

MAKING AN IMPACT ON U.S. MANUFACTURING

MEP

A National Resource to Help U.S. Small Manufacturers Implement Digital Manufacturing

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NIST
**National Institute of
Standards and Technology**
U.S. Department of Commerce

Manufacturing Extension Partnership (MEP)

MISSION

“

To enhance the productivity and technological performance of U.S. Manufacturing.

”

- MEP built on nationwide system of centers located in all 50 states and Puerto Rico.
- Each MEP center is a partnership between the federal gov and a variety of public and private entities, including state, university, and nonprofit organizations.
- MEP centers help thousands of manufacturers reinvent themselves, increase profits, create and maintain jobs, and establish a foundation for long-term business growth and productivity.



MEP Program in Short



National Network

At least one center in all 50 U.S. states plus Puerto Rico; ~1500 field staff in >400 service locations assisting U.S. manufacturers



Partnership Model

Federal, State and Industry



Local → National Connection

System of Centers providing localized service to manufacturers in each State – with National reach and resources



MEP Budget & Business Model

\$128 Million Federal Budget with Cost Share Requirements for Centers



Global Competitiveness

Program provides direct, hands-on tech & business assistance to domestic manufacturers to help them compete and grow



Digital Manufacturing Relevance

Annually serve >30,000 small U.S. manufacturers – *can facilitate Digital Mfg-related outreach to small U.S. manufacturers*



National Network



MANUFACTURING
EXTENSION PARTNERSHIP
National Network

www.nist.gov/mep



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What MEP Does



- ✓ Work with small and medium size manufacturers to help them create and retain jobs, increase profits and save time and money
- ✓ Focus on meeting manufacturer's short term needs, but in context of overall company strategy
- ✓ Reach over **30,000 manufacturing firms** and complete over **10,000 projects** per year
- ✓ Provide companies with a consistent set of assistance services including:



Supply Chain Development



Technology Acceleration



Workforce Development



Quality Systems and Lean Process



Innovation and Growth

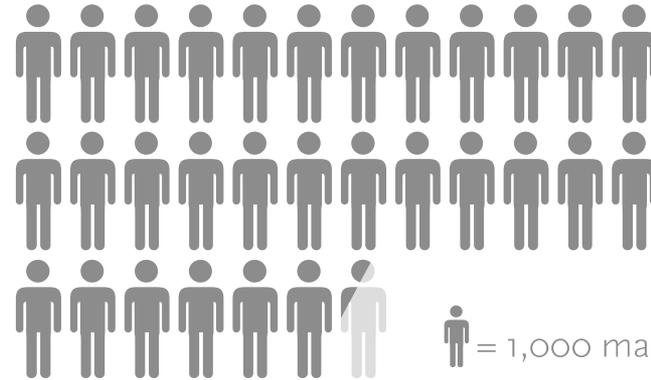


Sustainability



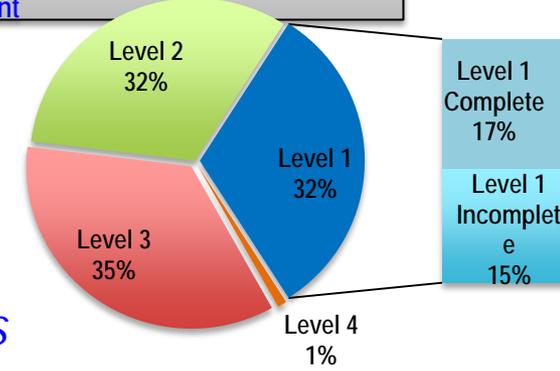
Client Impacts

30,131
Manufacturers
served in FY2013



MEP and MBE

* MBE Analysis Metric
 * Analysis & Results: 2/3 of participating suppliers are ready to operate in an MBE environment



- 2009 MBE Capabilities Assessment

- ✓ *Small manufacturers are generally ready to operate with 3D data*

- MBE Education and Training Summits, 2010-2011

- ✓ *Small manufacturers are interested in using 3D models as basis for design and production; are anticipating receipt of models, requirements*

