



SDCOOS

San Diego Coastal Ocean Observing System

&

SCCOOS

Southern California Coastal Ocean Observing System

&

HPWREN

High-Performance Wireless Research and Education Network

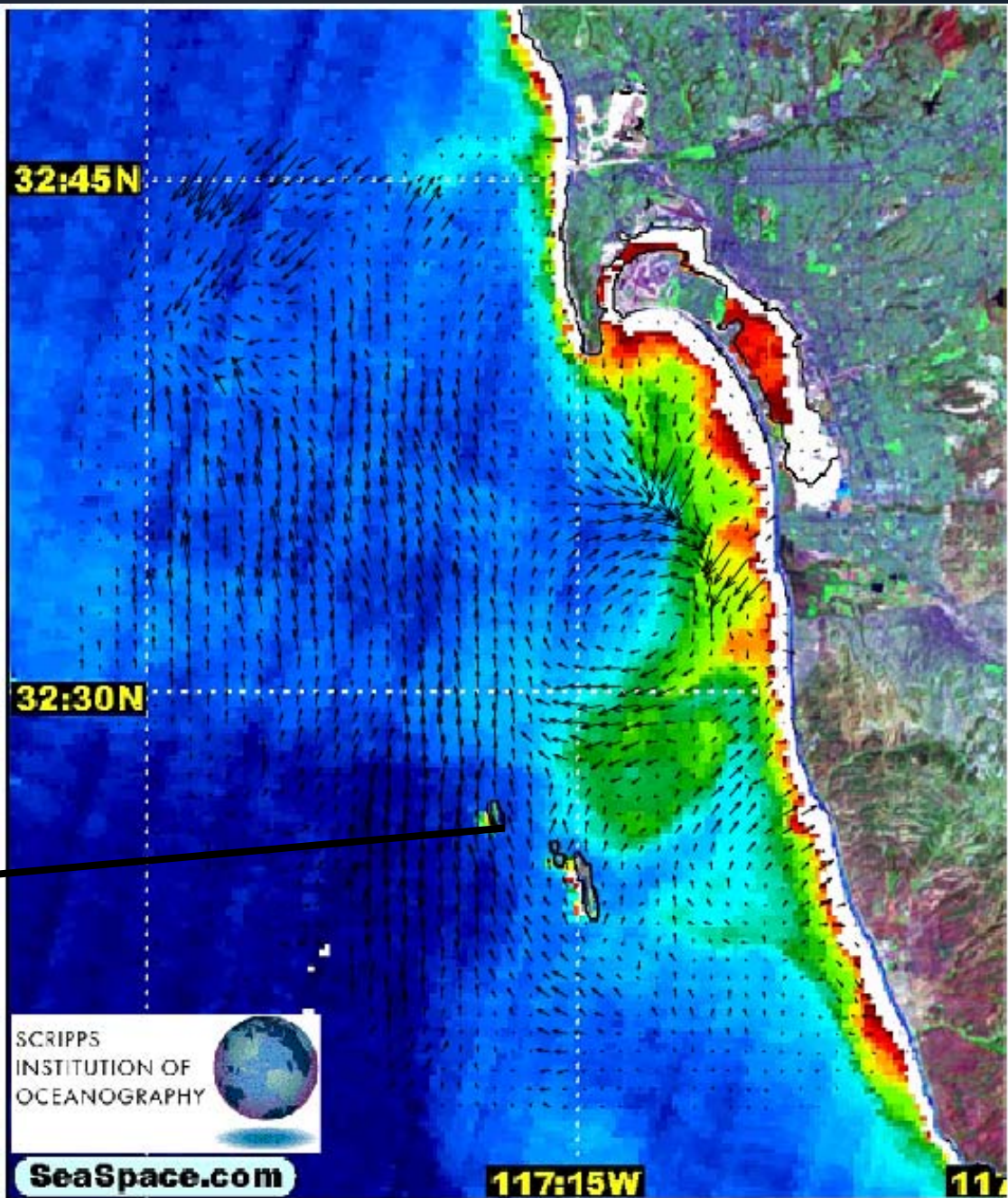
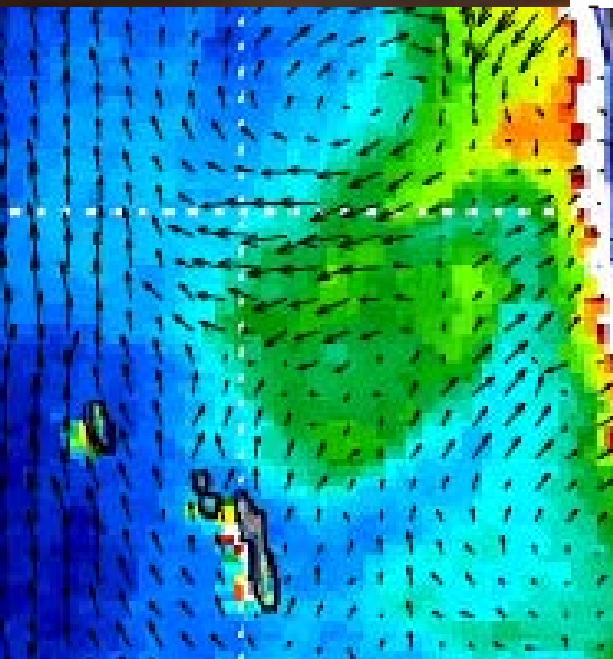
Lisa Hazard, Tim Harris *Scripps Institution of Oceanography*

