



Depuis 80 ans, nos connaissances
bâtissent de nouveaux mondes



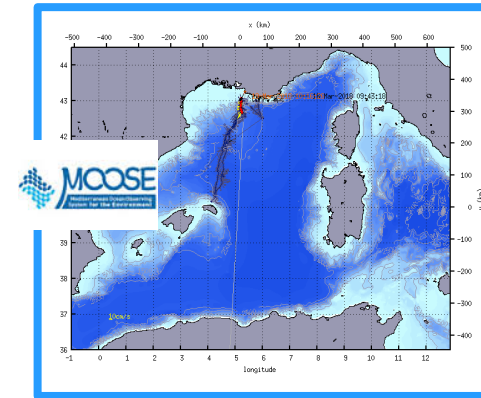
8th EGO Meeting - 2019 International Glider Workshop

Managing failures and issues in the French Glider National Facility

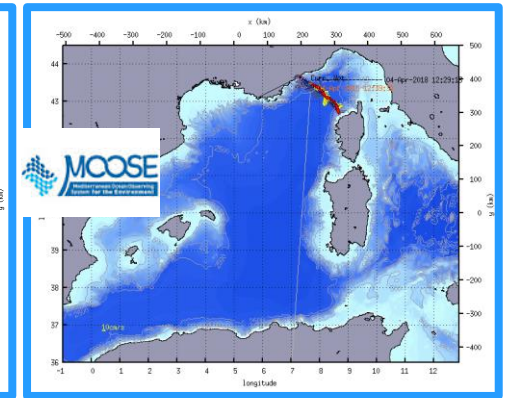
**Jeanne Melkonian, Paul Dasi, Hassane
Benabdelmoumène, Stéphane Renouf
Karim Bernardet, Elodie Godinho**



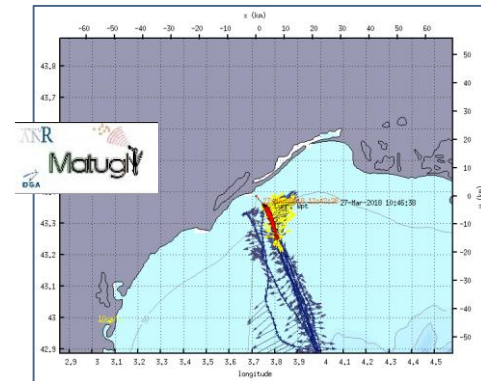
Our glider national facility



Tintin / MooseT02_18
Janv 2018



Potame / MooseT00_40
Fev 2018



Thèque / Matugli2018
Fev 2018

La Seyne sur Mer

2008 : Creation

- 12 Slocums
- 2 Seagliders



The fleet at the beginning



Thio : our Spray

Today

- 8 Slocums (6 G1, 2 G2)
- 1 Seaglider
- 1 SeaExplorer
- 1 Spray (in test)



Kraken : our brand new SeaExplorer

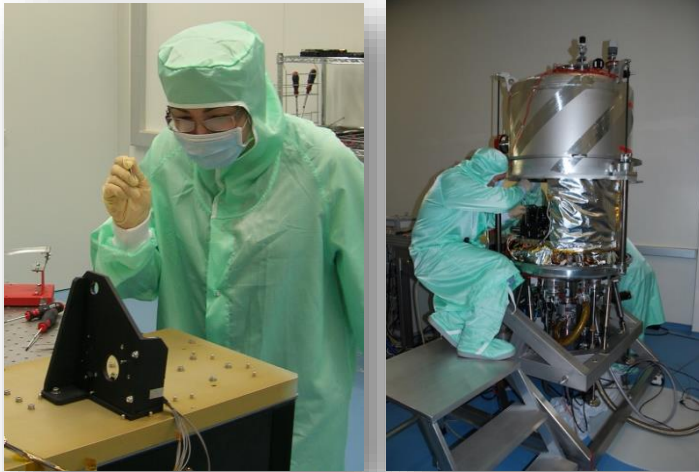


Conti : our Seaglider

A rough environment

Normal life

➤ LAM



Integration of the instrument IRDIS

➤ IM2NP



A ST-Microelectronics Wafer

Glider Facility

➤ DT-INSU



Intercomparison on ThetysII

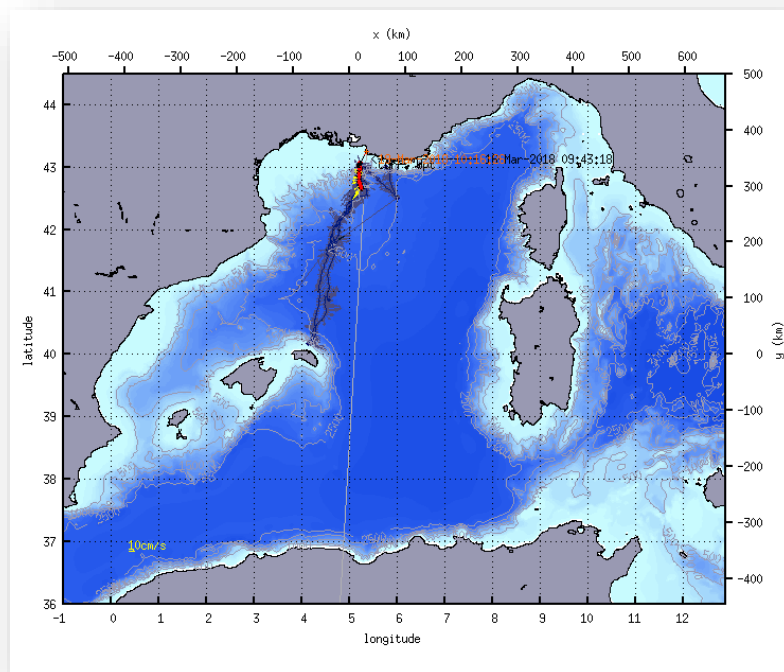


Deployment in Perou



Recovery by Pourquoi Pas ?

