

# Environmental Monitors on Lobster Traps & Large Trawlers (eMOLT)

## Telemetered-bottom-temperature system

The current system consist of four parts:.



1) The foot-long **wireless temperature & depth probe** (pictured in the hands of Captain Jon on F/V Linda Marie) is secured to the doors with a pair of 2" by 1/4" stainless bolts. This unit, recently engineered by Nick Lowell in Falmouth, MA, also measures tilt/angle but we have not yet incorporated that part of the data stream in our processing routines. The probe collects data up to six months on the same battery charge. We do not attempt to observe the entire water column but instead focus on bottom temperatures.

2) The second component of the system is a **micro computer** with a 7" screen that is mounted in the wheelhouse. As the probe comes on deck, this computer automatically downloads the data via a

bluetooth connection, saves any data with specific time and depth ranges, plots the results for the fisherman, calculates trawl statistics, and relays the statistics to a hard-wired satellite transmitter mounted above the wheelhouse.

A USB GPS recorder stamps the raw data filenames with latitude and longitude. The same Python program that does the processing optionally uploads the raw



data whenever a wifi-connection is detected. So, if we are using the fishermen's smartphone for this operation, we need to conduct a one-time test on installation and hope he occasionally enables the phone's hot spot while back at the dock.

3) The **satellite transmitter** on top of the wheelhouse accepts our external sensor data through an RS485 port and transmits several

numbers at a time. In the future, if the fishermen wanted to enter other data such as catch and have it transmitted this is certainly a possibility.

