



Data 101

Foundations of data
management, loading
and extracts

The FACT Network

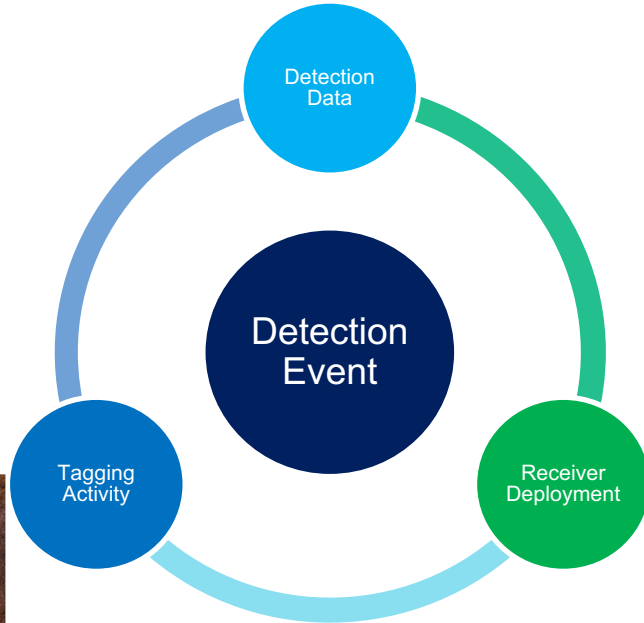
Detection events- intersection of machine and people



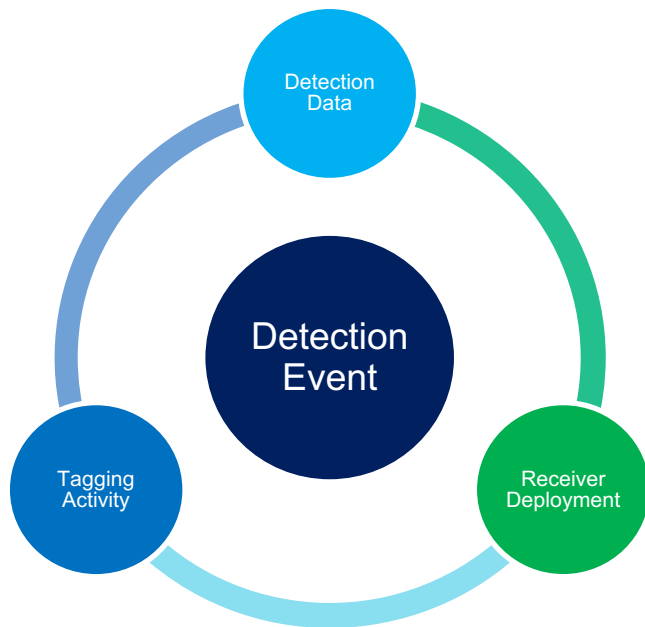
Detection data: The 'what' (tag) to the 'when' (date time) generated by a machine.

Tagging activity: The history of which tags are in which animals, where those animals were released, how long the tag will live, and all auxiliary measurements and observations made at tagging time by the researchers. Recorded by people.

Receiver deployment: The history of receiver deployments. The 'where' (coordinates) receivers were in the water. Recorded by people.



Data Types



Detection data:

Raw (unedited) vrl files

*Note csv extracts do not contain event information used to time correct and get temperatures.

Tagging metadata:

Tag metadata form

Tag specs

Receiver deployment metadata:

Deployment metadata form

Receiver specs

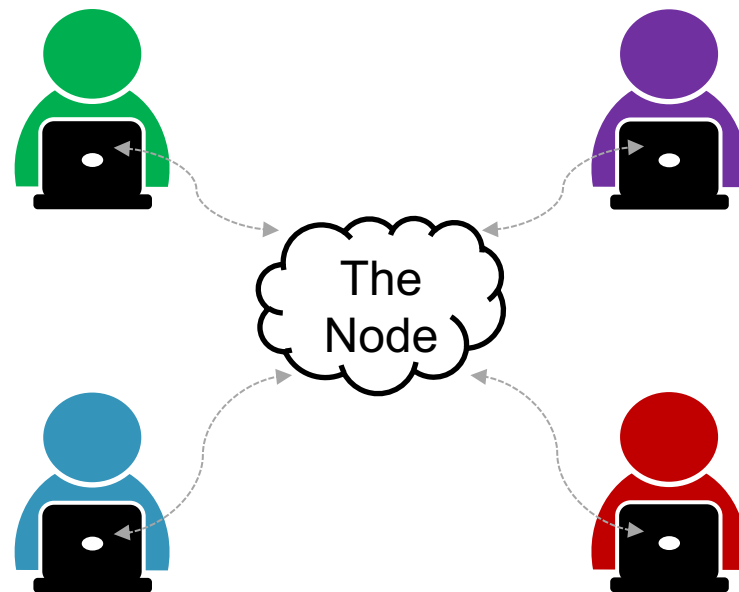
Other data types:

Mobile coordinate files

Environmental measurements

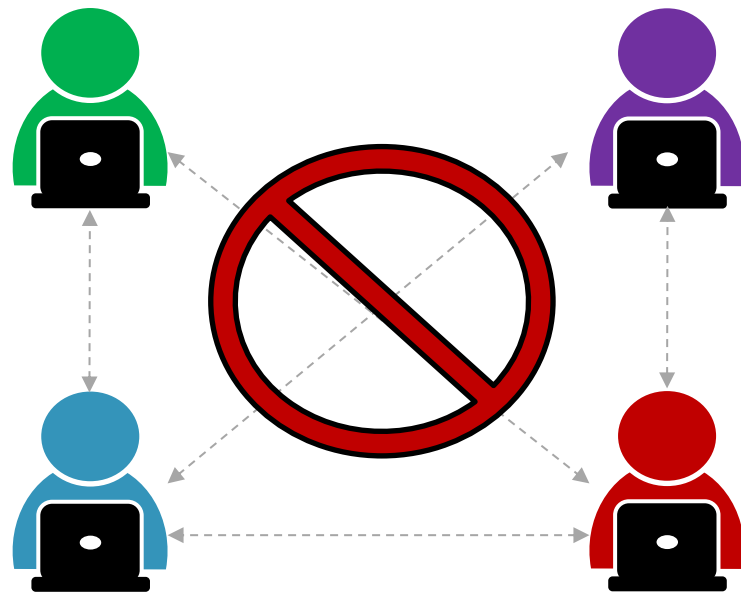
An simple overview of data sharing between researchers under the FACT Network User Agreement

- **Researchers Conduct Their Projects**
- **Data Uploaded and Processed Online**
- **Researchers Receive Matched Detections**
- **(More details to come)**



Challenges of Historical Data Sharing

- **Historical Data Sharing Directly Between Researchers**
- **Not Effective**
- **Not Scalable**
- **Data Quality Issues**
 - Times Not Corrected (or are they?)
 - Potential for Duplicate Detections
 - Varying Formats Require Additional Processing Time



Project Design - Resources

[Home](#) > [Yellow Perch, Walleye, and Sauger: Aspects of Ecology, Management, and Culture](#) > [Chapter](#)

Can You Hear Me Now? Design Considerations for Large Lake, Multispecies Telemetry Projects

[Aaron Shultz](#), [Carl A. Klimah](#), [Jocelyn Curtis-Quick](#), [Rachel Claussen](#), [Jalyn LaBine](#) & [Adam Ray](#)

Chapter | [First Online: 22 November 2021](#)

247 Accesses | 1 Citations | 2 Altmetric

Part of the [Fish & Fisheries Series](#) book series (FIFI, volume 41)

Methods in Ecology and Evolution



RESEARCH ARTICLE | [Open Access](#) | [CC](#) [i](#)

Evaluation of acoustic telemetry grids for determining aquatic animal movement and survival

Richard T. Kraus , Christopher M. Holbrook, Christopher S. Vandergoot, Taylor R. Stewart, Matthew D. Faust, Douglas A. Watkinson, Colin Charles, Mark Pegg, Eva C. Enders, Charles C. Krueger

First published: 03 March 2018 | <https://doi.org/10.1111/2041-210X.12996> | Citations: 49

This article has been contributed to by US Government employees and their work is in the public domain in the USA.

RESEARCH ARTICLE

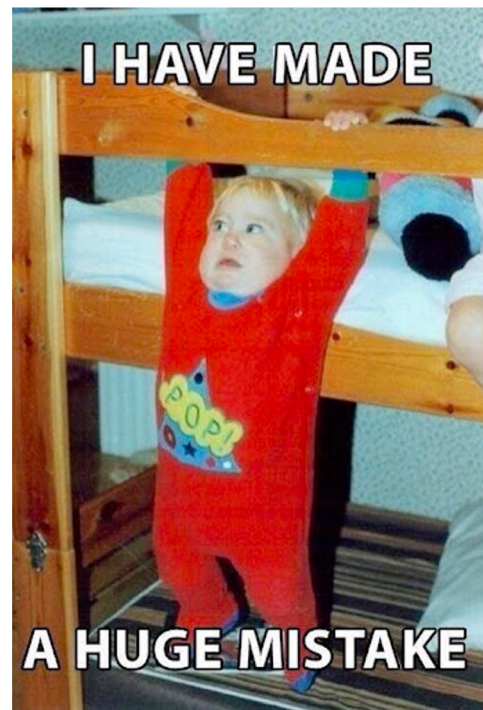
Optimising the design of large-scale acoustic telemetry curtains

Andre Steckenreuter ^{A J}, Xavier Hoenner ^B, Charlie Huveneers ^C, Colin Simpfendorfer ^D, Marie J. Buscot ^E, Katherine Tattersall ^B, Russell Babcock ^F, Michelle Heupel ^G, Mark Meekan ^G, James van den Broek ^A, Phillip McDowall ^A, Vic Peddemors ^H and Robert Harcourt ^{A I}

+ Author Affiliations

Marine and Freshwater Research 68(8) 1403-1413 <https://doi.org/10.1071/MF16126>

Submitted: 8 April 2016 Accepted: 6 October 2016 Published: 30 November 2016



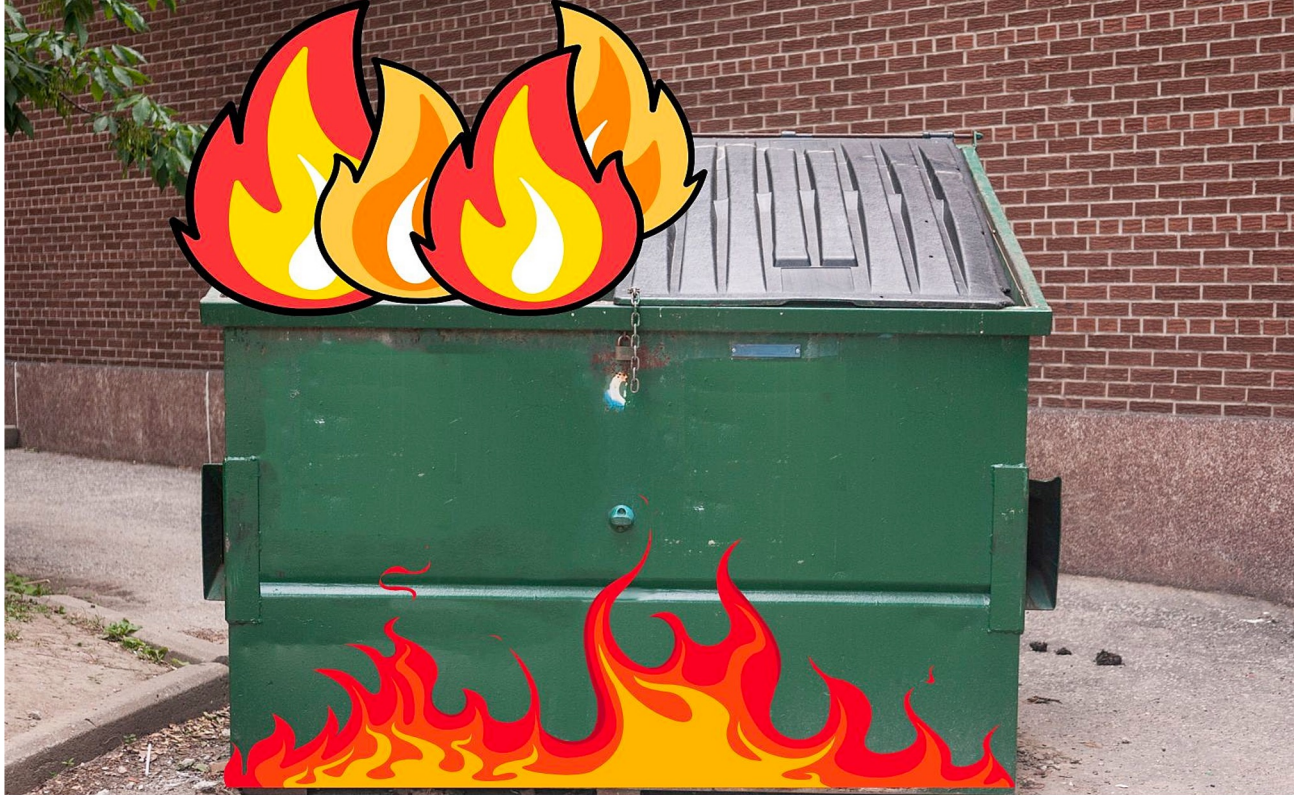


Project Data Management

Project Complexity: Growth Over Time and External Factors



Proper Management Prevents Project Disasters



Resources to Help Manage Project Data

The screenshot displays the Vemco Biotelemetry User interface. At the top, there are navigation tabs: "Update Station Status", "Update Receiver Status", and "Deployment List". The main header includes the Vemco logo and the text "Vemco Biotelemetry User". Below the header, there are several action buttons: "Deployment" (dropdown), "Retrieval", "+ Add Receiver", "+ Add Station", "+ Add Sensor", and "Run Report". On the right, there is a "Deployment Shortform" section with "From" and "To" input fields. Below these elements is a table with the following data:

DEPLOY_ID	Station	Receiver_Number	Deploy_Date_Time	Status
95	18HO	104535	2016-09-16T12:46:00	Deployed

The banner for InnovaSea Fathom Software features the company logo in the top left and a navigation menu in the top right. The main text "Fathom Software" is prominently displayed in the center, with a descriptive tagline below it. The background image shows a hand typing on a laptop keyboard, with a pen and a small InnovaSea device visible on the desk.

INNОВАSEA

INSIGHTS NEWS ABOUT US CONTACT US LOGIN ▾ 🔍

Open Ocean Aquaculture Land-Based Aquaculture Aquaculture Intelligence Fish Tracking

Fathom Software

Comprehensive collection of cloud-based fish tracking tools provides deep visibility into your data.

The VEMBU Database

The VEMBU access database is designed to standardize and organize deployment- related data.

