Southeast Coastal Ocean Observing Regional Association (SECOORA): A Framework for Monitoring, Prediction and Assessment to Support Decision-Makers Needs for Coastal and Ocean Data and Tools

Program Performance Report

Award Number: NA11NOS0120033

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1) Progress and Accomplishments

Goal 1: Sustain SECOORA as a Regional Information Coordination Entity (RICE)

Milestones	Status
Provide timely grant reports to NOAA	Completed. NOPP Annual Report (December 16, 2016); IOOS Semi-Annual Report Year 5 (December 16, 2016); Semi-annual Federal Financial Report (September 30, 2016).
Hold Board Meeting and Members Meeting	Board meeting Fall 2016: Completed (Dec. 8-9, 2016). Spring 2017 Board and Annual Members meetings: Ongoing
Publish e-newsletters and other outreach material	Ongoing. Launched a blog site. See our website, Facebook and Twitter for newsletter, stories and videos.
Coordinate observing activities with neighboring RAs and US IOOS	Ongoing.
Update SECOORA website with new content	Ongoing.
Develop Strategic Planning document, IOOS Certification Application	Strategic Planning document: Completed; IOOS Certification Application: Ongoing, Anticipated submission: December 2016.
Support local, regional, and national collaboration	Ongoing.
Evaluate mechanisms to track operational statistics, product usage, and outcome measures and metrics	Ongoing (See Goal 5 Milestone for status.)

Goal 2: Sustain an Observing Subsystem for the SE:

Milestone A: Operate and maintain moored and coastal stations and report data to SECOORA and NDBC/GTS: **Ongoing.**

Institution/Contractor	Status
University of South Florida (Weisberg) - Coastal Ocean Monitoring and Prediction System (COMPS) moorings	Three real time surface moorings (C10, C12 and C13) were maintained, along with two (non-real-time) subsurface (C11 and C15) moorings. The up-time of all sensors on moorings is over 90%. **Operational issues:** Data telemetry system outages due to either power limitations (mostly winter time) or antenna issues.
University of South Florida (Luther) - Coastal tidal meteorological stations	**Operational issues:** Big Carlos Pass site: Rebuilding was completed in August 2016. Shell Point and Aripeka sites: Maintenance visits completed in November 2016. The water level data collection was restored, a worn RM Young wind sensor was replaced, and plugged rain gauge cleaned out at Shell Point. Aripeka site: Damaged by impact of hurricane Hermine. A visit to this site is scheduled December 2016/January 2017.
University of North Carolina - Wilmington (Leonard) - Mooring network	Moorings ILM2, ILM3, LEJ3, SUN2, CAP2, FRP2 were maintained. Except FRP2, meteorological and in-water sensors uptime is over 95%. **Operational issues:** FRP2 mooring sustained damage during the passage of Hurricane Matthew. Data return from this mooring is 84%.

Milestone B: Operate and Maintain Priority Radars and Report data to SECOORA and National HF Radar Network: **Ongoing.**

Institution/Contractor	Status
University of South Florida (Weisberg, Merz) - CODAR radar arrays on the West Florida Shelf	**Operational uptime and average spatial range statistics:** Naples (71.5%, 164km); Venice (74.5%, 148km); Reddington Shores (46.9%, 181km). **Operational issues:** The CODAR central processing site (St. Petersburg) was down from October 10 - 21 due to a hard drive failure with approximately a week of the remote site(s) data missing from the provided CORDC diagnostic totals. Reddingnton Shores site was down between April 22 – August 19, 2016 due to A/C failure within the instrumented enclosure.
University of Georgia, Skidaway Institute of Oceanography (Savidge) - WERA radar arrays on St. Catherine's and Jekyll Island, GA	**Operational uptime and average spatial range statistics:** Jekyll Island (71.9%, 174km) and St. Catherine's Island (48%, 160km). **Operational Issues:** An upgrade of one component of the Jekyll control hardware required extensive troubleshooting over the summer (2016). Both sites were affected by hurricane Matthew and had power outages and damages. Repairs in progress.
University of Miami (Shay)- WERA radar arrays at Crandon, Virginia Key and Dania Beach	**Operational uptime and average spatial range statistics:** Virginia Key (84%, 117km), Crandon Park (70%, 139km); Dania Beach (74%, 98km%). **Operational issues**: System at Dania Beach had to be shutdown (lasting between 5 to 10 days) for US Navy testing.
University of NC - Chapel Hill (Seim) - CODAR radar arrays on the Outer Banks of NC	**Operational uptime and average spatial range statistics:** Cape Hatteras (80%, 176km); Duck (82.3%, 190km) and Core Banks (82.3%, 201km). **Operational issues:** System antenna relocation at Cape Hatteras and transmit cable replacement at Duck and beam pattern runs at Core Banks were carried out.
University of South Carolina (Voulgaris) - WERA arrays on Fort Caswell, NC and Georgetown, SC	**Operational uptime and average spatial range statistics:** Georgetown (75%, 231km) and Fort Caswell (77%, 167km). Operations issues: (i) cable relocation due to potential impacts on nesting turtles at Georgetown; (ii) continual and rapid beach erosion where the Fort Caswell transmit array is deployed, the TX array had to be relocated inland by 5m; (iii) replaced the AC unit in the Caswell trailer, rebuilt the support structures for 4 receive antennas, and repaired connectors on cables from July 15th through July 17th, 2016; (iv) failure of the power supply unit at

Institution/Contractor	Status
	Georgetown, and (vi) power failure and damages at sites due to Hurricane Matthew.

