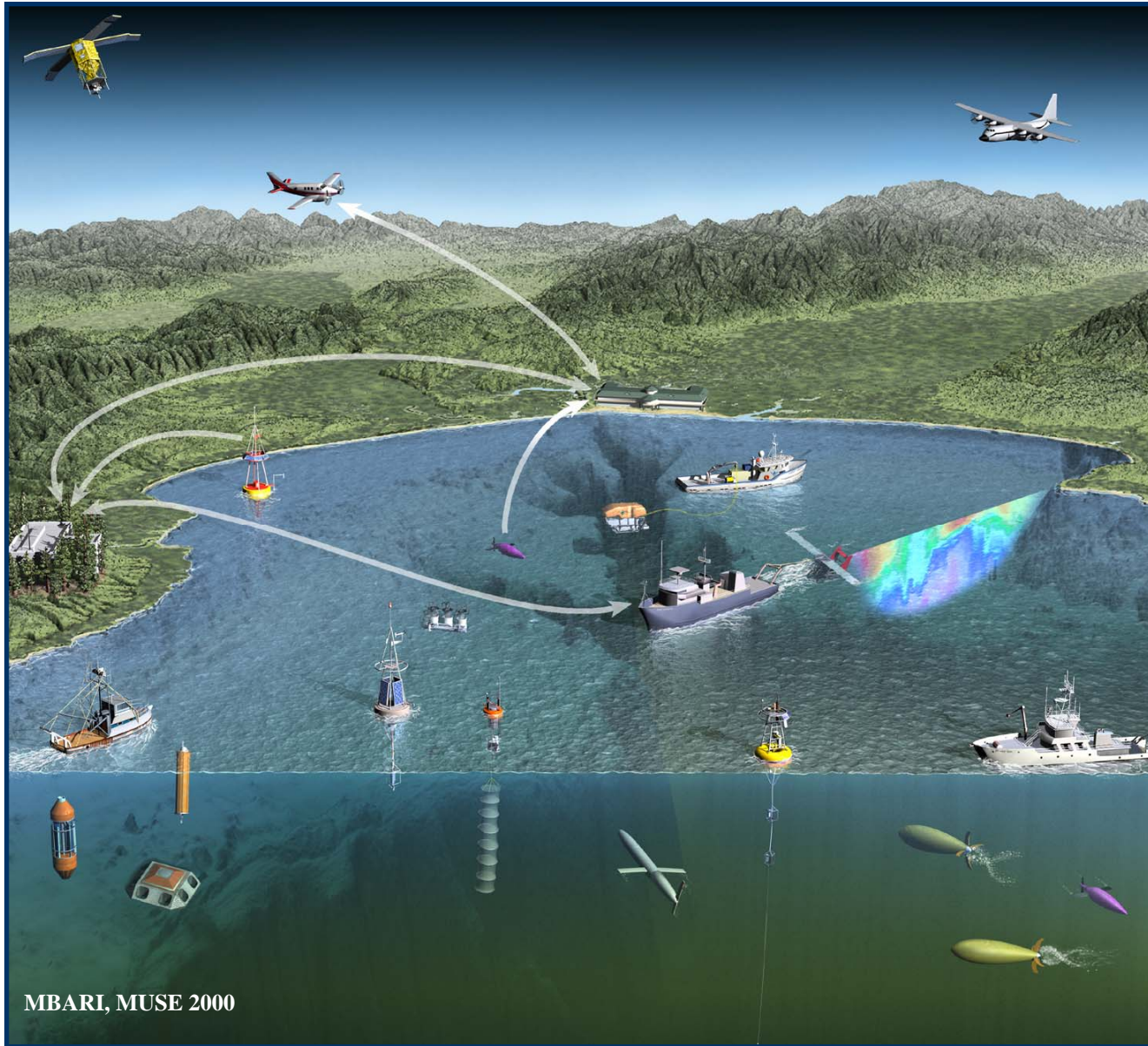




NOAA funded partnership of: research institutions; state / regional resource managers; private sector companies.

Interested in developing and applying sensor technologies for use in monitoring coastal environments.

