REQUEST FOR PROPOSALS

SPECIAL CALL FOR BUILDING THE DEFENSE INNOVATION-BASE'S ADVANCED MANUFACTURING WORKFORCE PROGRAM

Final Proposal with Final Budget, Due: July 10, 2023

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SECTION 1: INTRODUCTION AND DURATION

INTRODUCTION

A need to build and expand the nation's innovation-based manufacturing workforce capability and capacity has been clearly established through national Science, Technology, Engineering, and Mathematics (STEM) workforce analyses, including the 2018 Deloitte Skills Gap and Future Workforce in Manufacturing Study, which was updated in 2021 in the report titled "Creating Pathways for Tomorrow's Workforce Today". While the US made progress in 2022 in filling open manufacturing jobs, 759,000 remain unfilled. This analysis estimates that the nation will see 2.1 million manufacturing positions go unfilled by 2030 at a cost of $1 trillion unless the U.S. steps up to this pivotal supply-side challenge.

This situation is partially because only 20% of graduating high school seniors are ready for the rigors of STEM occupations, leaving manufacturers and other advanced technology companies forgoing investment in advanced manufacturing tools and/or offshoring manufacturing jobs. The United States is expected to lose $1 trillion in economic output due to the skills gap in 2030 alone.

Focusing solely on education at the high school, vocational, and college/university levels to rebuild this critical workforce is not enough to sufficiently address the 2.1 million unfilled manufacturing positions, especially given that the number of students graduating high school is projected to shrink beginning in 2025. This is compounded by the number of graduating seniors that failed basic math competency – 40% – which is a 2% increase from 2015.

An additional level of complexity to addressing this skills gap is the speed at which technology evolves, quickly rendering technical skills obsolete. STEM workers focused on advanced technologies and manufacturing practices must be able to upskill quickly to keep pace with technological change.

PROJECT DURATION

There are **six distinct objectives** associated with this Special Call. The duration of each objective is unique. The specific period of performance for each objective can be found below. Proposers should use a notional start date of September 1, 2023, for budgeting purposes. Contracting is pursuant to 2 CFR 200 (Uniform Guidance).

SECTION 2: SPECIAL CALL OBJECTIVES

If there is interest in responding to multiple objectives, **proposers should plan to submit separate proposals for each objective**.

Objective 1: Regional Development Project

As a continuation on products developed by past project teams, create a scalable process and methodology for deploying a collaboration tool and flexible model that allows competencies to be pushed into existing community college programs regardless of context, ultimately ensuring consistent delivery of manufacturing technician training programs that meet the needs of industry.

a. Finalizing Playbook Materials
    - Complete previously developed materials, which includes but is not limited to: rubrics validated by industry and community colleges; assessments developed as a part of curricula validation; lessons learned and best practices to help establish a community of practice for on-going collaboration; tool to evaluate a manufacturing training ecosystem; and training

course utilized to onboard new schools and faculty interested in implementing developed programming.

b. Disseminate, Recruit, and Deploy
    - Create an implementation plan with plans and schedules to support dissemination of updated materials to several community colleges within the Commonwealth of Massachusetts, recruitment of additional community colleges in New England, and deployment and training of developed awareness modules.

c. Review Existing Content
    - Identify, assess, evaluate, and document existing content and its ability to integrate the content into community college programming available through the Manufacturing USA Institutes and other potential resources.

d. Promote Manufacturing Careers
    - Develop a plan to promote manufacturing career opportunities and the developed programming to help drive enrollment and validate work previously completed.

e. Create Content
    - Based on assessment mentioned in Objective 1 Part D, develop a project plan specific to creating content around an identified specific need following community college curriculum validation. Upon approval, develop identified content.

Deliverables include: manufacturing technician training program regional deployment playbook; regional readiness assessment; train-the-trainer online course; implementation plan; learning transition assessment and plan; promotional plan; content creation plan; and supporting materials as appropriate.

