Schmidt Ocean Institute Technical Documentation

Schmidt Ocean Institute

8/29/23

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Preface

Schmidt Ocean Insititute

This will be a book that contains chapters on accessing data systems while onboard R/V Falkor (too)

Table 1: R/V *Falkor (too)* General Specifications

Length Overall	110.6 meters
Length between perpendiculars	97.8 meters
Beam, overall	20.0 meters
Height above water	33.0 meters
Freeboard	2.9 – 3.5 meters
Draft (gondola)	8.5 meters
Draft (air)	32.4 meters
Depth (moulded)	9.81 meters
International Gross Tonnage	7,257 GRT
Net Tonnage	2,250 NRT
Fuel Capacity	1715 m3 / 453,100 gallons
Mess Seating	60
Maximum Transit Speed	8.5 knots
Survey Speed	6.0 knots
Endurance	60-120 day maximum
Polar Operations	Ice Class-C, Polar Ship Certificate (Pending)
Year Built / Year Converted	2011 / 2022

For more information about available systems on board see R/V *Falkor (too)* specifications

Data Pipeline

Data, files, and information are collected from sensors and computer systems and then written and/or moved to a central location. Depending on the indiviual system, and how data is captured, the route the data takes as well as the structure of file containging the information differs. An overview of this system is described here.

NOTE: On the ship you can easily access some of the data described below through : http://10.23.9.25/

Ship Overview

OpenRVDAS

"OpenRVDAS Open Research Vessel Data Acquisition System is a Python-based open source architecture intended to allow easy creation of customized data acquisition systems for research vessels and other scientific installations." - https://openrvdas.org/

- OpenRVDAS is used aboard R/V *Falkor (too)* to gather and compile data from many systems.

OpenVDM

"OpenVDM Open Vessel Data Management is a ship-wide data management platform. It is comprised of a suite of programs and an accompanying web-application that provides vessel operators with a unified at-sea solution for retrieving and organizing files from multiple data acquisition systems into a unified cruise data package." - https://github.com/ OceanData-Tools/openvdm

- OpenVDM is used aboard R/V *Falkor (too)*.

InfluxDB

InfluxDB is an open source timeseries database used to capture real-time data and allow for redistribution, alerting, and interface abaoard R/V *Falkor (too)*

Grafana

Dashboarding software used to allow real-time data viewing on R/V *Falkor (too)*

Shore Overview

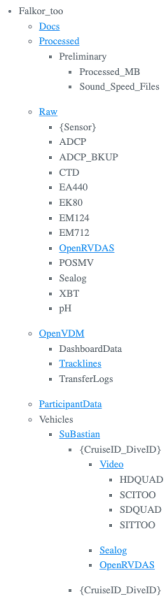
Cloud Infrastructure

Public Repositories

Public Access

Data Directory

The Data Directory is shown below:



Docs

The Document folder contains all the calibration files for sensors on board *R/V Falkor(too)* and ROV *SuBastian*

Processed

Any data that has gone through processing is found in this folder. This includes the multibeam data and sound speed files. Multibeam data can be found in Processed_MB then Exports.

Raw

All raw data from sensor systems on board and deployed are curated in this folder. They are separated out by sensor system. For sensors whose data is collected individually, they are listed in individual folders. Depending on which sensors are running during an individual expedition, a different set of folders will be available. A list of commonly seen folders is shown but {Sensor} represents an individual system. A variety of underways systems whose real-time data is captured by the RVDAS collection system are inside that particular folder.

OpenRVDAS

Files written by OpenRvdas are split into daily files and have the standard naming convention:

Each file should contain a header line with the variable name and unit. The rows of data are timestamped by OpenRVDAS on the arrival of the udp message and otherwise, the line of raw data is written as received. For more information on SOI's OpenRVDAS configuration see the OpenRVDAS section in the Data Pipeline Overview.

For additional information on NMEA style messages which are captured via OpenRVDAS see the Appendix

OpenVDM

These files are specific to the OpenVDM collection system.

Tracklines

Geospatial files of the vessel track created by OpenVDM are available here in kml and json format with a subset of points along the track from at least 1 navigation system.

Participant Data

Data added to the participant drive during the cruise is found here. When saving files and folders to the participant data directory, please use thoughtful filenames and omit spaces and punctuation other than hyphen and underscore, (i.e. exclude spaces, question marks, parenthesis, square and curly brackets from filenames as this can impact files being moved from system to system). Letters, numbers, and underscores are preferred for filenames. For more information on best practices see Best Practices for File Naming and Organizing

Vehicles

SuBastian

All data related to individual dives are separated into folders with the cruise identifier followed by the dive identifier:

- {cruiseid_diveid} ex: FKt230602_S0529

Inside of each folder are the video files, data files per sensor, and sealog exports per dive.

Sealog

includes all screengrabs, reports, dive template configuration, and the csv and json files of all of the events.

- Exports from Sealog SuBastain are further described in Sealog SuBastian Overview. Of most interest for scientists is likely the complete csv export of tagged information, {cruiseid_diveid}_sealogExport.csv,(ex: FKt230602_S0540_sealogExport.csv)
- Images folder contains all snapshots from sealog for all cameras.

Video

Video files captured from cameras aboard ROV *SuBastian* are saved in 10 min increments and separated by camera. Inside the subfolders, each video is of the filename {camera}_{YYYYMMDDTHHMMSSZ}.mov where the camera is one of HDQUAD, SDQUAD, SCIITOO, SCICAM, and the datestamp is the start time of the file in UTC.

- SCICAM is the main science camera and likely the one of interest to scientists.

OpenRVDAS

OpenRVDAS files capturing real-time sensor data are cut into files with just dive-related data in them and separated by sensor and dive.

Dashboards

Overview

While aboard *R/V Falkor (too)* real-time data is viewable via a variety of grafana dashboards.

- For an overview of real-time data related to the *Falkor (too)*
- For an overview of real-time data from *ROV SuBastian*

Quick-Facts

- Dashboards are set to show recent time periods. Each dashboard may show a different amount of time. The time span can be controlled for viewing in the upper right-hand side. When adjusted, the window for graphs will adjust. Some dashboards have been given the ability to bucket data based on a window choice. This dropdown, if available is in the upper left corner. Note: Some calculations are for set time frames and are unaffected by this choice
- Dashboards can be accessed by direct link

Dashboards of interest

- *Falkor (too)* Expedition Overview
- *ROV SuBastian* Dive Overview
- Meteorlogical Sensors
- Underway Seatwer Sensors
- USBL
- R/V *Falkor (too)* Navigation

Sealog

R/V Falkor (too)

Overview

Sealog is a smart event logger. *R/V Falkor (too)* has two instance aboard the ship. One instance used for the ship, its underway systems and tracking of general information related to deployments on insturments. The seond innstance aboard is set up to log *ROV SuBastian* dives coupling key metadata (such as video framegrabs, vehicle position, vehicle depth, water temperature, etc.) with each event. Sealog can be configured for each cruise to better support a science party's specific data logging needs. Data,information and reportscaptured and generated by Sealog are made available to the science party.