Integrated Ocean Observing System (IOOS)

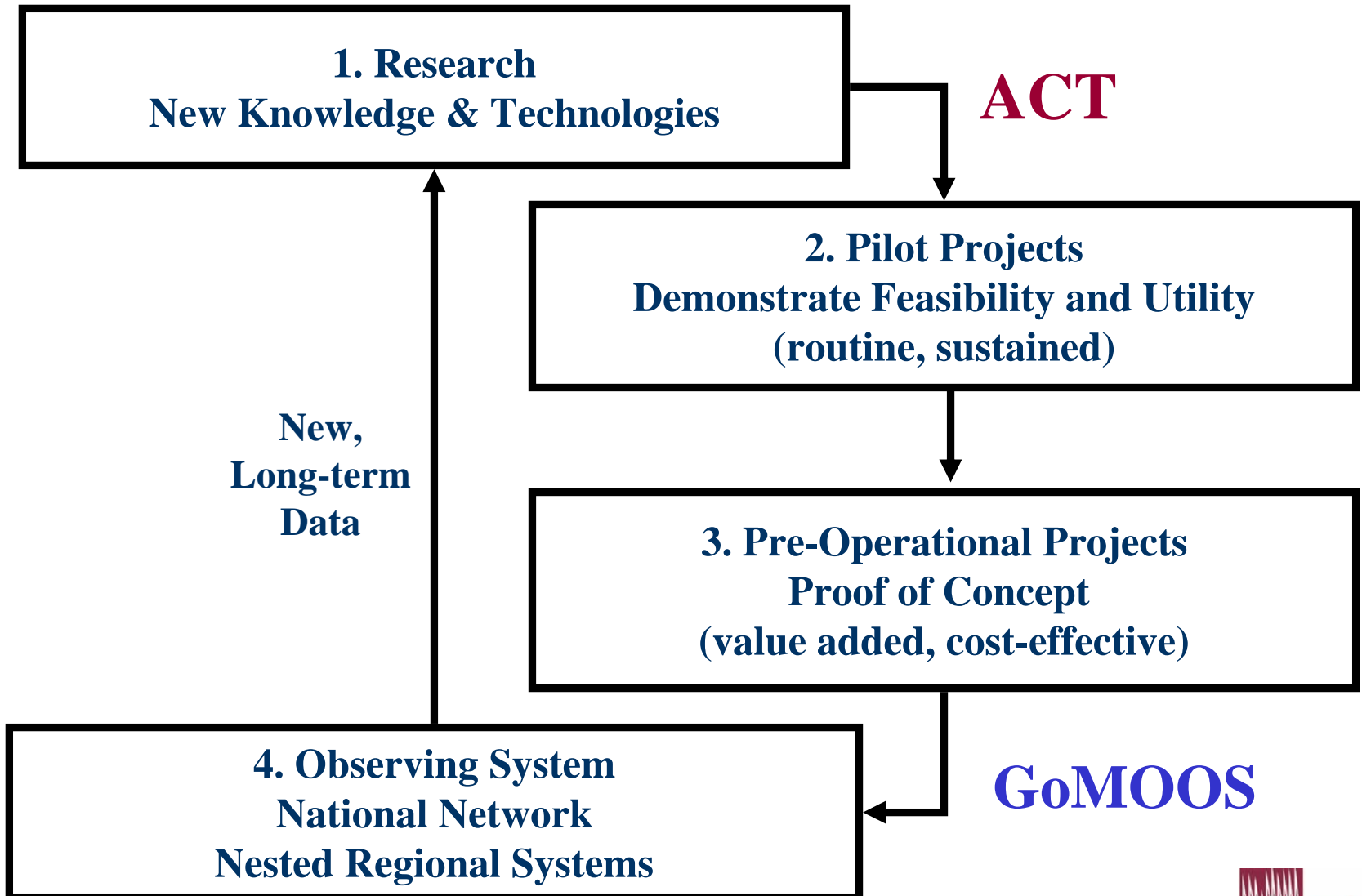


IOOS Goals

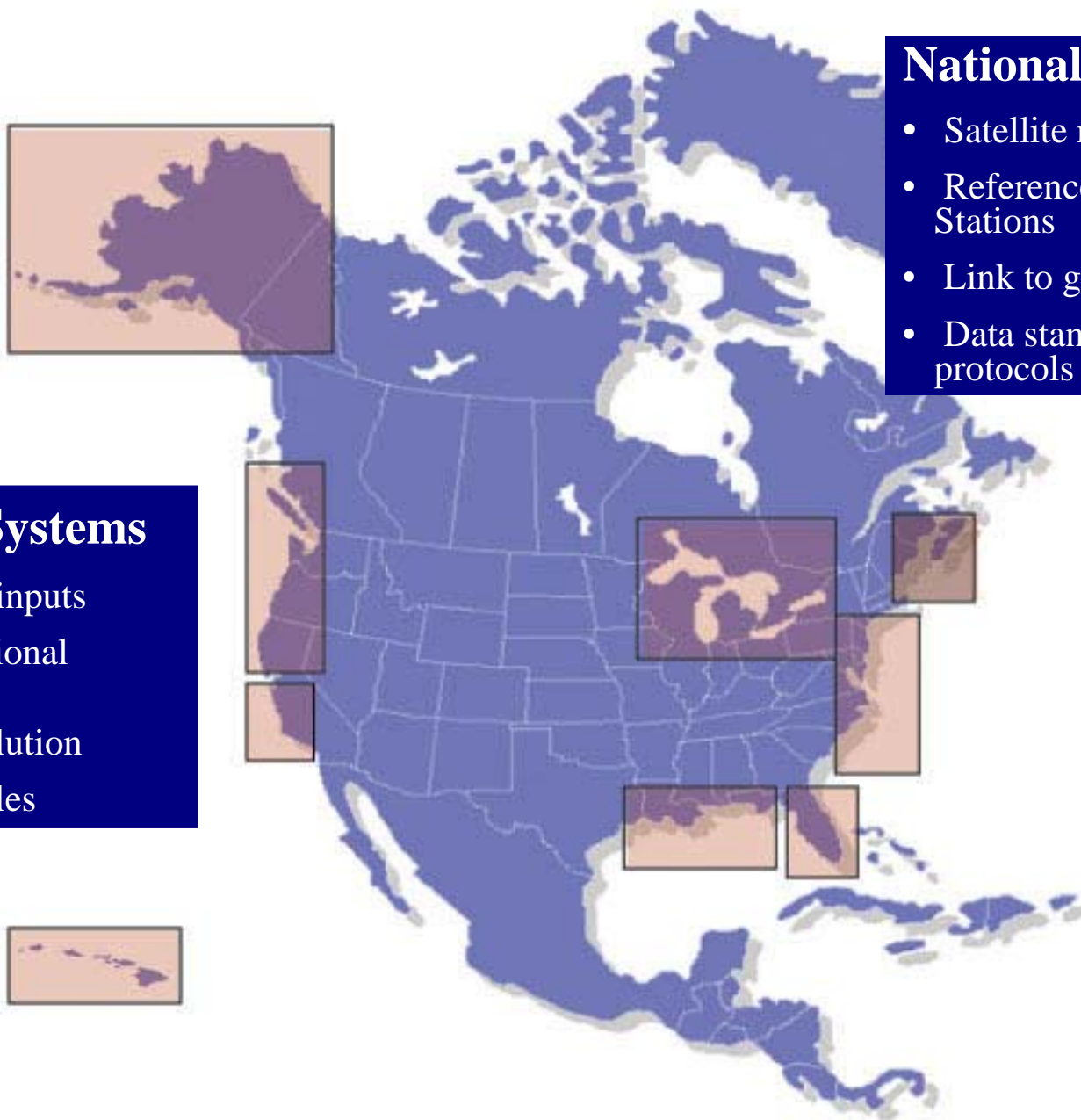
⊕ Observations required by a broad community of users for:

- **detecting and predicting oceanic components of climate variability**
- **facilitating safe and efficient marine operations**
- **ensuring national security**
- **managing resources for sustainable use**
- **preserving and restoring healthy marine ecosystems**
- **mitigating natural hazards**
- **ensuring public health**

