Balearic Islands Coastal Observing and Forecasting System

GF-MR-0002

Post Mission Report

'First Seaglider Water Test'

Team Leaders

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Launch date	11/11/2011
Launch location	Andratx Harbour
Glider	541-sdeep03 iRobot Seaglider 1KA
Duration of mission	1 day
Recovery location	Andratx Harbour

1.0 Plan

1.1 Operations

Check the operability of the Seaglider using the Rodman vessel and make all the field team familiar with the Seaglider operation dynamics.

1.2 Piloting and Technical

Launch a dive to 20 meters with a string attached to the glider for security. Visually check sdeep03 ballasting is correct (i.e. water line just below the rudder when in maximum buoyancy). Let the glider transfer files to SOCIB basestation. Be able to plot piloting results.

1.3 Scientific

Be able to plot scientific results and check sensor data makes sense.

2.0 Events

2.1 Operations

The Seaglider always needs two persons to be transported. In the vessel, the antenna mast complicates launch, recovery and glider storage. Doing the selftest on board needs the glider to be attached properly and is not very practical. Launch and recovery are done from the side of the vessel and not from stern. To do so, a rope is attached to the crate handle closer to the seagliders bow and the vessel's roof structure is used as a pulley (see Fig. 1). Two persons can perform this launch/recovery operation but a third is advisable.

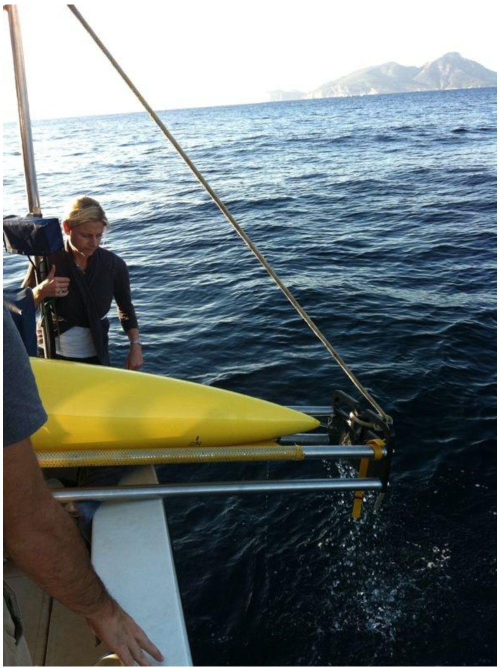

Fig. 1: Seaglider launch and recovery system

2.2 Piloting and Technical

A selftest at the deck calling SOCIB’s basestation at IMEDEA confirms the basestation is not operative and still needs tuning. iRobot’s Basestation will be used for the rest of the mission. The selftest reports no errors and the glider is ready for deployment.

Diving to 20 meters is not possible due to bad weather and rough sea outside the harbor. Having the bottom at 18 meters, a 7 meter dive is programmed. The glider is launched and shows its good ballasting (Fig. 2). The glider dives to 4 meters, surfaces and sends the data to the basestation. The data is correct and piloting plots are obtained (Fig. 3).

