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Space 4

October 2, 2024

Space for a Safer World

Careers - Opportunities - Knowledge

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Topic 6

Artemis : Fortifying our outpost in space IBDM : Connecting Europe to the Moon

Frank Preud'homme

Artemis missions

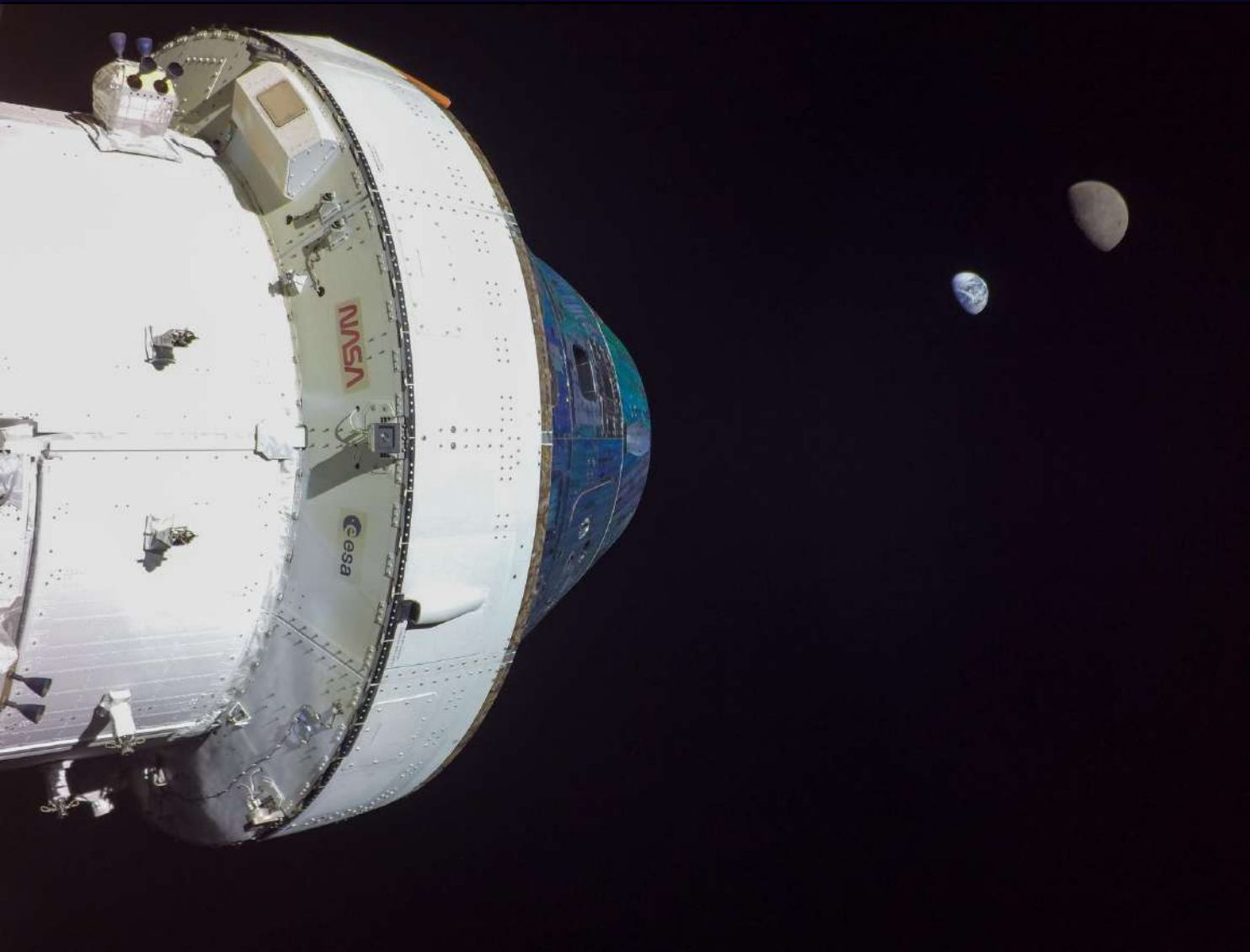
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Artemis: Landing Humans On the Moon



