

REARM: Re-Entry Hopper Space-Craft System on Mars

Faranak Davoodi

Jet Propulsion Laboratory/Engineering and Science Directorate

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Contributors: Behcet Acikmese (University of Texas, Austin), Benjamin B. Donahue (The Boeing Company), Kurt K. Klaus (The Boeing Company), Azin Akbari (Graphic Designer)

REARM Architecture Concept

- New class of Mars exploration mission
 - Expedites the exploration of Mars
 - Exploits the assets already existing on Mars
 - Integrates various technologies that have been already tested and used

REARM Architecture Concept

- New class of Mars exploration missions
 - Reusable lander
 - Ascend/descend vehicle
 - Refuelable hopper
 - Multiple-location sample-return collector
 - Cargo system for assets and humans
 - Scalable Laboratory

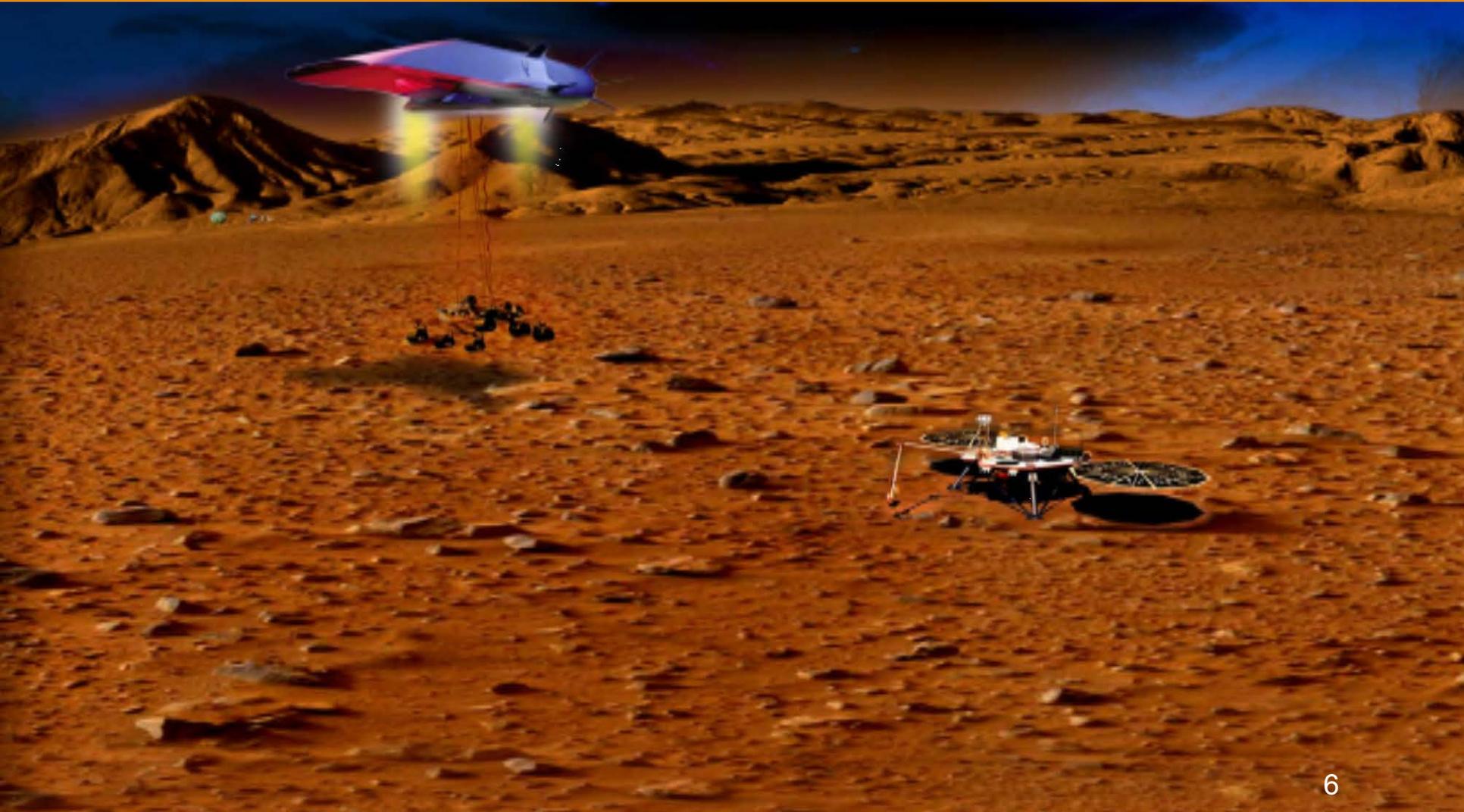
REARM Architecture Concept

- All these by adding only:
 - A Re-entry hopper-spacecraft
 - A Docking station at the Martian orbit

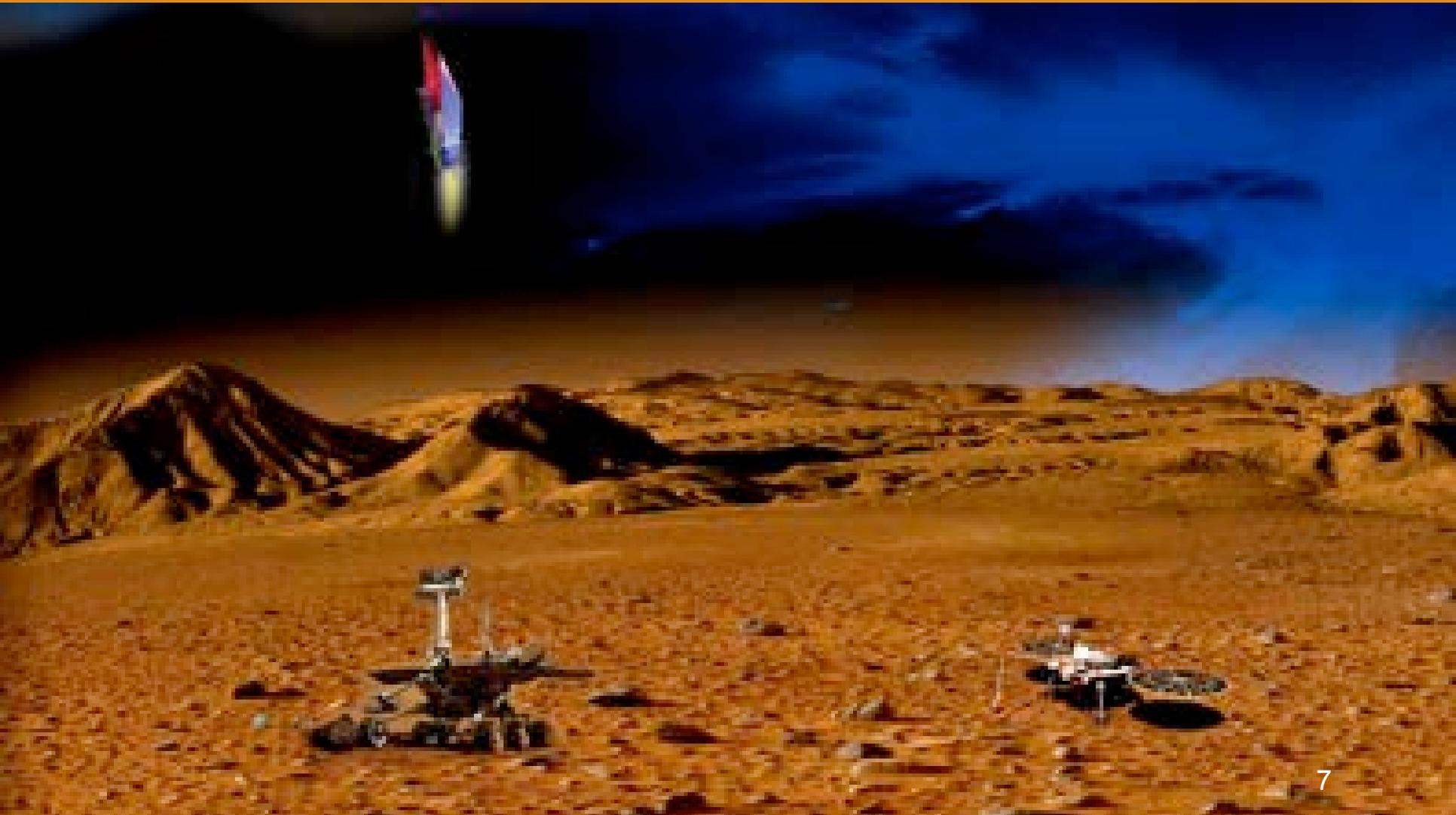
REARM Docking Station: A Cargo System between Mars and the Earth