Milestone C: Support ocean acidification activities in the region: **Ongoing.**

Institution/Contractor	Status
University of Georgia (UGA) (Noakes) and University of Delaware (UDEL) (Cai) – Maintain OA sensors at NDBC Gray's Reef National Marine Sanctuary (GRNMS) NDBC ID #41008 buoy and collect underway water samples	**UGA**: Completed installation of new MAPCO2 system on May 6, 2016**.** Completed installation of a new iridium antenna and a battery pack on August 4, 2016 to address system performance issues. Next site visit: Spring 2017 to turn around the MAPCO2 system. **UDEL:** No new field samples were collected, however continue to analyze time series data as it becomes available.

Goal 3: Support a multi-scale multi-resolution modeling subsystem

Milestone A: Support and enhance SABGOM model: **Ongoing.**

Institution/Contractor	Status
North Carolina State University (He) - Maintain and enhance SABGOM model	Continued to operate South Atlantic Bight – Gulf of Mexico (SABGOM) model on a 24/7 basis, providing 3-d regional ocean predictions to SECOORA.

Milestone B: Participate in the National Hurricane Center (NHC) Joint Hurricane Testbed (JHT): **Ongoing.**

Institution/Contractor	Status
University of Florida (Sheng) – Storm Surge Modeling	Advanced Coastal Modeling System (ACMS) was utilized to forecast three tropical storms that affected Florida during 2016 hurricane season: Tropical Storm Colin, Hurricane Hermine and Hurricane Matthew. Forecasts were shared with SECOORA via THREDDS server. Note: National Hurricane Center discontinued the Joint Hurricane Testbed project.

Milestone C: Support Fisheries Climate Workshop and compile reports: **Completed.**

Milestone D: Improve and expand beach/shellfish water quality advisories: **Ongoing.**

Institution/Contractor	Status
University of South Carolina (Porter) - Provide a decision support tool for beach/shellfish water quality advisories.	Statistical models were already developed for each of the 12 sampling sites in the study area west of Sarasota, FL. Fine-tuning of the web-app (Myrtle Beach SC, Sarasota FL) and data structure were also performed.

Goal 4: Enhance the DMAC Subsystem

Milestone A: Service data providers and RCOOS subsystem PIs: Ongoing.

Milestone B: Assess and advance IOOS recommended SOS implementation: Ongoing.

Milestones C, D, E and F: Maintain DMAC infrastructure (hardware and software); support data providers and RCOOS Manager on implementation of QA/QC flags based on published QARTOD manuals; upgrade SECOORA website services, and; transition the DMAC services to SECOORA core operations: Ongoing.

Institution/Contractor	Status
University of SC (Porter)	Continued monitoring and maintenance as data portal activities are migrated to the new SECOORA DMAC services provider.
Axiom Data Science, LLC (Wilcox) - Transition of existing DMAC services	We follow the IOOS recommended standards based services and requirements to ingest, manage and provide access to all our funded data streams (in-situ, remotely sensed and numerical models). See portal.secoora.org. Data portal services transitions completed (portal.secoora.org). Archival agreement is being negotiated/updated with National Centers of Environmental Information (NCEI).

Milestone G: Support SABSOON tower data recovery and curation: Delayed.

Institution	Status
University of Skidaway Institute of Oceanography (Savidge) - South Atlantic Bight Synoptic Offshore Observational Network (SABSOON) Tower Data recovery project	Anticipated new completion date: Spring 2017. Reason: Retirement of software personnel at the end of March 2016.

Goal 5: Support a Targeted and Leveraged Education and Outreach Subsystem

The primary focus of SECOORA's Education and Outreach (E&O) subsystem is to engage stakeholders in observing technologies, data, products, and services. Note that Goals 1, 3, and 4 include outreach activities that complement and contribute to the E&O subsystem. We have listed work carried out during this reporting period below. No Education and Outreach PIs were funded in Year 5.

