AMMO WG Teleconference Minutes – 2 Mar 2016

On 2 Mar, 2016 the Additive Manufacturing Maintenance Operations (AMMO) working group conducted a teleconference. A brief summary of the teleconference follows:

**AM Business Model Wargame Update** - (Mark Vitale) There is an Additive Manufacturing (AM) Wargame scheduled on 9-10 May at the Lockheed Martin “Lighthouse” in Suffolk, VA. The wargame will examine commercial terms and the business model processes involved in AM scenarios involving the use of AM to rapidly produce select replacement parts unavailable through traditional methods. A planning group has begun work and we are looking for more volunteers. The scenario involves a fictitious repair part needed at a CONUS maintenance depot. The AM fabrication capability is assumed to be present (The wargame is not looking at technological issues). The main business process to be exercised is DoD gaining access to the Tech Data Package from the OEM. Sub elements include defining DoD requirements, OEM requirements, warranty, duration of access, certification (virtually?), etc.

The scenario and expectations for volunteers will be completed and sent out in a few days. Anyone interested in volunteering to plan or participate in this wargame, please contact Mark Vitale at mvitale@deloitte.com.

**Virtual Certification and Qualification** – Susan Moehring described a DoD RFI for the next two institutes that include six topic areas, one of which is “Certification and Qualification”. All six have workshops to “flush” out the topic areas. “Cert & Qual” area will include model based approaches to certify parts before being manufactured. The USAF issued RFI deadline has been extended to about 22 March. There is an ASME workshop on or about 29 March to help frame the institute. You need an invitation to join. If you want an invitation, contact Susan Moehring at moehring@TechSolve.org. More info to follow.

**Cross Cutting Funding Update** – Greg Kilchenstein (for Lt Col Randy Ackerman) described the newest AT&L cross-cutting project submission. It is a study of specs and standards that are used by DoD and industry, with a goal to develop a compendium of specs and standards on what drives AM in DoD. The proposal has passed the first two cuts. We should know in a week or two if the proposal is going to be approved for funding.

**NIST Measurement Science Additive Manufacturing (MSAM)** – Federico Sciammarella provided additional details on a conference and workshop on Direct Energy Deposition being conducted on May 23-24 in Chicago near the Northwestern Campus. The goal is to understand what is needed to qualify metallic parts. The objective is to have presentations and discussions on direct energy deposition on Monday, and then hold a workshop on Tuesday to go over lessons learned and help educate those interested. Attendance is free. Information will be distributed to the AMMO WG and CTMA distribution list by email. For more information go to http://niu.edu/ceet/MSAM/.

**ASTM F42** – (Carl Dekker) The next meeting is 11-14 July in Tokyo, followed by one in the U.S. in either San Antonio or Florida. There should be an opportunity for the WG to meet. In an Oct meeting at PSU, the focus was on who is working on what in the areas of standards and certifications.

The Additive Manufacturing Standards, Specifications, and Data Schemas (AM3S) meeting was conducted on 13 Jan at NIST. The meeting attempted to define what is going on with standards and where it is heading. The outcome is that NIST and America Makes are working to facilitate the development of standards. The next working group is on 26 or 29 March. Anyone is welcome to join.

F42 is still working on the AM Road Map and F42 activities. An outcome from the previous meeting is that all organizations have agreed to use one set of terminology. We hope that will facilitate us seeing more collaborative efforts. Headway has been difficult on a Joint WG standard on ISO.

A participant on the call asked for a spreadsheet listing the collection of different subgroups and activities.

**Tiger Team:**  (Col Keith Bearden) Follow-on discussion to review the AF Tiger team initiative and the selection of 12 parts. We have had a problem obtaining funding to produce the parts, since we don’t have a machine. We are working it. We estimate that we should have the first draft of the AMMO paper by the latter part of FY16.

**Maintenance & Sustainment Advisory Group Update** - Marilyn Gaska provided a quick update on the following:

- Aircraft Airworthiness & Sustainment Conference. There is an Additive Manufacturing Keystone panel meeting in Grapevine, Texas on 24 March, and a 4 hr. training session. For more information go to: for Keystone Panel - http://www.aasconference.com/ , for training modules - http://www.aasconference.com/pages/training.html

- Tech Roadmap Update: RP+M is performing an analysis of opportunities for AM

- External Outreach

 **Actions:**

1. Anyone interested in volunteering to plan or participate in this wargame, please contact Mark Vitale at mvitale@deloitte.com.
2. If you want an invitation to the working meeting to help frame the “Certification and Qualification” institute, contact Susan Moehring at moehring@TechSolve.org.
3. Send out information on the “NIST Direct Energy Deposition Conference & Workshop” to the AMMO WG and CTMA distribution list by email. (NCMS)
4. Distribute to the AMMO WG a spreadsheet listing the collection of different ASTM 42 activities. Carl provided to NCMS. NCMS distributed to the AMMO WG

**Next Meeting:** - Wed, 6 Apr, at 10:30 am Eastern Time (Scheduled on the first Wednesday of every month). Topics to be discussed include:

* Standardization of Best Practices

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