
**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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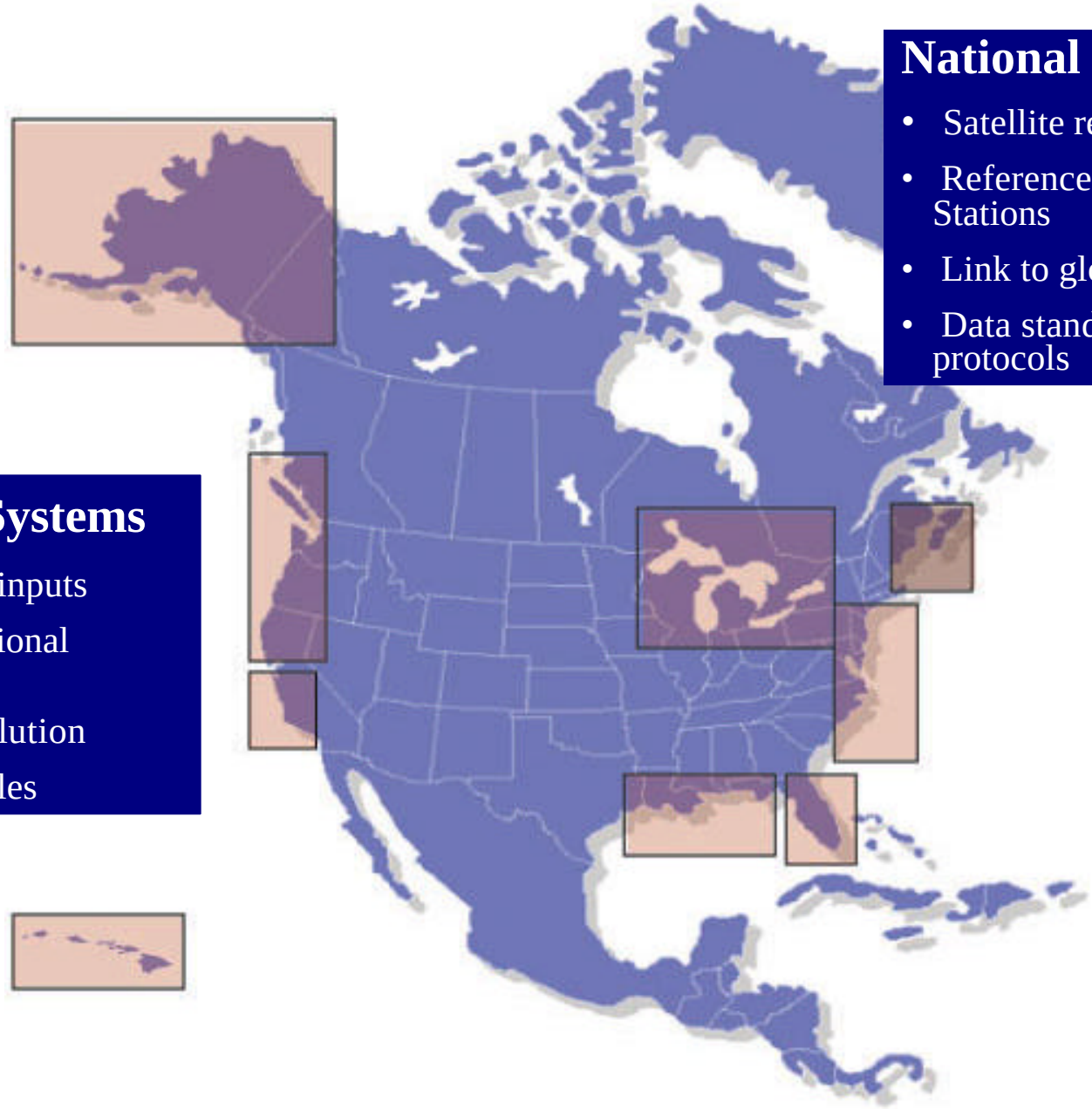
# National Federation of Regional Systems



## 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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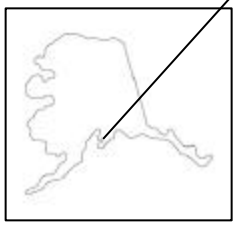
# ACT Partners Include

