaceable role in that security. ARSAG's JSB, with the support of DSP, offers unique contributions to aerial refueling's effectiveness and international interoperability.

KC-390 Refueling F-5s

Expeditionary Shelters and Basing Equipment

The predecessor to the JSB for Expeditionary Shelters and Basing Equipment (ESBE) was created in 1975 as the Joint Committee on Tactical Shelters (JOCOTAS) under Office of the Secretary of Defense direction to 1) prevent the duplication of tactical shelter research and development, 2) eliminate the proliferation of non-standard tactical shelters in DoD inventory, 3) maximize use of the DoD standard family of tactical shelters, and 4) promote and implement the use of tactical shelters through a joint forum. Prior to the formation of JOCOTAS, over 100 rigid wall tactical shelter types existed among the Services, creating a huge logistics burden. JOCOTAS succeeded in reducing the types of tactical shelters among the Services to 21. Soft wall and hybrid shelters were added to JOCOTAS in 1995.

The JSB for ESBE was chartered in 2006 and fulfilled by the Joint Committee on Tactical Shelters to do the following:

- Provide senior-level visibility for standardization and interoperability initiatives.
- Establish NGSs or DoD standards (in accordance with DoDM 4120.24).
- Improve interoperability of joint and coalition forces.
- Offer materiel development standardization considerations to program offices and buying commands.
- Furnish a forum for recommending, creating, and coordinating joint policy doctrine.
- Define joint doctrine, tactics, techniques, and procedures.
- Establish standardized parts and components to lower costs, reduce inventories, shorten logistics chains, and improve readiness.
- Create joint solutions to issues that affect the tactical shelters and expeditionary basing domains.
- Provide the interface for commercial-military integration.

In 2015, to address the requirements of DoDD 3000.10, "Contingency Basing Outside the United States," the JSB for ESBE and DSPO revised the JSB's charter to add expeditionary basing related to tactical shelters. Expeditionary basing includes infrastructure, installation services, and facilities for bases and camps in worldwide locations to support DoD expeditionary operations.

The charter revision encouraged the JSB to develop and improve joint processes and procedures to facilitate the design, development, and acquisition of identical and common prefabricated structures equipment or systems and expeditionary basing systems (to the maximum extent possible) while maximizing interoperability, and to authorize, approve, and manage the development and maintenance of specifications and standards (in accordance with DoDM 4120.24) that support prefabricated structures, tactical shelters, special purpose covers, shelter accessories, and expeditionary basing equipment and systems.

In September 2018, the JSB charter was once again updated to add the members of the Joint Expeditionary Basing WG, which examined engineering standards and sought ways to capitalize on equipment commonality and interoperability in a deployed environment. The combination of the two WGs consolidated similar and redundant efforts, and further supported commonality and interoperability of expeditionary basing equipment. The now larger joint membership of the JSB for ESBE has been a great success, bringing together more Service members from the Army, Air Force, Navy, and Marines to solve the issues of tactical shelters and expeditionary basing. In 2020, the ESBE JSB updated its internal charter to define its operating procedures. The JSB chair, who is the director of the Defense Standardization Program Office, approved that change. The JSB for ESBE meets twice a year, bringing together DoD organizations and experts involved in the development and acquisition of expeditionary shelters and basing equipment and serving as an advisory body to the Service headquarters, Joint Staff, and the Office of Secretary of Defense for all matters relating to ESBE.

The JSB for ESBE has introduced significant advances in DoD's tactical shelter technology:

- Energy-efficient motion detectors for turning lights on and off and thermal insulation panels and pads with the added benefit of ballistic protection.
- LED lighting: an easy technology to adopt which results in an immediate reduction in power usage by 45 percent or more.
- Solar power photovoltaic arrays to convert energy from the sun into electrical power.

In April 2021, the JSB-ESBE website went live, offering access to the ESBE Catalog of approved standard shelters and basing equipment options for all Services. The catalog contains other information and points of contact for the JSB. For more information, please visit https://www.dsp.dla.mil/JSB-ESBE. The following figures depict examples of various shelters.

Modular Extendable Rigid Wall Shelter: *an expansion kit that attaches to the Army's one- or two-sided standardized shelters. The result: up to 1,150 square feet of unobstructed floor space.*

Lightweight Multipurpose Shelter (LMS): *a lightweight, transportable, electromagnetic interference-protected, high-mobility multipurpose wheeled vehicle–mounted tactical rigid wall shelter. LMS is the replacement for the S-250 communications-electronics shelter.*

Panelized shelter (future): *a reusable, transportable, simple, low-labor assembly, environmentally resilient, modular, and scalable shelter.*

Fuze and Initiation Systems

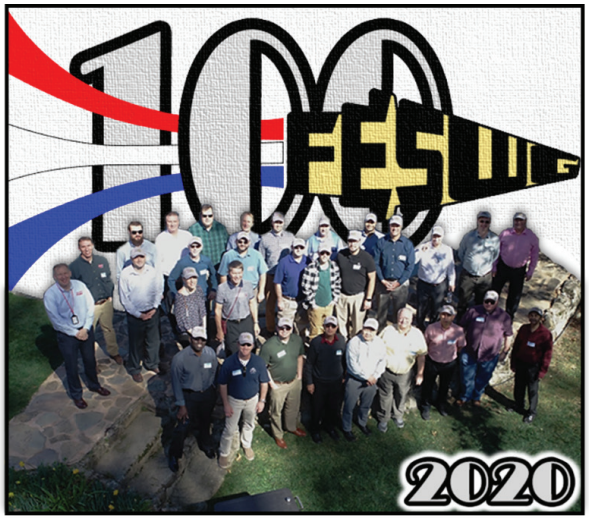
Charted in 2006, the JSB for Fuze and Initiation Systems maintains a DoD-wide working arrangement to prepare and review U.S. and NATO standards, guidelines, and handbooks for fuzes and other initiation systems effectively and promptly. Fuze and initiation systems are critical subsystems employed in almost every DoD munition and weapon system to ensure safe operation by the users and subsequent reliable engagement and defeat of the threat. Fuze and initiation systems vary widely in form factors with the associated technologies constantly advancing, pushing the state of the art to enable extended range, increased lethality, and precision engagement capabilities in alignment with current and future DoD priorities.

The DoD Fuze Engineering Standardization Working Group (FESWG) fulfills the JSB for Fuze and Initiation Systems, which serves as the continuing group to facilitate safety, interoperability, and standardization of fuzes and initiation systems, thus ensuring that standardization products account for changes in emerging technologies, DoD policy, DoD priority needs, and international interoperability. Generating, revising, and updating fuze and initiation systems–related standards is the responsibility of two independent standardization groups—the FESWG for U.S. military standards and handbooks and the NATO Council of National Armament Directors Ammunition Safety Group Action Committee 326 Subgroup A (AC326 SG/A) on Energetic Materials and Initiation Systems for NATO standards.

The DoD FESWG meets twice a year with fuze and initiation systems subject matter experts from across the technical community, including the DoD tri-Services, national laboratories, academia, and large and small business industry partners, to ensure that standardization products are well promoted and not developed in isolation. The FESWG meetings provide the forum to discuss matters of mutual importance collectively; FESWG's diverse membership has proven pivotal in exploring solutions for issues affecting current trends and emerging needs while harmonizing safety, reliability, and interoperability concerns.

One of the oldest and premier defense standardization committees chartered under the DSP, the FESWG achieved a significant milestone by holding its 100th FESWG meeting in February 2020 (one month prior to the start of the COVID-19 pandemic lockdown). To mark the occasion, the attendees of the 100th FESWG meeting reflected on significant achievements during the FESWG's 50 years of history, recognized the milestone contributions of the founding and past members, and developed a new logo expressing the aim for continued forward progress (Figure 10).

Figure 10. 100th DoD FESWG Meeting Participants Unveiling the New DoD FESWG Logo



Despite the adversity posed by the ongoing COVID-19 pandemic, the DoD FESWG demonstrated steadfast momentum and resiliency by powering through an abundance of virtual ad hoc and formal position meetings, completing the 101st through 103rd FESWG meetings and furthering the continuous delivery of products and services in support of standardization, as follows:

- Revised MIL-STD-1901A, "Munition Rocket and Missile Motor Ignition System Design, Safety Criteria for." MIL-STD-1901 is DoD's pillar document addressing ignition safety design requirements.
- Revised MIL-STD-1316F, "Fuze Design, Safety Criteria for." MIL-STD-1316F is DoD's pillar document addressing fuze safety design requirements.
- Revised Joint Ordnance Test Procedure (JOTP) 051, "Technical Manual for the Use of Logic Devices in Safety Features."
- Revised MIL-DTL-23659, "Initiator, Electric, General Design Specification for."
- Began drafting a new JOTP, "Requirements for Submunition Advanced Features to Meet DOD 2017 Cluster Munition Policy." This JOTP clarifies and guides the implementation of fuzing system features as specified in paragraph 5.b in the Technical Specifications of the 2017 DoD Cluster Munition Policy. The JOTP has been through government coordination via ASSIST and is now out with Fuze industry partners for comments and adjudication before publishing.

Due to its increasing importance to improving NATO forces' effectiveness over the whole spectrum of current and future operations, the demand for standardization activities among domestic and NATO communities is constantly growing and evolving. For several decades, the NATO AC326 SG/A group has been creating and maintaining fuze and initiation systems safety and test standards for NATO to improve ammunition safety and interoperability among participating nations. NATO AC326 SG/A meets twice a year with members from participating NATO nations and DoD tri-Service FESWG members to develop NATO fuzing and initiation systems safety and interoperability standards and related policies. DoD participation in the NATO AC326 SG/A is critical to account for U.S. interests and compatibility during the development of NATO-wide system requirements, acquisition strategies, and concepts of use.

Due to the challenges of the COVID-19 pandemic, AC326 SG/A members have been unable to meet in person, but they have achieved a great deal of work through virtual meetings, resulting in the following accomplishments:

- Submitted the revision to STANAG-4187 Ed. 5, "Fuzing Systems: Safety Design Requirements" for ratification.
- Revised STANAG-2818 Ed. 3, "Demolition Materiel, Design Principles."
- Revised STANAG-4368 Ed. 4, "Ignition Systems for Rocket and Guided Missile Motors. Safety Design Requirements."
- Continued to harmonize terminology in the standards for addition to the NATOTerm database.
- Agreed to commence a new STANAG for "Aircraft Countermeasure Devices."

The DSP acknowledges the Army Fuze Management Office for its central role of overseeing the JSB for Fuze and Initiation Systems. The Army Fuze Management Office has served as the chair for the DoD FESWG and NATO SG/A since the inception of the JSB for Fuze and Initiation Systems. The Army Fuze Management Office (organizationally assigned to the U.S. Army Combat Capabilities Development Command Armaments Center at Picatinny Arsenal, New Jersey) is the Army's lead for centralized management and oversight of the U.S. Army's weapons and munitions fuze programs, inclusive of fuze standardization.

Intermodal Equipment

The JSB for Intermodal Equipment (IE) is composed of the Joint Intermodal WG, designated and chartered as a JSB in 2006, and chaired by the Army, Navy, and Air Force, rotating every 2 years. The IE JSB's goals include drafting standards for intermodal equipment to reduce inventory, shorten logistics chains, and improve readiness; establishing liaisons with various standards bodies and industry; and providing the interface for commercial and military integration to optimize the DoD distribution process (e.g., to improve end-to-end distribution and enhance integration and interoperability).

The IE JSB developed MIL-STD-3037, "Inspection Criteria for International Organization for Standardization (ISO) Containers and Department of Defense Standard Family of ISO Shelters," which superseded MIL-HDBK-138B, "Guide to Container Inspection for Commercial and Military Intermodal Containers." This standard provides acquisition professionals with a document to cite in contracts and it offers inspection criteria and procedures for examining intermodal freight containers visually, enabling personnel to certify containers as serviceable and safe for loading and shipping. DoD owns over 300,000 ISO containers and each one must be inspected at 30-month intervals. DoD-controlled containers are furnished by carriers but available to DoD and under DoD control as part of transportation contracts managed by United States Transportation Command (USTRANSCOM) Military Surface Deployment and Distribution Command (SDDC) as agreed between each Service and USTRANSCOM SDDC.

MIL-STD-3037 also addresses the International Maritime Dangerous Goods (IMDG) Hazardous Class I (explosives) code as it pertains to the condition of ISO freight containers or, as stated in 49 CFR §176.172, a "closed cargo transport unit for Class 1 (explosive) materials." For DoD, an IMDG container is suitable for transport of explosives. While a non-IMDG container refers to a container not suitable for transporting explosives, for DoD, it is suitable for transporting other materials, including hazardous cargo.

This terminology differs from commercial reference to IMDG containers as suitable for all hazardous materials with non-IMDG containers categorized as not suitable for movement of hazardous materials. U.S. DoD IMDG containers, therefore, need to be in a superior condition as required per MIL-STD-3037 and 49 CFR §176.172.

The MIL-STD-3037 preparing activity is the U.S. Army Armaments Center and the lead standardization activity is the Army Sustainment Command, Packaging, Storage & Containerization Center. Since the publication of MIL-STD-3037, it has been cited as a reference document in 20 other standardization documents, including DoD commercial item descriptions, defense performance specifications, and ISO standards as well as DoD-adopted ASTM and ASME non-government standards.

