Sourcing with Confidence
What is AMNOW?

AMNOW is establishing an Additive Manufacturing (AM) Infrastructure for the US Army future AM supply chain comprised of:

**Organic Industrial Base**
World-class domestic sources of AM equipment, material, and support

**Defense Industrial Base**
A robust domestic supply chain of high quality AM products and services

**Human Capital**
A highly skilled AM workforce capable of executing and exploiting the capabilities and advantages of AM
Connecting Army AM Needs to the Industrial Supply Base

AMNOW Is A Prototype Demonstration Of Connecting Army Needs With Supply Base Capabilities
Leveraging Past and Current Efforts

AMNOW

MAMLS
AM for Sustainment

Workforce Development Roadmap

Technology Development Roadmap

DoD AM Roadmap v1 and v2

America Makes
Expeditionary Training

America Makes
Project Portfolio

America Makes
Digital Storefront

U.S. Army Additive Manufacturing Technology Report (AAMTR)

AMNOW
US Army Additive Manufacturing (AM) Needs

Needs of US Army

Army is seeking production capable AM in order to:

- Improve readiness
- Develop more effective weapon systems
- Reduce costs and improve responsiveness for legacy parts
- Extend AM capability close to the point of need

Technology

AM enhances manufacturing capability through:

- Improves design freedom for complex designs
- Part consolidation
- Light weighting
- Customization for improved performance

Industry 4.0

AM combined with Industry 4.0 improves readiness through:

- Supply chain efficiency
- Reduced inventory and shorter lead times
- Distributed manufacturing / Localized production
- On-Demand production
Simplified Flow with Timescale

**Army Needs Assessment**
- Select Parts, Materials & Processes for Validation

**Supply Chain Assessment**
- Design Digital Supply Chain
  - Prototype - Platform Source
- Digital Supply Chain Platform
  - Build & Verification - Platform Source
- Technical Requirements & Definition (Specifications, Digital Thread, TDPs)
  - Spec & Std Orgs, OEMs, Digital Thread Software Supplier
- Onboard Supply Chain - Feedstock, Part Build, Post-Process

**Supply Chain Development & Simulated Qual**
- Supply Chain Development & Simulated Qual
- Project Calls - Phased
- Validations - 6 or more of increasing complexity
- Digital Supply Chain Improvements

Assessment activity underway

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Yearly Quarters:
- FY20Q1
- FY20Q2
- FY20Q3
- FY20Q4
- FY21Q1
- FY21Q2
- FY21Q3
- FY21Q4
- FY22Q1
- FY22Q2
- FY22Q3
- FY22Q4
Digital Supply Chain

**Future State Objective**

**Activity**

1. Army Organization Requests Part
2. AM Can/Should Make Determination
3. Procuring Organization Sends out RFP to Bidders
4. Supplier Bids
5. Procurement Organization Selects Source & Issues PO
6. Part Build
7. Post-Processing & Inspection
8. Delivery, Installation, Service History

**Inputs/Outputs**

- AM TDP Repository
- Part Engineering
- AM Capability
- TDP
- Qualified Suppliers
- AM Process & Special Process Approved Sources
- Manufacturing & Inspection Data
- Service History Data

**Prototype**

**Activity**

1. Army Provides Use Case
2. AM Can/Should Make Determination
3. NCDMM Sends out Project Call to Bidders
4. Supplier Bids
5. Army/NCDMM Selects Source & Issues PO
6. Part Build
7. Post-Processing & Inspection
8. Delivery, Installation, Service History

**Inputs/Outputs**

- AM TDP Repository
- Part Engineering
- AM Capability
- TDP
- NCDMM TDP Repository
- Qualified Suppliers
- AM Process Special Process Approved Sources
- Manufacturing & Inspection Data
- Service History Data

**Fully Automated Supply Chain & Digital Thread**

**Demonstrate Data Quality & Usability & 1st Build Success**
Program Partners

U.S. Army funding through CCDC-AvMC

Bringing the needs of the U.S. Army and understanding the value of AMNOW to their future AM supply chain

Current Program Partners

Program Lead
Program management and prime contractor
Convene partners, coordinate effort, catalyze next steps

Regional Lead
Leading assessment process for both Army and supply base
Manufacturing Extension Partnership (MEP)

Industry and Technology Consultants
Experts in industrializing additive manufacturing

Academic Research Partner
Supply Chain expertise and Supply Chain Readiness Levels (SCRL)

Future Program Partners

Working groups/Advisory Groups
Costshare Project Teams
Project Call Teams
AM Subject Matter Experts
Government Liaison
Enterprise System Integrators
Anticipated Outcomes

AMNOW delivers the ability to source additive manufactured products and services with confidence. The final AMNOW deliverables will address these concerns:

- **Can I print it?**
  - Understanding capabilities
  - Assessment criteria
- **Should I print it?**
  - Limitations
  - Expectations
  - Understanding risks
  - Economics
- **Where do I print it?**
  - The correct resource for the application
  - Supply chain capability
- **How do I print it?**
  - Detailed requirements
  - Technical data packages
  - Digital thread
- **How can I be sure?**
  - Prototype verification and validation
  - Quality assurance
  - Repeatability
Key Takeaways: Areas of Engagement

**CAPABLE AM SUPPLY BASE**
Assessing the supply base; piloting the “tech-belt” with scalability to national level

**TOOLS & METHODS**
Designing and building the digital bridge between “Need” and “Capability”

**TRAINING & EDUCATION**
Human capital development on both the “Need” side and the “Capability” side

**PROJECT CALLS**
Selected Army parts to demonstrate capability of AM supply base to meet Army needs

**SHARED LEARNING**
Army approved program deliverables available on the America Makes Digital StoreFront

**PREPARED INDUSTRY**
Digitally integrated industry prepared to manufacture Army AM parts
Sourcing with Confidence