Alaska SeaLife Center
University of Alaska
(Joining Soon)



University of Michigan
Cooperative Institute for
Limnology & Ecosystems Research

Gulf of Maine
Ocean Observing System

University of Maryland
Center for Environmental Science
Chesapeake Biological Laboratory

Moss Landing
Marine Laboratories

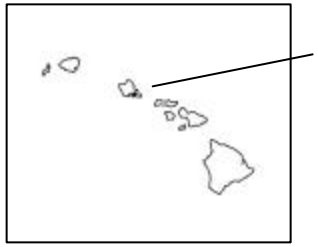
M B A R I

Monterey Bay Aquarium
Research Institute

Coastal Services Center

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

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# 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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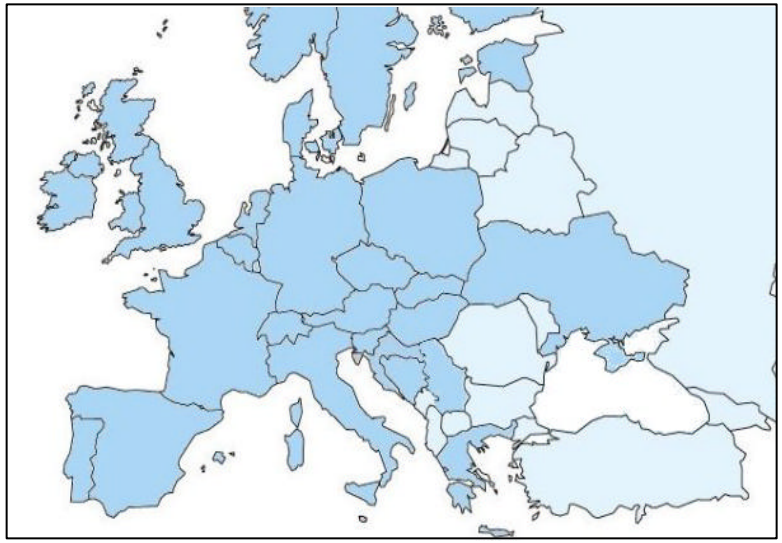
# EuroACT



- **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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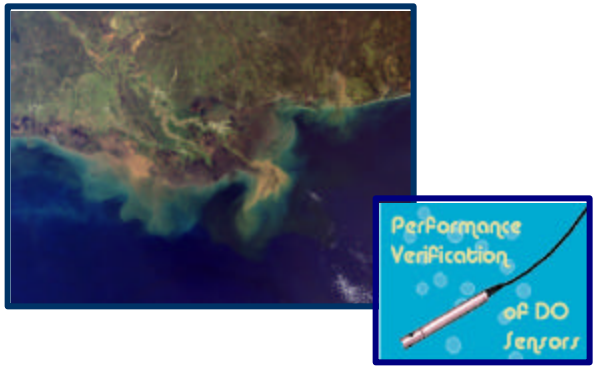
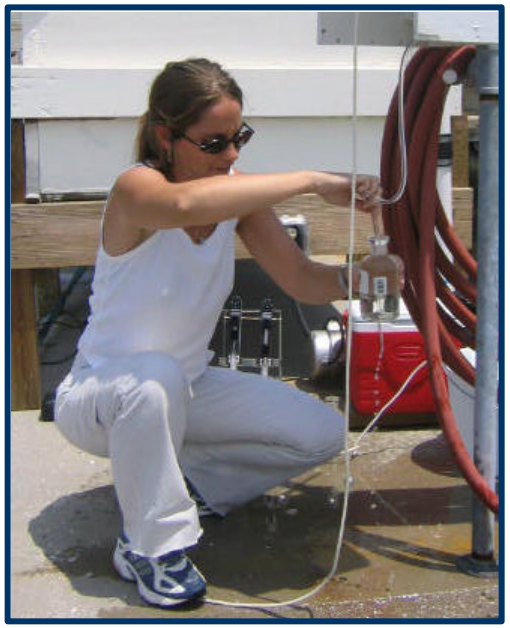
# Technology Evaluations Activities

