Request for Information (RFI): DOD Design for Manufacturability and Business Case Analysis

Issued By: Advanced Functional Fabrics of America (AFFOA)
Date Issued: October 1st , 2025
Response Deadline: November 1st, 2025
Point of Contact: Guan Wang, Ecosystem Technology Manager, gwang@affoa.org
Project Title: DOD Design for Manufacturability and Business Case Analysis

1. Introduction

Advanced Functional Fabrics of America (AFFOA) is seeking information via conference calls with industry stakeholders in the cut-and-sew, automation, and manufacturing technology sectors to support the Department of Defense (DOD) clothing and textiles modernization, including the Joint Clothing & Textile Modernization Initiative (JCTMI). This RFI aims to gather insights, case studies, best practices, and resources to quantify the benefits of implementing design-for-commonality process changes in military combat clothing, such as the Advanced Combat Uniform (ACU), Flame Resistant ACU (FR-ACU), Improved Hot Weather Combat Uniform (IHWCU), Marine Corps Combat Utility Uniform (MCCUU), and Navy Working Uniform Type 3 (NWU III). Beyond single-garment analyses, the RFI is designed to roll up comparable feature-level metrics (e.g., pocket construction, cuff width, closure type) into a holistic DOD view of potential commonality. This will allow the Government to assess alternatives consistently, using a quantified methodology across Services, thus reducing production costs, enhancing automation opportunities, and streamlining manufacturing processes through standardized design features and materials.

Key Opportunity: Responses to this RFI will inform the selection of 2-3 garments for physical prototyping, with potential contract R&D opportunities for industry partners to collaborate with AFFOA in manufacturing and testing prototypes to validate cost savings and manufacturing efficiency improvements.

2. Background

Current DOD combat uniforms prioritize Warfighter functionality for service-specific mission requirements. However, minor design variations between services (e.g., seam allowance, stitch type) create manufacturing complexities, leading to longer set-up times, reduced opportunities for automation, and higher costs when producing multiple service uniforms. AFFOA is developing validated tools, guidelines, and metrics to assess the cost benefits of common design features and optimized production processes through a detailed analysis involving stakeholder engagement, industry outreach, and data collection to identify high-impact process changes. These findings will guide the

commonality analysis AFFOA will lead later, where selected industry partners will fabricate 5-8 prototypes per garment type to validate cost estimates and manufacturability, potentially leading to contract R&D opportunities.

JCTMI is a joint-service modernization effort emphasizing a data-centric, digitally enabled clothing and textiles enterprise. Its Integrated Product Teams focus on (i) a Digital Platform & Implementation track to support centralized data sharing, decision support, and analytics; (ii) Body Scanning and 3D visualization to inform sizing; and (iii) Joint Sizing & Fit including garment simulation and virtual prototyping. Consistent with this direction—and with ongoing transitions toward standardized Apparel Tech Packs—this RFI seeks the specific, comparable, and analyzable inputs needed to populate DOD-wide models and quantify the payoff of adopting common features.

3. Objectives

This RFI seeks to:

- Identify industry best practices for implementing design-for-commonality principles in garment manufacturing.
- Collect case studies demonstrating cost savings, process efficiencies, or automation improvements from standardized design features or materials.
- Gather resources and methodologies for quantifying the impact of process design changes on production complexity, manufacturing time, and product cost.
- Identify commercial off-the-shelf (COTS) materials, findings, and garment fabrication methods/processes suitable for cross-Service adoption.
- Engage stakeholders to support an upcoming Industry Webinar and the development of a DOD Textile Process Commonality Recommendations Report.

4. Requested Information

Respondents are encouraged to provide detailed, actionable information addressing the following areas during the conference call with the AFFOA team. Initial responses to this RFI are only required to include indication of willingness for a conference call, discussion of the questions below can happen on the call. Please review the questions below in preparation for the call.