Milestones	Status
• Maintain web portal content and other outreach activities • Develop outreach materials • Develop success stories with PIs to highlight on website, newsletters, one-pagers, etc. • Coordinate and develop SECOORA RCOOS Accomplishments and Lessons Learned journal publication • Conduct community outreach highlighting the importance of observatories and SECOORA's products	Ongoing. SECOORA continued to engage in marketing and outreach activities via e-newsletter, e-mails, social-media and website. Since June 1, 2016 to November 30, 2016, we observed a less than 1% increase in subscription to our newsletter, from 696 to 697, Facebook "likes" have grown 12% (from 289 to 325) and Twitter "followers" have grown 13% (317 to 358). During the reporting period SECOORA shared approximately 94 Facebook posts and 109 Twitter "tweets", referring a combined 450 sessions to SECOORA website. Website sessions have decreased 3% in the report period (76,961 sessions to 74,750 sessions). We also launched a blog site. SECOORA newsletters, stories and videos can be accessed on our website, Facebook and Twitter
Support SECOORA/IOOS NOAA EPP Summer internship	Completed. During summer 2016, we hosted two interns (Julianna Diehl, an undergraduate student at the Maine Maritime Academy and Andrew Reid, an undergraduate student at East Carolina University. See website story on NOAA EPP

Milestones	Status
	Interns.
Coordination of SOCAN activities	Ongoing. The network via SECOORA has hired Leslie Wickes, a contractor for NOAA Ocean Acidification Program, to be the Program Coordinator for SOCAN.
Coordinate and Support Fisheries Climate Workshop	Completed.

2) Scope of Work

Scope of work remains as describeded in Year 5 descope proposal.

3) Personnel and Organizational Structure

No major changes in SECOORA personnel or organizational structure were made during this reporting period. A current list of SECOORA Members and Board is available on our website. SECOORA's Board elected new officers during this reporting period (Chair- Quinton A. White, Jacksonville University; Vice Chair – Rick DeVoe, South Carolina Sea Grant Consortium; Treasurer – George Maul, Florida Institute of Technology; Secretary – Peter Hamilton, Leidos Corporation; At Large: Jeff Copeland, WeatherFlow).

4) Budget Analysis

The FY16 SECOORA audit was conducted by the firm Elliott Davis Decoscimo, LLC and was finalized in October 2016. There were no negative findings. SECOORA's October 31, 2016 financial report shows a budget balance remaining of approximately $150K (Year 4 funds) and a budget balance remaining of approximately ~$640K (Year 5 funds). We are within budget and on track with spending the remainder of the award. SECOORA continues to receive invoices regularly from our sub-awardees and we process them at one of two bi-monthly administration meetings. All invoices are paid within forty-five days. SECOORA continues to draw from ASAP monthly. As a reminder SECOORA pays out its monthly operational costs (i.e. payroll, etc.) and then conducts the ASAP draws in the middle of the following month for both the preceding month's operation expenses and the sub-awardee invoices.

