

Development of a Dual-Use Over-The-Horizon Radar Network for Monitoring Ocean Currents and Ship Traffic in the Exclusive Economic Zone

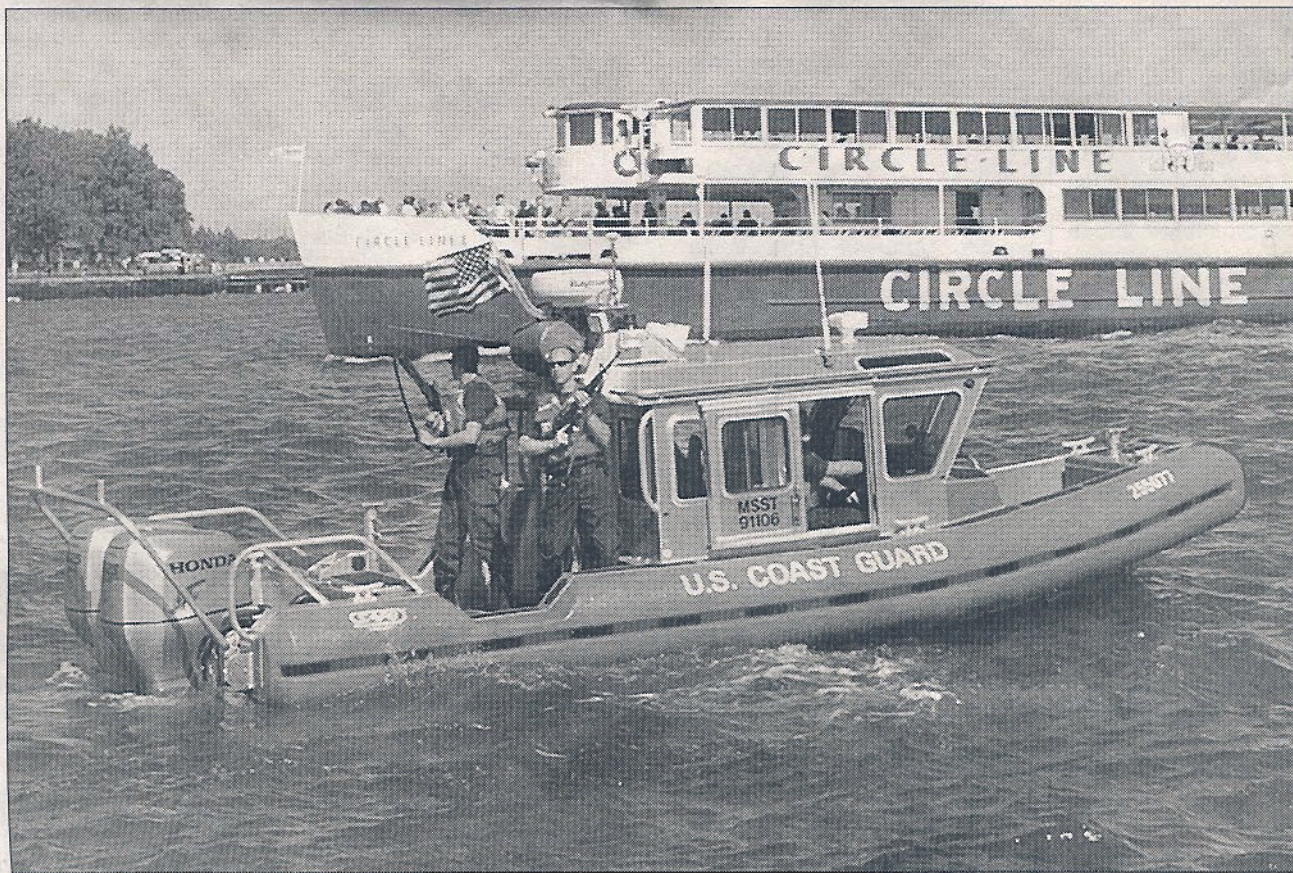
**Scott M. Glenn
Coastal Ocean Observation Lab (COOL)
Rutgers University**