IOOS Sequential Development



National Federation of Regional Systems



National System

- Satellite remote sensing
- Reference, Sentinel Stations
- Link to global module
- Data standards & exchange protocols

Regional Systems

- Land-based inputs
- State & Regional Priorities
- Greater resolution
- More variables

ACT Organization and Functions

- ⊕ Based on a 2000 workshop of academics, resource managers, and private sector companies
- ⊕ Funded by NOAA's Coastal Service Center, Charleston, South Carolina
- ⊕ Made up of a Headquarters office, Partner institutions, a Stakeholder Council, and Alliance Members



-
- ⊕ An evaluation program for sensor technologies
 - ⊕ An information clearinghouse for sensor technologies
 - ⊕ A forum for capacity building

Headquarters



- ✦ **The Coastal Technologies Laboratory at the UMCES Chesapeake Biological Laboratory in Solomons, MD**
- ✦ **Oversees ACT website, database, information transfer, and technology evaluations activities**
- ✦ **Coordinates with other programs such as NOAA, EPA, Ocean.US, and EuroACT**

✦ **Current Staff:**

Dr. Ken Tenore, Director

Dr. Mario Tamburri, Chief Scientist

Dr. Fabien Laurier, Technology Specialist

Mr. Martin Carroll, Multimedia/Database

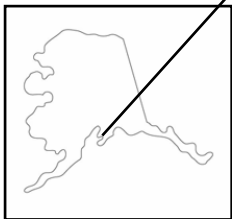
Ms. Clarice Ashton, Administrative Assistant



ACT Partners Include



Alaska SeaLife Center
University of Alaska
(Joining Soon)



University of Michigan
Cooperative Institute for
Limnology & Ecosystems Research

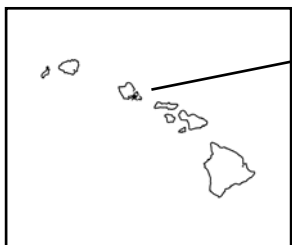


Gulf of Maine
Ocean Observing System

Moss Landing
Marine Laboratories



Monterey Bay Aquarium
Research Institute



University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE
CHESAPEAKE BIOLOGICAL LABORATORY

Coastal Services Center



Stakeholder Council

Membership:

- ⊕ Up to 21 members with term appointments
- ⊕ Recruited from private sector companies and environmental management agencies
- ⊕ Representing geographic and sector diversity

Objective:

- ⊕ Prioritizing technologies to be evaluated
- ⊕ Participating in decision making process to ensure ACT focuses on service-oriented activities
- ⊕ Fostering interactive flow of information between various users and disciplines critical to success of ACT



Alliance Members



Membership:

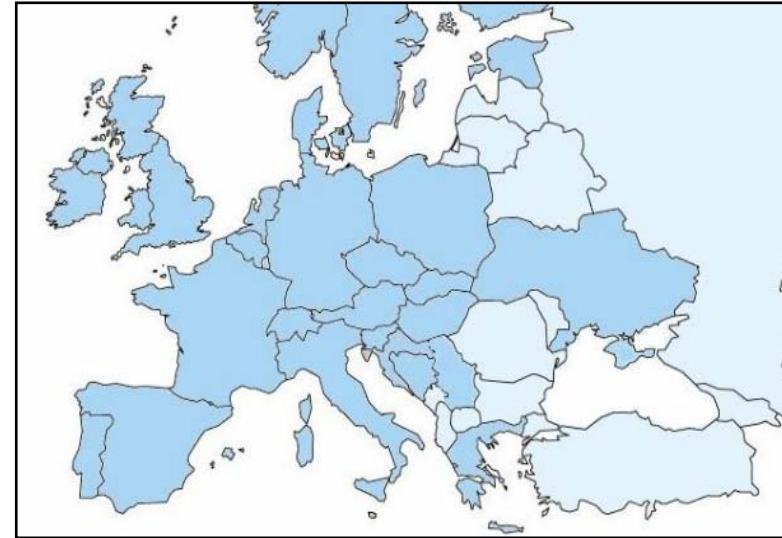
- ⊕ **Collaborating institutions, companies, and organizations involved in developing and/or use of coastal sensor technologies**
- ⊕ **Organized into regional Alliance Chapters.**