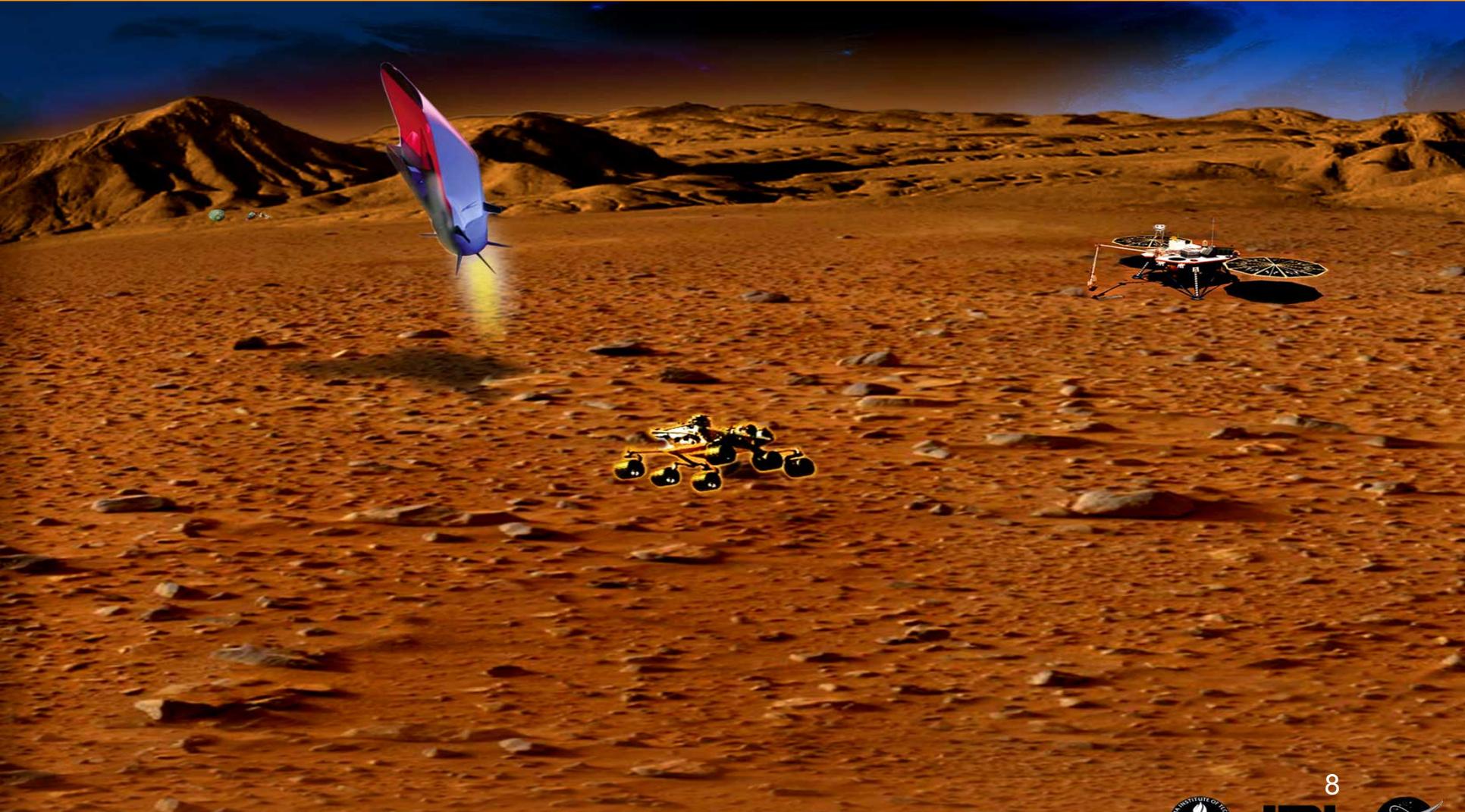
REARM-Spacecraft Could Relocate the in-situ Assets



