



# Additive Manufacturing: OSD Perspective

DOD Maintenance Symposium  
Additive Manufacturing Panel  
17 December 2018

Kelly Visconti  
Supporting Office of the Under Secretary of Defense for  
Research and Engineering





# Relevance of Additive Manufacturing

Interest over time ?



<https://trends.google.com/trends/explore?date=2006-09-01%202018-10-03&geo=US&q=3d%20printing>



# Advantages and Limitations of AM

## Advantages

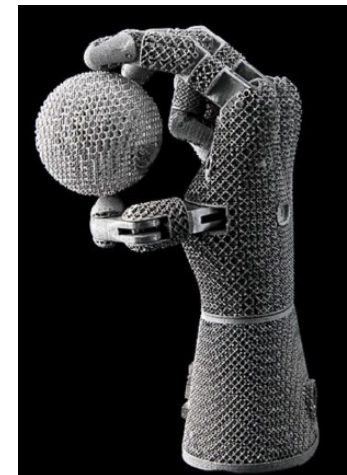
- Design freedom
- Reduced waste
- Cost savings
- Agile and shorter supply chains
- Legacy Part Replacements
- Energy efficient for low volumes



*Airline seat belt buckle lightweight redesign –  
3.3 MM liters fuel saved*

## Current Limitations

- Limited approved material selection
- Build speed can be slow
- Surface roughness
- Extensive testing, validation
- Build size with limited post processing



*Titanium prosthetic hand*

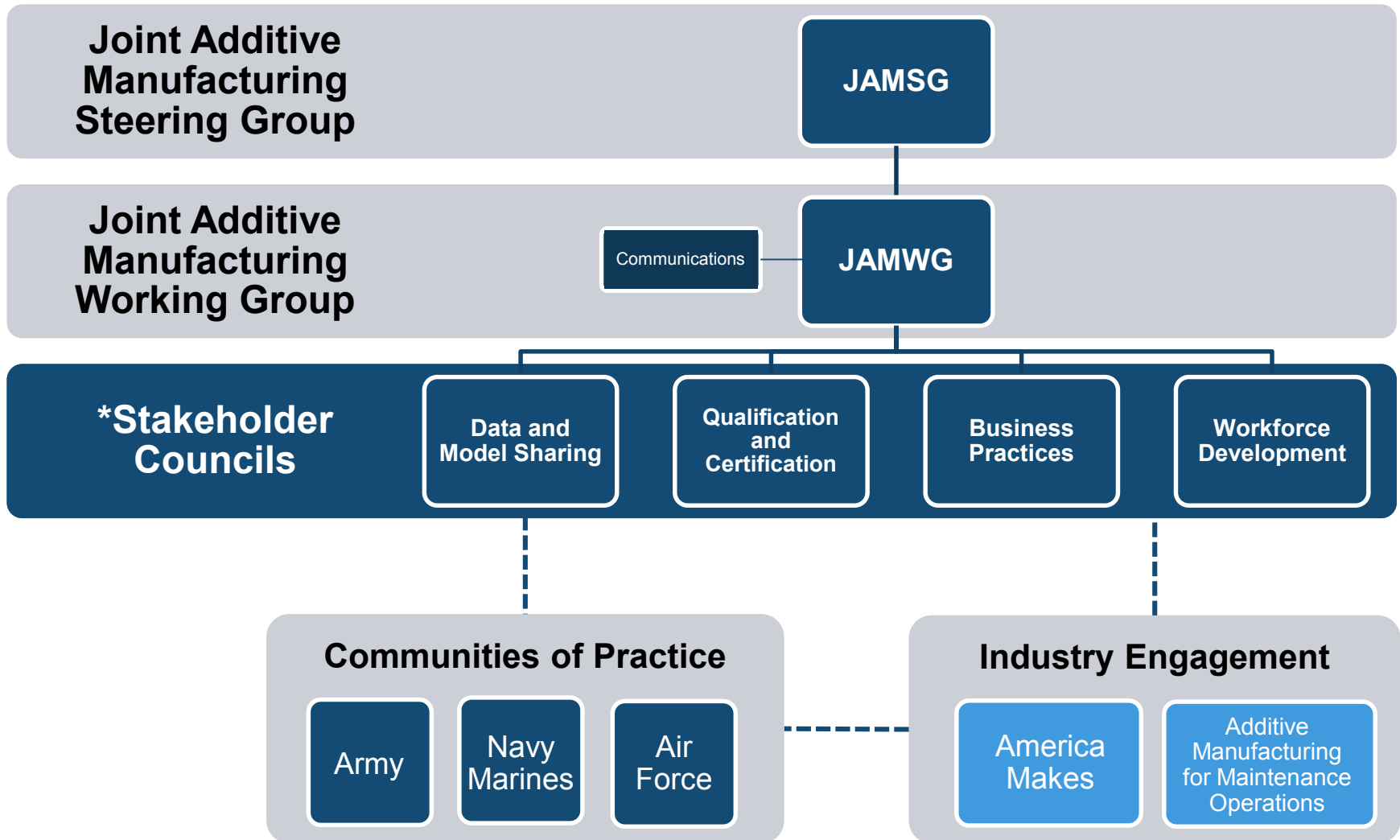


# Joint AM Objectives





# Joint AM Organization





# Joint AM Community

	Research and Engineering	Acquisition	Maintenance and Sustainment	Logistics
<b>OSD</b>	Office of Deputy Director for Strategic Technology Protection and Exploitation	Systems Engineering	Office of Deputy Assistant Secretary of Defense Materiel	Office of Deputy Assistant Secretary of Defense for Logistics
<b>Joint Staff</b>	Joint Staff J4			
<b>Air Force</b>	Assistance Secretary of the Air Force Acquisition, Technology and Logistics; Air Force Research Lab		Air Force Materiel Command	Air Force Logistics, A4
<b>Army</b>	Assistant Secretary of Army – Research and Technology; Army Research Lab		Army Materiel Command	Army Logistics, G4
<b>Navy</b>	Office of Naval Research	Assistant Secretary of the Navy Research, Development and Acquisition	Office of Chief of Naval Operations	
<b>Marines</b>	Logistics Innovation			
<b>Defense Logistics Agency</b>	Information Operations - Chief Research and Development		Logistics Operations Chief Technical and Quality Assurance	
<b>Missile Defense Agency</b>	Component and Materials Engineering Division			
<b>Defense Contract Management Agency</b>	Technical Directorate Engineering Division			



