The Manufacturing Extension Partnership (MEP) Program

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www.nist.gov/mep

MEP • MANUFACTURING
EXTENSION PARTNERSHIP®

https://www.nist.gov/mep/mep-national-network

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

# National Institute of Standards and Technology

- **Non-regulatory** agency of the U.S. Department of Commerce
- Serves as the U.S. National Measurement Institute
- Laboratory programs support U.S. innovation, standards development.
- Focus on metrology and standards

Disclaimer: *The identification of any commercial product or trade name is included solely for the purpose of providing examples of publicly-disclosed events and does not imply any particular position by the National Institute of Standards and Technology (NIST).*
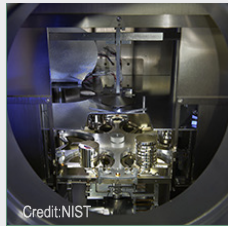
NIST Laboratory and Extramural Programs
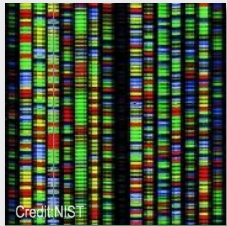
Material Measurement Laboratory
Credit:NIST

Physical Measurement Laboratory
Credit:NIST

Engineering Laboratory
Credit:Shutterstock/Dmitry Kalinovsky

Information Technology Laboratory
Credit:Shutterstock

Communication Technology Laboratory
Credit: Shutterstock/urbanscape

NIST Center for Neutron Research

Hollings Manufacturing Extension Partnership

Manufacturing USA

Baldridge Performance Excellence Program

<u>The Manufacturing Extension Partntership (MEP) Program</u> is a unique public-private partnership that delivers comprehensive, proven solutions to U.S. manufacturers, fueling growth and advancing U.S. manufacturing.

- Managed federally by NIST since 1988, the MEP Program operates an extension-based nationwide network of non-federal centers in every U.S. state and Puerto Rico that provide daily hands-on technical assistance to ~30,000 SMMs each year

- MEP Program Objective: to enhance competitiveness, productivity, and technological performance in United States manufacturing

4

The MEP Program

- Non-federal MEP Centers in all 50 states, Puerto Rico.
- Program managed at federal level by NIST

Public-private partnership with local flexibility.

Federal funds, state investments, and private sector fees cover services.

Market driven program that creates high value for manufacturers.

Leverage partners to maximize service offerings.

Transfer technology and expertise to manufacturers.

MEP National Network

MEP Program Partners

Economic development organizations

Federal agencies & laboratories

Industry leaders & think tanks

Manufacturing USA Institutes

State & local government

Universities, community colleges & technical schools

Trade associations & other partners

Partnering to Drive a National Program

Over
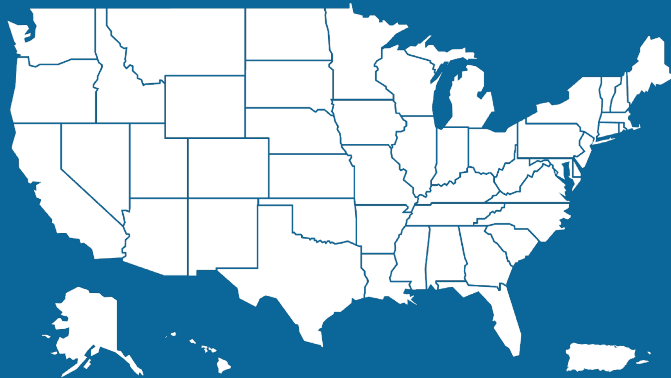**1,400**
Manufacturing Experts

84.3
Net Promoter Score

More than
2,100
Partners

NATIONAL NETWORK
One Center in Every State and Puerto Rico

More than
385
Service Locations

Results are based on FY 2020 MEP National Network Client Impact Survey

FY20 MEP Program Impacts

In FY 2020, the MEP National Network served ~28,000 U.S. manufacturers

105,748 JOBS Created or Retained

$13.0 BILLION in New and Retained Sales

$4.9 BILLION in Total Investment in U.S. Manufacturing

$2.7 BILLION in Cost Savings

Results are based on FY 2020 MEP National Network Client Impact Survey

MEP Economic Impact Analysis

In February 2021, *Summit Consulting* and the *W.E. Upjohn Institute for Employment Research* published a study that found the MEP Program generated a **substantial return on investment** of nearly **13.6:1** for the **$146 million** invested in FY 2020 by the federal government.

