MUREP High-Volume Manufacturing and Supply Chain Management (MUREP High Volume)

Title: Student Apprenticeships in Aerospace Advanced Manufacturing
Institution: Florida International University
City/State: Miami, FL
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Summary: The vision outlined in this proposal is for a sustainable high-volume manufacturing integrated with the avionics supply chain, as part of the US Aerospace supply chain ecosystem. The project will support NASA and the national efforts in Advanced Aerial Mobility (AAM), and it aligns with the ARMD Strategic Implementation Plan, Strategic Thrust 6: Assured Autonomy for Aviation Transformation Vehicles, by supporting the aerospace supply chain innovations, and by training professionals in two domains of the future aerospace workforce: aerospace supply chain specialists and manufacturing technicians and engineers.

The proposed effort, to be led by Florida International University (FIU), a Hispanic Serving Institution, in partnership with industry, academia and other organizations, will focus on the following directions:

1. To create a network of scientists, engineers, and business analysts led by FIU, to explore opportunities for innovation in the aerospace high volume manufacturing supply chain and identify post-secondary education strategies to develop talent for the current and emerging aerospace needs.
2. Contribute to the development of a diverse aerospace workforce by offering training opportunities to students, largely from underrepresented and underserved groups: Hispanics, African Americans, and women, for the aerospace manufacturing jobs of tomorrow.
3. Develop manufacturing capacity in avionics at FIU to support the AAM supply chain.

Aligned with the goals of MUREP High Volume and with the ARMD Strategic Thrust 6, as well as the FIU strategic plan, the proposed project will accomplish the following objectives:

1. Develop an engineering, manufacturing, and supply chain network led by FIU to contribute to supply chain innovation in alignment with aerospace NASA high-volume manufacturing and supply chain ecosystem needs for national competitiveness.
2. Strengthen institutional capacity by enabling students' access to training opportunities through the partnerships established with NASA and industrial partners.
3. Raise awareness of aerospace industry needs toward developing the next generation workforce skillsets adequate for aerospace high volume manufacturing.
4. Develop institutional capability in manufacturing for the aerospace supply chain, through an integrated aerospace high-volume manufacturing plan toward achieving project sustainability beyond the period of the NASA High Volume SA3M Project.

The FIU team is partnering with three academic institutions: FIU, Broward College, and The Pennsylvania State University. FIU and Penn State hold ABET accreditations in all engineering programs and Broward College offers certificates in avionics and degrees (four years and two years) in Supply Chain Management, two NASA Centers conducting ARMD research – Ames

Research Center and Glenn Research Center, two industrial partners: Nano Dimension (committed partner) and Joby Aviation (expressed interested to partner), two organizations relevant to the project scope: Women and Drones, and South Florida Manufacturers Association.

The project team will receive guidance from the External Advisory Committee (EAC) and the NASA Technical Review Committee and will be evaluated in all project activities by an independent evaluator. The EAC will work closely with the project team to attain sustainability in all proposed activities after funding expiration.