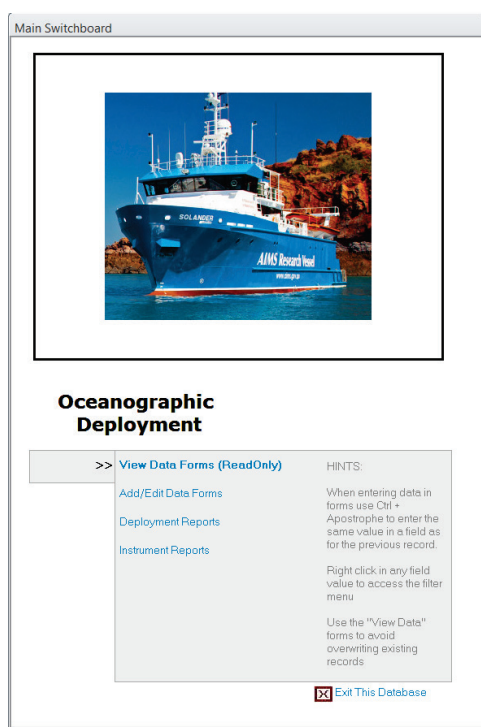


Oceanographic Instruments and Deployments Database



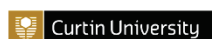
IMOS is a national collaborative research infrastructure, supported by Australian Government. It is operated by a consortium of institutions as an unincorporated joint venture, with the University of Tasmania as Lead Agent. www.imos.org.au

PRINCIPAL PARTICIPANTS



SIMS is a partnership involving four Universities.

ASSOCIATE PARTICIPANTS



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Oceanographic Deployments Database

User Manual

Database Conventions and Definitions

Version 1 - May 2017

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1. Introduction

The Oceanographic Deployment Database has been developed to enable the systematic entry and retrieval of metadata associated with oceanographic moorings and CTD profiles. Extra functionality also allows the database to be utilised for managing an instrument pool requiring servicing and maintenance. The database has been created using Microsoft Access and supports the IMOS Toolbox (see: <https://github.com/aodn/imos-toolbox/wiki>) for processing raw instrument data into IMOS compatible Quality Controlled (QC) NetCDF files. This Toolbox will be referred to as the Toolbox throughout the document.

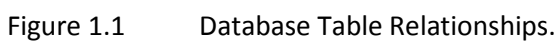
The database has several forms that have been developed to assist and guide the user with data entry. This manual is not intended to act as an instruction manual for using MS-ACCESS, however some tips and advice are offered.

There is no constraint on how the database is used or altered to meet the needs of the user and/or organisation however it is recommended that the existing forms, queries, reports and macros are not altered or deleted to maintain the database integrity. Users are able to create their own queries, add extra tables, field to tables, forms and reports as required. Guidance for this is available via the MS-ACCESS help pages and web-based literature. Appendix B describes three extra forms included with the database.

For novice MS-ACCESS users, it is important to note that unlike MS-EXCEL, when data is changed in a record or field, the changes are persistent. There is no requirement to save changes as is done with a spreadsheet. Therefore when navigating the database, it is advised that if the user does not wish to alter or add new records, then data should be accessed using the **View Data Forms (ReadOnly)** portal to avoid overwriting existing records.

If editing or adding of records is required, then this should be done via the **Add/Edit Data Forms** portal. Some forms have the ability to lock the records to editing - this only applies to records viewed via the forms. At **ALL** times, records can be altered/deleted when viewed via the tables. If navigating the database when in Edit mode – **do not** use direct entry into the fields or the dropdown boxes to filter records. Direct entry implies editing the field. See Chapter 5 – Database Tips – for techniques for record filtering.

Confident users can go directly to the tables to add/edit records.



This is a relational database with referential integrity. Tables are linked via primary and foreign keys. This database also has cascading updates and deletes.

What does this mean to the user?