**Science web site
<http://marine.rutgers.edu/cool>**

**Operational web site
<http://www.thecoolroom.org>**





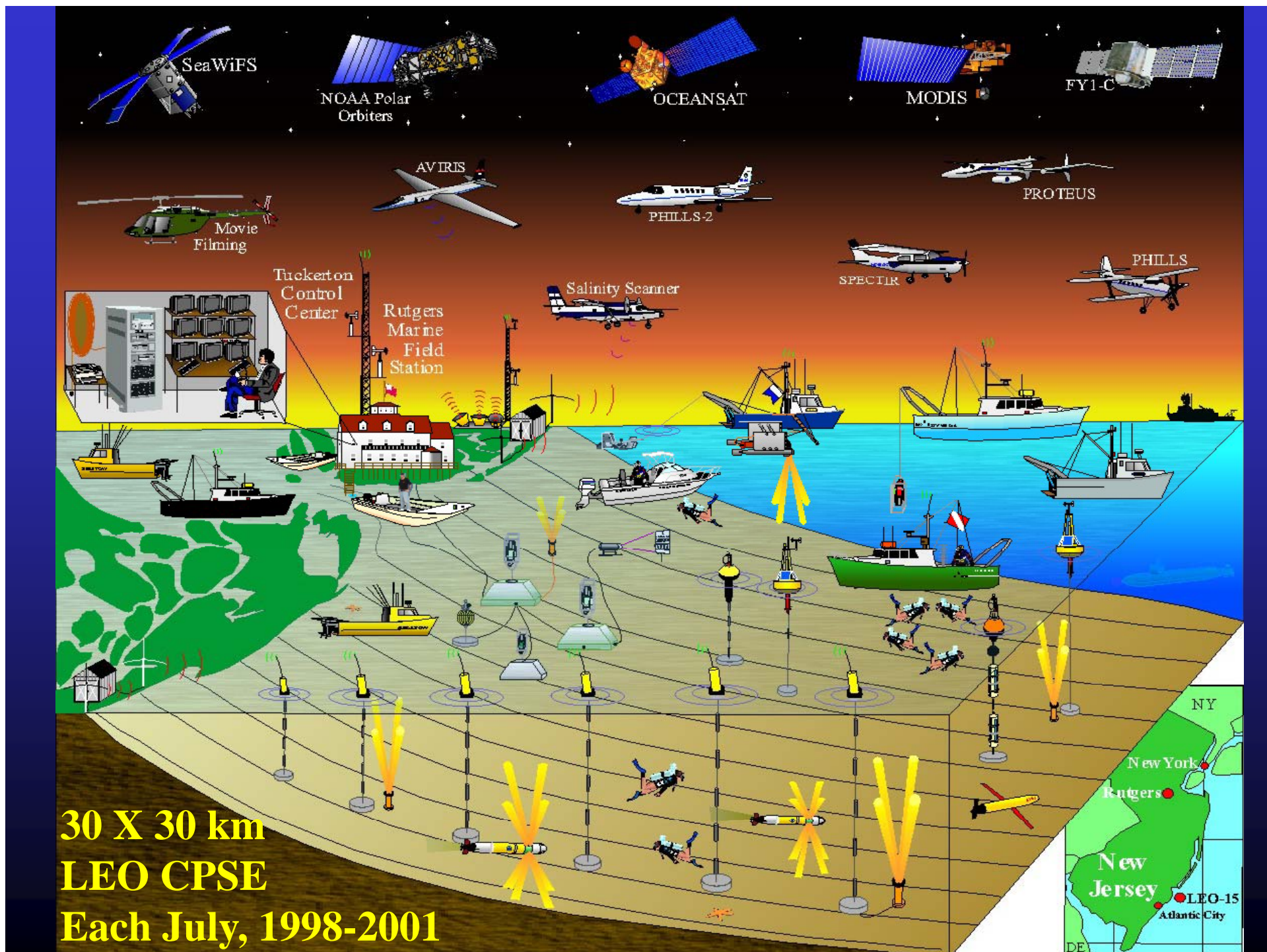
AP photo

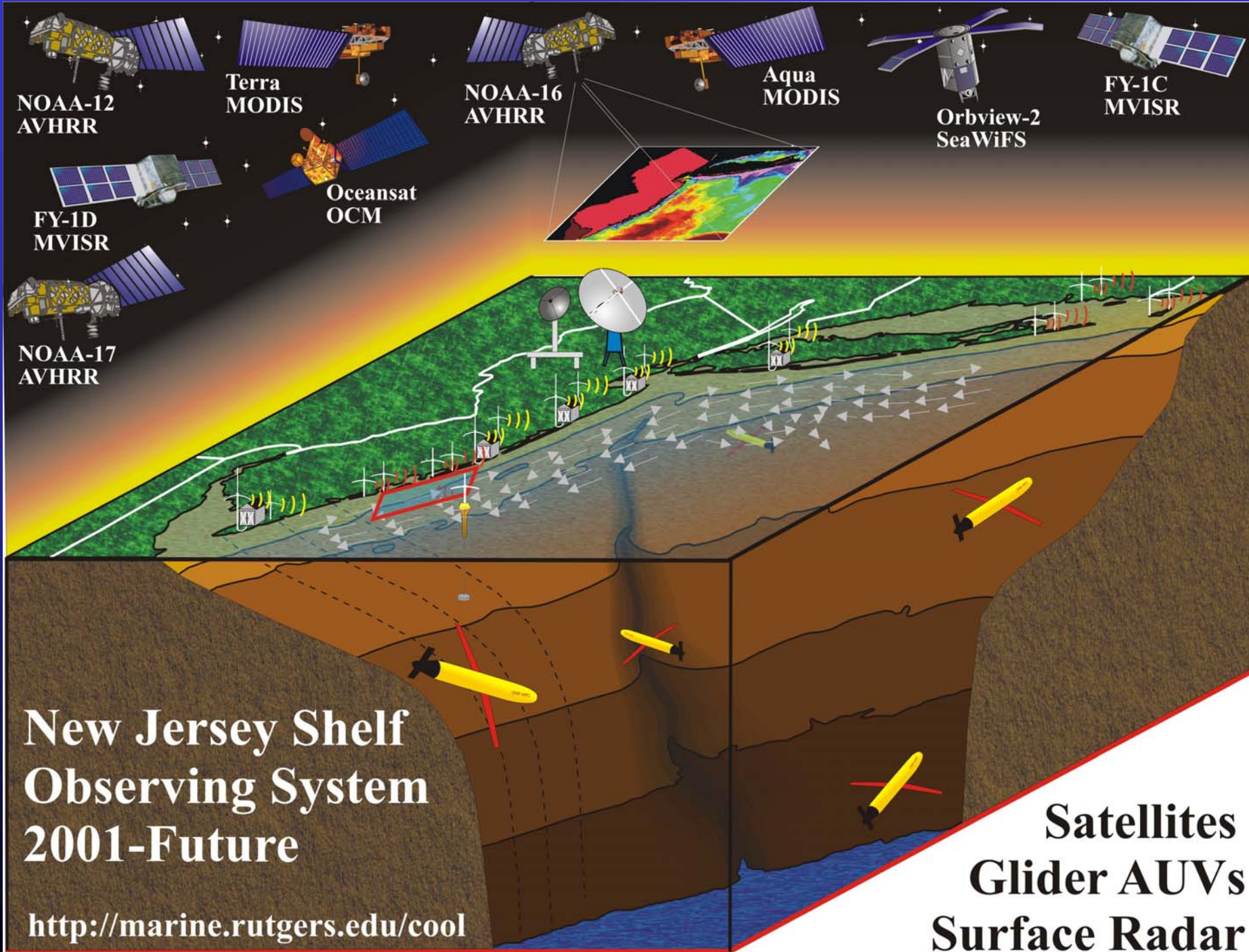
Members of the U.S. Coast Guard's Maritime Safety and Security Team pass a sightseeing boat near the Statue of Liberty during an anti-terrorism drill yesterday.