As the IE JSB has fulfilled its standardization goals, the Joint Intermodal WG has elected not to renew its charter as a JSB. The Joint Intermodal WG continues to operate under its WG charter. Standards or documents coordinated through the IE JSB remain available and will be maintained in ASSIST in accordance with DoDM 4120.24.

Figure 11. Multimodal ISO Shipping Container

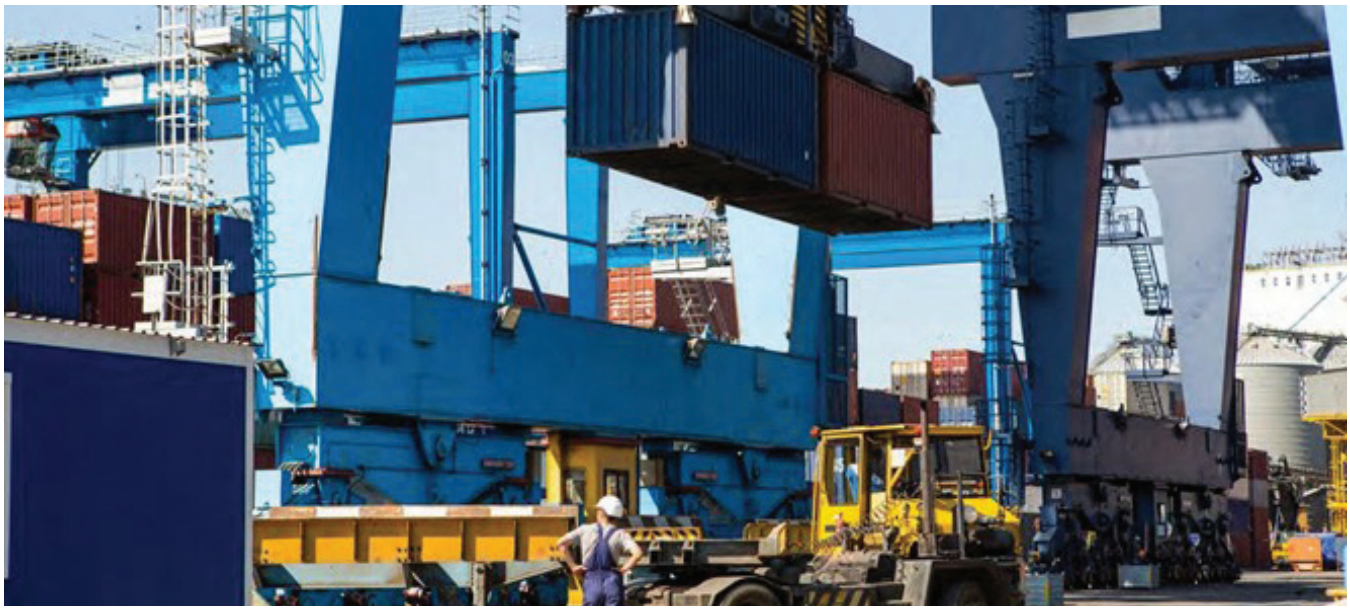


Figure 12. Results of Poorly Performed or Delayed Inspections

Mobile Electric Power Systems

Although the Joint Standardization Board (JSB) for Mobile Electric Power Systems (MEPS) wasn't chartered until June 8, 2006, the pressing need for a standard family of military generators dates to World War II. A July 18, 1948, memorandum, "Summary of Program for Development of Engine-Generator Equipment for the Army," documents:

> *"When the last war became imminent, suitable engine-generator equipment had not been developed. Therefore, in order to obtain the great quantities that were required, it became necessary to procure commercial equipment from many manufacturers, and the result was hundreds of hastily selected types with little interchangeability of parts. Since the end of the war, many types have been eliminated as surplus, and at this time the total in stock is approximately 250. The obvious lesson learned from this experience is the need for well-selected equipment of good quality in a minimum number of limited types with adequate sources of supply."*

When the same generator problems repeated in Vietnam due to the lack of standardization, OSD issued DoDD 4120.11, "Mobile Electric Power," on August 10, 1967, to create clear DoD policy to "establish, maintain, and supply for maximum use a DoD standard family of power generator sets." Further, DoDD 4120.11 established the Army Project Manager Mobile Electric Power (PM MEP) as "responsible for overall management of mobile electric power generating sources." Today, 10 sizes and less than 40 configurations exist for the DoD standard family of generators—and most sizes share over 50 percent of interchangeable spare parts.

DoDD 4120.11 has been continuously used since its inception, making PM MEP one of the oldest project management offices in the Army and DoD. On April 30, 2014, PM MEP reorganized as Army Project Manager Expeditionary Energy and Sustainment Systems (PM E2S2), but its core role remains consistent. DoDD 4120.11 has been revised six times since 1967, most recently on August 24, 2018, as DoDI 4120.11. Content and responsibilities have changed little during these revisions, other than adapting to reflect modern business practices, including updated waiver and appeal procedures in the rare cases that consider a non-standard generator.

Figure 13. Operational Employment of an Advanced Medium Mobile Power Sources Microgrid (MG-5106 120 kW System), July 2018, Operation Inherent Resolve, U.S. Central Command Area of Responsibility

The cover page of the 2018 DoDI 4120.11 update "recognizes the MEPS JSB as a forum to coordinate joint interoperability and standardization." Significantly, DoDI 4120.11 empowered all four Service MEPS offices to improve joint interoperability and standardization. The MEPS JSB meets twice a year in April and October. All Military Services and OSD (specifically the Office of the Deputy Assistant Secretary of Defense for Environment and Energy Resilience and DSPO) fully support our JSB meetings. These good relationships smooth important work and coordination between meetings.

Generator standardization remains a priority. Lessons learned from operations in Afghanistan and Iraq confirm that standardization must be continuously enforced or it will atrophy. Introduction of scores of commercial generators in theater produces the same frustrations for our modern soldiers as their great grandfathers faced in World War II—too many different engines and generators that lack spare parts, manuals, and trained mechanics. Figure 14 shows an example of the efforts that this JSB supports.

For FY22 and beyond, MEPS JSB's primary goal is to engage senior leaders in OSD and all Services to consider formal Joint Capabilities Integration and Development System (JCIDS) requirements for the next generation of tactical power architecture. While reliable tactical power and architecture undergirds all Services' modernization priorities, it often lacks formal JCIDS requirements and the commensurate investments to advance and improve power capabilities. To address this gap, the Assistant Secretary of Defense for Energy, Installations, and Environment, Operational Energy Innovation Office, has funded several key next-generation power architecture projects through the Operational Energy Capabilities Improvement Fund. A key goal for FY22–23 is to reschedule the tactical power technology demonstration at Fort Belvoir to highlight to senior leaders the next-generation tactical power and architecture for operational advantages for all tactical units across DoD.

Figure 14. Gray Eagle 1, John Wherry, far right and Rob Stilwell, second from right, offer instruction on the MG-5105 Microgrid ISO deployed OCONUS units, Task Force Gray Eagle, early 2019

Power Source Systems

The JSB for Power Source Systems was established under the DSP in 2006 from the Joint Battery Technical Working Group and now works under the title of the Power Sources Technical Working Group. This JSB achieves common, mutually satisfactory solutions to shared requirements and problems by authorizing, approving, and managing the development and maintenance of specifications and standards (in accordance with DoDM 4120.24) that support the development and manufacture of batteries and power source systems. It creates and improves joint processes and procedures to facilitate the design, development, and acquisition of identical and common power source systems (to the maximum extent possible) while maximizing interoperability. The JSB promotes standardization and conserves resources in support of joint Service and multinational operations. It is the Department-wide forum for coordination, planning, and decision-making and it interfaces for commercial industry and military integration. The charter of this board is under review for revision to update membership, the chair, and plans of actions and milestones.

Figure 15. BB-2590 and Conformal Wearable Battery

JSB representatives collaborate on several joint power source initiatives to advance and standardize technology implementation in batteries. The DLA Battery Network (BATTNET) R&D Program is working with the Army Combat Capabilities Development Command (CCDC); the Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance Center; DLA Small Business Innovation Programs; the Army Research Laboratory; and the Center for Research on Extreme Batteries to improve MIL-PRF-32383, covering soldier battery technologies. These batteries include the BB-2590 and Conformal Wearable Battery (Figure 15). Technology implementation includes high-performance silicon anodes and safe solid-state electrolytes.

Another joint effort between the DLA BATTNET R&D Program, Army ManTech, the Army CCDC Aviation and Missile Center, and Naval Air Systems Command (NAVAIR) focuses on expanding the prototyping and qualification of lithium-ion aviation batteries under MIL-PRF-29595 (Figure 16). This effort will introduce standardized higher energy, lower weight batteries to replace power sources across various Army and Navy air platforms.

Figure 16. Joint Efforts to Develop and Qualify Lithium-Ion Aviation Batteries

The DLA BATTNET R&D Program has a joint effort with the Army CCDC Ground Vehicle System Center (GVSC) to address DMSMS of wet and dry lead-acid batteries (MIL-B-11188 and ATPD-2206). The technology development involves bipolar lead-acid and standard absorbed glass-mat options. Bipolar lead-acid batteries increase performance and reduce weight and manufacturing costs (Figure 17).

With Naval Sea Systems Command (NAVSEA), NAVAIR, and the Air Force Research Laboratory, the DLA BATTNET R&D Program is addressing the critical DMSMS of nickel-cadmium batteries (MIL-PRF-81757 and others) by establishing alternative sourcing options and new lithium-ion replacements.

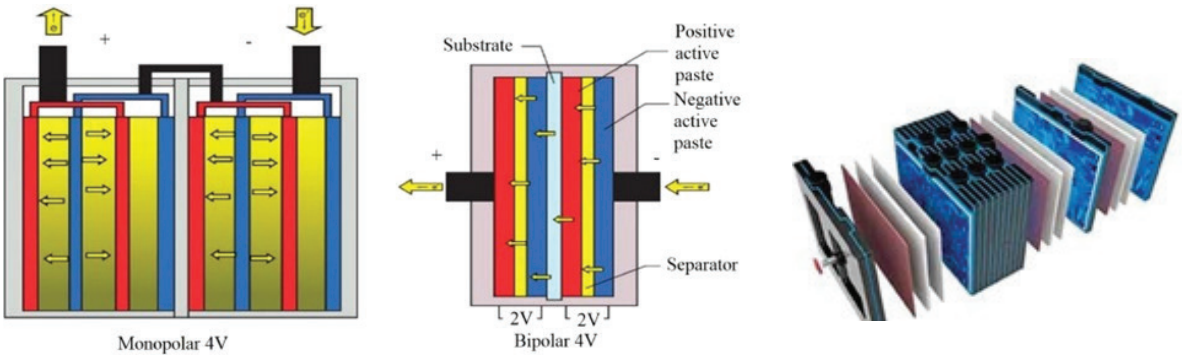
Vehicle platform demands for increased electrical power, longer silent operation, reduced weight, and improved battery durability have driven the development of the next generation, standardized, 24V lithium-ion 6T (Li6T) form-factor battery. Army GVSC has multiple projects ongoing to expand the applicability and commonality of the Li6T battery on multiple Army and U.S. Marine Corps platforms. Replacing lead-acid batteries with the standard Li6T has numerous benefits, including the following:

- Reduced weight (up to 1/4 the weight of lead-acid batteries)
- Reduced volume (2 for 1 replacement 24V versus 12V)
- Increased cycle life (3–5 times), reducing logistics and sustainment costs (reduced overall lifecycle cost)
- Extended silent-watch duration (1.5–3 times)
- Decreased recharge time from as many as 10 hours to about 1 hour
- Advanced battery management with state of charge and state of health indicators.

Among other projects, the Army GVSC is evaluating Li6T battery parallel strings at fringe test conditions, testing ballistics and nuclear hardening of battery management systems on type 2-B Li6T batteries. Many weapon systems are under review for using the Li6T, including the mobile electric hybrid power source system, rechargeable expeditionary power source system, hybrid Halvorsen, next generation powerhead for aircraft, Stryker, joint light tactical vehicle, Abrams, and Bradley.

OSD is including a new program directive in the FY23 President's Budget Request for advanced battery standardization related to the efforts underway based on recommendations from 100-day reviews under Executive Order 14017. The Federal Consortium on Advanced Batteries, which meets quarterly, is pursuing standardization initiatives and activities for power sources to improve standardization, supply chain resilience, and affordability for the power source needs of the warfighter.

Figure 17. Bipolar Lead-Acid Batteries Improve Performance and Reduce Weight



Tools and Capabilities

The DSP leverages several user-centric, web-enabled tools and technologies to assist DoD personnel and defense contractors with meeting the acquisition needs of DoD. The following is a list of the capabilities managed by DSPO:

- DSP website: http://www.dsp.dla.mil/
- ASSIST: https://assist.dla.mil
- Weapon System Impact Tool: https://wsit.xsb.com
- Pin Point: https://pinpoint.xsb.com
- Qualified Products Database: https://assist.dla.mil or http://qpldocs.dla.mil
- GIDEP: http://www.gidep.org
- Knowledge Sharing Portals
  - DMSMS: https://www.dau.edu/cop/dmsms
  - DSP: https://www.dau.edu/cop/dsp
  - Parts Management: https://www.dau.edu/cop/pmksp
- Social Media
  - Twitter: https://www.twitter.com/DoD_DSP
  - LinkedIn: https://www.linkedin.com/in/dspo
  - YouTube: https://www.youtube.com/@DOD-DSP

Ongoing Initiatives

DSPO is managing several information technology tools and social media platforms to modernize and enhance DSP tools, as follows:

- Automate workflows associated with the development, distribution, and maintenance of DSP documents, data, and information.
- Distribute standardization, qualified products, and parts information to DoD stakeholders who span the globe.
- Reduce the time, costs, and expenses associated with maintaining standards and standards-related data and information.
- Leverage extensible markup language (XML) to convert documents to interoperable, digital data and then write them to the user's desired output format.
- Provide standardization management activities with access to webinars and training material at any time.
- Maintain MOSA-related information in ASSIST.
- Continue federating across the DoD IT Systems Registry (DISR) and ASSIST.

