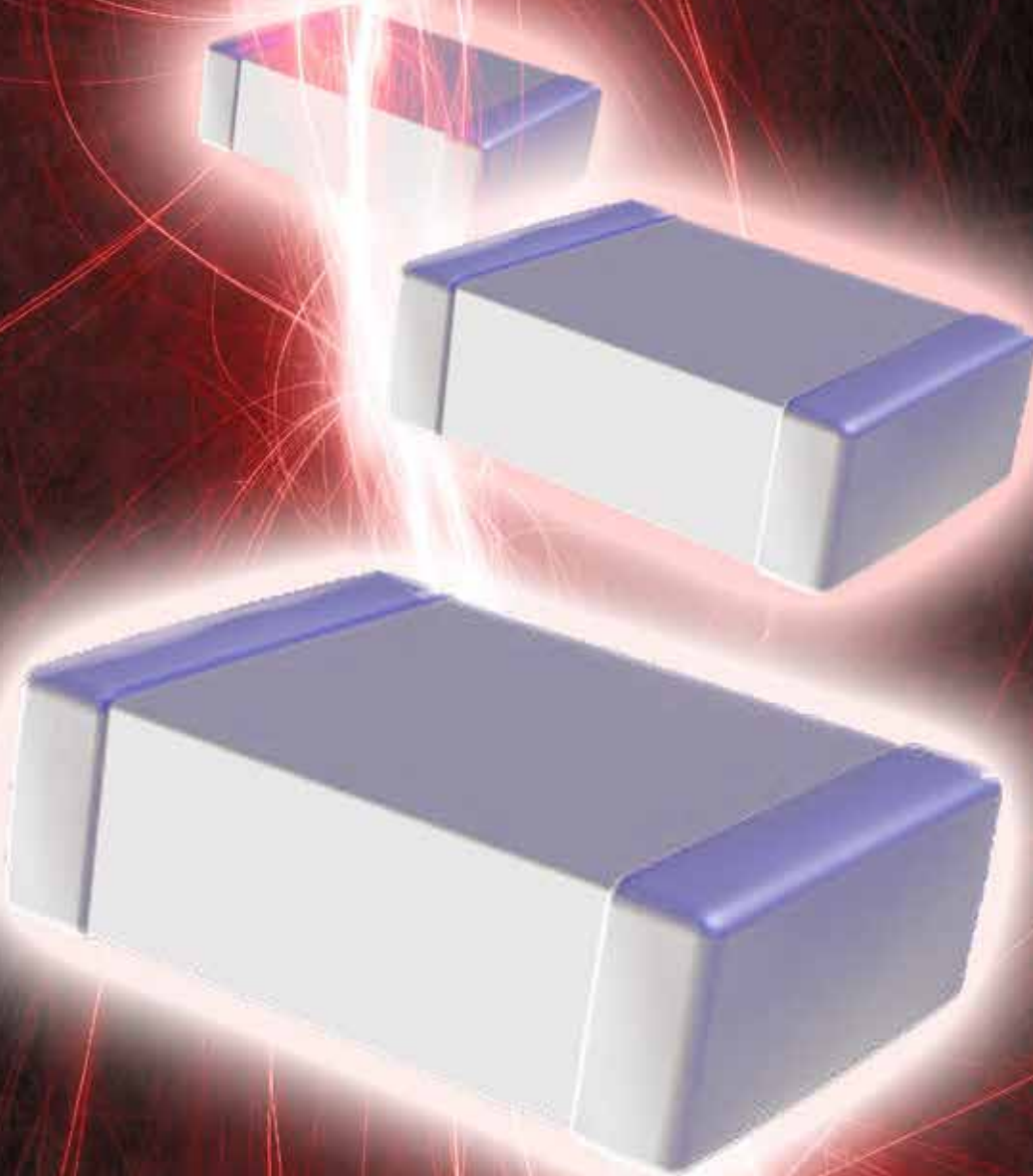
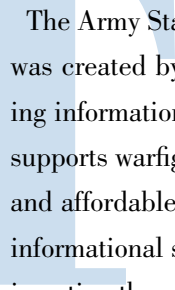


# Army Standardization Activities and Initiatives

By Wade Schubring





The Army Standardization Program (ASP) is one piece of the Defense Standardization Program that was created by congressional mandate. The program ensures that materiel standardization, including information technology and facilities, is addressed throughout the acquisition process. The ASP supports warfighters by ensuring their equipment is interoperable, reliable, technologically superior, and affordable. It also ensures interoperability within the DoD services and multinational partners; informational superiority via standardized data and equipment interfaces; and rapid new technology insertion through standard interfaces and performance requirements.

The ASP comprises more than 30 different preparing activities (PAs) that oversee standardization over hundreds of different product lines and technologies, which are divided via standardization areas, federal supply group, and federal supply classifications. The PAs are assigned these areas based on their technical expertise residing within each specific organization. The Army has a broad base of product lines and technologies from the well-known areas of Army weapon and soldier systems (armored and combat vehicles, ammunition, small arms, helicopters, etc.), to publishing, heraldry, and packaging, to new technologies in materials, medical, and communication.