JOBS	GDP	RETURN ON INVESTMENT
252,000	$20.9 Billion	13.6:1

How Centers Work with Manufacturers

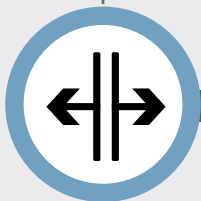**Initial Contact**

Group sessions, referral

Assessment

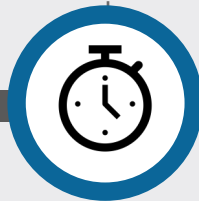Informal walk-through, detailed company analysis

Identify

Find potential issues, define proposed project and approach

Follow-Up

Assures customer satisfaction and explore further opportunities

Project Execution

Center staff, partners, and/or 3rd party consultants

Negotiate

Consult with company and sign contract with fee paid to Center

Business Solution Examples
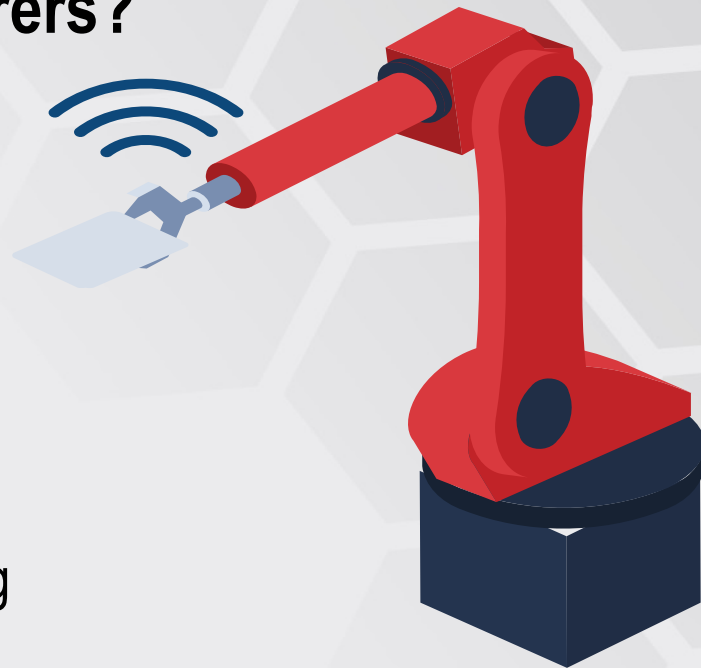
Cybersecurity is Good Business

- Misinformation or worse (misled customers)
- Embarrassment (credibility/reputation)
- Repair costs (and down time)
- Weakened ability to innovate
- Suboptimal information flow
- Loss of personal assets
- Loss of customers
- Out of business!

Why manufacturers?

- Few can afford to be shut down for long
  - Will pay ransoms
- Are interconnected with higher payoff targets
- News-worthy
- Extensive use of technology that isn't secure
  - e.g. IoT/IIoT
- Lack of cybersecurity awareness / monitoring
  - i.e. they can get in without being detected

