Naval Additive Manufacturing

Mr. Ben Bouffard; Office of the Deputy Assistant Secretary of the Navy (Research, Development, Test and Evaluation)

Dec 17, 2018

OVERALL CLASSIFICATION: UNCLASSIFIED

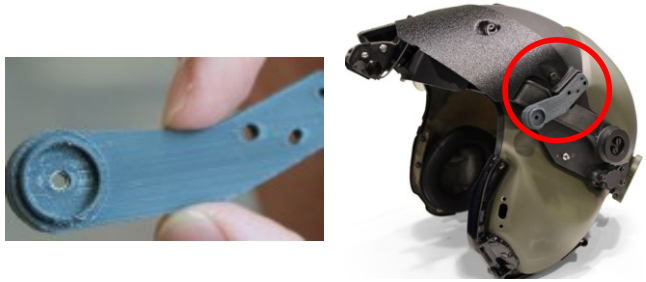
AM: A Warfighting Capability TODAY

Radio Clip

Equipment Nob

Tailored, Attritable UxS

H1 Helmet Clip



Snow Shoe Clips

Re-start Training Pipeline

Foundational AM LOEs – Overcoming Enterprise Challenges

1. Accelerate standards development • Define and prototype DON usage of materials database • Enable rapid approval process for certain AM components
2. Prototype End-to-End Digital Manufacturing Ecosystem – Publish procedures to network select printers – Field and populate initial 3D Print Exchange Server
3. Expeditionary and afloat deployment – Deploy capability afloat, undersea, expeditionary – Define and pilot afloat network solutions – Metal capabilities forward deployed
4. Define workforce development requirements – Warfighter, Artisan, DAU/acquisition
5. Develop AM Contracting and Acquisition Guide
6. AM Challenge

*Define metrics that convey AM benefits to fleet and a means to capture them

2019 AM Goals

- 1000 Unique end use components available to fleet
- 5000 AM files available on 3D file exchange server
- 10 sites with networked AM equipment
- AM Contracting Guide signed out through DASN (RDT&E)
- Permanent AM installations on 7 ship classes
- MARCORSYSCOM responses to MARFOR AM requests within 24 hours

DON Additive Manufacturing / 3D Printing Vision

- *Enhanced warfighting capabilities through employment of designs not otherwise possible*
- *Increase readiness through the production of obsolete or long lead-time items, at or near the point of need*
- *Rapid development of new capabilities through prototyping*
- *21st Century Civilian and Warfighting workforce empowered to innovate*

Enhanced Capabilities

Additive manufacturing will be integrated into weapon system designs in order to field capabilities that outperform those that use conventionally manufacturing techniques only.

Mission-Tailored, On-Demand Warfighting Systems

Sailors, Marines and civilians will be trained to rapidly build and adapt systems tailored to specific missions in order to meet emerging warfighting requirements.

Agile Supply Chain

Our supply chain will be transformed from a physical to digital inventory. The Navy and Marine Corps will leverage a global, distributed digital manufacturing infrastructure that is able to scale and surge to produce the right part, at the right time, in the right place.

Energetics

Customized munitions and explosives will be printed afloat and ashore, greatly enhancing our Naval supremacy in the areas of speed and flexibility.

Expeditionary Sustainment

Forward-deployed personnel will be able to better maintain and enhance their warfighting systems. Whether it's a Forward Operating Base ashore or a repair shop afloat, AM will bring more capability closer to our deployed operational forces.