

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Future Space Transportation Systems Technologies (5)

Author: Ms. Mari Gravlee
United Launch Alliance LLC (ULA), United States, mari.gravlee@ulalaunch.com

H2-O2 THRUSTER TECHNOLOGY

Abstract

An H2-O2 Thruster that utilizes hydrogen and oxygen ullage gas to create impulse in Evolved Expendable Launch Vehicle (EELV) upper stages is currently in development. There are many applications for this technology, including upper stage orbital disposal, propellant settling during long coast periods, and attitude control. As increasing launch rates place even more upper stage vehicles in non-compliant orbits and the probability of collision increases and un-controlled re-entries will continue to grow, the initial development of the thruster has a focus on upper stage orbital disposal.

The H2-O2 Thruster System development achieved PDR in Feb 2014. Extensive hot-fire testing has been conducted on the thruster, with a flight experiment planned for 2016.

This paper will outline the H2-O2 thruster technology development and its potential applications.