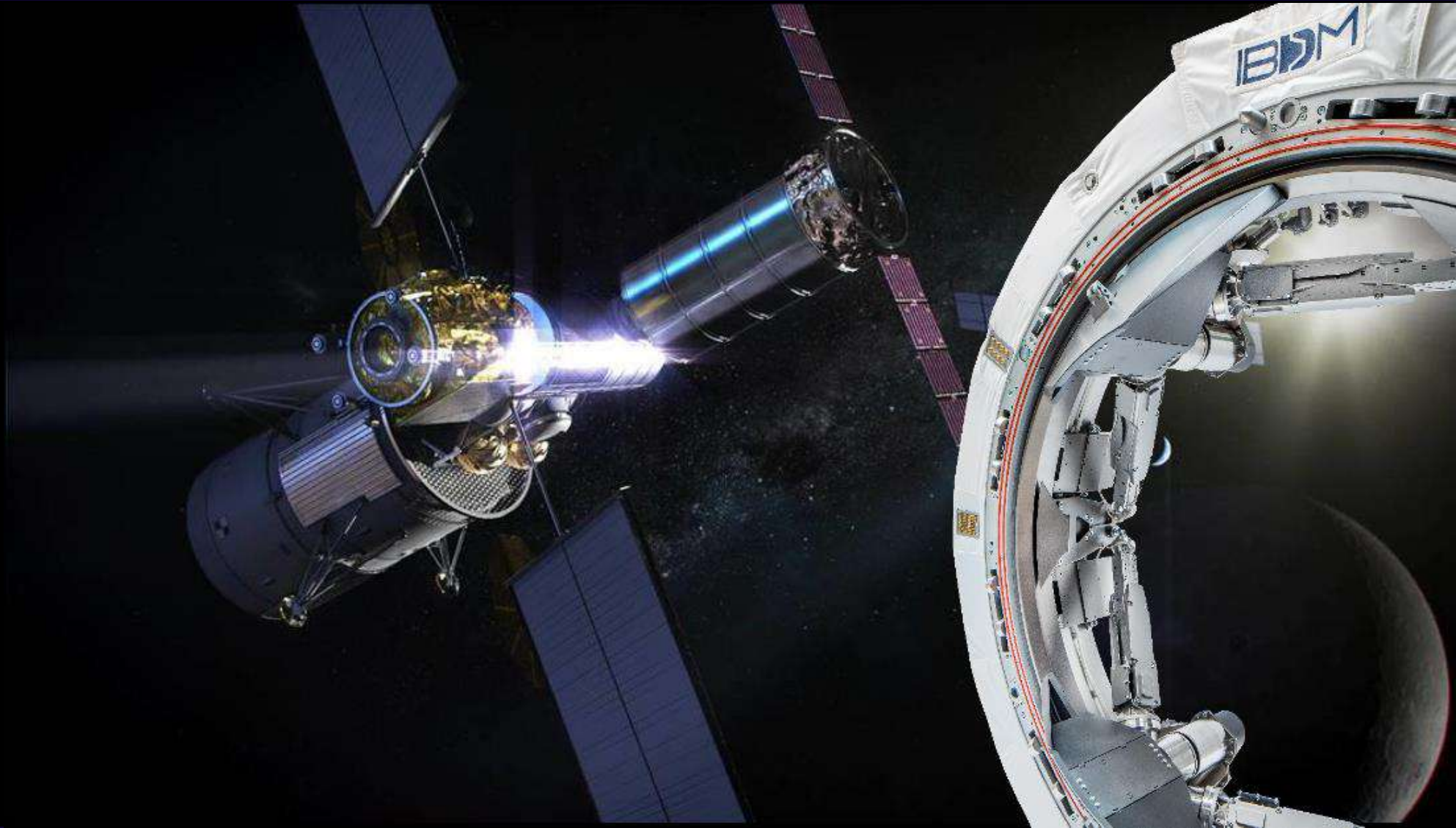
Key elements : ORION

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Key elements : Gateway