Re-fuelable Ascend/Descend System



Re-fuelable Hopper



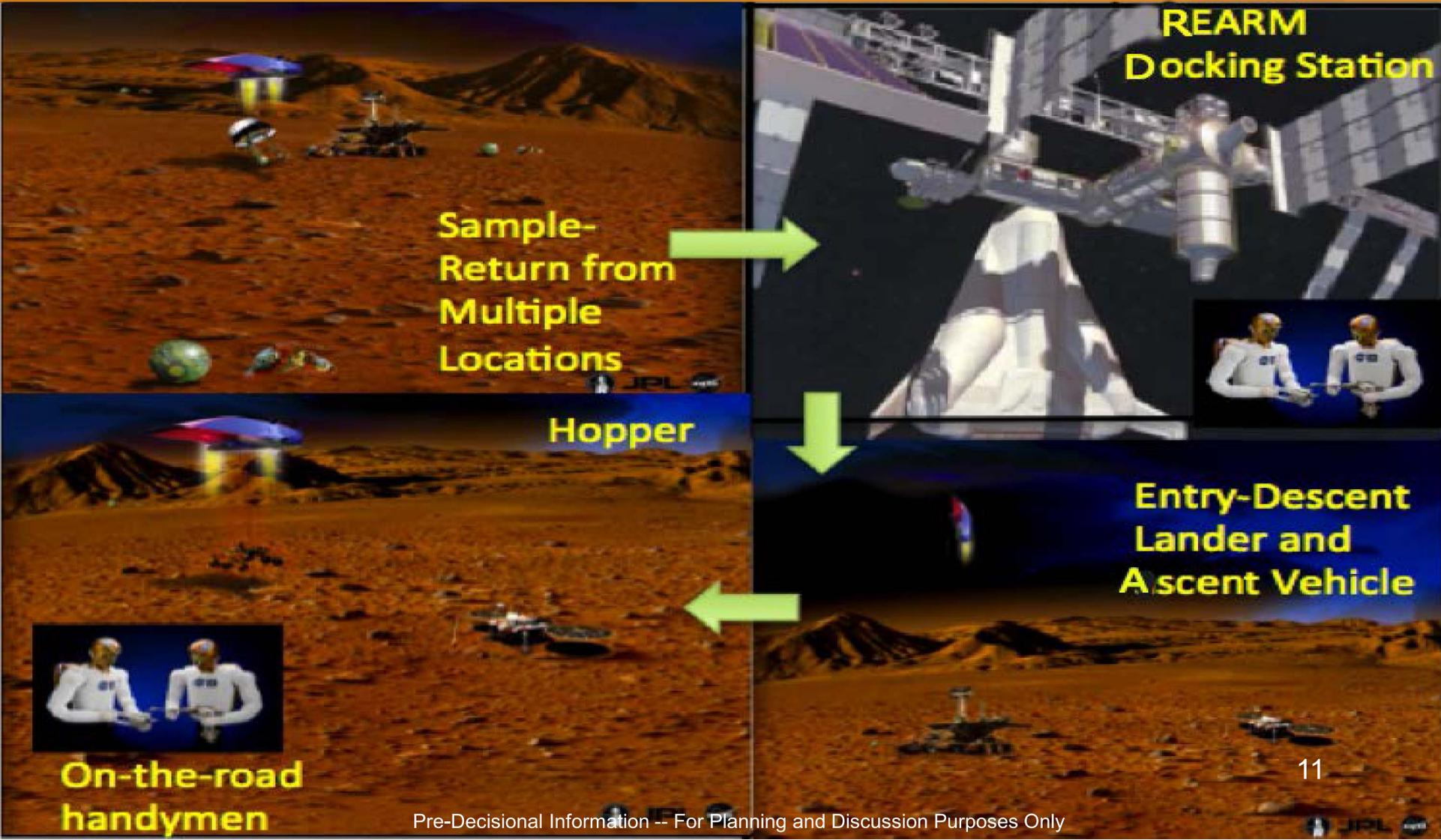
Multiple-Location Sample Return Collector



