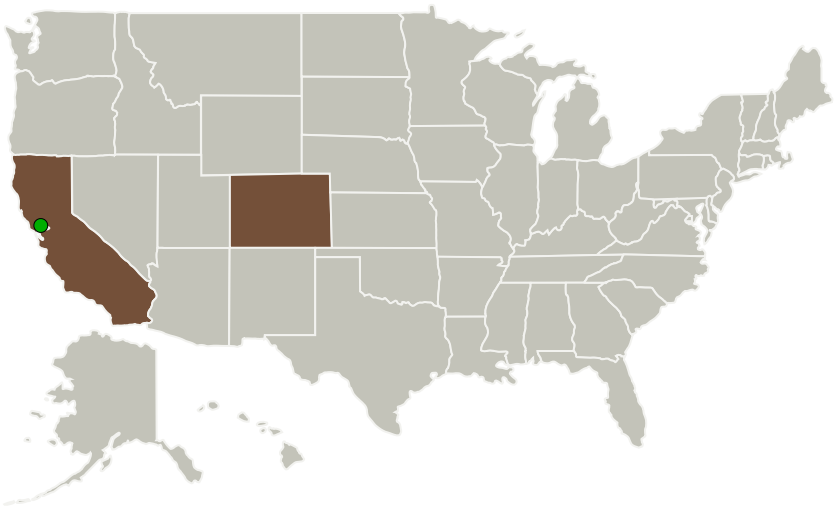
Very Dense High Speed 3u VPX Memory and Processing Space Systems, Phase I

Completed Technology Project (2010 - 2010)

Project Introduction

Today, memory and payload processing systems for space applications are typically designed for a specific application for a specific mission. Many of these systems do not employ a commercial standard which adversely affects the development costs, risks, and schedule while minimizing effective reuse of capabilities. Traditional commercial standards such as PCI are limited in bandwidth and reliability and do not meet the needs of advanced space payloads. New standards, like VPX, do show promise. VPX supports module to module datarates of 10 Gbps. VPX supports multiple switch architecture, so redundancy is supported. With newer large capacity memory components, a high capacity modular architecture is achievable which opens the door for adoption of a commercial standard for space payload and memory systems.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
SEAKR Engineering, Inc.	Lead Organization	Industry	Centennial, Colorado
●Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

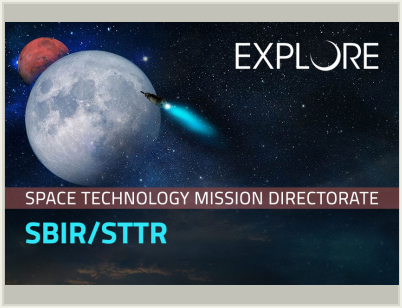


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Table of Contents

Project Introduction 1
Primary U.S. Work Locations and Key Partners 1
Project Transitions 2
Organizational Responsibility 2
Project Management 2
Technology Maturity (TRL) 2
Technology Areas 3
Target Destinations 3

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Primary U.S. Work Locations	
California	Colorado

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140042)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

SEAKR Engineering, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

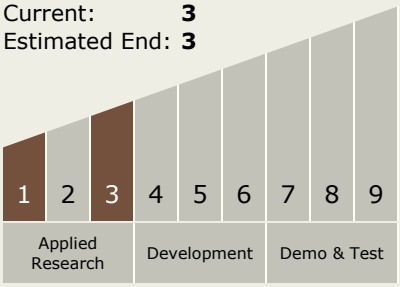
Carlos Torrez

Principal Investigator:

Steven Vaillancourt

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  └ TX09.4 Vehicle Systems
    └ TX09.4.1 Architecture Design and Analysis

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System