Combination of HF
RADAR
CURRENTS with
OCEAN COLOR
satellite data

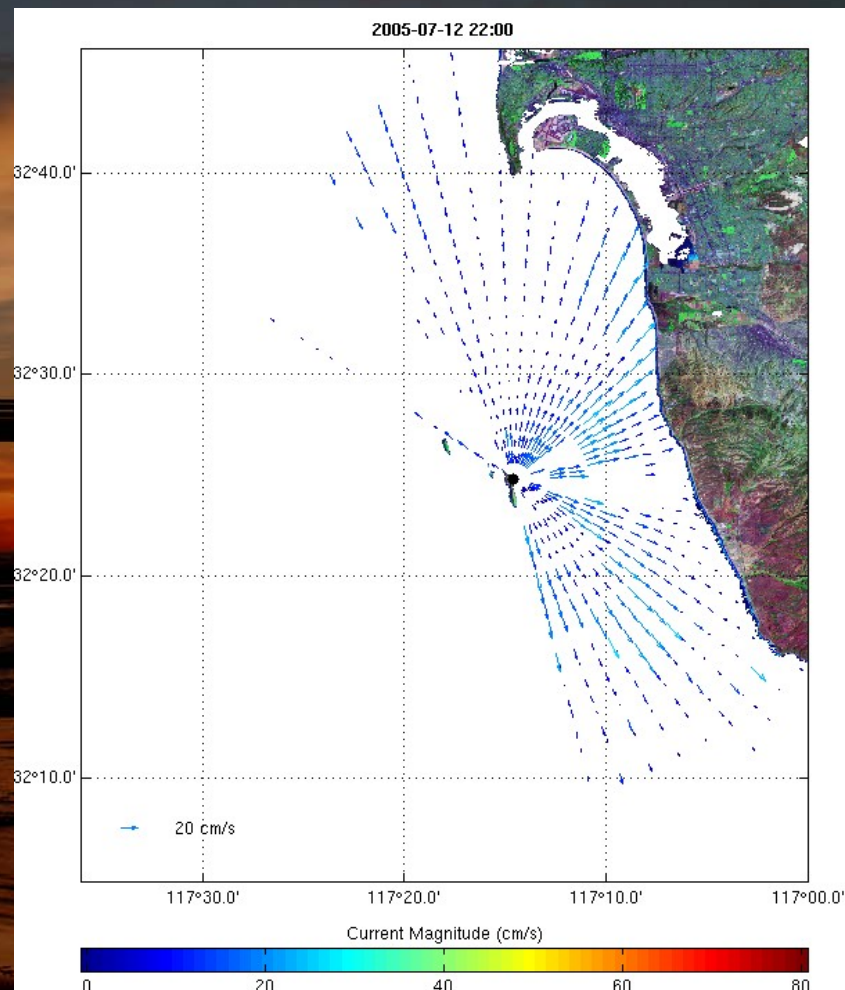
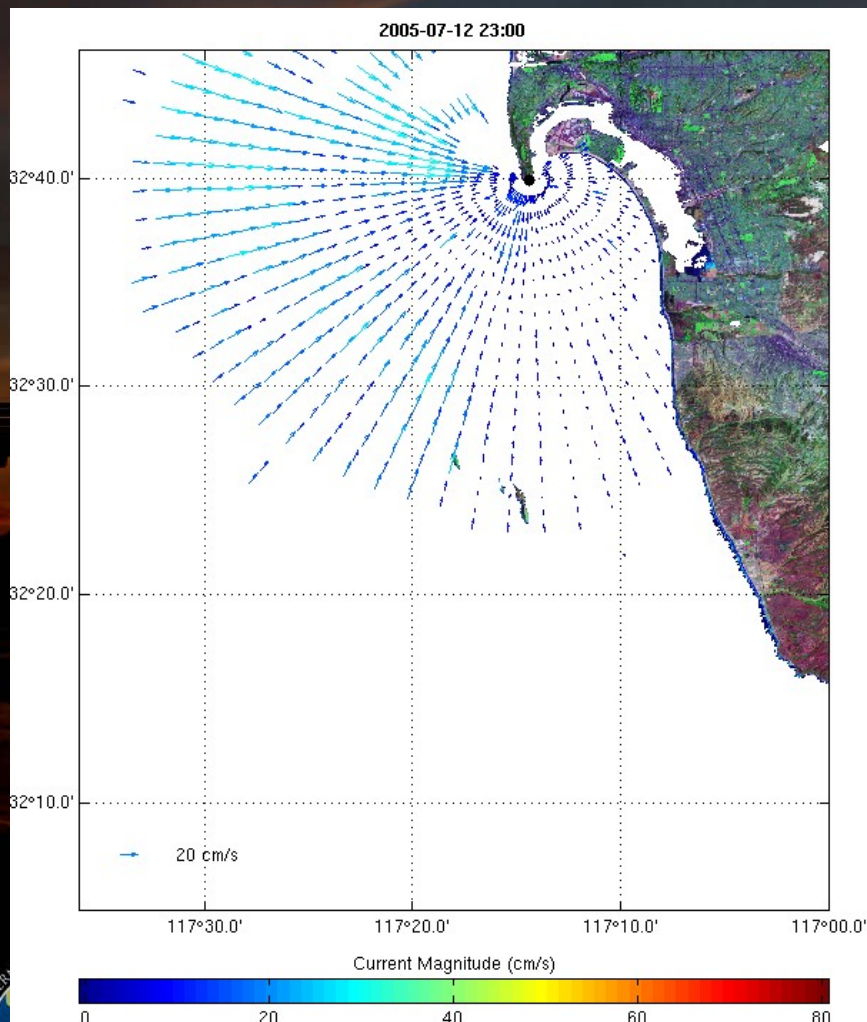
2/5/03

oceansat-1
2003/02/05
20:31:05

Total
Suspended
Matter
mg/l



Radial Data from existing Sites



....the many layers of an integrated coastal ocean observing system

- Existing agency monitoring
- surface current measurements
- satellite and aircraft remote sensing
- physical, bio-optical moorings
- autonomous vehicles
- meteorological measurements
- modeling
- distributed databases
- ?