2000 percent increase in incidents targeting OT environments

IBM X-Force Threat Intelligence Report Index 2020

14

NIST MEP & DoD Office of Small Business Programs

- MOU executed between NIST MEP and OSBP in 2021 – emphasis on cybersecurity
  - Education & Training Materials
  - Project Spectrum
  - Mentor-Protege Program
  - Leverage MEP Centers to provide hands-on assistance to SMMs
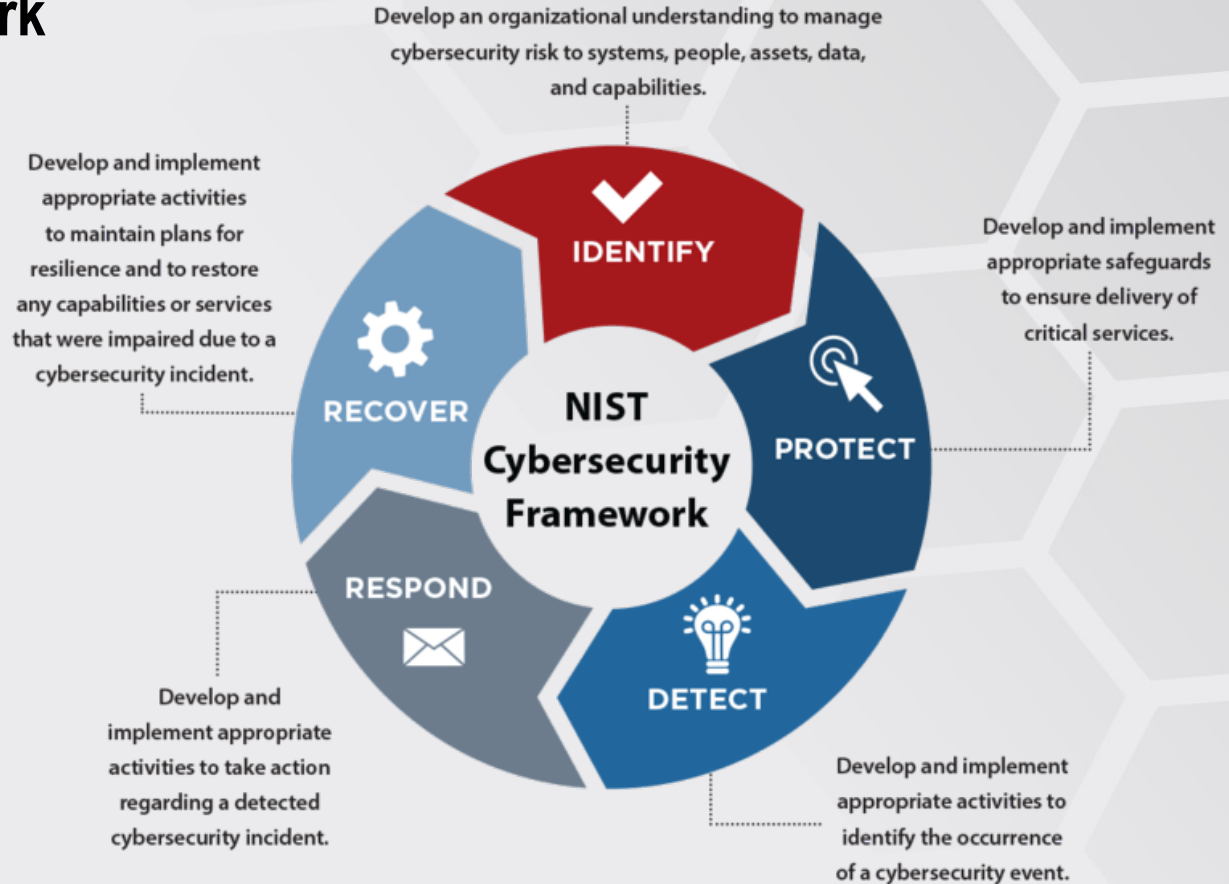- Multiple MEP Centers participating, including UT, IN, MD, others

MEP National Network Cybersecurity

MEP National Network Cybersecurity
August 2021

MEP National Network™ continues to develop strong nationwide capabilities to provide cybersecurity assistance for small US manufacturers.

- **Continues to be spurred by strong DOD partnerships.**
  - MEP role continuing with DFARS requirements for defense sector and evolving for DOD CMMC program.
- Continued emphasis on risk management for all manufacturing industries served by MEP Centers.
- Importance of cybersecurity also being highlighted by opportunities relating to Industry 4.0 and manufacturer/supply chain resilience.
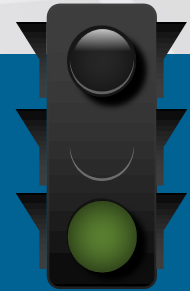
- MEP Centers nationwide providing cybersecurity services
- All 51 Centers participating in MEPNN cybersecurity WG

17

2021 National Defense Authorization Act (NDAA)

- Passed Jan. 1, 2021; specifies DOD budget, expenditures, policies for FY 2021.
  - NDAA is an authorization, not an appropriation.

