Technology Goal

SKEP will develop and qualify a long-life, sub-kilowatt integrated propulsion system based on recent advances in Hall-Effect Thruster (HET) technology that will support exploration missions and enable high-value science and commercial applications within the constraints of an ESPA-class spacecraft.

- Enable double to triple the delta-v propulsive capability currently available to secondary spacecraft, thus making ESPA-class spacecraft compelling for NASA exploration and science missions as well as many commercial applications.

Project Objectives

1. Design, develop, and perform qualification testing on a long-life, sub-kilowatt integrated propulsion system based on recent advances in HET technology.
2. Implement a development strategy that maximizes future availability of the SKEP system for NASA and commercial needs, while reducing the likelihood of significant future nonrecurring engineering (NRE) and requalification.

SKEP will leverage prior NASA electric propulsion (EP) investments in multi-kilowatt electric propulsion systems, but simplifying and miniaturizing for a sub-kilowatt scale consistent with the power, volume, and mass limitations of an ESPA-class spacecraft.

By simultaneously developing all major components of the SKEP system (thruster, cathode, power processing unit, and feed system), the project will optimize for reliability, lifetime, and cost.