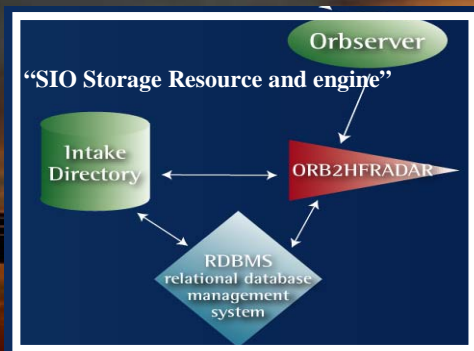
- water quality
- marine life resources
- coastal hazards
- educators
- search and rescue
- spill response
- security
- regional marine science
- ?

**Observing
infrastructure**

Data Transfer

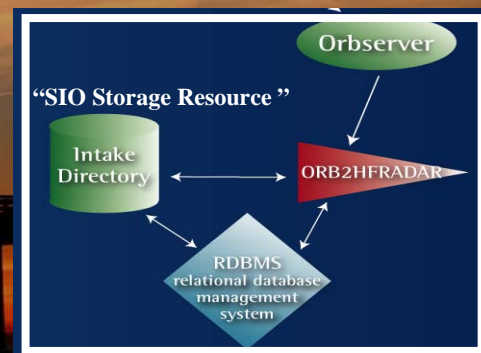
**End user needs/
DATA providers**

SIO West Coast Repository & Engine

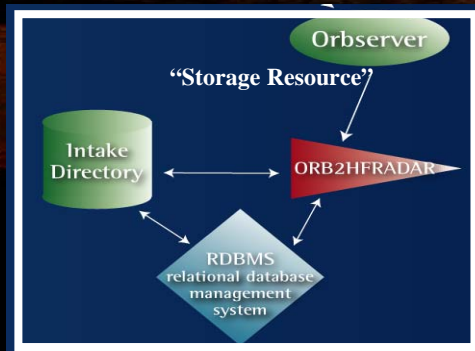


Phase One

RUTGERS East Coast Repository



Radials and metadata,
Real-time vector (RTV),
graphics



Phase 1: SIO
Phase 2: NDBC