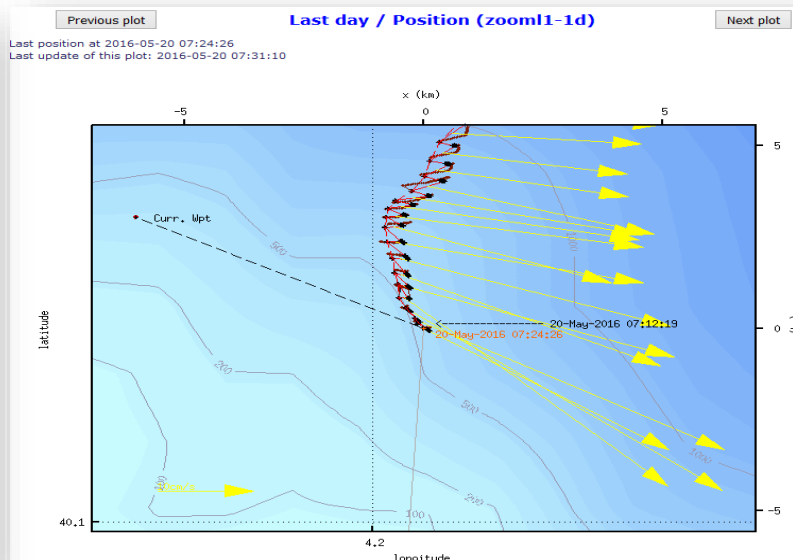
➤ Observing an anomaly



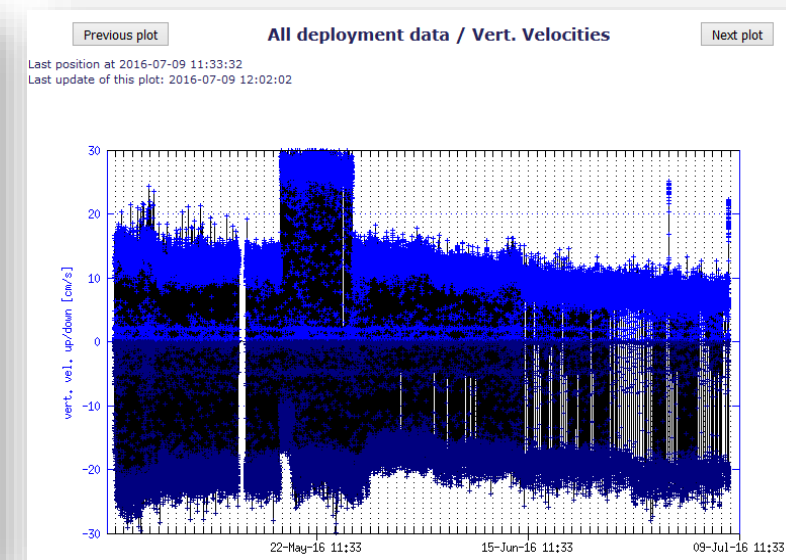
Project Moose : Tansect Marseille - Minorca

➤ Analysing the facts : a wing loss

➤ Searching an emergency solution



Sudden strong current ?



Vertical velocity modified: faster climb, slower dive

First Major Issue : Solved



➤ Campe rescued by SOCIB



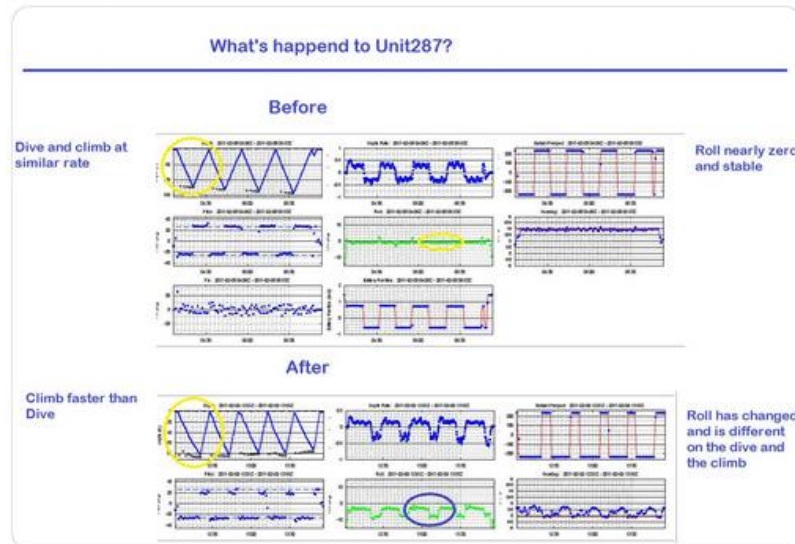


Dennis Stanley
@possibilize

Abonné

What's up with Unit287? Spot the problem from the telemetry. @IMOS_AUS #slocum #seaglider #science

Traduire le Tweet



17:19 - 16 févr. 2017



Laurent Beguery @LaurentBeguery · 18 févr. 2017

En réponse à @possibilize
wing loss maybe?

1



Dennis Stanley @possibilize · 20 mars 2017

yep and a fairly convincing "wing loss" at that.

Traduire le Tweet



1



benshotme @benshotme · 16 févr. 2017

En réponse à @possibilize @IMOS_AUS
wing loss?

1

➤ Obvious !