Records in linked tables (Foreign Key) cannot be created until a parent record (Primary Key) is created. E.g. a DeploymentData record cannot be created until corresponding records have been created for an Instrument, FieldTrip and Site.

If a Primary Key is altered in a table, then this will also be updated in any tables with a linked foreign key. E.g. altering the Site (Primary Key) in the Sites table will result in the Site value in the DeploymentData table (Foreign Key) being altered – this is a cascading update.

If a Parent record is deleted from a table then records linked to this will also be deleted. E.g. Deleting a Field Trip record from the FieldTrip table will result in all related records in the DeploymentData table being deleted – this is a cascading delete.

This may seem restrictive however there are several advantages to using a relational database with these constraints including:

Removes redundancy

Ensures consistency between linked tables

Figure 1.1 illustrates the relationships between the database tables. The arrows indicate the direction of the relationship and the type of relationship - the most common being:

1 → ∞

The above relationship indicates a one-to-many relationship, whereby the “1” is next to the Primary Key and the “∞” is next to the foreign key.

For example in Figure 1.2, this relationship indicates that for each *individual* Site Record in the Sites tables there are possibly *many* DeploymentData records. The Sites-Site field is the Primary key and the DeploymentData-Site field is the Foreign key, therefore a Sites record must be created before a DeploymentData record referencing that Site can.

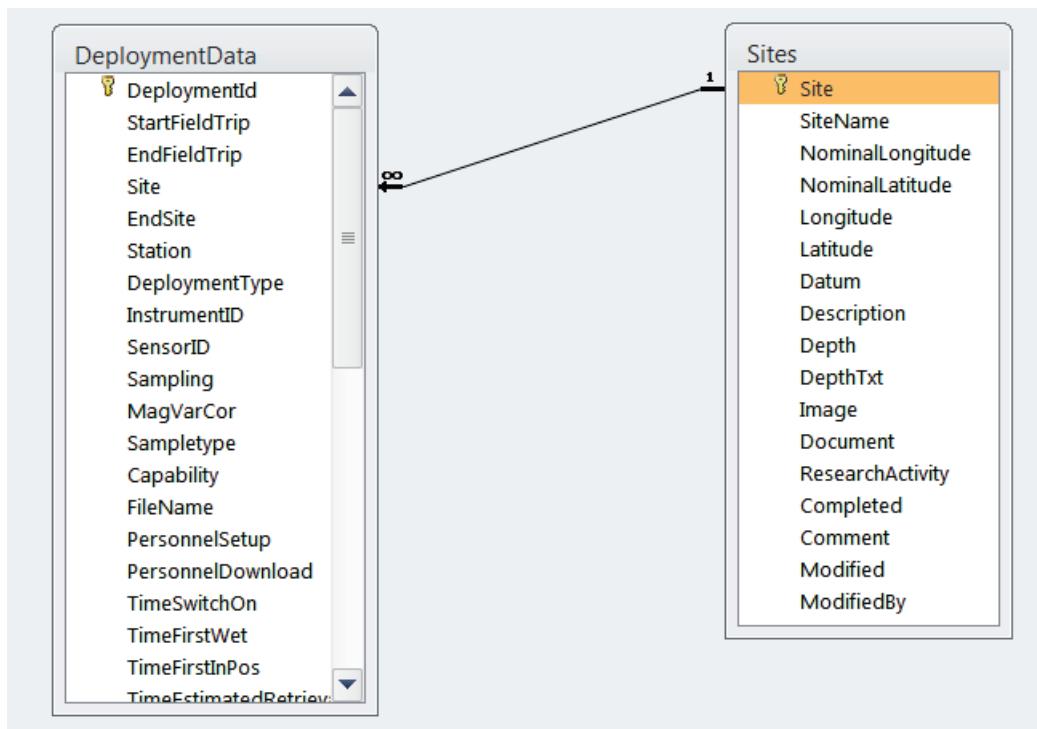


Figure 1.2 Example of One-to-Many relationship.

All of the relationships are described in more detail in Appendix A - Tables and Definitions.