# DoD Institutes Design Tenets

Industry driven, public-private partnerships



Investments in applied research and industrially-relevant manufacturing technologies (cost-matched)

Regional hubs of manufacturing excellence with National Impact

Required focus on education and workforce development needs

Tenets meet key DoD ManTech requirements

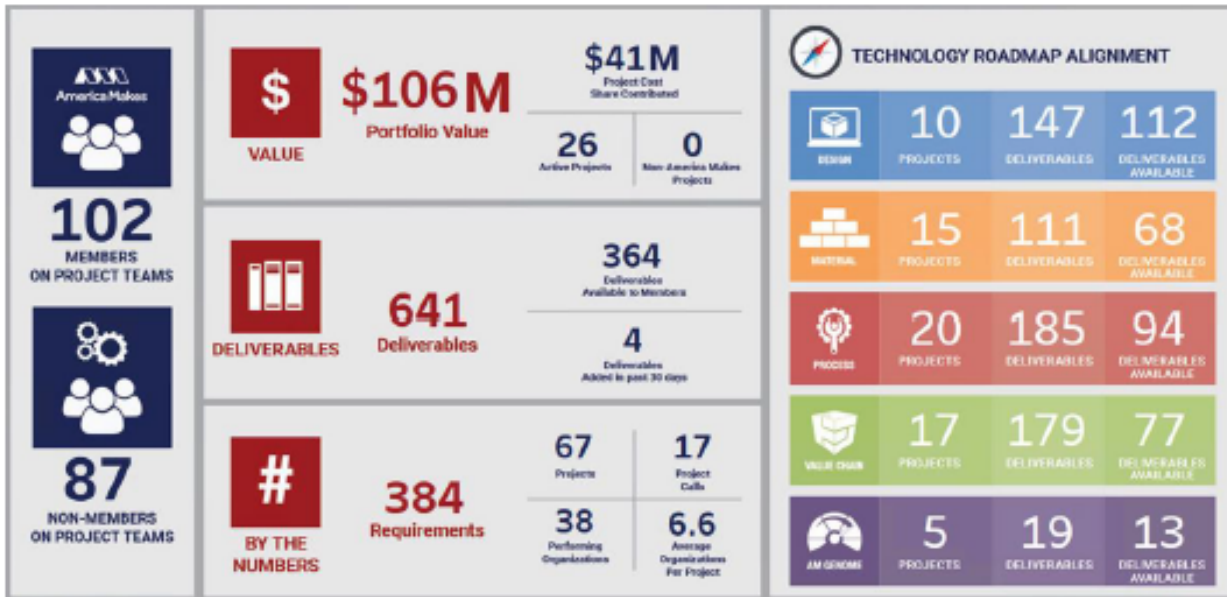




# America Makes

America Makes Driven by... NCDMM  
NATIONAL CENTER FOR DEFENSE  
PRODUCTION AND ACQUISITION

## Portfolio Snapshot



- Public Private Partnership on AM
- Launched in 2012
- \$100M+ R&D investments
- Continued partnership with DoD

America Makes Program Information / NCDMM Proprietary Information **AmericaMakes.us**

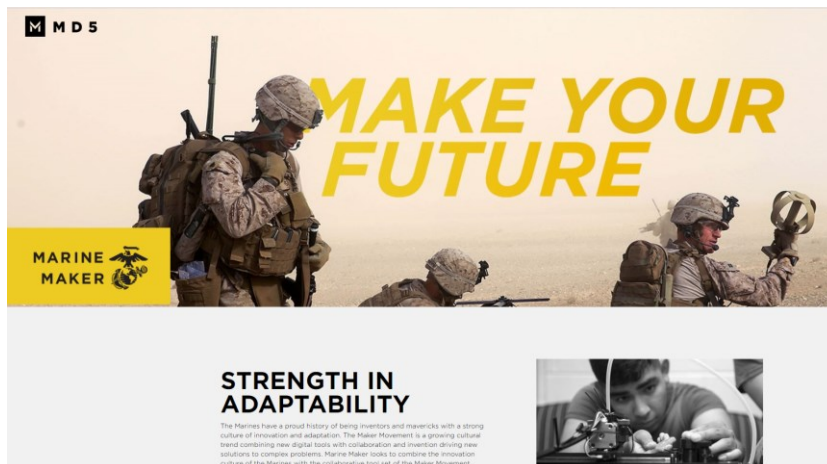




# JAMWG Directed Project

## Joint Additive Manufacturing Model EXchange (JAMMEX)

- Develop a system to share 3D print files in a secure environment





# JAMWG Directed Project

## Advanced Tools for Rapid Qualification

- 3 Focus Areas
  - Damage surrogate models
  - Service conditions for thermoplastics
  - Corrosion
- Project call through America Makes
- JAMWG Qualification and Certification Stakeholder Council engagement