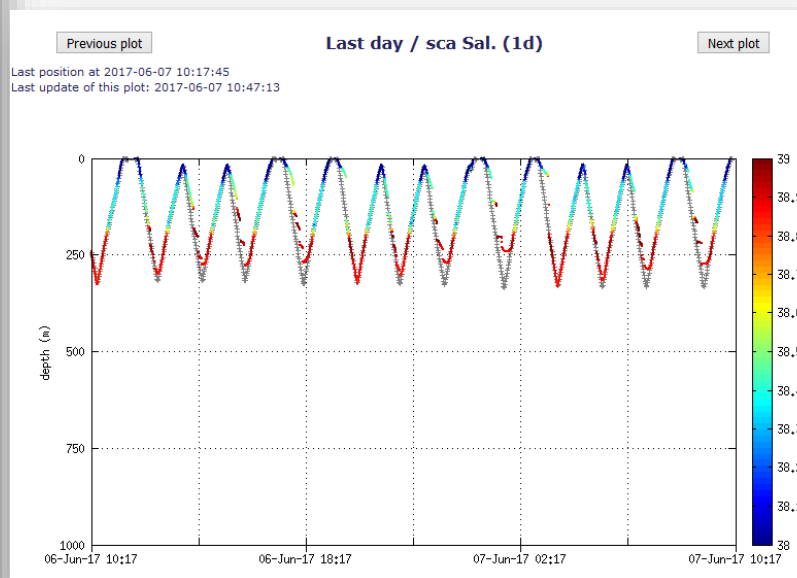
- Reporting the issues : « anomalies notebook »
 - Observations / Analysis / Solutions / Consequences / Prevention

Recueil des Péripiétés

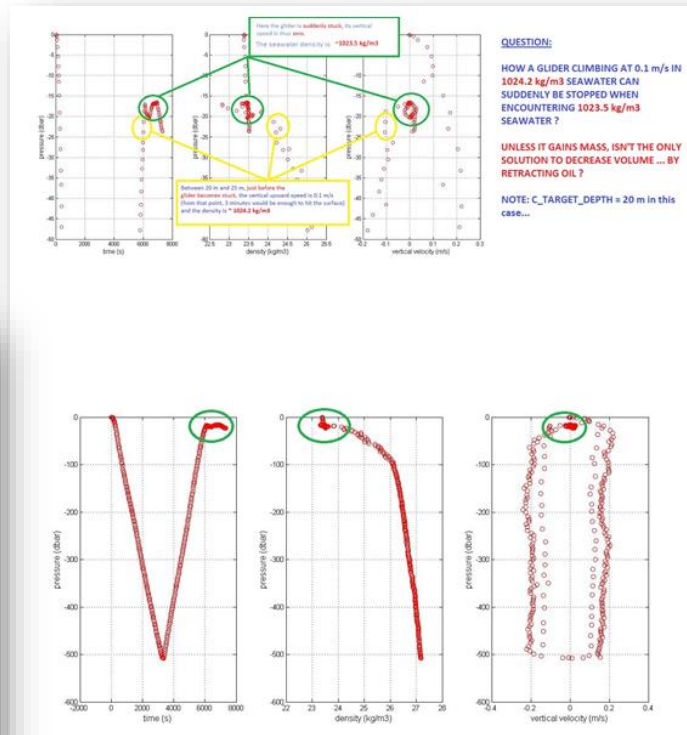
Table des matières

Recueil des Péripiétés.....	1
Incidents en mer.....	3
Bonpland Moose T00_31 : Pics avec le capteur de pression.....	3
Bonpland El_Nino: Trop lourd pour remonter	5
Bonpland El_Nino2: Toujours trop lourd pour remonter.....	6
Bonpland Glisen2: Endurance plus courte.....	11
Campe MooseT02_13 : WP incohérent.....	13
Campe MooseT02_13 : Pertes des ailes.....	14
Campe TNA Malte GliderSouth : Affichage pression.....	17
Crate Moose T00_38 : Diminution lente du vide.....	19
Potame Moose T02_15 : Profondeur de Plongée Incohérente.....	23
Potame Moose T00_40 : Profil de plongée asymétrique	25
Thèque Matugli : Erreur de Proglets	26
Tintin Taiga18 : Optode Oxygène delay.....	29
Pannes Atelier	30
0 Tous les gliders: Démarrage très long	30
Crate Test18_03: Déplacement du Pitch Motor hors limites	31
Potame Moose T02_16 : Déplacement du Pitch Motor en défaut.....	32

Anomalies Notebook



Strange pressure measured by the CTD



Perou : problems in the oil volume coefficients

Managing the issues : how ?



TWR Forum

Slocum Glider support and ideas

[Board index](#)

[User Control Panel \(0 new messages\)](#) • [View your posts](#)

It is currently May 21st, 2019, 5:51 am

[View unanswered posts](#) • [View unread posts](#) • [View new posts](#) • [View active topics](#)

GLIDERS

[FAQ](#)
Look here first.

[Operation](#)
Things to do with a glider in a boat

[Missions](#)
Mission development

[lab testing](#)

TWR forum

EGO

Everyone's Gliding Observatories

[Logout](#) [My account](#) [EGO /](#)

Trace: >> start

[HOME](#)

- What is ego?
- Why gliders?
- What are gliders?
- How do gliders work?
- Vision documents

[COMMUNITY](#)

- Intl coordination
- Newsletters
- References
- Links
- EGO Groups
- Forum

[WORKSHOPS AND GLIDER SCHOOLS](#)

- 2019 New Jersey

Forum

Welcome to the Forum for discussions about the different glider models as well as on sensors, data, deployments, software and others...

[User Control Panel](#) • [Your posts](#)

[FAQ](#) [Members](#)

It is currently Tue May 21, 2019 3:55 am

Last visit was: Mon Dec 17, 2018 1:23 pm

[Unanswered topics](#) • [New posts](#) • [Active topics](#)

[Mark forums read](#)

GLIDERS	TOPICS	POSTS	LAST POST
Seaglider Everything about Seaglider (problems, ...)	1	2	by karim View the latest post Thu Jun 14, 2012 2:46 pm
Spray Everything about Spray (problems ...)	0	0	No posts
Slocum Everything about Slocum (problems ...)	16	36	by iruka75 View the latest post 5d May 04, 2018 0:17 am

EGO GLIDERS

- [By Observatories]
- [By EGO groups]
- [By Operators]
- [All Gliders]

- [AWI]
- [BAS]
- [BCCR]
- [CEFREIM]
- [CETSM]
- [CMRE]
- [CNR-ISMAR]
- [CSIR]
- [DFO]
- [DISAM]
- [DT INSU]
- [ENSTA Paristech]
- [FM]
- [GEOMAR]
- [HMR]
- [HZG]
- [IFREMER]
- [IMARPE]
- [IMEDEA]
- [IOLR]
- [KNU]

Ego forum



Twitter or any social networks ?