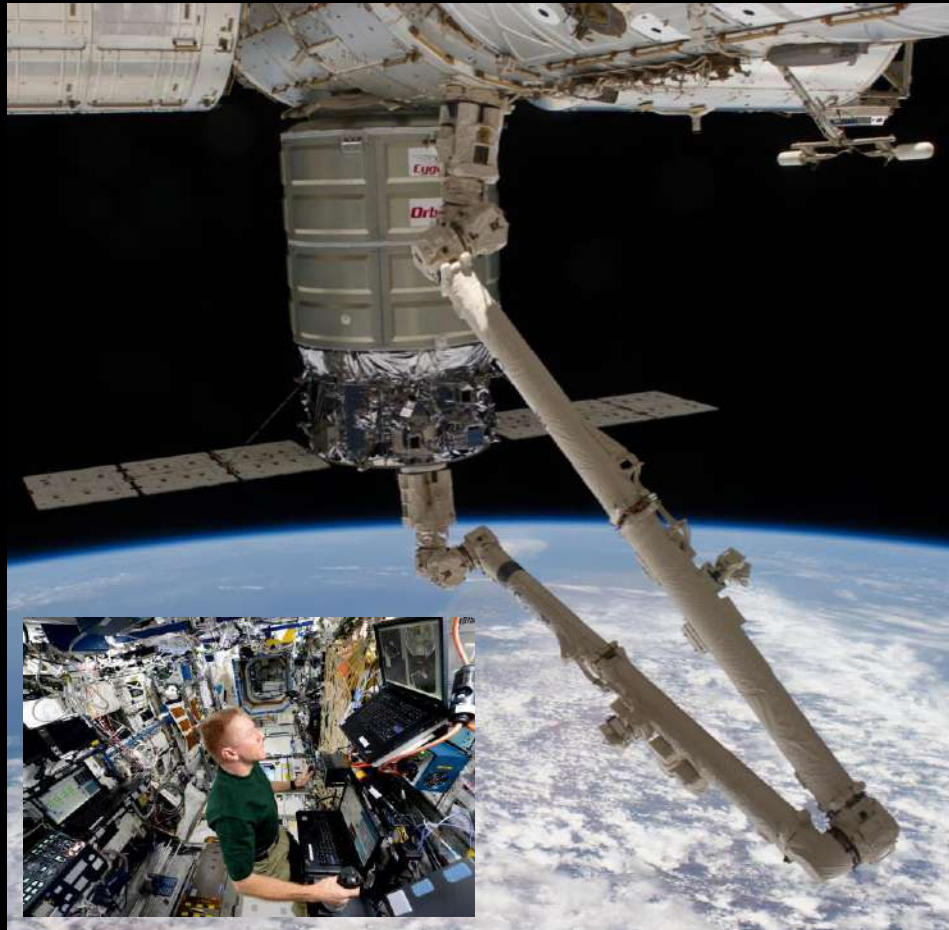
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Need for docking

