Advanced Functional Fabrics of America (AFFOA) Project Call 1.0 White Paper Template

AFFOA Project Call 1.0 Project Topic:

Project Title:

Project Keywords (up to five):

Lead AFFOA Member Applicant Organization: Name and location (city, state)

Lead AFFOA Member Applicant Principal Investigator or Project Point of Contact: Name, affiliation, address, email, phone

AFFOA Team Member Organizations: Name and location (city, state). Also, please complete Project Execution Table in Appendix A

Target Market(s) for product prototype: Automotive, Aerospace, Medical, Apparel, Materials, Consumer Products, Architecture (interior design, construction), Consumer Electronics, Data and Software, Electronic Components, Services and Systems, Equipment or Define Other

Current manufacturing capacity for fiber and fabrics with justification:

Expected manufacturing maturity and scaling plan at the conclusion of the project with justification:

Maximum 5-page count for Proposal Narrative (Project Description and Work Plan)

Project Description (2-3 pages)

Please compose your response according to the following sections.

1. Prototype Description and Valuation: Proposed product prototype with graphic depiction, market specific use case, market needs addressed and evaluate total addressable market. Describe how the project supports AFFOA’s mission and creates a revolutionary fabrics or textile system as it compares to current state of the art. Describe how technology provides a value-added service. Describe if technology could be dual use for civilian and defense applications.
2. Technology and Manufacturing Innovation: Proposed technology innovation(s) and how it (they) represent advancements versus current manufacturing practice or incumbent technology. Specifically explain how the project addresses key Project Selection Criteria including each Manufacturing Thrust (Computer Aided Design of Integrated Textiles (CAD-IT), Fiber and Yarn Devices (FYD), Textile Systems and Assembly (TSA) and System Integration and Testing (SI)).
3. Impact: how the project aligns with technology needs/challenges identified in AFFOA’s project call topics, generates “market pull” by aligning with a major industry value chain participant; delivers public economic benefit (US competitiveness, jobs, SME growth, workforce development, training, etc.).
4. IP Listing and Management Plan: List existing IP protecting this technology or process and describe unique know-how required to produce and scale. Clearly mark any proprietary information disclosed and limit to amount necessary to convey value. Describe IP and data sharing plan that addresses willingness to license background and foreground IP within the team and more broadly. Describe IP sharing plan to address joint inventions among team members.
5. High Level Plan Beyond Year 1: Technology and manufacturing roadmap of improved and additional capabilities and scale enabled by this investment with future product implementations described.
6. Core Competency Analysis and Learning Content (not included in page limit): Each team member brings unique knowledge, skills, expertise, and experience (i.e. core competences) to the project call team that contributes to the overall success of the project. Identify the following for each team member:
   1. Identify one or more project-relevant core competencies (use template in Appendix B)
   2. List or include existing or proposed learning content in support of the competencies. Where possible, include links to content not provided.
7. Team and Qualification: Resources (public and private sector funds, facilities, equipment, staff qualifications) of the Member Project Team. Commercialization record of proposed team along with description of commitment to manufacturing in USA.

Work Plan (2-3-page maximum)

The Work Plan should include a concise summary of:

* Project Deliverables, i.e. what will be delivered upon successful completion of the project (prototype along with specific data, design or manufacturing tools, etc.)
* High-Level Work Flow Structure, i.e. brief description of each of 3-5 major tasks and responsibility for each (to the extent possible, projects should utilize industry standards for conducting and reporting materials testing, characterization, and resulting data) with description of prototype step in CAD-IT, FYD, TSA, or SI
* Each task shall have one or more associated success metrics
* Which organization on team leads the task

Task 1:

Task 1.1:

Task 1.2:

Task 2:

Task 2.1:

Task 2.2:

…

* Schedule including start and end of each task (Months from Project Start)
* Major High-Level Project Milestones, i.e. 4-6 major milestones with metric of success, minimum of 1 milestone/quarter.

Milestone 1:

Milestone 2:

Milestone 3:

…

Budget Summary (not included in page count)

The budget summary should identify amounts and the source(s) of non-federal cost share (cash and In-kind) and the approximate annual allocations of cost share and requested federal funding to each high-level task for Year 1.

Appendix A. Project Execution Table (list organizations per core competency area, not included in page count)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Design/testing/modeling | Fiber and yarns | Fabric | Assembly | System integration |
|  |  |  |  |  |
|  |  |  |  |  |

Appendix B. Core Competency Analysis Template (not included in page count)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Task | Who on your team is contributing this core competency? | Core competency area (see list below) | Specific core competency | Requires knowledge, hands-on skill, or both | Learning Content (existing or proposed) | Why is this relevant? |
| 1 | Leroy Knife | Fibers and yarns | Photonic bandgap Fiber fabrication (structural coloration with fiber) | Both | Relevant excerpts from PhD thesis on Preform and Fiber Fabrication Outlining step-by-step how to guide (see appendix IV) | Teaching tool for fiber with spectral reflectivity; enables with fabrics structural coloration |
| 1.1 | Harold Irod | Design | Criteria for garment ready fiber | Knowledge | Proposed | Ensures fibers meets todays production requirements |
| 2 |  |  |  |  |  |  |
| 2.1 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Example content

Core competency area:

1. Design, modeling, testing validation
2. Fibers and yarns
3. Fabrics
4. Assembly
5. System integration

Supporting Information for Technical Content (not included in page count)

AFFOA encourages applicants to include supporting patent applications, issued patents, references and supporting data for technical content.