2. Using the Switchboard

Navigation of the database is best achieved utilising the switchboard. The switchboard provides quick access to the forms that are used to populate the tables as well as providing a selection of reporting tools for the deployment data and the instruments. The switchboard appears when the database is first opened.

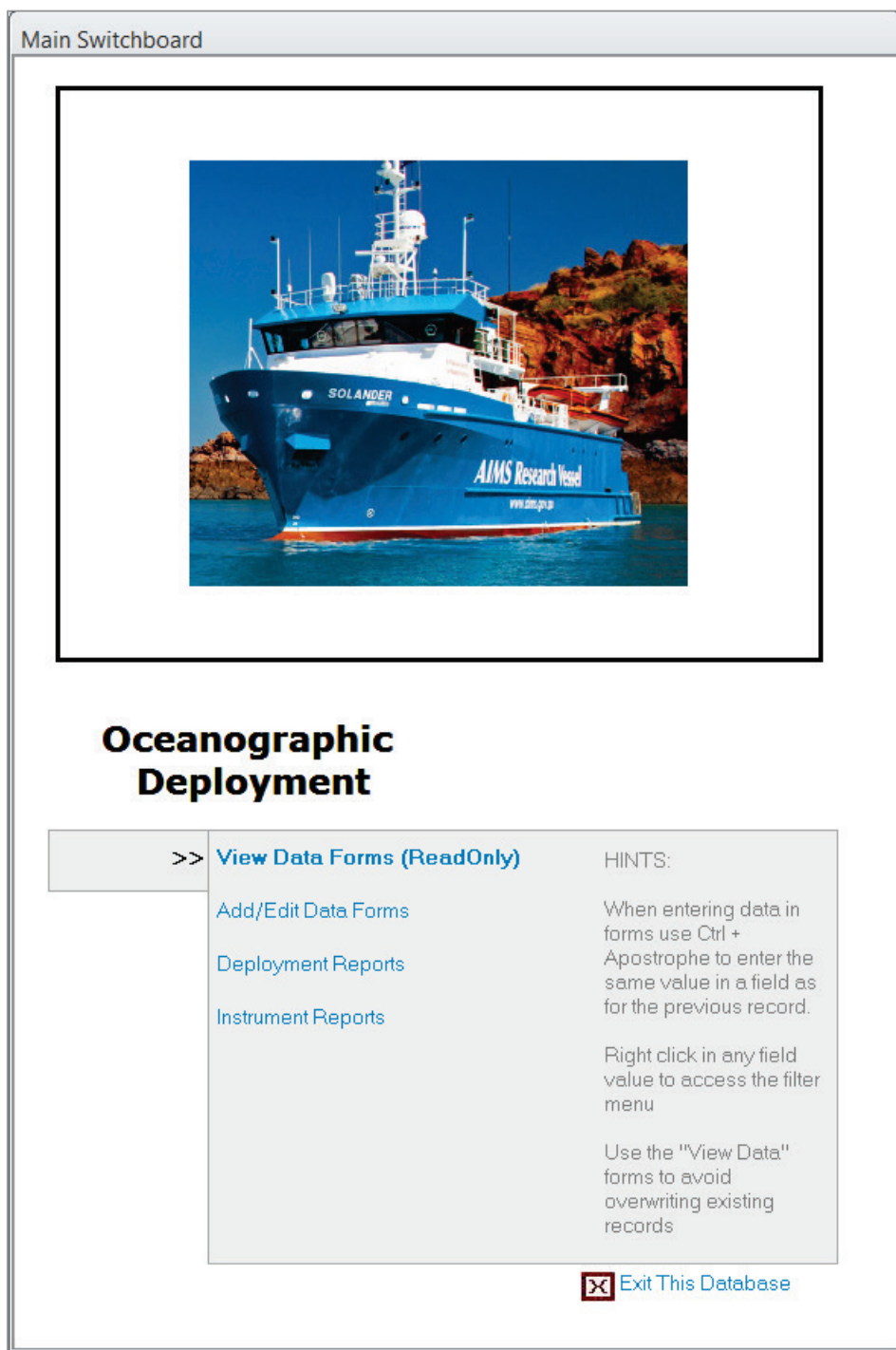


Figure 2.1 The Main Switchboard

View Data Forms (ReadOnly)

Selecting this option allows the user to access all data forms in a read-only format. This prevents any accidental deletions or alterations. This portal to the database should be used if no editing or addition of records is required.

