# Glider Mission Summary Report

CAMPAIGN 2016
SOCIB GLIDER FACILITY
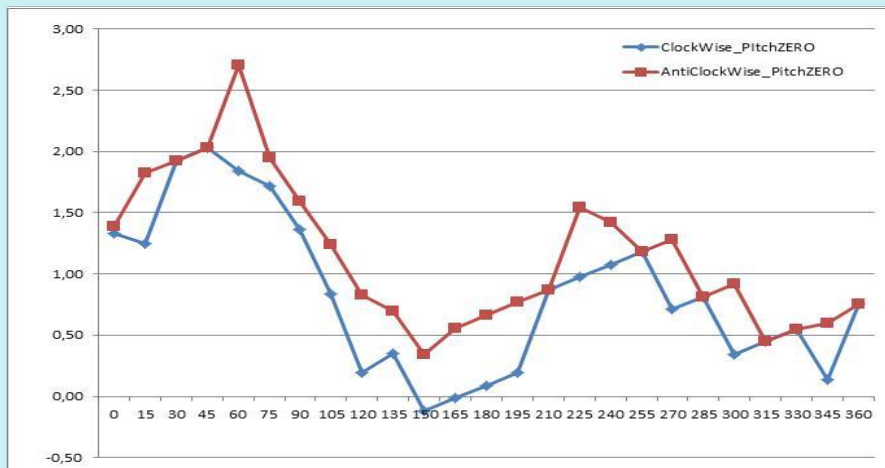
*SOCIB_CANALES_NOV2016 (GF-MR-0051)*

**SOCIB**

Balearic Islands
Coastal Observing
and Forecasting
System

GOBIERNO DE ESPAÑA MINISTERIO DE ECONOMIA Y COMPETITIVIDAD

**Govern de les Illes Balears**

CSIC

Universitat de les Illes Balears

IMEDEA

| | | | |
|---|---|---|---|
| **Mission Name** | *SOCIB_CANALES_NOV2016 (GF-MR-0051)* | | |
| **Platform Model** | *Slocum 1000 G1* | | |
| **Platform ID / Name / WMO Code** | *U132 / IDEEP02 / 68966* | | |
| **Related Platforms / Missions** | *None* | | |
| **Start Date** | *2016-10-28* | | |
| **End Date** | *2016-12-15* | | |
| **Total Days** | *48.2* | **Total distance (Km / Nm)** | *918 / 495* |
| **Survey Area** (NODC or SDN region) | *Mallorca and Eïvissa Channels (Western Mediterranean Sea)* | | |
| **Objective(s)** | • *Establishing the variability of the N/S exchange of water masses that occur through the Ibiza Channel(IC). Sampling standard transects across the Ibiza Channel several times using physical and biogeochemical sensors. No greater than 1 month gap in between consecutive iterations. The Mallorca Channel is also sampled when operationally practical.* | | |
| **Scientific Sensors** (name & model / serial_number / calibration date) | • *CTD -SBE- / sn 0129 / 25/07/2014* <br> • *FLNTU -WetLabs- / sn 3710 / 09/01/2014* <br> • *OPTODE -Aandera- / sn 993 / 23/10/2009* <br> *(calibration sheets available upon request to glidertech@socib.es)* | | |
| **Number of Profiles** | *2276 (CTD), 440 (FLNTU), 440 (OXY)* | | |
| **Significant Events** | • *Dual operation* <br>   ○ *recovery (GFMR0050 - sdeep04)* <br>   ○ *deployment(GFMR0051 - ideep02)* <br> • *Fail on deployment due to bad ballasting* <br>   ○ *1st try 26/10/2016* <br>   ○ *2nd try 28/10/2016* <br> • *Hard currents during Eivissa channel* <br> • *Significant number of incomplete RT files* <br> • *Malfunction on SCI-bay on 15-Dec-2016, 191 oddities raised, no data lost* <br> • *Premature recovery due to thermal-valve leak* | | |
| **Mission Summary** | *Preparation phases were executed between 10/10/2016 to 26/10/2016* <br><br> *All the checks and configurations were undertaken according to the pre-mission-report and applicable protocols. There were neither relevant issues nor problems worth to be mentioned here. Compass error was measured in a EMI-free forest location (max. error = 2,70 deg), loaded with Saft lithium batteries (310Ah).* <br><br>  <br> *Fig 1.1- Error measured during Compass Error Check procedure in an electromagnetic-field-free environment located in a forest close to IMEDEA (in Esporles)* | | |