References to MEP program

- Sec. 1738 Assistance for Small Manufacturers in the Defense Industrial Supply Chain on Matters Relating to Cybersecurity.

- Sec. 9413 National Institute of Standards and Technology Manufacturing Extension Partnership Program Supply Chain Database.

- Sec. 9415 Coordination [by Manufacturing USA Institutes] with Hollings MEP Centers.

Defense Supply Chain Requirements

- **DFARS 252.204-7012:** Requires contractors with CUI to follow NIST SP 800-171, report cyber incidents, report cybersecurity gaps

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- **DFARS 252.204-7019:** Requires primes and subcontractors to submit self-assessment of NIST 800-171 controls (currently through SPRS)

- **DFARS 252.204-7020:** Requires primes and subcontractors give the DoD access to their infrastructure to verify the self-assessment; requires contractors roll requirements down to subcontractors

- **DFARS 252.204-7021:** Rolling out of the Cybersecurity Maturity Model Certification program over 5 years

MEP NN Cybersecurity Services Overview

- **Since 2018 more than 3,400 SMMs served**

- **More than 225 Awareness & Training Events**
  - General cyber hygiene practices
  - Overview of FAR and DFARS requirements
  - Overview of other requirements (e.g. ITAR, PCI DSS, Privacy, etc.)

- **More than 1,200 projects completed**
  - Assess the cybersecurity posture of an organization, provide recommendations, help implement solutions, follow-up
  - Majority to help companies follow DFARS requirements

MEP NN Defense Supply Chain Services

- **Services**
  - Help companies **implement basic hygiene requirements** (FAR 52.202-21)
  - Help companies **follow NIST SP 800-171** (DFARS 252.204-7012)
  - Help companies conduct NIST SP 800-171 **self-assessment** (interim DFARS 252.204-7019) – including entering score into SPRS
  - Transition to compliance with **CMMC program** (interim DFARS 252.204-7021)

NIST MEP / DoD Office of Under Secretary of Defense Research & Engineering

Interagency Agreement (IAA) funded MEP Centers to serve cybersecurity needs of small defense manufacturing suppliers between Aug 1, 2019 - June 30, 2021

- MEP National Network award, led by Michigan Manufacturing Technology Center (MMTC), provided nationwide cybersecurity awareness across about half of the U.S. states, hands-on technical assistance to small defense contractors , and pilot operational technology protections
  - o Served over 1,000 small defense contractors
  - o Also collaborated with NIST Labs

MEPNN & CMMC

- Planned to be rolled out over the next 5 years ("crawl, walk, run") as a means to verify FAR 52.202-21 and DFARS -7012 (and other) requirements are followed

- Regular coordination between NIST MEP, OUSD A&E, CMMC-AB, and others on helping defense supply chain meet needs of the DoD

- Some MEP Centers currently Registered Practitioner Organizations (RPOs)

- Mulitple MEP Centers currently planning to either obtain RPO designation and/or have at least one employee obtain Registered Practitioner (RP) designation.

- Some MEP Centers may be able to offer grants to SMMs seeking CMMC certification (through state-based or DoD OLDCC-funded grants)

Cybersecurity Maturity Model Certification (CMMC)

- Not replacing DFARS 252.204-7012 (yet)

- 5 levels; which level depends on the sensitivity of information given to the contractor

- Operated by the CMMC-AB

- Determined by certified third-party assessors (C3PAOs)

- GO/NO GO decision; No POAM (60-day remediation period)

- Currently Department of Defense, other agencies have expressed interest in using