Objective:

- ⊕ **Fostering interactive flow of ideas and information between various users and disciplines critical to the success of ACT**
 - **Kept abreast of current ACT activities**
 - **Identify regional issues**
 - **Provide advice on technology foci**
 - **Participate in developing ACT Workshops**

EuroACT

- ✦ **USACT is collaborating with European colleagues in an effort to form a EuroACT**
- ✦ **EuroAct will eventually include partners from each European eco-region**
- ✦ **First workshop was held in Lisbon on 1-2 March 2004 and hosted by LUSO-AMERICAN FOUNDATION**
- ✦ **EuroAct Partners currently seeking EU funding**



- ✦ **Assure common/standardized technologies**
- ✦ **Encourage joint opportunities in technology development**
- ✦ **Exchange information**

Technology Evaluation Program

⊕ Purpose:

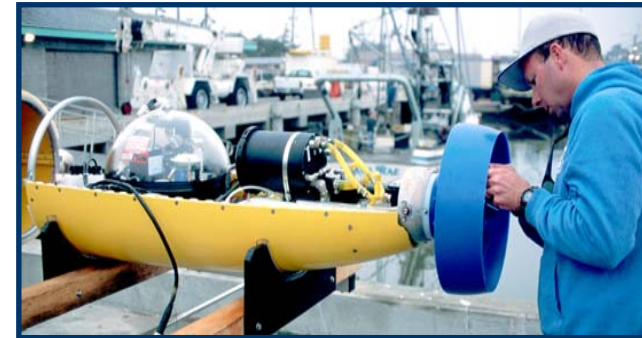
- Document sensor technology performance under Third Party set protocols and procedures
- Verify existing and demonstrate new technologies
- NOT a certification; NOT an approval process, NOT a head-to-head comparison

⊕ Values:

- Fairness, Credibility, Transparency, Quality, Responsiveness

⊕ Methods:

- Community input to prioritize technologies to be tested
- Customer Needs Survey to determine focus of testing
- Voluntary participation by vendors
- Test plans / protocols developed by involved community segments
- Performance tests at ACT Partner sites



⊕ Benefits:

- Community access on ACT website to high quality information on sensor performance
- Level playing field among vendors
- Accelerated adoption of innovative technologies

Technology Evaluations Activities

- ⊕ **Testing Guidelines developed with a verification trial in winter 2002-2003**



- ⊕ **Present Testing:**

- *In Situ Dissolved Oxygen Sensors*, results / reports available December 2004
- *In Situ Fluorometers* for measures of chlorophyll in 2005 now underway

Detailed Technology Evaluation Process

- ⊕ **Partners and Stakeholders select topic**
- ⊕ **Conduct Customer Needs and Use Assessment**
- ⊕ **Establish Technical Advisory Committee**
- ⊕ **Release Request for Technology**
- ⊕ **Initial acceptance for evaluation**
- ⊕ **Full application packages, including proposed test protocols**
- ⊕ **Workshop to finalize test protocols**
- ⊕ **Technology Evaluation Agreements with manufacturers**
- ⊕ **Instrument training and standardization of methods**
- ⊕ **Laboratory and field tests**
- ⊕ **Final reports released to the public**



Data and Information Clearinghouse

- ⊕ Information on ACT mission, structure, and background
- ⊕ Information on process and results of ACT technology evaluations.
- ⊕ Updates on upcoming and reports on past workshops and seminars
- ⊕ A searchable sensor technology database...

The screenshot shows the website for the Alliance for Coastal Technologies. The browser address bar displays "http://www.act-us.info/". The page features a navigation menu on the left with links for Home, Organization, News, Technologies, Events, Contact, and Search. The main content area includes a "Welcome" banner, a "News & Events" section with a "June 2004" calendar, and a "NEW SEARCHABLE TECHNOLOGY DATABASE" section. The database section lists three items: an unbiased, third-party testbed for evaluating new and developing coastal sensor and sensor platform technologies; a comprehensive coastal technology specification/performance data and information clearinghouse; and a forum for capacity building through a series of annual workshops and seminars on specific technologies. The footer includes the NOAA logo, the text "Coastal Services Center", and the date "Modified on: Tuesday, May 25, 2004 1:11:28 PM".

web Site (www.act-us.info)

Searchable Technology Database

Small browser window showing the homepage of the Alliance for Coastal Technologies. The page includes a navigation menu with links for Home, Organization, News, Technologies, Events, Contact, and Search. A NOAA logo is visible at the bottom.

