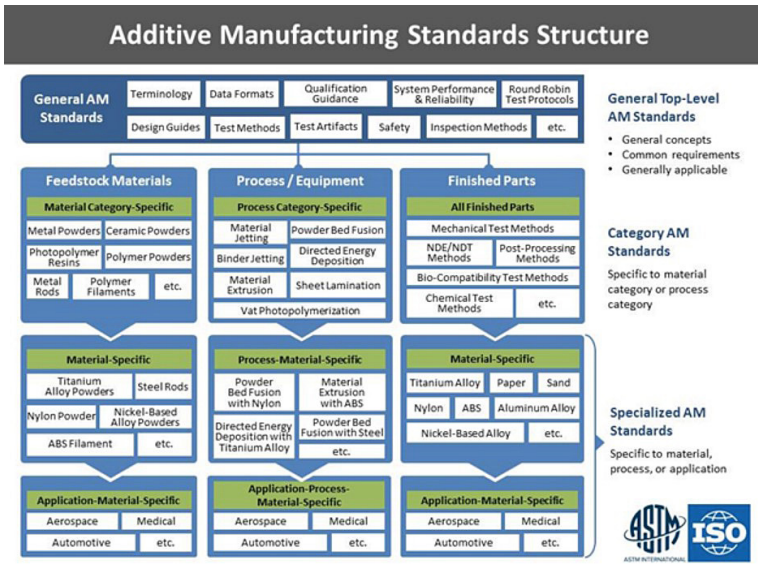
SUCCESS STORY 3002

Resource records and develops standards and specifications necessary for the industrialization of AM technologies.

AMSC Roadmap facilitates coordination of standards development gaps while leveraging a common language



Additive Manufacturing Standards Structure

PROBLEM

Numerous standards development organizations (SDO's) are engaged in standards development across the AM value stream. The wide range of activity, while of considerable merit and necessity, exhibits a propensity for generating conflicting information as well as duplication of effort. Prior to the Additive Manufacturing Standardization Collaborative (AMSC), no process existed for identifying priorities and interdependencies in the development of standards and specifications for additive manufacturing. Recognizing the limited range of intended industry application domains and corresponding subject matter expertise to support these volunteer-based standards development efforts, a neutral facilitator to identify and prioritize standards development opportunities (gaps) offers considerable benefit to optimize resources for coordinating these various efforts. An unbiased convener should foster the development of a consistent, harmonized, and non-contradictory set of additive manufacturing standards and specifications.

OBJECTIVE

The purpose of the effort was to develop a standardization roadmap for additive manufacturing that identified existing standards and specifications, as well as those in development, assessed gaps, and made recommendations for priority areas where there was a perceived need for additional standardization, including in relation to needs already identified in the America Makes Additive Manufacturing Technology Roadmap. This effort did not include the development of standards or specifications, but rather coordinated standards development activity co-facilitated by the American National Standards Institute (ANSI) and America Makes. Furthermore, the AMSC roadmap now serves as a publicly available resource for the AM supply chain which features a common language and framework for coordinating standards and specification development opportunities.

AMERICA MAKES TECHNOLOGY DEVELOPMENT ROADMAP

This project aligns to:

VALUE CHAIN

ASTM PROCESS CATEGORY
N/A

EQUIPMENT
N/A

MATERIAL
N/A

TECHNICAL APPROACH

The project team leveraged an approach familiar to the standards development community which promotes engagement and coordination through consensus-driven activity while leveraging focused working groups. A kickoff meeting open to the public was hosted and communications outreach was used to attract subject matter expertise registration that ensured the relevance and validity of the AMSC roadmap content. The kickoff meeting agenda was developed to establish an equitable overview of the AM standards development landscape and included ongoing and future anticipated efforts of various SDO's as well as discussions with industry and America Makes to identify and prioritize standards and specification development opportunities quickly. Standards development opportunities (gaps) were cataloged by leveraging the support of subject matter experts through virtual teleconferences that convened multiple technology domain-focused working groups (design, process and materials, qualification and certification, non-destructive evaluation, and maintenance). A taxonomy was developed to document and categorize standards development gaps as well as priorities while noting the necessity for additional research and development when necessary.

The draft document was made available for public comment and then published. The current version of the roadmap is available at https://www.ansi.org/standards-coordination/collaboratives-activities/additive-manufacturing-collaborative.

ACCOMPLISHMENTS

A publicly available resource was delivered that documents available AM standards and specifications as well as standards and specifications in development or necessary for the industrialization of AM technologies. The roadmap serves as a framework to facilitate a more coherent and coordinated approach to the future development of standards and specifications for additive manufacturing. The roadmap publication was promoted to the AM community to drive awareness and is periodically updated to ensure its relevance as additional technologies and opportunities for standardization evolve.

PROJECT END DATE

February 2017

DELIVERABLES

- Additive Manufacturing Standardization Collaborative Roadmap
- AM Standards Gaps Progress Report

FUNDING

$180,000 total project budget

PROJECT PARTICIPANTS

Project Principal:
America Makes/NCDMM

Other Project Participants:
American National Standards Institute (ANSI)

Public Participants:
U.S. Department of Defense