

NEMA Advanced Manufacturing Summit Report

Background

On February 9-10, 2022 NEMA and the International Trade Administration (ITA) hosted an Advanced Manufacturing Summit to discuss technical and trade challenges related to the implementation of advanced manufacturing systems. The summit aimed to begin developing a strategy to mitigate those challenges. Advanced manufacturing systems increase productivity and quality, reduce energy use, and enable manufacturers to improve manufacturing and supply chain resiliency. The summit was planned as part of a [Market Development Cooperator Program](#) (MDCP) award that NEMA received from ITA. This report provides an overview of the key discussions held during the summit as well as an action plan developed from the discussions. NEMA and ITA would like to thank all participants and extend our sincere gratitude to all presenters. The summit agenda and a link to the summit recordings are available on the [NEMA website](#).

Participation

Over 150 individuals registered for the summit. 45% of registrants self-identified that their primary role was technical; 32% as business; and 23% as government relations/public policy. Participants were from 67 separate companies or organizations, including manufacturers, associations, U.S. government representatives, university representatives, and testing laboratories.

International Trade Administration and Market Development Cooperator Program

The International Trade Administration (ITA)—a bureau within the U.S. Department of Commerce—engages with U.S. industry, foreign governments, and international bodies to identify and remove barriers to exports and ensure U.S. businesses compete on a level playing field. The Market Development Cooperator Program (MDCP) is the U.S. government’s most successful export assistance program. MDCP awards spur industry-led export-development projects through financial and technical assistance from ITA.

NEMA MDCP Award

NEMA was awarded an MDCP grant in October 2021 focused on expanding U.S. participation on technical standards related to advanced manufacturing systems and increasing U.S. exports of advanced manufacturing systems. The three-year award will allow NEMA to identify new experts for international technical standardization work, provide training for experts, and support participation in international standards meetings. In addition, the award will help NEMA connect U.S. companies with industry groups, foreign companies, and U.S. government officials in Indonesia, India, Turkey, and Mexico through trade promotion activities and trade missions focused on advanced manufacturing systems.

Standards for Advanced Manufacturing Systems

Advanced manufacturing standards are critically important for system interoperability and to ensure data can communicate across devices and companies in the supply chain. An important aspect of standards is that they can also ensure the safety of components and systems.

There are significant opportunities in standardization related to advanced manufacturing systems. Topics in need of additional standardization include: interoperability, communication protocols, blockchain, augmented reality, user guides, cybersecurity, and data.

A consensus-based standards roadmap will help drive action based on industry's vested interest in the business-case need for standards development and adoption. A roadmap requires input from a variety of relevant stakeholders including manufacturers, industry associations, and standards-related government agencies. The standards roadmap should begin with the end in mind to ensure that advanced manufacturing systems meet user needs.

Industry Challenges to Implementation of Advanced Manufacturing Systems

Manufacturers, especially small and medium enterprises, struggle with cost, complexity, and accessibility of advanced manufacturing systems. Interoperability and standardization can reduce some of the barriers to implementation. However, immediate challenges outside the scope of standards, such as workforce gaps, also need to be addressed.

The disconnect in understanding the return on investment emerged as key challenges for implementation of advanced manufacturing systems. These systems have the potential to significantly reduce costs, but the large upfront expense may be difficult for users to justify. Developing information, training, and tools to explain the benefits and return on investment for advanced manufacturing systems is an important industry need.

Action Plan

Based on discussion during the summit, the following action plan has been developed for NEMA.

1. **Advanced Manufacturing Council**
NEMA will launch the Advanced Manufacturing Council, which will serve to bring together those in business and strategy-focused roles and those in technical roles to ensure that resources are being invested in ways that make the most impact. The Council will serve as a forum to understand and identify industry's priority to address barriers to U.S. and global adoption of advanced manufacturing systems. Membership in the Council is open, and interested parties should contact Fern Abrams, Industry Director for Industrial Systems (fern.abrams@nema.org).
2. **Standards Roadmap**
NEMA will work to develop a standards roadmap for advanced manufacturing systems that identifies gaps in standardization as well as key priority areas for participation. NEMA will coordinate with relevant trade groups, the Advanced Manufacturing Council, and interested U.S. government agencies in development and maintenance of the roadmap. A framework should be available for input within a few weeks.

3. Standards Training

As part of the MDCP award, NEMA will develop a training toolkit for its stakeholders. NEMA will begin to develop the toolkit and associated training materials and make that available to NEMA Technical Advisory Groups and experts as soon as possible.

4. Funding Opportunities for Participation in International Standardization

As part of the MDCP award, NEMA will provide financial support for participation in international standardization. NEMA will develop guidelines for funding participation, with a focus on funding new participants and those from small and medium enterprises. This information will be made available to NEMA Members and participants in Technical Advisory Groups related to advanced manufacturing as soon as it is available.