SECOORA: IOOS Asset Inventory v1.0 template (Year 5 AwardNNA11NOS0120033)																	
Terms	Station ID	Station Long Name	Station Description	Station WMO ID	Station Location Lat	Station Location Lon	RA/Federal Affiliation	Platform Type	Instrument Type	Time Period	Platform Maintainer	Platform Operator	Operator Email	Operator Sector	Variable Names	Variable Units	Altitude/Depth Units (m)
	lej3	Onslowbay Outer, NC	Onslowbay Outer	41064	34.2071	-76.949	SECOORA/CDIP(Waves)	Buoy	Mooring	2016-12-13T11:08:00Z	University of North Carolina, Wilmington	University of North Carolina, Wilmington	jbortoni@uncw.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity', 'Water Temperature']	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C']	Winds: 2.95m (above sea level); Air temperature, pressure and humidity: 2.79m above sea level; Water temperature and Salinity: 1m below sealevel
	cap2	Capers Island Buoy 2	Capers Island Buoy 2	41029	32.8028	-79.6236	SECOORA	Buoy	Mooring	2016-12-13T11:08:00Z	University of North Carolina, Wilmington	University of North Carolina, Wilmington	jbortoni@uncw.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity', 'Water Temperature']	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C']	
	frp2	Fripp Island Bouy 2	Fripp Island Bouy 2	41033	32.277	-80.4077	SECOORA	Buoy	Mooring	2016-12-13T11:08:00Z	University of North Carolina, Wilmington	University of North Carolina, Wilmington	jbortoni@uncw.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity', 'Water Temperature']	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C']	
	lim3	Wrightsville Beach Buoy 3	Wrightsville Beach Buoy 3	41037	33.9886	-77.361	SECOORA	Buoy	Mooring	2016-12-13T11:08:00Z	University of North Carolina, Wilmington	University of North Carolina, Wilmington	jbortoni@uncw.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity', 'Water Temperature']	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C']	
	lim2	Wrightsville Beach Buoy 2	Wrightsville Beach Buoy 2	41038	34.1418	-77.7187	SECOORA/CDIP(Waves)	Buoy	Mooring	2016-12-13T11:08:00Z	University of North Carolina, Wilmington	University of North Carolina, Wilmington	jbortoni@uncw.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity', 'Water Temperature']	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C']	
	sun2	Sunset Beach Buoy 2	Sunset Beach Buoy 2	41024	33.8427	-78.4932	SECOORA	Buoy	Mooring	2016-12-13T11:08:00Z	University of North Carolina, Wilmington	University of North Carolina, Wilmington	jbortoni@uncw.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity', 'Water Temperature']	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C']	
	C10	WFS Central Buoy, 25m Isobath	WFS Central Buoy, 25m Isobath	42013	27.17300000	-82.92400000	SECOORA	Buoy	Mooring	2016-12-13T10:35:00Z	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	jlee@mail.usf.edu;	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity', 'Water Temperature', 'Longwave Radiation', 'Shortwave Radiation', 'Current Speed', 'Current Direction')	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C','W/m^2','W/m^2','cm/s','degT')	Winds: 3.1m; Airtemperature, radiation and Humidity: 1.98m; Air pressure: 1.93m (all above sea level); Water Temperature and Salinity (1m, 10m, 19m)
	C12	WFS Central Buoy, 50m Isobath	WFS Central Buoy, 50m Isobath	42022	27.50400000	-83.74100000	SECOORA	Buoy	Mooring	2016-12-13T10:35:00Z	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	jlee@mail.usf.edu;	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity','Water Temperature', 'Current Speed', 'Current Direction')	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C','cm/s','degT')	Winds: 3.1m; Airtemperature and Humidity: 1.98m; Air pressure: 1.93m (all above sea level); Water Temperature and Salinity (1m, 20m, 30m)
	C13	WFS South Buoy, 50m Isobath	WFS South Buoy, 50m Isobath	42023	26.01000000	-83.08600000	SECOORA	Buoy	Mooring	2016-12-13T10:35:00Z	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	jlee@mail.usf.edu;	Academic	['Air Pressure', 'Air Temperature', 'Humidity', 'Wind Speed', 'Wind Direction', 'Salinity','Water Temperature', 'Current Speed', 'Current Direction')	['mb','deg C','%','m/s', 'degrees', 'ppt','deg C','cm/s','degT')	Winds: 3.1m; Airtemperature and Humidity: 1.98m; Air pressure: 1.93m (all above sea level); Water Temperature and Salinity (1m, 20m, 30m)
	SHPF1	Shell Point, FL	Shell Point, FL	SHPF1	30.06011667	-84.2905	SECOORA	Shore station	Coastal Tower	2016-12-13T07:54:00Z	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	mluther@usf.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity','Wind Speed', 'Wind Direction', 'Water Level')	['mb','deg C','%','m/s', 'degrees', 'm')	Winds: 12.5m; Air Temperature and Humidity: 5m ; Air Pressure: 1.5m (All sensors are above MSL)
	ARPF1	Aripeka, FL	Aripeka, FL	ARPF1	28.433	-82.667	SECOORA	Shore station	Coastal Tower	2016-12-13T09:54:00Z	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	mluther@usf.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity','Wind Speed', 'Wind Direction', 'Water Level')	['mb','deg C','%','m/s', 'degrees', 'm')	Winds: 11.3m; Air Temperature, Humidity and Air Pressure: 2.9m (All sensors are above MSL)
	FHPF1	Fred Howard Park, FL	Fred Howard Park, FL	FHPF1	28.15325	-82.80115	SECOORA	Shore station	Coastal Tower	2016-12-13T09:54:00Z	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	mluther@usf.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity','Wind Speed', 'Wind Direction', 'Water Level')	['mb','deg C','%','m/s', 'degrees', 'm')	Winds: 11m; Air Temperature, Humidity and Air Pressure: 4m (All sensors are above MSL)
	CLB	Clam Bayou, FL	Clam Bayou, FL	In Process to get WMO ID assigned	27.73608333	-82.69173333	SECOORA	Shore station	Coastal Tower	2016-12-13T10:48:00Z	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	mluther@usf.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity','Wind Speed', 'Wind Direction', 'Water Level', 'Dissolved Oxygen', 'pH', 'Salinity', 'Chlorophyll Concentration', 'Water Temperature')	['mb','deg C','%','m/s', 'degrees', 'm','mg/l','pH','ppt','m','ug/l', 'deg C')	Winds: 11.2m; Air Temperature, Humidity and Air Pressure: 11m; Water Temperature 1m (Below MLLW) and all other sensors above MSL
	BCPF1	Big Carlos Pass, FL	Big Carlos Pass, FL	BCPF1	26.40448333	-81.881	SECOORA	Shore station	Coastal Tower	Station refurbished (Will become available next reporting period)	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	mluther@usf.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity','Wind Speed', 'Wind Direction', 'Water Level')	['mb','deg C','%','m/s', 'degrees', 'm')	Winds: 18.5m; Air Temperature, Humidity and Air Pressure: 14.5m (All sensors are above MSL)
	NFBF1	Northwest Florida Bay, FL	Northwest Florida Bay, FL	NFBF1	25.084	-81.096	SECOORA	Shore station	Coastal Tower	Currently Down	University of South Florida, St. Petersburg	University of South Florida, St. Petersburg	mluther@usf.edu	Academic	['Air Pressure', 'Air Temperature', 'Humidity','Wind Speed', 'Wind Direction', 'Water Level')	['mb','deg C','%','m/s', 'degrees', 'm')	Winds: 5m; Air Temperature, Humidity and Air Pressure: 5m (All sensors are above MSL)