Main sources of errors in our Facility



- Turn over : since 2018, 3 heads and 15 glidermen / gliderwomen
- Very old gliders (bought between 2007 and 2011)
- 4 different glider types

TELEDYNE
WEBB RESEARCH
Everywhere you look



Slocum



Seaglider

BLUEFIN
ROBOTICS



Spray

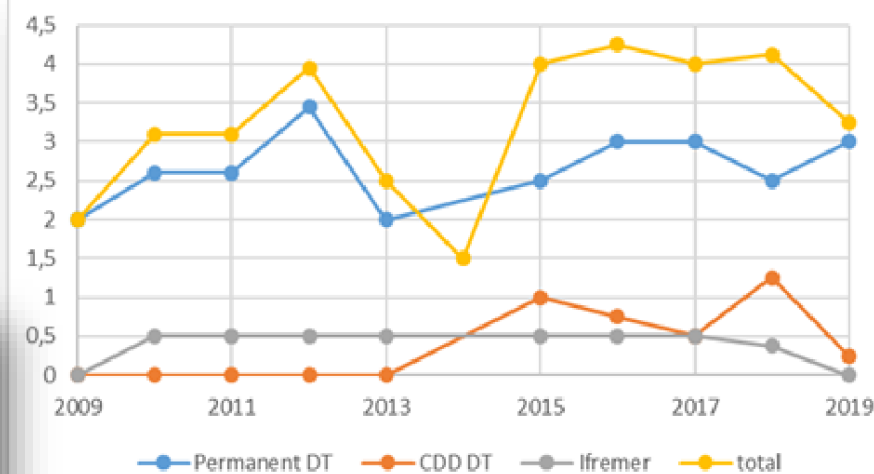
ALSEMAR
ALCEN



SeaExplorer

Achat	Perte	Nom du Glider	Nb missions	Taux utilisation	Nb jours en mer
2008		Tintin	24	19%	817
2008		Milou	20	15%	648
2009		Bonpland	18	20%	786
2008	2016	Hannon	14	11%	370
2009		Campe	13	16%	650
2009		Eudoxus	12	12%	491
2009		Tenuse	12	10%	397
2009	2015	Nearchos	8	13%	340
2007		Potame	7	6%	305
2009		Conti	7	4%	174
2008		Himilcon	6	3%	136
2011		Crate	5	5%	175
2011		Theque	5	4%	119
2008		Wallis	3	1%	39
2009	2013	Sq509	3	8%	147
2019		Kraken	2	13%	47

Total utilisation by glider



Evolution of the number of glidermen/gliderwomen

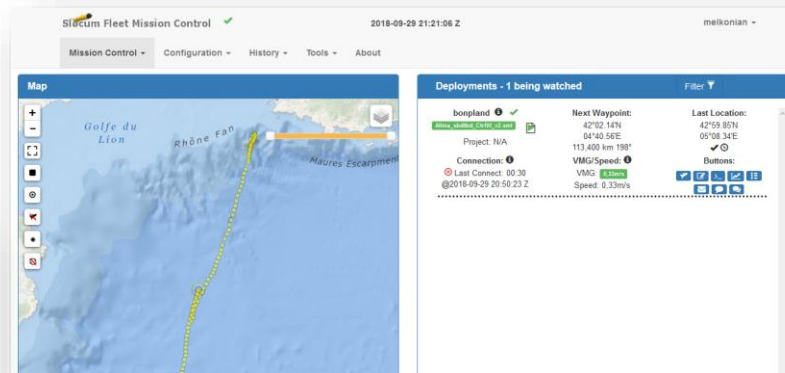
Problems involved :



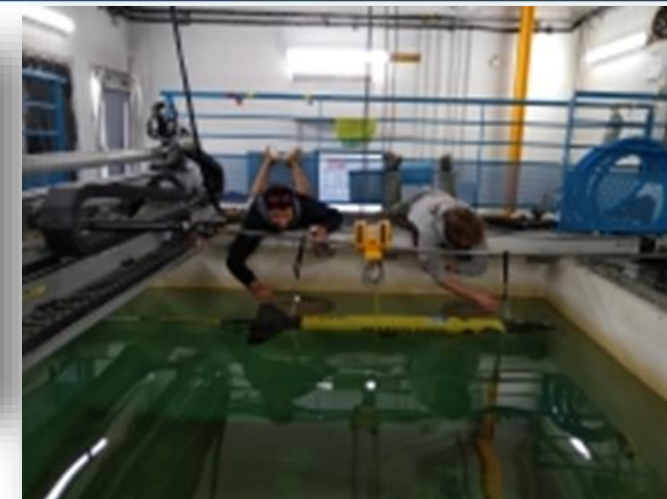
- Superficial knowledge
- Different preparations
- Different tools
- Lot of repair works
- Different piloting tools
- Immobilized gliders
- Stress for the Glider Team