Metadata:

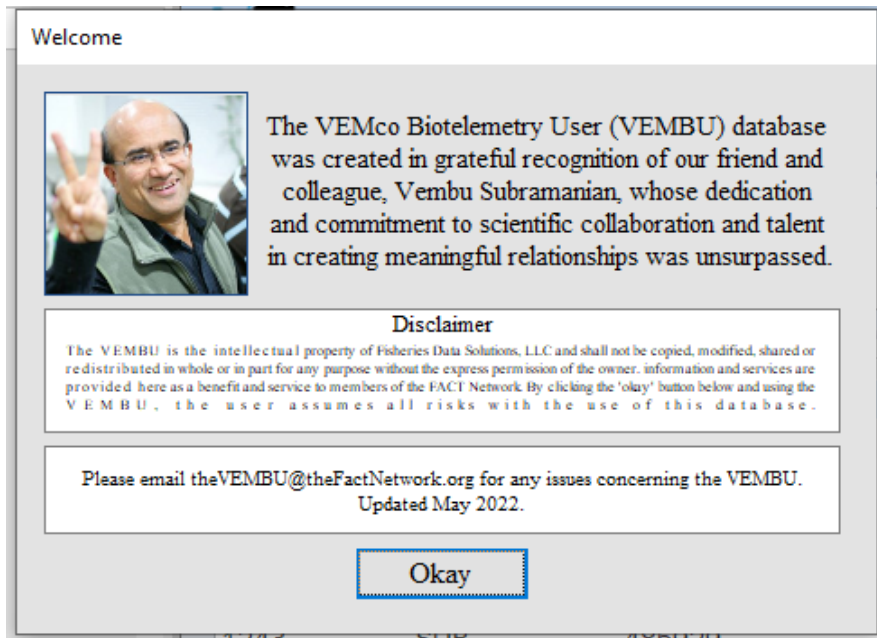
- Station
- Receiver
- Environmental logger
- Tag
- Equipment Vendor Specs

Field Data:

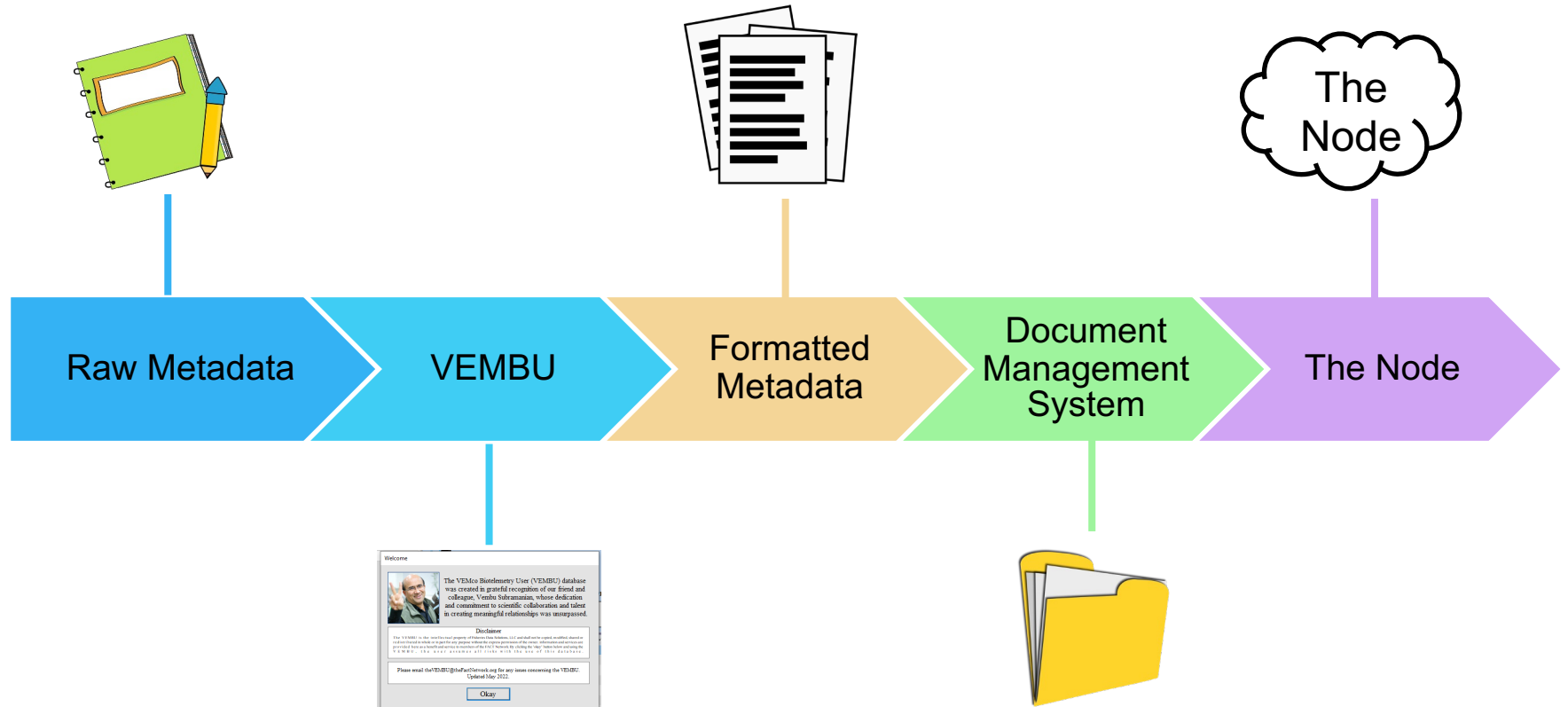
- Deployment and retrieval info
- Receiver maintenance
- Station maintenance
- Move a station

Organization:

- Retire equipment
- Battery changes
- Much more



Connection Between the VEMBU and the Node



A brief introduction to the VEMBU

The screenshot displays the VEMBU software interface, which is a data management tool for fishery research. The interface is divided into several sections:

- Menu Bar:** Includes File, Home, Create, External Data, Database Tools, and Help.
- Toolbar:** Contains various icons for file operations (View, Paste, Cut, Copy, Format Painter), data manipulation (Filter, Sort & Filter, Refresh, Save, Delete, More), and text formatting (Find, Replace, Go To, Select).
- Left Sidebar:** Labeled "All Access Objects", it lists various tables and queries, including Attachment_Stations, Copy Of tblConnected, Deployments_Receiver, Deployments_SensorOnly, LookUpValues, Maintenance_Receiver, Maintenance_Station, Metadata_Acoustic_Release, Metadata_Receivers, Metadata_Sensors, Metadata_Stations, Paste Errors, Receiver_BatteryChange, Retrievals_Receiver, Retrievals_SensorOnly, Tag_Metadata, tblConnected, and tblGliderDeployment.
- Main Content Area:** Features the VEMBU logo and a series of buttons for data management: Retrieval, Deployment, Sensors, Mobile Receivers, Add equipment (Add Receiver, Add Station, Add Sensor, Acoustic release), and Receiver Status. An "Export Deployment Shortform" button is also present.
- Data Table:** A table with the following columns: DEPLOY_ID, Station, Receiver_Number, Deploy_Date_Time, and Status. The table contains 15 rows of data, all showing a status of "Deployed".

DEPLOY_ID	Station	Receiver_Number	Deploy_Date_Time	Status
1251	SLNA	137295	2023-05-24T9:17:00	Deployed
1250	THNO	487179	2023-04-03T16:21:00	Deployed
1249	CEBA	127651	2023-02-14T17:39:00	Deployed
1246	CPRE	107888	2023-02-14T16:32:00	Deployed
1245	UPDB	108012	2023-02-14T15:40:00	Deployed
1244	SLDJ	484728	2023-02-14T15:03:00	Deployed
1243	SLIB	485929	2023-02-02T17:44:00	Deployed
1242	SLR6	104790	2023-02-02T17:15:00	Deployed
1241	SLR7	110349	2023-02-02T16:43:00	Deployed
1240	SLR8	134615	2023-02-02T15:39:00	Deployed
1239	SLR9	107893	2023-02-02T15:01:00	Deployed
1238	SLR10	137302	2023-02-02T14:35:00	Deployed
1237	DAVT	487180	2023-02-02T13:56:00	Deployed

Streamlining Responses with Prepopulated Dropdown Selections

- The VEMBU is prepopulated with some responses.
- Add your own responses!
 - Drop down selection in other forms
 - Reduces need to repeatedly type the same response.
 - Add projects, grants, species, etc.

Database Tools Help Tell me what you want to do

Ascending Selection ~ Refresh New Totals Replace
Descending Advanced ~ All ~ Save Spelling Find Go To ~
Remove Sort Toggle Filter More ~ Select ~

Sort & Filter Records Find Text Formatting

Customize Your Values

Required: Add array and tag project codes (as reported to a node), grant or project name(s), tagging PIs, tagging organizations, taggers, common names, scientific names, and state.
Optional: Many of the forms have dropdown lists based on the columns below. To add something to the dropdown lists, add the variable to the appropriate column below and click save.

Array Shortcode	Tag Shortcode	Grant or Project	State	Common Name	Scientific Name	Tagging Organizations	Tagging PIs
TEQ	SGGAJ	MARFIN FY21	Florida	Cobia	Rachycentron canadum	FWRI Tequesta	Jim Whittington
	COPREPRO	Sea Grant Greater Amberjack		Greater Amberjack	Seriola dumerili		Joy Young
	COBCRP	FNEMO		Fat Snook	Centropomus parallelus		Phil Stevens
	FNEMO	SLFWI		Goliath Grouper	Epinephelus itajara		Chris Taylor
	SLFWI			Atlantic Tarpon	Megalops atlanticus		Mark Barton
	GGINEC			Cubera Snapper	Lutjanus cyanopterus		
	WPAJ			Gray Snapper	Lutjanus griseus		

NUM LOCK

Streamlining Responses with Prepopulated Dropdown Selections

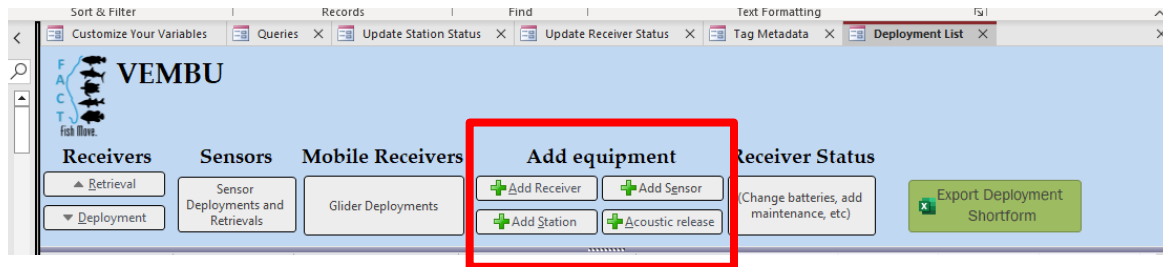
Upload tag spec sheets from manufacturer to populate dropdowns.

**Note: mis-entered tag ID, serial number, and battery are some common flags when submitting data to the node. This fixes that!*

The screenshot shows a software interface titled 'Tag Metadata'. At the top, there is a menu bar with 'Database Tools' and 'Help'. Below the menu is a toolbar with various icons for actions like 'Selection', 'New', 'Totals', 'Refresh', 'Save', 'Spelling', 'Find', 'Go To', and 'Select'. The main window has a tabbed interface with tabs for 'Customize Your Variables', 'Queries', 'Update Station Status', 'Update Receiver Status', 'Tag Metadata' (active), and 'Deployment List'. The 'Tag Metadata' tab displays a table with the following columns: 'Open', 'Project Short', 'Common Name', 'Animal ID', 'Tag_ID', 'Deployment_Type', 'UTC_RELEASE_DATE', 'Estimate_Tz', and 'Hav'. The table contains 16 rows of data, all with 'SLFWI' as the Project Short and 'Sheepshead' as the Common Name. The 'Tag_ID' column shows a sequence of IDs from A69-1602-37656 to A69-1602-37671. The 'UTC_RELEASE_DATE' column shows dates and times ranging from 2020-05-25 to 2020-06-08. The 'Estimate_Tz' column shows the value '520'. A red circle highlights the 'Import Tag' button, which is located next to the 'New Tag' button. There is also an 'Export Tagging Metadata' button.

Open	Project Short	Common Name	Animal ID	Tag_ID	Deployment_Type	UTC_RELEASE_DATE	Estimate_Tz	Hav
Open	SLFWI	Sheepshead	001	A69-1602-37656		2020-06-10T14:58:00	520	
Open	SLFWI	Spotted Seatrout	002	A69-1602-37657		2021-05-25T2:56:00	520	
Open	SLFWI	Sheepshead	003	A69-1602-37658		2020-06-10T14:57:00	520	
Open	SLFWI	Spotted Seatrout	004	A69-1602-37659		2020-06-10T14:40:00	520	
Open	SLFWI	Sheepshead	005	A69-1602-37660		2020-06-08T14:03:00	520	
Open	SLFWI	Sheepshead	006	A69-1602-37661		2020-06-08T15:31:00	520	
Open	SLFWI	Sheepshead	007	A69-1602-37662		2020-06-08T15:16:00	520	
Open	SLFWI	Sheepshead	008	A69-1602-37663		2020-06-08T14:23:00	520	
Open	SLFWI	Sheepshead	009	A69-1602-37664		2020-06-08T15:39:00	520	
Open	SLFWI	Sheepshead	010	A69-1602-37665		2020-06-08T14:17:00	520	
Open	SLFWI	Sheepshead	011	A69-1602-37666		2020-06-08T14:12:00	520	
Open	SLFWI	Sheepshead	012	A69-1602-37667		2020-06-08T14:08:00	520	
Open	SLFWI	Sheepshead	013	A69-1602-37668		2020-06-08T13:58:00	520	
Open	SLFWI	Sheepshead	014	A69-1602-37669		2020-06-08T14:20:00	520	
Open	SLFWI	Sheepshead	015	A69-1602-37670		2020-06-08T17:08:00	520	
Open	SLFWI	Sheepshead	016	A69-1602-37671		2020-06-08T15:34:00	520	

Metadata: Stations, Receivers, and Sensors



Add New Receivers

Add Receiver

Save and New Close

Receiver Serial Number:
Numeric serial as 123456

Receiver Model Type:
As in VR2 or VR2W, etc.

Date Purchased:
yyyy-mm-dd

Integrated Transponder Tag ID:

AR Release Code:

AR Enable Code:

Map:

Purchased under:
Grant or project from look-up values

Entered by:

Add New Stations

Add Station

Save and New Close

Station:
Four to six letter/number code as in SLWS or SLW-12

Date Established:
Format: yyyy-mm-dd

Attachment Method:
Description as in Sand Auger

Latitude:
Decimal degrees as in 24.34567

Longitude:
Decimal degrees as in -80.34567

Bottom Depth: Feet
Depth (m) at deployment location

Riser Length: Feet
Length (m) from the anchor to topmost point of the mooring assembly

Instrument Depth: Feet
Depth (m) of the instrument. I.e. bottom depth minus distance from bottom to instrument

Waterbody Type:

Habitat Type:

Bottom Type:

Station Description:

Project:
The project the station was established under, or write your own response.

Station Timeline:
For example: Year-round

State: Florida

Array: TEQ

Station Status: Active

Add New Sensor

Add Sensor

Save and New Clear From Close

Sensor serial number:

Type:

Make:
For example, Onset

Model:
For example, Hobo Water Temperature Pro

Date Purchased:
yyyy-mm-dd

Project:

Receiver Deployments and Retrievals

Linked together by unique ID (automatically assigned)

Deployment QA/QC

- Can only deploy to **active** stations with '**on shelf**' receivers
- Coordinates can be changed and updates current location

Deployment Details

Station: [Dropdown] (New)

Receiver Serial Number*: [Dropdown]

All dates and times must be in UTC. See link to convert online <https://www.timeanddate.com/worldclock/converter.html>

Integrated Transponder: [Text]

Initialize Date Time: [Text]

Deploy Date and Time*: [Text]

Battery Life: [Text]

Latitude*: [Text]

Longitude*: [Text]

Status: **Deployed**

Entered by: [Text]

Acoustic Release Receivers

AR Serial No: [Text]

AR Model No: [Text]

Comments: [Text Area]

For receivers with assoc. tag

Tag_Setting: [Dropdown]

Interval: [Dropdown]

Power: [Dropdown]

For sensor deployments (e.g. temp logger) with a receiver, use the sensor deploy form.

Select station

Coordinates auto populate

Deployment Details

Station: [Dropdown] (New)

Receiver Serial Number*: [Dropdown]

Integrated Transponder: [Text]

Initialize Date Time: [Text]

Deploy Date and Time*: [Text]

Battery Life: [Text]

Latitude*: [Text]

Longitude*: [Text]

Status: **Deployed**

Entered by: [Text]

Acoustic Release Receivers

AR Serial No: [Text]

AR Model No: [Text]

Comments: [Text Area]

For receivers with assoc. tag

Tag_Setting: [Dropdown]

Interval: [Dropdown]

Power: [Dropdown]

For sensor deployments (e.g. temp logger) with a receiver, use the sensor deploy form.

Annotations:

- A red arrow points from the text "Select station" to the "Station" dropdown menu.
- A red arrow points from the text "Coordinates auto populate" to the "Latitude*" and "Longitude*" fields.

Gliders, too!

