AMMO WG Teleconference Minutes – 1 November 2017

On 1 November 2017, the Additive Manufacturing Maintenance Operations (AMMO) working group conducted a teleconference with over 45 participants. A summary follows:

**First 3D Printed Rocket Engine Part (made with two different alloys)** - Majid Babai (NASA) described NASA’s extensive 26 year history in AM, current AM Efforts to include the differences between manufacturing “In Space” (Manufacturing capability in space) and “For Space” (to reduce manufacturing costs and schedules), NASA’s AM Developments and Goals, and bi-metallic hybrid AM developmental efforts in collaboration with DMG MORI.

**3D Printed Parts Library** - Alberto Lacaze (Robotics Research, LLC) provided a presentation on the Deployable Rapid Prototyping System and Library. He noted that there are very few common parts amongst deployed robots and it is important to reverse this trend and reduce the number of parts sets. He also stated that the cost of many “3D printable” parts is driven by the logistics tail, not the cost of the part. Some of his recommended solutions include: create a wide library of “3D printable parts, use CTMA Cooperative Agreement or an OTA to create a government-wide consortium repository run by a non-profit; use presented library to provide access to users; implement single cyber policy and TTPs designed for the complete group; use the library as a means for sharing version control, testing results, manufacturing instruction, and assembly instructions.

**AM Wargames Planning Team Update** - Ray Langlais (LMI) reported the AM Business Model Wargame II Final Report is completed and posted on the AMMO website at https://ammo.ncms.org/ . Additionally, the AM Wargame Planning Team has agreed to establish four AM working groups in the following areas:

1. Develop an AM Contracting Guide for Navy and DoD: The objective of the guide is to lay out acquisition processes and procedures with the inclusion of contractual language that will allow activities to fully leverage the unique logistical and technological advantages of AM, throughout the entire life cycle, beyond what is currently possible with other existing manufacturing methods. The guide will incorporate recent government-industry collaboratively developed products at the OSD AM Wargame, the Naval AM Technical Interchange and other similar efforts.

Working Group Lead: CAPT Armen Kurdian

1. Development of Acquisition Policy Language for AM: There is a need to develop acquisition policy that considers the unique manufacturing capabilities that AM provides and how DoD can best utilize those capabilities to improve the effectiveness and efficiencies of sustaining DoD weapon systems.

Working Group Lead: COL Howard Marotto

1. Determine how to secure Data Transmission for AM and the Digital Thread: In order to realize the full benefits of AM in a distributed environment, DoD must address the cyber security challenges of transporting the digital thread of Additive manufacturing (DTAM) across less secured networks. Additionally from the OEM viewpoint, each transfer and/or access of technical data outside of its immediate control is a potential liability issue, or a breach of intellectual property (IP).

Working Group Lead: CDR Steven Dobesh

1. Pathfinder Scenario Study of AM Repair Part: This working group will Conduct an End-to-End “Pathfinder” study that looks at the DoD AM repair part process from requirement determination, through contracting, design and manufacturing, certification and qualification, and finally delivery.

Working Group Lead (TBD)

**Maintenance and Sustainment Advisory Group Update** - Marilyn Gaska (LM/America Makes) stated that the next AM Workshop is scheduled for 30-31 May, 2018, at the Lockheed Martin Global Vision Center in Arlington, Virginia (same location as this year). She also provided an update on the AM Metal Casting Project, and the 15-16 November America Makes MMX – Members Meeting & Exchange to be held at the Henry H. Stambaugh Auditorium ballroom. There will be America Makes tours offered on 14 November.

**Next Meeting:** - The next AMMO WG call is scheduled for 10:30-12:00 am (Eastern Time) on ***Wednesday, 13 December 2017.***

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