Period of Performance: 14 Months from Start Date

Objective 2: Advancing the State-of-the-Art Advanced Manufacturing: Macro Analyses and Data Portal

Development of a web-based portal that allows the Department of Defense (DoD) Manufacturing Innovation Institutes (MIIs) to access evergreen data on populations, geographies, employer demand, and workforce skills, ultimately informing future workforce development strategies. This will ensure that MIIs' understanding of their manufacturer and worker stakeholders are keeping pace with the advancements in the sector. With real-time access to the data, MIIs will be well positioned to align the interests of manufacturers, education and training organizations, students and job seekers, and current and potential manufacturing workers.

a. Conduct Annual Tool Review
    - Reconvene stakeholders to review and validate or adjust target occupations, re-validate data, test functionality, and gather additional feedback on utility and ease of the portal, and explore potential updates and upgrades to improve usage and utility. Selected project partner will facilitate a workshop to review and prioritize potential improvements and upgrades, and will document findings, actions, and priorities, delivered in the form of an annual review report.

b. Upgrade Pre-Existing Tool
    - Based on the tool review completed as a part of Objective 2 Part A, project partner will determine the scope of updates and/or upgrades to the portal, delivered in the form of a project management plan. Depending on scope and complexity of updates and/or upgrades, the project partner will make an effort to have new version of portal live within six months of start date, and no later than the end of the contract period.

c. Hosting and Maintenance
    - Project partner will continue to host and maintain the web-based tool for the full contract period.

Deliverables include: annual review report; project management plan; live web portal; and supporting materials as appropriate.

Period of Performance: 12 Months from Start Date

Objective 3: Expanding and Enhancing the Manufacturing Careers Platform - SYSTEM

Previous investments have been spent in a DoD-specific instance of Open edX called the manufacturing careers platform (MCP) hosted on a maintained AWS Government Cloud that serves as a publicly accessible channel for DoD MII's and partners to develop and host curricula and learning resources. Additional support work is sought to allow for system development, which is the publicly accessible website and interlinked webpages with the functionality to enable the user experience. Selected participants will work closely with System Vendor from Objective 4. Additional supporting documentation and data sets will also be provided to base contracted work, including: Manufacturing Skills Graphic Packet, buildyourfuture.us Website.

a. Project & Technical Management
    - Management, oversight, and coordination with Content Vendor (Objective 4) that is necessary to successfully deliver courses on time and support cross-compatibility content and functionality among educational institutions and digital learning providers.
b. Website Redirection
    - Redirection of website from manufacturingworkforce.org to buildyourfuture.us and ensuring support of users migrating to the new site.
c. Accessibility and Maintenance
    - Ongoing access to the "buildyourfuture.us" digital learning platform, necessary AWS cloud services, and the online chat service.
d. Security Functions
    - Ongoing use of security functions such as IP address screening to limit access to users outside of the United States.
e. Chat Service Development & Integration
    - Development and integration of an open-source, private-cloud-hosted, online chat service to facilitate communication between and amongst platform content contributors, technical and instructional design service providers, the platform technical management team, as well as others.
f. Creator's Guide
    - Support the Content Vendor (Objective 4) with the development of a web-based version of the creators' guide and supporting content to aid contributors to plan, prepare, design, upload and manage live courses on the platform.
g. Device and Operating System Functionality
    - Partner with the Content Vendor (Objective 4) to expand, troubleshoot, and enhance the structure and functionality of the current platform. Should include capability to work on popular mobile devices and operating systems at no additional cost.
h. Pedagogies and Educational Technologies
    - Partner with Content Vendor (Objective 4) to identify leading-edge pedagogies and educational technologies and create a plan/timeline for incorporation into the platform to achieve long-term and near-term goals. This includes but is not limited to, AI/machine

learning, VR/AR, simulations, learning games, adaptive curriculum, 5G/6G networks, micromodules, neuroscience-informed pedagogy, etc.

i. Site Action Plan
   - Partner with Content Vendor (Objective 4) to provide the government with a site action plan to secure and protect the platform/website. The immediate need should be to trademark the site name and logo unless it is not possible due to name and/or logo already in legal use, in which case, work with the government to create and secure a new name and/or logo.

Deliverables include: joint execution plan; integrated online chat service and supporting user's guide; integrated cohort learning group function and supporting user's guide; five-year EdTech roadmap; platform security and protection action plan; finance collection/distribution function and supporting user's guide; quality/test plan and results; data collection and analytics tool and supporting user's guide; vendor hosted operational website; and supporting materials as appropriate.

