

INNOVATION & OPPORTUNITY CONFERENCE

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Small Spacecraft Technology

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nasa.gov/smallsat-institute

Small Spacecraft Technology Program - Purpose

Enable and execute small, rapid and affordable missions for exploration

- Develop and demonstrate the capabilities that enable small spacecraft to achieve NASA missions in unique and more affordable ways.
- Enable **new mission architectures** for which small spacecraft are uniquely suited.
- Expand the capability of small spacecraft to execute missions at **new destinations** and in challenging new environments.
- Enable the **augmentation of existing assets and future missions** with supporting small spacecraft.
- Address strategic knowledge gaps for **sustainable exploration** beyond Earth. Small Spacecraft provide an increasingly capable platform to precede human explorers to the moon, Mars, and other destinations.
- Advance **early demonstration of technologies** for expanded mission capabilities by embracing the small spacecraft risk tolerant approach.
- NASA supports and harnesses the rapid pace of innovation through **public-private partnerships** and the leveraging of advances and capabilities in industry and academia.

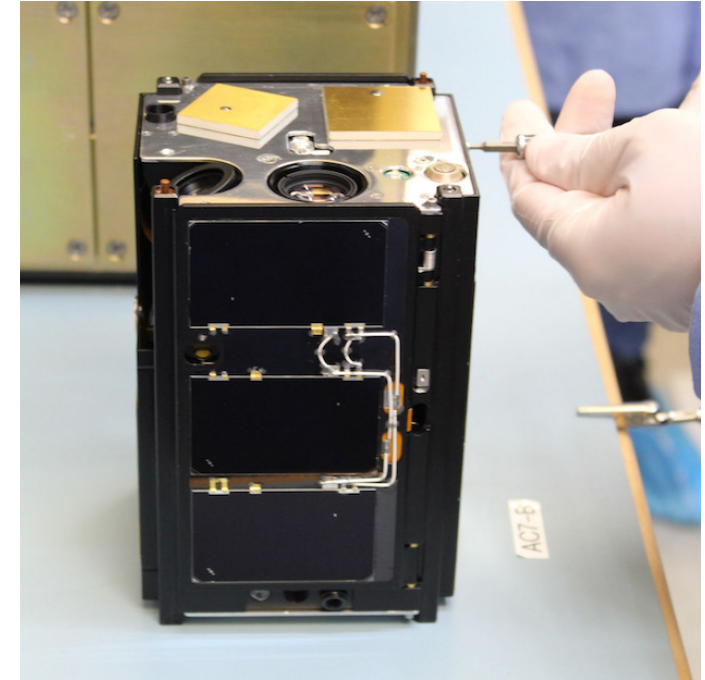
Small Spacecraft Technology Program - Themes

- **Deep Space Small Spacecraft**

- In-space propulsion - distant objectives/destinations
- Attitude control systems – fine pointing and steering
- Communications - large data rates over large distances
- Robust architectures - radiation tolerant systems

- **Affordable Distributed Spacecraft Missions**

- Autonomy (i.e., software)
- Position, navigation, and timing (PNT)
- Spacecraft to spacecraft communications



Small Spacecraft Technology Program

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Recent SmallSat News

NASA Reliability Initiative Works to Improve Small Satellite Mission Confidence

A new public-private initiative is working to improve Small Satellite (SmallSat) mission confidence. Historically, using CubeSats or SmallSats for certain types of missions have largely been viewed as unviable due to the mission success rate associated with these missions. As the space industry landscape changes — continuous technological

Small Spacecraft Body of Knowledge

SPOON

SMALLSAT PARTS ON ORBIT NOW

SPOON

Small Spacecraft