

In 2012, DARPA challenged the authors to launch a small thermal rocket into the air using millimeter waves. The resulting 2-year program, the Millimeter-Wave Thermal Launch System (MTLS), has been executed by NASA Ames Research Center and involves partnerships with General Atomics DIII-D Tokamak, the Air Force Research Laboratory, and the Army High Energy Laser Systems Test Facility (HELSTF). We define the MTLS program, describe its challenges, and outline its achievements.