Database Tools Help Form Datasheet Tell me what you want to do

Property Sheet Chart Background Color Alternate Row Color Conditional Formatting

Tools Customize Your Variables Queries Update Station Status Tag Metadata Deployment List Glider Deployment

Mobile Receiver Deployment List



Glider_Id	Mission_Id	Ins_Model_Number	Ins_Serial_Number	Deploy_Date_Time	Deploy_Lat	Deploy_Long
-----------	------------	------------------	-------------------	------------------	------------	-------------

Glider Deployment

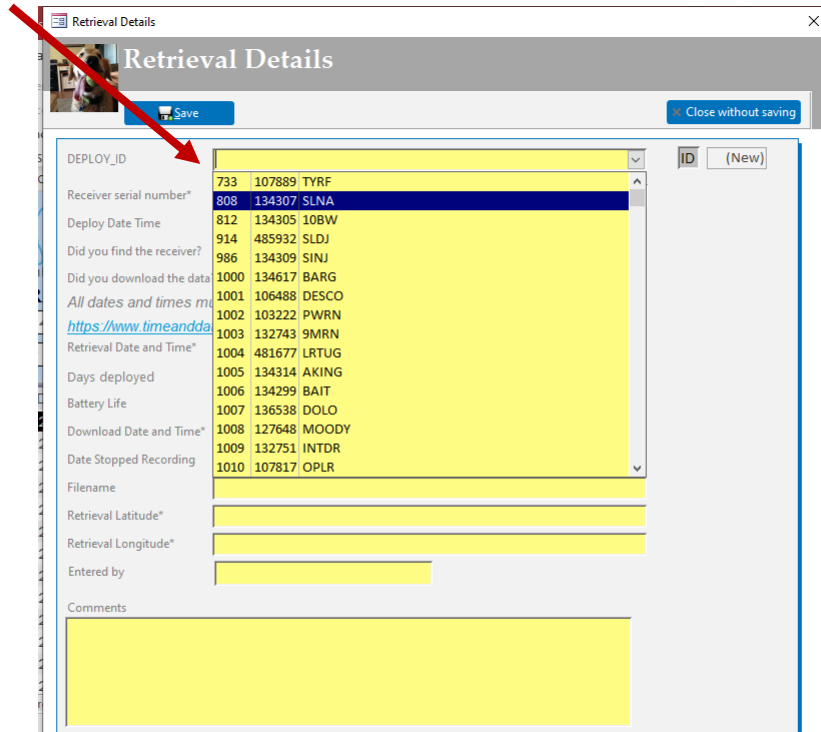
Glider ID*	ID (New)	Data Downloaded*	
Mission ID*		Download Date Time*	
INS Model Number*		Recover Date Time*	
INS Serial Number*	0	Recovered*	
Deploy Date Time*		Recover latitude*	0
Deploy Latitude*	0	Recover longitude*	0
Deploy Longitude*	0	File Name*	
Bottom Depth*	0		

All dates and times must be in UTC. See link to convert online <https://www.timeanddate.com/worldclock/converter.html>

Receiver Deployments and Retrievals

Linked together by unique ID (automatically assigned)

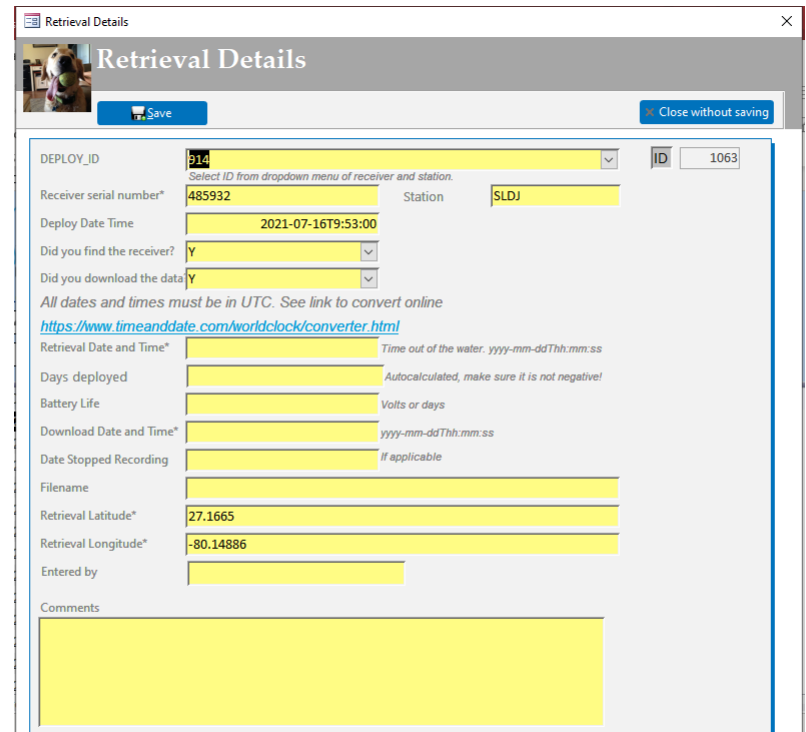
Select station/ receiver that has been deployed



The screenshot shows the 'Retrieval Details' form. A red arrow points to the 'DEPLOY_ID' dropdown menu, which is currently empty. Below the dropdown is a list of receiver and station information. The form includes fields for Receiver serial number, Deploy Date Time, Did you find the receiver?, Did you download the data, Retrieval Date and Time, Days deployed, Battery Life, Download Date and Time, Date Stopped Recording, Filename, Retrieval Latitude, Retrieval Longitude, Entered by, and Comments.

DEPLOY_ID	Receiver serial number*	Station
733	107889	TYRF
808	134307	SLNA
812	134305	10BW
914	485932	SLDJ
986	134309	SINJ
1000	134617	BARG
1001	106488	DESCO
1002	103222	PWRN
1003	132743	9MRN
1004	481677	LRTUG
1005	134314	AKING
1006	134299	BAIT
1007	136538	DOLO
1008	127648	MOODY
1009	132751	INTDR
1010	107817	OPLR

Auto populates deploy datetime, coordinates, etc



The screenshot shows the 'Retrieval Details' form with auto-populated values. The 'DEPLOY_ID' dropdown is set to '914'. The 'Receiver serial number*' field is '485932' and the 'Station' field is 'SLDJ'. The 'Deploy Date Time' field is '2021-07-16T9:53:00'. The 'Did you find the receiver?' and 'Did you download the data' fields are both set to 'Y'. The 'Retrieval Date and Time*' field is empty. The 'Days deployed' field is empty. The 'Battery Life' field is empty. The 'Download Date and Time*' field is empty. The 'Date Stopped Recording' field is empty. The 'Filename' field is empty. The 'Retrieval Latitude*' field is '27.1665'. The 'Retrieval Longitude*' field is '-80.14886'. The 'Entered by' field is empty. The 'Comments' field is empty.

DEPLOY_ID: 914 (Select ID from dropdown menu of receiver and station.)

Receiver serial number*: 485932 Station: SLDJ

Deploy Date Time: 2021-07-16T9:53:00

Did you find the receiver?: Y

Did you download the data: Y

All dates and times must be in UTC. See link to convert online <https://www.timeanddate.com/worldclock/converter.html>

Retrieval Date and Time*: Time out of the water. yyyy-mm-ddThh:mm:ss

Days deployed: Autocalculated, make sure it is not negative!

Battery Life: Volts or days

Download Date and Time*: yyyy-mm-ddThh:mm:ss

Date Stopped Recording: If applicable

Filename:

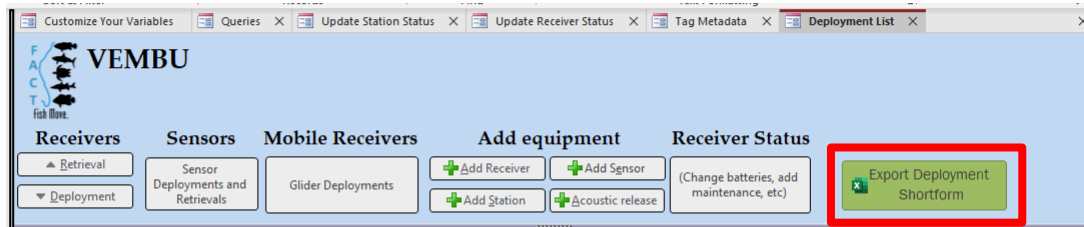
Retrieval Latitude*: 27.1665

Retrieval Longitude*: -80.14886

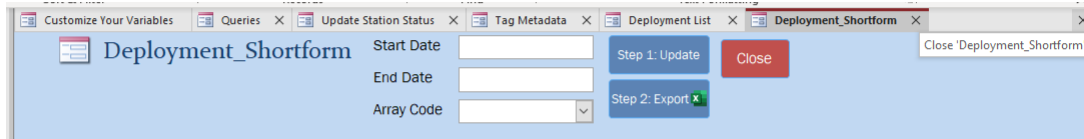
Entered by:

Comments:

Deployment metadata exports formatted for the Node



- Select export from main page.



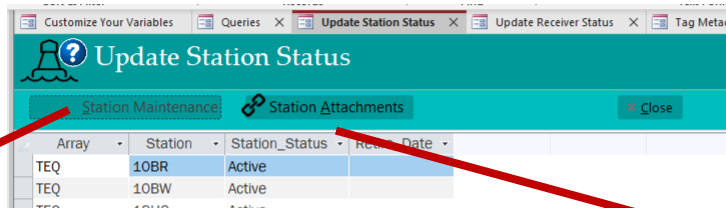
- Bind by dates and projects.
- Select Update.

The screenshot shows the 'Deployment_Shortform' dialog box with the 'Export' step selected. Below the dialog box, a table of deployment data is displayed.

ARRAY	STATION_NO	DEPLOY_DATE_TIME	DEPLOY_LAT	DEPLOY_LONG	BOTTOM_DEPTH	RISER_LENGTH	INSTRUMENT_DEPT
TEQ	SIWP	2019-04-10T13:11:00	27.8602	-80.44933	2		
TEQ	SISO	2019-04-10T13:56:00	27.85725	-80.45115	2		
TEQ	SINJ	2019-04-10T13:26:00	27.86257	-80.44507	4		
TEQ	VBNB	2019-04-10T11:36:00	27.65132	-80.37415	1		
TEQ	NFRG	2019-06-20T14:56:00	27.27213	-80.3217	1.8	0.3	0.3
TFO	RRDO	2019-09-30T16:00:00	27.06163	-80.12171	1	0.6	0.6

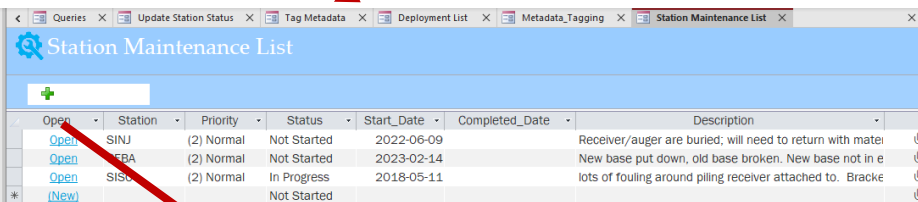
- Ensure these are the intended deployments.
- Select Export.
- Save file and upload it to research Workspace!

Update Station Status

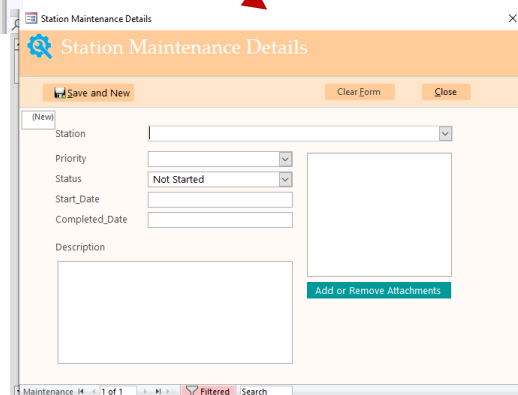


Array	Station	Station_Status	Review Date
TEQ	10BR	Active	
TEQ	10BW	Active	
TEQ	18HO	Active	

Dropdown to change station to retired



Open	Station	Priority	Status	Start_Date	Completed_Date	Description
Open	SINJ	(2) Normal	Not Started	2022-06-09		Receiver/auger are buried; will need to return with material
Open	TEQA	(2) Normal	Not Started	2023-02-14		New base put down, old base broken. New base not in place
Open	SISC	(2) Normal	In Progress	2018-05-11		lots of fouling around piling receiver attached to. Brackets



Station Maintenance Details

[Save and New](#) [Clear Form](#) [Close](#)

(New)

Station:

Priority:

Status:

Start_Date:

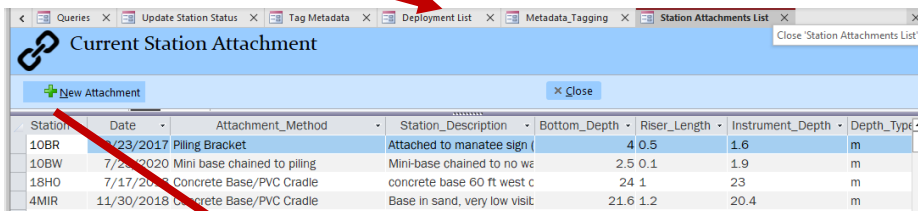
Completed_Date:

Description:

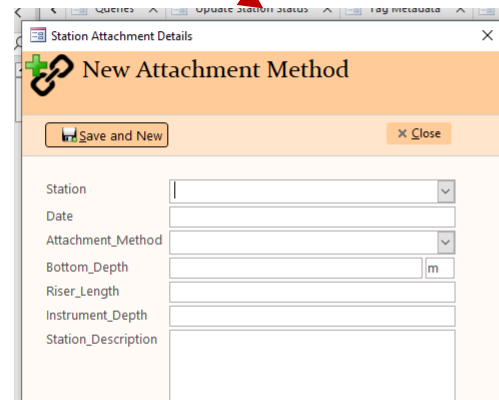
[Add or Remove Attachments](#)

Station Maintenance

- See history and add new



Station	Date	Attachment_Method	Station_Description	Bottom_Depth	Riser_Length	Instrument_Depth	Depth_Type
10BR	7/23/2017	Piling Bracket	Attached to manatee sign	4	0.5	1.6	m
10BW	7/23/2020	Mini base chained to piling	Mini-base chained to no we	2.5	0.1	1.9	m
18HO	7/17/2018	Concrete Base/PVC Cradle	concrete base 60 ft west c	24	1	23	m
4MIR	11/30/2018	Concrete Base/PVC Cradle	Base in sand, very low vis	21.6	1.2	20.4	m



Station Attachment Details

[Save and New](#) [Close](#)

Station:

Date:

Attachment_Method:

Bottom_Depth:

Riser_Length:

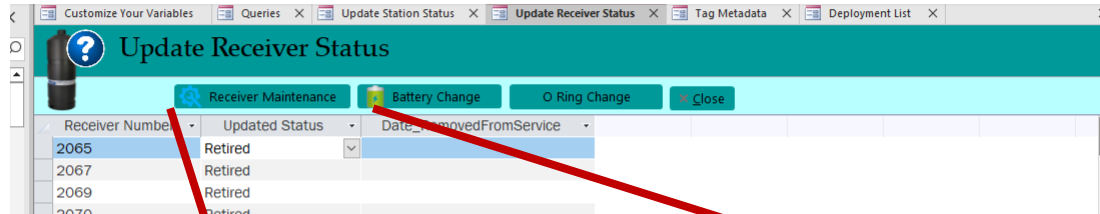
Instrument_Depth:

Station_Description:

Station Attachments

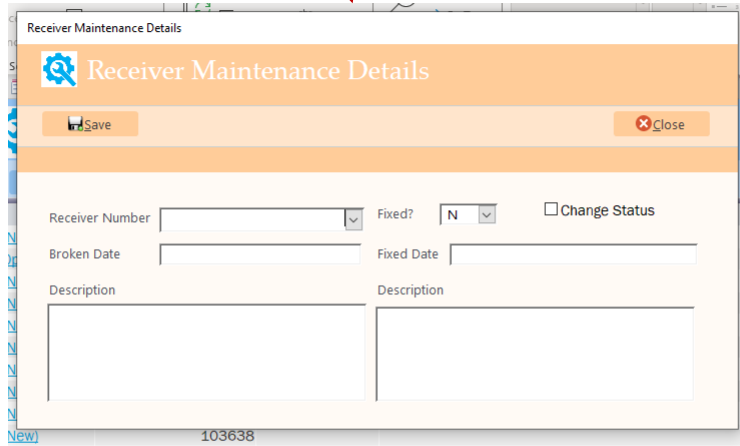
- See history and add new

Update Receiver Status



Receiver Number	Updated Status	Date Removed From Service
2065	Retired	
2067	Retired	
2069	Retired	
2070	Retired	

Dropdown to change receiver to retired/lost



Receiver Maintenance Details

Save Close

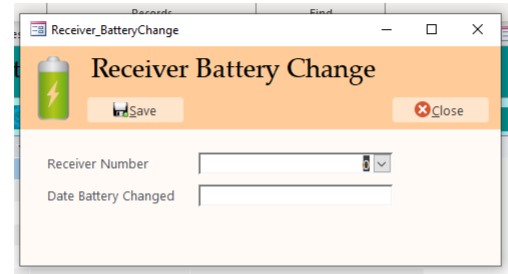
Receiver Number Fixed? N ☐ Change Status

Broken Date Fixed Date

Description

Receiver Maintenance

- See history and add new



Receiver_BatteryChange

Receiver Battery Change

Save Close

Receiver Number

Date Battery Changed

Battery Change

- Add date of battery change

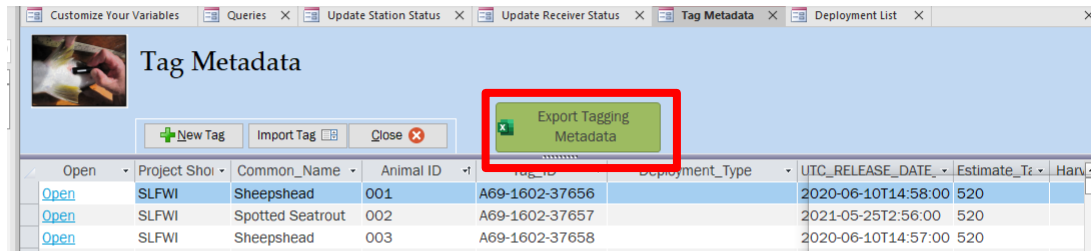
Tag Metadata

The image shows two screenshots of the 'Tag Metadata' software interface. The top screenshot displays the 'Tag Information' tab, which includes fields for 'Tag_Full_ID', 'Tag Serial Number*', 'Tag Code Space*', 'Tag ID Code*', 'Tag Model*', 'Estimated Tag Life', and 'Acoustic Tag Type' (with an example of 'pressure'). It also has fields for 'Project Shortcode*', 'Tag Owner PI', 'Organization', 'Tag Type*' (set to 'Acoustic'), and 'Tag Manufacturer*' (set to 'Innovasea'). The bottom screenshot shows the 'Animal Information' tab, which features a table of animal data and several input fields. The table has columns for 'Animal_ID', 'Unique Animal Identifier', 'Common_Name*', 'Scientific_Name*', 'Standard Length', 'Fork Length', and 'Total Length'. The 'Animal_ID' column is expanded, showing a list of IDs like 'A69-0004-3883' and 'A69-0001-56493'. To the right of the table are input fields for 'Weight (kg)', 'Life_Stage' (with a dropdown showing 'Juvenile'), 'Sex' (with a dropdown showing 'F'), 'Capture_Depth (m)' (with a dropdown showing '2'), 'Harvest_Date' (with a date format 'yyyy-mm-dd'), and 'Release Condition' (with a dropdown showing 'Good').