- MBE Website, Launched 2010

www.model-based-enterprise.org

- ✓ *Upgraded in 2014 by Catalyst Connection (MEP Center in Pittsburgh, PA)*

- 2012 3D TDP Assessment

- ✓ *3D TDP Tool developed by ManTech contains all info needed to make a part and is better than 2D drawings*



Level 0	<ul style="list-style-type: none"> • Drawing Centric • Disconnected Manufacturing - Disconnected Enterprise • Primary Deliverable: 2D Drawing
Level 1	<ul style="list-style-type: none"> • Model Centric • Neutral Model CAM - Disconnected Enterprise • Primary Deliverable: 2D Drawing and Neutral CAD Model
Level 2	<ul style="list-style-type: none"> • Model Centric • Native Model CAM - Disconnected Enterprise • Primary Deliverable: 2D Drawing and Native CAD Model
Level 3	<ul style="list-style-type: none"> • Model Based Definition • Native Model CAM - Disconnected Enterprise • Primary Deliverable: 3D Annotated Model and LightWeight viewable
Level 4	<ul style="list-style-type: none"> • Model Based Definition • Integrated Manufacturing - Disconnected Enterprise • Primary Deliverable: 3D Annotated Model and LightWeight viewable via PLM
Level 5	<ul style="list-style-type: none"> • Model Based Enterprise • Integrated Manufacturing - Integrated Internal Enterprise • Primary Deliverable: Digital Product Definition Package and TDP
Level 6	<ul style="list-style-type: none"> • Model Based Enterprise • Integrated Manufacturing - Integrated Extended Enterprise • Primary Deliverable: Digital Product Definition Package and TDP via the web

MEP and Digital Manufacturing

- MEP operating M-TAC Pilot Projects (M-TAC = Manufacturing Technology Acceleration Center)
- M-TAC Projects focused on tech acceleration assistance to small manufacturers – set within context of specific supply chain needs.
- Transportation Equipment Manufacturing M-TAC
 - Led by California Manufacturing Technology Consulting (CA), w/MEP Center partners GENEDGE Alliance (VA), Illinois Manufacturing Excellence Center, Corporation for Manufacturing Excellence (CA)
 - Includes industries such as automotive, aerospace, trucking, shipping, rail.
 - Takes systems view of technology needs w/in these supply chains
 - Works with Top/Mid-Tier manufacturers to ID their needs, and needs of small manufacturers within their supply chains.
 - Also directly works with the supply chains' small manufacturers to provide awareness about the needs of Top/Mid Tiers, as well as assistance in implementing specific technologies.
 - *One initial focus area: MBE within aerospace supply chain*



MEP and DMDII



DIGITAL MANUFACTURING
& DESIGN INNOVATION INSTITUTE

- DOD/OSD and NIST MEP developing Formal Framework for Partnership between MEP and IMIs, including DMDII
 - Processing MOU between NIST MEP and DOD / OSD for DOD-led IMIs, starting with DMDII
- Organic efforts occurring that leverage local / regional MEP Center assets and resources to assist DMDII as they strive to engage, assist, and positively impact small manufacturers
 - IMEC (IL), Manufacturer's Edge (CO) initial MEP Centers working with DMDII
- Anticipate partnerships developing per guidance flowing from MOU(s)





SAMPLE / POTENTIAL PARTNERSHIP EFFORTS

✓ *SME Awareness and Outreach*

- NIST MEP and DMDII jointly develop training content for MEP Center field staff to serve as consultants to small manufacturers
 - *Example: Digital Manufacturing 101, with DMDII*
- MEP Centers conduct manufacturing workshops to address groups of manufacturers about DMDII efforts, assets, resources, opportunities

✓ *SME Participation in DMDII R&D Planning*

- Local MEP Center or NIST MEP participate in DMDII Technical, Strategic Advisory, or other DMDII Committees – to represent voice of small manufacturers





SAMPLE / POTENTIAL PARTNERSHIP EFFORTS

✓ *SME Participation in DMDII R&D Conduct*

- DMDII and MEP (NIST MEP and MEP Centers) operate bulletin boards or conduct MEP Scouting to match interested and capable small manufacturers with formative proposal teams

✓ *SME Implementation of DMDII R&D Results*

- MEP serve as “clearinghouse” to present DMDII research results to relevant small manufacturers working with MEP Centers



Thank You

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