Add/Edit Data Forms

Selecting this option allows the user to access all data forms as above and be able to edit/delete existing records as well as adding new records. This portal should only be used by competent users.

Deployment Reports

Selecting this option allows the user to access several formatted data reports. A separate form appears which allows filtering of records based on several options.

Instrument Reports

Selecting this option allows the user to access options for viewing several reporting options for the instrument pool.

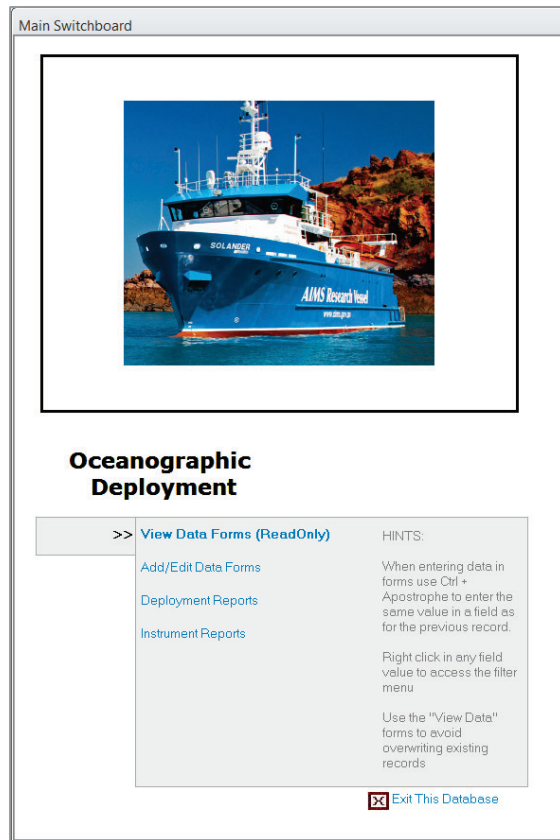


Figure 2.2 Main Switchboard - Descriptions

View Data Forms

Opens a new Switchboard window that allows the user to open the desired forms in read only format. This is the preferred portal to use if no editing or adding of records is required. Selecting any form will allow the user to view and filter records within it.

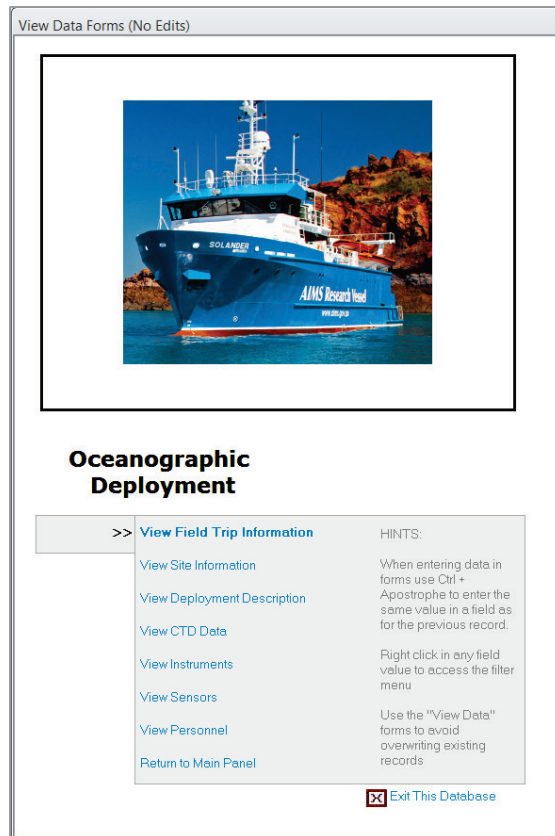


Figure 2.3 Switchboard – View Data Forms

Add/Edit Data Forms

Opens a new Switchboard window that allows the user to open the desired forms for adding and editing. A description of each form and their fields can be viewed in Chapter 3 - Entering Data.

