Additive Manufacturing Maintenance & Sustainment Working Group Monthly Telecon

Date: June 19, 2015

Time: 11AM-12PM EDT

Attendee list: Below

Prepared by: Brett Conner

Business Items:

1. Old Business
   1. “Final” Charter: The charter was presented to the group. It should be recognized as a living document. It was noted that there were some missing items on the charter and the final document would be updated and placed on the collaboration space.
      1. Feedback was provided on prioritizing critical issues identified in the charter both prior to the meeting in email and also during the call.
         1. The establishment of material properties from the different AM processes (SLS, DMLS, DED/DDM, EBM, etc.). Need data available to the general population, government, or small company design engineer.  DoD customers can leverage DARPA's Open Manufacturing Database, but it is limited to a few alloys and processes.
         2. Give the proliferation of AM processes and materials, and the amount of time that it takes to develop material properties for a single process and material, the AMMSWG needs to consider whether the "ASM  
            Handbook" statistical basis approach for additive is feasible.   Or consider moving to a probabilistic/model based approach?
         3. Consider a set of AM industry/government standards tailored to specific industry needs (e.g. aerospace metallic components, non-metallic tooling, etc) that will enable industry to understand government requirements.  These standards can include everything from powder supplier standards, machine qualification requirements, AM component qualification/certification, QA/NDI requirements, etc.
         4. Of key interest to #3 above is a standard to manage the data associated with the AM process, including the security of that data.
         5. AMMSWG should also consider how to assess what specific components/assemblies are driving our readiness (i.e. what are the "head hurters" for maintaining our systems) and how to we find them, manage them, assess whether they are makeable via AM, and understand the cost benefit associated with building them using AM.
   2. Vice Chair: Dana Ellis from NCMS was introduced as the Vice Chair for the working group.
   3. Collaboration space: Brett Conner gave an overview of the collaboration space on the America Makes website. Working group documents including meeting slides and minutes will be posted at the collaboration site. There is also a discussion area for and The collaboration space is not for export controlled (i.e. ITAR) information.
2. New Business
   1. Proposed Sub Working Groups / Volunteers:
      1. The following proposed subworking groups were introduced:
         1. DoD AMMO
         2. Communications / Collaboration
         3. Technology / Solutions Roadmap
         4. Specific Issue White Paper Team:
         5. Certification and Qualification Issues
         6. External Outreach / Education
         7. Commercial
      2. Subworking group leaders and members were being sought
         1. Greg Kilchenstein gave an Additive Manufacturing for Maintenance Operations (AMMO) Working Group update to the AMMSWG. There is an open forum Joint Technology Exchange Group (JTEG) meeting scheduled for June 30, 2015. The topic is Digital Thread and Model Based Enterprise (MBE). Details can be found here: http://jteg.ncms.org/index.php/2015/07/digital-thread-and-model-based-enterprise-mbe/
         2. Liz McMichael from NAVAIR requested that suppliers/OEMs who are NAVAIR customers should be represented on the AMMSWG and subworking groups. Brett Conner raised concern about non-America Makes members. However, Teresa Clement from Raytheon noted that since this is a working group and not an advisory group, non-members are welcome to participate.
         3. There was a consensus that maintenance and sustainment should be treated as a market sector similar to automotive, medical, etc. During this discussion, it was recognized that the M&S Roadmapping Subworking Group should actually be a Sector Working Group within the Roadmapping Advisory Group. This M&S Roadmapping Working Group would coordinate with both the Roadmapping Advisory Group and AMMSWG
         4. M&S roadmapping workshops should be aligned with those planned for October 2015. It was noted in discussion there should be strong interplay between the roadmap development for the Sustainment Sector and any issues identified by the sub-working groups. For example, while Qualification/Certification and material properties topics are already on the America Makes roadmaps, they probably do not yet reflect the M&S community needs.
   2. AMMSWG Priorities
      1. Early success through collaboration space
      2. Communication / documentation of pilot program success
   3. AMMSWG CONOPS were presented
      1. The working group will meet monthly via teleconference (3rd Friday of every month)
      2. Additional effort will be required for Sub-Working Group efforts which will then report during monthly telecons
      3. Annual Face to Face / Venue Adjacency
      4. AMMSWG Management Team (Chair, Vice Chair, Secretary) Coordination with:
         1. America Makes Executive Committee
         2. America Makes Management Team
         3. America Makes Government Program Manager
3. Action Items (status will be reported at the next conference call):

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| Action item | Owner | Status |
| Schedule M&S roadmapping workshop | Teresa Clement | Open |
| Subworking group leaders and members | All | Open |
| Create a list of proposed subworking groups. Inputs desired from working group members. | Marilyn Gaska, Brett Conner | Open |
| Provide inputs on prioritizing the critical issues and objectives identified in the charter | All | Open |
| Add leadership positions, add interface teams to the charter and distribute the final charter to the working group | Ed Morris | Closed |
| Coordinate transfer of working group leadership | Ed Morris, Marilyn Gaska | Closed |
| Setup a working group website page | Brett Conner | Closed |
| Contact points for participation in AMMO, contact Greg Kilchenstein and Deb Lilu | Brett Conner | Closed |
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Attendees for 6/19 Maintenance and Sustainability Meeting

1. Greg Bernitt
2. Jess Bonfield
3. Rex Brown
4. John Carpenter
5. Wesley Cass
6. Teresa Clement
7. Brett Conner
8. Tony Davenport
9. Dana Ellis
10. Marilyn Gaska
11. Douglas Greenwood
12. Michele Hanna
13. Greg Kilchenstein
14. John Kleek
15. Tessa Lett
16. Elizabeth McMichael
17. Susan Moehring
18. Georgette Neslon
19. Tim Osborn
20. Bill Peter
21. Hank Phelps
22. Ken Sabo
23. Tom Santelle
24. Federico Sciammarella
25. Mark Vitale
26. Bob Wood