Project Introduction

Advanced EVA suits for space exploration will need a portable life support system (PLSS) that is compact, lightweight, and highly reliable. A key component is a blower that circulates air through the space suit ventilation loop. We propose to develop an innovative air blower that can meet the challenging requirements for circulating ventilation air in an EVA suit using a reliable system that consumes little power. In Phase I we will prove the feasibility of our approach by producing a conceptual design for the blower and building and demonstrating a proof-of-concept blower. In Phase II we will optimize the blower and motor designs to achieve small size and maximum efficiency while meeting requirements and constraints for operation in exploration space suits. We will demonstrate lifetime and reliability of critical components and deliver a prototype blower that can be used in system tests of advanced portable life support systems.

Primary U.S. Work Locations and Key Partners

<table>
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<th>Organizations Performing Work</th>
<th>Role</th>
<th>Type</th>
<th>Location</th>
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<tr>
<td>Johnson Space Center (JSC)</td>
<td>Lead Organization</td>
<td>NASA Center</td>
<td>Houston, TX</td>
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<td>Creare, Inc.</td>
<td>Supporting Organization</td>
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Organizational Responsibility

- Responsible Mission Directorate: Space Technology Mission Directorate (STMD)
- Lead Center / Facility: Johnson Space Center (JSC)
- Responsible Program: SBIR/STTR
Primary U.S. Work Locations

| New Hampshire | Texas |

Project Management

**Program Director:**
Jennifer L Gustetic

**Program Manager:**
Carlos Torrez

For more information and an accessible alternative, please visit: https://techport.nasa.gov/view/8093