Future

- Engage standardization management activities in the testing of enhancements to ASSIST modules and review of standardization documents converted to digital data and models.
- Compile skill-building bite-sized training videos in focused chunks through our knowledge sharing portals and social media platforms.

DSP WEBSITE

Purpose

The DSP website provides news and defense standardization information to the public and standardization stakeholders worldwide. DSPO staff members manage the DSP website, which the Defense Media Activity, DoD Public Web program hosts.

Status

The DoD Public Web provides a DoD enterprise-level cloud service for website hosting using a consolidated content management system and website analytic tools so we can optimize content based on users' interests. The DSP website functions on all modern browsers and is easy to use on a mobile device. This always-available website features contact forms to facilitate inquiries and feedback from the public to DSPO staff and DSP leadership. Although DSPO strives to maintain a quality website, in fiscal year 2023, we plan to review the design for any areas requiring improvement.

In 2022, DSPO launched a new webpage in honor of the DSP's 70th anniversary: https://www.dsp.dla.mil/DSPTurns70. It features historical information about program milestones, a medley of pictures of past events, congratulatory remarks from well-wishers, and a collection of educational videos and resources.

Website Analytics

1. **Visits.** From the time DSPO began tracking website analytics in 2017 until now, the DSP website received 433,709 visitors viewing content and approximately 3 million online interactions (hits) in all. A visit is one individual visitor who arrives at our website and browses (see Table 4).

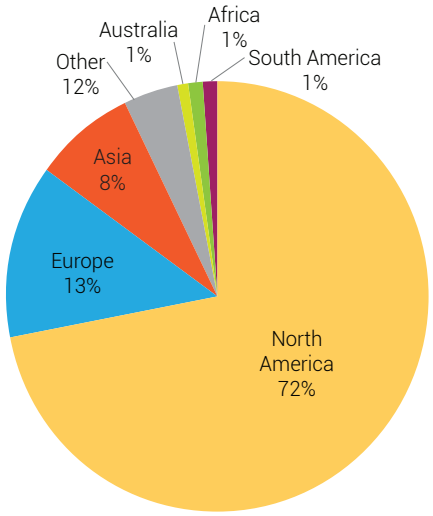
Table 4. DSP Website Traffic Overview (February 2017 to December 2021)

Year	*Visitors*	*Page Views*	*Hits*
2017-2018	82,133	254,444	524,167
2019-2020	117,812	412,865	789,880
2021-2022	233,764	474,697	1,660,000

Each page that a visitor views is tracked as a page view. On average, DSP website visitors viewed about two pages per visit.

2. **Global reach.** In 2021, the DSP website received visits from users from 185 countries. In addition to the United States, the top 20 visitors were from Canada, Germany, United Kingdom, France, Netherlands, Japan, India, Australia, South Korea, Turkey, Singapore, Taiwan, Italy, Russia, Iraq, Brazil, Spain, Poland, Saudi Arabia, and China. As depicted in Figure 18, North American user access DSP website content the most; however, the website is used by individuals from across the continents.

Figure 18. Website Usage Based on Visitors' Continental Location



3. **Top keywords.** The following keywords are used the most to search for or arrive at the DSP website: DISR, military standards library, EIA-649, and testing. The DSP web team will update metatags and keywords to make them more relevant to the types of files and pages accessed the most and improve web traffic.

4. **Top content.** The following list details the top content accessed over the past year:

   - Top pages:
     - Specs and Standards
     - COVID-19 Related Standards
     - MOSA
     - DIDs
     - GIDEP
     - List of DISR Documents
   - Top downloads:
     - *DSP Journal* article entitled "EIA-649-1 Configuration Management Requirements for Defense Contracts," by Mr. Larry Gurule and Mr. Daniel Christensen, January/March 2015
     - 2020 DSP Conference proceeding entitled "Open System Standards and Agile Acquisitions," Mr. Mark Rothgeb

- 2018 DSP Workshop proceedings:
  - "Configuration Management Standards," Mr. Daniel K. Christensen
  - "MIL-STD-1472 Revision "H" – Significant Updates and Challenges," Dr. Daniel Wallace
  - "The NATO Defense Planning Process (NDPP): An Overview," Mr. Dieter Schmaglowski

5. **Hits.** A hit is a request for one file from a web server. A hit also refers to the number of files downloaded on a website, which can include photos and graphics. A hit counter measures and displays the number of times visitors have viewed a single page on a website. One visitor can generate dozens or even hundreds of hits during a single visit. The DSP website received 1,660,000 hits from 2021 to 2022, which is a significant increase from years past.

ASSIST

Purpose

The ASSIST web-based application integrates with internal and external systems, such as QPD, the NATO Standardization Document Database, and WSIT. As a comprehensive information and workflow management system, ASSIST supports the development, coordination, distribution, and management of the following.

- Defense specifications and standards
- Federal specifications and standards
- Defense handbooks
- Commercial item descriptions
- Data item descriptions
- Qualified products lists
- Qualified manufacturers lists
- International standardization agreements

In addition to providing DoD personnel and defense contractors with access to standardization documents, ASSIST furnishes an environment for personnel from 175 active and 152 inactive, for a combined total of 327 Standardization Management Activities (SMAs) to draft, develop, and maintain DSP documents. SMAs in DoD, federal agencies, and industry use ASSIST to manage DSP documents prepared in accordance with DoD Manual 4120.24, "Defense Standardization Program Procedures." Registered users may search for documents, find standardization points of contact, generate numerous standard or custom reports, and establish profiles to receive customized email alerts when a preparing activity undertakes a project to develop or modify a document, posts a draft for coordination, or publishes a new or revised document.

ASSIST is hosted in the cloud in three distinct, isolated enclaves (networks):

1. Public unrestricted (no user account needed):
   - ASSIST Quick Search—http://quicksearch.dla.mil
2. Public restricted:
   - ASSIST and QPD—https://assist.dla.mil
3. Private:
   - ASSIST Common Access Card (CAC)—https://assistca.dla.mil
   - ASSIST Maintenance.

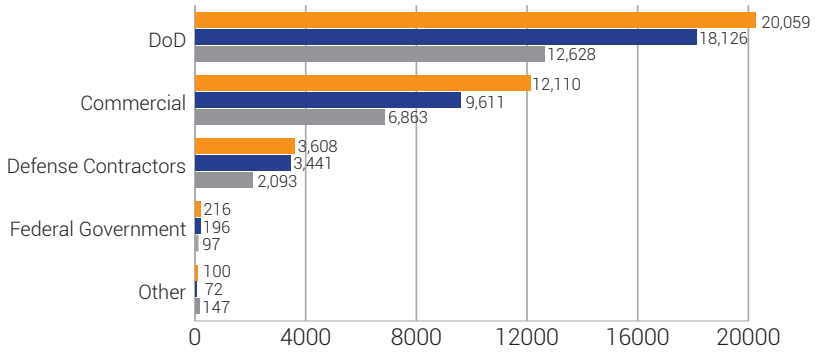
These enclaves segregate the level of access and furnish added security for DSP documents with restricted distribution.

System Statistics

The following overview of ASSIST user and document statistics provides a high-level characterization of the variety of users and uses that ASSIST supports:

1. **User account breakdown.**
   - February 2022's 148,878 registered ASSIST users was a 13,960-user increase compared to the 134,918 users in 2020. Registered ASSIST users are subdivided into four categories based on their employment: DoD (civilian and military personnel), federal government agencies personnel, commercial users (public), and defense contractors (commercial users granted access to additional modules and privileges for contractual requirements).
   - Of those registered, only 19,496 are active (logged in) users, suggesting that most users access DSP documents through ASSIST Quick Search, which offers public documents without user log in.
   - The number of commercial and defense contractor users increased in ASSIST while the number of DoD users decreased. Figure 19 depicts ASSIST users by account type.

Figure 19. Active ASSIST Users by Account Type

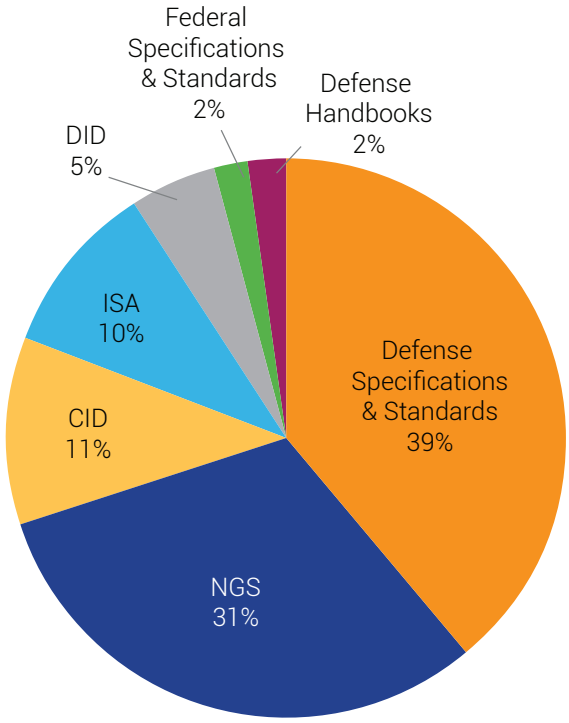


Year	2018	2020	2022
DoD	12,628	18,126	20,059
Commercial	6,863	9,611	12,115
Defense Contractors	2,093	3,441	3,609
Other	147	72	100
Federal Government	97	196	216
Totals	**23,846**	**33,465**	**38,121**

2. **Web server analytics.** ASSIST has approximately 12,787,551 hits and Quick Search has 95,176,869 hits for a total of 107,964,420 hits. ASSIST has 394,407 visitors and Quick Search has 942,973 visitors. The average number of visitors per day is 1,080 for ASSIST and 2,583 for Quick Search. The highest number of hits and visits occur on Quick Search versus other enclaves because of its flexibility, enabling users to view unclassified information and download documents without having to log in to the password-protected side of ASSIST, as required on the private restricted and restricted enclaves. However, viewer access is limited to Distribution A (approved for public release) standardization documents.

3. **Documents in ASSIST.** ASSIST houses 114,088 standardization documents, with 28,559 active documents. As shown in Figure 20, most of the active DSP documents are military specifications and standards, and adopted NGSs, commonly referred to as "consensus-based standards, commercial, industry or civil standards." The number and status of documents archived in ASSIST can change daily. As of March 2020, 1,289 standardization projects were in process to revise existing, develop new, or cancel standardization documents.

Figure 20. Active DSP Documents in ASSIST



4. **Most frequently downloaded documents.** As of the first quarter of 2022, MIL-STD-810H, "Environmental Engineering Considerations and Laboratory Tests," remained the top downloaded standardization document. MIL-STD-810 was downloaded 6,124 times from ASSIST Quick Search. Table 5 contains a comprehensive list of the top 10 downloaded documents and subject matter of interest to standardization stakeholders.

Table 5. Top 10 Downloaded Quick Search Active DSP Documents

Document ID	*Title*	*Subject Matter (Federal Supply Class/Standardization Area)*
MIL-STD-810	Environmental Engineering Considerations and Laboratory Tests	Environmental Testing (ENVR)
MIL-DTL-5541F NOT 1	Chemical Conversion Coatings on Aluminum Alloys	Metal Finishes and Finishing Processes and Procedures (MFFP)
MIL-A-8625F(1) NOT 1	Anodic Coatings for Aluminum and Aluminum Alloys	Metal Finishes and Finishing Processes and Procedures (MFFP)
MIL-STD-130N(1) NOT 1	Identification Marking of U.S. Military Property	Systems Engineering Standards and Specifications (SESS)
MIL-DTL-38999M(2) SUP 1	Connectors, Electrical, Circular, Miniature, High Density, Quick Disconnect (Bayonet, Threaded, or Breech Coupling), Environment Resistant with Crimp Removable Contacts Backshell or Hermetically Sealed with Fixed, Solderable Contacts	Electrical Connectors (5935)
DI-MGMT-81861C	Integrated Program Management Data and Analysis Report (IPMDAR)	Management
MIL-STD-129R(2)	Military Marking for Shipment and Storage	Packing (PACK)
MIL-STD-2073-1E(4)	Standard Practice for Military Packaging	Packing (PACK)
MIL-STD-461G	Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment	Electromagnetic Compatibility
DI-MISC-80508B	Technical Report—Study/Services	Miscellaneous (MISC)

- In 2022, there are two new documents in the top downloaded documents list: DI-MGMT-81861C, "Integrated Program Management Data and Analysis Report (IPMDAR)," and MIL-STD-461G, "Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment."