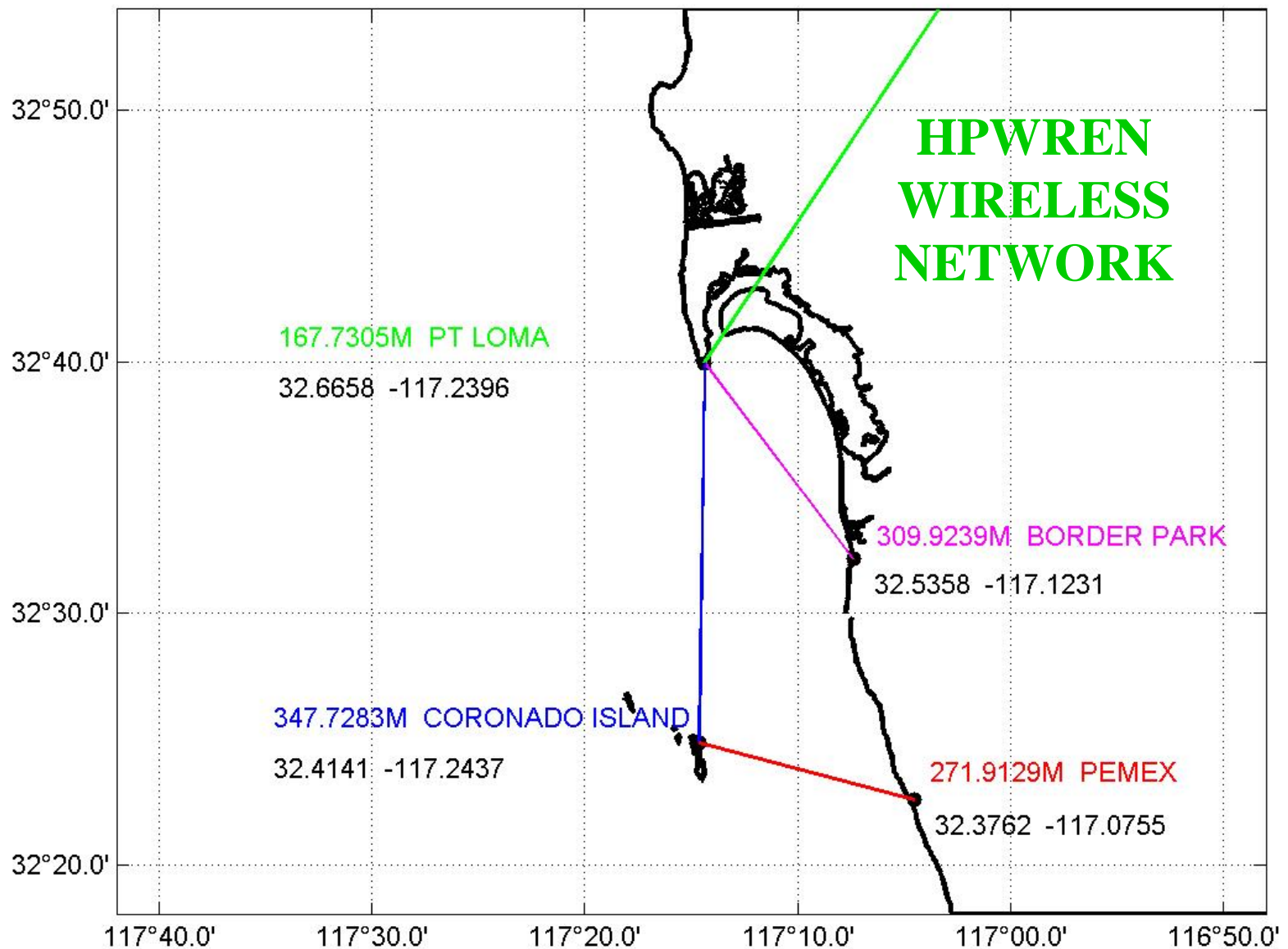


PUBLIC ACCESS

NDBC



SDCOOS WIRELESS NETWORK



**HPWREN
WIRELESS
NETWORK**

167.7305M PT LOMA

32.6658 -117.2396

309.9239M BORDER PARK

32.5358 -117.1231

347.7283M CORONADO ISLAND

32.4141 -117.2437

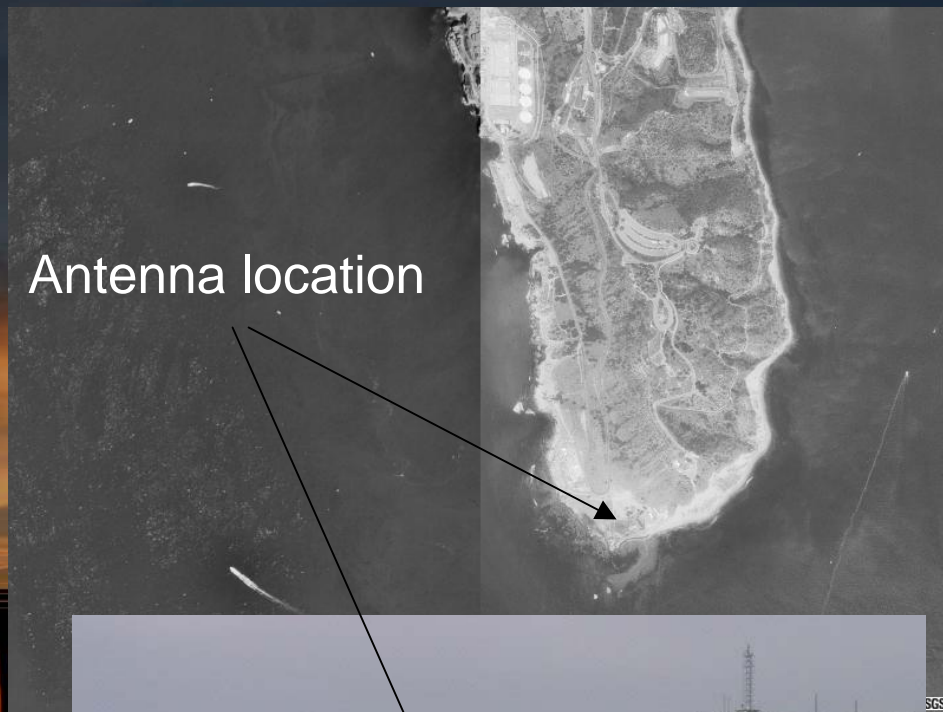
271.9129M PEMEX

32.3762 -117.0755

Installation of similar hardware at Battery Humphries on Point Loma



Antenna location



SOUTHERN CALIFORNIA

CURRENT AND PROBABLE SITE LOCATIONS FOR SCCOOS NESTED HF RADAR ARRAY

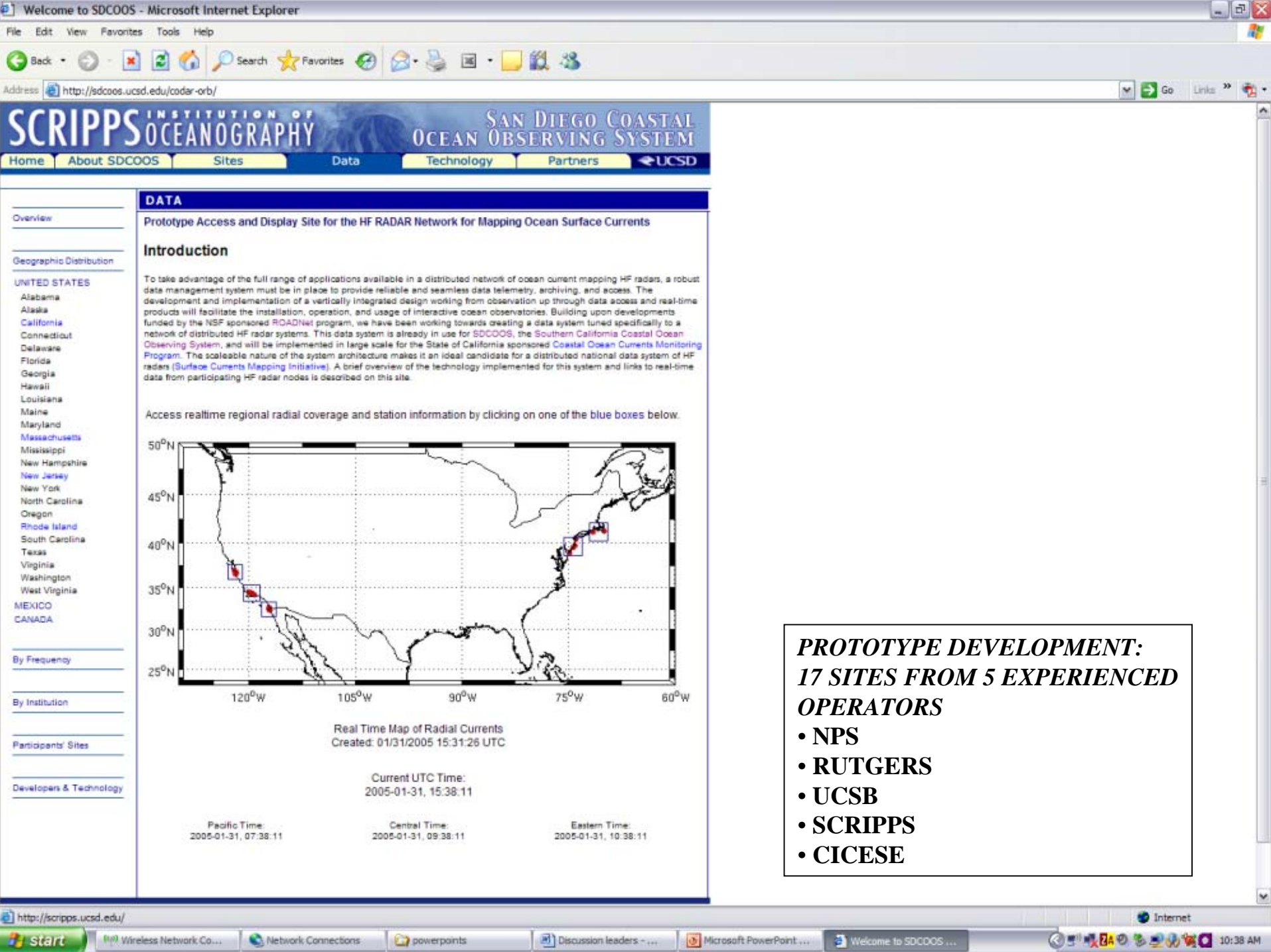


