**Department of Defense Additive Manufacturing for Maintenance Operations Working Group Charter**

**Scope and Background:**

The Department of Defense (DoD) Additive Manufacturing for Maintenance Operations Working Group (AMMO WG) is chartered to develop an integrated DoD strategic vision and facilitate collaborative tactical implementation of Additive Manufacturing (AM) technology in support of DoD’s global weapon system maintenance enterprise. The AMMO WG activity will include development of OSD guidance recommendations, selection and prioritization of opportunities to employ AM technology, coordination and standardization of AM activities into established DoD maintenance processes and procedures, and preparation and maintenance of the AMMO Roadmap.

AM technology is an evolutionary development of historical Computer Numerical Control (CNC) technology. While CNC removes unwanted material, AM adds material to create a finished product. AM is often called “3D Printing” and includes various processes used to create a three-dimensional object by layering material under computer control. The capability to robotically fabricate high quality metal parts dramatically expanded the practical application of AM technology, and industry has been quick to capitalize on the technology’s potential. In recent years, DoD’s maintenance activities, particularly its maintenance depots, have been working to complement current CNC capabilities with new AM capabilities.

**Goals & Objectives:**

The overarching goal of the AMMO WG is to promote the development and adoption of AM capabilities which support DoD’s maintenance mission - sustaining materiel readiness at best cost. The AMMO WG will facilitate the development of OSD guidance regarding AM technology deployment within the DoD maintenance enterprise, and the subsequent collaborative development and employment of that technology on a continuing basis. This guidance, accompanied by a supporting Roadmap, will:

* Promote integrated AM technology collaboration, planning, and resourcing across the DoD Maintenance Enterprise, to include both organic and commercial sources of repair and their associated Stakeholders. To discourage duplication of effort in planning and execution, the WG will
  + De-conflict and integrate current Service AM initiatives and funding streams to maximize overall, enterprise-level return-on-investment.
  + Facilitate collaborative, mutually supportive investment from DoD, Academia and Industry partners, to include leveraging proven Government-Industry collaborative venues, such as *America Makes* and the *National Center for Manufacturing Sciences* in the development and execution of AM capabilities.
* Harmonize DoD maintenance “inspect & repair” policy and procedures for parts using AM materials and processes to include
  + Repair of AM parts
  + Repair of legacy parts
  + Manufacture of AM parts
* Standardize policy and procedures for use of AM technology within the organic DoD maintenance enterprise (first article test, repair certification, maintainer training and qualifications, source data, etc.)
* Establish a formal process for submission and evaluation of proposed repair procedures which will archive process data, test data and approval rationale.
* Leverage Commercial Off-The-Shelf technology and capitalize on best business practices and “lessons learned” from private-sector maintenance and manufacturing organizations with experience using AM technology.
* Comply with existing Federal, State and OSD policy guidance relative to organic maintenance operations in support of DoD missions and develop recommendations for alternative policy when impediments to effective or efficient employment of AM technology are discovered.
* Support the MANTECH chartered *Joint Defense Manufacturing Technology Panel* (JDMTP) subpanels on Advanced Manufacturing Enterprise and Metal Processing and Fabrication; both critical to the successful use of AM capabilities in DoD maintenance.
* Influence policy and investment decisions which affect the use of AM in support of DoD maintenance.

**Organization & Operations:**

The AMMO WG will consist of general membership with two co-chairs. The permanent co-chair will be OSD’s Director of Enterprise Maintenance Technology. The rotating co-chair will be appointed by the Joint Defense Manufacturing Technology Metals Subpanel Chair with a tenure of two years. The rotating co-chair will be selected from the Army, DLA, Department of the Navy, and Air Force.

The Working Group will be composed of members from the Army, Air Force, Department of the Navy, DLA, and other government agencies such as NIST, DOE, NASA, and industry, as jointly approved by the co-chairs. AMMO WG members will be authoritative maintenance leaders, recognized AM leaders, and domain-level experts from the JDMTP Subpanel communities. Participation is voluntary and involves collaboration with multiple agencies. Participants are responsible for covering their own costs.

Minutes will be taken during WG meetings and teleconferences to capture outcomes and decisions for approval, disapproval, or referral as necessary. All AMMO WG products, including but not limited to, meeting minutes and recommendations for guidance, planning, opportunity prioritization, and changes to existing policy will be submitted for technical review to the JDMTP. Approval authority for AM technology policy, development, and implementation recommendations to enable effective and efficient AM employment in the DoD maintenance enterprise resides with the Deputy Assistant Secretary of Defense for Maintenance.

**Duration:**

This charter will remain in effect until the OSD Director, Manufacturing Technology determines that the Goals & Objectives of the AMMO WG have been achieved. Changes to this charter may be made on an as needed basis with approval of the OSD Director, Enterprise Maintenance Technology.

**Approval:**

The authority for this charter is authorized by the Office of Secretary of Defense for Maintenance.