*Fig 1.2- Dual field operation*

*Launching operation*

*First try on 26/10/2016 unsuccessful due to bad ballasting.*

*Second try (28/10/2016) was executed by 1 ETD and 1 GF facility members on board SOCIB I. Glider was released in N 39°29.9290' E 02°10.0004' at 09:03:09-utc. The deployment was an operative and tactical success (environmental conditions were very good). Pilot was onshore. Glider executed successful test dives prior to the first survey dive.*

*Altimeter test was executed on Sdeep04 (Unit 567) during second deployment day.*

*During Mission*

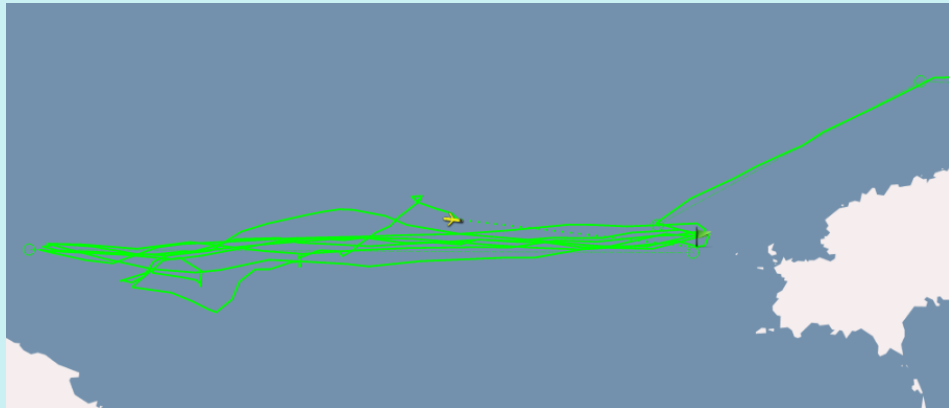*Strong currents during all mission, specially located in Eivissa Channel*



*Fig 1.3. Strong currents*

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*27/11/2016 Thermal-valve leak. This behavior started on 27/11/2016, and stayed until recovery day. At the beginning, glider didn't raise oddities. From that day forward and deep waters, increases oddities per time.*



*Fig 1.4. Thermal valve leak*

*Sampling: Science-payload was correctly turned-on and off accordingly to the behavior of the glider executed at all moments during the mission.*

*Recovery operation*

*(15/12/2016) was executed by 1 ETD and 1 GF facility members on board SOCIB I. Before operation starts, glider surfaced at 9.00am UTC. Glider was recovered in N 39°02.2177' E 00°44.7490' at 14:59:55-utc.*

*After recovery operation, field team decided not return to Calanova due to sea conditions and sunrise proximity. They decided stay in Sant Antoni.*

