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)

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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**

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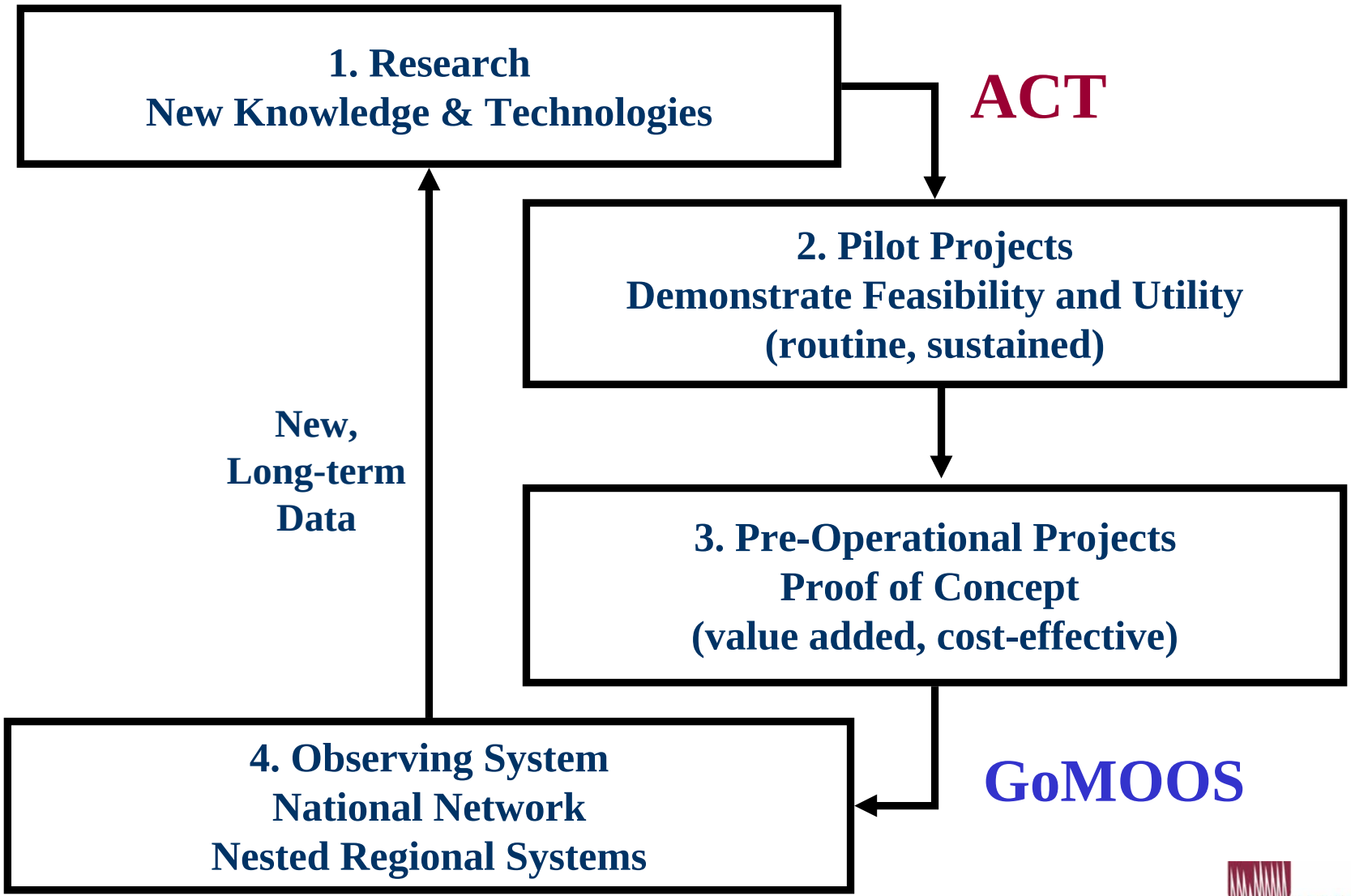
IOOS Sequential Development