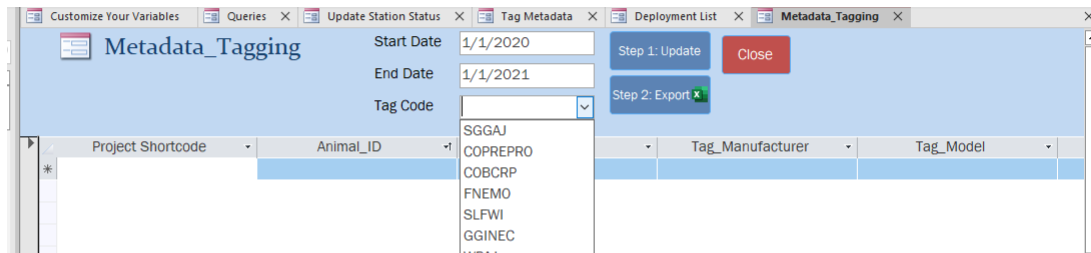
- Enter tag, surgery, animal and any additional information

- If tag specs are loaded, select tag ID from dropdown and battery life, serial number, and model are auto populated.
- Species and taggers are dropdown from the 'Customize Your Variable' tab.

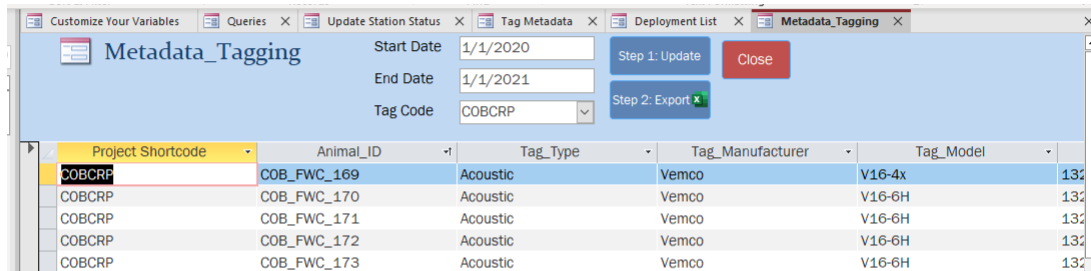
Tag Metadata Exports



- Select export from Tag Metadata tab.



- Bind by dates and projects.
- Select Update.



- Ensure these are the intended tag deployments.
- Select Export.
- Save file and upload it to Research Workspace!

Queries: Field Sheet, Histories, Functional Equipment, 'Date of Last'

The screenshot displays the 'Queries' web application interface. At the top, there is a navigation bar with tabs: 'Customize Your Variables', 'Queries' (active), 'Update Station Status', 'Update Receiver Status', 'Tag Metadata', and 'Deployment List'. Below the navigation bar, the main content area is titled 'Queries' and includes a sub-header 'Click any button below to run the query'. The interface is organized into a grid of query categories, each with a list of buttons to execute specific queries.

Field Data Sheets	Receiver recording start and end times	Functional equipment
Field Data Sheet	Start End Recording	In Rotation Receivers
	Stopped Recording Before Download	In Rotation Sensors

Outstanding Maintenance Needs	Deployments and retrievals	New equipment, not yet deployed
Maintenance Needed Receivers	Deployed Receivers	New Receivers
Maintenance Needed Stations	Deployed Sensors	New Sensors
Receiver Health	Retrieved Receivers	
	Retrieved Sensors	

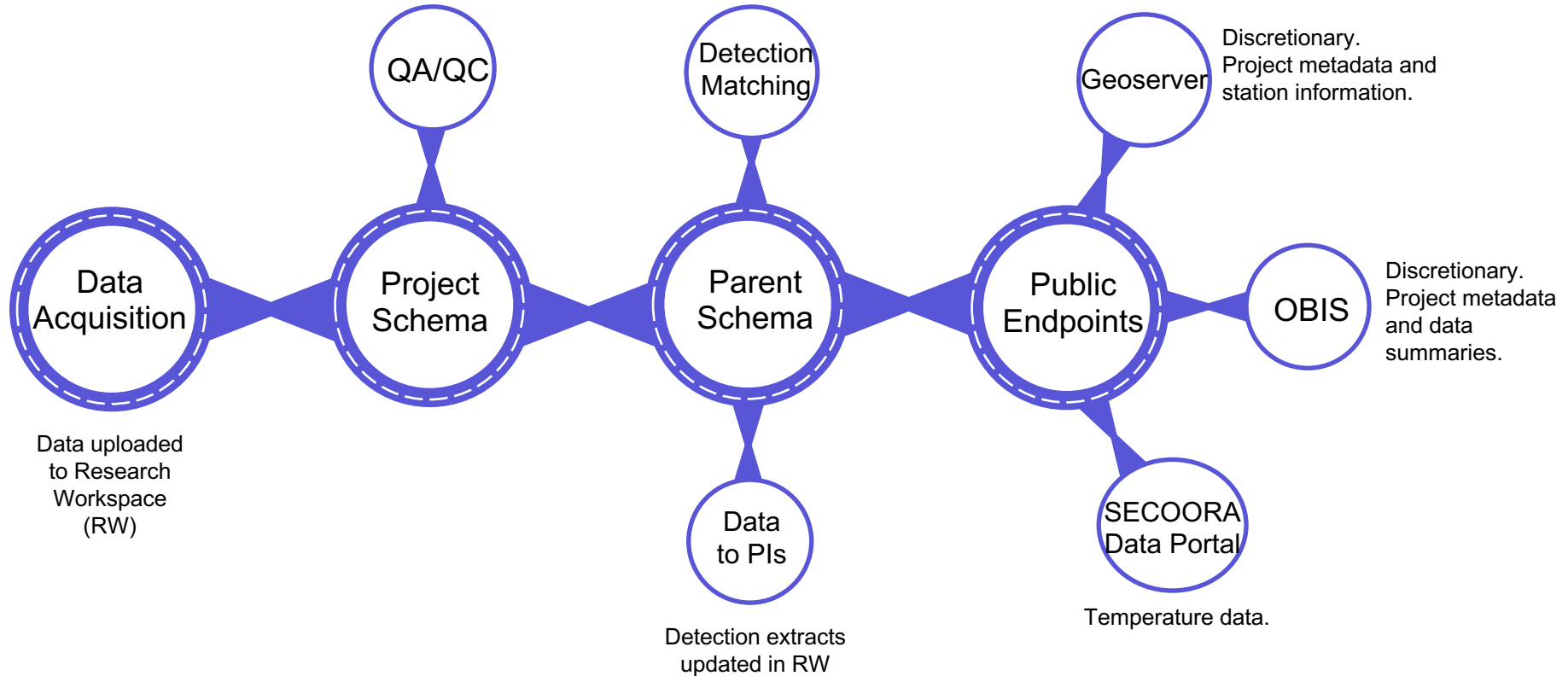
Last dates....	Histories	Equipment available to be deployed
Date of last battery change	Station Location History	On Shelf Sensors
Date Last At Station	Station Attachment History	On Shelf Receivers
Active Stations	Station Maintenance History	

The interface is designed for easy navigation, with clear categorization of queries and prominent buttons for each query. The bottom of the screen shows a standard Windows taskbar with the 'Num Lock' indicator.

The Node

The Node Flow Chart

Detections are crossmatched within the node, between compatible nodes, and with partner nodes



Data Pushes are Now Set in Stone

- 1 Feb 2024
- 1 June 2024
- 1 October 2024

To register or for questions:
Data@theFACTNetwork.org



If You Forget... Go to our website



HOME THE FACTS THE TECHNOLOGY DISCOVER PROJECTS AND SPECIES RESOURCES MEMBERS JOIN FACT

SUPPORT FACT



How To Submit Data
Data Form Templates

The FACT Network

A grassroots collaboration of marine scientists using acoustic telemetry and other technologies to better understand and conserve our region's important fish and sea turtle species.

Image Credit: David B. Snyder

ABOUT US

FACT scientific members upload their data via their respective, password protected folder on [Research Workspace](#). The FACT Data Team processes the files semi-annually through the FACT Node (herein referred to as 'the Node') and deposits detection extracts back into the folder. You will be notified via email of an approaching deadline to submit data.

We accept data from current projects and historic projects. If you would like assistance in organizing and loading a historic project, please email Data@theFACTNetwork.org.

How to Submit Data

Step 1. Provide Background Information on Your Project(s)

Only done once for each project.

All telemetry projects are broken into tag projects and array projects - even if they are run by the same group. Project metadata forms are used to gather background information and create your private folder(s) in research workspace and the Node. Only the people designated on the project metadata forms are granted access to the folder(s).

Email the metadata forms to Data@theFACTNetwork.org.

[Download FACT Tag Project Metadata Template](#)
[Download FACT Array Project Metadata Template](#)

Step 2. Receive Email Invite To Your Research Workspace Folder

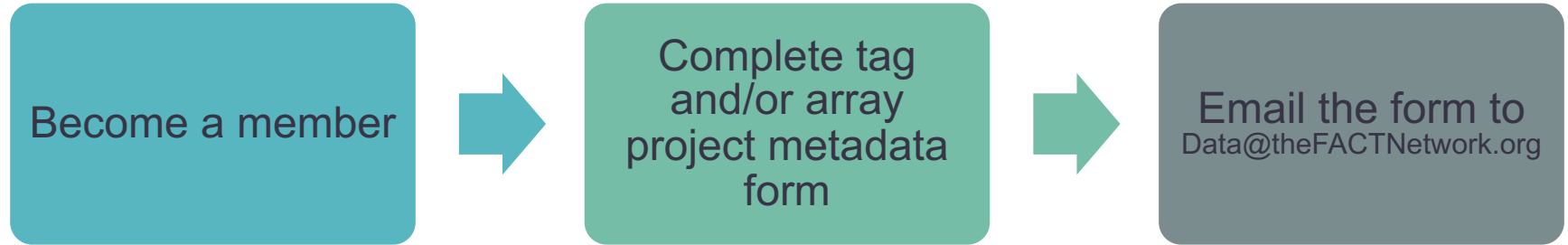
Step 3. Authorize Vendor To Provide Technical Specifications Of Your Equipment

Step 4. Upload Tagging Metadata

Step 5. Upload Deployment Metadata And Detections

Step 6. Receive Detection Extracts

Steps to using the node *Project setup*





A Collaboration of Scientists and Stakeholders

FACT is made of a diverse group of individual members and partners, including federal, state, and local governments, academia, for-profit and not-for profit institutions, and citizen scientists. There are two ways to get engaged with FACT:

Become a Scientific Member

Scientific Member

Scientific members are data contributors and users that comprise the bulk of the network. Becoming a scientific member connects your research with the greater acoustic telemetry community and provides a platform to share expertise, knowledge and infrastructure. Plus, our meetings are always fun and we have cool shirts.

Some member benefits include:

- Networking and collaborating with colleagues
- Discounts on some telemetry equipment
- Access to semi-automated cloud based data sharing (aka the FACT Node)
- Cross-referencing of data with compatible data systems (e.g. ACU, Biotrack, QTN, Mirovaap)
- Quality controlled data products formatted for ingestion into commonly used analytical tools (e.g. SURGE, Resound)

How to Join

Join as a scientific member and become part of the FACT Network! Members are required to abide by our User Agreement and Data Policy. Complete the registration form below and see our How to Get Started section for instructions on submitting data.

*The FACT Network is open to all scientists. However, if you are from a different geographic area please email Membership@theFACTNetwork.org. We can help ensure that FACT is the most appropriate place for you, and if not, connect you to resources in your area.

FACT Scientific Member Registration

Complete the form below to join the FACT Network

factnetworkmembership@gmail.com [Switch account](#)

🔒 Not shared

* Indicates required question

I have read and agree to the [FACT User Agreement and Data Policy](#)

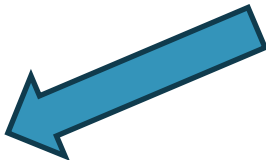
☐ Yes

☐ No

Become a member

- Read the User Policy
- Fill out the form online
- Everyone who will have access to the data needs to become a member.
 - Only done once.

<https://secoora.org/fact/become-a-member/>



Steps to using the node *Project setup*

Become a member



Complete tag
and/or array
project metadata
form



Email the form to
Data@theFACTNetwork.org

Online form on website

Only done once per person

<https://secoora.org/fact/become-a-member/>

Complete project metadata form(s)

```
FACTnode_Array_Project_Metadata.txt — Edited

===FORM START===
0. Intended/preferred project code, if known? (May be altered by FACT Data Team)
format: XXXX (3-6 uppercase letters that do not already have a representation in the FACT DB. Will be assigned if left blank)

1. Title-style description of the project?
format: < 70 words in 'paper title' form

2. Brief abstract of the project?
format: < 500 words in 'abstract' form

3. Names, affiliations, email addresses, and ORCID (if available) of researchers involved in the project and their role.
The accepted Project Roles are defined as:
Principal Investigator: PI or Co-PI. The person(s) responsible for the overall planning, direction and management of the project.
Technician: Person(s) responsible for preparation, operation and/or maintenance of shipboard, laboratory or deployed scientific instrumentation, but has no invested interest in the data returned by that instrumentation.
Researcher: Person(s) who may use/analyse the data to answer research questions, but is not the project lead. Can be a student if their involvement spans past the completion of an academic degree.
Student: Person(s) researching as part of a project as part of their work towards an academic degree.
Collaborator: A provider of input/support to a project without formal involvement in the project.
Please add 'Point of Contact' to the contact(s) who will be responsible for communicating with FACT.
format: Firstname Lastname, Employer OR Affiliation, Project Role (choose from above list), email.address@url.com, point of contact (if relevant), ORCID

4. Project URL - can be left blank
format: http[s]://yoursite.com

5. Species being studied? - can be left blank if array project
format: Common name (scientific name)

6. Location of the project?
format: (city, state/province OR nearby landmark OR lat/long points in decimal degree), one per line

7. Start and end dates of the project, if known?
format: YYYY-MM-DD to YYYY-MM-DD ('ongoing' is an acceptable end date)

8. Citation to use when referencing this project:
format: Lastname, I., Lastname, I. YYYY. [Title from question 1 or suitable alternative] Will be assigned if left blank.

9. Is this project part of the OTN loaner program?
format: Y/N

10. Is this project part of the FACT loaner program?
format: Y/N

===FORM END===
```

- Templates available from the FACT website.
- Tag and array forms are virtually the same.
- Project code- make one up or we will make one up for you.
- Defines who gets access to the data.
- Used to create project folder in Research Workspace and build your schema in the node.
- Used for discovery (website project page)
- Questions about being a part of the OTN or FACT loaner program and opting in for the DaViT.
- Only done once per project, but can be updated.

