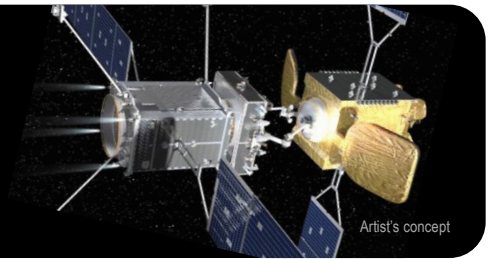


Robotic Servicing of Geosynchronous Satellites

INTERFACE FACT SHEET



POD Capture System (PCS)

Overview

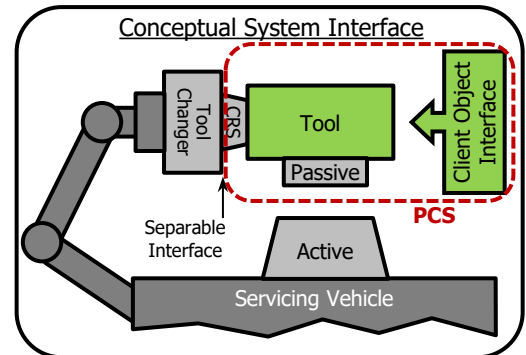
- Enables objects equipped with a grapple fixture to be grasped and secured by the POD capture tool (PCT) mounted on the robotic arm
- Design heritage from hardware flown successfully on DARPA's Orbital Express mission in 2007
- Compatible with a wide range of Payload On-Orbit Delivery (POD) systems, or other objects equipped with a compatible grapple fixture
- Development Status: Design completed; engineering units in production

POD Capture Tool (PCT)

- Captures the grapple fixture and establishes a rigid mechanical connection
- Attaches to the robotic arm through the tool changer interface
- Stows on structural, power, and data ports when not in use, providing power & data connections for thermal control and health monitoring
- Incorporates internal heaters to support use in a wide range of orbital environments

Grapple Fixture (GF)

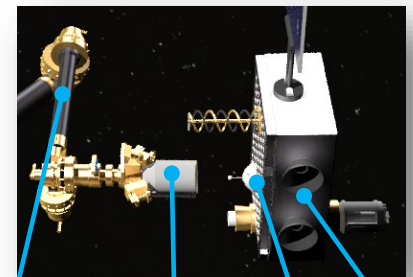
- Compact design with a mechanically compliant probe, allowing for generous misalignment tolerances
- Passive charge bleed system equalizes charge between vehicles during first contact
- Designed to operate over a large temperature range



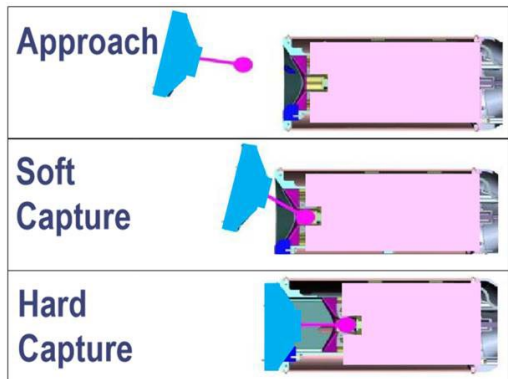
SYSTEM FEATURES:

- Flight-proven design
- Mechanical alignment features provide misalignment tolerance
- Separate capture and rigidize functions enable load limiting
- Flexible, low overhead grapple fixture suitable for many space objects

Product Specifications		
	U.S.	SI
Performance		
Payload Mass	110 - 772 lbm	50 - 350 kg
Moment Capacity (overall)	69 ft-lbf	94 Nm
Moment Capacity (separation)	34.6 ft-lbf	47 Nm
Time to Soft Capture	<0.5 sec	
Time to Rigidize	<10 sec	
POD Capture Tool		
Length	13.8 in	351 mm
Diameter (max)	6.9 in	175 mm
Height	8.1 in	206 mm
Mass (not including tool changer or port)	13.2 lbm	< 6.0 kg
Power	<30 W	
Operating Temp	-8°F to 185°F	-22°C to 85°C
Survival Temp	-40°F to 221°F	-40°C to 105°C
Grapple Fixture		
O.D. (mounting plate)	5.43 in	138 mm
Mass	1.70 lbm	0.771 kg
Base Plate Operating Temp	-123°F to 241°F	-86°C to 116°C
Capture Envelope		
Radial	<1.18 in	<30 mm
Angular	<5 deg	
Rotational	<5 deg	
Information provided is current as of April 2021. Interested parties should contact the manufacturer for up-to-date information		

