MARS
Marine Operations Support
A. Cable laying from the MARS node to science experiments

B. Science instrument testing

C. ROV deployment of science instrumentation

D. Elevator deployments of science instrumentation

E. Ship deployments of science instrumentation
The ROV *Ventana* with cable laying toolsled

4000 to 5000 meter sections of fiber optic cable per run
Ventana Specifications

- Depth rating 1850 m
  6100 ft
- Working tether 2100m
  6900 ft
- 5 power connectors
- 10 fibers
- 40 hp Electro/ Hydraulic
After science instrumentation has been bench tested for compliance to MARS power and telemetry protocols, we can test the best ways to emplace the instruments using the ROVs *Ventana* or *Tiburon* in the MBARI test tank.
ROV deployment of science packages

1. Size and shape do matter!
2. 100 lbs. to 250 lbs. in water weight.
3. Designed for ROV manipulation

The ROV Ventana installing ODI connectors to connect science instrumentation to a RIN (remote instrument node).
Swing-arm deployment system

Up to 200 lbs air weight

Science packages can be ROV deployed on the porch, using the swing-arm stabs or as tool-sleds themselves.
Elevator Deployments of Science Instrumentation
Ship Deployed Packages

MBARI ships can deploy loads up to 5000 lbs. in air weight.