Steps to using the node *Project setup*

Become a member



Complete tag
and/or array
project metadata
form



Email the form to
Data@theFACTNetwork.org

Online form on website

Only done once per person

<https://secoora.org/fact/become-a-member/>

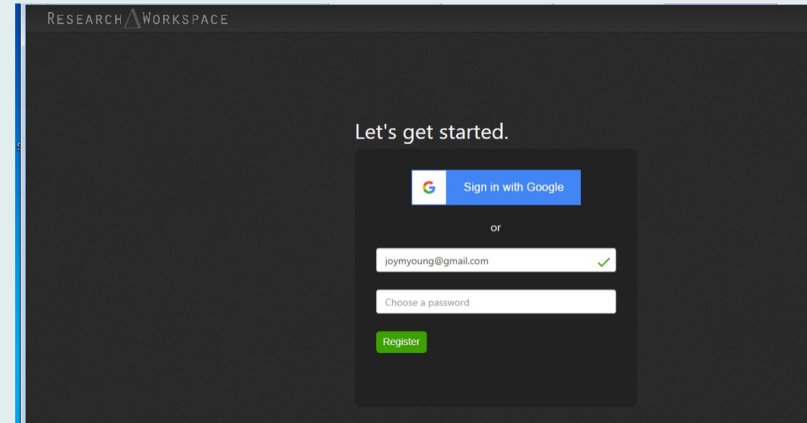
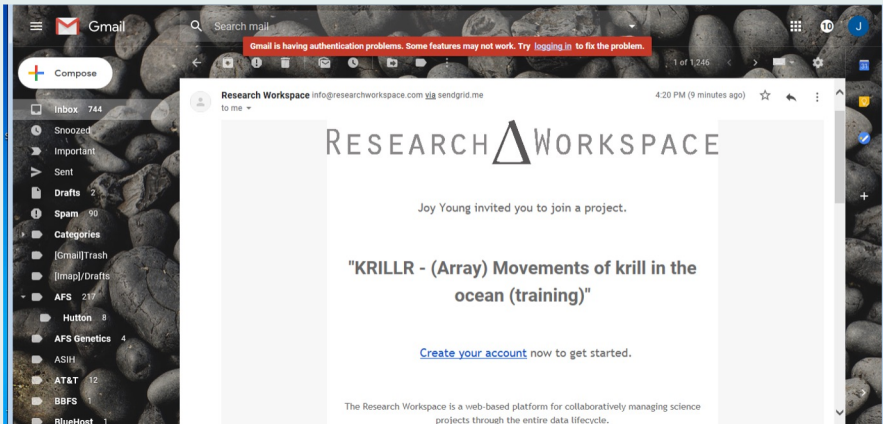
Download template from website

One per project

<https://secoora.org/fact/data-templates/>

Steps to using the node *Project setup*

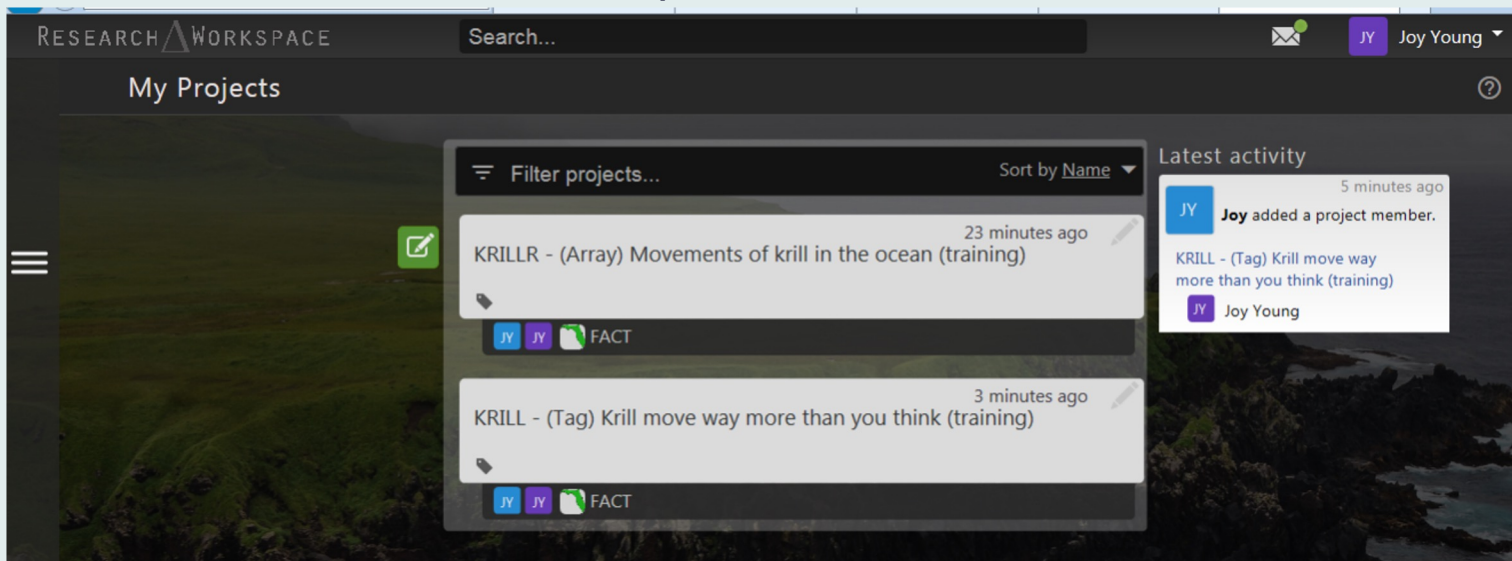
Receive an email invite to your project folder(s) and
set up your Research Workspace account



Log in to see your projects!

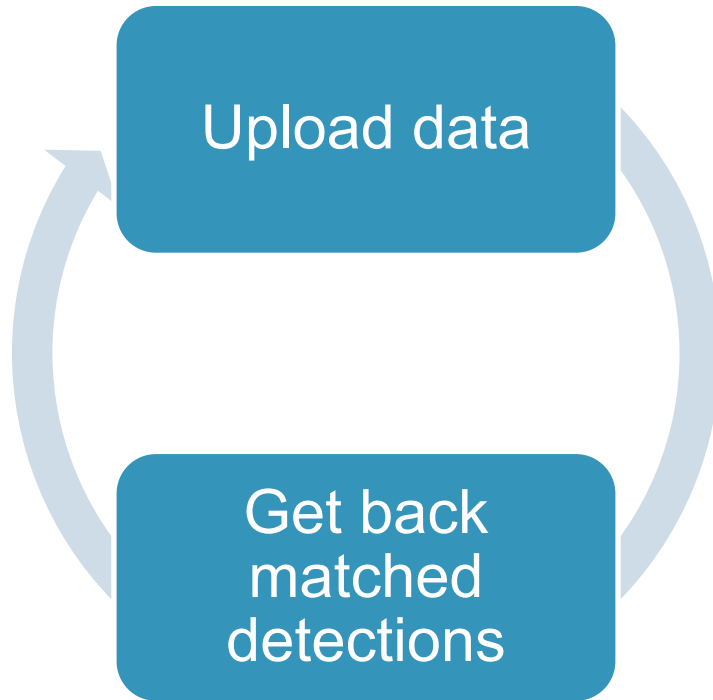
www.researchworkspace.com

Do NOT create your own folder. The data team will not have access to it and will not be notified when you upload data.



Steps to using the node

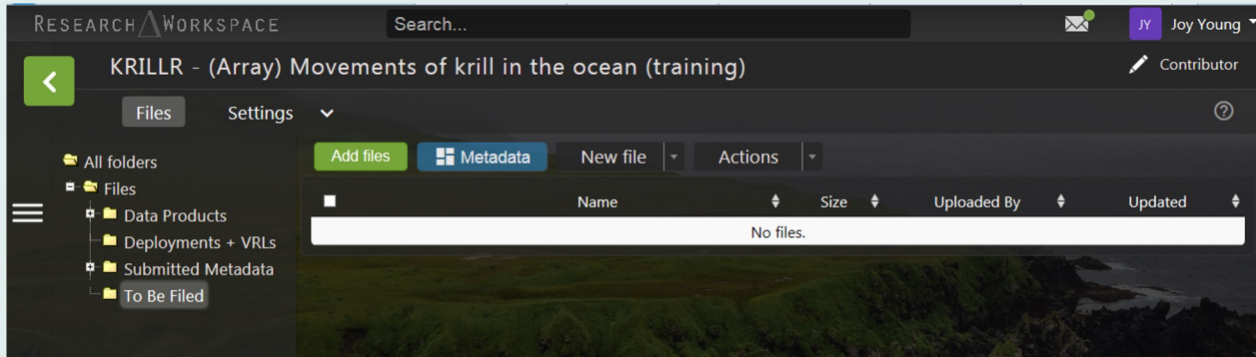
Uploading data



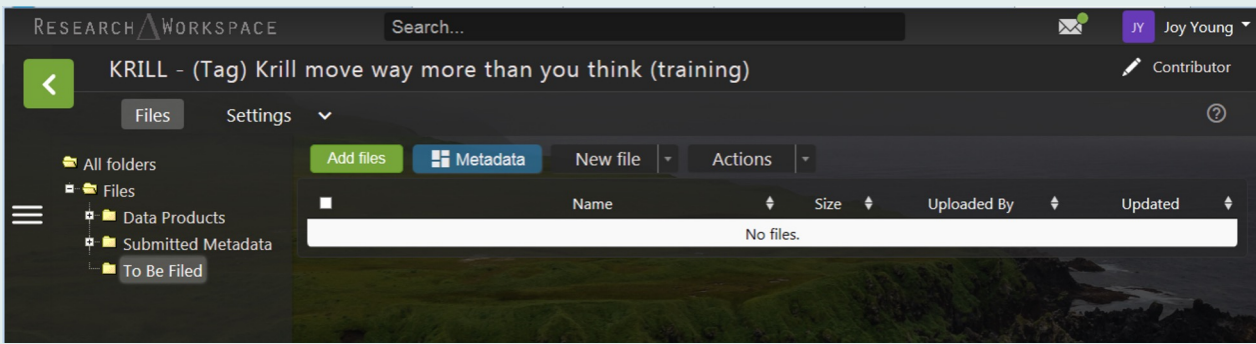
Upload Data in your To Be Filed Folder

www.researchworkspace.com

Select 'To Be Filed' and click 'Add Files'



Array Project Project
Deployment shortform
Vrls
Environmental Data
Equipment Specs



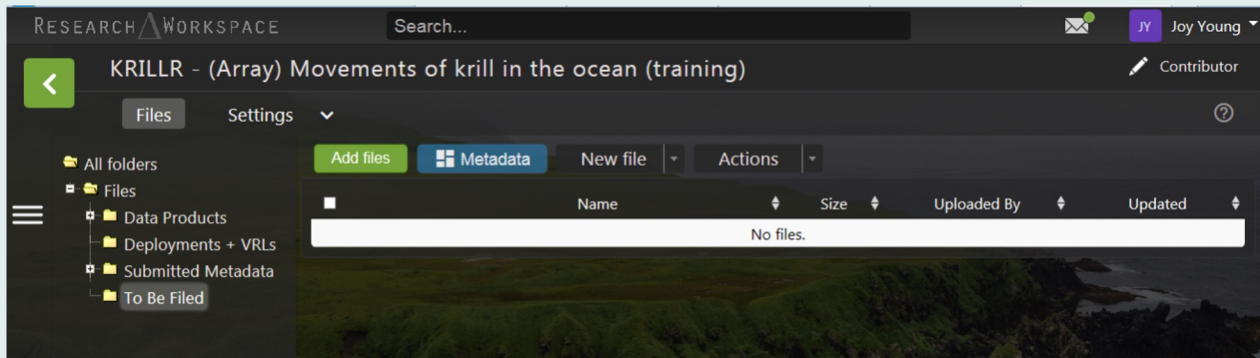
Glider Project Folder
Deployment shortform
Telemetry File
Detection File
Equipment specs

Tag Project Folder
Tag Metadata
Equipment specs

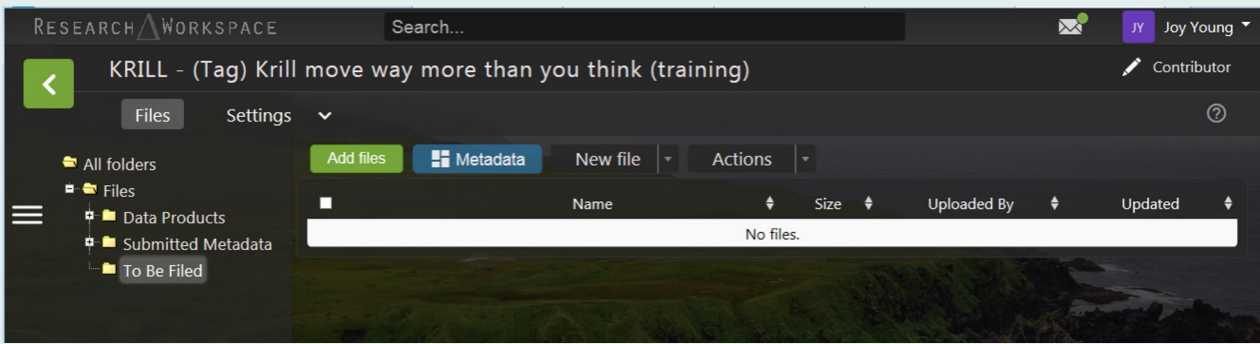
Upload Data in your To Be Filed Folder

www.researchworkspace.com

Select 'To Be Filed' and click 'Add Files'



*Note, if you do not use the 'to be filed' folder, the data team does not know where data are loaded.



Upload Data in your To Be Filed Folder

www.researchworkspace.com

Deployment and tag metadata **MUST** be formatted.
Use the templates from the FACT website, or use other
software (e.g. the VEMBU).
Green columns = mandatory

Project shortcode	ANIMAL_ID (floy tag ID, pit tag code, etc.)	TAG_TYPE	TAG_MANUFACTURER	TAG_MODEL	Acoustic_Tag_Type	TAG_SERIAL_NUMBER	TAG_ID_CODE	TAG_CODE_SPACE	Tag_ID_Code_Standard	Deployment_Type	TAG_IMPLANT_TYPE	EST_TAG_LIFE	Expiration_Date	TAGGER	TAG_OWNER_PI	TAG_OWNER_ORGANIZATION	Collaborators	COMMON_NAME_E	SCIENTIFIC_NAME	CAPTURE_LOCATION	CAPTURE_LATITUDE	CAPTURE_LONGITUDE	RELEASE_LOCATION
ARRAY	STATION_NO	DEPLOY_DATE_TIME (yyyy-mm-ddThh:mm:ss)					DEPLOY_LAT		DEPLOY_LONG		BOTTOM_DEPTH		RISER_LENGTH		INSTRUMENT_DEPTH		INS_MODEL_NO		INS_SERIAL_NO		TRANSMITTER		

On the horizon - Plone

The FACT Network will be switching from Research Workspace to Plone.

The screenshot displays the OCEAN TRACKING NETWORK website. On the left is a dark sidebar with navigation options: Contents, Edit (circled in red), View, Add new... (circled in red), State: Private, Actions, Display, 2 months ago, Sharing, and Mini Caitlin. The 'Add new...' menu is open, showing options: Collection, Event, File, Folder, Image, Link, News Item, and Page. The main content area features the OCEAN TRACKING NETWORK logo, a search bar, and a navigation bar with links: Home, Data, News, Discover, Statistics, and FAQs. Below this is a breadcrumb trail: Home > Data > Project Data Repository > OTN Halifax Line > Data and Metadata > Missions > 2023. The main heading is '2023'. The content lists several items, including 'VR4-UWM_250300_20221012_1.vrl' by Yinghuan Niu, 'Updated Metadata - Washup' by Cassandra Hartery, and 'Update Metadata Including Washup' by Joe Pratt. A right sidebar titled 'Navigation' contains links to 'Data and Metadata Templates', 'Policies and Guidelines', 'OTN Standard Operating Procedures Wiki', and 'OTN Ocean Gliders and Marine Observations'. A Windows watermark is visible in the bottom right corner.

On the horizon - Plone



- Contents
- Edit
- View
- Add new...
- State: Private
- Actions
- Display
- 2 months ago
- Sharing
- Mini Caitlin

Home > Data > Project Data Repository > OTN Halifax Line

OTN Halifax Line

Smith, P.C., Bartholette, J., O'Dor, R., Stokesbury, M., Branton, R. 2009. Ocean Tracking Network Halifax Canada Line Metadata and Data Set.

 [Data and Metadata](#)
— by [Peter Smith](#) — last modified Mar 03, 2022 04:51 PM

Contains metadata and data for both Phase 1 and Phase 2 Halifax Line deployments

 [Equipment](#)
— by [Susan Dufault](#) — last modified Mar 21, 2012 11:41 AM

 [Detection Extracts](#)
— by [Peter Smith](#) — last modified Nov 14, 2023 09:51 PM

For Trackers: All detections of all tags released by the project no matter where they occurred. False detections no longer being marked/separated. There may be detections of some of your tag ids which have not been matched. There can be many reasons for this. To check if any of your tags may have been missed please see the mystery tag list for your region or series. For Deployment Operators: Sets of sentinel tag detections, sets of detections mapped to animals without the animal details, sets of 'UNQUALIFIED' detections.

Navigation

-  [Data and Metadata Templates](#)
-  [Policies and Guidelines](#)
-  [OTN Standard Operating Procedures Wiki](#)
-  [OTN Ocean Gliders and Marine Observations](#)
-  [Publication Data Repository](#)
-  [Mystery Tag Lookup](#)
-  [Discovery](#)

Activate Windows
Go to Settings to activate Windows.

The Matching Process

What happens after I upload?

Research Workspace
sends email notification
when a file is uploaded

Create an issue in
Gitlab
Uses templates to track
steps in processing

Detections are cross-
matched
When all nodes have
completed their uploads

Files are uploaded to
the database
Using Jupyter
notebooks

We get notified



What happens after I upload?