Medium browser window showing search results for 'CTD Sensor 3231'. The results list three items:

- CTD Sensor 3231** by Aanderaa Instruments. Technical specifications include Range: 0-75mS/cm, -7.5 to +41°C, 0 Accuracy: +/- .15mS/cm, +/- .1°C, .2% pressure; Sensitivity: .075mS/cm, .05°C, .1% pressure.
- STD Sensor 3230** by Aanderaa Instruments. Technical specifications include Range: 0-40ppt, -7.5 to +41°C, 0-11 Accuracy: +/- .2ppt, +/- .1°C, .2% pressure; Sensitivity: .04ppt, .05°C, .1% pressure.
- Towed CTD Chain III** by ADM-Elektronik GmbH/ASD Sensors. Technical specifications include Range: Accuracy: Sensitivity: (partially obscured).

Each result includes a 'More info' link and a small image of the sensor. A NOAA logo and 'Coastal Services Center' text are at the bottom.

Large browser window showing the search interface. The page title is 'Alliance for Coastal Technologies' and the URL is 'http://www.actonline.ws/db.html'. A search bar is at the top right. A navigation menu is on the left. The main content area includes:

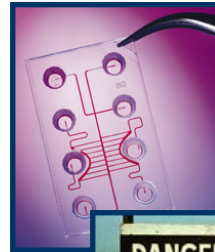
- Home** (selected), Organization, News, Technologies, Events, Contact, Search.
- Search by parameter:**
 - Physical:** Conductivity/Salinity, CTD, Currents/Flow, Depth/Bathymetry, Global Position, Habitat, Characterization/Mapping, Ice, Imaging, Light, Meteorology, Pressure/Waves/Tides, Sediment/Pore Water, Seismic Activity, Sound, Suspended Sediment/Turbidity, Temperature.
 - Chemical:** Chemicals/Metals/Hydrocarbons, Dissolved Gases, Nutrients, Oxidation/Reduction, pH.
 - Biological:** Fish/ Marine Mammals, Microbes/ Pathogens, Phytoplankton, Zooplankton.
 - Other:** Multi-parameter, Custom Search: [input field]
- Search** button.
- Or, search by sensor type:** Acoustic Current/Flow Meters, Dissolved Oxygen, Fluorometers, Magnetic Current/Flow Meters, Mass Spectrometers, Optical Systems, Plankton Samplers, Radiometers, Seismometers, Sonars, Thermistors, Custom Search: [input field].

A NOAA logo and 'Coastal Services Center' text are at the bottom.



ACT Technology Workshops

- ✦ **Biosensors for Harmful Algal Blooms**
- ✦ **Developing Acoustic Methods for Surveying Groundfish**
- ✦ **In Situ Nutrient Sensors**
- ✦ **Data Telemetry from Remote Coastal Sensors and Platforms**
- ✦ **Rapid Identification of Coastal Pathogens**



- ✦ **Biofouling Prevention Technologies**
- ✦ **Dissolved Oxygen Sensors**
- ✦ **Surface Current Radar**
- ✦ **Nano-Technology Systems for Water Quality**
- ✦ **Optical Particle Counters**
- ✦ **Management Applications for AUVs and Gliders**
- ✦ **Acoustic Remote Sensing**
- ✦ **Underwater Remote-Operated Vehicle**

