

ACT: PROGRAM OVERVIEW AND SERVICES

UNOLS RVTech Meeting
6 November 2007
MLML





A NOAA funded partnership of research institutions, state / regional resource managers, and private sector companies.

‘To provide information and foster development of sensor technologies for coastal observing systems.’



ACT Services

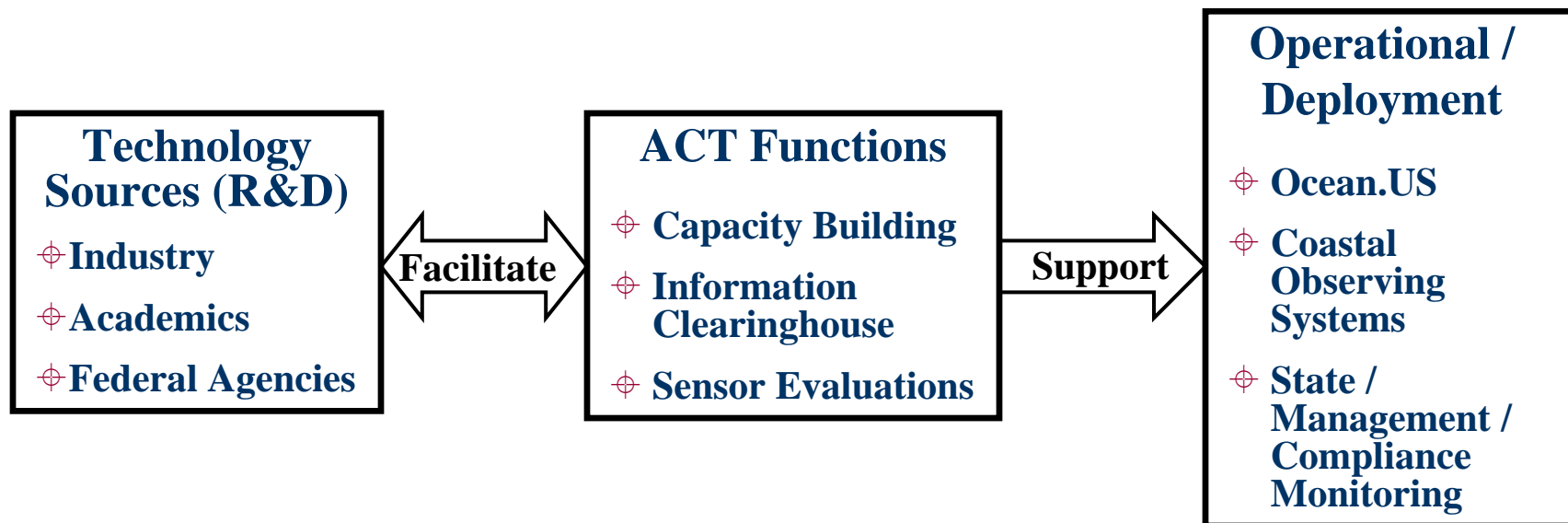
- ⊕ **An third-party testbed for evaluating coastal technologies**
- ⊕ **An information clearinghouse for coastal technologies**
- ⊕ **A forum for capacity building**



ACT Priorities

- ⊕ Transition emerging technologies to operational use rapidly and effectively**
- ⊕ Maintain a dialogue among technology users, developers and providers**
- ⊕ Identify technology needs and novel technologies**
- ⊕ Document technology performance and potential**
- ⊕ Provide the IOOS with information required for the deployment of reliable and cost-effective networks**

ACT's Brokering Role in Fostering Development of Sensor Technologies



ACT Organization

✦ Headquarters - UMCES / CBL

- Oversees all ACT activities
- Coordinates with other programs



✦ Partners - 8 Institutions with expertise in coastal technologies

- Conduct all regional ACT activities
- Prioritize topics for workshops & evaluations
- Foster interactive flow of information

✦ Board of Directors - Partner Institution, Stakeholder Council and NOAA/CSC representatives

- Establish ACT foci
- Provide Program Vision
- Foster links with the broader community

