

Lessons Learned from the First Build of Phase Four's Maxwell Engine

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ABSTRACT

Thousands of small satellites are expected to be launched over the next decade. Electric propulsion is critical to these missions, enabling orbit raising and maintenance, as well as collision avoidance and safe deorbiting capabilities. Historically, complex, expensive propulsion systems have hindered the mass production and mass deployment of large constellations of small satellites. Phase Four designs and manufactures Maxwell, a xenon-based radio-frequency (RF) plasma engine that is smaller, lighter, and more cost-effective than these legacy systems, without compromising on performance. Maxwell generates thrust by applying RF power to create plasma from xenon propellant, and accelerating that plasma out of your spacecraft.

In this talk, we'll discuss the challenges, innovations, results, and future work around the first build of Phase Four's Maxwell engine for small satellites.