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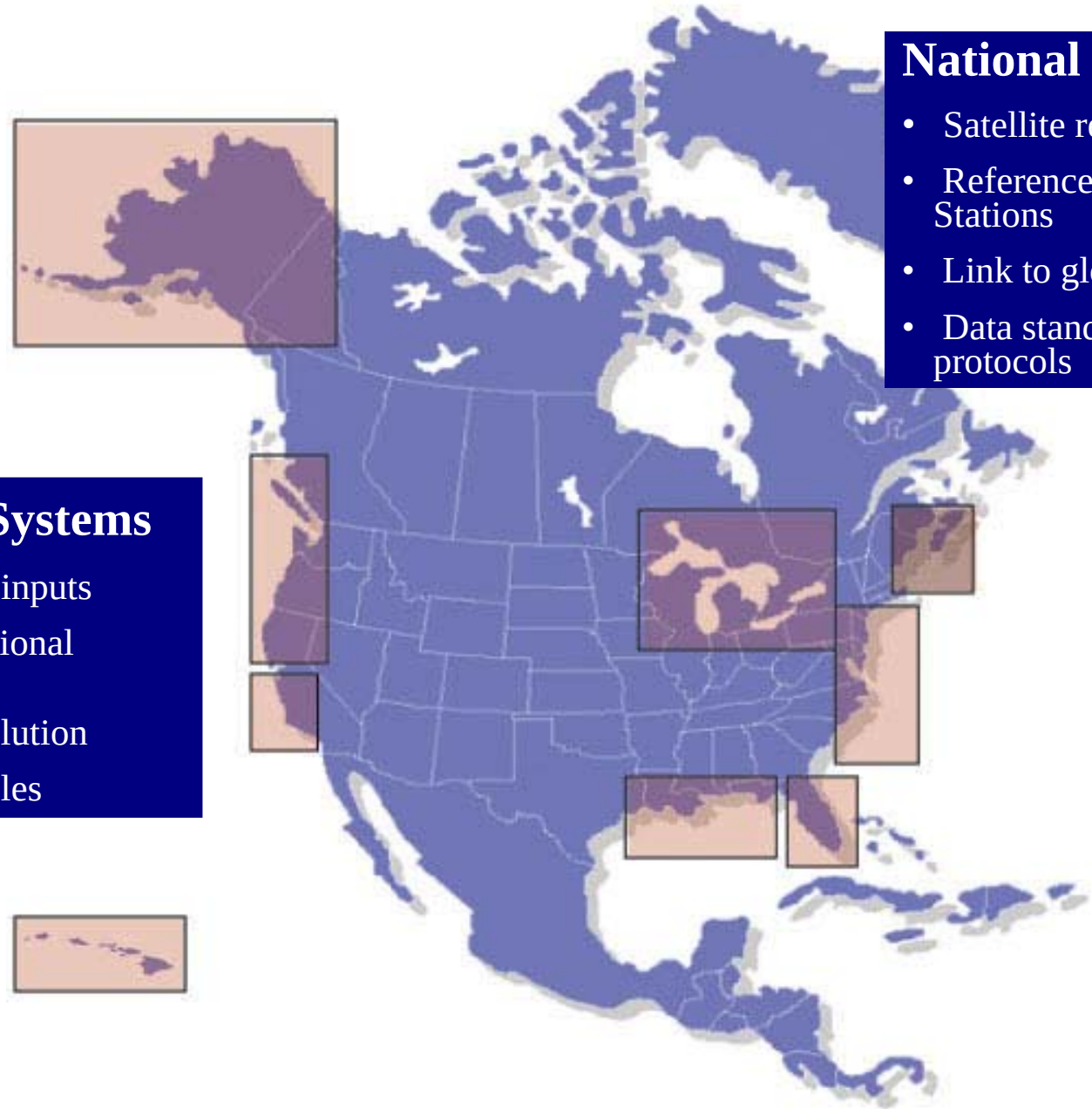
National Federation of Regional Systems



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

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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**

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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

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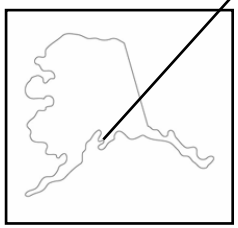
ACT Partners Include

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

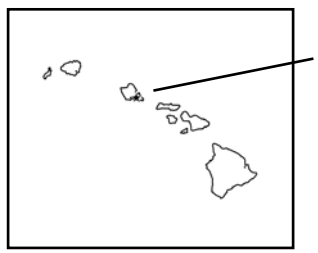
University of Maryland
Center for Environmental Science
Chesapeake Biological Laboratory

Coastal Services Center

Monterey Bay Aquarium
Research Institute

Skidaway Institute of Oceanography

College of Marine Science
University of South Florida
St. Petersburg



soest
university of hawai'i

Alliance for Coastal Technologies

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

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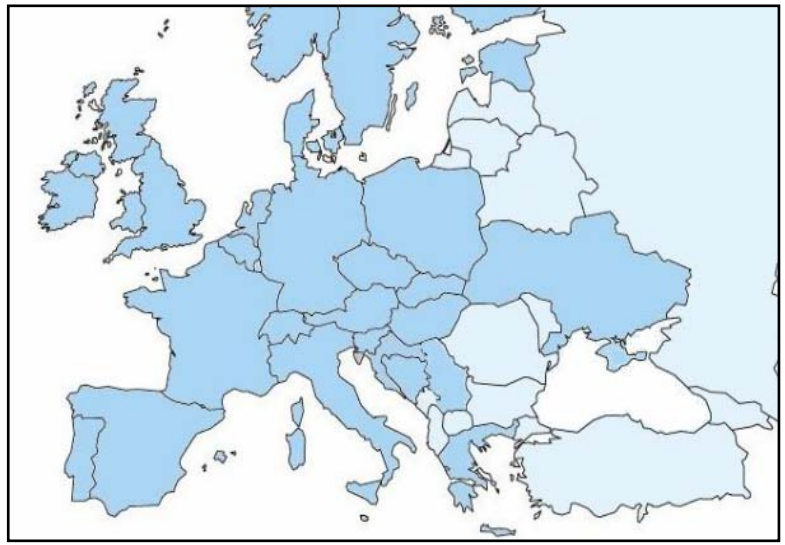
EuroACT

