## Overview of Heatshield for Extreme Entry Environment Technology (HEEET)

Abstract for USACA 42<sup>nd</sup> Annual Conference on Composites, Materials, and Structures January 22-25, 2018, Cocoa Beach, FL

David M. Driver, Donald T. Ellerby, Matthew J. Gasch, Milad Mahzari, Frank S. Milos, Owen S. Nishioka, Margaret M. Stackpoole, Ethiraj Venkatapathy, Zion W. Young NASA Ames Research Center

Moffett Field, CA 94035

Peter J. Gage Neerim Corp Moffett Field, CA 94035

Tane Boghozian, Jose F. Chavez-garcia, Gregory L. Gonzales, Grant E. Palmer, Keith H. Peterson, Dinesh K. Prabhu, Joseph D. Williams
Analytical Mechanics Associates, Inc.
NASA Ames Research Center
Moffett Field, CA 94035

Cole Kazemba Science and Technology Corp. NASA Ames Research Center Moffett Field, CA 94035

Youssef Mohamedaly Millennium Engineering and Integration Co. NASA Ames Research Center Moffett Field, CA 94035

Sarah L. Langston, Carl C. Poteet , Scott C. Splinter, NASA Langley Research Center Hampton, VA 23681

> Mike E. Fowler NASA Johnson Space Center Houston, TX 77058

> Charles M. Kellermann Jacobs Technology, Inc. NASA Johnson Space Center Houston, TX 77058

## **Abstract**

The Heatshield for Extreme Entry Environment Technology (HEEET) projects objective is to mature a 3-D Woven Thermal Protection System (TPS) to Technical Readiness Level (TRL) 6 to support future NASA missions to destinations such as Venus and Saturn. The scope of the project, status of which will be discussed, encompasses development of manufacturing and integration processes, fabrication of a prototype 1m diameter engineering test unit (ETU) that will undergo a series of structural tests, characterizing material aerothermal performance including development of a material response model, and structural testing and analysis to develop tools to support design and establish system capability.