5. **Data feeds to external interfaces.** The extensible markup language (XML) module contains, in XML format, publicly releasable information and document details pertaining to DSP documents, for example, military specifications and military standards. DSPO staff approve users' access to standards information in XML format. Users with such access download standards metadata and DoD standards in XML format to further process the data—for example, to add DoD standards to their own standards database systems or build bibliographies.

   Some federal government, non-government standards bodies, and industry partners have been granted access to the XML module data feeds to update their own systems—for example, IHS Markit includes data, information, and documents from ASSIST in its index of specifications and standards for its users but directs them to ASSIST as the authoritative source. If not for ASSIST, the following approved users of the XML module would not have a repository of DSP documents in their databases:

   - DoD users: DLA, the Army, NASA, and the Navy
   - NGS bodies: ANSI, ASTM, and DIN
   - Industry: BidLink, Boeing, Document Center Inc., Edaptive Technologies, IHS Markit, Marvin Engineering Co., Northrop Grumman, Techstreet, SBC Global, and XSB.

Status

Over the past two years, ASSIST has undergone several system enhancements to implement federal government-wide policy on the reduction of data centers and revisions to DoD policy on cybersecurity and controlled unclassified information (CUI). In addition, the ASSIST Advisory Team continues to work on pilots to depict documents as digital data, modernize ASSIST system software, and deploy functionality to improve user experiences. The following list summarizes these activities.

- Implementation of federal government and DoD cybersecurity policies
  - **Controlled unclassified information:** The DSPO and ASSIST Advisory Team developed an implementation plan to incorporate DoDI 5200.48, "Controlled Unclassified Information (CUI)," which canceled DoDM 5200.01, Volume 4, "DoD Information Security Program: Controlled Unclassified Information." DoDI 5200.48 standardizes the way DoD manages unclassified information requiring protection by law, regulation, or government-wide policy. ASSIST business rules for management of standardization documents marked Distribution Statement B–F were updated to incorporate DoDI 5200.48. The application's ASSIST Search module was modified to allow users to search for documents using Distribution Statement as a criterion; the document details page indicates whether a document contains CUI; DSPO drafted interim guidance on formatting DSP documents; and custom ad hoc reports were created to help the ASSIST Advisory Team identify the number of documents containing CUI.
  - **Cybersecurity hygiene:** ASSIST underwent a cybersecurity hygiene analysis to comply with DoD's cybersecurity hygiene report initiative to rate an application's score for managing cybersecurity risks. ASSIST earned a score of "A," through security-related efforts, patches, and artifacts designed to mitigate and remove system vulnerabilities and threats. Members of the ASSIST Advisory team, particularly the ASSIST Technical Service Provider—Defense Logistics Agency, Information Operations (J6)—continues to assess ASSIST with rigor to ensure cyber hygiene practices and DoD CIO policies are implemented.
- Piloting XML conversion software tools
  - **Conversion of documents to digital data:** The DSPO's evaluation of software to convert digital documents to XML is entering its third year of testing. The pilot is designed to explore a customized version of the XML conversion software tool by testing its ability to convert a sampling of MS Word versions of documents. The goal of the pilot is to help the DSP develop an XML document structure and conversion process that will make digital documents machine-readable and a mechanism for describing information in standards as data. XML versions of documents improves our access to information contained within documents. It also helps to establish links between content within a document to other information sources, enhances digital searches on the content in a document, and supports faster, better decision making on the health and update of documents.
  - **Engagement with stakeholders.** The DSPO is also engaging with non-government standards bodies and other nations as they pursue similar goals.
- Enhancements to ASSIST
  - **Federate ASSIST and DISA's DoD Information Technology Registry (DISR):** This ASSIST and DISR federation is being designed to enable users to access up-to-date information housed in both systems. In 2020, the DSPO modified ASSIST's document details page indicating whether a document is mandated by the DISR and created a link to the report of documents in the DISR. Over the next two years, users will be able to establish email alerts for documents mandated by DISR, exchange information between both systems, and enhance the interoperability between these two tools.
  - **Electronic Document Submission (EDS):** EDS has been enhanced for the ASSIST and Maintenance applications for inclusion of required letters of authorization when submitting

new military standards or new performance or detail specifications requiring qualification. The EDS module on ASSIST CAC has been modified to restrict action types when submitting documents with no associated project record.

  - **Document Details:** The Document Details field has been modified to find documents mandated by SD-21 as well as populated data structures.

- **Jira—issue tracking tool:** The ASSIST team needed a tool to submit and track system change requests or reported issues. The Jira issue tracking software tool has been customized to meet the needs of the ASSIST team in the following ways: enables users to review current and historical issues through the search and retrieval function, allows the ASSIST team to prioritize tickets, generates reports on issue progress for managers to view the quantity of issues and time frame for completion, and permits uploads of files to the ticket.
- **Modernization of ASSIST:** ASSIST is being modernized using agile methods. We are documenting requirements for all ASSIST applications, including ASSIST Maintenance and ASSIST CAC. Some of our overarching requirements for a modernized ASSIST include the following: offer a user-friendly application, e.g., system options, language, navigation intuitive to users; allow per user customizations; enable users to save documents, searches, history, topics, organizations, and projects easily; and provide a better workflow for users.

Future

ASSIST is a legacy system with significant financial and technical challenges to overcome, including automated process design and personnel to operate and maintain the modernized system. ASSIST functionality has evolved to meet the needs of the DSP and SMAs, but each new change made the overhead of the system more complex. DSPO is working on initiatives to deploy system enhancements to make SMAs' jobs easier, leverage technological advancements, ensure system safety and security, and develop a guide as a user's manual.

Challenges

Over the next five years, DSPO will execute a strategy to realize the following modernization goals:

- Modernizing for the next generation of ASSIST and deploying documents as digital data.
- Obtaining the resources required for the management, hosting, and contract actions to sustain and modernize ASSIST.
- Aligning modernization outputs with revisions to DSP policies and procedures.
- Keeping pace with changes in best industry practices and technology.
- Ensuring that ASSIST capabilities and functionality align with Office of the Under Secretary of Defense for Research and Engineering and Office of the Under Secretary of Defense for Acquisition & Sustainment standardization initiatives and objectives.
- Adapting ASSIST to address user needs quickly.

To combat these challenges, DSPO will work with the ASSIST Advisory Team to align the revision to DoD Manual 4120.24 with ASSIST modernization efforts, and engage with a representative sample of ASSIST users to gather user stories and to perform user and usability testing.

WEAPON SYSTEM IMPACT TOOL

Purpose

The Weapon System Impact Tool (WSIT) provides access to information about weapon systems and specifications associated with National Stock Numbers (NSNs). The tool helps to group parts influenced by a specification and evaluate the effect of specification changes on weapon systems.

This application shows the relationship between specifications and standards in ASSIST and the weapon systems that use parts (specifically, NSNs) derived from those specifications and standards. WSIT uses weapon system designator codes created by DLA and, through artificial intelligence, gathers information about weapon systems and their specifications from multiple data sources, such as cataloging data and procurement history files. The WSIT query feature enables users to explore the relationships between weapon systems and specifications and standards ("documents"). Table 6 shows a snapshot of information that users can query from WSIT. For example, the F-35 Joint Strike Fighter cites 2,130 requirements documents and the C-130J Hercules cites 4,237.

Table 6. Number of Documents Cited in Weapon System Acquisitions

Weapon System	*Documents Cited*
Missile, Tomahawk	292
F-35 Joint Strike Fighter	2,130
Tank, Abrams M-1	3,854
C-130J Hercules	4,237
Helicopter, Black Hawk UH-60A	4,948
Virginia Class Submarine, SSN-774	5,071
Littoral Combat Ship	5,613
Aircraft, Hornet F/A-18	9,137

The data and information from WSIT enable users to assess the effect on a weapon system from a change or cancellation of a document, or if a manufacturer no longer provides a part that supports the weapon system. Table 7 illustrates how WSIT data reveals that a modification to MIL-DTL-18866 could affect 743 weapon systems.

Table 7. Number of Weapon Systems Using DSP Documents

Document	*Subject Matter*	*Number of Weapon Systems*
MIL-DTL-18866	Fittings, Hydraulic Tube, Flared...	743
SAE-AMS-7276	High Temperature Low Compression FKM Rubber Fluid Sealing Ring	702
MIL-DTL-38999	Quick Disconnect Electrical Connector, Environment Resistant	1,075

When a part conforming to a specification fails its testing requirements, WSIT finds other items on the weapon system tested using that specification as well as other weapon systems that could be affected by the failed part. WSIT generates a list of weapon systems referenced for a specified document (e.g., a defense specification, federal specification, commercial item description, or non-government standard). Also, it provides a list of the NSNs and controlling part numbers associated with specified documents.

All this information and user training offerings can be found at the WSIT.

Status

We are currently looking at new ways in order to better extract data from our data sources. We are researching new ways to better extract data from our sources. Also, we are seeking to fund additional projects against the system to increase its robustness for helping standardization management, engineering, and logistics communities in meeting their defense missions.

Future

With changes in access via CAC from email certificates to Personal Identity Verification (PIV) certificates, WSIT can no longer verify the Service or agency of a user. A future enhancement will create an area to declare Service or agency affiliation during registration, with yearly validation to ensure accurate accounting of Service and agency user information in WSIT and Pin Point. Additionally, we will be looking at new ways in order to better extract data from our data sources. This will make the system more robust in helping standardization management, engineering, and logistics communities help meet their defense missions.

Challenges

The new PIV certificates have presented a challenge in the effort required from users to update their information. The future enhancements will help face this challenge and increase the efficiency of the system.

PIN POINT

Purpose

Pin Point, a government-only query engine for researching parts in the federal supply chain, provides users with rich technical and logistics information about National Stock Numbers (NSNs) and tens of millions commercial parts.

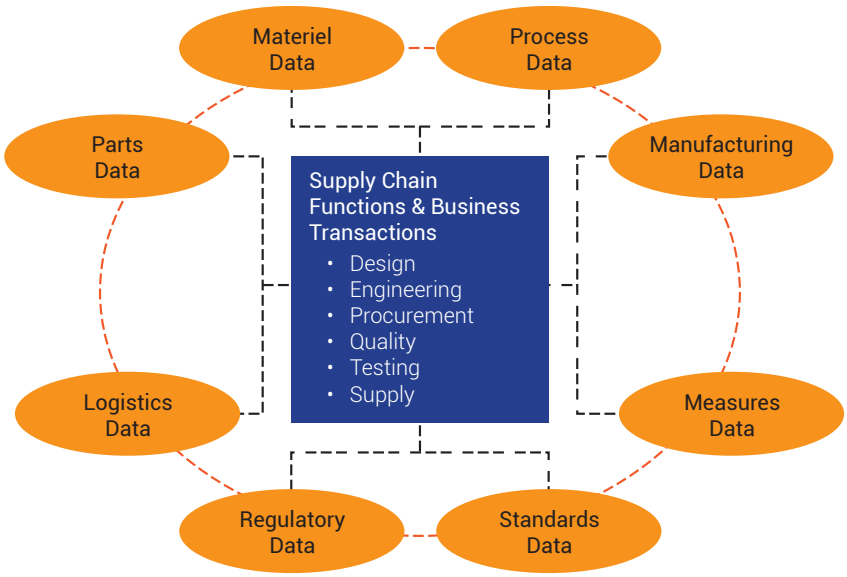
MIL-STD-3018, "Parts Management," laid the groundwork for the development of a common parts library between the government and its major equipment manufacturers. The standard encourages engineers to select component parts that the government has already approved with assigned NSNs or parts readily available from the defense supply chain. Selecting these preferred parts helps the government avoid the proliferation of functionally similar parts and discourages specialized components with little use beyond a single weapon system. The major obstacle has been the lack of a single source aggregating and standardizing government and supplier data so a user can search and compare component characteristics across all data sources.

Pin Point addresses this issue by enhancing parts data from the Federal Logistics Information System (FLIS), a DLA system that catalogs information about parts and items used by DoD. Pin Point enhances information retrieved from FLIS with technical, management, and reference data about NSNs and commercial parts cited on government contracts aggregated from other sources (e.g., DoD databases, government electronic part portals, and commercial and manufacturer websites).

Pin Point uses advanced artificial intelligence technology to extract and infer part properties from narrative text, specifications, part numbers, and product descriptions. It then provides parametric searching on physical and logistic part properties. Users with a valid CAC can log on to Pin Point at https://pinpoint.xsb.com.

Figure 21 diagrams Pin Point's supply chain functions and business transactions.

Figure 21. Pin Point Supply Chain Functions and Business Transactions



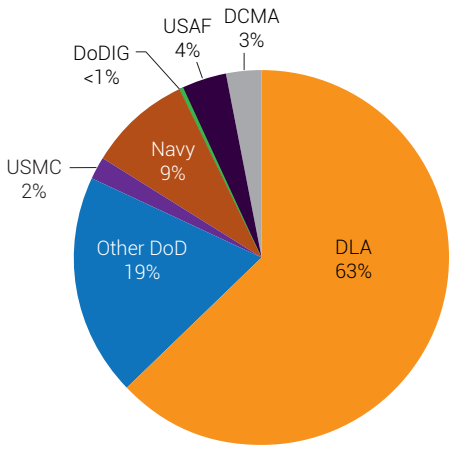
Status

System Statistics

DSPO collects usage data to evaluate the benefit of Pin Point for DoD in researching parts data. Pin Point usage data is tracked in multiple ways—the email address from registration and the domain name assigned to the DoD component—as though users enter from a single site rather than more than one organization. For example, visitors who enter the system from the "mail.mil" domain are classified as "Other DoD," irrespective of where the visitor works in DoD (this is most prevalent with Army as the army.mil domain was converted to mail.mil). Pin Point also tracks visitors accessing the system from a Military Department and Defense Agency by a unique domain name. For example, users visiting the system from "navy.mil" are listed as Navy visitors.