✦ Stakeholders - Agencies, NGOs and Industry

- Prioritize topics for workshops & evaluations
- Ensure ACT focuses on service-oriented activities
- Foster interactive flow of information

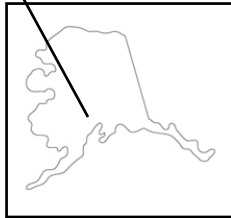


Partner Institutions



Alaska SeaLife Center®
windows to the sea

University of Alaska



University of Michigan
Cooperative Institute for
Limnology & Ecosystems Research



Gulf of Maine
Ocean Observing System

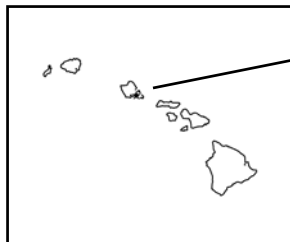


University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE
Chesapeake Biological Laboratory

Moss Landing
Marine Laboratories



Monterey Bay Aquarium
Research Institute



Skidaway Institute
of Oceanography





ACT Pacific Coast Partnership

PERSONNEL:

Kenneth Coale, *PI*

G. Jason Smith, Co-PI, *Technical Coordinator*

Kendra Hayashi, *Research Technician*

Traci Conlin, *Education / Outreach Specialist*



Technology Evaluations

Enable existing and new technologies to be identified and made available for coastal science, management, and IOOS.

✦ Types of Evaluations:

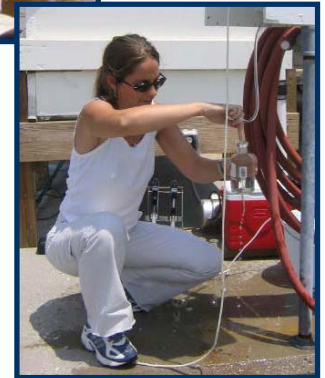
- Performance Verification
- Performance Demonstration

✦ Purpose:

- Document performance under third party tests
- **NO** certifications, recommendations or direct comparisons

✦ Benefits:

- Community access to relevant, reliable performance information
- Enhanced ability to identify appropriate technologies
- Level playing field among manufacturers
- Accelerated adoption of innovative technologies



Technology Evaluations

✦ **Methods:**

- **Community input to prioritize technologies to be tested**
- **Customer Needs and Use Assessment to determine focus of testing**
- **Voluntary participation by vendors**
- **Test protocols / QA plan developed by involved community segments**
- **Performance tests at ACT Partner sites**
- **Fair, objective and transparent testing and reporting**

Values and Principles

⊕ Fair:

- Voluntary participation
- Available to all manufacturers

⊕ Credible:

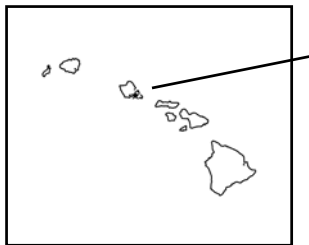
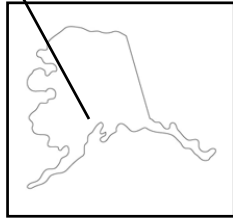
- Objective testing
- Skilled, trained personnel
- Sound methodologies with statistical rigor
- Test conditions representative of the technology's intended use
- Comprehensive documentation
- QA Plans based on established federal policies and guidelines

⊕ Responsive:

- Based on user and manufacturers needs - identified by stakeholders



Diverse Environments



Technology Evaluation Themes

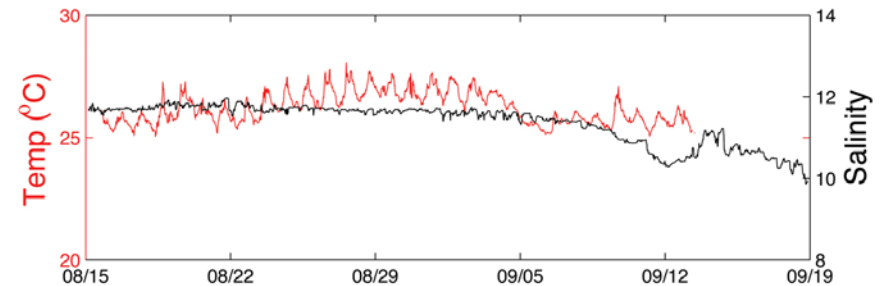
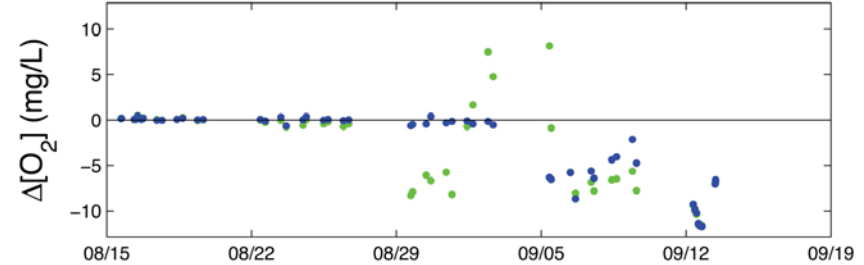
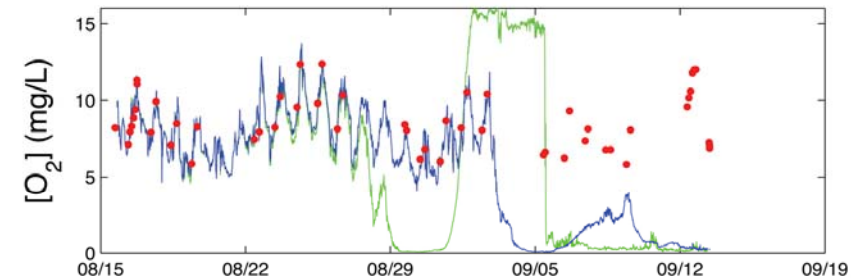
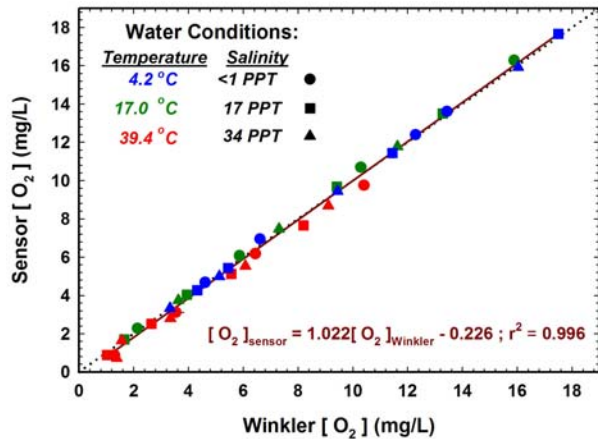
- ⊕ **Performance Verification of In Situ Dissolved Oxygen Sensors**
Four Evaluations - 2004
- ⊕ **Performance Verification of In Situ Chlorophyll Fluorometers**
Eight Evaluations - 2005
- ⊕ **Performance Verification of In Situ Turbidity Sensors**
Ten Evaluations - 2006
- ⊕ **Technology Demonstration of In Situ Nutrient Sensor** - 2007
- ⊕ **Performance Verification of In Situ Conductivity Sensors** - 2008



DO Performance Verification

⊕ Instruments Tested:

- Aanderaa - Optode
- Greenspan - Galvanic Cell
- In-Situ - Optode
- YSI - Clark Cell



Fluorometer Performance Verification

⊕ Instruments Tested:

- bbe Moldaenke
- Chelsea (2)
- Hydrolab
- Turner Design (2)
- WET Labs
- YSI

⊕ Reports available online



⊕ Applications and Parameters:

- Lab and Moored/Profiling Field Tests
- Response Linearity
- Precision
- Range
- Reliability

Turbidity Performance Verification

⊕ Instruments Tested:

- Aquatec
- In-Situ
- McVan
- WET Labs
- YSI

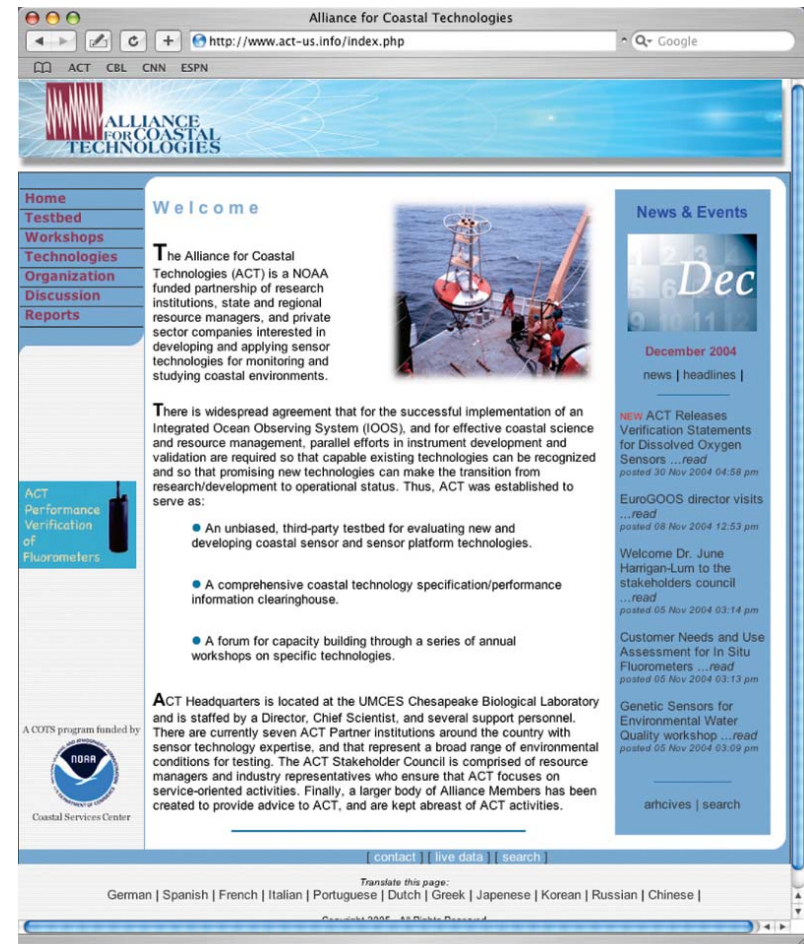


⊕ Applications and Parameters:

- Lab and Moored Field Tests
- Accuracy
- Precision
- Range
- Reliability
- Calibration Life