| Principal Investigator (e-mail or contact phone/address) | • *Prof. Joaquim Tintoré* *jtintore@socib.es (+34 971439821)* |
|---|---|
| **Institute** | *SOCIB in collaboration with IMEDEA* |
| **Project Affiliation** (web-site) | *http://www.socib.eu* |
| **Partnership / Participation** | • *SOCIB* • *IMEDEA (in-kind contribution of infrastructures)* |
| **Glider Software Version** | *Nav : v7.14 Acomms, Payload: 3.18* |
| **Data Retrieval** (real-time [ RT ] / delayed-mode [ DM ] ) | • *RT: sub-set via satellite link every 6 hours every day.* • *DM: direct download of full gathered data sets (flash-cards backup)* |
| **Compass Calibration** (specify procedure) | *Compass error was measured. Observed error suggests re-calibration is not needed. Deviation in Navigation is considered a consequence of strong currents though (See Figure 1.1)* |
| **Battery Type** | *Saft lithium batteries (310Ah-nominal capacity)* |
| **Battery Consumption (Ah)** | *230,4Ah (reading from 4,5 to 234,9Ah)* |
| **Data Available From** | *http://thredds.socib.es/thredds/catalog/auv/glider/ideep02-ime_sldeep002/catalog.html* |
| **Further Details** | *glidertech@socib.es* |

**Figure 1**

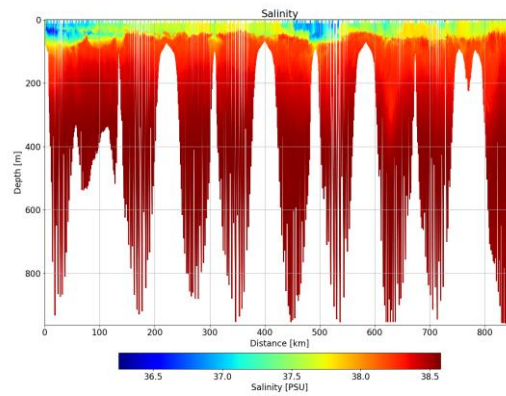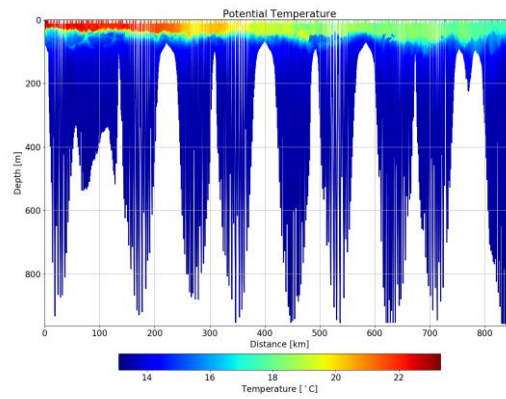(Map providing general overview of Survey Area)
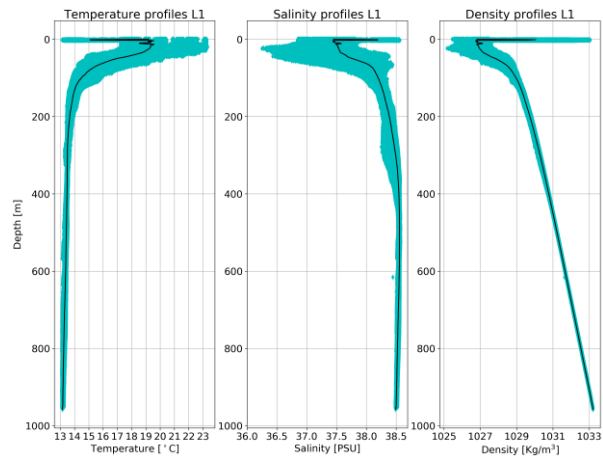
On-line Track