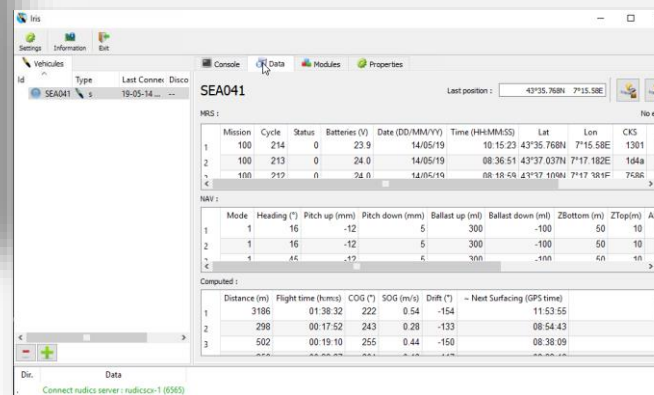
Testing Bonpland



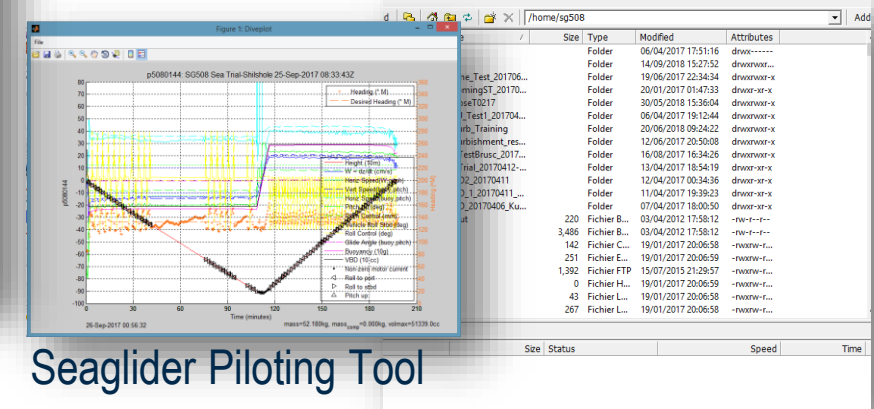
SFMC (Slocum Fleet Mission Control)



Ballasting Kraken



Iris (SeaExplorer)



Seaglider Piloting Tool

Basestation

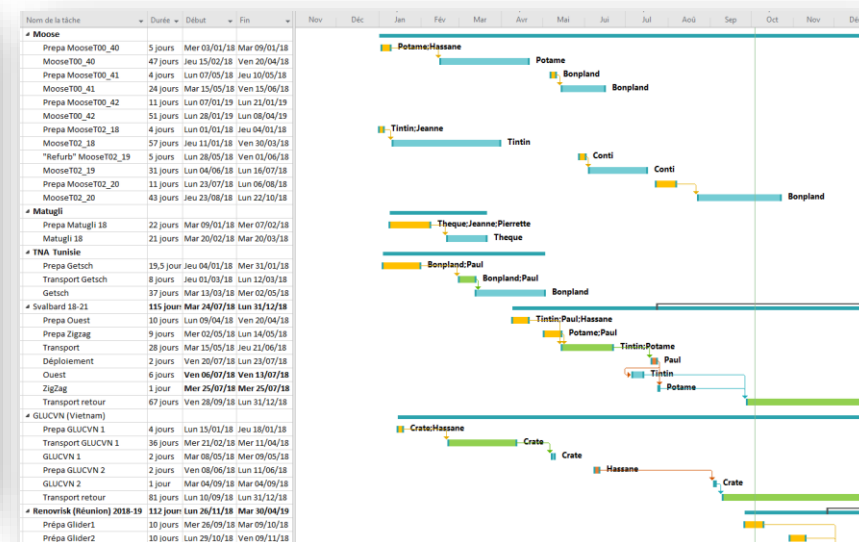
- Renew of the fleet,
 - Kraken (SeaExplorer)
 - Buy 4 new gliders in 4 years

- Schedules / Organisation

- Appropriate tools



Kraken



Missions Schedule

- A new building and a new workshop for 2022
- A future recruitment
- Reinforce the Team culture



The French Glider Team



Seaglider Pilot training - KUTI



Slocum training – Ashumet Pond

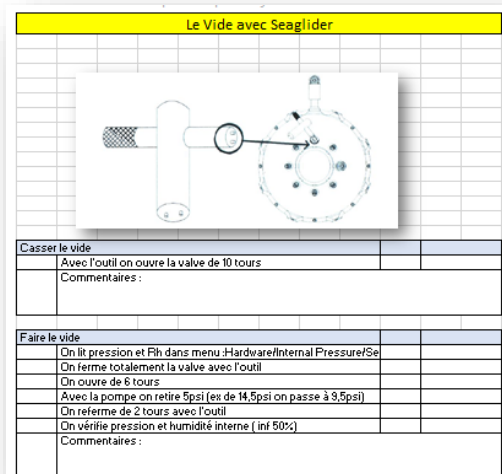


Seaxplorer training – DT INSU

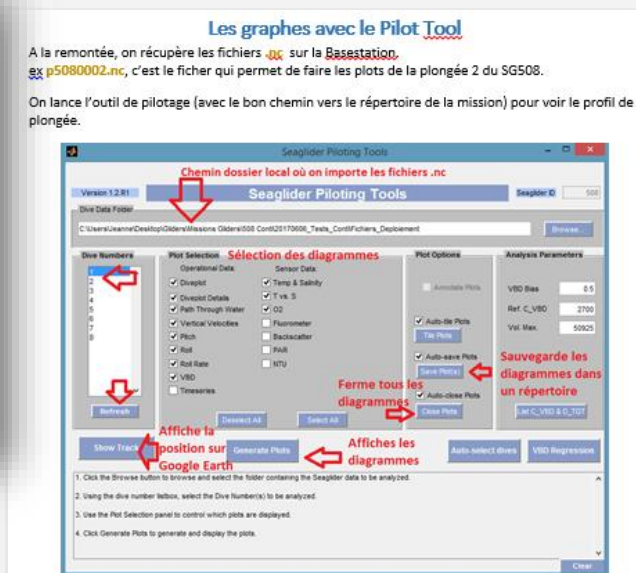


Plocan – Glider School

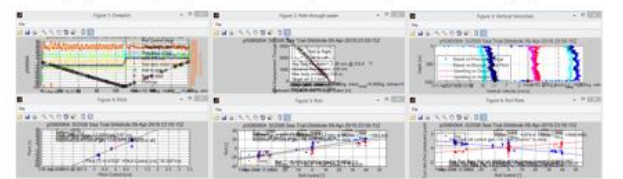
- Home made manuals and procedures in constant evolution
- Everybody involved in the improvements



