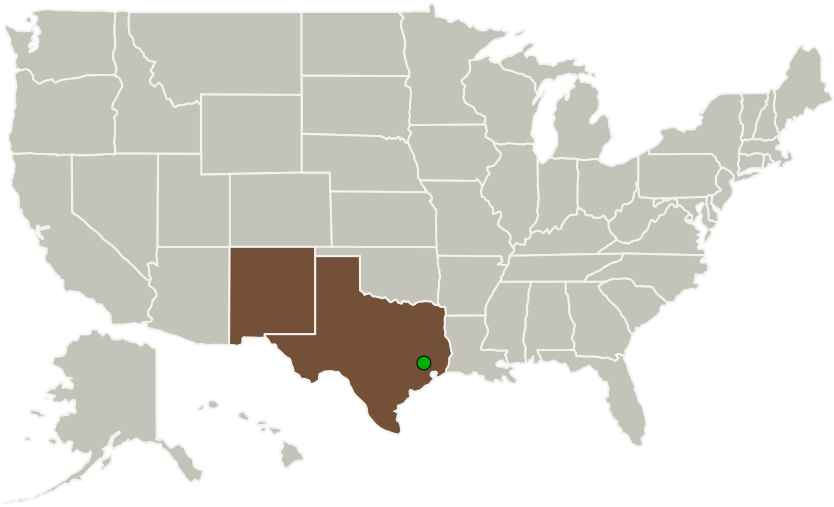
Quick Spacecraft Thermal Analysis Tool, Phase II

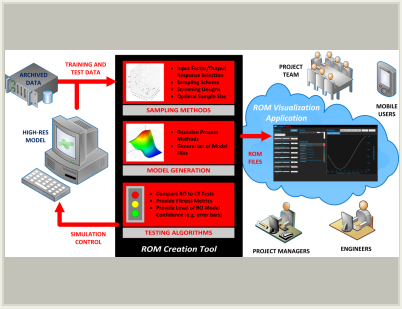
Completed Technology Project (2014 - 2017)

Project Introduction

For spacecraft design and development teams concerned with cost and schedule, the Quick Spacecraft Thermal Analysis Tool (QuickSTAT) is an innovative software suite that will significantly reduce labor costs and effort associated with the design, analysis, and optimization of spacecraft. Unlike traditional analysis where highly-trained engineers spend days to months developing, running, and evaluating high-resolution models, QuickSTAT provides the similar results in near real-time to a broader range of users. QuickSTAT will enable, on one hand, highly skilled thermal engineers to more effectively explore complex design spaces, while on the other hand give better engineering design access to less skilled engineers and program stakeholders. For thermal analysts involved in multi-dimensional trade studies, QuickSTAT provides the means to rapidly compare hundreds or thousands of discrete design points and identify trends that lead to more optimal design solutions. For designers of low-cost spacecraft, QuickSTAT can enable quick and efficient thermal design trade studies without investing in a high-end thermal analysis tools.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
LoadPath	Lead Organization	Industry	Albuquerque, New Mexico
Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
New Mexico	Texas

Project Transitions

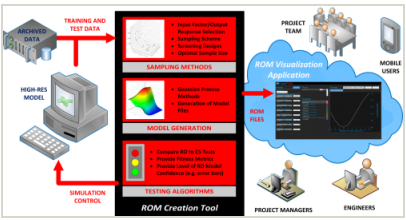
April 2014: Project Start

May 2017: Closed out

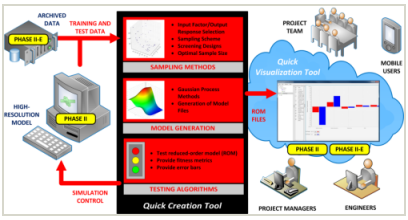
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137448)*

Images



Briefing Chart Image
Quick Spacecraft Thermal Analysis Tool, Phase II *(https://techport.nasa.gov/image/135162)*



Final Summary Chart Image
Quick Spacecraft Thermal Analysis Tool, Phase II Project Image *(https://techport.nasa.gov/image/135460)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

LoadPath

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

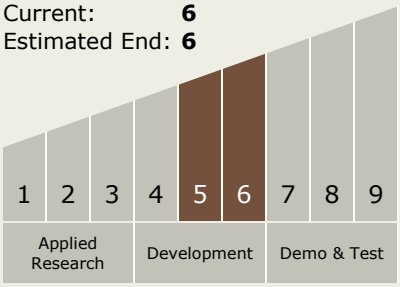
Carlos Torrez

Principal Investigator:

Derek Hengeveld

Technology Maturity (TRL)

Start: **5**
Current: **6**
Estimated End: **6**



Technology Areas

Primary:

- TX14 Thermal Management Systems
  └ TX14.2 Thermal Control Components and Systems
    └ TX14.2.5 Thermal Control Analysis

Target Destinations

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