

BACKGROUND

An expeditionary Army will encounter emerging and unexpected threats. The force which can rapidly respond to and counter these threats will dominate the battlefield. Agile Expeditionary manufacturing enables the production of responsive, on-demand items either in-theater or on-site to rapidly respond to threats while retaining freedom of maneuver by reducing the logistics tail. The Center for Agile Materials Manufacturing Science (CAMMS) will lead research focused on discovery, innovation, and maturation of materials and manufacturing science to permit agile, adaptive, mobile processing for a highly flexible expeditionary manufacturing capability to quickly produce tailored parts and components.

PARTICIPANTS

Open to national and defense labs, universities, and industry.

CONCEPT OF OPERATION

The CAMMS is ARL's Open Campus focal point for government, industry, and academia to innovate processing for expeditionary manufacturing science. ARL will establish an overarching Cooperative Research and Development Agreement (CRADA) that defines the extent of collaboration conducted in the CAMMS. This agreement defines the disposition of intellectual property, and the sharing of research outcomes and laboratory resources. Upon establishment of the CRADA, collaborative research on expeditionary manufacturing science and technologies will begin.

COLLABORATIVE FOCUS

- Manufacturing and processing science
- Development of novel expeditionary manufacturing techniques, processes, and technologies
- Manufacturing process-to-microstructure modeling
- Process characterization-based performance estimator using a probabilistic approach.
- Certification processes

BENEFITS

- Access to ARL's strong capability in physical and mechanical metallurgy, physical ceramics, materials processing, polymeric materials, materials modeling, and manufacturing science.
- Rapid, in-situ certification of additively manufactured parts.
- New materials and feedstocks for high-performance parts.
- Specifications and standards published for materials and processes developed by the Center.
- Access to pilot scale manufacturing facilities to prove out processes for niche and military applications.

UNIQUE FACILITIES

- Additive Manufacturing Laboratory Suite
- Selective laser sintering
- Hybrid additive manufacturing system
- Cold spray systems
- Characterization & Computational Tools & Nondestructive Evaluation (NDE) Capabilities
- Scanning and transmission electron microscopy
- Materials synthesis and processing
- Specifications and Standards Office

POINT OF CONTACT

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