Figure 22 diagrams Pin Point's supply chain functions and business transactions.

Figure 22. Pin Point Visitors by DoD Component



Note: DoDIG = Department of Defense, Office of the Inspector General; USAF = United States Air Force.

Future

A contractual initiative is underway to modernize and improve Pin Point functionality. The significant enhancements include upgrading system software and processes to address new security protocols; incorporating requested features, such as adding contract numbers related to part numbers and contract awards, and enabling users to save queries and search return results; and training and educating current and future users on how to use the tool effectively.

Challenges

Future investment in Pin Point is a great way to save time and resources on technology that DoD has already acquired but seeks to make more efficient. In fiscal year 2018, DSPO invested in infrastructure and some usability enhancements—with input from the user community—to address core issues and make the system more user friendly, but these actions are not enough to sustain this system. In addition, changes to access via PIV certificates vice email certificates no longer enable visibility of which Service or agency users come from. A future enhancement could capture that information at signup or during a yearly validation process. While the adoption and use of Pin Point and WSIT applications continue to rise, the lack of dedicated funding has kept these systems technologically dormant. DSPO is tracking usage data and will evaluate the best methods to apportion funding requests and requirements of DoD components significant to system users.

DSP Training

TRAINING

Scope and Purpose

DSP sponsors a wide array of training activities on DoD policies and procedures for the development, management, and implementation of standardization documents, parts management, DSP tools, and DSPO programs. This training offers DoD personnel standardization knowledge to apply to their roles immediately. Our comprehensive training endeavors to blend instructor-led virtual and in-person training with asynchronous online learning, credentials, webcasts, conferences, and knowledge sharing portals hosted through Defense Acquisition University (DAU).

While the training targets DoD personnel, non-DoD federal agencies, members of the defense industry (DoD contractors), and international students (foreign national, foreign military sales, and NATO) can attend depending on space availability.

Training Opportunities

The training program offers a mixture of in-person instructor-led workshops and courses, online training courses, credentials, and asynchronous and synchronous webinars cosponsored by DAU.

Tables 8 through 10 list training offered through DAU and cosponsored by DSPO. The DAU catalog (http://icatalog.dau.edu) contains additional information on the defense standardization workshop (DSW), continuous learning engineering and technology (CLE), and life cycle logistics (LOG) online training modules, including syllabi and course objectives.

Table 8. DAU Courses, Credentials, and Workshops

Course	*Title*	*Delivery*
CLCL 014	Parts & Material Life Cycle Management Credential https://icatalog.dau.edu/onlinecatalog/CredentialConceptCard.aspx?crs_id=26	Online
WSE 023	Defense Standardization Workshop (course offered onsite on a fee-for-service basis or virtually for no cost to the customer) https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=12204	Classroom/Virtual Classroom
CLE 028	Market Research for Engineering and Technical Personnel https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=67	Online
CLE 064	Standardization in the Acquisition Life Cycle https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=1734	Online
CLE 065	Standardization Documents https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=1785	Online
LOG 0580	Standards, Specifications & Technical Publications https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=12620	Online
LOG 0630	Introduction to Parts Management https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=12514	Online
LOG 0640	DMSMS: What the Program Manager Needs to Do and Why https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=12513	Online
LOG 0650	DMSMS Fundamentals https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=12509	Online
LOG 0660	DMSMS Executive Overview https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=12498	Online
LOG 0670	DMSMS Basic Component Research https://icatalog.dau.edu/onlinecatalog/courses.aspx?crs_id=12508	Online

Table 9. Other Offerings

Title	*Source*	*Medium*
ASSIST Demonstrations	https://assist.dla.mil (ASSIST CAC, Training Module)	Video recordings
DMSMS Conference Proceedings	http://www.dmsmsmeeting.com	Briefings
DSP Policy and Procedures	https://assist.dla.mil (ASSIST CAC, Training Module)	Webinars and video recordings
DSP Workshop Proceedings	https://www.dsp.dla.mil/Get-Involved/Training-Events	Briefings and video recordings
GIDEP Clinics and Training	http://www.gidep.org	Classroom-style clinics
Additional Resource	https://www.youtube.com/@DOD-DSP/playlists	Video recordings

Table 10. Knowledge Sharing Portals

Title	*Source*	*Medium*
DMSMS Knowledge Sharing Portal (DKSP)	https://www.dau.edu/cop/dmsms	Online
Parts Management Knowledge Sharing Portal (PMKSP)	https://www.dau.edu/cop/pmksp	Online
Defense Standardization Knowledge Sharing Portal (DS KSP)	https://www.dau.edu/cop/dsp	Online

For outreach, DSPO sponsors conferences, workshops, and events to disseminate policy, guidance, and educational modules for programs and tools under its purview. More than 800 DoD civilian and military personnel, defense contractors, federal government personnel, and industry partners participated in DMSMS conferences, international standardization workshops, and the biannual DSP Conference.

Although DSPO deployed several webinars, enabling students to manage their learning pace, participate in real-time, or watch the video recording later, no tools capture participation metrics for these webinars.

Future

The integrated approach of DSPO and DAU collaboratively developing and delivering online and in-person training via instructors, defense acquisition credentials, workshops, webcasts, and online knowledge sharing portals continues to provide the visibility and flexibility to disseminate standardization knowledge throughout DoD. This approach includes working with DAU and other partners for rapid knowledge sharing and delivery of relevant training to those who need to apply it to programs, projects, and tasks. In the future, we plan to offer bite-size video content to address educational needs in real time, pursue a standardization credential, and continue enhancing currents efforts to help DoD build a standards-savvy workforce.

This approach helps DSP provide real-time information and resources to defense acquisition workforce functional areas requiring standards and standardization training.

Challenges

In addition to the continuous learning modules, DSPO sponsors a standardization workshop WSE 023, DSW, with individual and group practical exercises, emphasizing the application of standardization tools, policies, and procedures, as described in CLE 028, CLE 064, and CLE 065. This workshop—formally known as SYS 120—was offered as an elective course through DAU. Although the course was retired from the DAU catalog in 2016, it is offered through DAU's Mission Assistance Workshop, a fee-for-service training delivered on demand by DAU faculty at the customer's location, awarding 14 continuous learning points to participants. DSW is also offered in a virtual environment (DAU MS Teams for Educations) on a no-fee basis. Since SYS 120 was not mandated as a core or elective class through a certification program, defense acquisition curriculum managers hesitate to commit resources to sponsoring the workshop due to tight budgets and existing certification needs.

If DSW is classified as an elective or core requirement in a program leading to certification or a credential, the workshop would have greater demand and could be included on the DAU catalog again. CLE 028 proves that, if a course is part of a certification program (elective or core), demand is much greater.

DAU Course, Credential, and Workshop Descriptions

CLCL 014, Parts & Material Life Cycle Management Credential: The Parts & Material Life Cycle Management Credential brings together 13 online training courses and supporting resources for a comprehensive overview of DoD parts and material life cycle management. The credential provides learners with an overarching understanding of the life cycle logistician's responsibilities for planning, developing, and implementing all aspects of Parts and Material Life Cycle Management, including DMSMS, Root Cause Analysis, Supportability Analysis, Cybersecurity, and Additive Manufacturing. A credential scenario fills the gaps between the competencies aligned to sustainment engineering and the courses. A summative examination must be completed to demonstrate learning. Target audience: defense acquisition workforce personnel from all functional areas, including life cycle logistics (LCL), engineering (ENG) and technical management, business and financial management, cost estimating, contracting, test and evaluation, and program management (PM).

WSE 023, Defense Standardization Workshop: This workshop offers individual and group practical exercises, emphasizing the application of standardization tools, policies, and procedures. Recommended prerequisites: CLE 028, CLE 064, and CLE 065. Target audience: professionals who develop, review, coordinate, and manage DoD specifications and standards or who otherwise support DoD in making standardization decisions.

CLE 028, Market Research for Engineering and Technical Personnel: Market Research for Engineering and Technical Personnel describes market research from the perspective of technical personnel. This module explains the practical value and discusses the government mandate for market research, addressing market research team membership, sources for obtaining market data, and techniques for technical evaluation and documentation of market information. Target audience: acquisition personnel in the program management, engineering, lifecycle logistics, test and evaluation, production, quality, manufacturing, or related career fields who develop acquisition requirements, evaluate tradeoffs with users, or examine the commerciality of suppliers or services.

CLE 064, Standardization in the Acquisition Life Cycle: This online training explores the role of effective standardization in defense acquisition and its contribution to program success. The course introduces standardization and its application across phases of the acquisition life cycle, discusses standardization

policy in DoD, and addresses managing and using standardization documents. Target audience: professionals involved in the development or management of standardization documents.

CLE 065, Standardization Documents: This online training offers students knowledge of the standardization documents managed by DoD. This module covers technical details about the specific purpose of each type of document, how to distinguish each type of document based on the document identifier, general rules for stating requirements in standardization documents, the policy regarding the adoption and use of NGSs, and format and content requirements for CIDs, Defense Specifications, Defense Standards, and Defense Handbooks. This course also introduces Federal Standards, Federal Specifications, and Guide Specifications.

Effective February 2022, all previous DAU CLL courses have been replaced by the following Life Cycle Logistics (LOG) courses.

LOG 0580, Standards, Specifications & Technical Publications: This course provides a comprehensive knowledge and understanding of standards, specifications, and technical publications based on DoD policy, guidance, processes, procedures, and best business practices from across the Services and industry throughout the product life cycle. Target audience: Defense Acquisition Workforce members, including the LCL, ENG, and PM career fields.

LOG 0630, Introduction to Parts Management: This course describes the parts management process and provides the skills and knowledge to implement a coherent parts management plan. The training covers the parts management plan, roles and responsibilities, policy and contractual implementation requirements, costs and benefits of a parts management plan, and tools to aid in parts management. Target audience: those supporting weapons system development and support, specifically the LCL, ENG, and PM career fields.

LOG 0640, Diminishing Manufacturing Sources and Material Shortages: What the Program Manager Needs to Do and Why: This course offers program managers information about DMSMS and how to mitigate its effect on programs, the DoD supply chain, and the industrial base. Target audience: Department of Defense program managers and product support managers involved in acquisition and sustainment.

LOG 0650, DMSMS Fundamentals: This course describes why DMSMS management is important, how it relates to the Defense Acquisition System, and the processes of DMSMS management. The module discusses the five-step process of prepare, identify, assess, analyze, and implement for DMSMS actions. The training moves beyond a basic familiarity with the topic, introducing the skills and knowledge necessary to establish and manage DMSMS actions for a program office. Target audience: LCLs, PMs, systems engineers, and other defense acquisition and sustainment workforce members involved in DMSMS, obsolescence, parts, and material management activities.

LOG 0660, DMSMS Executive Overview: This course provides concise DMSMS information for the Executive or Program Manager requiring an understanding of how DMSMS influences operations and processes, including reliability, maintainability, supply chain efficiency, funding, policy, procedure, and staffing. This training offers the executive a perspective on the management and supervisory actions necessary to enable effective DMSMS mitigation, thereby enhancing mission readiness, efficiency, and cost effectiveness. This one-hour course empowers the manager through an understanding of the challenges and options to properly establish the optimum proactive DMSMS team.

LOG 0670, DMSMS Basic Component Research: This course covers DMSMS basic information and processes. The training details specific component research best practices and in-depth processes, including how to adapt the concepts and processes to an individual DoD program. Students can review DMSMS program scenarios, evaluate a program's requirements and level of proactivity, and make DMSMS management decisions, incorporating lessons learned through real-world examples. Target audience: those supporting aging weapon systems, especially those in the LCL, ENG and PM career fields.

Description of Other DSPO Training and Education Offerings

GIDEP Clinics and Training: GIDEP hosts several training and education opportunities for GIDEP members at the GIDEP Operations Center or various locations throughout the United States. GIDEP training consists of narrated slide presentations offering an introduction to key aspects of GIDEP; quarterly, in-person GIDEP training sessions for new members; monthly training webinars; and twice yearly GIDEP training clinics for new users. The training clinics—held in different geographic regions to ease the burden on travel funds—cover all aspects of GIDEP while providing hands-on, computer-based tutorials.

Webinars: The webinar platform and tools offered by DAU let the DSP deliver useful and relevant content in bite-sized chunks to a larger audience. Generally, the topics covered in webinars focus on tool demonstrations and standardization management-related processes.

Video Recordings: We provide free online training for all DSP stakeholders. ASSIST houses training and educational content on DSP procedures and using ASSIST. The ASSIST training module allow users to access previously recorded webinars, workshops, and demonstrations at any time, from anywhere. Additionally, the DSP has a YouTube channel, accessible at https://www.youtube.com/@DOD-DSP where DSP stakeholders can access tutorials, educational materials, and information relevant to standardization.

