

Methods for AM Cross-Platform Consistency (AM-CPC)

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AM-CPC

- 1 step response – Full Proposal
- Standard full proposal format

| America Makes RFP

Project Call for America Makes Applied Research Projects

Methods for AM Cross-Platform Consistency (AM-
CPC)



Prepared by

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Background

- Additive manufacturing (3-D printing) for part production has gained significant importance to US manufacturers
- Part qualification remains a major barrier to broader adoption of additive manufacturing processes
- Part qualification is difficult and represents one of the key focus areas of AM research
- Round robin studies have been conducted to collect data needed to characterize AM processes
- These studies help to develop standards for AM materials and AM process parameter specifications
- While individual AM machines produce relatively consistent results, the variability of parts produced on each machine can be significantly different and warrants further investigation
- Controllable process parameters may vary significantly between machine makes, models, manufacturing sites, or operators
- Inconsistencies in mechanical properties between laboratories may also exist

Objectives

- Develop neutral manufacturing plans to compensate for differences between AM machines and provide a basis for analyzing reproducibility of results between different machines
- Establish Test Methods and Test Requirements for AM Reproducibility Tests
- Establish Test Data Collection Requirements
- Conduct Consistency Study

Schedule

Event	Date
Project call announcement and posting	3/1/2023
Industry Day Kickoff at TRX – Registration Required	3/8/2023
Questions from proposers about scope or approach due	3/15/2023
Responses to proposers about scope or approach due	3/22/2023
Deadline for proposal lead to complete a fully executed America Makes Membership Agreement	3/24/2022
Fully Executed NDA with NCDMM (only if proposal contains proprietary information)	3/24/2022
Full project proposal submission due date (Note: No Concept Paper Submission)	4/7/2023
Anticipated decision and notification to project proposal teams	5/9/2023
Anticipated date to have projects on contract	6/5/2023

AM-CPC – 1 award

Funding Description	Amount
Total Federal Funding Available (not per award)	\$250,000
Max. Federal Award Per Proposal	\$250,000
Minimum Cost Share	50%
Maximum Allowed Period of Performance (PoP) – shorter periods are acceptable	18 Months (15 months execution and 3 months reporting)

Eligibility

- The lead Proposer is a current member of America Makes and in good standing by Friday, March 24, 2023. Information on how to join America Makes is available at www.americamakes.us/membership.
- Cost share accrued in this project may also be applied towards membership, as with other project calls. However, cost-share proposed on a future project cannot be counted towards a new America Makes membership. To become a member by the aforementioned deadline, organizations shall commit to a cash payment and / or complete an @Program MOU
- A 50% cost share is required for each project submittal. Example: If \$1.00 of funding is requested from America Makes, \$0.50 in cost share must be committed against that \$1.00 for a total scope of \$1.50.
- The lead Proposer is fully responsible for all project and subcontract performance.
- The lead Proposer shall be registered in U.S. System for Award Management (SAM) and have a cage code and duns number before submitting a proposal.
- Proposal team acknowledges that information from this project will be shared with America Makes members in accordance with the membership agreement.
- Proposal team arrangements are identified, and relationships are fully disclosed.

Minimum Deliverables

Minimum Deliverable	Timeline
Kickoff Meeting, with Project Plan	1 month after award
Virtual technical and programmatic update teleconferences with Project Team, including NCDMM, AFRL, and NIST	Monthly
Financial and man-hour reports	Monthly
Manufacturing process measurement specification	18 months after award
Documented workflow detailing inputs, processing parameters and tools, and expected outputs	15 months after award
<p>Final project report including at minimum: critical process parameters, lessons learned, standards used and any deviations from those standards, requirements for the neutral manufacturing plan, testing requirements, data collection requirements, and data analysis results and methods</p> <p>-minimum one round of revisions completed with PM/NCDMM prior to final submission</p>	<p>Complete first draft shall be submitted to PM/NCDMM no later than conclusion of month 15 of proposed effort</p> <p>Final report delivered 18 months after award</p>
Lead organization shall participate on at least one working group relevant to the subject matter of the project.	<p>Minimum of one presentation outlining all deliverables (CDIP, associated tangible artifacts, and associated roadmap requirements), KPP's, and data management plan within 60 days of project start date.</p> <p>Minimum of one presentation of milestone achievements, KPP's, and lessons learned relevant to the fulfillment or creation of roadmap requirements within 60 days of PoP end date.</p> <p>Hours attending and participating in meetings or activities shall be tracked and reported (regular meeting attendance is required)</p>

Minimum Deliverables

Minimum Deliverable	Timeline
TRX, MMX, webinar, or other America Makes hosted forum to brief membership	One presentation per project calendar year
<p>Data Management Plan Including at minimum:</p> <p>Any commercial software packages to be used, standards or data schemas to be used, and methodology for notating and labelling data to enable linking of various sample properties and characteristics, and plans for incremental delivery of data</p>	<p>Initial draft due at time of proposal</p> <p>Final due at first technical and programmatic update</p>
Raw materials test data (feedstock, process, material, post-process, property) available in a static format and in a database with property meta-data; non-destructive inspection data and meta-data	Delivered or posted to database regularly as available
<p>Schema and Data Compliance Reviews, Data shall:</p> <p>Be provided electronically, demonstrate pedigree and provenance, identify test apparatus/manufacturing/fabrication equipment and calibration, testing standards or processing specifications used including sample preparation and/or manufacturing equipment configuration, experimental/characterization/manufacturing process conditions and procedures, raw mechanical test data, data reduction and statistical analysis procedures, uncertainty associated with data and method used to calculate uncertainty</p>	Quarterly
Data Persistence Plan (how will data be stored and accessed after project conclusion)	<p>Initial draft due at time of proposal</p> <p>Final due at first technical and programmatic update</p>

Reporting

1. Virtual Teleconferences
2. Financial and man-hour reports
3. Final project report
4. TRX, MMX, webinar, or other America Makes hosted forum to brief membership
5. Manufacturing process measurement specification
6. Documented workflow detailing inputs, processing parameters and tools, and expected outputs
7. Data persistence plan
8. Data management plan
9. One presentation to one working group (Design, Materials, AM Genome, or Value Chain) which outlines all deliverables (CDIP, associated tangible artifacts, and associated roadmap requirements), KPPs, and data management plan within 60 day after award.
10. One presentation to one working group (Design, Materials, AM Genome, or Value Chain) which outlines all deliverables (CDIP, associated tangible artifacts, and associated roadmap requirements), KPPs, and data management plan within 60 days of project end.
11. Reports, presentations, or teleconferences provided upon request by NCDMM, AFRL, or NIST

Proposal and Contracting Information

- Executive Summaries must contain information which is publicly releasable, non-proprietary
 - Purpose
 - To aid in America Makes public release process for award announcement
 - To demonstrate impact and merits of Institute's efforts to the public
- No fee allowed
- Cover page should include DUNS and CAGE of at least team lead
- Teams must submit additional information to accelerate contracting
 - Sub-recipient agreement will be included in RFP, must be reviewed and any requested changes be sent in with proposal
 - No response certifies agreement as is upon award
 - Otherwise, award will be canceled

Evaluation Criteria

- **Executive Summary** (Executive summary is not scored but will be considered as part of the overall value proposition of the proposal.)
- **Technical Approach and Methodology (70%)**
- **Technology Dissemination to the domestic AM supply chain, America Makes Members, and Impact to NIST and USAF (10%)**
- **Program Management Approach (20%)**
- **Cost** (Cost and cost share are not scored but will be considered as part of the overall value proposition of the proposal.)

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