IOOS Asset Inventory v1.0

Readme: The definitions on this tab were not posted in the website version. These definitions need to be agreed upon before added to the next version of the inventory and posted to the website.

Terms	**Station ID**	**Station Long Name**	**Station Description**	**Station WMO ID**	**Station Location Lat**	**Station Location Lon**	**RA/Federal Affiliation**	**Platform Type**	**Instrument Type**	**Time Period**	**Platform Maintainer**	**Platform Operator**	**Operator Email**	**Operator Sector**	**Variable Names**	**Variable Units**	**Altitude/Depth Units**
Definitions	A unique identifier for a station, specified using a URN following IOOS conventions.	Long name or description; typically applied to assets, especially stations and networks of stations	Description of the station. This is realatively free form	Organization (WMO) assigns a 5-character alpha-numeric station identifier to ocean platforms reporting on the Global Telecommunication System (GTS). WMO numbers are allocated depending upon deployment area, and platform type (i.e. drifting buoys, moored buoys, ocean reference sites, and profiling floats)	Bounds for a network of stations, the point location of single stations, or a list of locations for trajectories	Bounds for a network of stations, the point location of single stations, or a list of locations for trajectories	The RA (or federal partner) with which the provider of the station data is affiliated. There are no implications from this very loose affiliation.	A term describing the type of platform that houses the sensors (e.g. buoy, shore station, etc)		Time period of the station deployment. Changes to DescribeSensor metadata should reset the time period of record. The end of the time range should indicate the time of last observation	The organization with the primary responsibiliy for the maintenance of the platorm	The organization that has primary ownership for the platform	The contact email of the station operator(s). May be the station owner as well, but an owner role is not currently specified.	Societal sector that best describes the station operator	A list of observed parameters that are associated with each station. Each station has multiple sensors, and each sensor may record one or more variables	A list of units associated with each of the observed parameters. The number of variable units should equal the number of observed parameters	The units of the altitude/depth used for sensors at a given station

Instructions:

This IOOS Observing Asset Inventory template is to be filled out annually by the IOOS Regional Associations and submitted with their December Progress report.

If an RA has published their list of assets online, they can point to this filled out template.

Including a graphic of pdf inventory with the December Progress report is not an acceptable substitution.

The template can be found at http://www.ioos.noaa.gov/regions/ra_asset_inventory_v1.0_template.xlsx

This is version 1.0 and will be updated as needed.

University of South Florida HFR Yr 5 Obs Sys Expenditures			Period of Performance:	01/01/2016 to 11/30/2016					
Expendables:	**Software:**	**Hardware:**	**Communications:**	**Facilities:**	**Labor:**	**Testing & Calibration:**	**Data Mgmt & Data Archive:**	**Transportation:**	**Travel to Working Groups & Conferences**
Replenishment of supplies (THIS MAY NOT BE NECESSARY-JH)	Costs for applications and mission software, commercial off-the-shelf software, communications software and the cost of software modifications, improvements and maintenance	Investment in durable mission hardware (sensors, platforms, information and communications technology); and modifications and maintenance to systems and mission hardware; includes engineering and off-site repairs, and unit-level replacement of persistent components	Costs associated with leased circuits, internet service, mobile phone service & telemetry required to collect data and deliver data from radar sites to regional or national servers	Costs associated with facilities and facilities infrastructure. Includes, leases and cost of utilities (power and fuel, but excluding communications costs), maintenance and repair for shelters, antenna bases, and HVAC equipment, security fencing or other security-related expenses, lightning protection, and grounds and access maintenance fees including rent.	Sum of salary, fringe benefits & their indirect costs for all field labor.	Labor and transportation costs (surface transport and days-at-sea) to test and calibrate antennas; excludes facilities, software and hardware needed for test and calibration	Cost of managing and processing radial velocity data to the point of delivery to national or regional servers, including data quality analysis and control; meta-data management and maintenance; and allocated cost of long-term data archive	Transportation costs to conduct to maintain and repair/replace radar site equipment; excludes test and calibration transport costs.	Transportation, lodging & associated travel expenses
$1,022	$2,882	$30,321	$5,217	$905	$69,104			$2,394	$2,332