- 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

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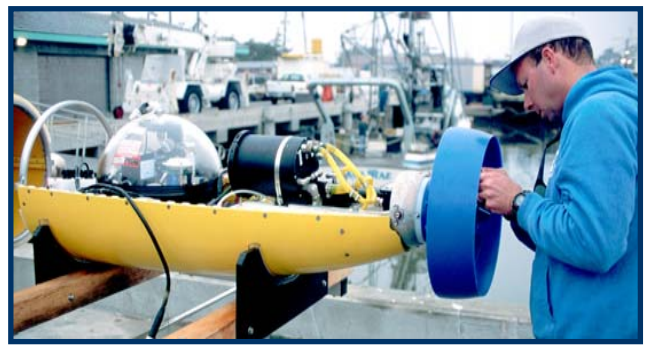
Technology Evaluation Program

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**

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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**

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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

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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…**

web Site (www.act-us.info)

Searchable Technology Database

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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

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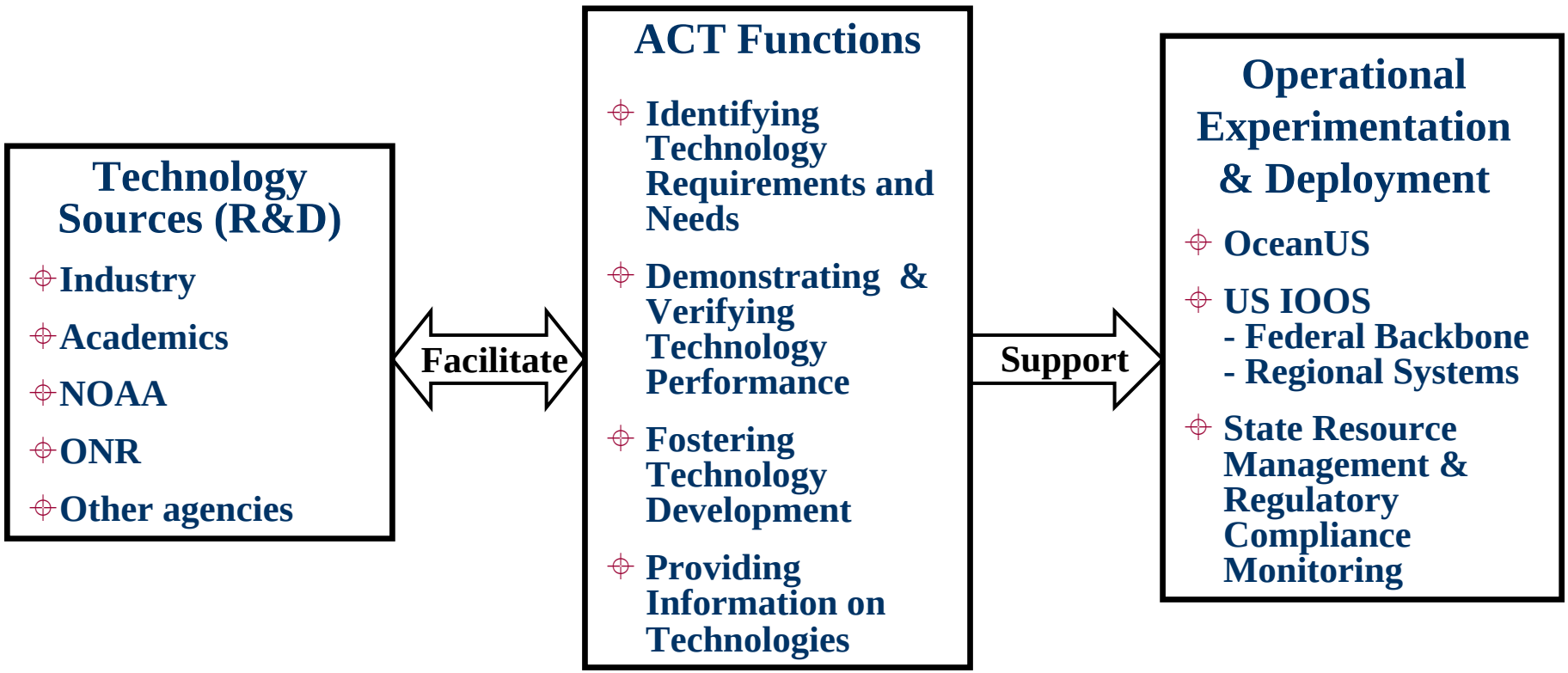
Workshops 2004/2005

- **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 Fluorometery (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



ALLIANCE FOR COASTAL TECHNOLOGIES

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