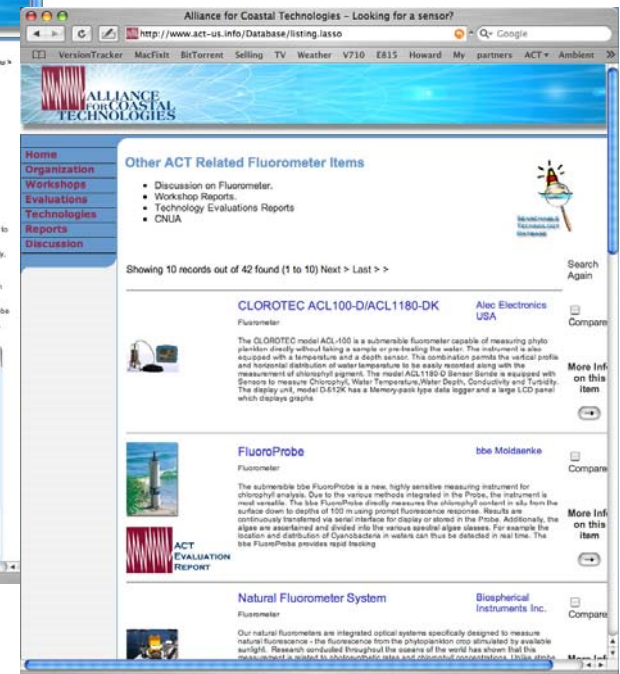
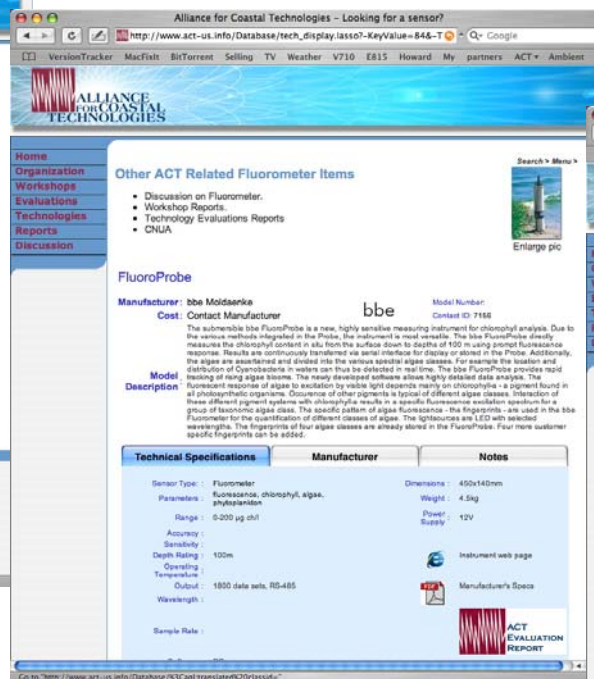
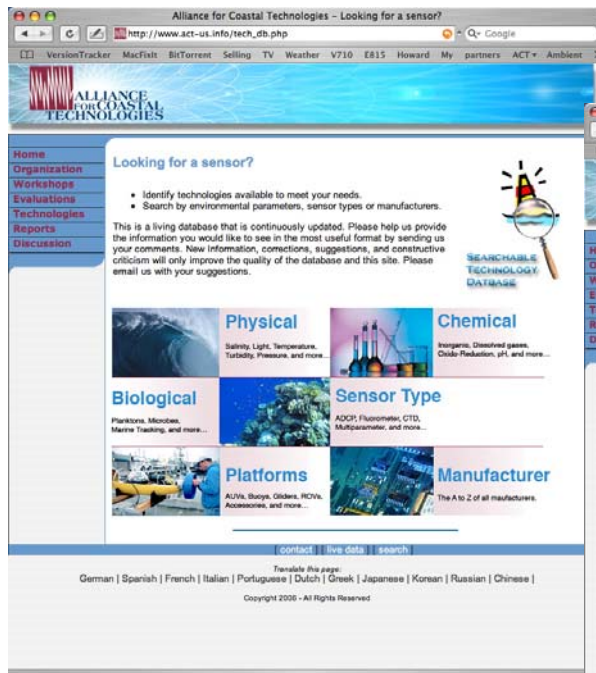
Data and Information Clearinghouse

- ✚ Information on ACT mission, structure, and background
- ✚ Information on process and results of ACT technology evaluations
- ✚ Updates on upcoming and reports on past workshops
- ✚ Searchable Technology Database
- ✚ Technology Discussion Forum



Searchable Technology Database

- ✦ One-stop shopping
- ✦ Organized and standardized relevant information
- ✦ Linked to reports and discussions



Technology Discussion Forum

- ✚ Community topic-based exchange
- ✚ Community comments and recommendations
- ✚ Traceable internal discussion
- ✚ User group data, protocol exchange

Alliance for Coastal Technologies :: Index

http://www.act-us.info/forum/

ACT CEL CNN ESPN LA Times BBC

Alliance for Coastal Technologies
Discussion Forum

FAQ Search Memberlist Usergroups
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You last visited on Thu Mar 09, 2006 12:50 pm
The time now is Thu Mar 09, 2006 4:12 pm