University of South Carolina HFR Yr 5 Obs Sys Expenditures		**Period of Performance:**	**01/01/2016 to 11/30/2016**						
Expendables:	**Software:**	**Hardware:**	**Communications:**	**Facilities:**	**Labor:**	**Testing & Calibration:**	**Data Mgmt & Data Archive:**	**Transportation:**	**Travel to Working Groups & Conferences**
Replenishment of supplies (THIS MAY NOT BE NECESSARY-JH)	Costs for applications and mission software, commercial off-the-shelf software, communications software and the cost of software modifications, improvements and maintenance	Investment in durable mission hardware (sensors, platforms, information and communications technology); and modifications and maintenance to systems and mission hardware; includes engineering and off-site repairs, and unit-level replacement of persistent components	Costs associated with leased circuits, internet service, mobile phone service & telemetry required to collect data and deliver data from radar sites to regional or national servers	Costs associated with facilities and facilities infrastructure. Includes, leases and cost of utilities (power and fuel, but excluding communications costs), maintenance and repair for shelters, antenna bases, and HVAC equipment, security fencing or other security-related expenses, lightning protection, and grounds and access maintenance fees including rent.	Sum of salary, fringe benefits & their indirect costs for all field labor.	Labor and transportation costs (surface transport and days-at-sea) to test and calibrate antennas; excludes facilities, software and hardware needed for test and calibration	Cost of managing and processing radial velocity data to the point of delivery to national or regional servers, including data quality analysis and control; meta-data management and maintenance; and allocated cost of long-term data archive	Transportation costs to conduct to maintain and repair/replace radar site equipment; excludes test and calibration transport costs.	Transportation, lodging & associated travel expenses
$650	$400	$2,050	$1,426	$680	$15,075		$1,200	$1,110	

University of Georgia Skidaway Institute of Oceanography HFR Yr 5 Obs Sys Expenditures			Period of Performance:	01/01/2016 to 11/30/2016					
Expendables:	**Software:**	**Hardware:**	**Communications:**	**Facilities:**	**Labor:**	**Testing & Calibration:**	**Data Mgmt & Data Archive:**	**Transportation:**	**Travel to Working Groups & Conferences**
Replenishment of supplies (THIS MAY NOT BE NECESSARY-JH)	Costs for applications and mission software, commercial off-the-shelf software, communications software and the cost of software modifications, improvements and maintenance	Investment in durable mission hardware (sensors, platforms, information and communications technology); and modifications and maintenance to systems and mission hardware; includes engineering and off-site repairs, and unit-level replacement of persistent components	Costs associated with leased circuits, internet service, mobile phone service & telemetry required to collect data and deliver data from radar sites to regional or national servers	Costs associated with facilities and facilities infrastructure. Includes, leases and cost of utilities (power and fuel, but excluding communications costs), maintenance and repair for shelters, antenna bases, and HVAC equipment, security fencing or other security-related expenses, lightning protection, and grounds and access maintenance fees including rent.	Sum of salary, fringe benefits & their indirect costs for all field labor.	Labor and transportation costs (surface transport and days-at-sea) to test and calibrate antennas; excludes facilities, software and hardware needed for test and calibration	Cost of managing and processing radial velocity data to the point of delivery to national or regional servers, including data quality analysis and control; meta-data management and maintenance; and allocated cost of long-term data archive	Transportation costs to conduct to maintain and repair/replace radar site equipment; excludes test and calibration transport costs.	Transportation, lodging & associated travel expenses
$336.08		$5,666.13	$1,597.44	$2,708.20	$135,420.32			$162.80	$238.50

University of North Carolina Chapel Hill HFR Yr 5 Obs Sys Expenditures			Period of Performance:	01/01/2016 to 11/30/2016						
Expendables:	**Software:**	**Hardware:**	**Communications:**	**Facilities:**	**Labor:**	**Testing & Calibration:**	**Data Mgmt & Data Archive:**	**Transportation:**	**Travel to Working Groups & Conferences**	
Replenishment of supplies (THIS MAY NOT BE NECESSARY-JH)	Costs for applications and mission software, commercial off-the-shelf software, communications software and the cost of software modifications, improvements and maintenance	Investment in durable mission hardware (sensors, platforms, information and communications technology); and modifications and maintenance to systems and mission hardware; includes engineering and off-site repairs, and unit-level replacement of persistent components	Costs associated with leased circuits, internet service, mobile phone service & telemetry required to collect data and deliver data from radar sites to regional or national servers	Costs associated with facilities and facilities infrastructure. Includes, leases and cost of utilities (power and fuel, but excluding communications costs), maintenance and repair for shelters, antenna bases, and HVAC equipment, security fencing or other security-related expenses, lightning protection, and grounds and access maintenance fees including rent.	Sum of salary, fringe benefits & their indirect costs for all field labor.	Labor and transportation costs (surface transport and days-at-sea) to test and calibrate antennas; excludes facilities, software and hardware needed for test and calibration	Cost of managing and processing radial velocity data to the point of delivery to national or regional servers, including data quality analysis and control; meta-data management and maintenance; and allocated cost of long-term data archive	Transportation costs to conduct to maintain and repair/replace radar site equipment; excludes test and calibration transport costs.	Transportation, lodging & associated travel expenses	
$0.00	$963.90	$1,137.78	$1,940.26	$2,802.32	$44,708.83	$2,394.00	$60,143.15	$3,050.75	$327.73	as of November 30, 2016 for yr 5 of the 1st funding agreement