Accesiblity

Currently, Sealog can only be reached while onboard the ship. Sealog-FKt Sealog-Sub can be found either at 10.23.11.25/sealog-Sub/ in any web browser, or you can use the "Sealog-Subastian" link at 10.23.11.25.

Preperation

Prior to an expedition, it is valuable to review the information in this doucumentation. Once aboard, the scienc eparty will be able to work with marine technicaians to adjust Sealog's output within the documented parameters to achieve their data logging and reporting needs.

Additional Documentation

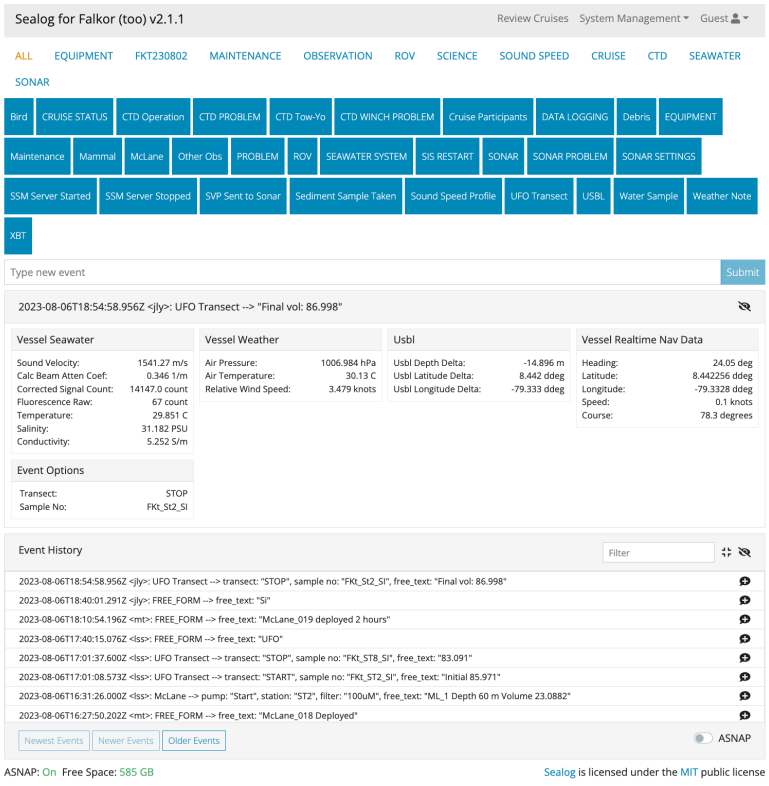
- Sealog-FKt
- Sealog-Sub

Sealog-FKt

R/V Falkor (too)

Overview

Sealog for R/V *Falkor (too)* is the event logger used for underway systems, deployments, and general events during the expedition.

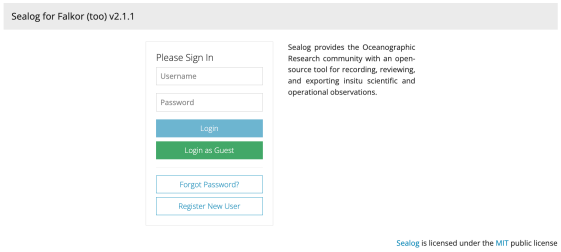


Orientation

Sealog can be found either at10.23.11.25/sealog-FKt/ in any web browser, or you can use the "Sealog-Falkor" link at 10.23.11.25. Currently, Sealog can only be reached while onboard the ship.

Login

We recommend that any science party member who will be logging events in this implementation of Sealog creates their own individual login forthis implementation. With each event entry, along with the scientific metadata, the system will keep track of the user that submitted the entry. There is also a guest login that has access to creating events, but has restricted access to event template configurations.



Sealog-Subastian

R/V Falkor (too)

Overview

Sealog SuBastian is a smart event logger for ROV SuBastian dives that couples key metadata (such as video framegrabs, vehicle position, vehicle depth, water temperature, etc.) with each event. Sealog can be configured for each cruise to better support a science party's specific data logging needs. After each dive, Sealog creates an extensive "Dive Summary PDF" with all the events recorded during the dive, along with other useful graphics.

Orientation

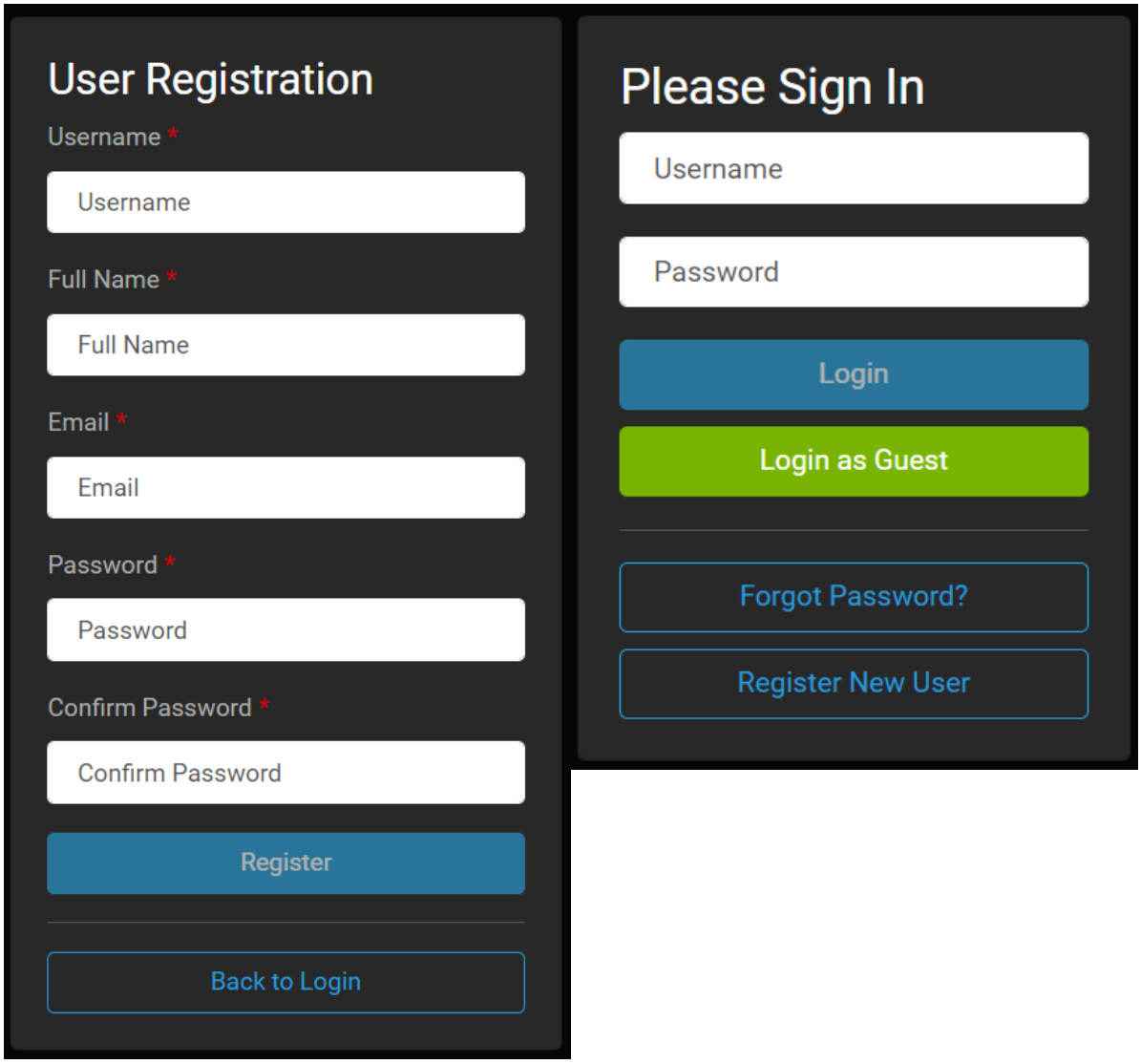
Sealog can be found either at 10.23.11.25/sealog-Sub/ in any web browser, or you can use the "Sealog-Subastian" link at 10.23.11.25. Currently, Sealog can only be reached while onboard the ship.