Long journey to security

Despite progress, transportation network still vulnerable

Trenton Times, Wednesday, September 10, 2003





Regional Scale Observatories

NEOS, a science consortium established in 2000 provides a regional footprint.

Consists of sub-regional observatories and technology/science working groups.

Current groups include:
DODS data management, satellite remote sensing, CODAR, AUVs, bio-optics standards, buoys, waves, shelf carbon biogeochemistry, extreme weather, economic products

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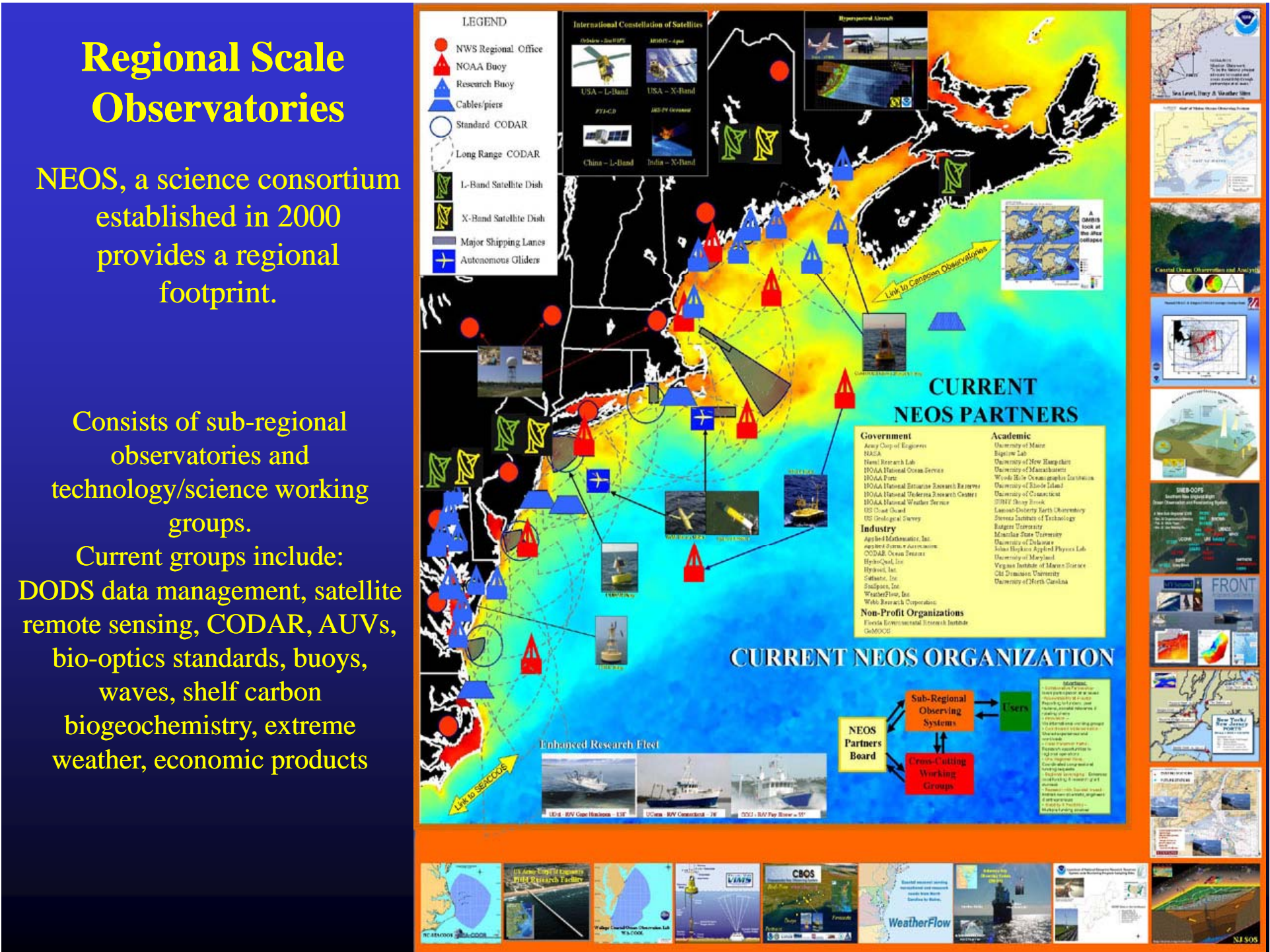
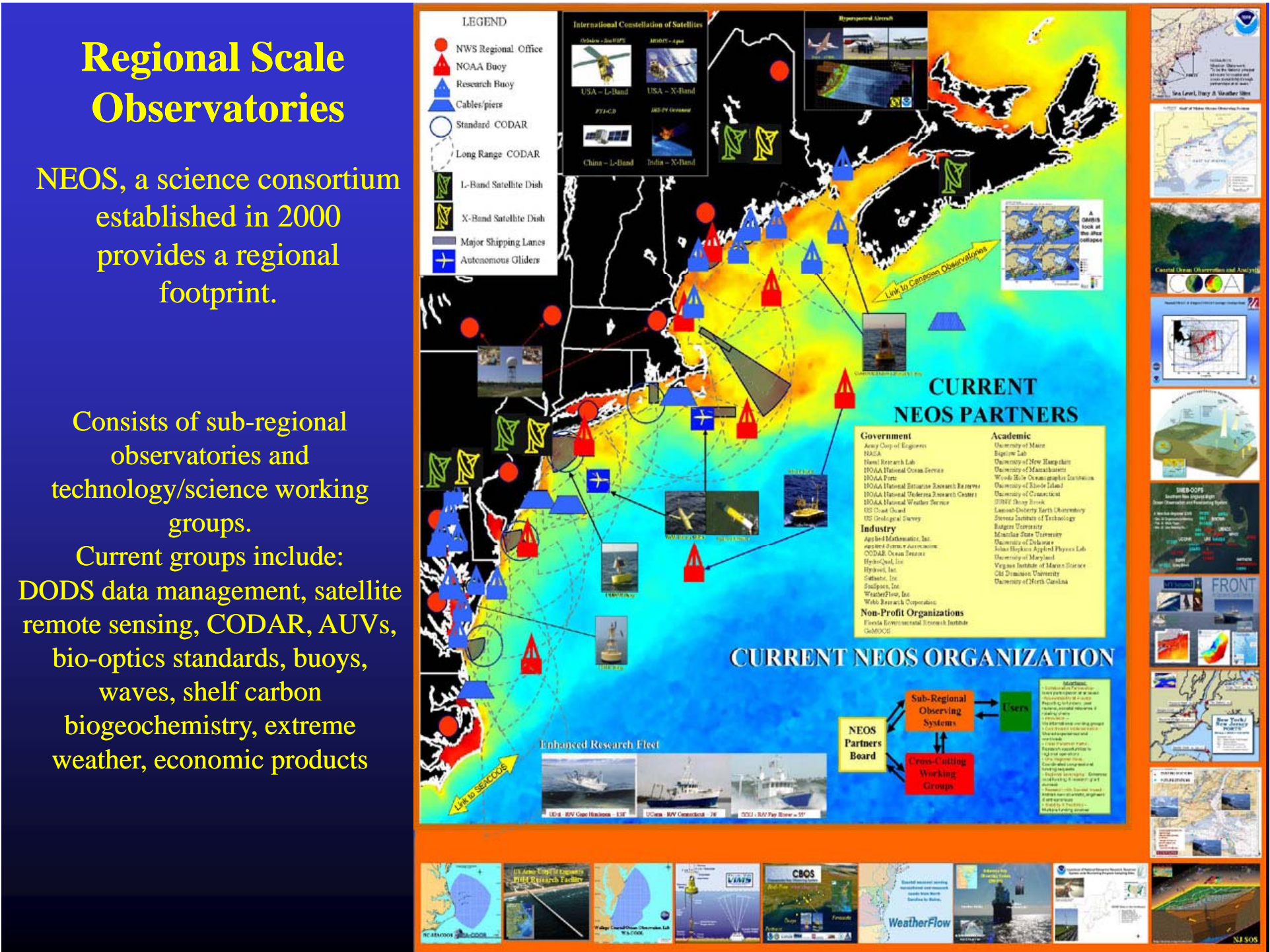
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Nested Multi-Static CODAR Array