DSP Publications

Scope and Purpose

The DSP publishes case studies, guide books, and an electronic journal to enable researchers, engineers, scientists, technical experts, and standardization management activities to review, evaluate, repeat, and build on engineering, logistics, technical, and scientific best practices and documented standardization success stories. This section offers a sampling of these publications.

Case Studies

Case studies share successful standardization efforts led by Military Departments and Defense Agencies in support of the warfighter to achieve interoperability with allies and coalition partners, enhance capability development and modernization, and deploy innovative solutions across the Department. Case studies also highlight the benefits of translating the procedures in DoD Manual 4120.24 into responses to real-world problems. DSPO published the following case study in the past two years.

- DSP-CS-26, "Standard Practice for Human Systems Integration": This case study explains the goals of Human Systems Integration (HSI) and the Naval Sea Systems Command's (NAVSEA) effort to develop a new, comprehensive HSI standard to furnish formal guidance for contractors to implement HSI on DoD system acquisition programs.

ASSIST houses this case study and all previous case studies for download at https://assist.dsp.dla.mil.

Guide Books

DSP guide books are non-binding advice developed by DSPO, in consultation with stakeholders, given to DoD personnel regarding how best to comply with a particular law, regulation, policy, or procedure. They are also developed to provide helpful information on DSPO tools and processes. DSPO issues the following guide books, which ASSIST contains, as Standardization-Related Documents (SDs).

- SD-1, "Standardization Directory": This document offers contact information for all Standardization Executives, DoD SMAs, civilian agency standardization offices, Lead Standardization Activities, and Department Standardization Activities by federal supply class (FSC) and standardization area, DID, and Approval Authorities. It also lists federal supply groups, FSCs, and standardization areas. Status: Active.
- SD-2, "Market Research for Engineering and Technical Personnel": This document offers guidance on acquisitions for all types of commercial and non-developmental items: systems, subsystems, assemblies, parts, and items of supply. It also addresses commercial services. This guide does not present a cookbook approach to the acquisition of commercial and non-developmental items; such an approach could not accommodate the vast array of potential applications. Instead, it showcases lessons learned and considerations when participating on an integrated product team. Status: Active.
- SD-3, "A Guide for DoD Personnel Participating in NATO Standardization Activities": This guide provides background information for DoD personnel participating in NATO standardization activities to help these personnel better understand the structure of NATO standardization activities and document development procedures and best practices for engaging in NATO standardization activities. It also offers information on U.S. procedures for staffing and

coordinating NATO standardization documents for comment, ratification, or approval, and reporting on the implementation of NATO standardization agreements. Status: Active.

- SD-5, "Market Research": This document furnishes DoD and other federal personnel involved in the acquisition process with practical guidance on using market research to ensure the acquisition of products and services that will best serve the government's needs. Specifically, this guide is for personnel establishing requirements for products or services, such as engineers, technical specialists, project officers, and customers; personnel purchasing products or services, such as contracting officers, contract specialists, and cost analysts; and personnel who support the acquisition process, such as logisticians, testing and quality assurance specialists, and legal counsel. Status: Active.
- SD-6, "Provisions Governing Qualification": These provisions are guidance for manufacturers and their authorized distributors who wish to submit products for qualification by the Department of Defense. A product may be qualified only when a governing federal or defense specification or non-government standard contains a requirement for qualification. Lists are not otherwise established for qualification. Status: Active.
- SD-9, "DOD Guidance on Participating in the Development and Use of Non-Government Standards": This document promotes more effective DoD use of NGSs and participation in their development. This guide describes the different types of NGSs and the organizations that develop them, offers general guidance and practices relative to DoD's involvement in developing or using NGSs, defines criteria to consider regarding requirements and verification before developing an NGS or replacing an existing military or federal document with an NGS, clarifies the roles and responsibilities of DoD personnel when participating in NGS activities, and explains the meaning of DoD adoption of an NGS and its importance. Status: Active.
- SD-10, "Guide for Identification and Development of Metric Standards": This document guides the identification and development of standards and specifications using the International System of Units (SI), commonly known as the metric system. The guide does not cover metric practice, such as methods of converting and rounding, as addressed in IEEE/ASTM SI 10. Status: Active.
- SD-15, "Guide for Performance Specifications": This document provides guidance information on performance specifications, focusing primarily on stating requirements in performance terms and including sufficient verification means in the specification to evaluate conformance. While this guide focuses on defense specifications developed under DoD Manual 4120.24, "Defense Standardization Program (DSP) Policies and Procedures," the principles and techniques can be applied to program-unique performance specifications, performance-based purchase descriptions, CIDs, or any other type of procurement specification. This guide supplements the format and content requirements for writing performance specifications in MIL-STD-961, "Defense and Program-Unique Specifications Format and Content." Status: Active.
- SD-18, "Program Guide for Parts Requirements and Application": The document offers extensive information to help guide the selection, design, procurement, and assessment of parts in military systems. Status: Active but no longer updated by DSPO.

- **SD-19, "Parts Management Guide":** In today's acquisition environment—characterized by rapidly changing designs, increased risk for DoD weapon systems and equipment acquisition contracts due to an increase in the use of commercial part types, offshore manufacture of parts, and DMSMS—the need for contractors to have an effective Parts Management Program (PMP) is greater than ever before. The PMP is an integral part of the acquisition process for design, development, modification, and support of weapon systems and equipment. Status: Active.
- **SD-21, "Listing of Specifications and Standards Mandated for Use by the Department of Defense by Public Laws or Government Regulations":** This document lists specifications and standards mandated by public law or government regulation to be used DoD program offices, buying activities, and contractors. This information is guidance only. Users must consult the actual public law or government regulation for the applicability of a specification or standard and whether a waiver process exists to exempt mandatory use of a specification or standard. Status: Active.
- **SD-22, "Diminishing Manufacturing Sources and Material Shortages":** This document offers guidance on addressing the loss, or impending loss, of manufacturers or suppliers of items, raw materials, or software due to DMSMS issues. Status: Active.
- **SD-23, "Department of Defense Item Reduction Program":** The Parts Management Program details processes to improve parts selection by requiring a systems engineering approach to parts management planning. Status: Active.
- **SD-25, "Government Industry Data Exchange Program (GIDEP)":** The guide assists GIDEP users with using the tool. Status: Planned for FY22.
- **SD-26, "DMSMS Contract Language Guide Book":** The DMSMS management contracting guide is what a program office needs to ensure critical requirements are not eliminated during contract negotiations. This guidance helps program management offices develop language for DMSMS-contractual arrangements. The guide is organized around 28 different subject areas, including case management and reporting, issue notification, and flow down of requirements to subcontractors. Status: Active.
- **SD-27, "ASSIST Guidance for Standardization Management Activities":** The guide will give SMAs assistance on how to use ASSIST. Status: Planned for FY23.

DSP Journal

The *DSP Journal*, a free online publication available for download at https://www.dsp.dla.mil/Publications/DSP-Journal, delivers informative information about standardization initiatives deployed throughout the federal government, Military Departments and Defense Agencies, industry, and multinational treaty organizations. It enables standardization stakeholders to share innovative and efficient solutions to keep pace with rapid technology changes, support government-wide modernization strategies, address standardization and interoperability issues, broadcast emerging issues, discuss the implementation of industry best practices, and announce upcoming events and activities of interest to the DSP.

Acknowledgment of the 70th Anniversary

Memorable DSP Milestones

CELEBRATING 70 YEARS OF MAKING SYSTEMS WORK TOGETHER

1952
July 1
Cataloging and Standardization Act establishes the DSP

1953
February 2
DoD Directive 4120.3, "Defense Standardization Program," issued

1961
November
Defense Supply Agency (DSA) created to administer the DSP

1962
DoD begins formal adoption of non-government standards

1964
May 31
Centralized DSP document repository created at Naval Forms and Publications Supply Office

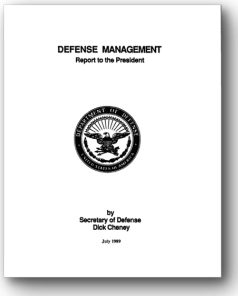
1964
June
DSP administration transfers from DSA to OASD(I&L)

1973
June
Defense Materiel Specifications and Standards Board established

1975
June
Metric Conversion Act encourages development of metric specifications and standards

1976
Resource Convention and Recovery Act requires that specifications and standards encourage use of recovered material

1977
April
The Defense Science Board publishes Shea report on the impact specifications and standards have on acquisition cost and contractual requirements



1978
The Office of Management and Budget Circular A-119 issued to encourage federal use of voluntary (non-government) standards

1980
December
Paperwork Reduction Act requires clearance of data requirements imposed on the public

1986
March
Defense Science Board study recommends DoD increase use of commercial products and services

1987
September
DSP Achievement Awards begins to honor standardization successes

1988
December
DoD increases leadership role in NATO standardization management activities

2022
70 years of making systems work together

2021
November
Defense Standardization Executive memo renews emphasis on participation in NGSBs

2019
January
Title 10 U.S.C. 2449a.(b), Section 805, requires use of a modular open system approach (MOSA)

2019
September
Parts and Materiel Management Working Group (P&MM WG) established

2018
February
DSP aligned to USD(R&E), as a result of the 2017 NDAA

2018
July
DoD Digital Strategy issued

2016
Strategic plan to modernize ASSIST and other tools formalized

2010
March
DSP realigned to DASD(SE)

2007
July
GIDEP integrated into the Defense Standardization Program Office

2006
Defense Standardization Roundtable established to address international standardization agreements

2006
May
DoD begins chartering Joint Standardization Boards

2006
April
Qualified Products Database established

2005
March
Defense Standardization Executive eliminates waiver to cite military specifications and standards in contracts

2000
May
DSP Journal established

1999
January
Gansler memo encourages U.S. participation in development and ratification of international standardization agreements

1999
DSP Strategic Plan issued

1998
December
Personnel supporting the DSP and MilSpec reform function transition from OUSD(A&T) to DLA; however, policy oversight remained

1998
October
DSP documents become available over internet through ASSIST

1995
March
National Technology Transfer and Advancement Act directs use of voluntary standards

1994
July
Secretary of Defense Perry issues memo on MilSpec Reform

1989
July
Secretary of Defense Cheney's Defense Management Review focuses on MilSpecs and MilStds

Congratulatory Remarks

Congratulatory Remarks

I am pleased to congratulate the Defense Standardization Program for all its achievements since its inception 70 years ago. In the two years that I have been the Defense Standardization Executive, the Defense Standardization Program has adapted to meet the needs of the Department. This is driven by the hard work and dedication of the stewards of standardization within the Department who have effectively managed the day-to-day execution of the Defense Standardization Program.

I'd like to acknowledge the Defense Standardization Program Office staff members, the Departmental Standardization Offices of the Military Departments and Defense Agencies, and all individuals and organizations that participate in standardization management activities throughout the Department of Defense.

Our standardization efforts supply a strong foundation for DoD to access technological advancements in the commercial market, develop highly complex systems and defense technology, and reduce total ownership cost of systems in a competitive global environment. The dedication of our personnel engaged in developing and implementing standardization in support of operational effectiveness is helping lead us to success!

As we celebrate the occasion of the 70th anniversary of the Defense Standardization Program, let's continue to promote standardization as a means to

- ensure interoperability across the Department and with our allies and partners,
- integrate advanced technology into our weapons systems,
- engage with industry and non-government standards bodies to work together on emerging and disruptive technologies, and
- develop and maintain standardization products to support the mission needs of our warfighters.

I am deeply proud of the champions of the Defense Standardization Program's mission and look forward to continuing the good work of this essential program.

Stephanie Possehl

Defense Standardization Executive

(2020–2022)

> *For the Defense Standardization Program (DSP) to have existed for 70 years is truly remarkable. The Department of Defense (DoD) was only established 5 years earlier in 1947. For the DSP to have been created near the outset of the DoD underscores the importance of standardization to the national defense.*
>
> *The DSP's 70-year longevity is a testament to the talent and dedication of the thousands of people who worked together over the decades to ensure the nation's armed Services and its allies had the necessary interoperability and interchangeability of systems, equipment, parts, and information to support the warfighter. Congratulations on many past achievements and to future successes.*
>
> -Stephen Lowell, Former DSP Deputy Director (retired)

A Message from the Retired Director, Defense Standardization Program Office

Standardization, in one form or another, has been around for thousands of years, and it has often been recognized as a force multiplier in both war and peace-time endeavors. The same cannot be said of the standardization of standardization. The development and application of rules governing the way we standardize, document decisions, manage and control documentation and changes – these are all comparatively recent innovations dating perhaps to the start of the industrial revolution. Many of our best known and most successful engineering and standardization societies, institutes, and organizations are around 100 years old, some even older. The Defense Standardization Program (DSP) was by no means first, or even among the first, to develop these kinds of conventions. But I would argue that it may have been among the best. Many of the conventions, policies, rules, and standards developed by the Defense Department have been adopted or adapted by the largest and most successful private sector standards developers as well as by other governments and inter-governmental and international organizations.