**Figure 2**

(Map providing detailed overview of Survey Area and traced Flight Path with surface points if possible)
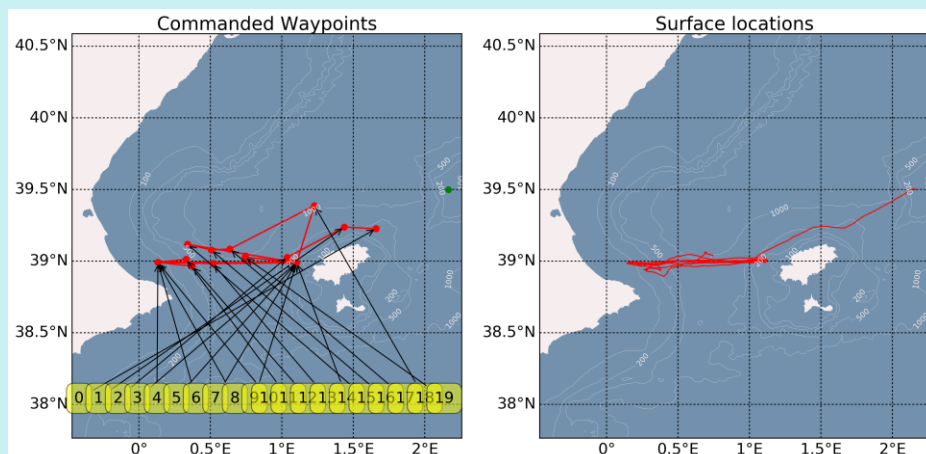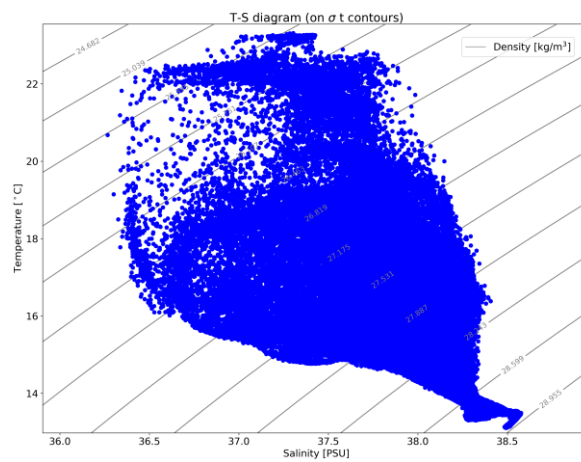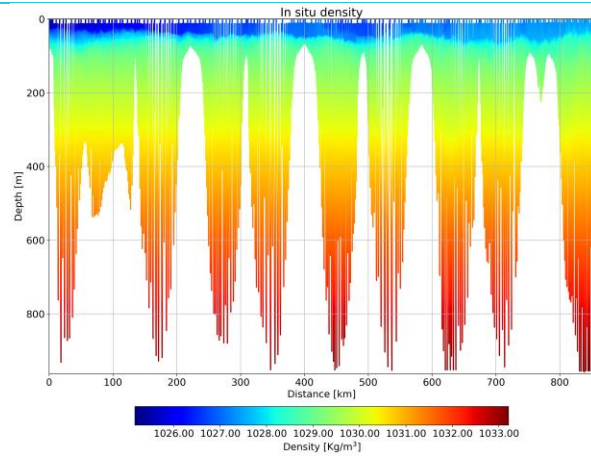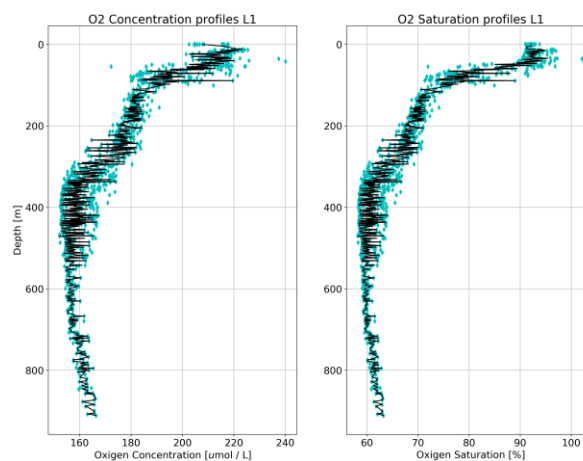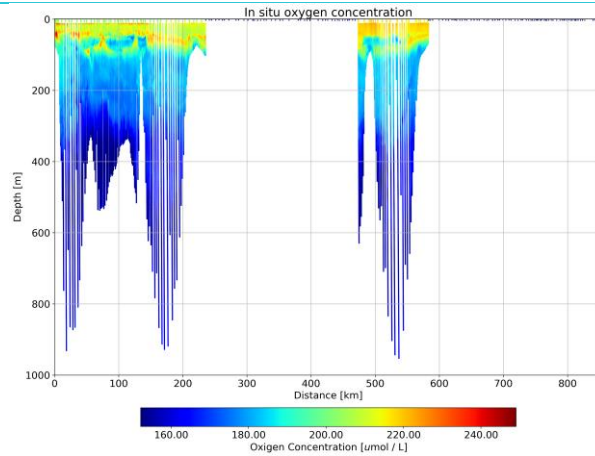
## Scientific Preliminary Review