- **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)**

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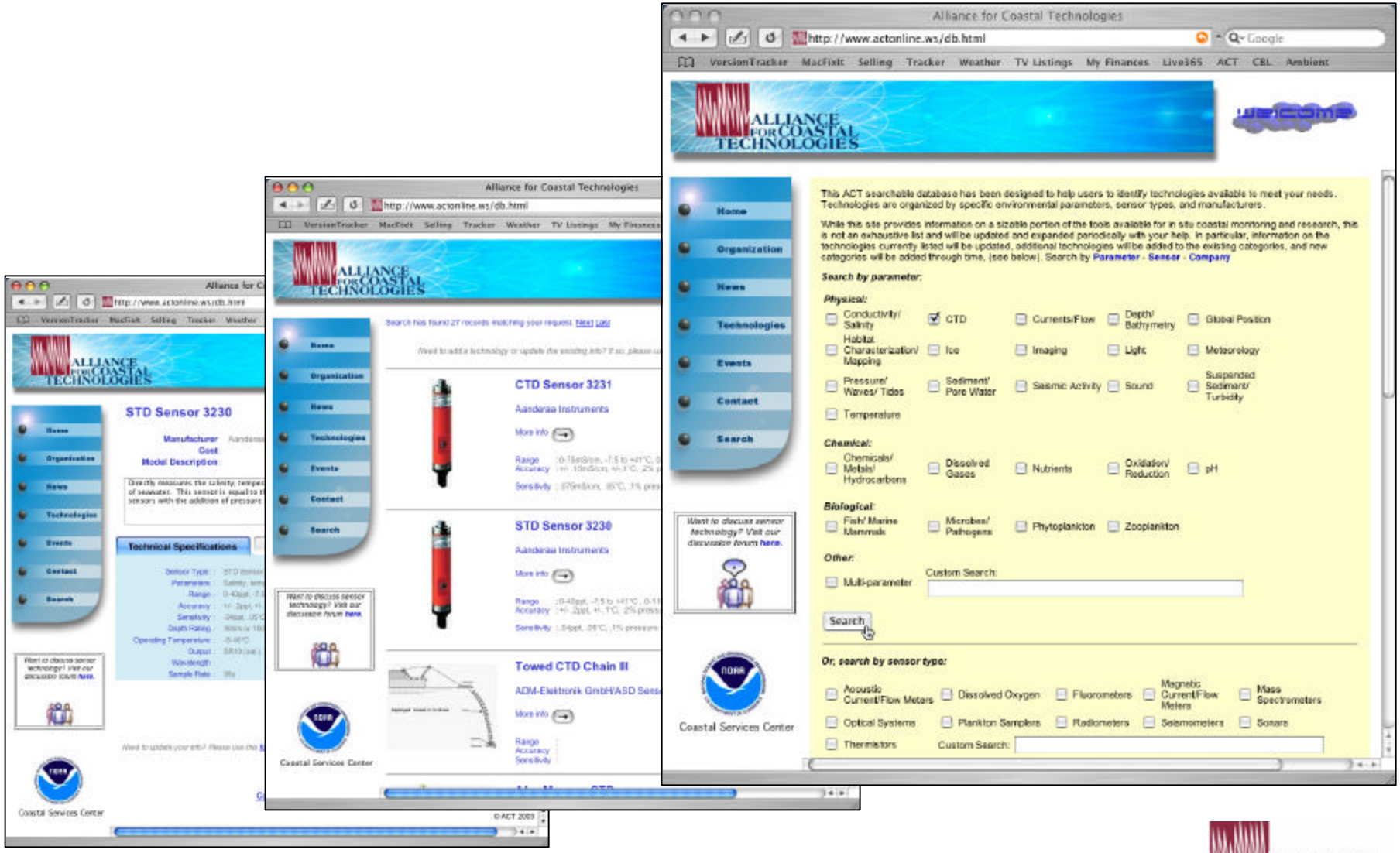
# Searchable Technology Database

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# Past ACT Technology Workshops

## PY: 2 (2002-2003)

- 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



## Project Year 3 (2003-2004)

- 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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# Planned Workshops

## Project Year 4 (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).**


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**Chesapeake Biological Laboratory**
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**Solomons, MD 20688**
**Tel: (410) 326-7385**
**Email: info@act-us.info**

