

Modular Portable Life Support System (PLSS) to Increase EVA Mobility and Reduce Consumables

Completed Technology Project (2014 - 2018)



Project Introduction

This proposal seeks to analyze the requirements for a modular portable life support system (PLSS) for a highly mobile, lightweight suit, and quantify mobility and bioenergetics as a function of subsystem placement for both gas-pressurized suits and advanced suit concepts. This will inform suit/PLSS design of both current (Z-series) and next-generation suits.

Anticipated Benefits

This will inform suit/PLSS design of both current (Z-series) and next-generation suits.

Primary U.S. Work Locations and Key Partners

Organizations Performing Work	Role	Type	Location
Massachusetts Institute of Technology(MIT)	Lead Organization	Academia	Cambridge, Massachusetts

Project Website:

<https://www.nasa.gov/directorates/spacetech/home/index.html>



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Massachusetts Institute of Technology (MIT)

Responsible Program:

Space Technology Research Grants

Project Management

Program Director:

Claudia M Meyer

Program Manager:

Hung D Nguyen

Principal Investigator:

Jeffrey Hoffman

Co-Investigator:

Nikhil Vadhavkar

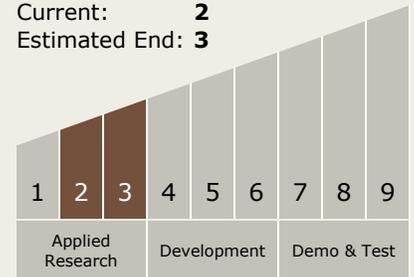
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Technology Maturity (TRL)

Start: 2
Current: 2
Estimated End: 3



Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.2 Extravehicular Activity Systems
 - └ TX06.2.2 Portable Life Support System

Target Destinations

Earth, The Moon, Mars