

# Marine Systems and Seafloor Networks

World-Class Communications Anywhere in the World™



## Fully managed data retrieval from remote ocean sensors

Harris CapRock's subsea services provide fully managed, end-to-end solutions that are comprised of high-bandwidth OceanNet® buoys, shore stations, and custom-engineered seafloor networks to meet a wide range of power and communication requirements. Deployed systems enable the real-time command and control through power and fiber-optic cables of any equipment on the network from anywhere around the globe.

### BENEFITS

- > Provides fully managed solution allowing users to focus on data collection and analysis
- > Promotes real-time collaboration with ideas shared and data stored on secure web portal
- > Enables in situ observation of ocean sites since data is delivered to any location globally
- > Reduces overall operational costs by delivering a comprehensive solution
- > Ensures project support through 24/7 access to Harris CapRock's Customer Support Centers (CSC)

### Serving Interests of

Industrial enterprises  
Scientific associations  
Educational entities  
Government organizations

### Applications

Digital oilfields  
Coastal security  
Environmental monitoring  
Oceanographic observation  
Inclement weather detection  
Seismic and tsunami observation  
"Portable," stand-alone power and/or communication platform

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## SOLUTION OVERVIEW

**Mission Planning:** Specially trained engineers assist users in long-range planning and in the construction of custom-interface hardware that will connect into the seafloor network. Each network can be configured to service a single project or for multiple users at one time. All seafloor networks are reconfigurable and can be used and redeployed in many different locations. Custom-tailored solutions including the utilization of smaller buoys, specialized nodes and landfall options are all part of providing the end-to-end managed solution. Harris CapRock can provide studies and permitting support as required.

**Deployment:** Sensors and experiments can be deployed along with the initial installation or as a separate sensor deployment activity. Additional or costly time for sensor-specific deployment activities can be mitigated as they can be deployed as part of normal buoy deployment activities.

**Sensor Control:** A two-way command link is available for remote experiment control. Sensors can be energized or de-energized.

**Data Collection and Forwarding:** The buoys support data-intensive experiments with continuous data rates up to 3Mbps in seas up to sea state 6. A fiber landfall architecture will provide nearly limitless bandwidth.

**Data Delivery:** Collected data can be delivered via the Internet, high-speed data lines or dial-in and is password protected. Data transfers can be encrypted if desired. VSAT, Iridium, GSM or Harris SeaLancet™ data links provide communications from the buoys.

**Power:** Each buoy provides up to 5 kW of power to the seafloor. Custom power options are available. Power is not dependent on battery life.

## Optional Security Services

Closed-Circuit Television (CCTV)

Detection sonar

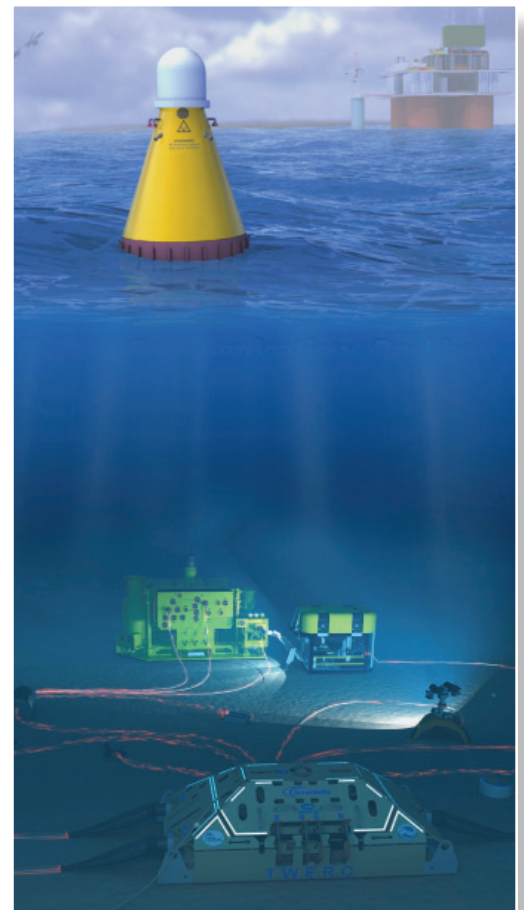
Automatic Identification System (AIS)

Radar

Long-range cameras

Acoustic arrays

Custom sensors



Full-service solution from architecture and design to permitting, deployment and sustainment.