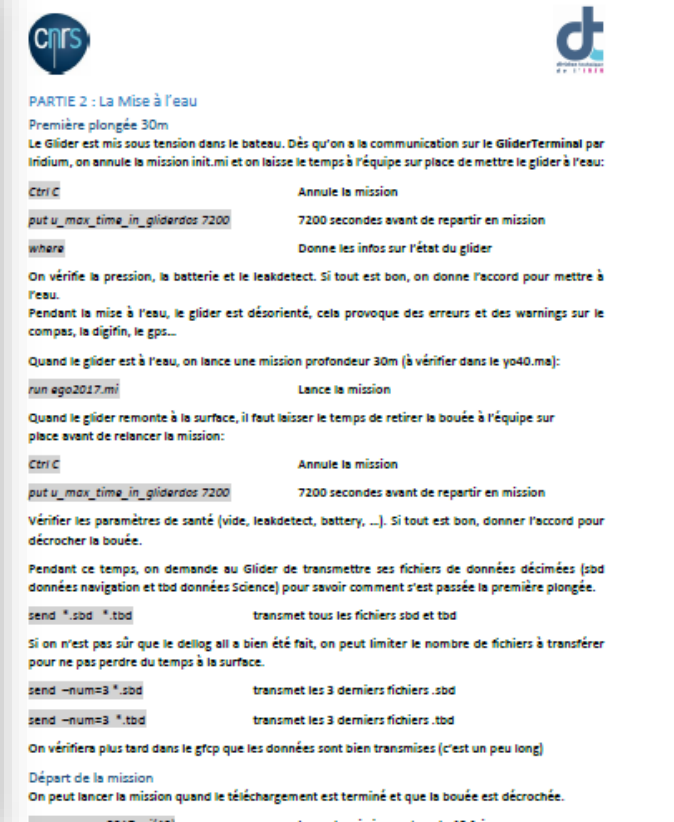
Seaglider vacuum procedure



Avec refresh les numéros de plongée apparaissent, on sélectionne la plongée qui nous intéresse et on génère les graphes avec Generate Plots. Le manuel fabriquant détaille chacun des plots et la façon de les analyser pour corriger les paramètres de vol. (SG - Piloting Tools User Guide.pdf)

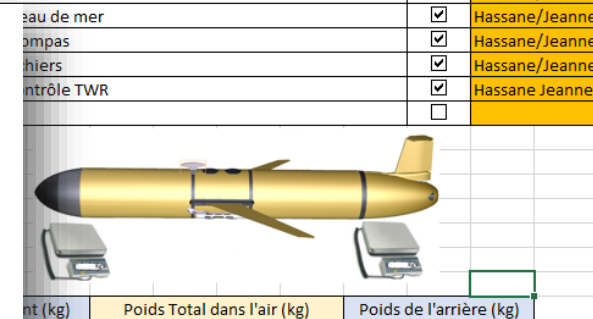


Seaglider piloting manual



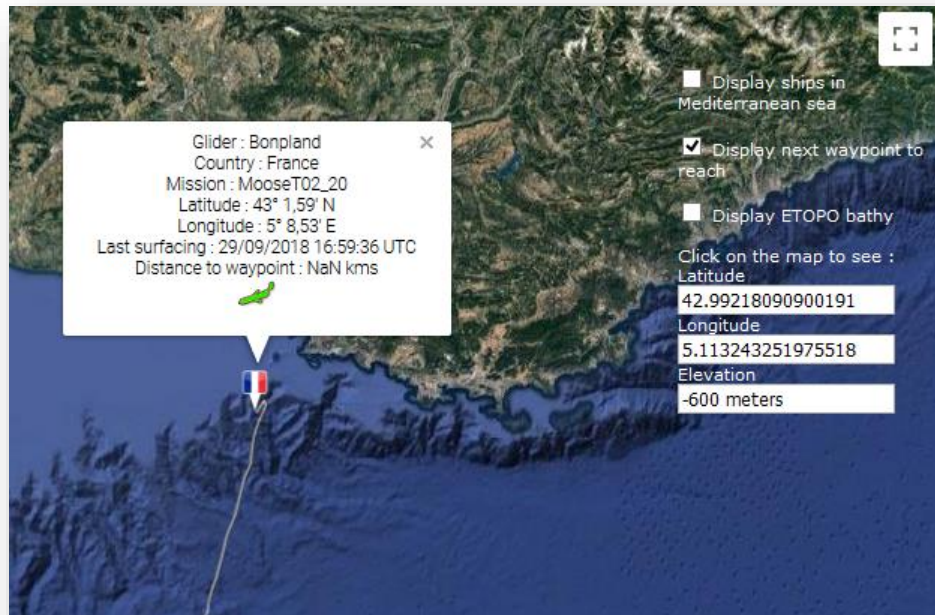
Slocum piloting manual

Glider/ns	Bonpland 142	0,001
Mission	Moose T00-39	Densité surface
Opérateur	Jeanne / Pierrette	1026
date	Procédures	fait obs
28/08/2017	Diagnostic	<input checked="" type="checkbox"/> Pierrette/Jeanne
05/09/2017	Contrôle des capteurs scientifiques	<input checked="" type="checkbox"/> Jeanne/Pierrette
11/09/2017	Changement de batteries	<input checked="" type="checkbox"/> Hassane/Jeanne
12/09/2017	Ballastage	<input checked="" type="checkbox"/> Hassane/Jeanne
		<input checked="" type="checkbox"/> Hassane/Jeanne
		<input checked="" type="checkbox"/> Hassane/Jeanne
		<input checked="" type="checkbox"/> Hassane/Jeanne
		<input checked="" type="checkbox"/> Hassane Jeanne
		<input type="checkbox"/>