CMMC

- **Level 1**
  - based on FAR 52.204-21
  - for businesses with FCI only
- **Level 3**
  - based on NIST SP 800-171 + additional requirements
  - for businesses with CUI
- **Level 5**
  - for businesses with CTI
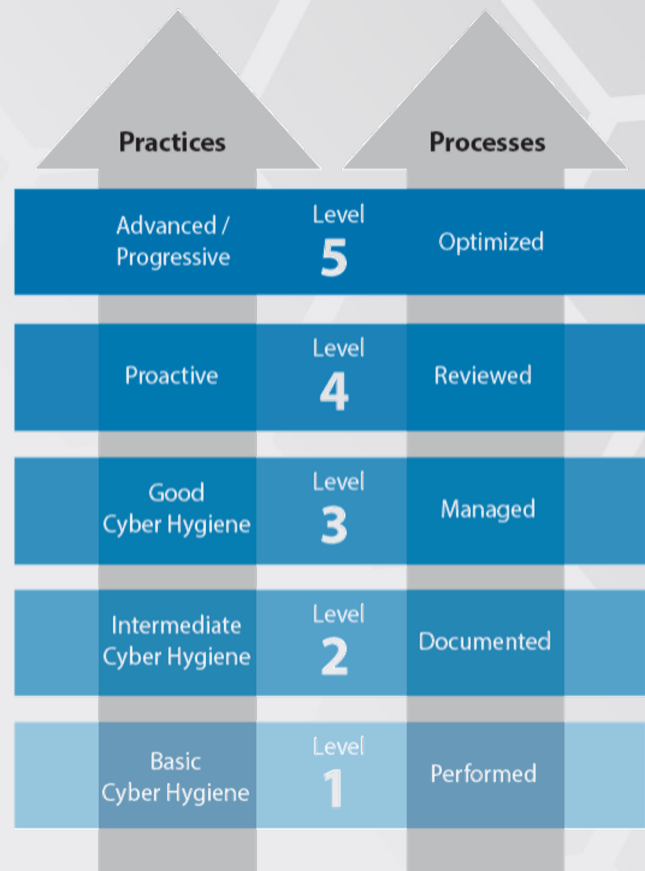
NIST Cybersecurity Resources for SMMs

- NIST MEP Cybersecurity Webpage
  - https://www.nist.gov/mep/cybersecurity-resources-manufacturers
- NIST MEP Cybersecurity Blog:
  - https://www.nist.gov/manufacturing-innovation-blog-categories/cybersecurity
- NIST Small Business Corner
  - https://www.nist.gov/itl/smallbusinesscyber
- Operational Technology Website
  - https://csrc.nist.gov/projects/operational-technology-security

NIST Cybersecurity Publications for SMMs

- **NIST IR 7621r1**: *Small Business Information Security: The Fundamentals*
  - https://csrc.nist.gov/publications/detail/nistir/7621/rev-1/final
- **HB 162**, *NIST MEP Cybersecurity Self-Assessment Handbook For Assessing NIST SP 800-171 Security Requirements in Response to DFARS Cybersecurity Requirements*
  - *https://doi.org/10.6028/NIST.HB.162*
- **NISTIR 8183**, *Cybersecurity Framework Manufacturing Profile*
  - https://doi.org/10.6028/NIST.IR.8183
- **NIST SP 800-82**, *Guide to Industrial Control Systems Security*
  - http://dx.doi.org/10.6028/NIST.SP.800-82r2
- **NISTIR 8259**, *Foundational Cybersecurity Activities for IoT Device Manufacturers*
  - *https://doi.org/10.6028/NIST.IR.8259*

Questions/Discussion

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The MEP National Network actively provides technical assistance to the defense industrial base on an ongoing basis.

Manufacturing Day
Effects on Perception*

89% More aware of mfg jobs in their communities

84% More convinced that mfg provides careers that are interesting and rewarding

64% More motivated to pursue mfg careers

71% More likely to tell friends, family, parents or colleagues about mfg after attending an event

October 1, 2021

*Students who attended MFG Day events in 2016 were asked to participate in a survey administered by Deloitte

MFG DAY

Mi MANUFACTURING Institute

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