Period of Performance: 12 Months from Start Date

Objective 4: Expanding and Enhancing the Manufacturing Careers Platform - CONTENT

Previous investments have been spent in a DoD-specific instance of Open edX called the manufacturing careers platform (MCP) hosted on a maintained AWS Government Cloud that serves as a publicly accessible channel for DoD MII's and partners to develop and host curricula and learning resources. Additional support work is sought to allow for content development, which includes the course, career, and data elements, composed of text, images, video, audio, and/or other media and organized in a meaningful structure. Selected participants will work closely with System Vendor from Objective 3. Additional supporting documentation and data sets will also be provided to base contracted work, including: Manufacturing Skills Graphic Packet, buildyourfuture.us Website.

a. Project & Technical Management
   - Management, oversight, and coordination with System Vendor (Objective 3) that is necessary to successfully deliver courses on time and support cross-compatibility content and functionality among educational institutions and digital learning providers.

b. Security Functions
   - Ongoing use of security functions such as IP address screening to limit access to users outside of the United States.

c. Chat Service Finalization
   - Finalize the integrated online chat service with content development and website structure once the capabilities have been installed on the platform by the System Vendor (Objective 3).

d. Creator's Guide
   - Development of a web-based version of the creators' guide and supporting content to aid contributors to plan, prepare, design, upload and manage live courses on the platform.

e. User Interviews on Platform Functionalities
   - Conclude user interviews and investigate and provide a development plan on partnering with external stakeholders to identify priorities, needs, challenges, etc. as related to the platform and its current and future functionalities.

f. Pedagogies and Educational Technologies
   - Partner with System Vendor (Objective 3) to identify leading-edge pedagogies and educational technologies and create a plan/timeline for incorporation into the platform to achieve long-term and near-term goals. This includes but is not limited to, AI/machine

learning, VR/AR, simulations, learning games, adaptive curriculum, 5G/6G networks, micromodules, neuroscience-informed pedagogy, etc.

g. Site Action Plan
    - Partner with System Vendor (Objective 3) to provide the government with a site action plan to secure and protect the platform/website. The immediate need should be to trademark the site name and logo unless it is not possible due to name and/or logo already in legal use, in which case, work with the government to create and secure a new name and/or logo.

Deliverables include: joint execution plan; integrated online chat service and supporting user's guide; integrated cohort learning group function and supporting user's guide; five-year EdTech roadmap; platform security and protection action plan; user interview findings and recommendations; web-based version of the creators' guide and supporting content; stakeholder investigation and findings report; operational learning content; and supporting materials as appropriate.

Period of Performance: 12 Months from Start Date

Objective 5: Providing STEM/DEIA Expertise for DEIA Special Project Call

Support the execution of Special Project Call projects focused on promoting STEM/DEIA in partnership with MSIs and community-based organizations.

a. Support to NextFlex DEIA Project Call – Review
    - Development of recommended rubric for evaluation of DEIA proposals based on the project call document and independent technical expertise in DEIA.
    - Review of proposals.
    - Providing written feedback on proposals.
    - Conduct verbal feedback sessions.

b. Support to NextFlex DEIA Project Call – Awardees
    - Support to MII technical assistance sessions.
    - Provide technical assistance to MIIs via the MIDD EWD Work Team on DEIA focused on sharing STEM/DEIA strategies and case studies – specific to a diverse talent pool – to:
        i. Inspire and attract workers;
        ii. Develop in-demand STEM knowledge and skills of the workers;
        iii. Support and retain STEM workers;
        iv. Create an industry engagement that cultivates a welcoming and supportive environment for this workforce.

Deliverables include: evaluation rubric; DEIA Special Project Call proposal feedback; and supporting materials as appropriate.

Period of Performance: 24 Months from Start Date

Objective 6: Supporting STEM Engagement

Enhancement of Project Support for collaboration on STEM activities through engagement, discovery, and implementation planning of mutually beneficial opportunities for collaboration.

a. STEM Engagement and Collaboration
    - Engagement to facilitate coordination and collaboration.