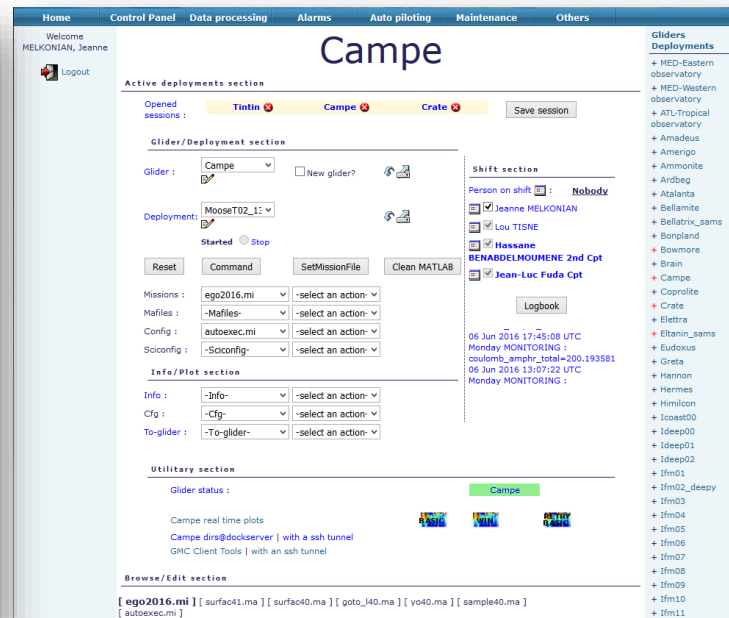


Slocum preparation procedure

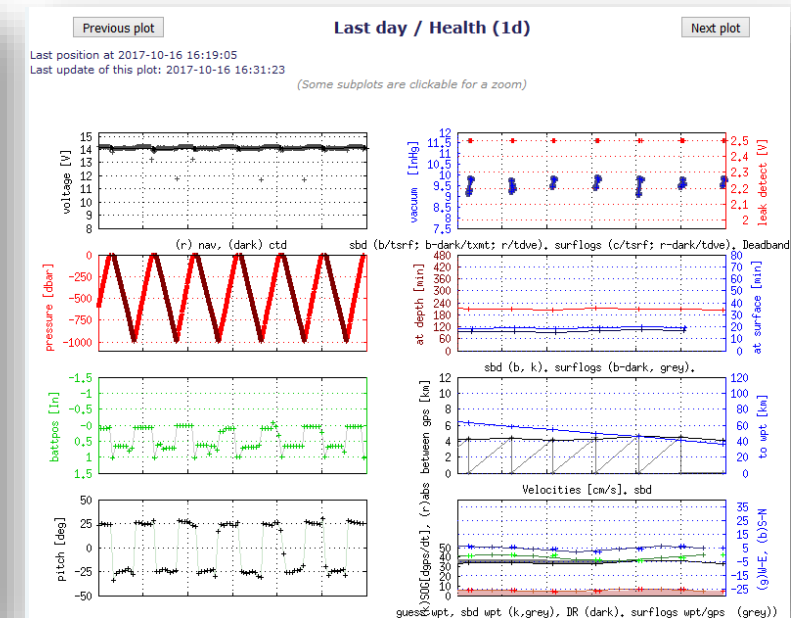
➤ Commun and adaptable piloting tools



RealTime Map



GFCP (Glider Fleet Control Panel)
on EGO website



Plots on EGO website

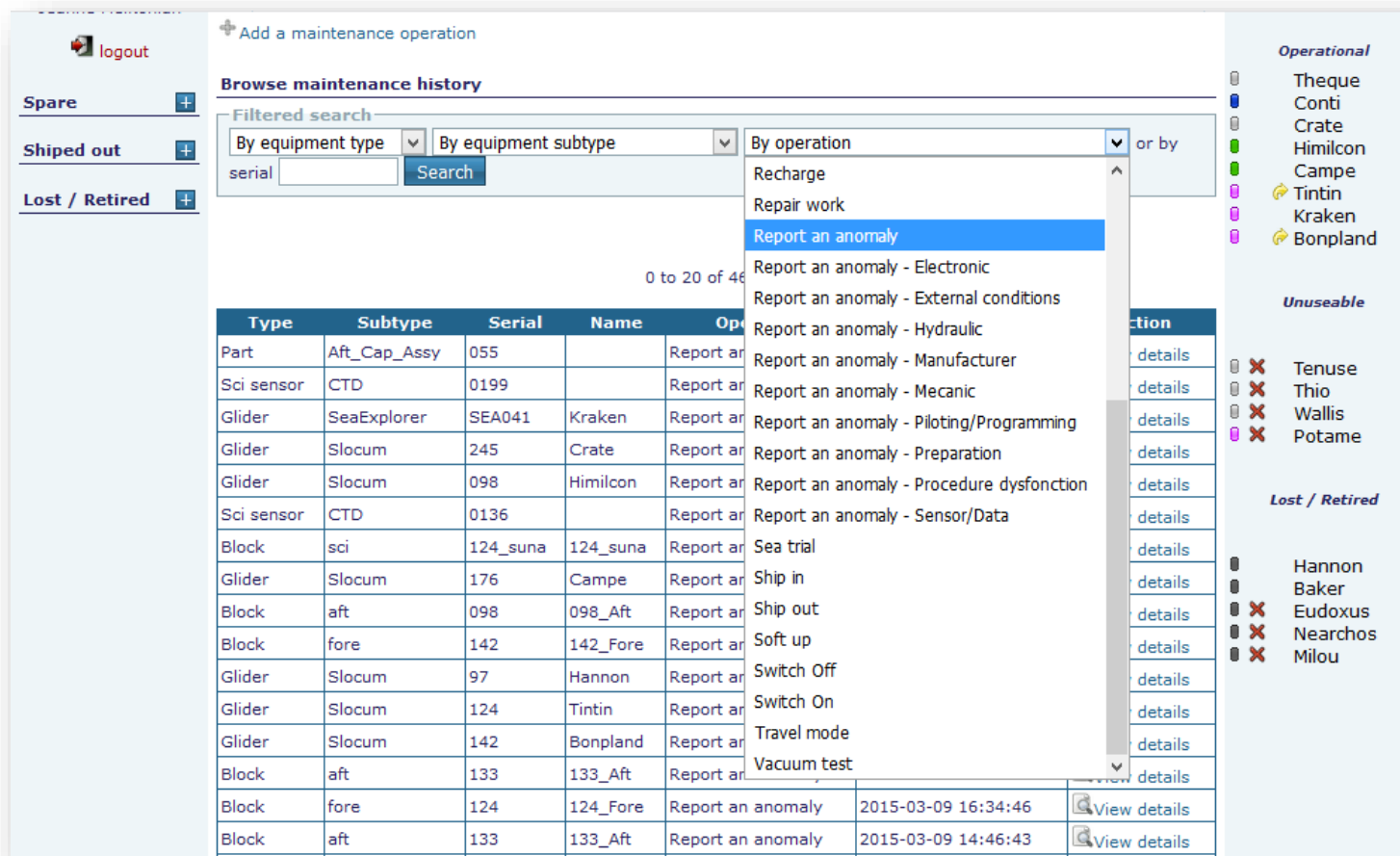
➤ Our Maintenance Data Base



Equipment	Operation	From/To	Date	Note	Action
CTD - 0208	Disassembly	1047	2019-05-06 16:47:40		
Tintin	Recovered gone		2019-03-22 15:47:34	Tintin récupéré vers 6h du matin par l'université de la Réunion (Emmanuel Cordier) et Paul au pilotage. Problème rencontré : Plus de transferts de fichiers sbd pdt les derniers heures, pas de téléchargements des fichiers nav, pas de lecture du script, plongée de 300m d'environ 2h. Le glider communiquait que quelques secondes sur le terminal ce qui l'empêchait de l'arrêter. Sans doute plus de batterie... revoir la limite des batteries.	
flbbcdslc - 3816	Assembly	133_Sci	2019-03-06 10:15:06		
flbbcdslc - 3707	Disassembly	1047	2019-02-28 16:38:46		
Tintin	At sea gone		2019-01-22 10:10:04		
Tintin	Soft up		2018-11-28 09:47:23		
Tintin	Ship out		2018-11-28 09:45:08		
Tintin	Prepared gone		2018-11-28 09:45:08		
Tintin	Prepared		2018-11-26 12:02:33		
Hull - 158	Disassembly	Tintin	2018-11-26 12:00:00	(correction faite \diamond posteriori)	
Tintin	Preparation		2018-11-26 11:35:55	ATTENTION : Le Pig Tail mal câblé par Webb. L'alimentation externe ne fonctionne pas. A recâbler.	
Tintin	Repair work		2018-11-23 16:26:12	!!! De nombreux soucis de continuité au niveaux de l'optode!!! Plusieurs pins changés car l'optode s'allumée mais ne communiquée pas (Driver oddity oxy3835...)Jeanne a refait les connections. Le connecteur principal de l'aft a été échangé avec celui de Milou car	

Tintin's historic

- Anomaly reporting in our Maintenance database instead of « a notebook »



The screenshot shows a web interface for the Maintenance database. On the left, there are navigation links: "logout", "Spare", "Shipped out", and "Lost / Retired". The main area is titled "Browse maintenance history" and includes a "Filtered search" section with dropdowns for "By equipment type", "By equipment subtype", and "By operation". A "Search" button is present. Below the search section is a table with columns: Type, Subtype, Serial, Name, and Operation. The table lists various equipment and their associated operations. A dropdown menu is open over the "By