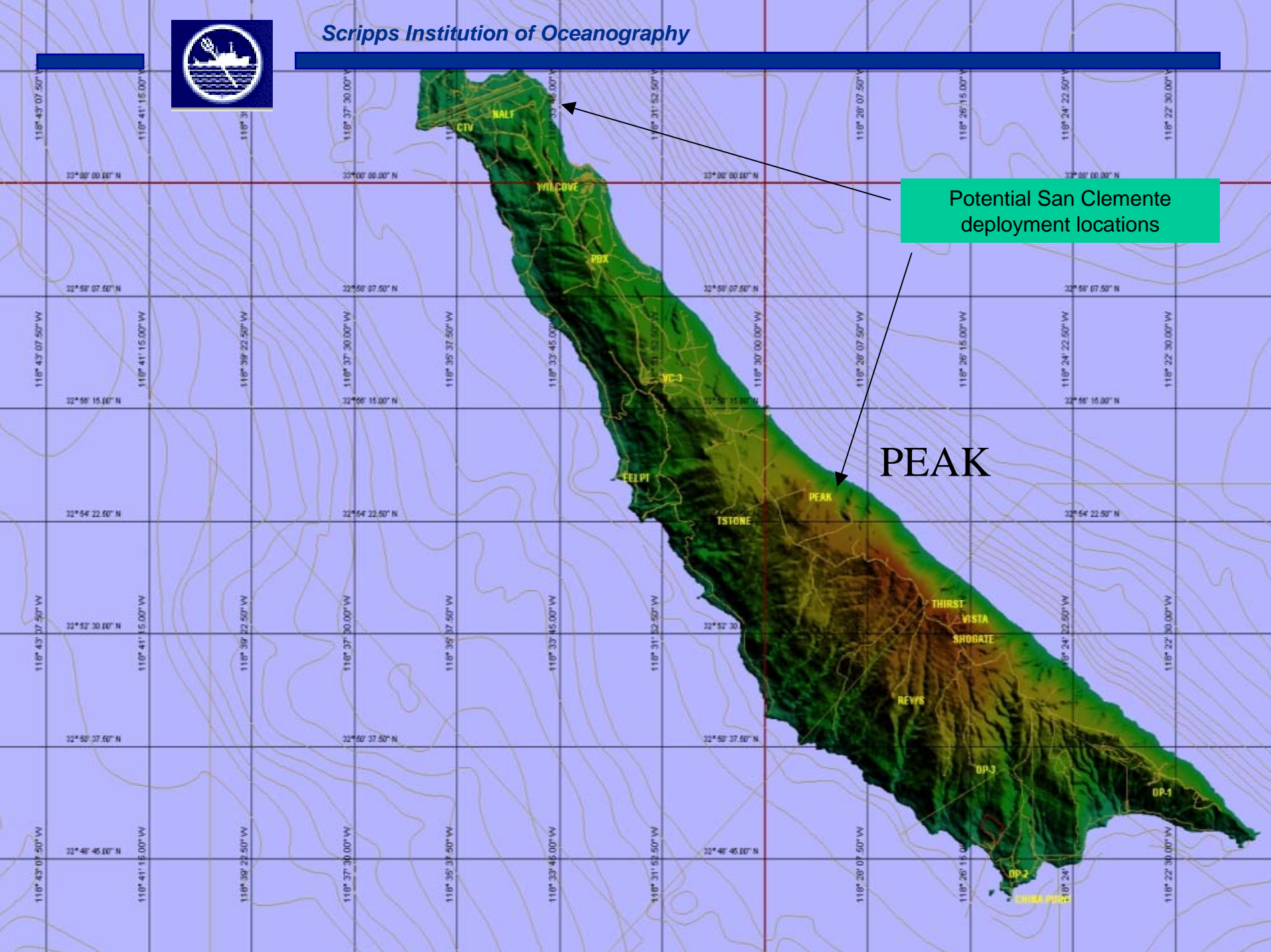
Small Arrays: 1. Pt Estero 2. Pt Pachon 4. Pt San Luis 5. Mussel Shoals/Pt Sal 7. Pt Arguello 8. Pt Concepcion 9. Refugio St Beach 10. Coal Oil Pt 11. Rincon Id 12. Mandalay Station 13. Ventura 14. Oxnard 15. Anacapa Id 16. Pt Dume 17. Pt Vicente 18. Pt Fermin 19. Huntington Beach 20. Newport Harbor Entrance 21. San Clemente 22. Avalon 23. Oceanside Pier 24. SD N County 25. La Jolla Pt 26. Sunset Cliffs/Pt Loma 27. Point Loma 28. Border Pk 29. S Coronado 30. Rosarito Beach