Alliance for Coastal Technologies Forum Index

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Forum	Topics	Posts	Last Post
General Topics			
Technologies Discuss all things related to sensor technology and past ACT workshop topics.	46	61	Tue Sep 27, 2005 3:34 pm Bob McClure ➡
News and Events Discuss past and upcoming events related to ACT.	0	0	No Posts
Industry Announcements News, events, job openings, etc.	2	2	Tue Jan 24, 2006 4:09 pm tamburri ➡
Workshops and Specific Tech Topics			
Meteorological Buoy Sensor Systems To be held April 19 - 21 2006 at CBL, Solomons, MD. Moderator: Susan Chausse	0	0	No Posts
Monitoring for Organic Contaminant Loading To be held June 11-13 2006 at CILER/University of Michigan, Ann Arbor, MI	1	1	Fri Jan 27, 2006 2:08 pm hourcell ➡
Sensor Inter-operability To be held October 2006 at GoMOOS, Portland, ME.	0	0	No Posts
Gene-based Sensors for Identifying Plankton Structure To be held November 8-10 2006 at UH/SOEST.	0	0	No Posts
Nutrients II To be held December 6-8 2006 at SkIO.	0	0	No Posts
Seabed Sensor Technology Held February 1-3 2006, at the Skidaway Institute of Oceanography, Savannah, GA.	2	2	Fri Aug 26, 2005 11:45 am huck.watson ➡
Optical Remote Sensing of Coastal Habitats Held January 9-11 2006 at MLML, Moss Landing, CA.	19	21	Mon Jan 23, 2006 6:09 pm huck ➡
Dissolved Oxygen probes Held January 2006 at USF.	11	11	Wed Feb 22, 2006 9:41 am christoforo ➡
Current Meters Held October 26 - 28 2005 at GoMOOS, Portland, ME.	1	2	Tue Feb 21, 2006 11:18 am jessica ➡
Turbidity (UH/SOEST) (*component of planned evaluation of turbidity sensors)	13	18	Thu Oct 27, 2005 1:16 pm jim.farmer ➡

Technology Workshops

✦ Purpose:

- Review current state of technology
- Discuss limitations to current technologies and identify user needs
- Provide recommendations to ACT and the community
- Enhance connections between users and developers

✦ Structure:

- 30 - 40 Managers, Researchers and Private Companies
- Two days of breakout group and plenary discussions
- Not a forum for scientific presentations

✦ Benefits:

- A forum for discussion among users, developers and manufacturers
- All aspects of community involved in consensus building
- Establish collaborations/partnerships

✦ Outcomes:

- Altered the way data is collected / instruments used
- Altered technology designs / features
- Generated funding opportunities (e.g., SBIR, RFP)
- Helped focus other ACT activities (e.g., Technology Evaluations)



Some Past Technology Workshop Themes

30 Workshops Completed to date since 2002

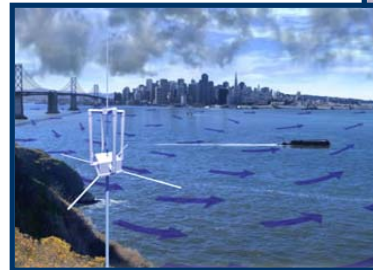
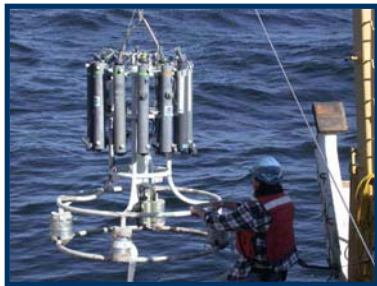
All reports available at: www.act-us.info

- ⊕ **Biosensors for Harmful Algal Blooms**
- ⊕ **In Situ Nutrient Sensors**
- ⊕ **Rapid Identification of Coastal Pathogens**



- ⊕ **Biofouling Prevention Technologies**
- ⊕ **Dissolved Oxygen Sensors**
- ⊕ **Surface Current Radar**
- ⊕ **Nano-Technology Systems for Water Quality**
- ⊕ **Management Applications for AUVs and Gliders**

- ⊕ **Measurement of Dissolved Inorganic Carbon**
- ⊕ **In Situ Fluorometry and Primary Productivity**
- ⊕ **Trace Metal Sensors**





Pacific Coast Alliance Chapter

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