Beach



Buoys



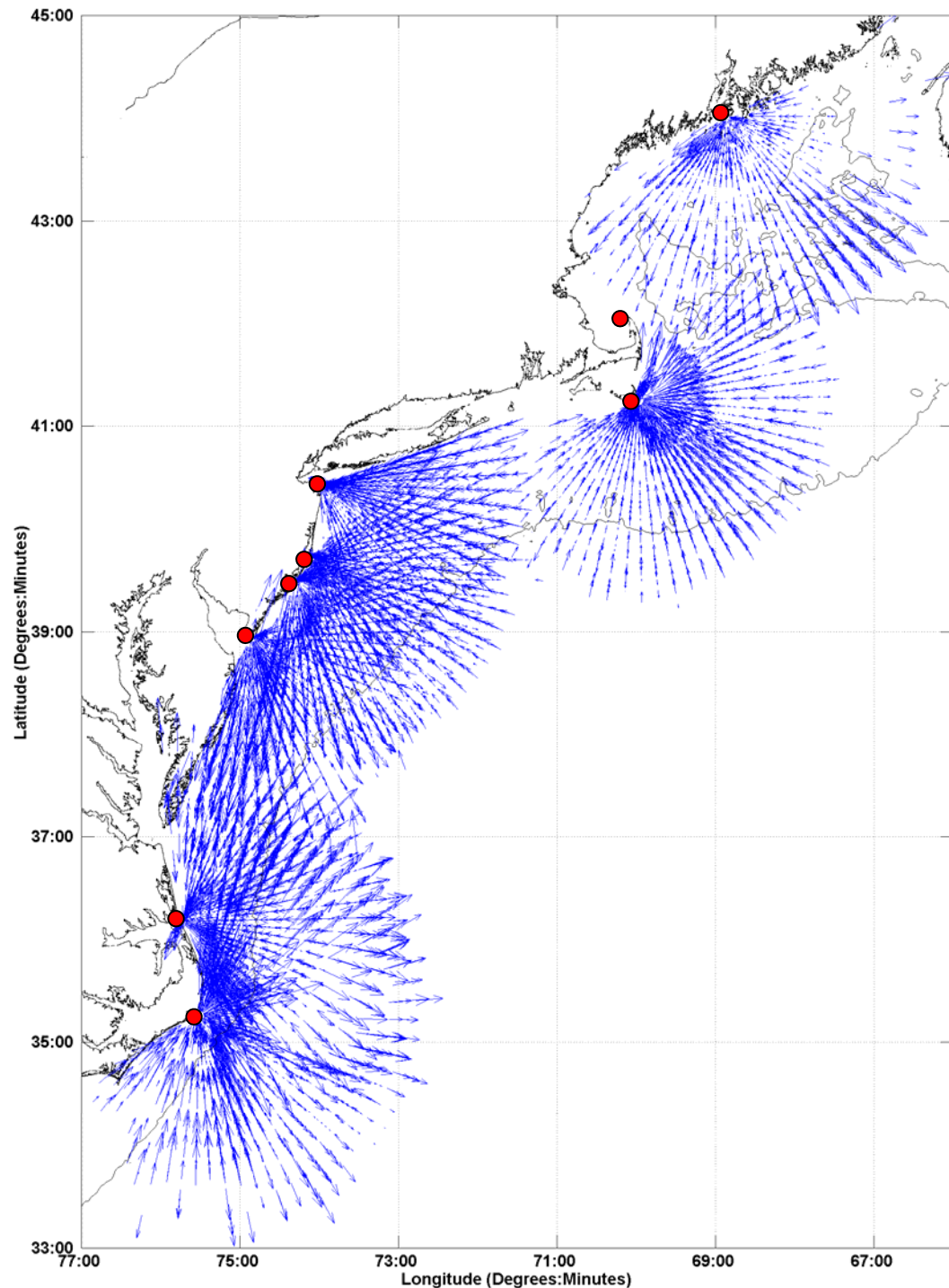
Boats



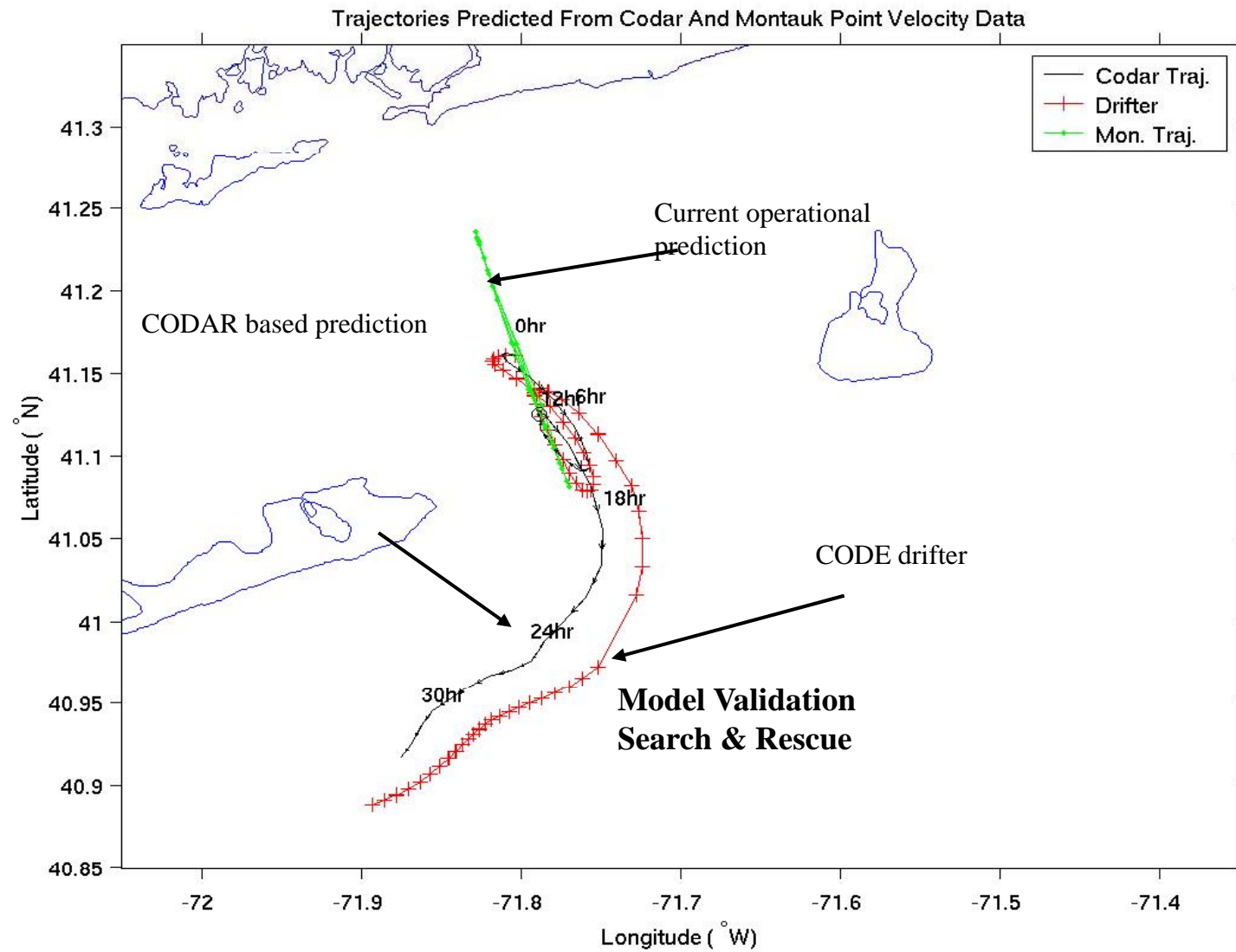
NEOS HF Radar Network

Partners

- Applied Mathematics, Inc.
- Army Corp. of Engineers
- CODAR Ocean Sensors
- GoMOOS
- NOAA
- Stevens Institute of Technology
- Rutgers University
- United States Coast Guard R&D Center
- University of Connecticut
- University of Maine
- University of Massachusetts, Dartmouth
- University of North Carolina, Chapel Hill
- University of Rhode Island



Search and Rescue Applications



HF Radar Vessel Tracking Applications

Partners:

Rutgers University

Codar Ocean Sensors, Inc.

Applied Mathematics, Inc.

U.S. Coast Guard

Funders:

Office of Naval Research

DoD Counterdrug Technology Development Office

Vessel-Tracking Applications

R/V Endeavor



USCGC Finback



M/V Oleander



Small Fast Boat



Vessel-Tracking Applications

One Site, One Target

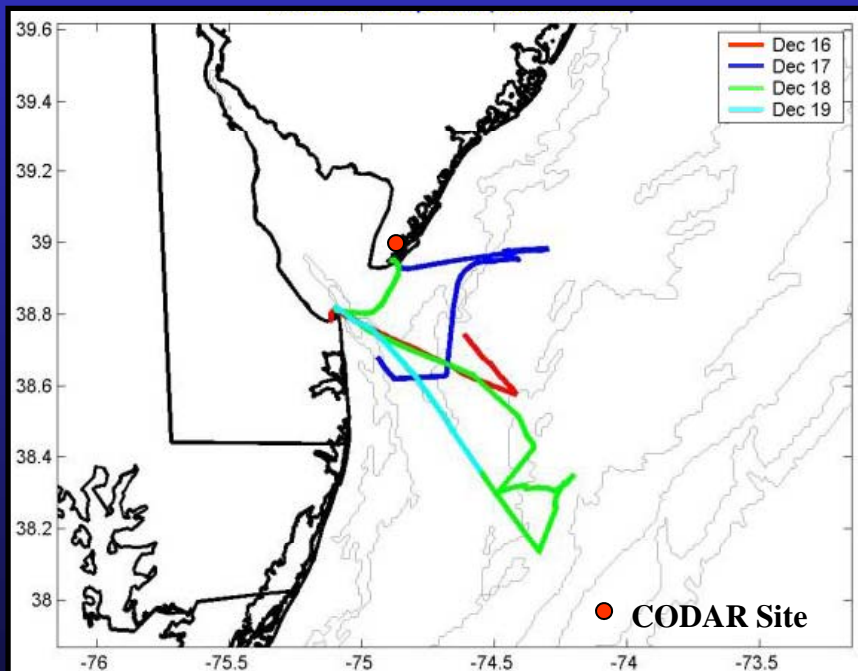
USCGC Finback



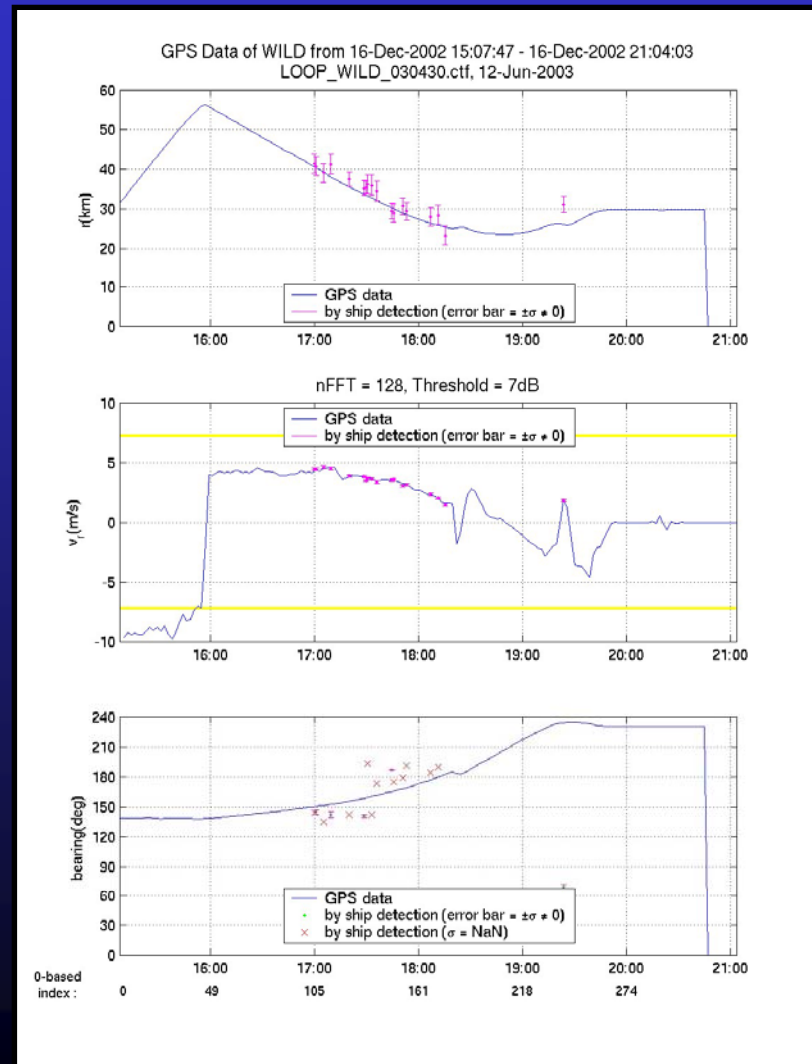