I had the privilege and pleasure of leading the Defense Standardization Program for over 20 years. I stood on the shoulders of many brilliant predecessors who created many of the rules that still govern defense standardization, and worked beside many dedicated and creative people in the DSP Office (DSPO). The DSPO has always sought to improve standardization, and with it, the standards and engineering it represents. With great respect for legacy and with a keen eye for the impact of rules on the future of standardization and engineering, the DSP continues to be one of the leaders of standardization both in the government and in the private sector. As the DSP celebrates a storied 70 years of standardization, I'm confident that the women and men doing the hard work of making rules and writing standards for the Defense Department will continue to be well-respected members of the engineering standardization community for many, many years to come.

Congratulations, DSP! Celebrate a well-deserved anniversary, and then get back to the critical work that has shaped this business for many years.

Greg Saunders
Director, Defense Standardization Program Office (Retired)

> *As the now retired and former DMSMS Program Manager in the Defense Standardization Program Office, I want to take this opportunity to specifically recognize the following leaders who, during my time as Program Manager, contributed to the elevation of obsolescence management, both nationally and internationally. Though some are retired, the DMSMS community owes each of them our gratitude for their individual and collective contributions to DMSMS. They are Mr. Louis Kratz (OSD), Ms. Claudia Knott (DLA), Mr. Gregory Saunders (DSPO), Mr. John Becker (DSPO), and Mr. Robert Gold (OSD).*
>
> -Alex Melnikow, Former DMSMS Program Manager (retired)

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

April 4, 2022

Kristen J. Baldwin, SES, DAF
Deputy Assistant Secretary (Science, Technology & Engineering)
Assistant Secretary (Acquisition, Technology & Logistics
1060 Air Force Pentagon; Suite 4D117
Washington DC 20330-1060

Ms. Stephanie Possehl
Defense Standardization Executive
3030 Defense Pentagon, Room 3C160
Washington DC 20301-3030

Dear Ms. Possehl,

On behalf of the Department of the Air Force Standardization community and myself as the lead executive I want to congratulate the Defense Standardization Program (DSP) on their 70th anniversary!

Since 1952 the DSP has advanced international standards, modernized DoD practices, created business efficiencies, and improved interoperability of our systems. In recent years, the DSP has taken initiative in key areas such as open systems, model based engineering, and human systems integration, fostering collaboration and synergy across the Department and with our industry and international partners. Without DSP governance, community leadership, engagement with non-government standards entities, and prioritization of resources and technology, such advances would not have been possible.

The DSP represents a strong, vibrant, and dedicated community that I have been privileged to be part of for over 15 years, witnessing the program's achievements in engineering, technical, and business standards. I and look forward to continued collaboration with our Department of the Air Force standardization activities.

My thanks to your team and congratulations on this significant anniversary!

Sincerely

KRISTEN J. BALDWIN, SES, USAF
Deputy Assistant Secretary of the Air Force
Science, Technology and Engineering

DEPARTMENT OF DEFENSE
DEFENSE ACQUISITION UNIVERSITY
OFFICE OF THE PRESIDENT
9820 BELVOIR ROAD
FORT BELVOIR, VA 22060-5565

February 2, 2022

Mr. Michael A. Heaphy, Jr, Director
Defense Standardization Program Office
8725 John J Kingman Rd, Stop 5100
Fort Belvoir VA 22060-6220

Dear Mr. Heaphy,

The Defense Acquisition University (DAU) congratulates your team for the Defense Standardization Program's (DSP) 70 years of service to the Warfighter and the Defense Acquisition community. The DSPO has consistently provided responsive support to DAU's mission of developing qualified acquisition workforce professionals who deliver effective and affordable Warfighting capabilities.

Through collaboration and shared leadership roles on various standards, committees, and councils, your team has long-provided DAU with knowledgeable, articulate guest speakers for our classes and invaluable advice in the development of six multi-disciplinary training courses on topics ranging from Diminishing Manufacturing Sources and Material Shortages (DMSMS) and Parts Management to Standards and Standardization. DSP has also made significant contributions to DAU in development of numerous workflow learning assets related to these areas, as well as numerous articles published by DAU faculty in the *DSP Journal*, and *Defense Acquisition Magazine*. We are also privileged to team with your staff in the development and implementation of three DMSMS & Parts Management Instructions and Guidebooks.

Our strategic partnership affords the Department significantly greater influence, ensuring DoD requirements are included in Industry Standards and Specifications, avoiding unique legacy standards which have proven to increase both acquisition and life cycle costs. We proudly join you in celebrating your seven decades of excellence in service to the DoD enterprise—thank you for being a valued partner!

Sincerely,

James P. Woolsey
President

DEPARTMENT OF THE ARMY
US ARMY FUZE MANANGEMENT OFFICE
ATTN: FCDD-ACE-Z
PICATINNY ARSENAL, NEW JERSEY 07806-5000

REPLY TO
ATTENTION OF

FCDD-ACE-Z 30 March 2022

MEMORANDUM FOR Defense Standardization Executive OUSD (Research & Engineering), Attn: Ms. Stephanie Possehl

SUBJECT: Army Fuze Management Office's Congratulatory Message for 70th Anniversary of the Defense Standardization Program

1. The U.S. Army Fuze Management Office (AFMO), charged with enhancing and sustaining the Department of the Army's nonnuclear Fuze and Safety & Arming (S&A) technology readiness, industrial base, and competency to meet the emerging and current needs of the Army's Modernization Strategy, has been a proud beneficiary of your success story and therefore offers heartfelt congratulations to the Defense Standardization Program on its 70th Anniversary. As the Army's lead for centralized management and oversight of the U.S. Army's weapons and munitions fuze programs, AFMO has proudly served as the chair of the Joint Standardization Board for Fuze and Initiation Systems, since its inception in 2003, as fulfilled by the activities of the DoD Fuze Engineering Standardization Working Group (FESWG).

2. The DoD FESWG is responsible for developing and maintaining all DoD and NATO Fuze and Initiation Systems safety design and qualification standards to promote munition system safety and interoperability. Fuze and Initiation Systems encompass relatively simple mechanical devices to highly advanced electrical and software systems that control safety, arming, and firing of munitions. Fuze and initiation systems are essential subsystems found in artillery projectiles, rockets, medium caliber ammunition, bombs, guided missiles, long-range precision-guided munitions, and hypersonic weapon systems being developed today.

3. As one of the premier and oldest standardization committees under the Defense Standardization Program, the DoD FESWG's formation evolved from the Joint Army-Navy-Air Force Fuze Committee, established in 1951 to develop the original MIL-STD-300 Fuze Series that standardized laboratory and field testing procedures. After the Defense Standardization Program was officially established, the DoD FESWG was formed to subsume the duties of the Joint Army-Navy-Air Force Fuze Committee. Officially chartered as a Joint Standardization Board in 2003, the DoD FESWG expanded its standardization efforts not only across DoD, but with our NATO partners by chairing and participating in the NATO Armaments Directorate (CNAD) Ammunition Safety Group (AC/326) Subgroup A Initiation System Team.

4. Well represented by Tri-service, national labs, industry and academia experts, the DoD FESWG's ability to work together effectively and efficiently to produce common design safety, interoperability, and test requirements resulted in substantial program cost savings throughout

FCDD-ACE-Z
SUBJECT: Army Fuze Management Office on Congratulatory Message for 70th Anniversary of the Defense Standardization Program

the DoD while facilitating interoperability among NATO Members and Partners for Peace. As for recent accomplishments under the Joint Standardization Board for the Fuze and Initiation Systems, DoD FESWG activities have yielded or will soon yield the following products:

A. MIL-STD-1901B, "Munition Rocket and Missile Motor Ignition System Design, Safety Criteria for". (NOTE: MIL-STD-1901 is the pillar DoD document that addresses ignition safety design requirements.)
B. MIL-STD-1316F, "Fuze Design, Safety Criteria for". (NOTE: MIL-STD-1316F is the pillar DoD document that addresses fuze safety design requirements.)
C. JOTP-051A, "Technical Manual for the Use of Logic Devices in Safety Features".
D. MIL-DTL-23659G, "Initiator, Electric, General Design Specification for".
E. Joint Ordnance Test Procedure (JOTP), "Requirements for Submunition Advanced Features to Meet DOD 2017 Cluster Munition Policy". (NOTE: This new JOTP document provides additional clarification and guidelines for the implementation of fuzing system features as specified in paragraph 5.b in the Technical Specifications of the 2017 DoD Cluster Munition Policy.)
F. Joint Ordnance Test Procedure (JOTP), "Safety Design Criteria for Remotely Controlled Fuzing Systems used in Munitions". (NOTE: This new JOTP document establishes additional design safety criteria for fuzes that are remotely controlled to permit capabilities for safe passage, recovery, and overhead safety operations.)
G. STANAG-4187 Ed. 5, "Fuzing Systems: Safety Design Requirements". (NOTE: This is the NATO equivalent to US MIL-STD-1316F.)
H. STANAG-2818 Ed. 3, "Demolition Materiel, Design Principles".
I. STANAG-4368 Ed. 4, "Ignition Systems for Rocket and Guided Missile Motors. Safety Design Requirements". (NOTE: This is the NATO equivalent to US MIL-STD-1901B.)
J. Harmonization of terminology used in the standards for addition to the NATO Term database.
K. A new design safety STANAG for "Aircraft Countermeasure Devices".

5. As evidenced by the history and achievements cited above, the standardization products developed by the Joint Standardization Board for the Fuze and Initiation Systems under the Defense Standardization Program facilitate safe use and interoperability of our nation's existing and next generation munition systems. Knowing that an official DoD advocate exists to support standardization activities has provided solid justification for continuous operation of the DoD FESWG, as reflected by its 100th semi-annual meeting, held February 2020. The Defense Standardization Program is therefore lauded for achieving 70 years of continued success. Let's keep the momentum going!

6. Point of contact is the undersigned at 973-724-3042, homeshwar.r.lalbahadur.civ@army.mil.

Mr. Homesh Lalbahadur
Chief, Army Fuze Management Office
Chairman, DoD FESWG

DEPARTMENT OF THE ARMY
PROJECT MANAGER
EXPEDITIONARY ENERGY & SUSTAINMENT SYSTEMS
5850 DELAFIELD ROAD, BUILDING 324
FORT BELVOIR, VA 22060-5809

February 23, 2022

Ms. Stephanie Possehl
Defense Standardization Executive
OUSD (Research & Engineering)
3030 Defense Pentagon, Room 3C160
Washington, DC 20301-3030

Dear Ms. Possehl,

Congratulations on the 70th anniversary of the Defense Standardization Program! I serve as the Chairperson of the Mobile Electric Power Systems Joint Standardization Board (MEPS JSB). My Army Project Management Office procures tactical military power for all four Services, US Special Operations Command, and US Space Force. Our MEPS JSB's success and authority comes from DoDI 4120.11 and JSB Charter issued by the Defense Standardization Program.

Thank you for signing our MEPS JSB Charter update on July 22, 2020, your support continues to empower the Defense Standardization Program as indicated in the original 2006 MEPS JSB Charter. The last revision published as DoD Instruction 4120.11, Mobile Electric Power Systems, continues to serve as a guiding force for all Services. As a result, our forum is able to maintain and maximize the use of interoperable and reliable MEPS family of systems, in addition, continues to coordinate Joint interoperability and standardization. Our JSB success is a tribute to the advocacy and influence of the Defense Standardization Program.

I would be remiss if I did not recognize the efforts of Mr. Lloyd Thomas from the Defense Standardization Program Office. Mr. Thomas attends all of our JSB meetings and is commended for his continuous hard work in support of our labors. I am pleased to recognize the impact of the Defense Standardization Program on the success of the MEPS JSB. Thank you for your unwavering support as well.

Sincerely,

BROWN.KATHY.MARINA.1066088118 Digitally signed by BROWN.KATHY.MARINA.1066088118 Date: 2022.03.08 14:50:40 -05'00'

Kathy M. Brown
Colonel, U.S. Army
Project Manager, Expeditionary Energy & Sustainment Systems

La seguridad es de todos | Mindefensa

Ms. Stephanie Possehl
Defense Standardization Executive
Defense Standardization Program Office (DSPO)
OUSD (Research and Engineering)
3030 Defense Pentagon
Room 3C160
Washington, DC 20301-3030

Dear Ms. Possehl,

On the occasion of the 70 th anniversary of the Defense Standardization Program, on behalf of the Ministry of Defense of Colombia, I have the great honor to extend my warmest congratulations to you and the members of the Department of Defense of the United States.

Since 1952, the Defense Standardization Program has grown from text written in law to a strong program that manages standardization policy, procedures, guidance, and tools used to support national defense goals.

We recognize the efforts of the Defense Standardization Program Office (DSPO) in working with allies and partners to improve the use of standards, that enable multinational forces to operate effectively together towards addressing emerging threats.

Particularly, the Republic of Colombia appreciates the support and engagement, over the past years with DSPO which has helped us to take the necessary steps towards modernizing our standardization procedures and to engage in standardization activities with the North Atlantic Treaty Organization (NATO).

For all of this, I want to take this opp ortunity to congratulate you on 70 years of increasing success as leaders on the Defense Standardization area and to reiterate our great interest in continuing our collaboration in years to come.

Best regards,

DIEGO MOLANO APONTE
Minister of National Defense

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TRADUCCIÓN NO OFICIAL

Ms. Stephanie Possehl
Ejecutiva de Estandarización de Defensa
OUSD (Investigación e Ingeniería)
3030 Defense Pentagon
Room 3C160
Washington, DC 20301-3030

Apreciada Señora Possehl,

Con motivo del aniversario 70 del Programa de Normalización de la Defensa, en nombre del Ministerio de Defensa de la República de Colombia, tengo el gran honor de extender mis más cálidas felicitaciones a usted y a los miembros del personal del Departamento de Defensa de los Estados Unidos.