REARM Docking Station: A Scalable Lab in the Orbit of Mars



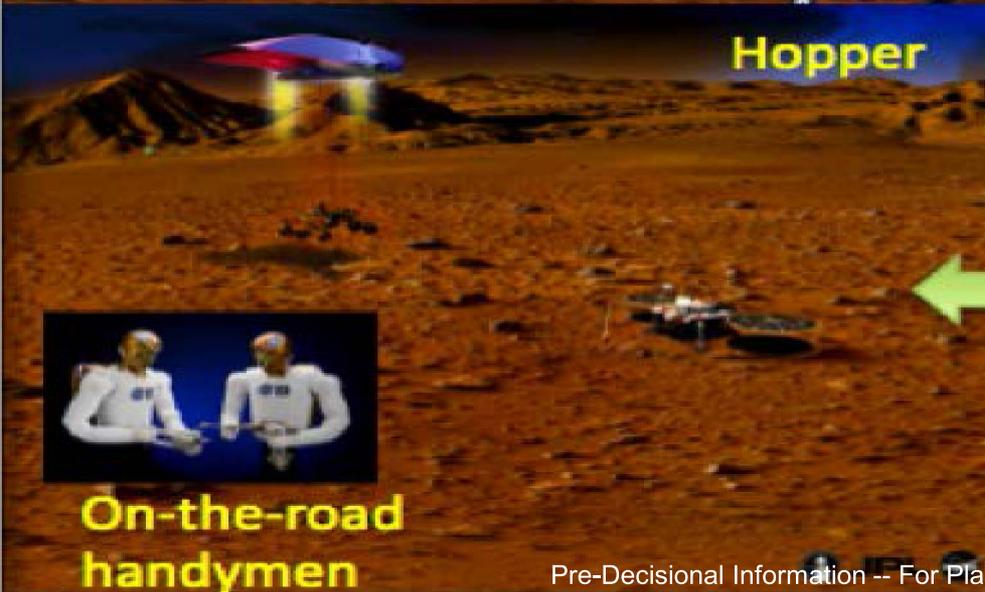
REARM Architecture



REARM Exploration Architecture Concept

- Expedites exploration of Mars by
 - Using lighter agile rover to explore the surface
 - Performing numerous advanced tests, including bio-tests, on the valuable samples in the orbiter of Mars
 - Reusing the rovers already on Mars to explore new areas with new payloads
 - Not needing to accompany a lander with each new rover sent
 - Making the missions less dependent on Earth
- Exploits existing technologies already used and tested

Questions?





Jet Propulsion Laboratory
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