The order of the switchboard items, follows the order in which data would be entered for a new deployment – assuming the instrument record already exists.

For example before a deployment record can be created, a Field Trip record and a Sites record must first be created.

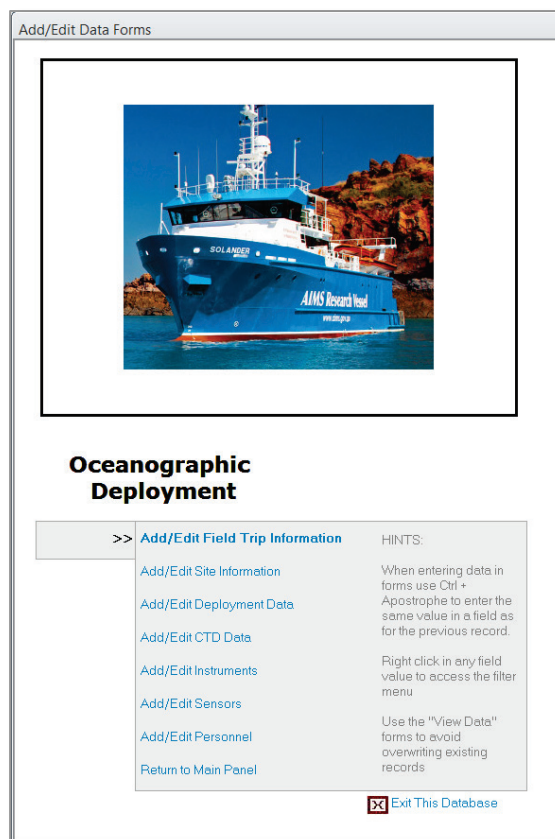


Figure 2.3 Switchboard – Add/Edit Data Forms

Deployment Reports

Selecting this option presents the user with three formatted data reports that can be saved in the standard MS ACCESS formats, e.g. PDF, RTF, Word etc. The three reports are:

Summary Report

A brief report in a landscape format with one line per deployment record.

Brief Drop Sheet

A more detailed report that is portrait format listing metadata for each deployment record

Detailed Drop Sheet

Another dropsheet format report which includes extra metadata including in/out water times, sampling setups etc.

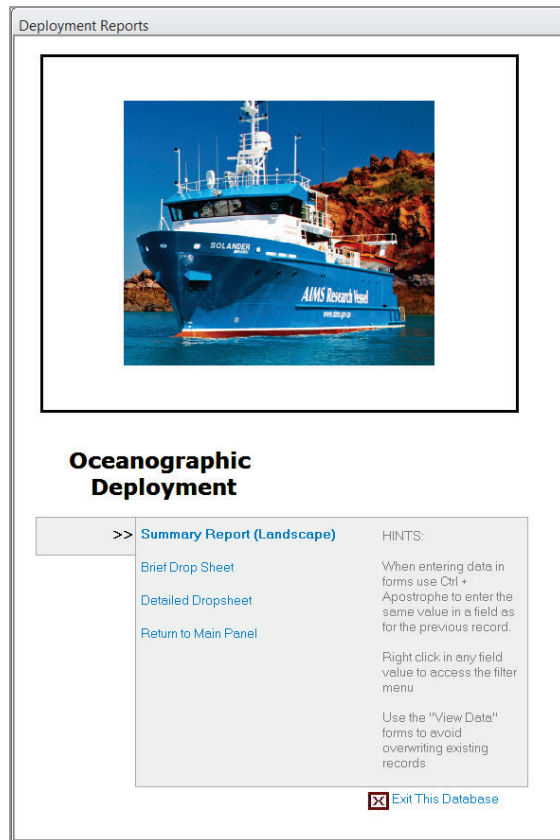


Figure 2.4 Switchboard – Deployment Reports

Report Filter

When the user selects one of the Reports listed above, a filter form opens that allows selection of records based on the filtering criteria listed in the form shown. Multiple criteria can be used at the same time. Each filter functions as a logical AND operation.