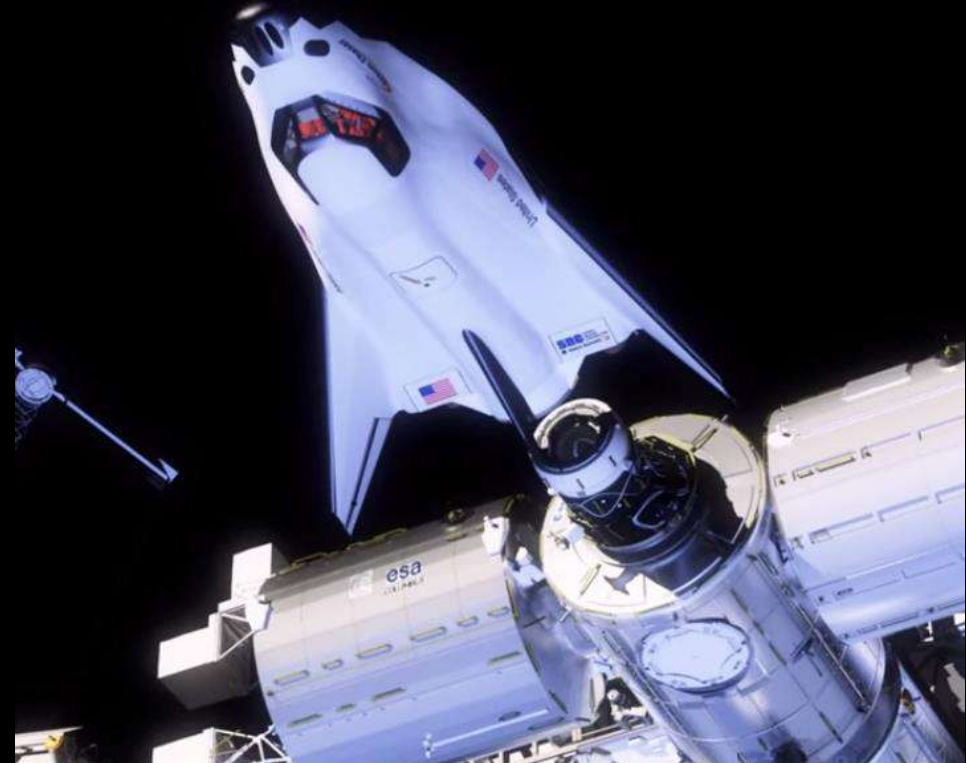
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Berthing



