

Products and Services

Marine Operations and Coastal Hazards

Maritime Operations - Vessels

USER NEED	PRODUCTS / SERVICES	A O O S	C A R A	C e N	G C	G L O S	M A R A	N A N	N E R A	P A C	S C C	S E C
Safe and efficient coast and ocean transit--shipping, fishing, recreation, ferries--scheduling, routes, etc.	Wind, wave, current conditions, nowcasts and forecasts for coast and open ocean, Great Lakes											
	Visualization tools combining obs and forecasts with bathymetry, nav charts, AIS tracking of vessels											
	Data/model output delivery via key existing systems (PORTS, E-NAV, AIS, portable units, etc)											
Safe passage into and inside ports, harbors, passages—scheduling, routes, keel clearance, loads, pilot boarding decisions, port status designations, etc.	Real-time high resolution obs/models of waves, surface and subsurface currents, winds, water level, density near and in major ports, harbors, passages											

Maritime Operations – Search and Rescue

USER NEED	PRODUCTS / SERVICES	A O S	C A R A	Ce N	G C	G L O S	M A R A	N A N	N E R A	P A C	S C C	S E C
<p>Where to focus search efforts, and optimize safety and efficiency of ops</p>	<p>Wind, wave, current conditions, nowcasts and forecasts, formatted for input into tactical SAR decision tools</p>											
	<p>Surface currents-- visualizations, assimilation into models, incorporation into interactive particle trajectory tools and TDAs</p>											

Maritime Operations – Spill Response

USER NEED	PRODUCTS / SERVICES	A O O S	C A R A	Ce N	G C	G L O S	M A R A	NA N	N E R A	P A C	S C C	S E C
Rapid effective response to spills, including decisions re type and location of containment, clean up and wildlife rescue	Winds, waves, currents, obs and forecasts formatted and delivered to responders and NOAA spill modelers											
	Spill trajectory tools											
	Satellite imagery to further define event											
	Subsurface oil distributions, water quality											
Determine where oil, tar balls, etc originated	Hindcast trajectories											

Maritime Operations – Offshore Energy

USER NEED	PRODUCTS / SERVICES	A O S	C A R A	Ce N	G C	G L O S	M A R A	N A N	N E R A	P A C	S C C	S E C
Assess conditions for feasibility and cost-effectiveness of energy generation; compare alternative locations	Wind, wave, and/or current climatologies											
Maximize efficiency and safety of energy ops	Real-time and forecast winds, waves, currents											

Coastal Hazards

USER NEED	PRODUCTS / SERVICES	A O S	C A R A	Ce N	G C	G L O S	M A R A	N A N	N E R A	P A C	S C C	S E C	
Emergency response--timely hazard and disaster information to coastal communities to protect public and infrastructure	Improved forecasts of extreme weather events, storm surges and erosion events; includes water level and wave observations and inundation and wave forecasts												
	Rip current forecasts												
Planning and permitting for development, protection of shoreline and natural resources	Maps showing shoreline migration rates, LIDAR products, long-term sea level measurements												

Linking User Needs to Assets

User need/goal	Products & services	Variables	Platforms & models
Marine Ops-Vessels			
Safe and efficient coast and ocean transit--shipping, fishing, recreation, ferries, etc. – scheduling, routes, etc.	Wind, wave, current conditions, nowcasts and forecasts for coast and open ocean, Great Lakes	<ul style="list-style-type: none"> • wind • waves • currents 	<ul style="list-style-type: none"> • shore stns, moorings, satellites, models • moorings, bottom mnts, satellites, models • moorings, HF radar, bottom mnts, models
Safe passage into and inside ports, harbors, passages— scheduling, routes, keel clearance, loads, pilot boarding decisions, port status designations	High resolution observations and models of waves, currents, winds, water level, density near and in major ports, harbors, passages	Row 1 at high res, spatially discrete areas, plus <ul style="list-style-type: none"> • water level • density (from T/S) • bathymetry • vessel path/speed 	Row 1 minus satellites <ul style="list-style-type: none"> • shore stations, bottom mnts • shore station, moorings • LiDAR (various), vessels, PWCs • AIS, HF radar?

Beyond the Common Elements

Other
regional
products



AOOS—ice forecasts



PacIOOS--
optimal ship
routing tool



MARACOOS/NERACOOS
Detect whale locations

New/innovative
products

Discussion Questions

- Identify commonalities across regions--are there other common products that should be added to national synthesis list?
- What other key regional differences and new/innovative products should be considered in synthesis?
- Describe end-to-end system requirements to deliver products
- What are the next steps needed to move the synthesis forward?