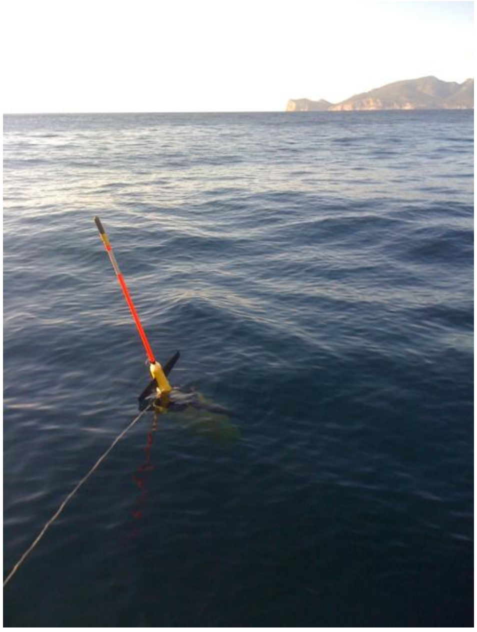

Fig. 2: sdeep03 ballast

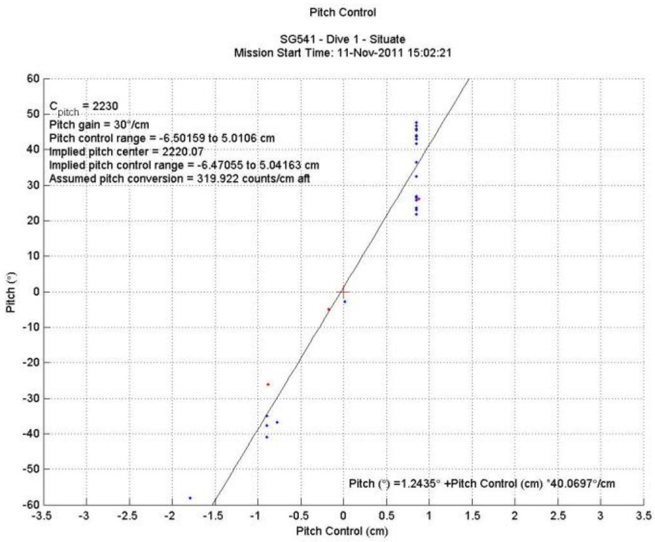

Fig. 3: Pitch control plot

2.3 Scientific

All sensors (CTD, FLNTU, Aanderaa) are set to sample at 0,2 Hz. The transferred files can be plotted and show reasonable data (Fig. 4).

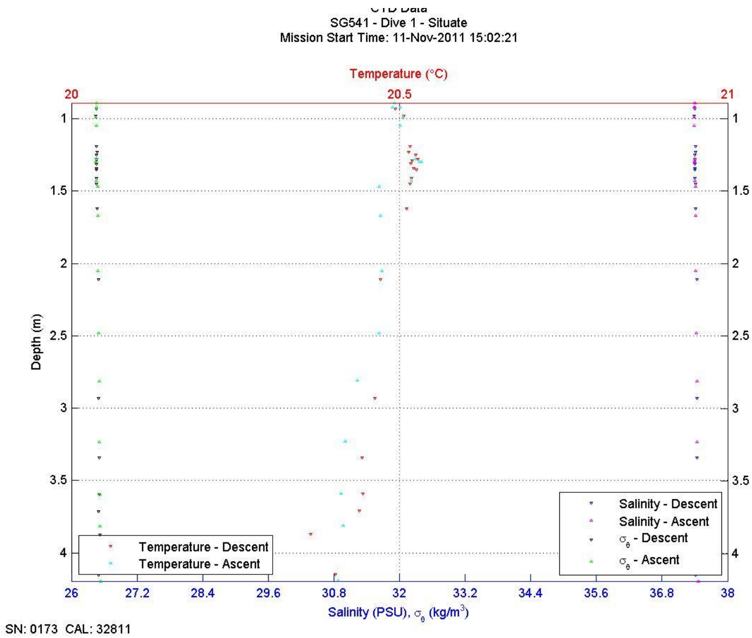

Fig. 4: CTD sensor data

3.0 Results

3.1 Operations

The crate needs wheels so that one person can manipulate the seaglider.
iRobot offers shorter antenna masts (50cm shorter approx.) and its purchase will be studied to ease manipulation.
Unless the deployment is far from the coast, the selftest and sealaunch can be done at deck.
A Zodiac type vessel is more convenient for the deployments. However, the procedure used worked out.

3.2 Piloting and Technical

SOCIB basestation needs to be confirmed as an operational server which it is not yet.
The glider is correctly ballasted.
The plotting is straightforward and correct.

3.3 Scientific

Results look coherent.