Orbital-ATK Cygnus®

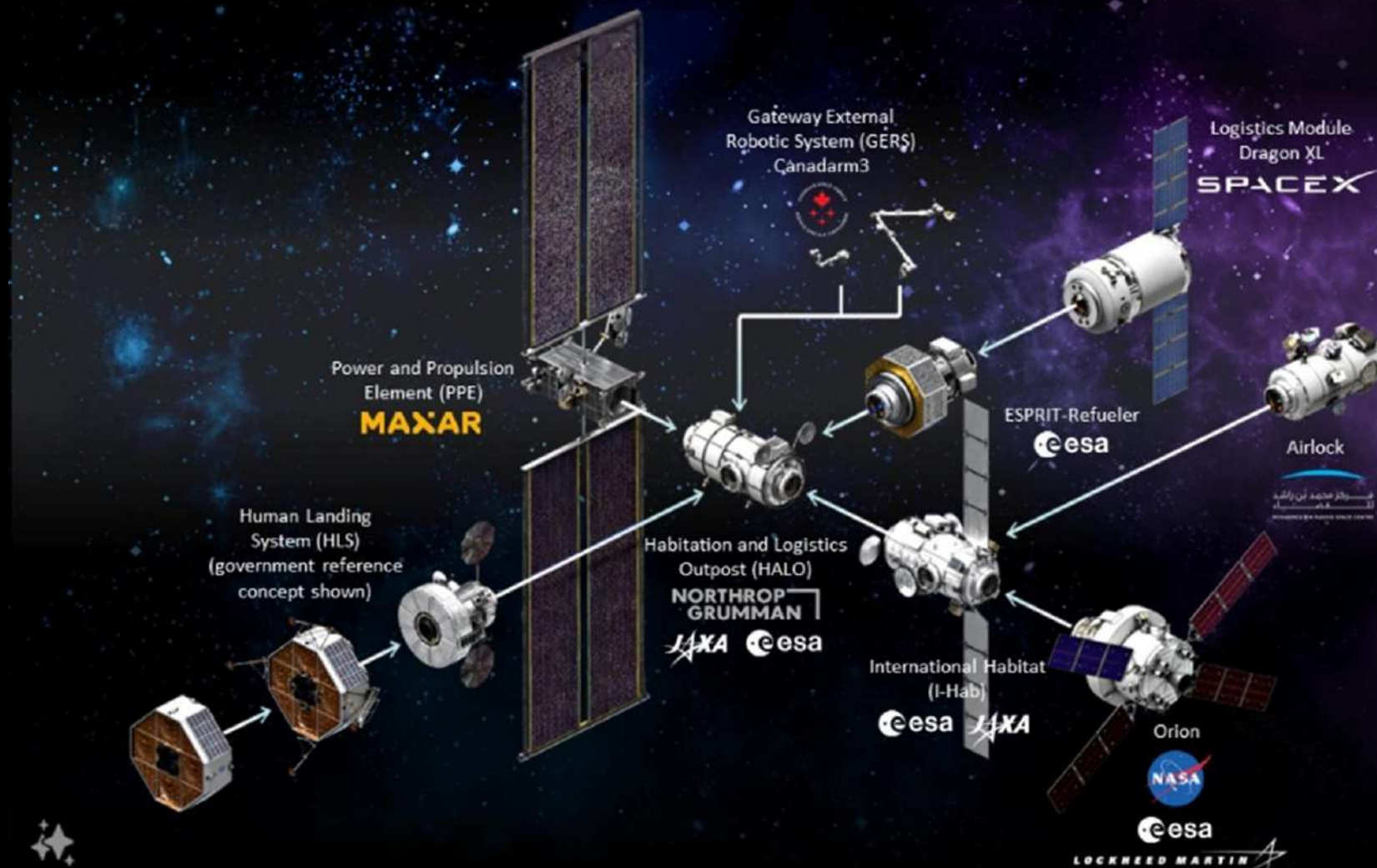
Docking



SNC DreamChaser®

IBDM on Lunar Gateway

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IBDM functioning

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SCS

Soft Capture Subsystem