Login

We recommend that each science party member create their own individual login for Sealog. With each event entry, along with the scientific metadata, the system will keep track of the user that submitted the entry. There is also a guest login that has access to creating events, but has restricted access to event template configurations.

Templates

System templates are event configurations that are logged and maintained by the ship's crew to monitor key milestones during each dive (ex. in water/out of water times, on/off bottom times, video start/stop). These events are admin access only and cannot be edited by the science party. Event templates can be edited by the science party and are meant to be tailored to meet the science parties' data logging needs.


User Registration
Username *
Username
Full Name *
Full Name
Email *
Email
Password *
Password
Confirm Password *
Confirm Password
Register
Back to Login
Please Sign In
Username
Password
Login
Login as Guest
Forgot Password?
Register New User

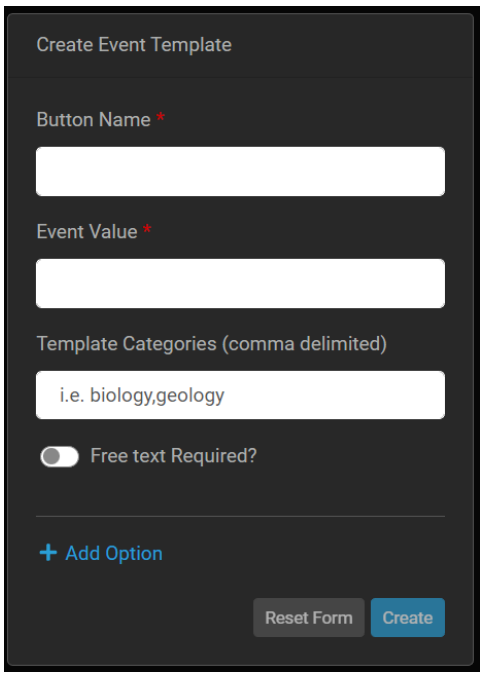
Event Template Configuration

This section will orient you on how to create Sealog "events." It is important to note that the primary way of accessing exported data is via a spreadsheet. All "Event Values" and "Event Option" names should be concise.

Adding an Event Template

- Once logged in, navigate to "System Management" then select "Event Management."
  - Please note you need to be logged in as a user, "Guest" does not have event management access.

- On the right hand side, the open for "Create Event Template" will allow you to create a new event.



Button Name

Button name is the title of the event. In the example below, the button name is "Video Logging" and is used by the SuBastian team to log when the DVR's begin recording.

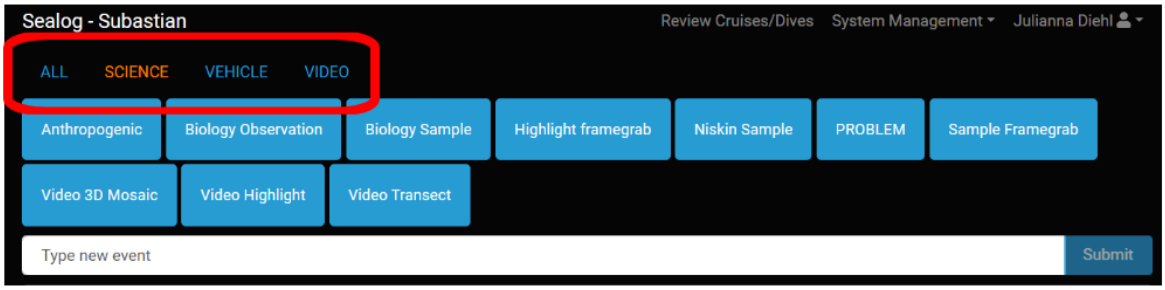
Event Value

Event values are a way of grouping events. For example, if you have several events that count as sampling (ex. coral collection, niskin sampling, biological sampling, etc.,) they can all be grouped as the event value "Sample." In the dive summary pdf that gets created at the end of every dive, each Event Value will have its own section, summarizing all of the events under the particular Event Value for that dive.

The screenshot below shows an example of events that were labeled with the Event Value "Sample" and the different types denote whether they are biological, niskins, or squeezer samples in this dive.

Template Categories

Template Categories create different tabs in the home screen to further organize event buttons. In the example below, there are three template categories configured: science, vehicle, video. By default, the "All" category will always show every event button configured.



Some science parties may want to broaden their own Template Categories beyond the single "Science" that is the default configuration, ex. "Observation, Sample, etc." The "Vehicle" and "Video" template categories contain important vehicle milestones and should be left unchanged.

Free Text Event

It is also possible to enter "free text events". These are events that are logged without using event templates. This could be useful for quick notes, corrections, or if there is not a current event template configured for a certain situation during a dive.

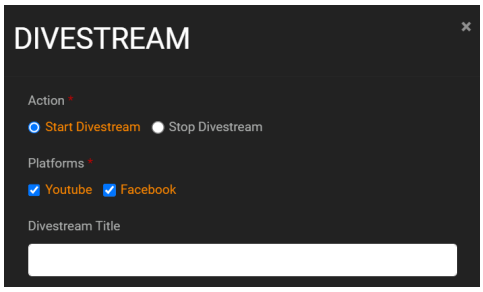
Configuring Event Options

At the bottom of the "Create Event Template" the "+ Add Option" selection gives you further options to tailor each event.

0.0.0.0.1 * Name

The name of the event option describes the specific option you are creating. For example, in the screenshot below, there are two options configured. The first option, named "Action" allows you to choose to either start or stop the dive stream radio buttons. The second option, named "Platform" allows you to choose checkboxes for the platforms that are being started.

- Event options cannot be named "id" or "comment"- these are reserved keywords.
- Each option within an event template must have a unique name.



0.0.0.0.2 * Type

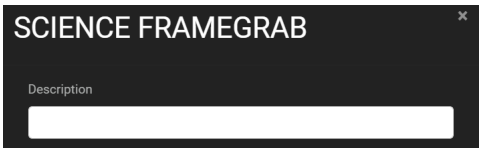
The type describes the choice of action you have for this option. The options are described in more detail below.

- Static Text

Static text options are for when the value is known and should not be altered. This can be used when the act of clicking the event button is all that is needed to log the event. In the example below, the event "Vehicle on Deck" will always have a value of "On Deck."