University of Miami HFR Year 5 Obs Sys Expenditures		Period of Performance:	01/01/2016 to 11/30/2016						
Expendables:	**Software:**	**Hardware:**	**Communications:**	**Facilities:**	**Labor:**	**Testing & Calibration:**	**Data Mgmt & Data Archive:**	**Transportation:**	**Travel to Working Groups & Conferences**
Replenishment of supplies (THIS MAY NOT BE NECESSARY-JH)	Costs for applications and mission software, commercial off-the-shelf software, communications software and the cost of software modifications, improvements and maintenance	Investment in durable mission hardware (sensors, platforms, information and communications technology); and modifications and maintenance to systems and mission hardware; includes engineering and off-site repairs, and unit-level replacement of persistent components	Costs associated with leased circuits, internet service, mobile phone service & telemetry required to collect data and deliver data from radar sites to regional or national servers	Costs associated with facilities and facilities infrastructure. Includes, leases and cost of utilities (power and fuel, but excluding communications costs), maintenance and repair for shelters, antenna bases, and HVAC equipment, security fencing or other security-related expenses, lightning protection, and grounds and access maintenance fees including rent.	Sum of salary, fringe benefits & their indirect costs for all field labor.	Labor and transportation costs (surface transport and days-at-sea) to test and calibrate antennas; excludes facilities, software and hardware needed for test and calibration	Cost of managing and processing radial velocity data to the point of delivery to national or regional servers, including data quality analysis and control; meta-data management and maintenance; and allocated cost of long-term data archive	Transportation costs to conduct to maintain and repair/replace radar site equipment; excludes test and calibration transport costs.	Transportation, lodging & associated travel expenses
$30,100			$350	$917	$45,833	$5,000	$9,000	$2,600	

SECOORA HF Radar Staffing Report (January 1 – November 30, 2016) – Year 5 Award

University of North Carolina, Chapel Hill

Total # of Radars Supported: 3

Operating Agency: University of North Carolina, Chapel Hill

Collaborators (Operational), if any: None

Staff Member	**(% FTE or #person-months)**
Principal Investigator: H. Seim	2.0
Technicians/Engineers: M. Muglia, S. Haines	(3.5,3)
Students: none	

CORDC Station Name/City/State	Latitude (N)	Longitude (W)	Nominal Frequency (MHz)
CORE/NC	34.7601	-76.4114	4.537 MHz
HATY/Buxton/NC	35.2573	-75.5200	4.575 MHz
DUCK/Duck/NC	36.1803	-75.7502	4.537 MHz

University of South Florida

Total # of Radars Supported: 5

Operating Agency: University of South Florida

Collaborators (Operational), if any: None

Staff Member	**(% FTE or #person-months)**
Principal Investigator	0
Technicians/Engineers (Cliff Merz)	8.5
Research Associate	1

Students/OPS	0

CORDC Station Name/City/State	Latitude (N)	Longitude (W)	Nominal Frequency (MHz)
Redington, FL (RDSR)	27.8325	-82.8344	4.9
Venice, FL (VENI)	27.0776	-82.4516	4.9
Naples, FL (NAPL)	26.1622	-81.8105	4.9
Ft. De Soto, FL (FDS)	27.6358	-82.7381	12.7
Venice, FL (VEN)	27.0756	-82.4511	12.7

University of Miami

Total # of Radars Supported: 3(4)

Operating Agency: University of Miami

Collaborators (Operational), if any: None

Staff Member	**(% FTE or #person-months)**
Principal Investigator L. K. (Nick) Shay	0.42
Technicans/Engineers Jorge Martinez	4.6
Students None	

CORDC Station Name/City/State	Latitude (N)	Longitude (W)	Nominal Freque
Virginia Key, Miami, FL	25.7413	-80.1465	12.70 MHz
Dania Beach, FL	26.0833	-80. 1166	12.70 MHz
Crandon Park, Miami, FL	25.6735	-80.1710	16.04 MHz
Turkey Point, Homestead, FL	25.4366	-80.3269	12.70 MHz

University of South Carolina

Total # of Radars Supported: 2

Operating Agency: University of South Carolina

Collaborators (Operational), if any: None

Staff Member	**(% FTE or #person-months)**
Principal Investigator: *George Voulgaris*	1.00
Technicians/Engineers: *William (Jeff) Jefferson*	3.00
Students: *Douglas Cahl*	10.5