- 1) capture
- 2) dissipate relative velocity
- 3) align for hard docking

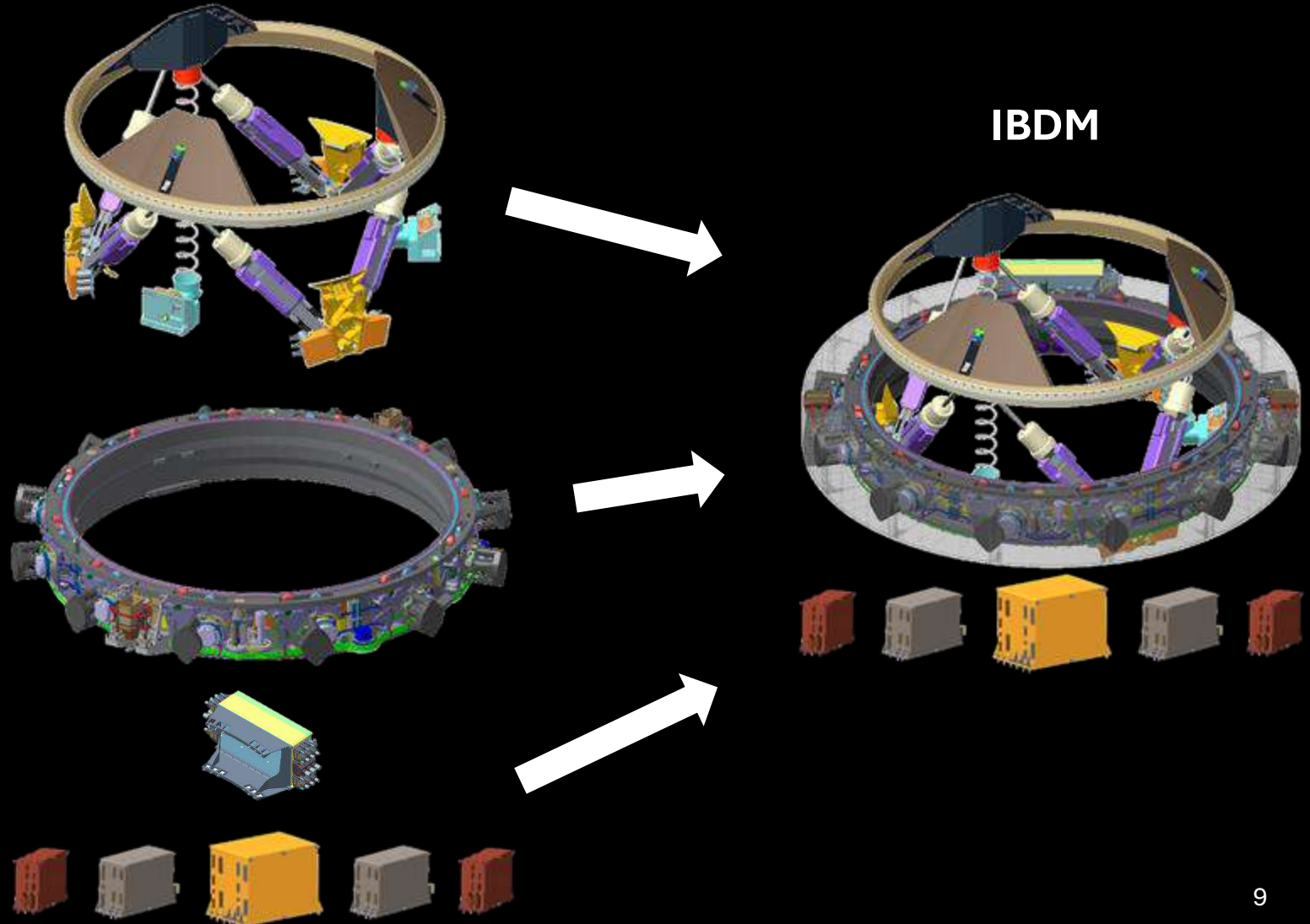
HCS

Hard Capture Subsystem

- 1) solidify interface
- 2) electrical/fluidic connection
- 3) pressurization of inter-hatch space
- 4) separation