E.g. the options selected at right would produce a report for all mooring records at Heron South for the period 01/01/2015 – 31/12/2017.

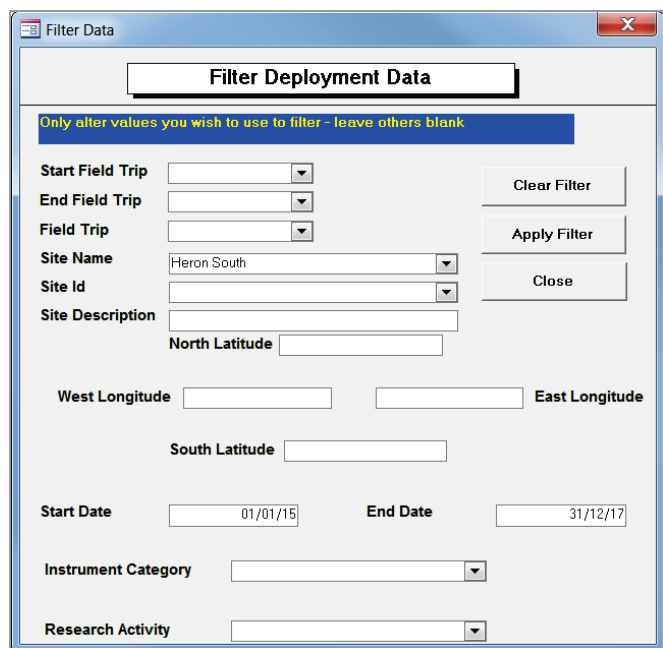


Figure 2.5 Filter Form for Creating Reports

Instrument Reports

Selecting this option from the main panel produces a selection of reporting options for the instrument pool.

View Current Instrument List

Produces an ACCESS report of all the instruments as well as any maintenance notes.

View Instruments in Field

Produces an ACCESS report of all instruments currently deployed. An instrument is considered to be in the field if a deployment record exists for that instrument that does not have an end field trip assigned

View Instruments in Field – Alphabetical

Produces a brief report with instruments sorted by InstrumentID using same in-field criteria.

Instruments in Field – Excel

Produces a list of instruments in the field using same criteria, which can be saved as an Excel spreadsheet, enabling a higher level of sorting and filtering of the records.

Instruments List – Excel

Produces a detailed spreadsheet of all instruments as an Excel spreadsheet.

Instruments Recovery Summary – Excel

Produces an Excel spreadsheet for recording instrument performance etc. on recovery – based on a FieldTrip ID entered.

Instrument Maintenance – Excel

Produces an excel spreadsheet listing all maintenance records for each instrument.