**www.act-us.info**

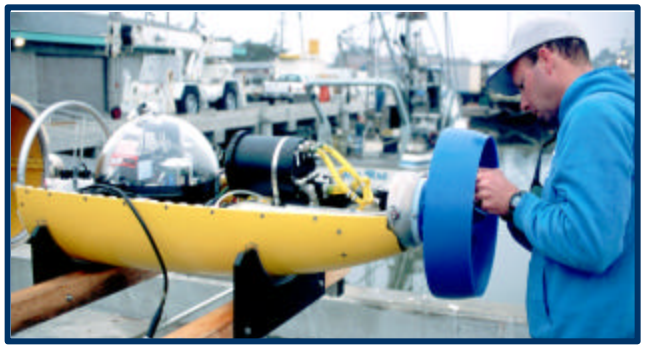
# Technology Evaluation Program

## 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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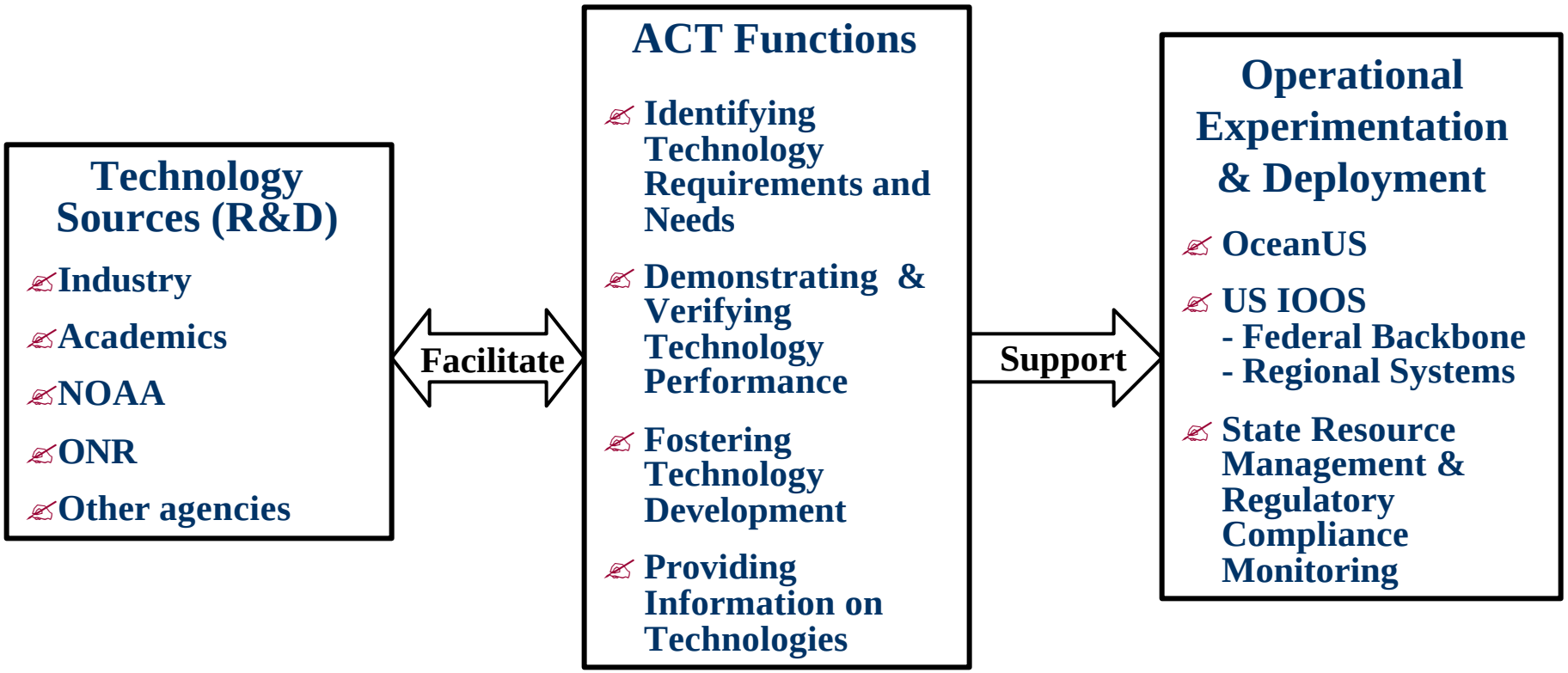
# ACT Sensor Technology Brokering