- Engage military service STEM activities, Defense STEM Consortium, and other DoD STEM-connected parties as appropriate.
- Engage with federal, national, and advanced manufacturing related STEM programs as appropriate.

Deliverables include: meeting notes; written report with identification of collaboration opportunities with DoD STEM and other relevant STEM activities; implementation plan for execution of collaboration activities; and supporting materials as appropriate.

Period of Performance: 9 Months from Start Date

SECTION 3: PROPOSAL SUBMISSION PROCESS

3.1 Deadline

Proposers should submit a Final Proposal and Cost Proposal (using the NextFlex Cost Proposal template) no later than July 10, 2023.

3.2 Proposal Format Guidelines

To accelerate contracting, it is anticipated that the Proposal will be incorporated as an attachment into the final agreement. It is imperative that proposals define tasks and deliverables that are tangible, measurable, and demonstrable. The specifications of each task and deliverable must be clearly defined. The project should detail tasks, deliverables, and the project schedule, and should include quarterly and final reports, and the Cost Proposal should be created using the provided template. Ensure all instructional design service costs, travel, and other direct costs are included in the Cost Proposal.

Submission: The proposer shall submit one (1) electronic copy of its Detailed Research Plan (DRP) with a complete cost proposal to proposal@nextflex.us.

SECTION 4: ADMINISTRATIVE TOPICS

4.1 Confidential Information

Proposals are not considered confidential and will be provided to the OSD ManTech EWD team for review. If confidential/proprietary information needs to be included, the proposer shall contact NextFlex before the Project Abstract due date.

NextFlex will only share proposal content with OSD ManTech and will not share proposal content with other proposing institutes or any other outside organizations or individuals.

Additionally, proposers should refrain from including export-controlled information in their submissions. If a proposer believes that inclusion of export-controlled information is required to fully convey the merits of its proposal, the proposer should contact NextFlex by email to proposal@nextflex.us to discuss this issue no later than July 6, 2023.

4.2 Financial Requirements

Subaward agreements generally will be awarded as cost reimbursement, not-to-exceed subawards subject to Uniform Guidance (2 CFR 200). If the proposer's organization has a U.S. government-

approved rate structure, please use it. All subrecipients of the Special Call subawards are expected to have a government approved or industry standard accounting system by which actual project costs are tracked and reported. Must have a Unique Entity Identification (UEI) number.

4.3 Eligibility Requirements

Organizations familiar with OSD ManTech's education and workforce development strategy preferred.

4.4 Funding Amount

Granting of subawards to proposals submitted in response to this Special Call is contingent upon the continued availability of U.S. government funding.

SECTION 5: PROPOSAL EVALUATION AND SELECTION

Once a subawardee has been selected by OSD ManTech, NextFlex will notify the organization of their selection and provide an overview of the contracting process. (Issuance of subawards to proposals submitted in response to this Special Call is contingent upon the continued availability of U.S. government funding.)

Submitted Proposers will have the option to sign a Mutual Non-Disclosure Agreement to receive contractual documents for review in advance of the selection process in order to expedite any prospective negotiation.

SECTION 6: IMPLEMENTATION AND MONITORING

Once project performers have been selected, NextFlex will create an agreement that incorporates the proposer's Final Proposal and Budget. The subrecipient will be responsible for implementing its Scope of Work. NextFlex will provide oversight and monitoring.

SECTION 7: REPORTING

The subrecipient will be required to deliver quarterly financial and technical reports to NextFlex, as well as a final technical and financial report. NextFlex will compile reports and will submit quarterly and final reports to OSD ManTech.

SECTION 8: CONTACT INFORMATION

Communication and questions during the proposal period and submission of proposals should be directed by email to proposal@nextflex.us, addressed to Taylor McLeod.

SECTION 9: SPECIAL CALL DOCUMENT LIST

The following documents are relevant to the submission process:

1. Detailed Research Plan (DRP)
2. Cost Proposal, Attachment A
3. Manufacturing Careers Platform Graphics Packet - Static (*Relevant to Objective 4 & Objective 5*)
4. buildyourfuture.us Website