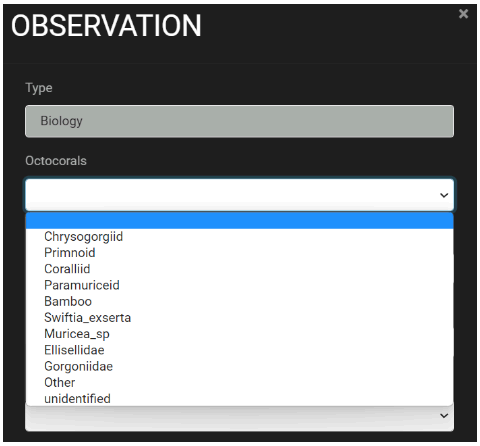
- Text

  The text option is for when the value possibilities for the option are unknown and must be manually filled out when the event is submitted. This could be used when describing file names, writing the species name of an animal observed during a dive, describing a frame grab, and more.



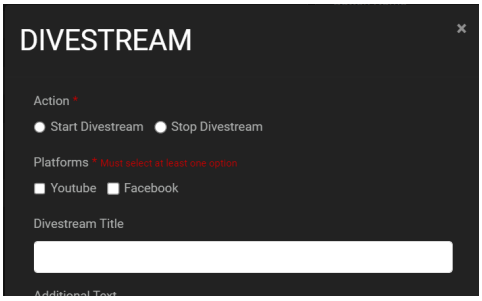
- Dropdown

  The dropdown option is for when the option is one out of a long list of possibilities. In the example below, a dropdown is used to describe all of the octocoral species to aid in a biological observation event.



- Checkboxes

  Checkboxes are for when the option is one or more of a list of possibilities. In the example below, this event allows the user to say they're starting both Facebook and YouTube streams, or just one.



- Radio Buttons

  Radio buttons are for when the option is one of a short list of possibilities. In the option below, the radio buttons are used to describe an action of starting or stopping the divestream, while checkboxes are used to choose one or all of the listed platforms.

- Required Button

  The required button allows you to choose if an entry is necessary before the event can be created. For example, you may want to have any entry that requires a Sample ID or file name as "required" so this can't accidentally be reported without key information.

- Additional Text

  Default with every Event Template, an additional text box will be added that can be used to document any extra information.

Saving and Testing Events

- Click "Create" to save your event to the "Event Templates."
-  Click to edit an Event Template.
-  Click to test an Event Template. This is useful when making new events to make sure all your options are configured how you mean them to be.

-  Click to delete an Event Template. Please ask an MT if you need to delete an event template that was not created by your science party.

Samples

Please follow the following requirements for logging your sample's on Sealog to ensure they will be properly calculated in Sealog's post-dive metrics. Please note that in all events that have the word "sample" in the "Event Value" will be used towards the total number of samples. For sample events, the "Event Value" should ALWAYS be "SAMPLE" and should be configured with the following options:

- Type

  to specify the type of sample collected i.e. "biology, geology, eDNA, Niskin, etc". This should be configured as a required option. If the desire is to have a dedicated button for a specific sample type then set this option as "static text" with the "value" set to the sample type i.e. "eDNA". If the event template is for multiple sample types then the "Type" option should have an option type of "dropdown" or "radio buttons".

- Sample ID

  to define the sample's unique identification. This generally will be a "text" option. This should also be configured as a required option.

- Storage Location

  the unique location on the vehicle where the sample is stored. This should be configured as a required option. This option should have an option type of "dropdown" or "radio buttons." Refer to the list of standard vehicle locations (below) for how to populate the event option values. If the sample is collected with a science-supplied sampling apparatus then the option value should be a list of unique identifications for the apparatus type. Ensure that the naming convention used for any science-supplied sampling apparatus does not conflict with the standard location names.

Table 2: SuBastian Standard Sample Storage Locations

Full Name	ID
Bio-Box 1A	BB-1A
Bio-Box 1B	BB-1B
Bio-Box 2A	BB-2A
Bio-Box 2B	BB-2B
Bio-Box 3A	BB-3A
Bio-Box 3B	BB-3B

Full Name	ID
Bottle 01	BTL-1
Bottle 02	BTL-2
Bottle 03	BTL-3
Bottle 04	BTL-4
Bottle 05	BTL-5
Bottle 06	BTL-6
Quiver 01	Q-1
Quiver 02	Q-2
Quiver 03	Q-3
Quiver 04	Q-4
Quiver 05	Q-5
Quiver 06	Q-6
Quiver 07	Q-7
Quiver 08	Q-8
Quiver 09	Q-9
Quiver 10	Q-10
Quiver 11	Q-11
Quiver 12	Q-12
Quiver 13	Q-13
Quiver 14	Q-14
Quiver 15	Q-15
Quiver 16	Q-16
Suction 01	S-1
Suction 02	S-2
Suction 03	S-4
Suction 04	S-4
Suction 05	S-5
Suction 06	S-6
Suction 07	S-7
Suction 08	S-8

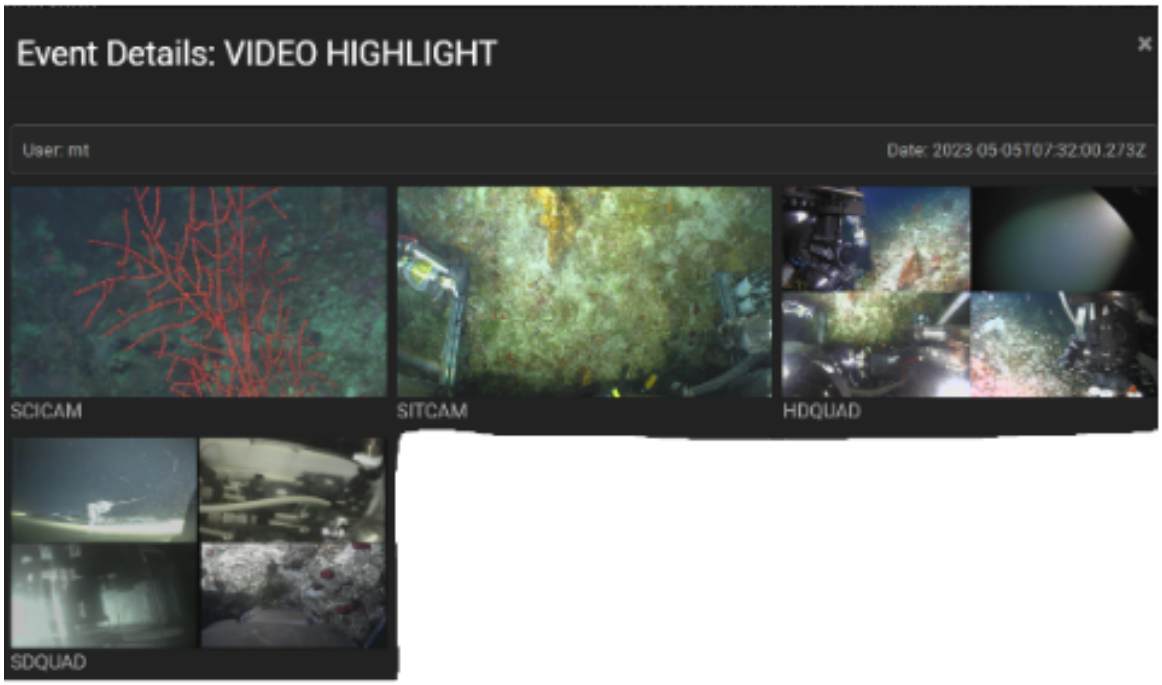
Metadata

With each event logged, the following metadata gets grabbed with it:

ROV Video Frame Grabs

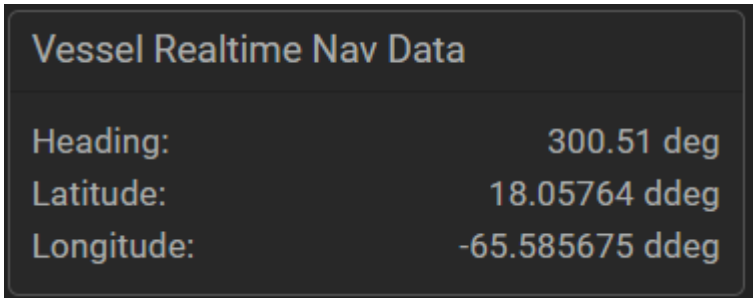
`High resolution screen capture on all cameras.`

- Science Camera (4K camera)
- Situation Camera (4K camera)
- HD Quad
  - Forward HD Cam, looking to Port.
  - Aft HD Cam, looking Aft.
  - Forward HD Cam, looking down onto the Porch.
  - Forward HD Cam, looking to Stbd.
- SD Quad
  - SD Teather Cam, looking aft
  - SD Manifold Cam
  - Suction Sampler Cam
  - Port Manipulator Cam



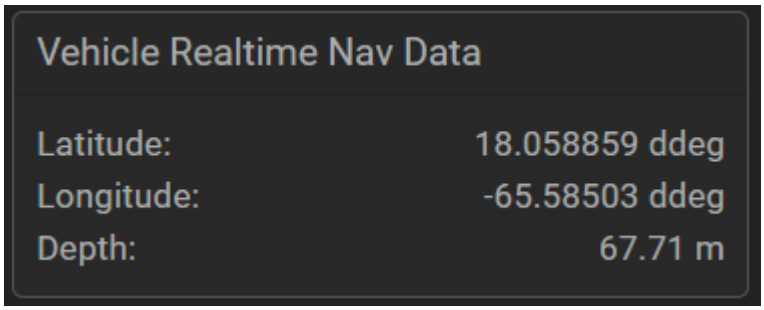
Vessel Realtime Nav Data

- Falkor (too) position and true heading.



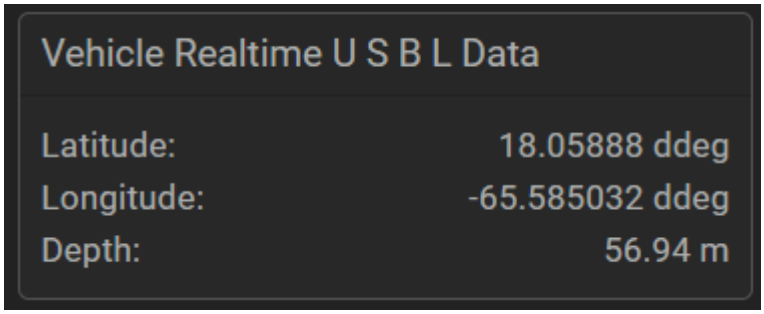
Vehicle Realtime Nav Data

- SuBastian position as calculated by its Sprint Inertial Navigation System, which takes several aiding sensors (Ultra Short BaseLine underwater positioning system, Doppler Velocity Log sensors, depth sensors) along with its own internal inertial sensors and accelerometers and uses an algorithm to output the most accurate position based on weighted sensor inputs.
- This is generally the most accurate position for the ROV, but it's important to confirm this with the Marine Technicians during the cruise.



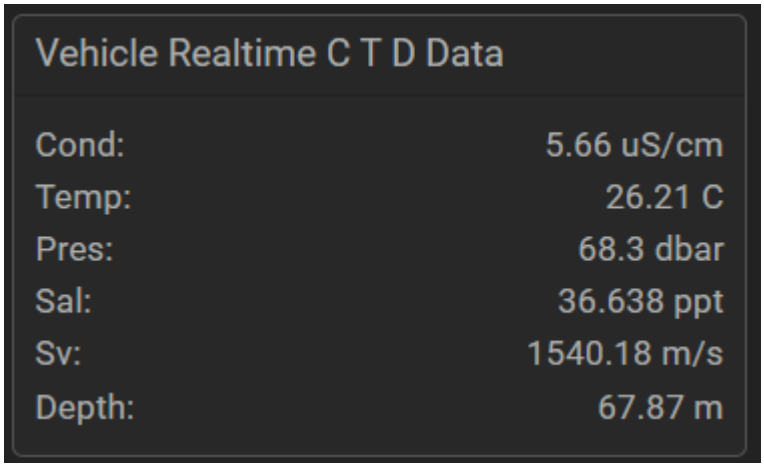
Vehicle Realtime USBL Data

- USBL is a method of underwater navigation that uses a transceiver head lowered under the ship that communicates with a beacon on the ROV, computing the range and angle from the transceiver head to the beacon. The software then can determine the position of the beacon on the ROV.
- This is a very accurate form of underwater navigation, but is generally not as accurate as the Sprint INS solution.



Vehicle Realtime CTD Data

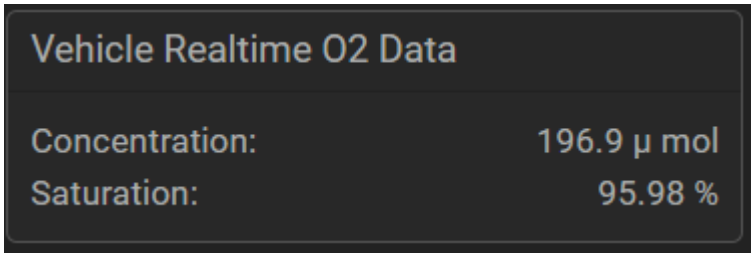
- Data from a SBE49 FastCAT CTD
- Realtime measured data:
  - Conductivity (uS/cm)
  - Temperature (C)
  - Pressure (dbar)
- Realtime Derived Variables
  - Salinity (ppt)
  - Sound Velocity (m/s)
  - Depth (m)



Vehicle Realtime O2 Data

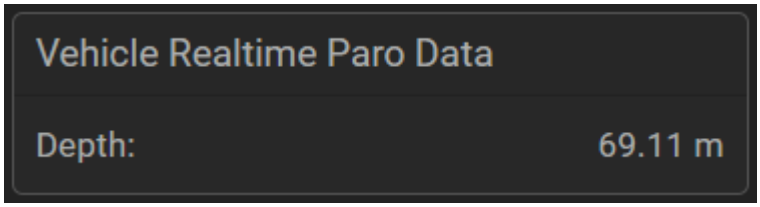
Values shown are corrected to account for the effects of salinity and pressure . Raw values are available in separate data files if needed.