Large Arrays: 1. San Luis Obispo/UC Reserve 2. Pt Arguello 3. Pt Dume 4. San Clemente 5. Point Loma

GalPoly, SLO Univ of Southern California UC Santa Barbara Scripps Institution of Oceanography
CenCOOS SCCOOS NOAA SCCOOS/COCMP







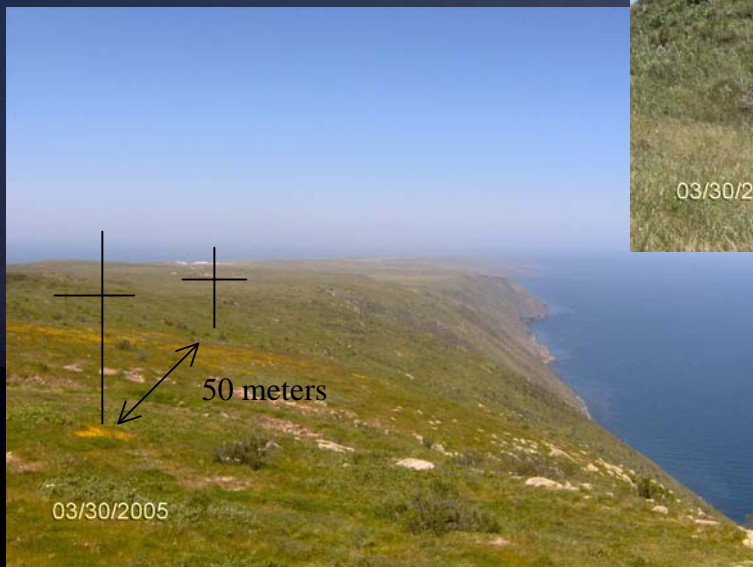
Potential San Clemente
deployment locations