Desde 1952, el Programa de Estandarización de Defensa ha pasado de ley escrita en papel a convertirse en un programa sólido que administra la política de estandarización, procedimientos, orientación y herramientas utilizadas para apoyar los objetivos de defensa nacional.

Adicionalmente reconocemos los esfuerzos del Programa de Normalización de la Defensa (DSPO, por sus siglas en inglés), en trabajar con los aliados y socios para mejorar el uso de estándares, que permiten a las fuerzas multinacionales operar juntas de manera efectiva para abordar las amenazas emergentes.

Particularmente, la República de Colombia valora el apoyo y compromiso de los últimos años del DSPO, el cual nos ha ayudado a tomar las medidas necesarias para modernizar nuestros procedimientos y participar en las actividades de estandarización de la Organización del Tratado del Atlántico Norte (OTAN).

Por todo esto, quiero aprovechar esta oportunidad para felicitarlos en 70 años de creciente éxito como líderes en el área de estandarización de la defensa y para reiterar nuestro gran interés en continuar nuestra colaboración en los próximos años.

Atentamente,

DIEGO MOLANO APONTE
Ministro de Defensa Nacional de Colombia

Elaboró. Mario Andres Garcia Carrión
Coordinador Grupo de Aseguramiento de la Calidad

Aprobó. Juanita Acosta Giraldo
Directora de Relaciones Internacionales y cooperación.

Antonio Fernando Mosquera Moran
Director de Logística Ministerio de Defensa Nacional

Jairo Garcia Guerrero
Viceministro para la Estrategia y Planeación
Ministerio de Defensa Nacional

MINISTÈRE
DES ARMÉES
Liberté
Égalité
Fraternité

Le directeur du centre de normalisation de défense

CND

Arcueil, the 21st of March 2022

Dear Sir,

On behalf of the Defense Standardization Center, established in 2003 within the French Ministry of the Armed Forces, I have the great pleasure of congratulating the Defense Standardization Program (DSP) on its 70th anniversary, which testifies to a longevity and its successes.

This anniversary would be an opportunity to remind a large number of allied standardization projects, which succeeded thanks to our fruitful cooperation.

Amongst all the undertakings, I will pinpoint to illustrate our exemplary cooperation, the modernization of the NATO standardization process to which our two organizations have intensely contributed between 2006 and 2014. "JULIET" has enabled us to forge close ties through numerous exchanges both in France and in the USA, in a real team spirit and mutually constructive synergies for our two bodies. It also allowed initiating a fundamental milestone in the field of standardization within NATO, which has contributed to strengthening the interoperability of Allied forces.

The CND does hope that the DSP will continue its successful life along with our transatlantic cooperation, which has been valuable for our two entities.

Sincerely yours,

L'ingénieur général de l'armement Michel Wencker

Sir Michael Heaphy, Jr
Director of the Defense Standardization Program Office (DSPO)

MINISTÈRE
DES ARMÉES
Liberté
Égalité
Fraternité

Le directeur du centre de normalisation de défense

CND

Arcueil, le 21 mars 2022

Monsieur le directeur du DSPO,

Au nom du Centre de Normalisation de Défense, érigé en 2003 au sein du ministère des Armées françaises, j'ai le vif plaisir de féliciter le programme de normalisation de défense (DSP) pour son 70ème anniversaire qui témoigne de sa longévité et de ses succès.

Cet anniversaire serait l'occasion de rappeler un grand nombre de projets de normalisation interalliés, qui réussirent grâce à notre coopération fructueuse.

Parmi toutes les entreprises, je retiendrai, pour illustrer notre coopération exemplaire, la modernisation du processus de normalisation OTAN à laquelle nos deux organismes ont tout particulièrement contribué entre 2006 et 2014. « JULIET » nous a permis de nouer des liens étroits au travers de nombreux échanges tant en France qu'aux USA, dans un véritable esprit d'équipe et une synergie mutuellement bénéfique pour nos deux entités. Elle a également permis d'engager une nouvelle étape dans le domaine de la normalisation au sein de l'OTAN qui contribue à renforcer l'interopérabilité des forces alliées.

La CND souhaite que le DSP poursuive sa vie avec succès ainsi que de notre coopération transatlantique, profitable pour nos deux entités.

Bien cordialement,

L'ingénieur général de l'armement Michel Wencker

Sir Michael Heaphy, Jr
Director of the Defense Standardization Program Office (DSPO)

FMV

Unclassified **LETTER**

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Ms. Stephanie Possehl
OUSD (Research & Engineering)
3030 Defense Pentagon, Room 3C160
Washington, DC 20301-3030
USA

Congratulations on the 70th Anniversary!

Dear DSP-professionals,

Congratulations on your 70th anniversary! You should be very proud of what you have accomplished so far!

Standards and standardization play a key role to reach efficiency and interoperability and have done so for a long time. Since the start in 1952 DSP has expanded to all branches of defense and continued the valuable work of developing the standardization process into modern times while keeping the historical connection.

DSP is a valuable standardization partner for the Swedish Defense Material Administration and the Swedish Armed Forces. The openness and cooperation with DSP is one of the main success factors in standardization. DSP's working process is a model that many of us can learn and benefit from.

It is my great honor and privilege to wish you continuous success in the coming years!

Lena Fagervall
Standardization Manager
Swedish Defence Material Administration

Ministry of Defence

de&s

Mr Stephen Wilcock MBE
BEng(Hons) MSc MDA MA CEng ChPP FRAeS MAPM

Director Engineering and Safety

BT: +44 117 913 2616
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Stephen.Wilcock259@mod.gov.uk

Defence Equipment & Support
Spruce 2c #1260
MOD Abbey Wood
Bristol BS34 8JH

Dear Tasha,

The UK MOD would like to convey its warm congratulations to the United States Defense Standardization Program for 70 years of dedicated service to the Department of Defense and the US Armed Forces.

Working with a common intent with our US colleagues we have achieved some notable successes, most prominent of which resulted from our joint drive to use civilian standards wherever possible and military ones only where necessary. This, together with our closely aligned international standardization programmes, have allowed both of our Nations to be able to shape NATO's thinking on standardization and bring real benefit to the wider Alliance.

As longstanding allies, we would like to thank you for your enduring commitment to standardization. We look forward to building on our successes and the opportunity to work in tandem to exploit the opportunities that emerging disruptive technologies offer. In particular, around digital modelling and simulation where open standards will be a significant enabler for NATO, and to ensure we collectively embrace the changes needed for us to contribute to a sustainable environment.

Congratulations

Stephen Wilcock
Director Engineering and Safety

S. JOE BHATIA
PRESIDENT AND CEO

Tel: +1.202.331.3605
Email: jbhatia@ansi.org

June 15, 2022

Ms. Stephanie L. Possehl
Office of the Under Secretary of Defense (Research & Engineering)
Principal Deputy Systems Engineering & Architecture
3030 Defense Pentagon, Room 3C160
Washington, DC 20301-3030

Dear Ms. Possehl,

On behalf of the members and staff of the American National Standards Institute (ANSI), I am pleased to extend our sincere congratulations to the Defense Standardization Program (DSP) of the U.S. Department of Defense (DoD) on the occasion of its 70th anniversary.

The Defense Standardization Program Office (DSPO) and ANSI have shared many productive years of cooperation and partnership. The DSPO's demonstrated, ongoing support of the private-sector standardization community has been an essential contributor to the success of the voluntary standards system in the United States and the powerful public-private partnership at its very heart.

In 2021, the DSPO issued a Memorandum to Service and Agency Standardization Executives encouraging participation in the activities of Non-Government Standards Bodies (NGSBs) – a meaningful endorsement that brings diverse stakeholders into the consensus-based standardization process, resulting in stronger and more impactful standards.

Beyond involvement with the voluntary standards community, the DSP's valuable work has strengthened standardization within the DoD immeasurably, improving operational efficiency and effectiveness and ultimately the safety and well-being of all Americans.

On behalf of all of us here at ANSI, we look forward to continued cooperation, collaboration, and progress for years to come.

Congratulations again on this noteworthy milestone.

With our best regards,

S. Joe Bhatia

aia-aerospace.org

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ASSOCIATION

April 15, 2022

Mr. Michael A. Heaphy, Jr.
Director
Defense Standardization Program Office
8725 John J. Kingman Road, Stop 5100
Fort Belvoir, VA 22060-6220

Dear Mr. Heaphy,

On the occasion of the 70th anniversary of the Defense Standardization Program, the Aerospace Industries Association would like to offer congratulations and best wishes for future success and collaboration. Having just celebrated AIA's 100th anniversary a few years ago, we recognize the importance of looking back to remember and celebrate the past, while looking ahead to a bright future. The Aerospace Industries Association represents over 300 aerospace and defense manufacturers and service providers, and we share in the mission of supporting US warfighters and the acquisition community.

AIA's first standard was published in 1941, and we have worked closely with the US military services and Department of Defense on standardization projects of mutual interest since that time. AIA's National Aerospace Standards library includes over 500 former Military Specifications that still maintain MS part numbering and we are proud to maintain these important part standards.

We would like to recognize the important role the Defense Standardization Program plays within the Department of Defense, and the leadership shown through DSP's recent "Digital Engineering, Documents as Digital Data" project. This new effort will enable more effective and efficient use of standards content throughout DoD, and AIA is also working to provide similar capabilities in the future.

Again, congratulations on DSP's 70th anniversary and we look forward to more engagement and collaboration in the future.
Sincerely,

Sincerely,

Eric Fanning
President & Chief Executive Officer
Aerospace Industries Association

1 April 2022

Mr. Michael Heaphy
Director, Defense Standardization Program Office (DSPO)
U.S. Dept. of Defense, Defense Standardization Program Office
8725 John J Kingman Rd, Stop 5100
Fort Belvoir VA 22060-6220

Dear Mr. Heaphy,

On the occasion of the U.S. Defense Standardization Program (DSP) anniversary and on behalf of IEEE, I congratulate DSP for 70 years of championing standardization through the U.S. Department of Defense (DoD), and for its dedication to standards development and the implementation of standards. DSP's dedication to the development of standards and its work in providing access to standardization processes, products, and services is to be commended.

As a global standards developing organization, we applaud DSP for its recognition of the importance and value of standards and its long standing commitment to providing the DoD with technically superior standards that help enable interoperability, reliability, maintainability, and safety.

IEEE is proud to have collaborated with DoD on the adoption of IEEE software engineering standards IEEE 15288.2-2014 Standard for Technical Review and Audits on Defense Programs and IEEE 15288.1-2014 Standard for Application of Systems Engineering on Defense Programs and welcomes future collaboration through DSP.

As DSP continues its work and advances its programs, we wish DSP another 70 years of growth and great success.

Warm regards,

James E. Matthews III

James E. Matthews III
IEEE Standards Association President
Member, IEEE Board of Directors

Peraton

March 29, 2022

OUSD (Research & Engineering)
3030 Defense Pentagon, Room 3C160
Washington, DC 20301-3030

Attention: Stephanie Possehl, Defense Standardization Executive

Dear Ms. Possehl:

Peraton wishes to congratulate the Defense Standardization Program Office (DSPO) on the 70th anniversary of its founding.

Peraton has supported the DSPO in its endeavors for more than 20 years, first as Integic, then as Northrop Grumman, and now as Peraton. Through the years, we have developed a close, mutually beneficial working relationship with the DSPO management and its employees. Initiated and championed by the DSPO, the ASSIST and Qualified Products Database applications Peraton supports have been invaluable tools that support the standardization and qualification communities. Similar to Peraton, the DPSO continues to demonstrate forward-thinking leadership with a mindset of continuous improvement to streamline processes, eliminate redundancy, modernize its applications and systems, and integrate with other standardization and qualification entities.

Peraton looks forward to continuing support of the DSPO and its mission to bring innovations and improvements to both the government and commercial sectors.

Sincerely,

Jeff Burgbacher
Project Manager
Financial & Regulatory BU

"The DSP has been working with us, almost since the foundation of the Performance Review Institute, and together we have achieved some great results, including over 80,000 qualified product listings on the PRI-QPL. DSP is represented in the PRI-QPL program on the Qualified Product Management Council, and it continues to supply us with its expertise in the development and maintenance of the PRI-QPL Program Operating Procedures, as well as the defense sector's view of the qualification process. It is a successful example of industry and government working together in partnership."

-Scott Klavon, Director, Nadcap Program & Aerospace Operations

Conclusions

This special edition of the State of the DSP biennial report presents a comprehensive overview of the progress, achievements, obstacles, and changes in defense standardization and provides information on the efforts undertaken by the Defense Standardization Program Office on behalf of the DSP. This report presents a comprehensive overview of the progress, achievements, and challenges in defense standardization through the years. It also provides information on the efforts undertaken by the Defense Standardization Program Office on behalf of the DSP upholding the program's legacy. The DSP website contains this report for download at https://www.dsp.dla.mil and a web page dedicated to the program's 70th anniversary at https://www.dsp.dla.mil/DSPTurns70/.

DEFENSE STANDARDIZATION PROGRAM OFFICE
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