The overall management, administration, and oversight of the Army's program are within the Army Materiel Command, where the Army standardization executive and the Army's departmental standardization officer (DepSo) are located. The majority of the standardization execution is within the Army's Research, Development and Engineering Centers (RDECs) and other Army research and support organizations. Following is a broad-brush look at the Army's Standardization Program, from what day-to-day activities worked within the various organizations to specific examples of what has been accomplished.

## **Communications-Electronics Research, Development and Engineering Center**

The Communications-Electronics Research, Development and Engineering Center (CERDEC) provides standardization support that is critical to readiness and sustainment as DoD continues to rely on legacy systems and emerging technologies in support of the warfighter. CERDEC standardization activities include maintenance of current documents as well as development of new standardization documents. The maintenance and development of these documents is often performed with DoD partners in a teaming and working group arrangement.

CERDEC teams with the Defense Logistics Agency Land and Maritime for many Communications-Electronics Command specifications by maintaining these specs, managing the associated qualification programs, and coordinating with industry and government to discuss needs and challenges and recommend changes, such as the creation of specifications for updated surface-mounted radio frequency coils and smaller ceramic chip capacitors that will reduce size, weight, power, and cost requirements for C4ISR systems.

CERDEC also represents Army C4ISR expertise in multi-service working groups for document development. CERDEC has used its C4ISR engineering expertise and lessons learned to facilitate completion of the Air Force handbook *Manufacturing Management Program Guide*, so it can be used as guidance for implementing a DoD Manufacturing Management Program (SAE AS6500). It has supported the Navy in equipment specification reviews for shipboard power switch gears and cable lace and tools. CERDEC supported the Defense Threat Reduction Agency Working Group for the development of two classified satellite standards for satellite survivability, providing feedback to improve survivability, protection, and sustainability of satellite systems in natural and nuclear environments.



## Army Research Lab

The Army Research Lab (ARL) Specifications and Standards Office (S&SO) has been in existence for approximately 70 years, and it is the Army's lead laboratory for materials research and development. Therefore, the ARL S&SO focuses mainly on materials and material processes including work with armor materials (ferrous materials, ceramics, composites, metal and nonmetal spray, and the newer lightweight aluminum alloys, magnesium alloys, and titanium). ARL is the PA for approximately 90 percent of the armor material specifications (ferrous and nonferrous) for all armored vehicles and platforms. Another important area of research and test are coatings, including chemical agent resistant coatings.

ARL worked to develop a manufacturing process known as "Cold Spray," a materials deposition technique by which particles of metals, nonmetals, or both, propelled by a high-velocity jet of gas, are used to build up a coating or a free-standing structure by means of ballistic impingement upon a substrate. ARL developed two standards for the implementation and use of this valuable technique (MIL-STD-3021, "Materials Deposition, Cold Spray," and MIL-DTL-32495, "Aluminum-Based Powders for Cold Spray Deposition"). Cold Spray will allow the reclamation of existing parts during overhaul and repair, and with a small investment, the Army will recover millions of dollars in cost

avoidance savings by not having to purchase new parts. Examples include saving an estimated 75 percent of the cost of overhauling and repairing the UH-60 main transmission and tail rotor gearbox housing assemblies, repair of the A-64 Apache mast support, and restoration of magnesium transmission gearboxes of the UH-60 Blackhawk.

When procurement problems occurred in the areas of ballistic fabric and composite armor laminates, a quick review by ARL revealed the problem: three standards documents required a complete makeover. ARL worked with the RDEC organizations to revise the documents, and the revisions now give both U.S. government (Tank Automotive Research, Development and Engineering Center and Tank-Automotive Command) and industry (original equipment manufacturers such as Oshkosh, BAE, General Dynamics, FPI, and IMG) the ability to order specific panel materials. With materiel controls in place, it ensures that troop survivability will be provided to the same level as was qualified previously during government testing. There are already documented events in which the improvement in survivability has been confirmed. The cost savings associated with lives saved are difficult to estimate.

## Logistics Support Activity

The mission of the Logistics Support Activity (LOGSA) in the area of *technical publications standardization* adapts technical manuals to meet the needs of the soldier in today's battlefields. For many years, LOGSA has been spearheading the development of requirements to standardize electronic technical manuals (ETMs) and interactive electronic technical manuals (IETMs) to provide soldiers with manuals that have a common look and feel. The requirements are contained in MIL-STD-40051-1/-2, the premiere standard for Army technical manuals and its associated document type definitions and style sheets. In recent years, LOGSA has also begun using ASD S1000D and have developed Army business rules (MIL-STD-3031). As a result of advances in technology and the changing needs of soldiers, several issues requiring the development of new requirements and capabilities have been identified. LOGSA is enforcing Extensible Markup Language tagging of all data and is working to develop or improve IETM download capabilities, develop near-real-time update capability via ETMs Online, provide requirements for smaller-screen devices, develop requirements for weapon system software manuals, and add requirements for other types of publications such as hand receipts, technical bulletins, and ammunition data sheets to MIL-STD-40051 and MIL-STD-3031. All of these efforts will enable soldiers to have more complete, more robust, and more up-to-date manuals that can viewed on whatever devices the soldier uses, which will improve readiness and make operation and maintenance of Army equipment easier and faster.