PEAK

San Clemente Surface Current Mapping Proposed Installation

Option 1: Vicinity of Stone Station

*Northern view from Stone Station:
potential CODAR site*

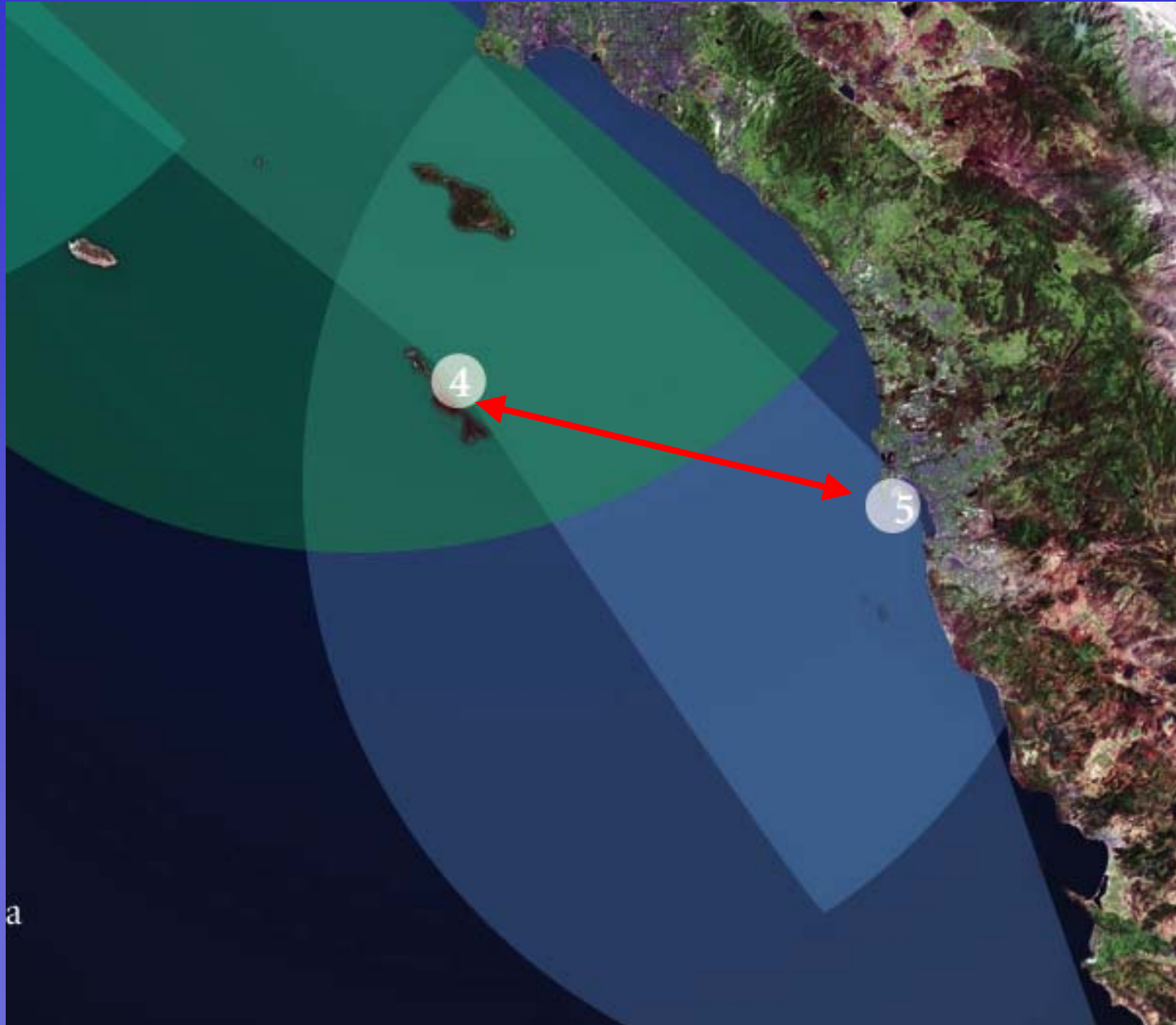


*Stone Station for power
and enclosure*

Option 2: SPWAR Property



HPWREN link to San Clemente Island



Address <http://sdcoos.ucsd.edu/codar-orb/>

SCRIPPS INSTITUTION OF OCEANOGRAPHY

OCEAN OBSERVING SYSTEM

Welcome to SDCOOS - Microsoft Internet Explorer

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Back Forward Stop Home Search Favorites Refresh Print Mail Stop

Address <http://sdcoos.ucsd.edu/codar-orb/>

Geographic Distribution

UNITED STATES

- Alabama
- Alaska
- California
- Connecticut
- Delaware
- Florida
- Georgia
- Hawaii
- Louisiana
- Maine
- Maryland
- Massachusetts
- Mississippi
- New Hampshire
- New Jersey
- New York
- North Carolina
- Oregon
- Rhode Island
- South Carolina
- Texas
- Virginia
- Washington
- West Virginia

MEXICO

CANADA

By Frequency

- 4.54 MHz - BLCK
- 4.54 MHz - ERRA
- 4.69 MHz - WILD
- 4.79 MHz - GRHD
- 4.89 MHz - HOOK
- 4.89 MHz - LOVE
- 12.15 MHz - RFG1
- 12.15 MHz - SCRZ
- 12.20 MHz - SMR1
- 13.39 MHz - PPIN
- 13.44 MHz - COP1
- 13.47 MHz - NPGS
- 13.65 MHz - MGSI
- 24.73 MHz - SDCI
- 25.27 MHz - SDPL
- 25.32 MHz - HADS

Introduction

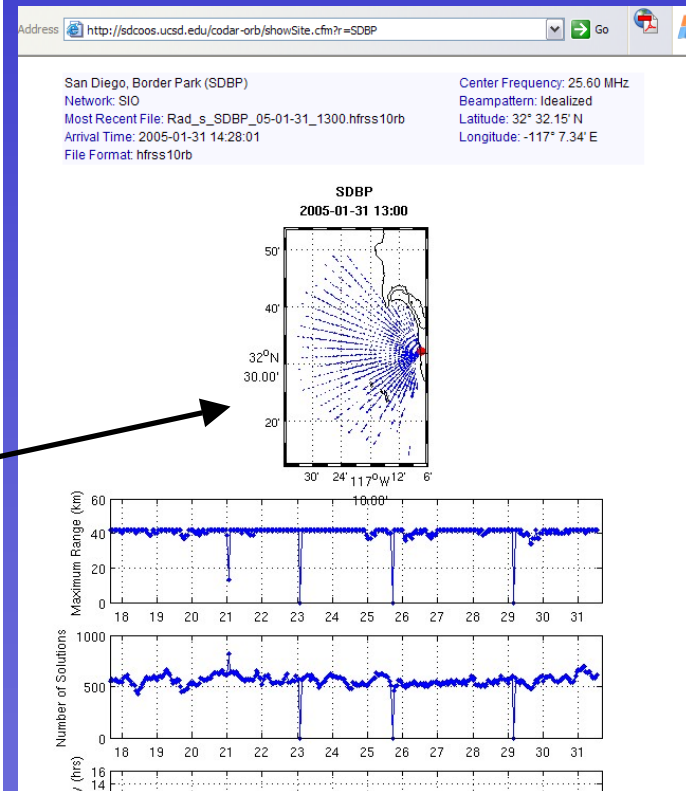
To take advantage of the full range of applications available in a distributed network of ocean current mapping HF radars, a robust data management system must be in place to provide reliable and seamless data telemetry, archiving, and access. The development and implementation of a vertically integrated design working from observation up through data access and real-time products will facilitate the installation, operation, and usage of interactive ocean observatories. Building upon developments funded by the NSF sponsored ROADNet program, we have been working towards creating a data system tuned specifically to a network of distributed HF radar systems. This data system is already in use for SDCOOS, the Southern California Coastal Ocean Observing System, and will be implemented in large scale for the State of California sponsored Coastal Ocean Currents Monitoring Program. The scaleable nature of the system architecture makes it an ideal candidate for a distributed national data system of HF radars (Surface Currents Mapping Initiative). A brief overview of the technology implemented for this system and links to real-time data from participating HF radar nodes is described on this site.