operation" dropdown, showing a list of operations including "Recharge", "Repair work", "Report an anomaly", "Report an anomaly - Electronic", "Report an anomaly - External conditions", "Report an anomaly - Hydraulic", "Report an anomaly - Manufacturer", "Report an anomaly - Mecanic", "Report an anomaly - Piloting/Programming", "Report an anomaly - Preparation", "Report an anomaly - Procedure dysfunction", "Report an anomaly - Sensor/Data", "Sea trial", "Ship in", "Ship out", "Soft up", "Switch Off", "Switch On", "Travel mode", and "Vacuum test". On the right side, there are sections for "Operational" (Theque, Conti, Crate, Himilcon, Campe, Tintin, Kraken, Bonpland) and "Unuseable" (Tenuse, Thio, Wallis, Potame) equipment, each with a list of "details" links. At the bottom right, there is a section for "Lost / Retired" equipment (Hannon, Baker, Eudoxus, Nearchos, Milou) with a list of "details" links.

Type	Subtype	Serial	Name	Operation	Details
Part	Aft_Cap_Assy	055		Report an anomaly	
Sci sensor	CTD	0199		Report an anomaly	
Glider	SeaExplorer	SEA041	Kraken	Report an anomaly	
Glider	Slocum	245	Crate	Report an anomaly	
Glider	Slocum	098	Himilcon	Report an anomaly	
Sci sensor	CTD	0136		Report an anomaly	
Block	sci	124_suna	124_suna	Report an anomaly	
Glider	Slocum	176	Campe	Report an anomaly	
Block	aft	098	098_Aft	Report an anomaly	
Block	fore	142	142_Fore	Report an anomaly	
Glider	Slocum	97	Hannon	Report an anomaly	
Glider	Slocum	124	Tintin	Report an anomaly	
Glider	Slocum	142	Bonpland	Report an anomaly	
Block	aft	133	133_Aft	Report an anomaly	
Block	fore	124	124_Fore	Report an anomaly	2015-03-09 16:34:46 View details
Block	aft	133	133_Aft	Report an anomaly	2015-03-09 14:46:43 View details

Anomalies in our Maintenance Database

- Exchange and cooperation with the other teams / glider community (/ OceanGliders?)

7th EGO Conference, 26-29 September 2016, NOC, Southampton, UK

The 7th EGO conference was held from 26th to 30th September 2016 coincided with the 10th anniversary of the first EGO conference held in Paris in 2006. It has provided a forum in which scientists, engineers, students and industry could exchange knowledge and experiences on the development of glider technology, the application of gliders in oceanographic research and the role of gliders in ocean observing systems.

-  Conference website.
-  Conference program
-  Compilation of abstracts
-  Highlights (D. Smeed)