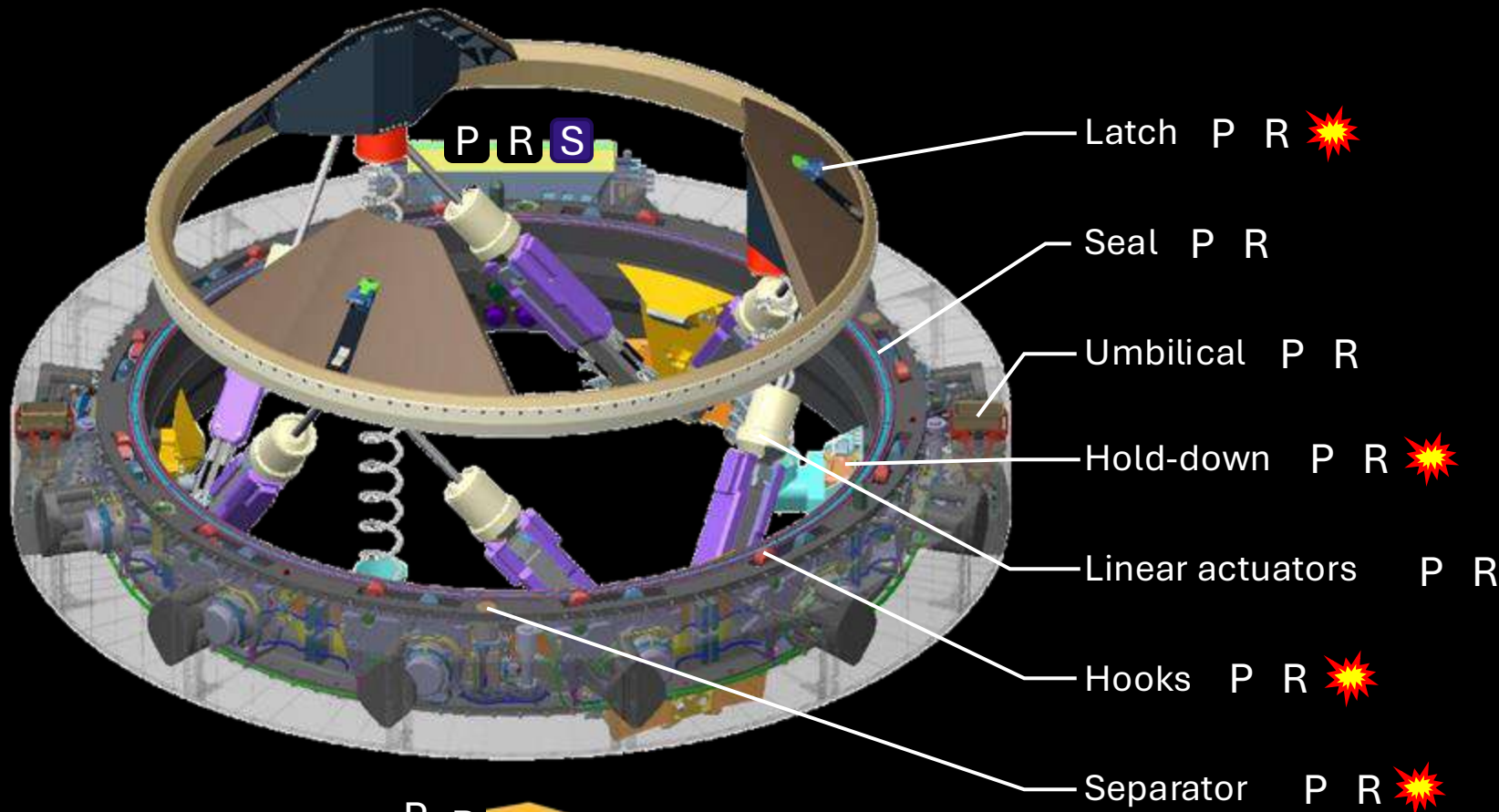
Avionics Subsystem

- 1) control SCS and HCS, incl FDIR
- 2) communicate with vehicle
- 3) thermal conditioning of IBDM



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P Primary System
R Redundant System
S Safe mode
 Secondary release

Soft capture (2 failure tolerant)

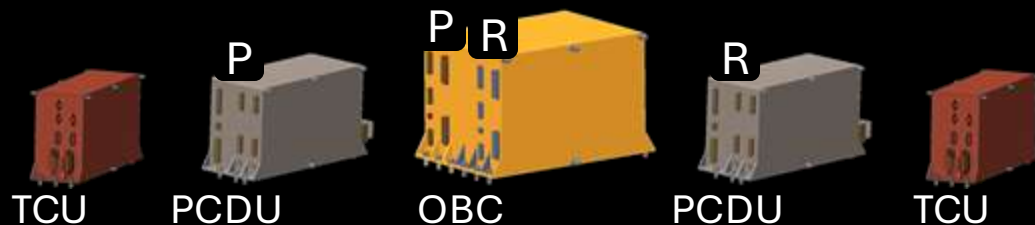
- Hold-down release
- Soft capture

Hard capture (1 failure tolerant)

- S
- Sealing
 - Hook closure
 - Umbilical

Separation (2 failure tolerant)

- Latch opening
- Hook opening
- Separator



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