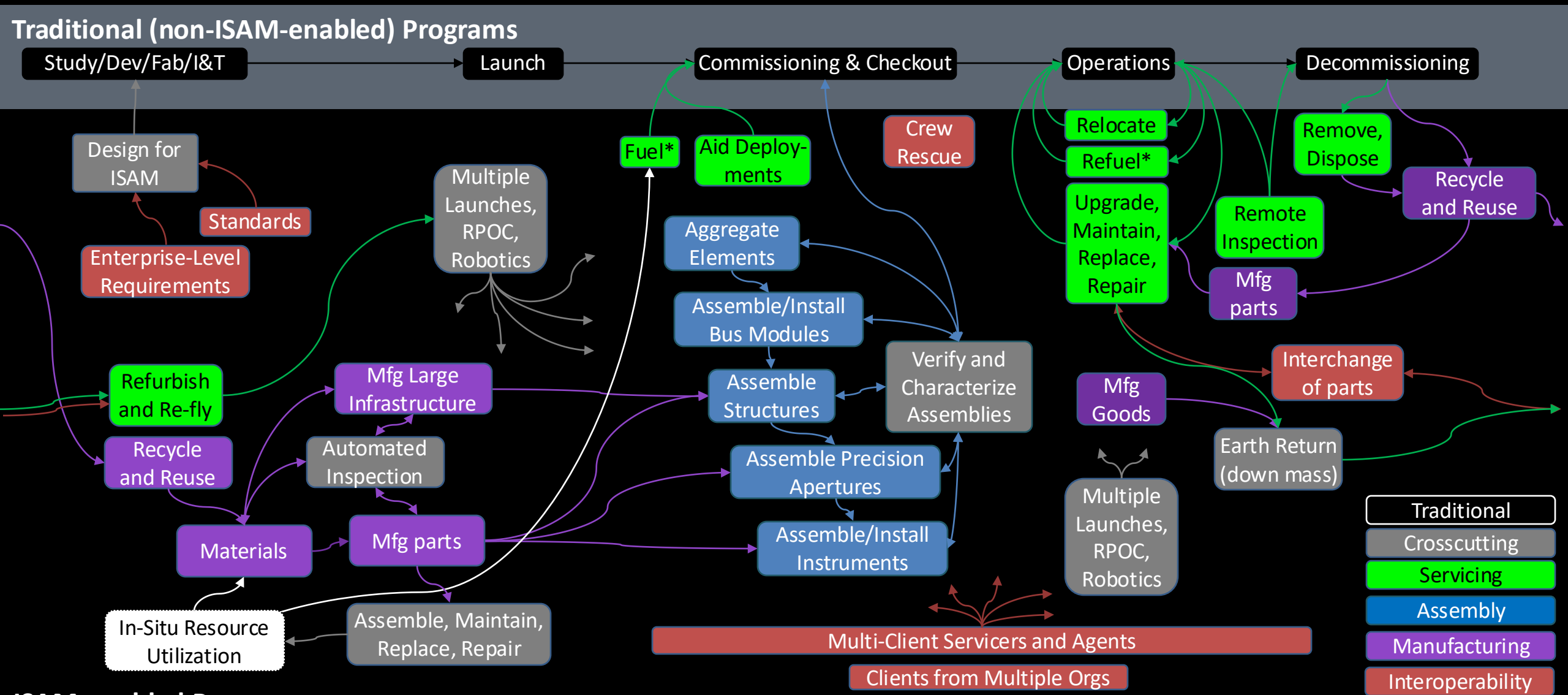


Flight Opportunities – Hosted Orbital Ecosystem – Fly Foundational Robots – Space Roboticist Challenge

Anh Nguyen, Ph.D., NASA's Flight Opportunities program

August 26, 2026, Small Satellite Conference Lighting Talk

What is In-Space Servicing, Assembly, & Manufacturing?