Access realtime regional radial coverage and station information by clicking on one of the blue boxes below.

Current UTC Time:
2005-01-31, 15:40:38

Pacific Time: 2005-01-31, 07:40:38 Central Time: 2005-01-31, 09:40:38 Eastern Time: 2005-01-31, 10:40:38

RETRIEVAL OF DATA FROM CENTRAL AGGREGATION ORB



Welcome to SDCOOS - Microsoft Internet Explorer

File Edit View Favorites Tools Help



Address <http://sdcoos.ucsd.edu/codar-orb/>

Louisiana
Maine
Maryland
Massachusetts
Mississippi
New Hampshire
New Jersey
New York
North Carolina
Oregon
Rhode Island
South Carolina
Texas
Virginia
Washington
West Virginia

MEXICO
CANADA

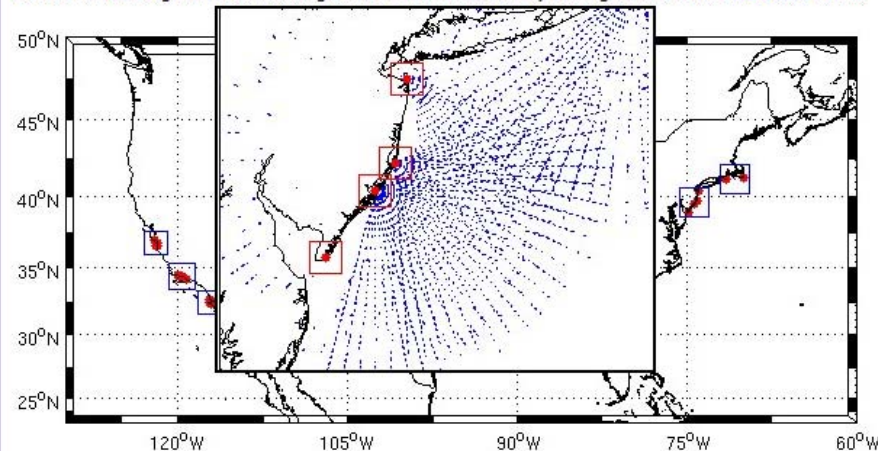
By Frequency

4.54 MHz - BLCK
4.54 MHz - ERRA
4.69 MHz - WILD
4.79 MHz - GRHD
4.89 MHz - HOOK
4.89 MHz - LOVE
12.15 MHz - RFG1
12.15 MHz - SCRZ
12.20 MHz - SMR1
13.39 MHz - PPIN
13.44 MHz - COP1
13.47 MHz - NPGS
13.55 MHz - MGS1
24.73 MHz - SDCI
25.27 MHz - SDPL
26.32 MHz - UABC
26.38 MHz - MLNG
26.60 MHz - SDBP

By Institution

NPS
SCRZ
MLNG
PPIN
NPGS
Rutgers
ERRA
BLCK
HOOK
LOVE

Access realtime regional radial coverage and station information by clicking on one of the blue boxes below.



Real Time Map of Radial Currents
Created: 01/31/2005 15:31:26 UTC

Current UTC Time:
2005-01-31, 15:41:59

Pacific Time:
2005-01-31, 07:41:59

Central Time:
2005-01-31, 09:41:59

Eastern Time:
2005-01-31, 10:41:59

Address <http://sdcoos.ucsd.edu/codar-orb/showSite.cfm?r=SCRZ>

Santa Cruz (SCRZ)

Network: NPS

Most Recent File: Rad_z_SCRZ_05-01-31_1300.hfrss10rb

Arrival Time: 2005-01-31 14:28:01

File Format: hfrss10rb

Center Frequency: 12.15 MHz

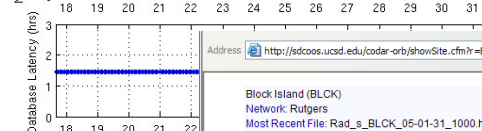
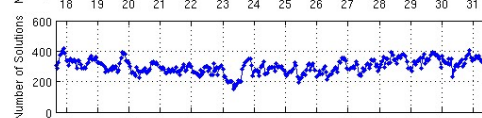
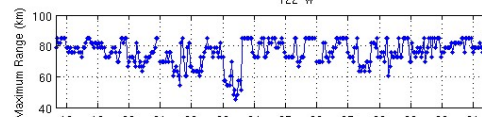
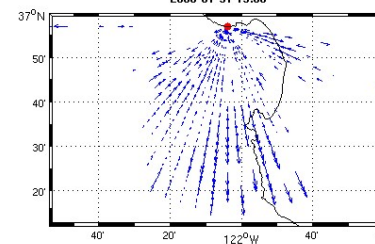
Beampattern: Measured

Latitude: 36° 56' 59" N

Longitude: -122° 3' 97" E

SCRZ

2005-01-31 13:00



Address <http://sdcoos.ucsd.edu/codar-orb/showSite.cfm?r=BLCK>

Block Island (BLCK)

Network: Rutgers

Most Recent File: Rad_s_BLCK_05-01-31_1000.hfrss10rb

Arrival Time: 2005-01-31 14:48:00

File Format: hfrss10rb

Center Frequency: 4.54 MHz

Beampattern: Idealized

Latitude: 41° 9' 16" N

Longitude: -71° 33' 05" E

BLCK

2005-01-31 10:00