- Aanderaa Oxygen Optode
  - Concentration: 196.9 umol
  - Saturation: %



Vehicle Realtime Paro Data

- Paroscientific Digiquartz Depth Sensor (m)



Sealog in Use

Once event templates are set up for your dive…now it's time to put the templates in action.

Who Can Use Sealog?

- Every dive, SOI has a datalogger on watch, who works to track information specific to the vessel's need for operation and outreach and to ensure specific vehicle milestones are set up for Sealog's reporting mechanisms.
- It's up to the science party to provide watchstanders who will log and keep track of scientific data logging needs. Generally at least one (if not all) watchstanders are in charge of adding events as needed during a dive.
- Any scientist onboard the ship who wants to contribute to event logging is able to do so.

What Do We Log?

- Crewmembers will log Vehicle Events that are critical to Sealog operation and reporting mechanisms. We also will log certain highlights for our Outreach team. All of our events will be available to scientists in the data exports and reports.
- We recommend that Scientists communicate internally about what kinds of events should be logged to best serve your needs. Some examples may be:
  - Wide angle and/or zoom screengrabs of samples prior to sampling.
  - Screengrabs to capture sample storage location.
  - Screengrabs of biological observations.
  - Screengrabs of anthropological observations.

When Do We Log Events?

- Sealog works best when events are logged during an active dive.
- Often scientists will assign certain individuals to be incharge of logging in Sealog per watch.
- We can also log Sealog after the fact, but the screen grabs and metadata are NOT captured.
- ASNAP is an automatic screengrab that is run at a designated timed interval during the dive. The default settings have ASNAP running once every 60 seconds, that will take a screengrab of video and metadata, so a reasonable log of the dive will exist with minimal science events logged.

Where Can We Use Sealog?

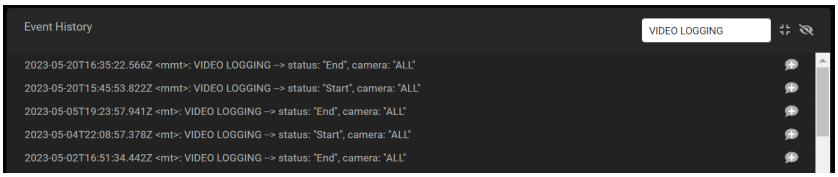
- Currently, Sealog is only available onboard Falkor (too)'s intranet.
- You can log events anywhere on the ship that has internet connectivity.
- In the future we hope to provide access to Sealog for scientists ashore.

How Should We Use Sealog?

- We provide the resource and it's up to you as the science party to decide your cruise best practices.
  - Some examples may include:
    * Taking a screengrab prior to any sample.
    * Adding any important information to be noted with each sample such as ID or storage location.
    * Log certain observations during a dive like anthropogenic or biological.
    * Duplicating key notes into a spreadsheet or logbook.

Filter/Searching for An Event

- On the main screen, the "Event History" box has a filter box. It's important to note that this will only filter button names and wont "search" for a keyword in the text or options.
- The example below shows how you can filter your events to show only the events that are associated with "VIDEO LOGGING."



- To search keywords, navigate to the following location:
  - Review Cruises/Dives
  - Select the appropriate year and cruise.
  - Select the dive.
  - Select "Review"
  - The Event Filter window will appear.
    - Event Value: searches only the Event Value (ex. Vehicle, Samples, etc).
    - Author: searches for all entries by a certain author.
    - Time: Gives you events within a certain time window.
    - Freeform Text: Searches the "text" field present on all events

Data Exports

After every dive, a script is run that will summarize the dive, compile all of the metadata and send it to the PI-NAS. The following exports are available after every dive.

- Dive Video
  - Science Camera- SCITOO (4K)
  - Situational Camera- SITTOO (4K)
  - HD Quads
  - SD Quads

  File name: {camera}_{YYYYMMDD}T{HHMMSS}Z.mov
- Images from all of the events, named by camera/date/time of the snapshot.
- Dive Summary Report PDF (explained in detail below).

- Vehicle Summary Report PDF (explained in detail below).
- Sealog Export (CSV, JSON)
- All the information from the dive, every event with associated metadata included.
- Aux Data Export (JSON)
- Auxiliary data sensors during the dive such as CTD, O2, High Temp probe, etc.
- Event Only Export (CSV, JSON)
- Export of events and their options and comments.
- Event Templates (JSON)
- Sealog configuration file for the dive, grabbing all of the event templates configured.
- Lowering Record (JSON)
- Dive number, location, and summary.

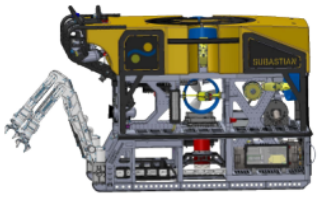
Dive Reports

Dive Summary Report

Each dive, a summary report gets produced which includes the following information and graphics:

- Dive Overview

  Includes dive number, location, and summary.



Dive Summary Report: S0508

Remotely Operated Vehicle: SuBastian

Generated: Sat May 6 17:37:05 2023

Dive Number: S0508

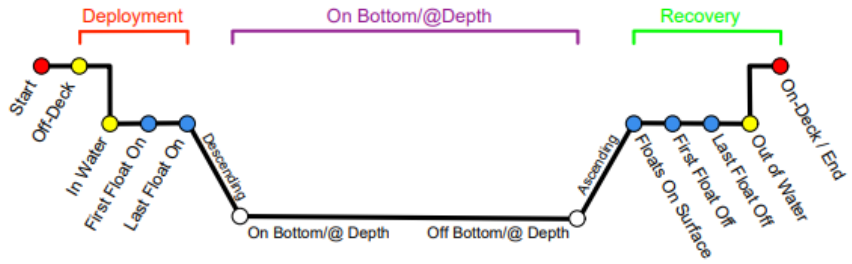
Dive Location: Desecheo Ridge

Dive Summary: Continuing where dive 507 left off.

We have had some great dives at 120-170 m. For this next dive, we would like to move to deeper waters, focusing on ~250 m. We will go along the track from a pervious Nautilus cruise where they saw a good diversity of corals at deeper depths. Dive activities: 1. Conduct measurements and collections as follows (in order): a. Photogrammetry – image coral b. SOLARIS – measure superoxide; start by measuring seawater ~1 m away from the coral, move wand to surface, move wand to several other areas on the coral surface, then move back to background seawter. c. Squeezers – if collecting waters at surface, fire a squeezer at the coral surface d. Collect coral fragments in coral quivers. 2. Conduct measurements and collections of a couple sponges as follows (in order): a. SOLARIS – measure superoxide; start by measuring seawater ~1 m away from the sponge, move wand to outside of sponge, move wand inside of sponge, then move back to outside of sponge. b. Squeezers – collect waters inside sponge c. Collect sponge fragments and place in coral quiver 3. Collect eDNA samples and water samples (Niskins) at sites along transects corresponding to ROS data. 4. Towards end of dive, collect coral fragments for aquaria incubations (one species, multiple fragments) 5. End Dive.

