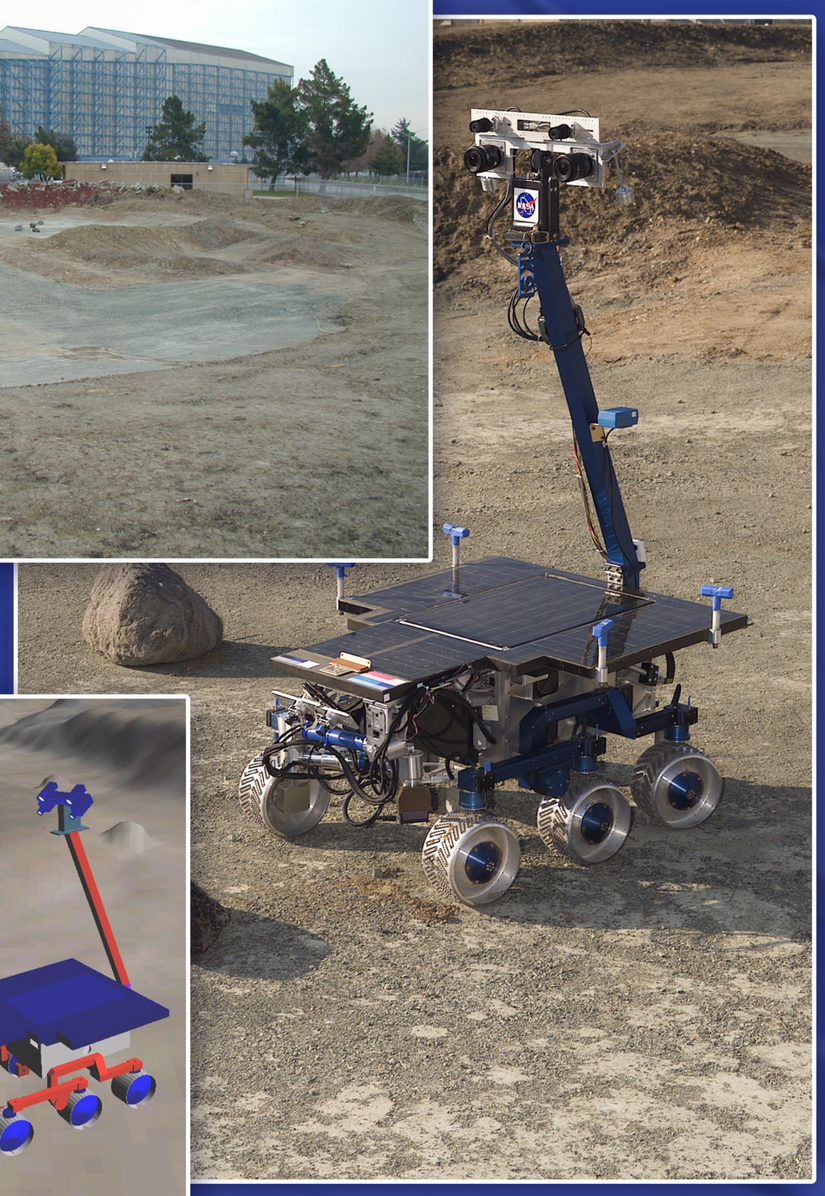
AMES Research Center

AUTONOMOUS SYSTEMS AND ROBOTICS FACILITIES

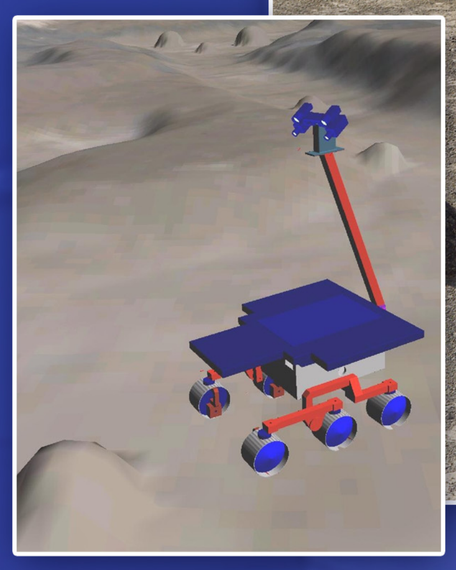
INTELLIGENT ROBOTICS LABORATORY

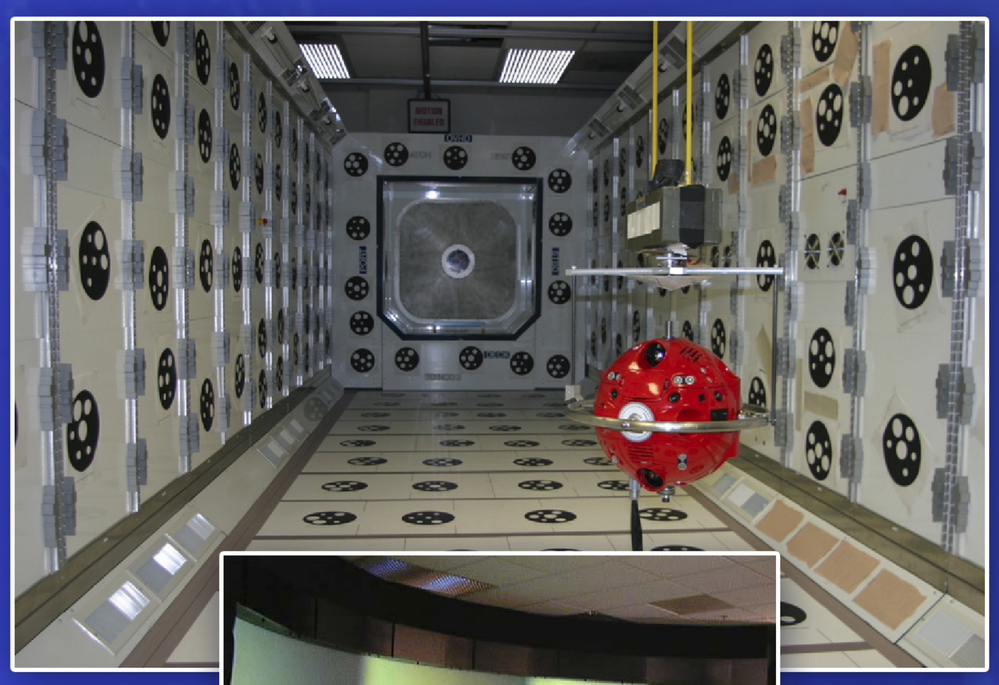
- K9 planetary exploration rover
- 15 Personal Exploration Rover (PER) programmable robots
- Viz 3D visualization system and associated software
- Marscape Test Facility, outdoor 3/4 acre high-fidelity planetary science test yard
- Robotics Development Laboratory (currently under construction), interior high-bay testbed facility

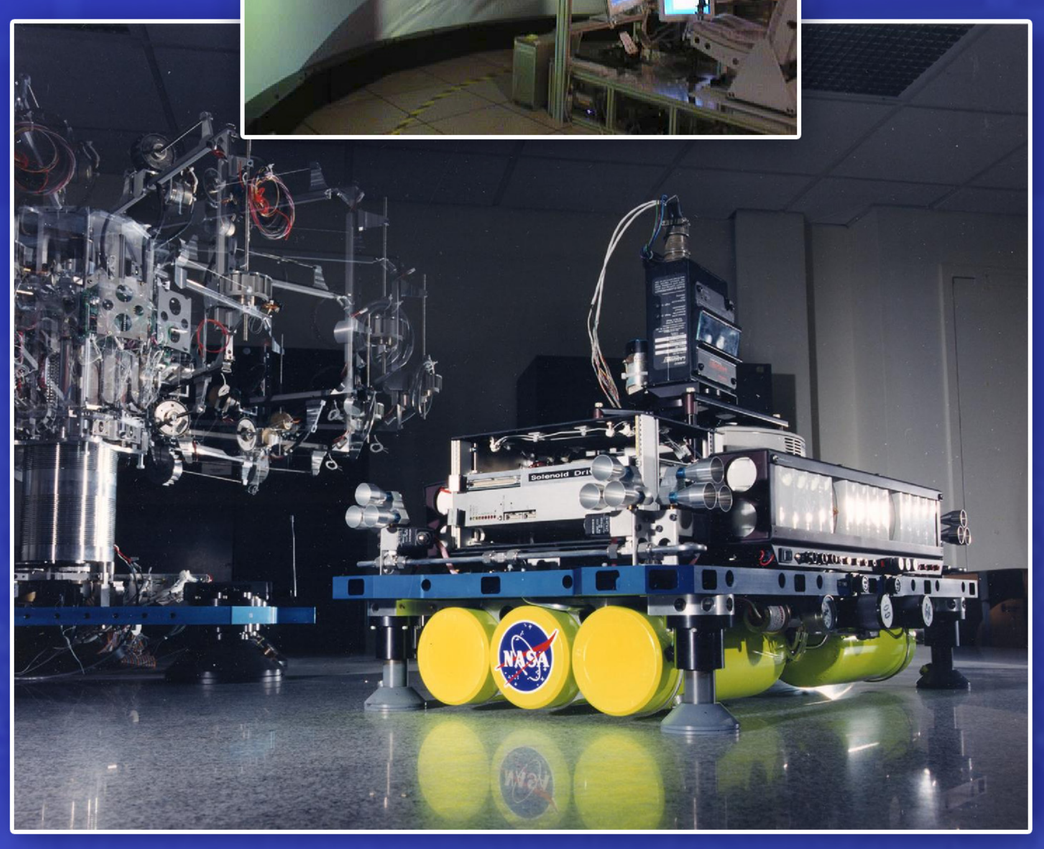


MISSION SIMULATION FACILITY

- Software framework to support research in autonomy
- Simulated "mission-level" testing environment including robotic vehicles, terrain, and sensors
- Provides migration path for autonomy software from research to missions
- Allows easy integration of existing software, autonomy modules and tools into the simulation
- Allows interchangeability of real hardware with simulated components







SPACECRAFT MOBILE ROBOT LABORATORY

- PSA robot
  - Cameras
  - Voice dialogue system
  - Environmental sensors
- Micro-Gravity Test Facility
  - 6 DOF micro-gravity environment

NEURO-ENGINEERING LABORATORY

- Neural networks, adaptive control and other intelligent, self-monitoring systems
- Instruments for collecting and processing bioelectric signals
- Computer-generated simulations
- 20 foot wide immersive environment for data visualization and flight simulation

SMART SYSTEMS RESEARCH LABORATORY

- Robust fault tolerant spacecraft rendezvous and docking
- ISS Artificial Gravity Centrifuge disturbance control
- Portable Virtual Environments for training
- Smart Surgical Tools for medical care
- Smart Probes for biological research