Design-for-Commonality Practices

- Describe the best practices or methodologies your organization uses to streamline construction process (e.g., pockets, cuff, plackets, stitch types, hardware and notions) across multiple products.
- Provide examples of how standardized designs have reduced setup times, labor costs, or manufacturing complexity in garment production.

- Identify challenges or risks associated with implementing common design features and how they were mitigated.
- Provide existing best-practice guides or commonality approaches you already use with other customers (e.g., customer-provided manufacturing guides, SOPs, standard work, tech-pack templates, DRC/MRC rule sets). Indicate provenance and any licensing/IP constraints.

4.1 Automation and Manufacturing Technology

- Share case studies where automation (e.g., robotic sewing, automated cutting) was integrated into garment manufacturing due to standardized designs or materials.
- Describe technologies or equipment that could support common manufacturing methods for DOD combat uniforms.
- Highlight any innovations in manufacturing processes that reduce costs or enable scalability for similar garments.

4.2 Cost and Process Impact Quantification

- Provide tools, models, or frameworks your organization uses to quantify the cost benefits of design changes (e.g., reduced material waste, lower labor hours, faster production cycles).
- Share examples of metrics or data used to evaluate the impact of design-for-commonality changes on production efficiency or product pricing.
- Suggest approaches for assessing the trade-offs between design standardization and meeting specific performance requirements.

4.3 Materials and Findings

- Identify common materials (e.g., fabrics, threads) or findings (e.g., zippers, buttons) that could be standardized across DOD combat uniforms to reduce costs or improve manufacturability.
- Provide data on cost savings or supply chain efficiencies achieved through material standardization in similar applications.

4.4 Case Studies and Resources

- Submit relevant case studies from garment manufacturing projects (military or commercial) that demonstrate successful implementation of design-for-commonality or process optimization.

- Provide references to industry standards, white papers, or other resources that could inform the development of guidelines for assessing manufacturability improvements.

4.5 Industry Engagement

- Indicate your organization's interest in participating in the Industry Webinar (date TBD, to be hosted by AFFOA) to discuss project goals and opportunities for collaboration.
- Suggest topics or questions for the webinar to ensure it addresses key industry needs and perspectives.
- Suggest risks or concerns with implementing standardized or common designs and processes, including any concerns with sharing proprietary information with AFFOA or the DoD.

5. Submission Instructions

5.1 Submission Format: Respondents who are interested in participating in this RFI can request one or multiple conference calls with the AFFOA team to provide the information requested.

5.2 Submission Method: Email to Guan Wang (gwang@affoa.org) with the subject line: "RFI Response: DOD Design for Manufacturability." The content of the email should include a brief introduction to your company, a description of your manufacturing capabilities, and a summary of your experience in DOD combat uniform manufacturing**.**

5.3 Deadline: Responses must be received by 11:59 PM EDT on November 1st, 2025

5.4 Questions: Submit questions to Guan Wang (gwang@affoa.org) by October 15th , 2025. Responses will be shared with all interested parties via an FAQ document by October 25th, 2025.(FAQ document will be available at https://www. ffoa.org/opportunities/)

6. Additional Information

- This RFI is for information-gathering purposes only and does not constitute a solicitation or commitment to award contracts or funding.
- Responses may be used to inform the DOD Textile Product Commonality Recommendations Report and guide the selection of products for prototyping.
- AFFOA will host an Industry Webinar (date TBD) to review project motivation, roadmap, and opportunities for collaboration. Respondents are encouraged to indicate interest in participating.

- Proprietary information should be clearly marked. AFFOA will protect proprietary data to the extent permitted by law.

7. Next Steps

- AFFOA will review RFI responses and incorporate relevant data into the Commonality Analysis task.
- Selected respondents may be invited to participate in the Industry Webinar or further discussions with AFFOA, DOD stakeholders, and industry partners.
- Findings from this RFI will contribute to the development of a validated set of tools and guidelines for assessing design-for-commonality changes in DOD combat clothing.

Thank you for your interest in supporting AFFOA's mission to advance DOD textile manufacturing capabilities.