Vessel-Tracking Applications

One Site, One Target

GPS Track



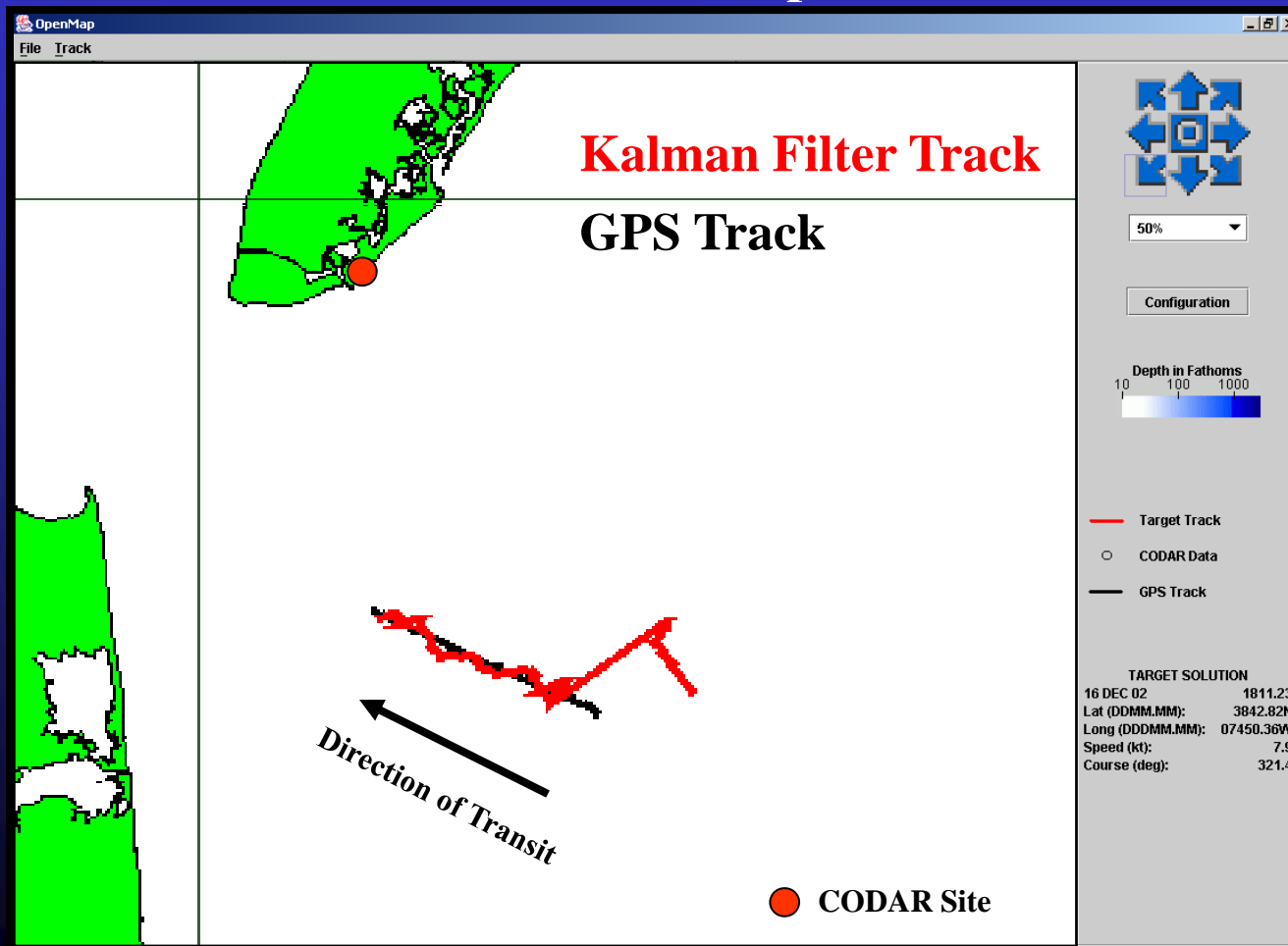
Ship Detections



Vessel-Tracking Applications

One Site, One Target

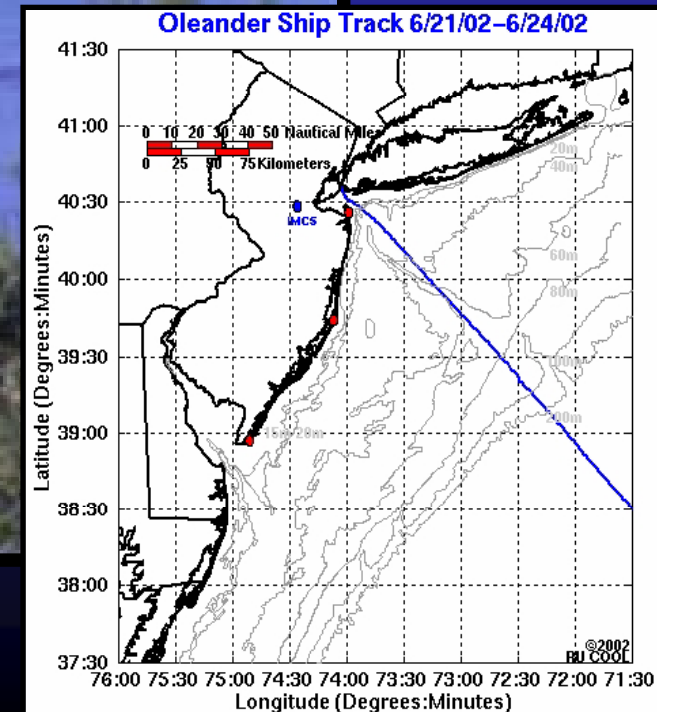
Tracker Output



Vessel-Tracking Applications

Two Sites, One Target

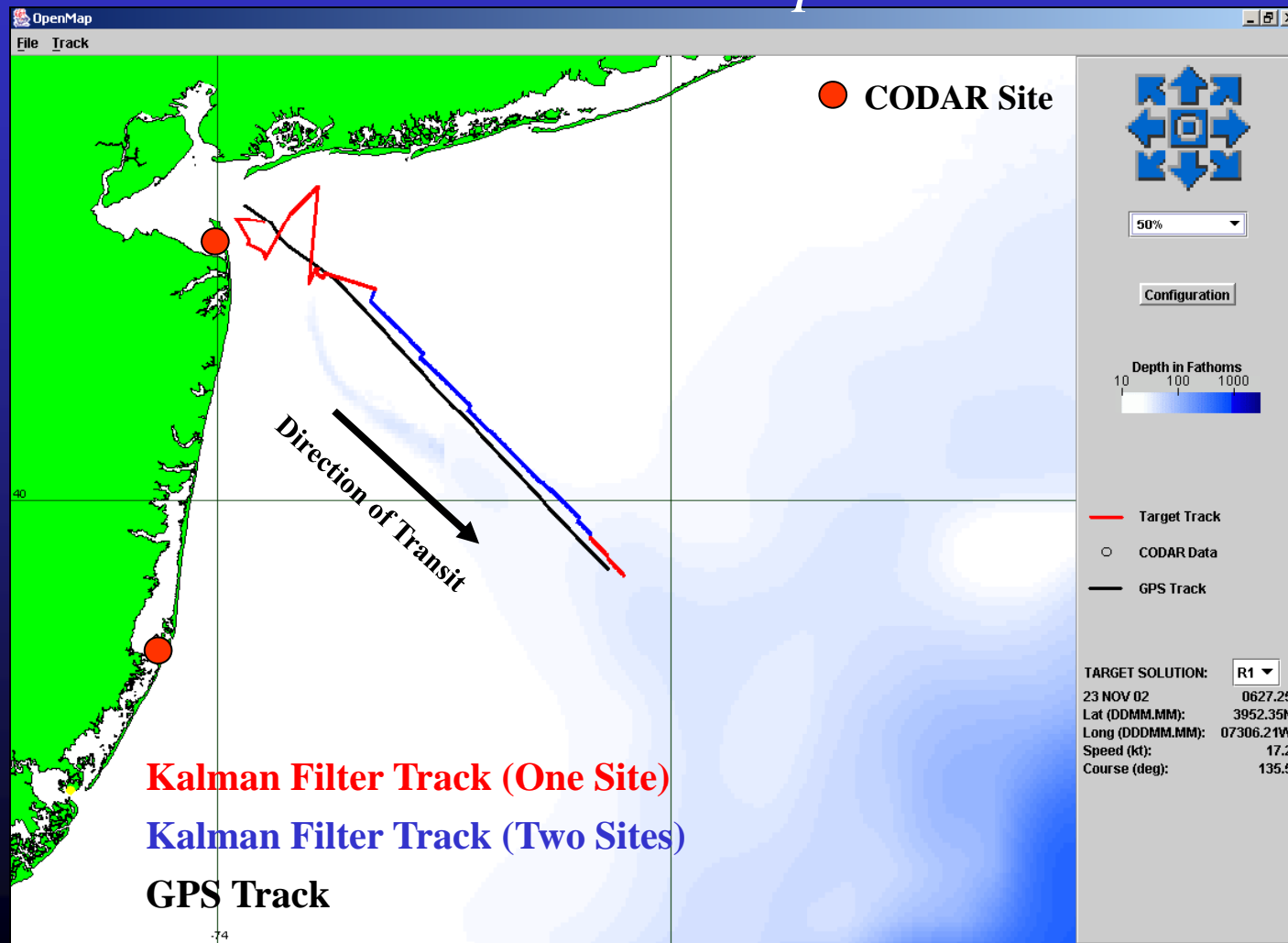
M/V Oleander



Vessel-Tracking Applications

Two Sites, One Target

Tracker Output



Conclusion

1. Federal Funding for Oceanography expected to double this decade
2. State buy-in is required
3. National HF Radar Network is first new start
4. Initial Applications – Science, Search & Rescue
5. Future Application – Vessel Tracking