REQUEST FOR INFORMATION:
Vendor Qualification Additive Manufacturing Processes

Introduction and Purpose

In support of Army Directive 2025-14, the US Army Combat Capabilities Development Command Ground Vehicle Systems Center (DEVCOM GVSC) is reviewing and qualifying Additive Manufacturing (AM) vendors for Army ground applications which supports readiness for future demand signals. GVSC is seeking information from vendors wishing to qualify their additive manufacturing processes and materials for use as alternative manufacturing methods.

Background

The Department of War faces a significant sustainment challenge where original equipment manufacturers, suppliers, and traditional manufacturing methods like casting or forging are no longer available. Furthermore, critical data such as the original design specifications, loading conditions, and safety margins for these components are often inadequately documented, making traditional component requalification a costly and time-prohibitive endeavor. DEVCOM GVSC is therefore exploring a risk-based qualification framework that focuses on a practical approach: verifying that a given AM process can consistently produce parts with material properties that meet or exceed the minimum requirements specified on the original legacy drawings, rather than establishing new, exhaustive design allowables.

DEVCOM GVSC is particularly interested in methodologies that leverage modern, high-strength AM materials. Information is requested on industry's capabilities to qualify parts using a simplified statistical validation, such as confirming the lower bound of an AM material's strength distribution remains safely above the legacy specification's minimum requirement (e.g., $\mu - 3\sigma > S_{min}$). Respondents are encouraged to provide data on their ability to implement such a risk-informed strategy, especially for non-critical components, to help accelerate vendor qualification, improve part availability, and enhance the resilience of the military's supply chain for sustaining legacy systems.

Scope

This request is open to **<u>all metal additive manufacturing modalities</u>**, including but not limited to: laser powder bed fusion (LPBF), wire directed energy deposition (W-DED), powder directed energy deposition (P-DED) and binder jet additive manufacturing (BJAM).

Prioritized materials include, but are not limited to:

-Steel alloys of all varieties, including PH17-4, 316L, and 42CrMo4.

-High strength aluminum alloys (Al10MgSi, AlSi7Mg06)

Unique alloy solutions may be proposed, but additional data to define design allowables will be required to enable analysis of viable material substitution scenarios.

Information Requested of Respondents

Respondents are requested to provide data on the quasistatic mechanical performance of their material and process combination, evidence of build quality, and documentation of process controls and quality management systems. A detailed list of required data is presented in Appendix A. Data shall include both the measured values and an analysis of statistical distributions and minimum allowables.

Respondents qualified to a commercial specification, such as SAE AMS or ASTM, should include a list of all specifications their process is intended to meet. Respondents qualified for another service, or which have performed work to another service's requirements, such as Air Force Research Lab EN-FSB-25-01, or NAVSEA Technical Publication Requirements for Metal Directed Energy Deposition Additive Manufacturing S9074-A4-GIB-010/AM-WIRE DED, should note which document and provide the corresponding data package.

All mechanical testing must be performed by a third-party certified lab, such as ISO17025 or NADCAP. If an external lab is used, please document the company name(s) and location(s).

Data must include all relevant post-processing conditions required, such as stress relief or heat treatment. If a third party is used to execute these steps, please document the company name(s), location(s), and certification(s).

Response Instructions

Detailed requirements are included in Appendix A. Provide test data in Microsoft excel format. Vendors must submit their cage code with submission. Instructions on obtaining a cage code can be found at https://www.dla.mil/Small-Business/Getting-Started/. Vendors shall submit all documentation to usarmy.detroit.devcom-gvsc.mbx.armygroundamqual@army.mil.

Contact Demetrios Tzelepis (demetrios.a.tzelepis.civ@army.mil) for comment on specific concerns on your specific material and modality

Disclaimer

Response to this RFI is not a guarantee of future orders. This is not a Request for Proposal (RFP) or an announcement of a forthcoming solicitation, nor is it a request seeking contractors to be placed on a solicitation mailing list. Response to this RFI is voluntary and no reimbursement will be made for any costs associated with providing information in response to this RFI and any

follow-on information requests. Data submitted in response to this RFI will not be returned. No solicitation document exists at this time.

Appendix A (See Attached)

Additive Manufacturing Process Qualification and Materials Evaluation Requirements