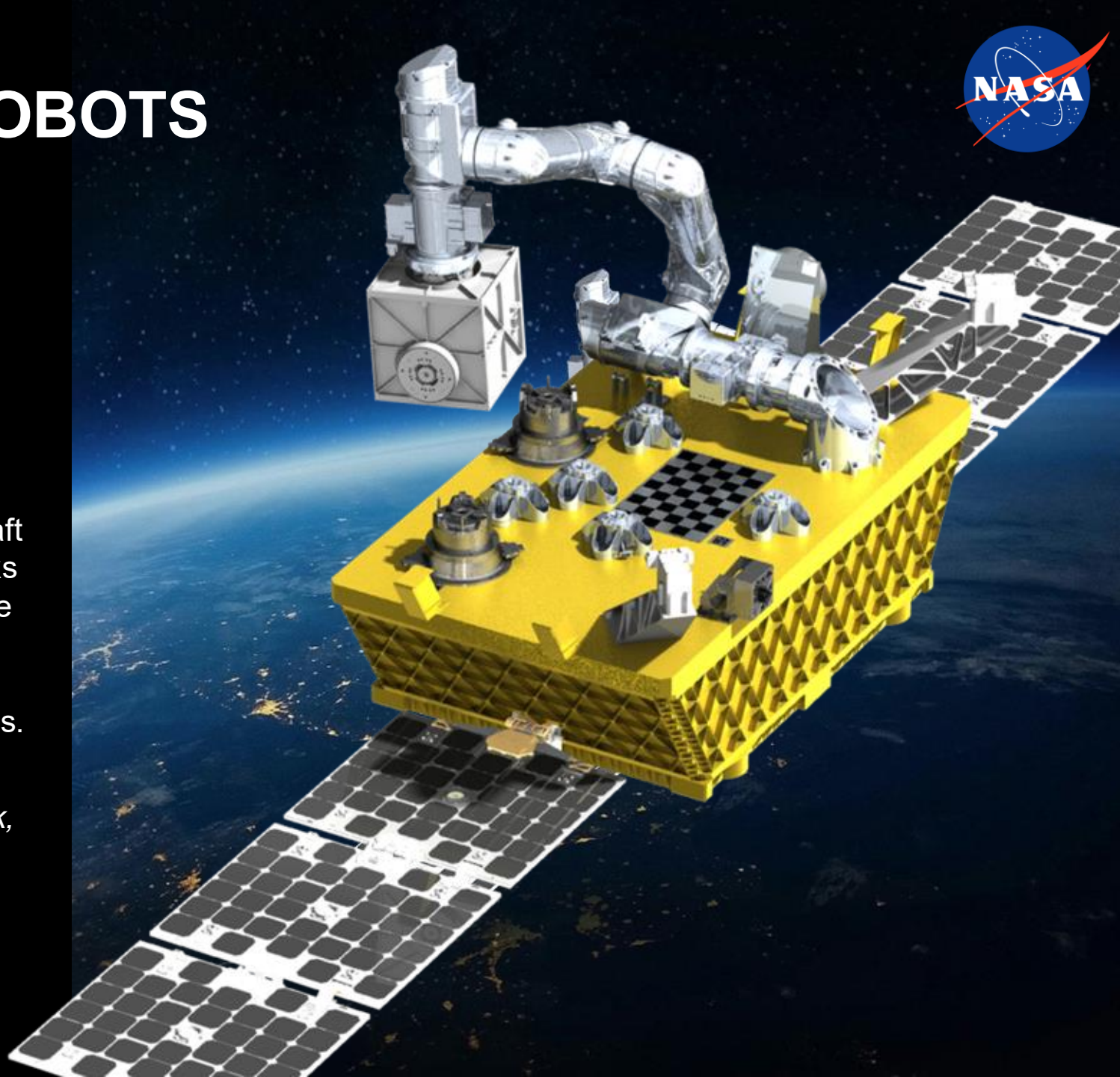
* Or perhaps “fill” and “refill”

FLY FOUNDATIONAL ROBOTS

Mission Overview: Set to launch in late 2027, FFR will deploy and operate a commercial robotic arm in low Earth orbit — allowing the spacecraft to act as an in-space platform for robotic demonstrations.

The Payload: A robotic arm from Motiv Space Systems that is capable of dexterous manipulation, autonomous tool use, and walking across spacecraft structures in zero or partial gravity will perform tasks on the FFR payload deck. The arm will demonstrate the movement of a modular component, the Orbital Replacement Unit (ORU), and the ORU will be hosted on the deck along with a variety of interfaces.