The *Logistics Engineering Division* (LED), with over 50 years of experience in providing product life-cycle support, has a rich history and a legacy of expertise. In fact, SAE GEIA-STD-0007 is the primary standard by which the Army Enterprise Resource Planning initiatives are obtaining their



data deliverables. LED's mission is to support and sustain product support standards activities and engage at all levels with the domestic and international organizations that develop logistics standards important to the Army, DoD, and our allies. With leadership roles on boards, committees, and working groups, through key organizations such as SAE International and the International Organization for Standardization, LED provides expertise in the area of product support, influencing the development and maintenance of these organizations' standards. This engagement determines the efficient and effective product support strategies that increase readiness of our military systems, enabling our soldiers to "win in a complex world." LED remains at the forefront of influence on the product support standards and organizations that are pertinent and essential to DoD and the Army.

LOGSA's *Packaging, Storage, and Containerization Center* is getting ready to begin Change 1 to MIL-STD-129R, "Standard Practice for Military Marking for Shipment and Storage." MIL-STD-129 is frequently cited in DoD contracts to ensure that manufacturers and suppliers provide items that are marked in a standard and uniform fashion compatible with DoD logistics systems. Change 1 will see modifications to the Joint Ammunition/Explosives Packaging Label from the Joint Ordnance Commander's Group, incorporate requirements for the new uniform Procurement Instrument Identifier (contract number) to address the new format and eliminate marking of delivery order numbers; update shelf-life marking requirements, and make minor editorial changes and corrections.

## **Tank-Automotive Command**

The Tank-Automotive Command (TACOM) has completed MIL-STD-3040, "Arc Welding of Armor Grade Steel," providing DoD, government agencies, and industry with a comprehensive standard for welding of armor grade steel. During the blueprint for change in the 1990s, the standards that covered welding were cancelled leaving no military or industry standards to weld armor grade steel. At that time, a TACOM drawing was developed for contract use in steel armor welding, but this drawing had never been updated and has no engineering guidance for the selection of weld wire. The TACOM Standardization Office collaborated with Ground Systems Survivability, Product Life Cycle Engineering, Center for System Integration, and Army Research Lab. Once the initial draft was completed, two separate coordinations were conducted with approximately 150 entities from DoD, industry, educational institutes, and civilian standardization organizations to produce the final standard. During the coordination effort, TACOM received almost 900 comments from the various reviewers. These comments were reviewed during meetings with various contractors, program offices, and subject matter experts. Developing this standard has taken approximately 5 years, but it has delivered a substantial document that will affect all military systems using welded steel armor.

## MRMC STANDARDIZATION INITIATIVES

Within the past year, the U.S. Army Medical Research & Materiel Command (MRMC) has worked with the Army DepSO on a couple of standardization initiatives to improve efficiencies in their contracting efforts:

- 1.They requested and received approval to stand up a standardization preparing activity (MD2) within MRMC that allows them to work standardization documents and approvals where the expertise resides in-house rather than attempting to get concurrences from an area that has no visibility of their activities.
- 2.They developed and published a Data Item Description (DID), titled “Research and Development of Medical Products Regulated by the U.S. Food and Drug Administration, (FDA),” to facilitate the acquisition of technical data to support the research and development of drugs, biologics, medical devices, or some component thereof regulated by the FDA. The DID allows for consistency and efficiency of one document rather than developing a document for each solicitation or having a multitude of different but similar documents.

MRMC is the Army’s medical materiel developer, with responsibility for medical research, development, and acquisition and medical logistics management. Its expertise in these critical areas helps establish and maintain the capabilities the Army needs to fight and win on the battlefield. It is an advanced developer of FDA-regulated medical products among its many products. Six medical research laboratory commands execute the science and technology program to investigate medical solutions for the battlefield with a focus on various areas of biomedical research, including military infectious diseases, combat casualty care, military operational medicine, medical chemical and biological defense, and clinical and rehabilitative medicine.

## About the Author

Wade Schubring is the Army Department Standardization Officer at Army Materiel Command. He started his career with the Rock Island Arsenal science and engineering department in howitzer production. He worked in private industry as a manufacturing engineering and plant maintenance supervisor. Mr. Schubring also worked for the Army’s Joint Munitions Command and Tank-Automotive Command as an engineering supervisor in the following functions: capital investment program, military construction—Army, environmental, facilities and base operations, logistic systems, industrial base, and value engineering.