CORDC Station Name/City/State	Latitude (N)	Longitude (W)	Nominal Frequency (MHz)
CSW / Caswell Beach / NC	33.8892	78.0258	8.3
GTN / Georgetown / SC	33.3561	79.1528	8.3

University of Georgia Skidaway Institute of Oceanography (SKIO)

Reporting Period: Jan 1 2016 – Nov 30, 2016

Total # of Radars Supported: 2

Operating Agency: SKIO

Collaborators (Operational), if any: None

Staff Member	**(% FTE or #person-months)**
Principal Investigator (Dana Savidge)	
Technicians/Engineers (Trent Moore)	1.5
Research Associate (Julie Amft)	3.75
Students/OPS	

CORDC Station Name/City/State	Latitude (N)	Longitude (W)	Nominal Frequency (MHz)
Jekyll Island, GA	31.06	-81.41	8.3
St. Catherine, GA	31.69	-81.13	8.3

Region	Username	Operator	Glider Name	Deployment Name	Sea Name	Deployment Start	Deployment End	Glider-days in 2016* reported to the glider DAC by glider operators or data providers in your RA. (Note: Glider-day = 1 glider in the water collecting data for 1 day)
SECOORA								
							Total	**0**

IOOS RA Glider Use Information for 2008 - 2015

Questions	How many glider-days of data were collected annually in 2008 -2015 (Report by year) by glider operators in your RA? Glider-day = 1 glider in the water collecting data for 1 day		Of the glider-days reported, how many were completed outside of the EEZ?	Of the glider-days reported, how many were supported by IOOS? Consider only operations and maintenance, not capital costs	Comments/Notes
AOOS	2008	47	0	0	
	2009	45	0	0	
	2010	132	0	0	
	2011	74	0	0	
	2012	14	0	0	
	2013	44	0	0	
	2014	183	0	32	
	2015	59	0	59	
CeNCOOS	2008	6	0	0	
	2009	5	0	0	
	2010	29	0	0	
	2011	0	0	0	
	2012	57	0	35	
	2013	246	0	0	
	2014	366	88	353	
	2015	492	N/A	298	
GCOOS	2008	0	0	0	
	2009	78	0	0	
	2010	118	0	0	
	2011	59	0	0	2013: Used 2012 days +10% for GERG
	2012	62	0	29	
	2013	68	0	29	
	2014	263	0	35	
	2015	318	0	2	
GLOS	2008	0	0	0	
	2009	0	0	0	
	2010	0	0	0	
	2011	41	0	0	Used 2012 days for 2013
	2012	58	0	58	
	2013	58	0	58	
	2014	149	0	149	
	2015	80	0	19	
MARACOOS	2008	604	226	40	
	2009	760	413	60	
	2010	877	194	353	
	2011	624	353	99	2013: Includes all regions for Gliderpalooza, not OTN
	2012	818	477	74	
	2013	978	338	102	
	2014	404	115	52	
	2015	1020	723	131	
NANOOS	2008	422	0	0	
	2009	325	0	28	
	2010	650	102	85	
	2011	1078	78	224	
	2012	641	112	76	
	2013	2151	1644	335	
	2014	645	104	231	
	2015	431	90	182.5	
NERACOOS	2008	78	0	0	
	2009	78	0	0	
	2010	78	0	0	2013: Gliderpalooza and WHOI days included in SCCOOS and MARACOOS
	2011	0	0	0	
	2012	78	0	0	
	2013	0	0	0	
	2014	52	0	0	
	2015	42	0	0	
PacIOOS	2008	450	0	56	
	2009	510	0	59	
	2010	500	0	201	
	2011	690	0	99	
	2012	600	0	86	
	2013	427	0	93	
	2014	236	0	0	
	2015	186	0	0	
SCCOOS	2008	2406	664	253	
	2009	2943	719	190	
	2010	2589	1033	351	
	2011	3094	1232	350	
	2012	3765	1204	357	
	2013	3665	1556	360	
	2014	1584	0	365	
	2015	2164	868	N/A	
SECOORA	2008	0	0	0	
	2009	0	0	0	
	2010	0	0	0	
	2011	80	0	0	
	2012	199	0	0	
	2013	10	0	13	
	2014	22	0	7	
	2015	0	0	0	
	2016	0	0	0	
CariCOOS	2008	0	0	0	
	2009	0	0	0	
	2010	0	0	0	
	2011	0	0	0	
	2012	0	0	0	2014: AOML Days
	2013	0	0	0	
	2014	250	0	0	
	2015	383	0	383	
IOOS	2008	4013	890	349	
	2009	4744	1132	337	
	2010	4973	1329	990	
	2011	5740	1663	772	
	2012	6292	1793	715	
	2013	7647	3538	990	
	2014	4154	307	1224	
	2015	5546	1681	1015	
	2008 - 2015	43109	12333	6392	