The mission includes several industry partners; Motiv Space Systems, Astro Digital, Arkisys, PikNik, SpaceWorks, iBOSS, and NASA/government partners; GSFC Astrophysics



The Fly Foundational Robots demonstration will be hosted in orbit aboard an Astro Digital vehicle through NASA's Flight Opportunities program



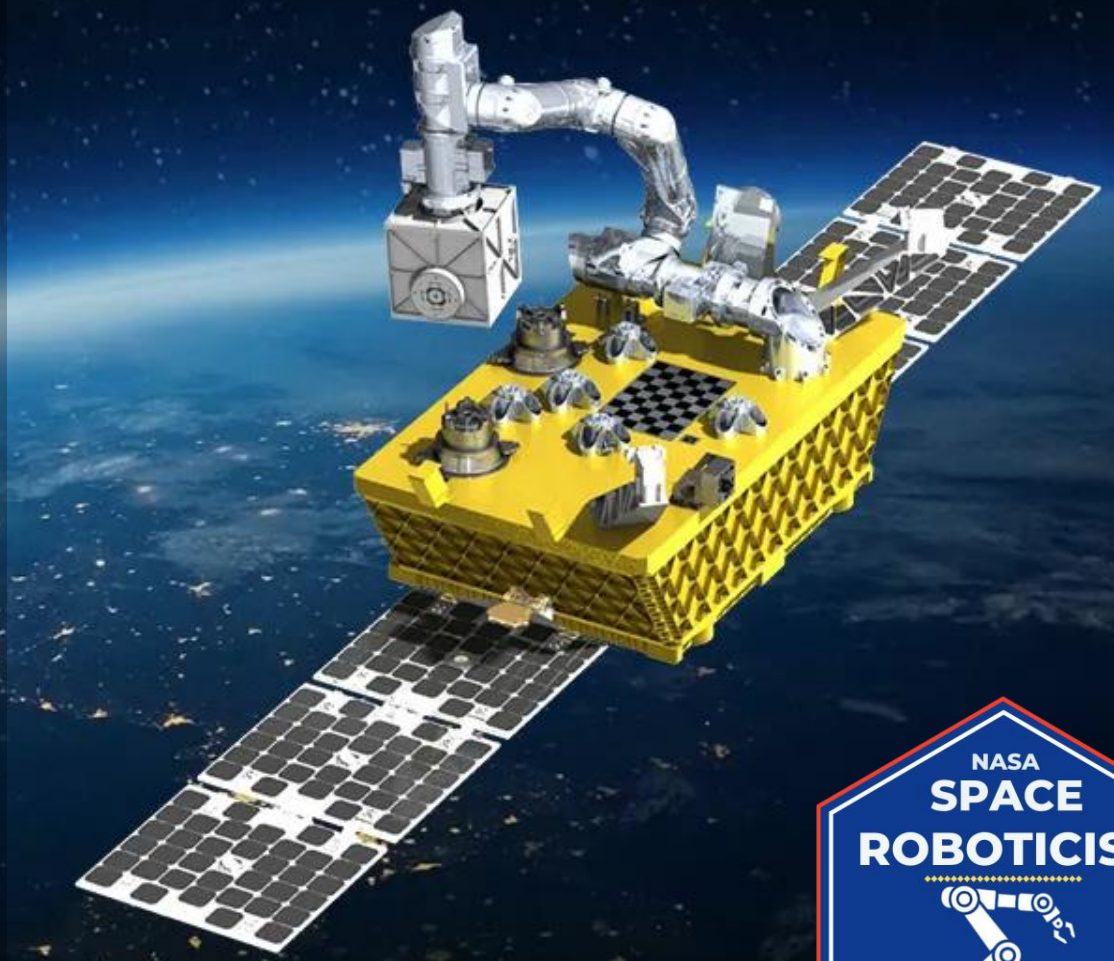
*Come see Flight Opportunities at the **Access to Space** booth.*

Learn more:
https://NASA.gov/FlightOpportunities

NASA Space Roboticist Challenge

NASA is selecting U.S. researchers to run real experiments with a robotic arm in space.

Got a bold experiment idea? NASA is opening access to its FFR 7 degree-of-freedom robotic arm to a select group of U.S. researchers. Principal investigators, post-doctoral researchers, professors, and highly qualified graduate students — if you have the capability to execute your experiment, apply now. Start with eligibility registration.



- **Eligibility Registration Required by:** Sept. 23, 2026
- **Submit White Paper by:** Oct. 2, 2026

For more information, visit:

https://SpaceRoboticistChallenge.com/

Creating a New Hosted Orbital Ecosystem

FFR marks a key milestone in NASA's new operational ecosystem, ***transforming how spacecraft are built, serviced, and expanded directly in orbit***.

This ecosystem fundamentally redefines Research & Test by providing an ***interactive orbital testbed***—allowing developers to continuously experiment, iterate, and validate technologies directly in microgravity.







Visit our website for more information and resources, including our **newsletter** and monthly **Community of Practice webinars**.

NASA.gov/FlightOpportunities

Reach out:

NASA-FlightOpportunities@mail.nasa.gov

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