



# METOC | METEOROLOGY & OCEANOGRAPHY

## CAPABILITIES



**METOC capabilities measure, sense, assess, and exploit the current and predicted states of the physical environment to produce relevant operational information for Warfighters.**

### METOC FoS

Meteorology and Oceanography  
Family of Systems

**The METOC Family of Systems (FoS) is the Navy and Marine Corps' predictive capability that provides real-time, integrated exploitation of the physical environment**

### NITES-Next

Naval Integrated Tactical  
Environmental System  
Next Generation

**Sailors must predict the environment to know the impact of their operation**

- One-stop-shop of tools and tactical decision aids on-site meteorologists and oceanographers use to develop forecasts and predict impact to electromagnetic-spectrum propagation and Naval operations
- Fuses atmospheric, oceanographic, and solar-lunar data to determine the effect of the physical environment on air, surface, and subsurface platforms and their associated weapons systems' ability to execute missions
- Navy C4I Enterprise processing, exploitation, and dissemination software tool hosted and operating on CANES hardware; accesses organic METOC data and global information produced by military METOC information centers
- Software-centric IT streamlining program executes agile software development to ensure flexibility in meeting emergent requirements and addressing Fleet user priorities

### METMF(R) NEXGEN

Meteorological Mobile  
Facility Replacement  
Next Generation

**Continuous operation and worldwide deployment help Warfighters navigate dynamic battlespace conditions**

- Compact, HMMWV-mounted mobile forecast system characterizes the current and future battlespace
- Hosts a radar, sensors, computing equipment, and forecasting tools that collect, process, and transmit METOC data, which impacts mission effectiveness and weapons system performance
- C2 equipment processes data on site; reaches back to CONUS military weather authorities for global-scale analysis

### HWDDC

Hazardous Weather  
Detection and Display  
Capability

**Weather radar operators look for the optimal conditions to conduct missions**

- Extracts and converts data from surveillance radars to generate weather situational awareness
- Organically detects and displays storm cell movement, precipitation intensity, radial winds, & atmospheric turbulence
- Off-boards data to the Fleet Numerical Meteorology and Oceanography Center to directly influence regional weather prediction models and enhance real-time operations analysis

### LBS-UUV FoS

Littoral Battlespace Sensing -  
Unmanned Undersea Vehicles

**Enables undersea dominance in support of anti-submarine warfare, mine countermeasures, & special operations**

- LBS-Gliders (LBS-G) provide long endurance sensing of ocean thermal and visible light transmission properties critical to weapon and sensor performance, planning, and execution
- Self-positively and -negatively buoyant; along the path, LBS-G measure temperature, salinity, and pressure to determine sound speed in the ocean
- LBS-Autonomous Undersea Vehicles (LBS-AUV) provide battlespace awareness of the undersea environment; LBS-AUV expand sensing capabilities in contested areas to ensure access and reduce risk in Fleet operations
- LBS-AUV collect high-resolution bathymetric and bottom imagery for use in undersea warfare planning/execution and safety of navigation

### POPS-OIS

Primary Ocean  
Prediction System -  
Oceanographic  
Information System

**Supercomputer fuses worldwide METOC data to feed numerical weather prediction models**

- The Fleet Numerical Meteorology and Oceanography Center (FNMOC) in Monterey, CA and the Naval Oceanographic Office (NAVO) at the Stennis Space Center in Mississippi are strategic repositories for Navy METOC data; they receive and process bulk observation data and run cyber secure numerical prediction models for Fleet use. NITES-Next and METMF(R) NEXGEN retrieve data from these ashore commands; LBS-UUV FoS and HWDDC deliver data to them
- OIS sustains global oceanographic and hydrographic surveying; POPS is the IT infrastructure providing environmental prediction across multiple classification enclaves for geophysical data the Navy collects, processes, and distributes