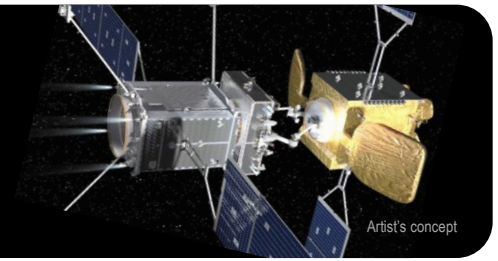


Robotic Arm System POD Capture Tool Grapple Fixture POD
PCS



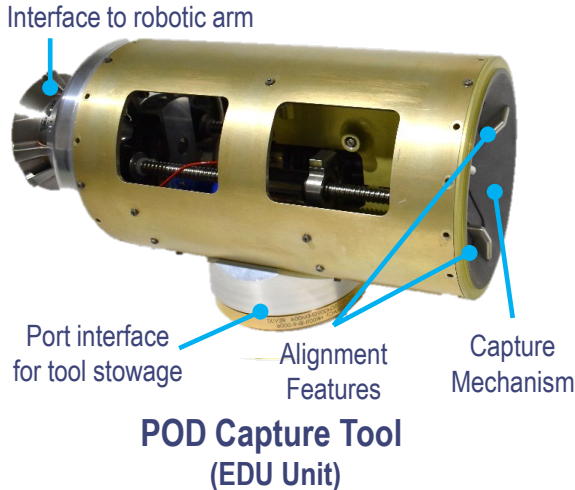
Robotic Servicing of Geosynchronous Satellites

INTERFACE FACT SHEET



Artist's concept

POD Capture System (PCS)

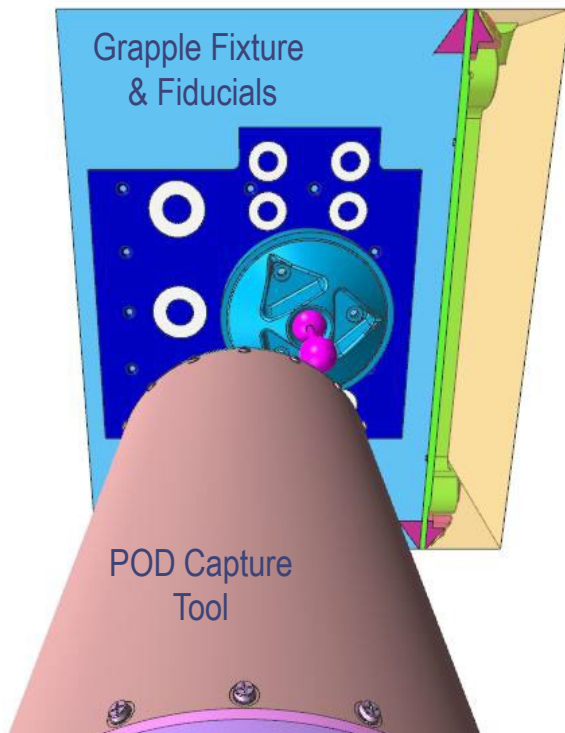


MANUFACTURER:

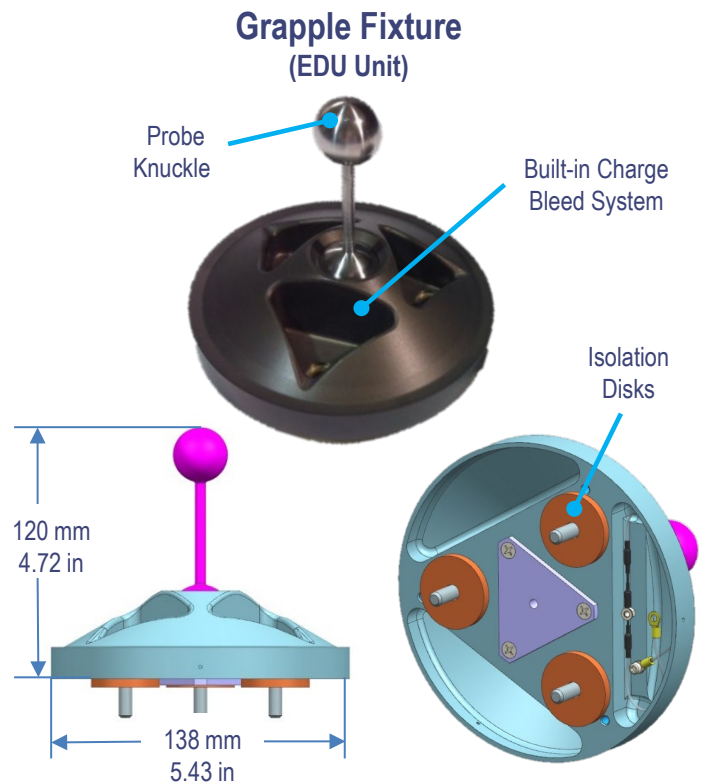
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Approach guided by fiducials



Grapple Fixture Base

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