

PATHFINDER TRACKING BUOY

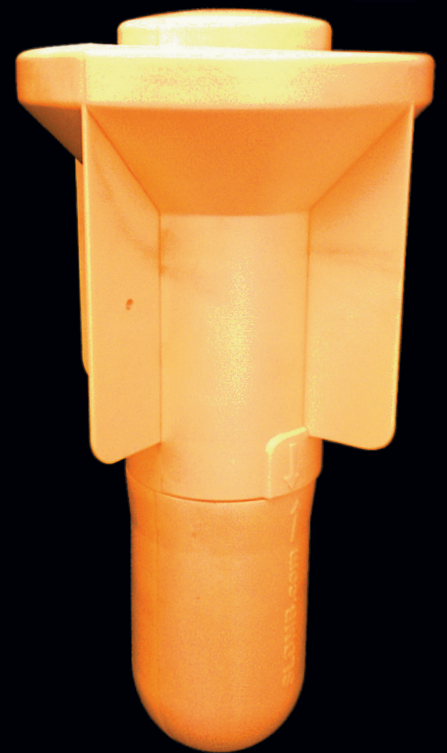
The Pathfinder surface current drifter buoy is a rapid response, Self-Locating Datum Marker Buoy (SLDMB) It is equipped with a GPS sensor and Iridium satellite telemetry to provide near real-time ocean drift data. The Pathfinder is designed to be operational for a minimum of twenty-one (21) days after deployment. The compact size and robust design of the Pathfinder make it easy to deploy from small boats, off rigs and from aircraft. Data consisting of drifter position, date and time is usually available to the user within four to eleven minutes of activation, with updates ranging from every 15 minutes to every hour, depending on the stage of deployment.

TYPICAL USES

- Maritime search planning
- Oil spill tracking
- Operational ocean forecasting
- Tracking elements in the water (algae / harmful algal blooms, pollutants, chemicals, biological materials, debris)
- Outfall / Effluent studies
- Contaminant tracking
- Meteorology / Weather forecasting
- Circulation pattern studies
- Climate studies / forecasting
- Water quality studies
- Current studies
- River / harbour water flow studies
- Calibration / Validation / data assimilation

PATHFINDER FEATURES

- Re-usable
- Robust compact design
- Drop launch from up to 50 meters height
- Easy on/off operation
- Weight: 3.7 kg
- Compact dimensions
- Diameter 17.8 cm, height 40.6 cm
- Buoy range: Global
- Battery lifetime: minimum 21 days of reporting
- Rapid response mode
- Low-cost global telemetry solution
- Un-attended operations



OPERATIONAL OVERVIEW

After activation the Pathfinder drifter is deployed in the ocean and drifts with the surface currents over a period of hours, days, or weeks. The drifter acquires a geographical coordinate fix via its global positioning system (GPS) at regular intervals. It uses the Iridium Satellite telemetry to transmit this location anywhere in the world and accessible via Fastwave's online tracking system. The Pathfinder goes into sleep mode until the next scheduled reporting time, thus extending battery life.

Once deployed, the surface current drifter buoy will begin transmitting in "RAPID RESPONSE" mode sending positional messages every fifteen (15) minutes for the first twenty-four (24) hours, then every thirty (30) minutes for the next forty-eight (48) hours. After the first seventy-two (72) hours of operation, the drifter buoy will enter "STANDARD" mode, where the unit transmits hourly until recovered or the batteries expire.

The Pathfinder design allows for indefinite storage life of the buoy and standard storage life for the D-cell batteries.

The Pathfinder drifter design provides excellent coupling to the surface current layer providing the true total water surface current. The drifters are small, light and optimised for simple and safe activation and deployment, allowing drifter launch and retrieval by one person. The only requirement is to connect the battery pack, close the hull, check for the activation message, and then throw it overboard.

Surface current data provided by these drifters are useful in current measurements, floating debris or oil spill tracking, operational ocean forecasting, search area definition calculations, real-time data assimilation into operational ocean current modelling, ocean model validation and similar analyses.

Traditionally, oil spill monitoring is done by helicopters, airplanes and ships. Decision makers are in need of in-situ information in order to make the correct decisions and prevent environmental damage. The drift of the oil spill is influenced by surface winds, tides and ocean currents. A Pathfinder surface current drifter buoy used to track oil spills during response operations provides the decision makers with real-time accurate information related to speed, position and direction of the pollutant.