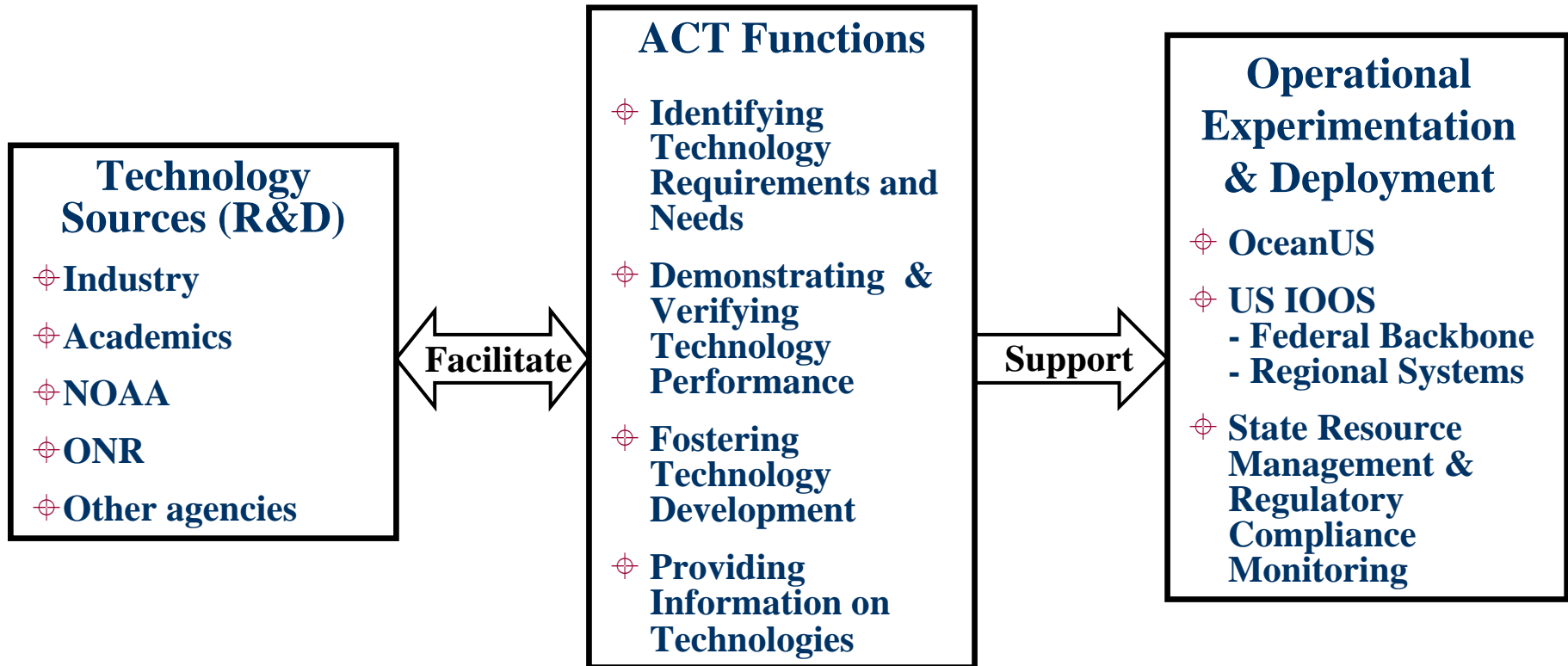


Workshops 2004/2005

- ⊕ **Autonomous Geno-sensors/Genetic Probes (USF, January 2005).**
- ⊕ **In situ Methods for Carbon Species (UH/SOEST, February 2005).**
- ⊕ **Coastal Groundwater Contamination Sensors (SkIO, March 2005).**
- ⊕ **In Situ Fluorometry (GoMOOS, February 2005).**
- ⊕ **Transfer of Medical Technology to Coastal Monitoring (CBL, April 2004).**
- ⊕ **Remote Imaging Technology II: Trace Metal Sensors for Coastal Monitoring (MLML/MBARI, April 2005).**
- ⊕ **Current Meters (GoMOOS, November 2005)**
- ⊕ **Dissolved Oxygen – managers workshop (USF/Skidaway January 2006)**



ACT Sensor Technology Brokering





**Chesapeake Biological Laboratory
P.O. Box 38 / One Williams Street
Solomons, MD 20688
Tel: (410) 326-7385
Email: info@act-us.info**

www.act-us.info