Research Workspace
sends email notification
when a file is uploaded



Create an issue in
Gitlab
Uses templates to track
steps in processing

Detections are cross-
matched
When all nodes have
completed their uploads

Files are uploaded to
the database
Using Jupyter
notebooks

Gitlab issues

The screenshot shows the 'New Issue' page in the GitLab web interface. The browser address bar shows the URL `gitlab.oceantrack.org/otndc/FACT-DAQ/-/issues/new`. The left sidebar contains a navigation menu with options: Project (FACT-DAQ), Pinned, Issues (114), Merge requests (0), Manage, Plan, Code, Build, Secure, Deploy, Operate, Monitor, Analyze, and Settings. The main content area is titled 'New Issue' and includes a 'Title (required)' text box, a 'Type' dropdown menu set to 'Issue', and a 'Description' dropdown menu set to 'Receiver_and_Detections'. The description field is a rich text editor containing a list of tasks for 'Receiver Metadata' processing, such as 'add label *loading records*', 'load raw receiver metadata', 'check for lost indicator in recovery column', 'verify raw table', 'post updated metadata file', 'load station records', 'verify stations', 'load to rcvr_locations', 'verify rcvr_locations', 'add transmitter records', 'load to moorings', 'verify moorings', 'label issue with *Verify*', 'pass issue to OTN daq for reassignment to analyst', 'check if project is OTN loan', 'pass issue to OTN analyst for final verification', 'check for double reporting', 'label issue *Ready to Load*', and 'pass issue back for detection processing'. At the bottom, there is a checkbox for 'This issue is confidential and should only be visible to team members with at least Reporter access.' which is currently unchecked.

← → ↺ gitlab.oceantrack.org/otndc/FACT-DAQ/-/issues/new

56 99+

Search or go to...

Project

- FACT-DAQ
- Pinned
- Issues 114
- Merge requests 0
- Manage
- Plan
- Code
- Build
- Secure
- Deploy
- Operate
- Monitor
- Analyze
- Settings

New Issue

Title (required)

Type

Issue

Description

Receiver_and_Detections

Preview

```
Receiver Metadata
- [ ] - NAME add label *loading records*
- [ ] - NAME load raw receiver metadata ('deploy' notebook) (**fish: put_table_name_in_ticket**)
- [ ] - NAME [OTN only] check for lost indicator in recovery column, list receiver serial numbers for OTN inventory updating, tag OTN daq personnel
- [ ] - NAME check that station locations have not changed station "NAMES" since last submission (manual check)
- [ ] - NAME verify raw table ('deploy' notebook)
- [ ] - NAME post updated metadata file to project repository (OTN members.oceantrack.org, FACT RW etc)
- [ ] - NAME load station records ('deploy' notebook)
- [ ] - NAME verify stations ('deploy' notebook)
- [ ] - NAME load to rcvr_locations ('deploy' notebook)
- [ ] - NAME verify rcvr_locations ('deploy' notebook)
- [ ] - NAME add transmitter records receivers with integral fingers ('deploy' notebook)
- [ ] - NAME load to moorings ('deploy' notebook)
- [ ] - NAME verify moorings ('deploy' notebook)
- [ ] - NAME label issue with *Verify*
- [ ] - NAME pass issue to OTN daq for reassignment to analyst
- [ ] - NAME check if project is OTN loan, if yes, check for lost indicator in recovery column, list receiver serial numbers for OTN inventory updating.
- [ ] - NAME pass issue to OTN analyst for final verification
- [ ] - NAME check for double reporting (verification_notebooks/'Deployment Verification' notebook)
- [ ] - NAME label issue *Ready to Load*
- [ ] - NAME pass issue back for detection processing
```

Switch to rich text editing

☐ This issue is confidential and should only be visible to team members with at least Reporter access.

What happens after I upload?

Research Workspace
sends email notification
when a file is uploaded



Create an issue in
Gitlab
Uses templates to track
steps in processing



Detections are cross-
matched
When all nodes have
completed their uploads

Files are uploaded to
the database
Using Jupyter
notebooks

Notebooks

jupyter Create and Update Projects Last Checked: 6 years ago

File Edit View Run Kernel Settings Help Trusted

JupyterLab Python 3 (ipykernel)

Create and Update Projects

What you'll need before creating a new Project:

1. A filled-out Project Metadata form. [template link](#)
2. Paste the text from the form in the cell marked **Project Metadata Form Parser**

Most of this information is also in the OTN Equipment Loan Proposal if one exists for your project.

You may already have a collectioncode in mind that you wish to use: the unique collection of letters that identifies the project in a nice shorthand. eg ABC, BILL, VZXYZ. Write it in manually as colcode if so.

Project codes have to be case-insensitive- to allow for matching to lowercase schema names. Due to constraints in schema naming, they cannot start with a number, but they may contain numbers.

STOP

Before proceeding, confirm that **NO** push is currently ongoing.
If a push is ongoing, you must wait for it to be completed before processing beyond this point

```
[1]: # Imports. Run this every time.
import dbtools as dbt
import pprint
import IPywidgets as widgets
from dbtools.connect_db import get_engine, test_engine_connection, get_conn_string
from IPython.display import display, HTML
from dbtools.leaflet_drawer import draw_map
from dbtools.load_styles import load_pygment_style, load_style
from dbtools.common import display_sql, get_node
import dbtools.create_project as cpj

load_pygment_style('native')
load_style()
# Make a DB connection
engine = get_engine("Users/JoyYoung_1/Documents/OTN/ipython-utilities/authfiles/fact_conn_string_auth")
test_engine_connection(engine)

Database connection established
Connection Type:postgresql Host:fact.secoora.org Database:otn_secoora_db User:iscotnadm Node:FACT

If you are updating a project, skip to the Extension and Updating section Skip
For verifying new projects Skip to the verification section.

Otherwise, continue from here:
```

Project Metadata Form Parser

Paste in the project metadata email form below to be scanned and verified. Don't forget to fill in the fields the form doesn't cover when writing to the database!

```
[1]: # Paste in the path of your completed project metadata template
project_template_path = '/path/to/project_metadata.txt'

emailString = open(project_template_path, 'rb').read().decode('utf-8-sig')
colcode, project_metadata, contacts = cpj.parse_email_template(engine=engine, mailstring=emailString)
# skip the next cell if you are using this cell

[2]: # If you have a filled-out email from the researcher in the standard template:
# http://members.oceantrack.org/data/data-collection/data-sheet-templates/project-metadata-sheet-template
# Paste from ==FORM START== to ==FORM END==, inclusive. Otherwise use the manual fields above.
# There are still some mandatory fields below to fill out as the Data Acquisition operator (DAO)

# ===== DON'T JUST PASTE + RUN! =====
```

jupyter deploy - load deployment metadata Last Checked: 4 years ago

File Edit View Run Kernel Settings Help Not Trusted

JupyterLab Python 3 (ipykernel)

Load deployment metadata

Loads deployment information to a target database using OTN's shortform metadata sheets. Metadata sheets are available for download here: <https://members.oceantrack.org/data/data-collection>

Processing Steps

1. First, **always** run the **Import Cell** before executing other cells.
2. Change the contents of the **User Input Cell**. Execute this cell to set these values and create the db engine object.

```
[1]: # Main Import Cell =====
import plotly
plotly.offline.init_notebook_mode()

# Suppress Panda's future warnings
import warnings
warnings.simplefilter(action='ignore', category=FutureWarning)

# Load notebook stylesheets =====
import dbtools.load_styles as style
style.load_style()
style.load_pygment_style('native')

from dbtools.connect_db import get_engine, test_engine_connection
from dbtools.nb_common import select_shortform_table
from dbtools.common import select_sheet, BlankSheet
from dbtools.shortform_to_stations import nb_add_stations

[2]: # Shortform metadata path (xls, csv)
filepath = '/path/to/metadata.xls'
excel_ext = 'xls' # Deployment metadata format 'otn' or 'fact'
if (filepath.endswith('.xls') or filepath.endswith('.xlsx')):
    sheet = select_sheet(filepath, default_sheet="Deployment"); # Choose deployment metadata sheet name
else:
    sheet = BlankSheet()

[3]: # Database settings
schema = 'schema' #Target database schema
table_name = 'c_shortform_yyyy' #Destination table

# Create database engine
engine = get_engine()
test_engine_connection(engine)

Verify scripts will help you spot errors which may have passed the initial quality control. The sheets are inspected by the following conditions:
```

1. The file input is validated based on file type (xls, xlsx, or csv)
2. The input sheet is checked for mandatory columns.
3. Each column value is checked for acceptable input values based on the short form **Data Dictionary** specification.
4. Checks and converts station_no values, removing invalid characters.
5. Uses the database to check that the reported depths match the stations table.
6. Checks that the supplied instrument models exists in the database. Allows you to add new instrument types.
7. Verify transmitter information has been supplied where needed. Also checks against vendor specification tables to confirm the correct serial number/fid_code combination.
8. Overlapping receiver deployments are checked based on analyzing the deploy date and recover dates.

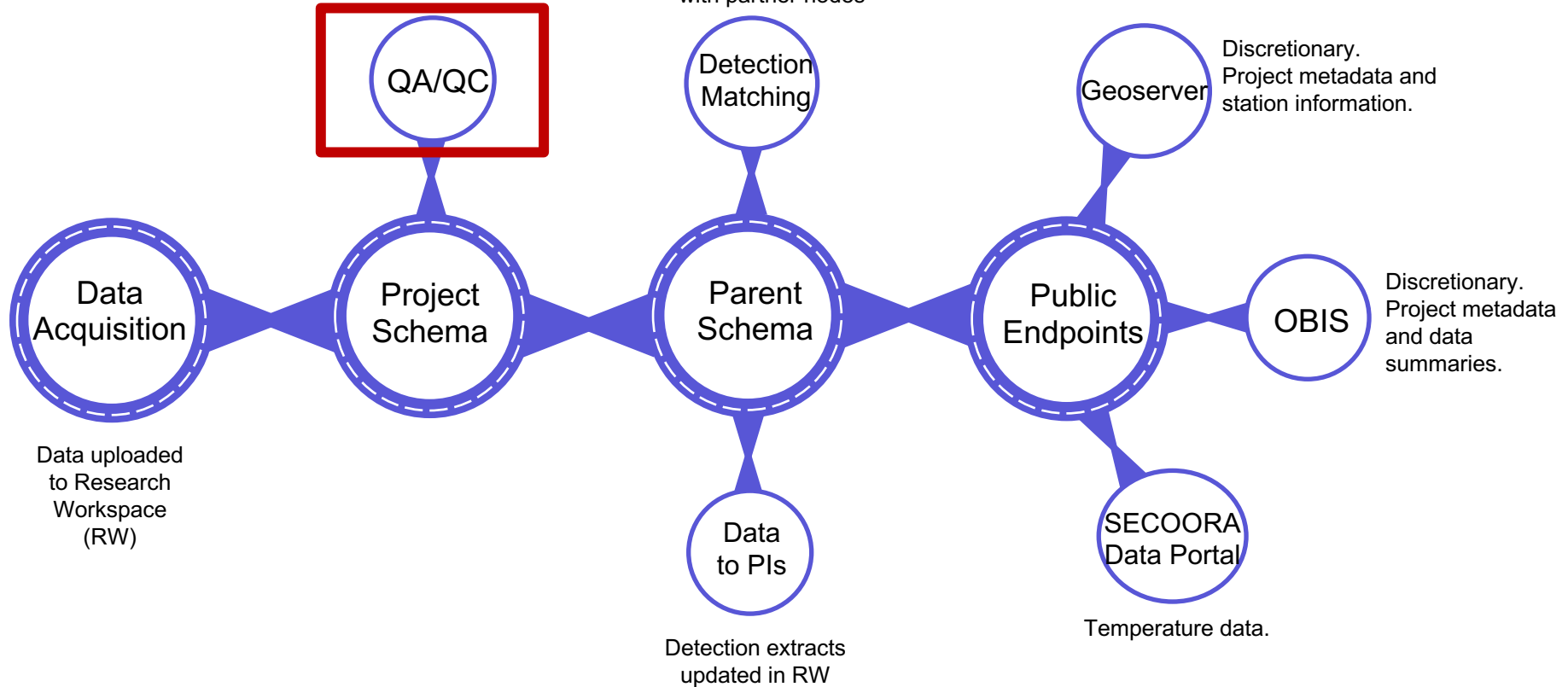
Please ensure the shortform is free from errors before proceeding to the database loading steps.

```
[1]: from dbtools.load_shortform import nb_verify_shortform
shortform_df = nb_verify_shortform(filepath, sheet_value, excel_ext, engine, schema)
```

Load the shortform into a database table

The Node Flow Chart

Detections are crossmatched within the node, between compatible nodes, and with partner nodes



Quality control - tag metadata

Within the new metadata form:

Are all mandatory fields filled out with appropriate and formatted responses?

Is the common and scientific name valid in WORMs?

Are the release coordinates within the project bounding box?

Do responses match submitted tag specifications?

Are there any duplicate tags?

Are release dates in the future?

Between new and previously loaded metadata:

Are there any duplicate tags (animal ID, serial number, etc)?

Are there any overlapping deployments?

Quality control - deployment metadata

Are all mandatory fields filled out with appropriate and formatted responses?

Are the deployment and retrieval coordinates within the project bounding box?

Do responses match submitted receiver specifications?

Are there any overlapping deployments?

Do AR and Tx receivers have an associated tag?

Are station coordinates the same as previously loaded?

Are recovery dates after deployment dates?

Quality control - detections

Are there any duplicate detections?

Are all datetimes, serial numbers and model numbers appropriate?

Any crazy time drift corrections?

Are there any missing vrls? (Deployments without events and detections)

Are there any missing deployment metadata? (Detections outside deployment information)

What happens after I upload?

Research Workspace
sends email notification
when a file is uploaded



Create an issue in
Gitlab
Uses templates to track
steps in processing



Files are uploaded to
the database
Using Jupyter
notebooks



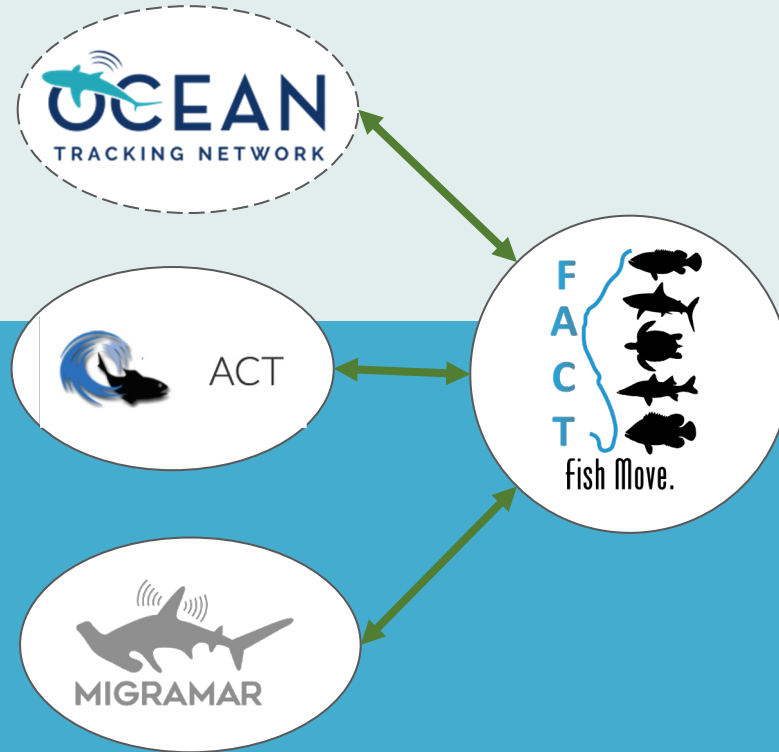
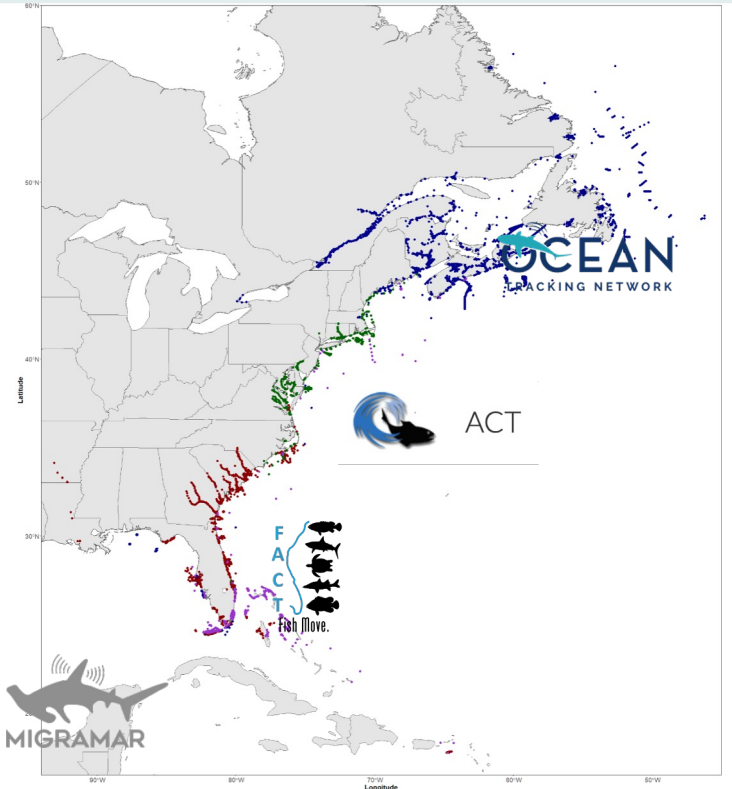
Detections are cross-
matched
When all nodes have
completed their uploads