- Dive Timeline

  Includes key dive milestone timelines, max depth, and number of samples collected

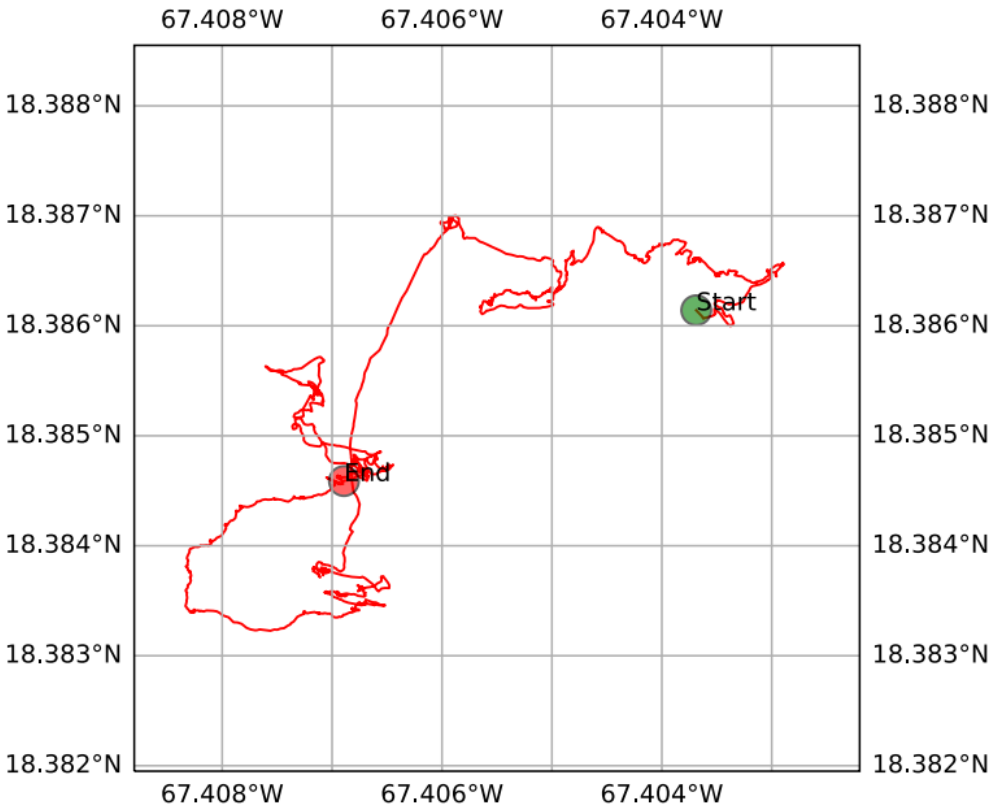


Stage	Date/Time	Stage Duration	Total
Off-Deck	2023-04-20 21:20:13	**Deployment:** 00d 00:06:19	**Deck-to-deck:** 00d 17:54:52
Last Float On	2023-04-20 21:26:33		
		Descent: 00d 00:18:21	
On Bottom/@ Depth	2023-04-20 21:44:54	**On Bottom/@ Depth:** 00d 16:54:20	
Off Bottom/@ Depth	2023-04-21 14:39:14		
		Ascent: 00d 00:18:08	
Floats On Surface	2023-04-21 14:57:23	**Recovery:** 00d 00:17:42	
On-Deck / End	2023-04-21 15:15:06		
Bounding Box: 18.387002, -67.40289, 18.383227, -67.408334			
Max Depth: 416.75		**Samples Collected:** 35	

- Dive Track

  Visual display of the ROV's track throughout the dive.

Dive Track:

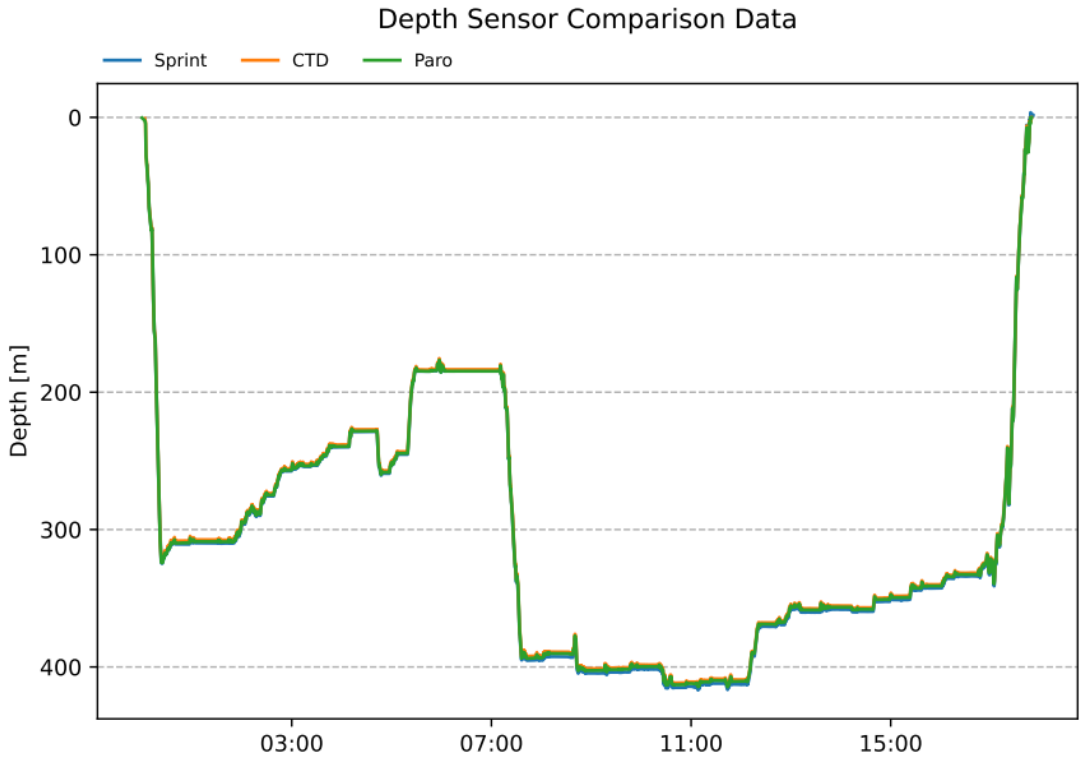


- Depth Profile

  `Comparison of all the depth sensor's dive profile`

Data Plots:

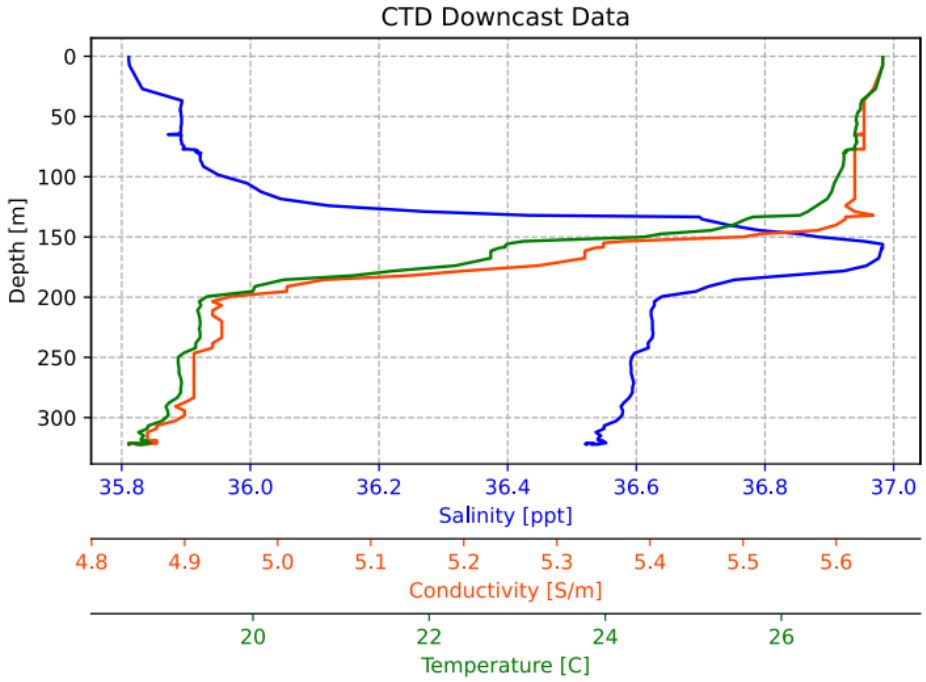
Depth Profiles From All Depth Sensors:



- CTD Profile

  Profiles of conductivity, temperature, salinity and depth for the descents and ascents.

CTD Profiles:



- Problems

  `Any problems (either vehicle or science related) for the dive.`

Problems:

No PROBLEM events recorded for this dive

- Events Breakdown Table

  Count of all the Event Value's recorded on the dive

Event Breakdown Table:

Event Value:	Count:	%:
ASNAP	6412	93.91
FLOAT OFF	13	0.19
FLOAT ON	12	0.18
FREE_FORM	25	0.37
HIGHLIGHT-FRAMEGRAB	136	1.99
INS RESET	1	0.01
MOSAIC	2	0.03
OBSERVATION	42	0.62
SAMPLE	35	0.51
SOLARIS	34	0.50
Sample_framegrab	32	0.47
VEHICLE	10	0.15
VIDEO HIGHLIGHT	36	0.53
VIDEO LOGGING	1	0.01
WATCH CHANGE	13	0.19
eDNA_sample	24	0.35
Total:	**6828**	**100.0**

- Event Value Table

  `Each Event Value gets its own table with metadata for each individual event.`

Event - VIDEO HIGHLIGHT

Date/time	Author	Event Options	Position:	Alt:	CTD Data:	Text/Comment:
2023-04-20 22:19:06	mt		18.386614 ddeg -67.403668 ddeg 308.82 m	No Data	4.8 uS/cm 18.24 C 36.469 ppt	Very cool large coral.
2023-04-20 22:19:42	mt	status: Start	18.386598 ddeg -67.403654 ddeg 309.19 m	No Data	4.74 uS/cm 17.75 C 36.402 ppt	
2023-04-20 22:22:07	mt	status: End	18.386607 ddeg -67.403659 ddeg 308.21 m	No Data	4.74 uS/cm 17.7 C 36.402 ppt	Corallium
2023-04-20 22:25:54	mt		18.386596 ddeg -67.403658 ddeg 309.8 m	No Data	4.73 uS/cm 17.62 C 36.394 ppt	Hermit crab on coral
2023-04-20 22:26:27	guest		18.386596 ddeg -67.403659 ddeg 309.8 m	No Data	4.73 uS/cm 17.64 C 36.396 ppt	Hermy crab
2023-04-20 22:26:31	mt		18.386595 ddeg -67.403659 ddeg 309.79 m	No Data	4.73 uS/cm 17.66 C 36.395 ppt	
2023-04-20 22:26:44	guest		18.386594 ddeg -67.403658 ddeg 309.79 m	No Data	4.73 uS/cm 17.63 C 36.394 ppt	Gorgonian
2023-04-20 22:51:32	mmt		18.386604 ddeg -67.403664 ddeg 309.31 m	No Data	4.76 uS/cm 17.91 C 36.43 ppt	audio - going for the ride
2023-04-20 22:58:06	mt		18.386587 ddeg -67.403700 ddeg 309.99 m	No Data	4.73 uS/cm 17.63 C 36.388 ppt	Corallium and Solaris sample shot

Vehicle Summary Report

This report is meant to be a summary of events that the ROV pilots can use to keep track of vehicle information. Most of the data here is more extensively covered in the Dive Summary Report. Vehicle Summary Report includes:

- Dive Timeline
- Dive Track
- Depth Profile
- Depth Sensor Comparison Plot
- ROV Compensator Pressure Data
- CTD Profiles
- Problems
- Watch Change Times

Frequently Asked Questions

- Is it possible to log an event in the past?

  Yes, at the bottom of each event template entry, there is an option for "Custom Time (UTC)." This can be used to adjust the time of the event, however Sealog will not grab past metadata for this entry.

- Which ROV Depth value is most accurate?

  Accuracy for depth is very much dependent on several factors (sensor calibration, depth, latitude, etc) your best option is to ask the MT's on your cruise.

- There are multiple positions in the metadata, which ones should I use?"

  USBL position is solely based on the USBL underwater tracking of the vehicle. The Realtime Nav Data is SuBastian's INS, which takes into account several inputs to make an educated calculation on position. In general, Realtime Nav Data is the position you should be using, but always ask the MT's on your cruise.

- Can I delete an event?

  Only system administrators have the ability to delete an event, but you can ask an MT to delete it for you if needed.

- Can I edit a past event?

  You cannot edit a past event, but you can add a "comment" to the event where you can correct or add more information.

- When I search for a known event, nothing is shown.

  Great Question! We are still working on this one :)

- Can I review the dive after it is over?

  Yes, while on the ship you can review the dive. All of the data during the dive is being transferred to the PI-NAS, which you'll have access to throughout the cruise. Shortly after the end of a dive, the dive summary and screengrabs will be available on the PI-Nas.

- Can I replay a dive?

  Under Review Cruises/Dives, after you've navigated to the correct year, cruiseID and dive number, you can select "Replay" which will allow you to step through every event logged during that dive.

- Am I able to login to Salog after I am off the ship?

  Currently this is not available, however all data associated with Sealog is found in your Cruise Data Folder under each dive.

- What if I forgot to screen grab an event?

  Sealog has a feature called "ASNAP" that takes a screengrab on a designated timed interval. The default is set to 1 per minute, but depending on your needs, you can make this more or less frequent. Speak to the Marine Technicians about changing your ASNAP interval.

- Can we change templates after initial configuration?

  Yes of course, you can change templates to better fit your needs anytime, but it's recommended that you spend time prior to the first dive to get the dive templates to fit your needs. Certain templates (like sampling) need to be approved by Marine Technicians.

- Can we use the same account for both instances of Sealog (SuBastian and Falkor)?

  No, currently these systems are independant and you will need to create a new user for each.

A Appendix

A.1 NMEA Referrence

References