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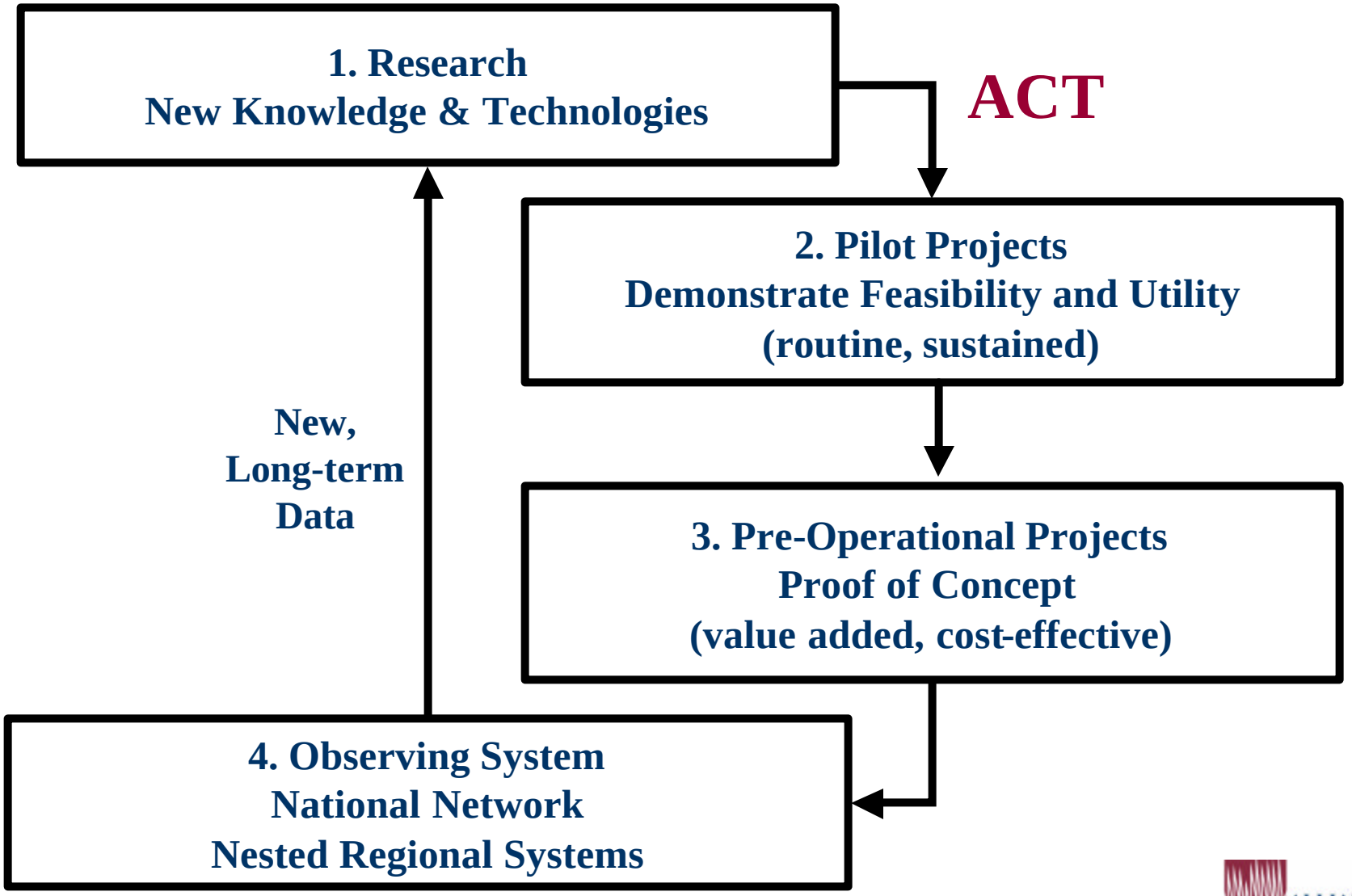
# IOOS Sequential Development

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