

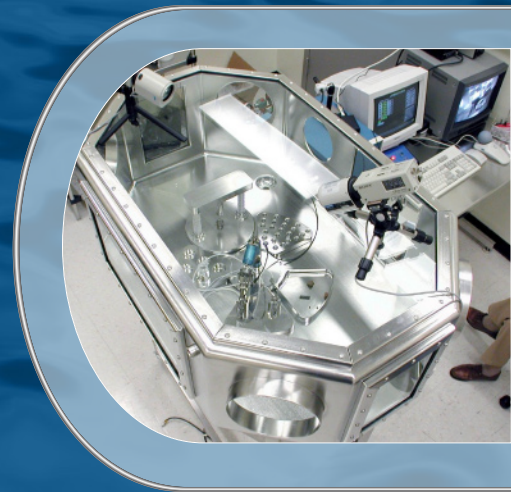
The current application for this Telerobotic Science Facility, a research and containment workcell, is the Advanced Curation Facility (ACF). The ACF technology demonstrator was designed under contract to Lockheed Martin for NASA's Johnson Space Center. This prototype facility handles and analyzes soil and rock samples such as those that will someday be returned to Earth from the surface of Mars. The glovebox is 304L stainless steel, sealed with EPDM gaskets, and is continually purged with dry gaseous nitrogen inside a cleanroom to satisfy bi-directional contamination issues. An integrated robotic manipulator allows operators to examine samples while working remotely, while four gloveports (gloves not shown) allow direct human interaction if required. All of the actuators for this cable-driven arm reside in the blue cylinder mounted to the underside of the glovebox, which significantly reduces any electromagnetic or thermal influences that might be introduced to the interior of the box by the motors. The end effector gripper is actuated using gaseous nitrogen for positive pressure and vacuum.

## Benefits

- Reduces fatigue of human operators.
- Flexible Tool System for a variety of operations and real-time analyses.
- Isolates and protects human scientists from sensitive materials inside the box.
- Biologically clean/sterile
- Biological safety level 3/4 compatible

## Features

- End Effector and tool suite
- Optional gloveports
- Rapid transfer port for samples and tool transfer
- Custom tooling and facility layout
- Remote handling, manipulation, and analysis
- Vision system (end effector, multiple global views)
- Software controlled operations and automated sequences



Oceaneering International, Inc.  
11911 FM 529 • Houston, TX 77041  
Phone: 713.329.4500 • Fax: 713.329.4621  
[www.oceaneering.com](http://www.oceaneering.com)