### CTD

(Compilation of preliminary post-processing plots provided by SOCIB's data-center glider-toolbox and processing services. Contact data.center@socib.es for further info. Plots available through DAPP)
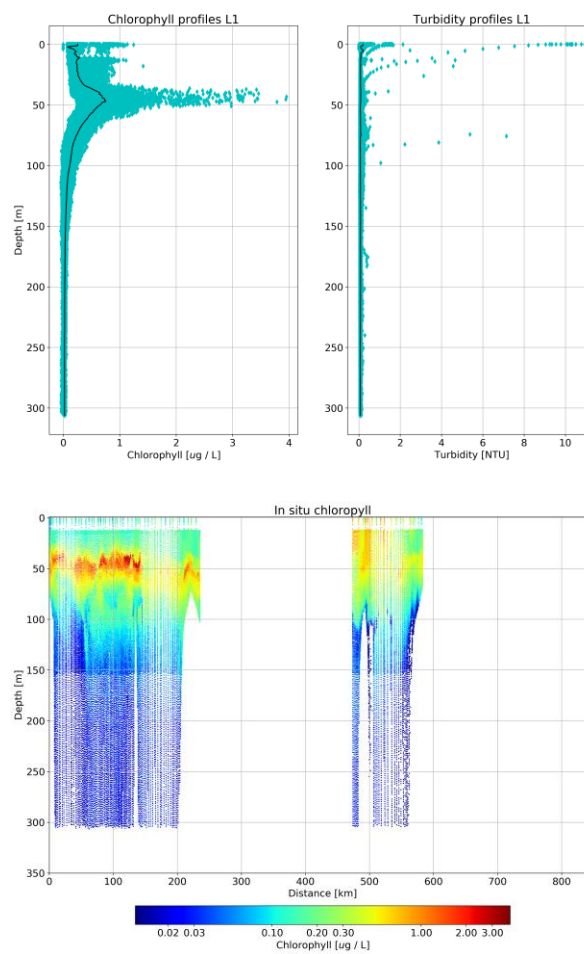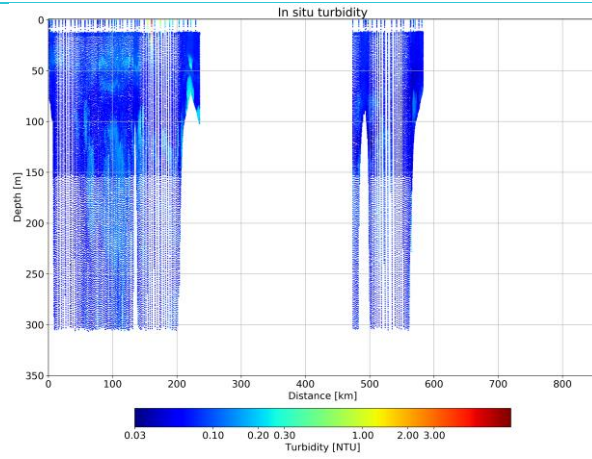
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In situ density



T-S diagram (on σ t contours)

**_OXYGEN_**



O2 Concentration profiles L1

O2 Saturation profiles L1

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In situ oxygen concentration

### TURBIDITY & CHLOROPHYLL



Chlorophyll profiles L1

Turbidity profiles L1



In situ chlorophyll

**_CURRENTS_**