Detections are crossmatched within the node, between compatible nodes, and with partner nodes

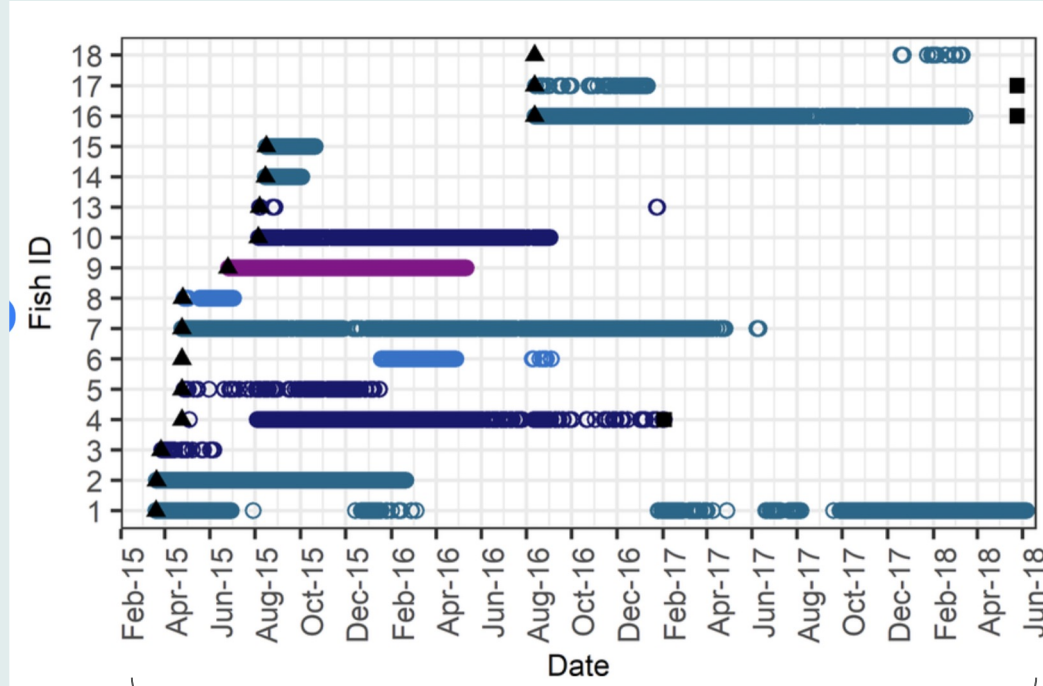


Crossover with other networks

Over 2,000 unique connections between 405 projects



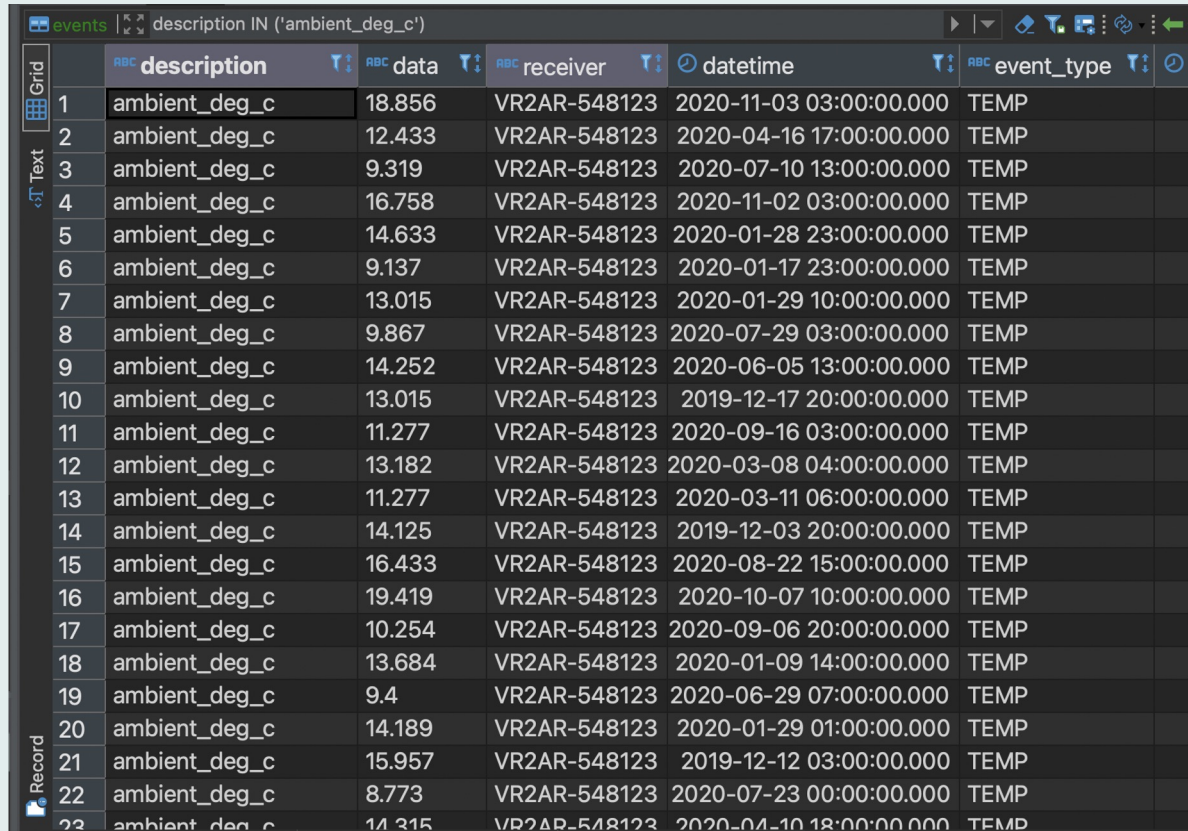
What gets matched?



ONLY detections that match registered tag IDs (code space is important) and within the tag life

ONLY detections within the timeframe of deployment (time is important)

Other - temperature

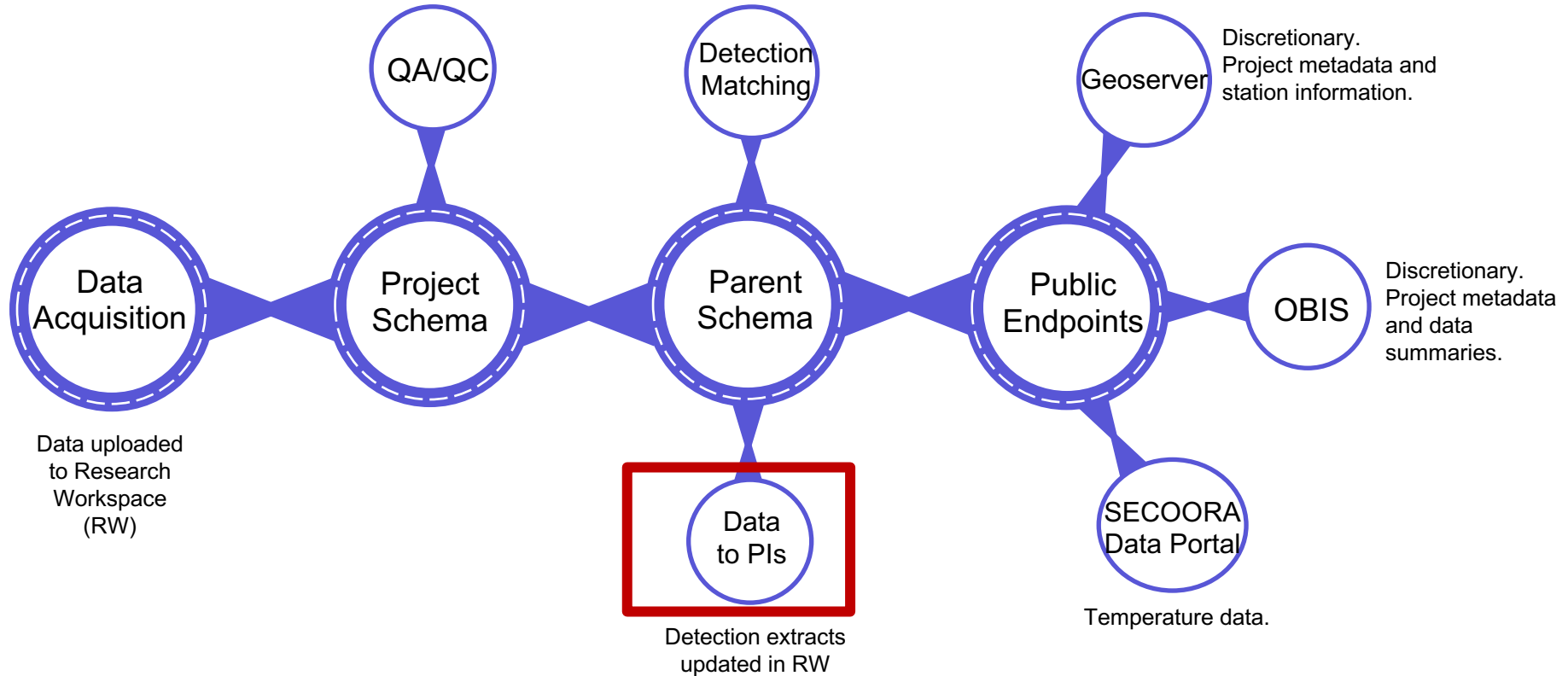


The screenshot shows a data table interface with a search bar at the top containing the text "events" and "description IN ('ambient_deg_c')". The table has a sidebar on the left with icons for "Grid", "Text", and "Record". The table columns are: "description", "data", "receiver", "datetime", and "event_type". The data rows show temperature readings for "ambient_deg_c" at various times, all recorded by "VR2AR-548123". The "event_type" for all rows is "TEMP".

	description	data	receiver	datetime	event_type
1	ambient_deg_c	18.856	VR2AR-548123	2020-11-03 03:00:00.000	TEMP
2	ambient_deg_c	12.433	VR2AR-548123	2020-04-16 17:00:00.000	TEMP
3	ambient_deg_c	9.319	VR2AR-548123	2020-07-10 13:00:00.000	TEMP
4	ambient_deg_c	16.758	VR2AR-548123	2020-11-02 03:00:00.000	TEMP
5	ambient_deg_c	14.633	VR2AR-548123	2020-01-28 23:00:00.000	TEMP
6	ambient_deg_c	9.137	VR2AR-548123	2020-01-17 23:00:00.000	TEMP
7	ambient_deg_c	13.015	VR2AR-548123	2020-01-29 10:00:00.000	TEMP
8	ambient_deg_c	9.867	VR2AR-548123	2020-07-29 03:00:00.000	TEMP
9	ambient_deg_c	14.252	VR2AR-548123	2020-06-05 13:00:00.000	TEMP
10	ambient_deg_c	13.015	VR2AR-548123	2019-12-17 20:00:00.000	TEMP
11	ambient_deg_c	11.277	VR2AR-548123	2020-09-16 03:00:00.000	TEMP
12	ambient_deg_c	13.182	VR2AR-548123	2020-03-08 04:00:00.000	TEMP
13	ambient_deg_c	11.277	VR2AR-548123	2020-03-11 06:00:00.000	TEMP
14	ambient_deg_c	14.125	VR2AR-548123	2019-12-03 20:00:00.000	TEMP
15	ambient_deg_c	16.433	VR2AR-548123	2020-08-22 15:00:00.000	TEMP
16	ambient_deg_c	19.419	VR2AR-548123	2020-10-07 10:00:00.000	TEMP
17	ambient_deg_c	10.254	VR2AR-548123	2020-09-06 20:00:00.000	TEMP
18	ambient_deg_c	13.684	VR2AR-548123	2020-01-09 14:00:00.000	TEMP
19	ambient_deg_c	9.4	VR2AR-548123	2020-06-29 07:00:00.000	TEMP
20	ambient_deg_c	14.189	VR2AR-548123	2020-01-29 01:00:00.000	TEMP
21	ambient_deg_c	15.957	VR2AR-548123	2019-12-12 03:00:00.000	TEMP
22	ambient_deg_c	8.773	VR2AR-548123	2020-07-23 00:00:00.000	TEMP
23	ambient_deg_c	14.315	VR2AR-548123	2020-04-10 18:00:00.000	TEMP

The Node Flow Chart

Detections are crossmatched within the node, between compatible nodes, and with partner nodes



Email Notification



Array Detection extracts

[Detection Extracts](#) are the main output of the Push. They contain all the new detection matches for each project. There are multiple types of detection extracts FACT creates:

- 'qualified' which contain detections collected by an array but matched to animals of other projects
- 'unqualified' which contain the unmatched or mystery detections collected by an array
- 'sentinel' which contain the detections matched to test or transceiver tags collected by an array
- Note- members that identify as FACT will have species information.

Detection Extract files are formatted for direct ingestion by analysis packages such as [glatos](#) and [resonate](#).



Tag Detection extracts

[Detection Extracts](#) are the main output of the Push. They contain all the new detection matches for each project. There are multiple types of detection extracts OTN creates:

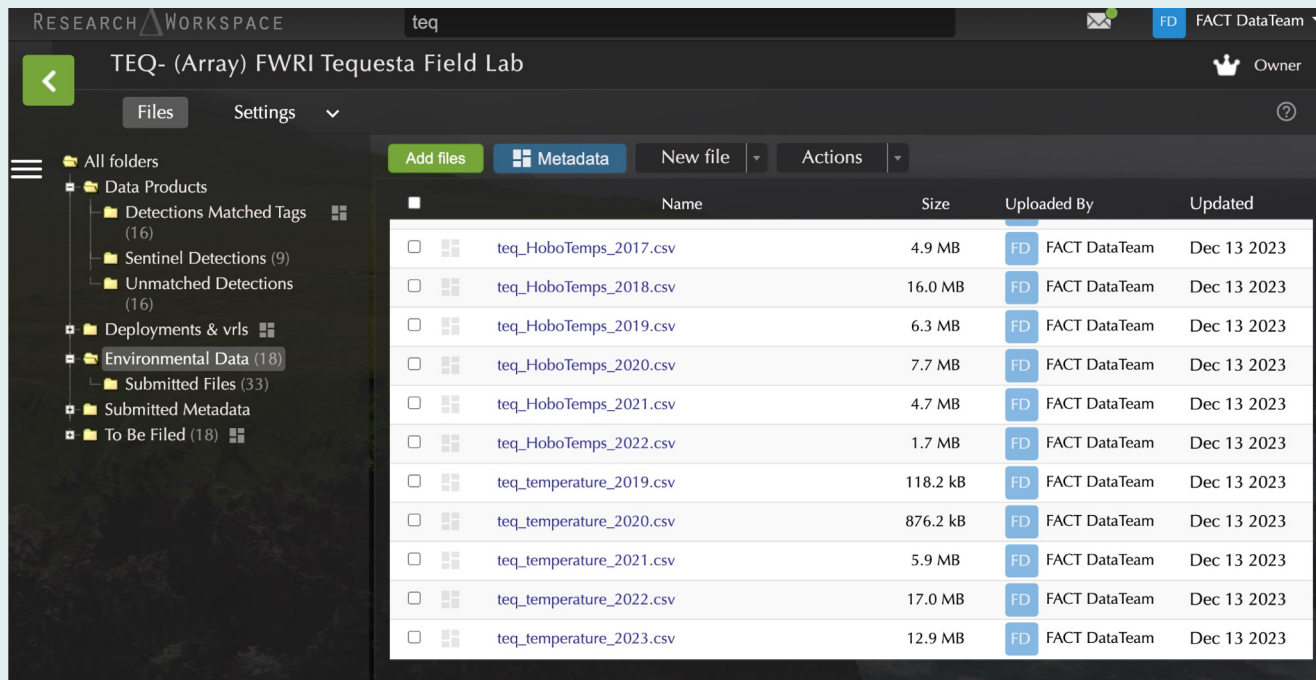
- 'tracker' which contains detections that have been mapped to animals tagged by a project that can originate from any receiver in the entire Network
- Matched to external partners. Matched to detections from non-node partners (only a few)

Detection Extract files are formatted for direct ingestion by analysis packages such as [glatos](#) and [resonate](#).



Temperature extracts

- Separated by external sensor and receiver derived temperatures.

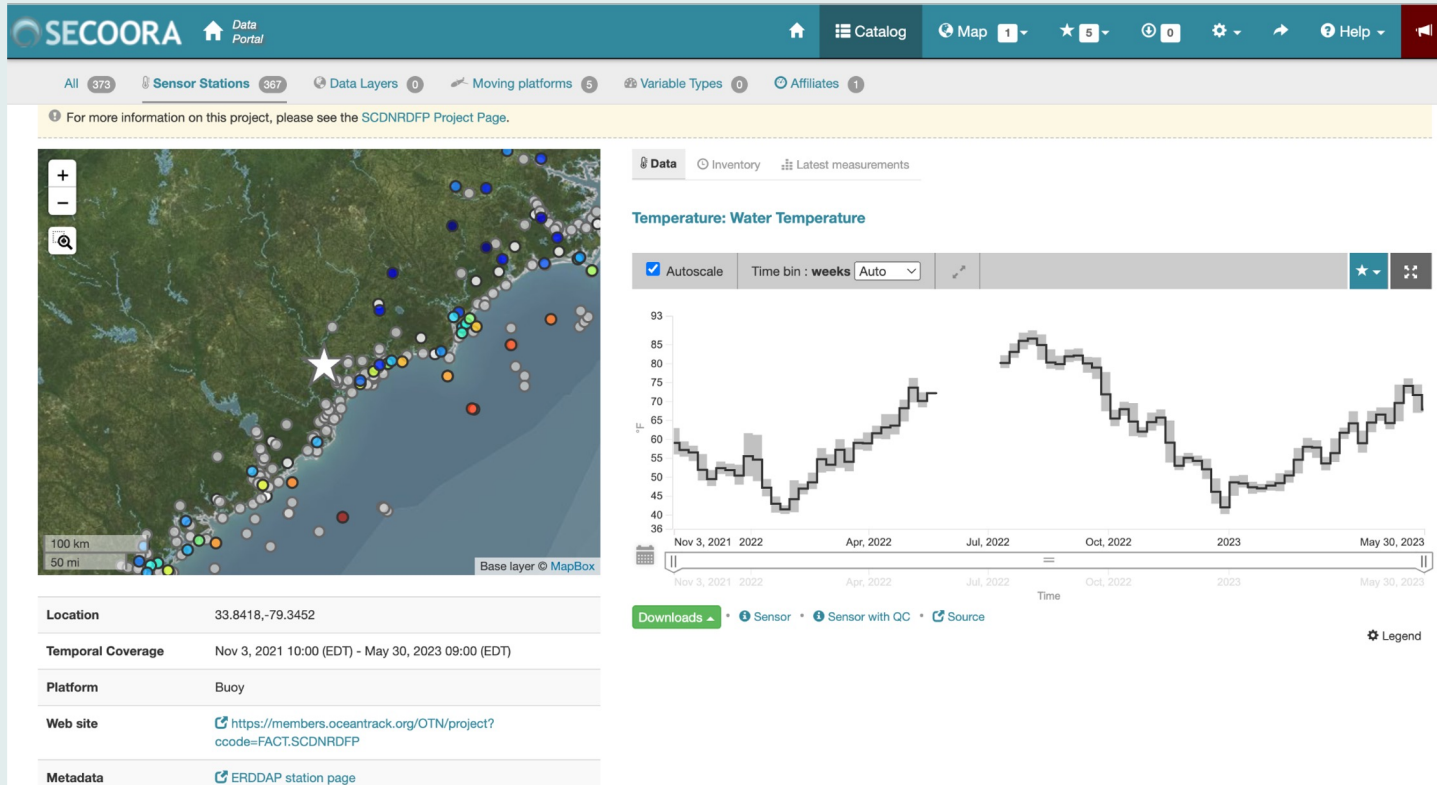


The screenshot displays the RESEARCH WORKSPACE interface for the 'teq' project. The main view shows a list of files under the 'Environmental Data' folder. The files are categorized into two groups: 'teq_HoboTemps' (external sensor) and 'teq_temperature' (receiver derived). The table lists the following files:

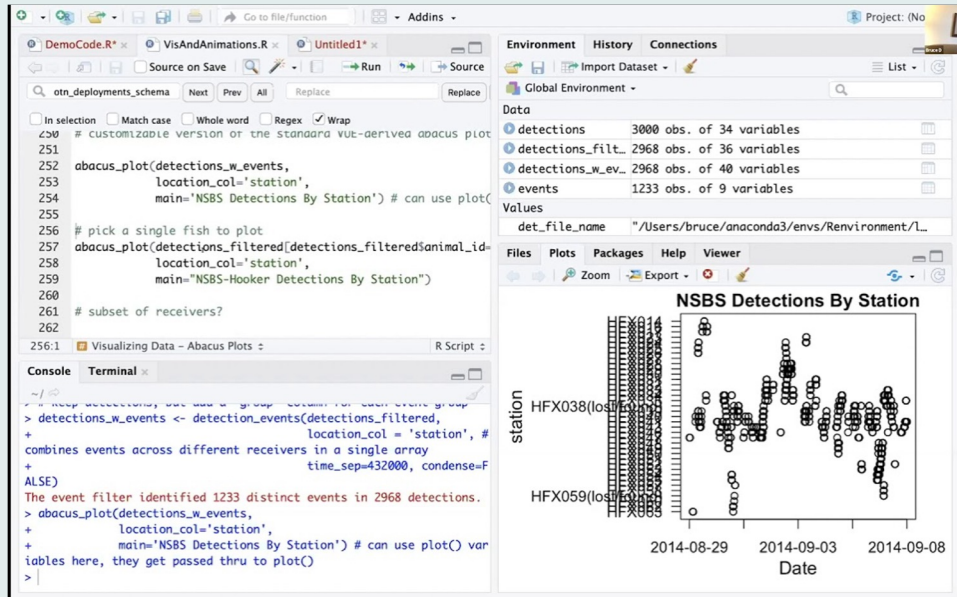
Name	Size	Uploaded By	Updated
teq_HoboTemps_2017.csv	4.9 MB	FACT DataTeam	Dec 13 2023
teq_HoboTemps_2018.csv	16.0 MB	FACT DataTeam	Dec 13 2023
teq_HoboTemps_2019.csv	6.3 MB	FACT DataTeam	Dec 13 2023
teq_HoboTemps_2020.csv	7.7 MB	FACT DataTeam	Dec 13 2023
teq_HoboTemps_2021.csv	4.7 MB	FACT DataTeam	Dec 13 2023
teq_HoboTemps_2022.csv	1.7 MB	FACT DataTeam	Dec 13 2023
teq_temperature_2019.csv	118.2 kB	FACT DataTeam	Dec 13 2023
teq_temperature_2020.csv	876.2 kB	FACT DataTeam	Dec 13 2023
teq_temperature_2021.csv	5.9 MB	FACT DataTeam	Dec 13 2023
teq_temperature_2022.csv	17.0 MB	FACT DataTeam	Dec 13 2023
teq_temperature_2023.csv	12.9 MB	FACT DataTeam	Dec 13 2023



Temperature data are provided to SECOORA



Your turn to quality control and analyze! (more help is coming)



- Gut check your datasets.
- DO NOT open in excel.
- Future- Remora flags.
- Future - Mortality filter.

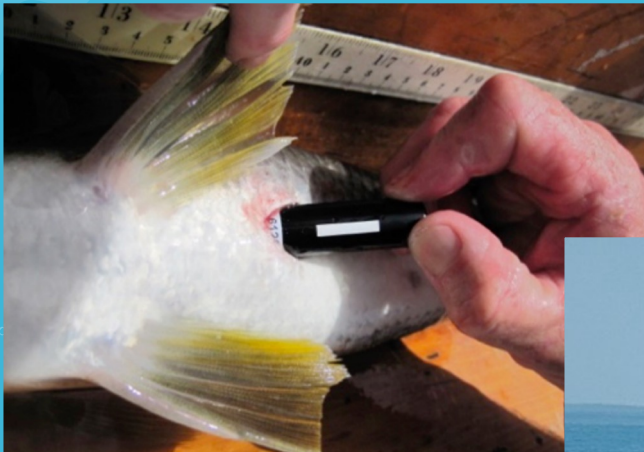
Navigating the Extract Maze

Common Errors and Quick Fixes

Common Mistakes When Submitting Data That Result in Unmatched Detections



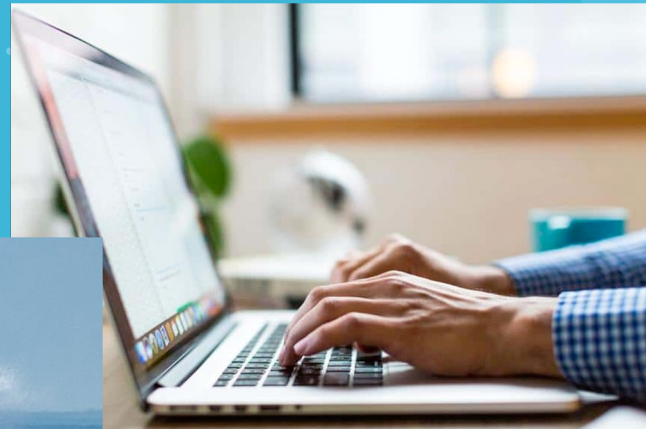
Tag Metadata



Placing a tag



Filling out a data sheet in the field



Data Entry

Common Tag Metadata Mistakes

• Typos

- Study species
- Common/scientific mismatches
- Full names for sex (e.g., ~~Male~~, Female, Unknown) vs. acronyms (e.g., M, F, U)



• Column names

- ~~Common_Name~~ vs. Common_Name_E

Common Tag Metadata Mistakes

- **Missing info**

- Serial number or Animal ID but NOT BOTH - **better to include both**



- **Missing columns**

- Commonly missing: STOCK, AGE, AGE_UNITS, LENGTH (m), LENGTH_TYPE, WEIGHT (kg)

- **Harvests**

- Submit the original tag metadata for the animal that was harvested along with harvest date
- Same info required whether you previously submitted the tag metadata or not

Common Tag Metadata Mistakes

•Est_tag_life

- This is the life of your tag! Your tag will stop matching after this timeline
- Look up manufacturer specification sheets for this information
- Can release information to us via form for the spec info (contact a data manager for details)
- Beware dragging down in Excel!

•Tag_code_space

- Be careful dragging down in Excel

Acoustic_Tag_Type	TAG_ID_CODE			Deployment_Type	TAG_IMPLANT_TYPE	TAG_IMPLANT_METHOD
Sensor	1036912	1450	A69-1303	Initial	INTERNAL	Midventral line incision, 2 sutures
			A69-1304			
			A69-1305			
			A69-1306			
			A69-1307			
			A69-1308			
			A69-1309			
			A69-1310			
			A69-1311			
			A69-1312			

Common Tag Metadata Mistakes

- **UTC_Release_Date_Time**

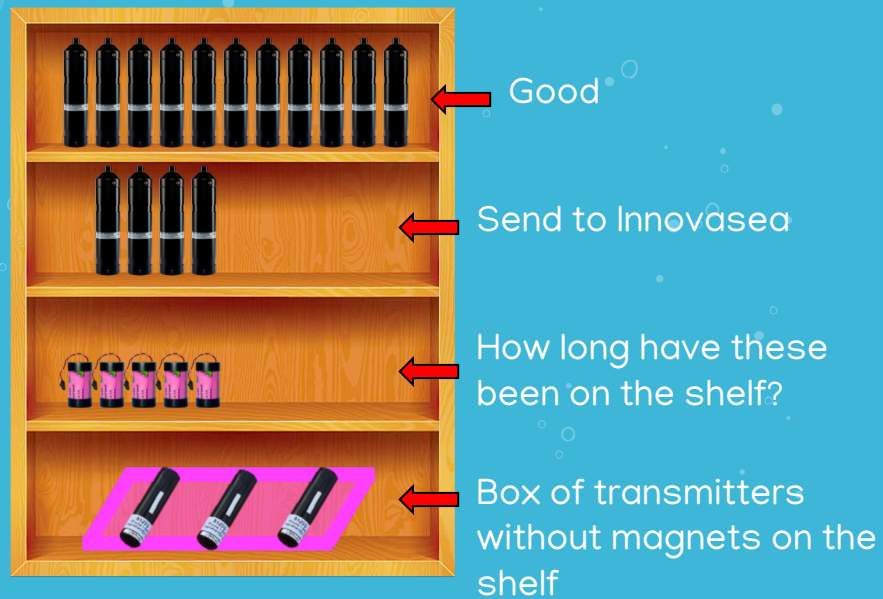
- Not necessary, but is be clear about time zone of deployment
- I convert your “T00:00:00” ET submissions to UTC to maintain date and consistency
- Oftentimes, omit time (“T00:00:00”) then added later - great, but we need to know if a change is required - indicate in comments columns

- **Previously uploaded tags**

- Check for accuracy (especially est_tag_life and release date times)
- If something needs correction, please add that in the comments



Deployment Metadata



Preparing and
initializing receivers



Deploying/retrieving receivers

Image from reddit r/thalassophobia and may not be accurate

Deployment Metadata



Filling out a data sheet in the field



Data Entry

Common Deployment Shortform Mistakes

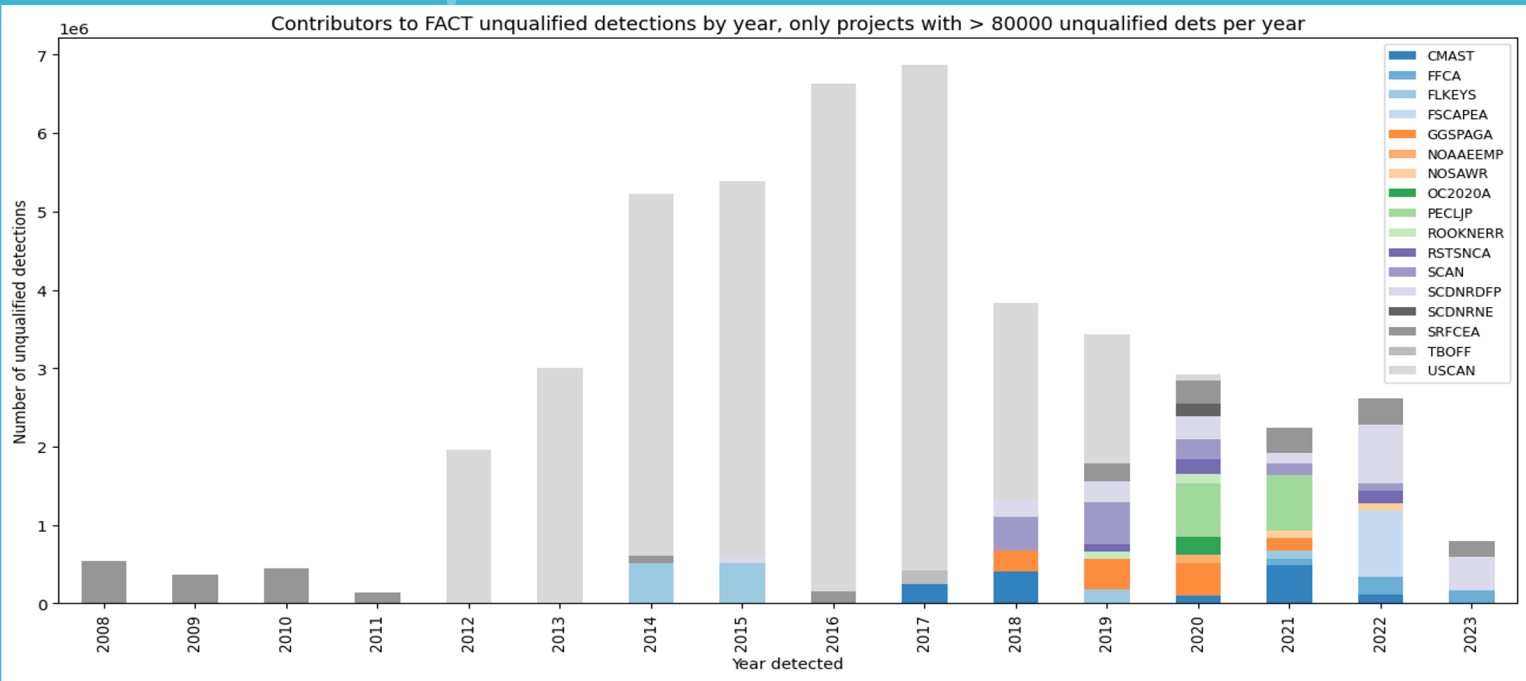
Missing info

- Missing project name
- Deployment times/recovery times/download times - **should include all three**
- **We assume UTC time unless specified**
- Are the correct number of files being loaded that correspond the deployment info

Double check information 'makes sense'

- Was receiver downloaded **BEFORE** it was recovered?
- Did any stations move but you kept the same names? Or vice versa?
- Are there overlaps in receivers at the same station?

- Unqualified detections may be due to false detections, unreported sentinel/sync tags, or unreported animal tags



Successful Utilization of Acoustic Telemetry Relies on Collaboration

- Ensures Accurate Datasets
- Streamlines Data Sharing Processes
- Fosters Scientific Community Engagement
- Facilitates Knowledge Exchange

Questions? Contact us!

Data@TheFACTNetwork.org