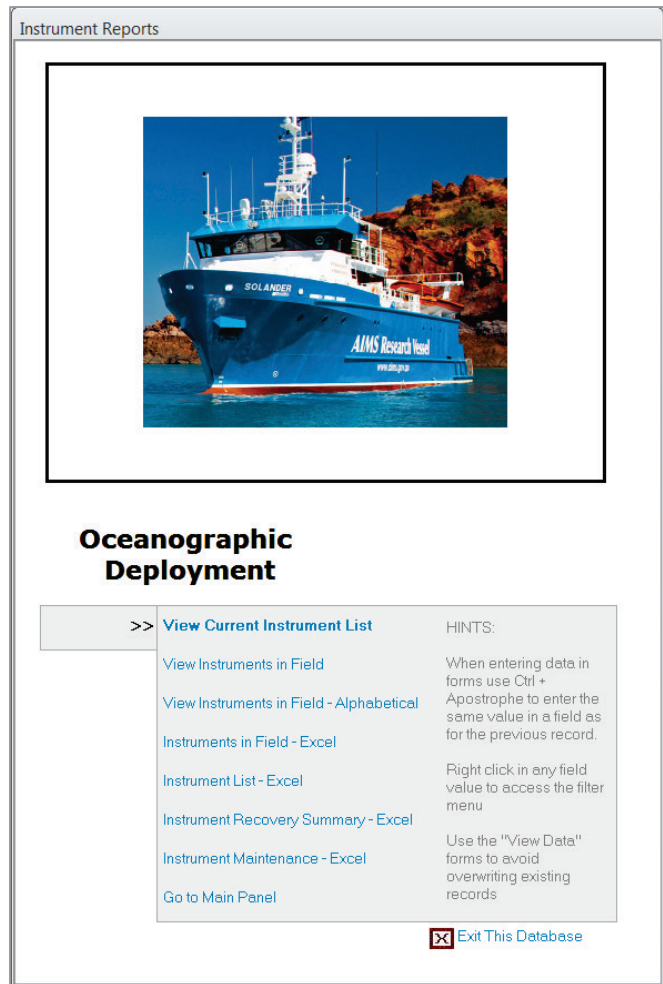


Figure 2.6 Instrument Reports

3. Entering Data in the Forms

Entering data via the forms provides added functionality and shortcuts via dropdown lists and auto-filling of some fields and is the recommended method over direct entry to the tables. Each form has the following format:

- Red Fields are the minimum required to create a record
- Blue fields are read-only and not saved to the underlying data table. They show data that is linked from other tables.
- Pink shaded fields are used by the IMOS Toolbox.

3.1 Instruments Form

The Instruments data is essentially the foundation data set that is used by the other forms in the database to describe their deployments, maintenance and configuration.

Note: Because of referential integrity linking data in the DeploymentData and CTDDData tables, deleting/altering an Instrument record causes the related records in these tables to be deleted/changed.

This form has three tabs:

Description Used to enter descriptive information about the instrument.

Maintenance/Location Used for instrument maintenance tracking.

Sensors Used for managing external sensor configurations on relevant instruments.

Some features of this form are shown below:

The form can be filtered using the Make, Model and Status of each instrument.

Start Date	End Date	Location Notes
21/03/17		NRGYON-1703-SUB

This form automatically locks against edits to prevent accidental changes and deletions which cascade through to the DeploymentData table etc. To make any changes it must be unlocked using the Lock Record for Edits tickbox.

The screenshot shows the 'Instruments' form with various fields for instrument details. A red box highlights the 'Lock Record for Edits' checkbox in the top right corner, which is currently unchecked. Other visible fields include InstrumentID (SBE16PLUSV2-7136), Category (CTD), Make (SEABIRD), Model (SBE16PLUS V2 SEACAT), SerialNumber (7136), Asset Number (1152291), BarCode (6826), Sensors (CTD, ECO-AFL/PL, ECO-NTU, PAR), and Description (SEABIRD CTD SBE16Plus V2 SEACAT PROFILER). The Status is checked, and Capability includes '350m Max (Housing) - Strain Gauge Pressure sensor (330m) ECO-AFL/PL, ECO-NTU, PAR'. Purchase Date is 01/11/12, Expiry Date is 01/11/22, Asset Life (Years) is 10, Project is BACS, and Custodian is AIMS_Juitchford.

This form allows the user to view the current location of the instrument using the subform at the bottom.

This screenshot is similar to the first one, but a red box highlights the 'Location' subform at the bottom right. The subform contains fields for Start Date (21/03/17), End Date, and Location Notes (HRSYON-1703-SUB). The rest of the form fields are identical to the previous screenshot.

This form allows the user to view previous deployments the instrument has had by clicking the Get Deployment button.

This screenshot is similar to the previous ones, but a red box highlights the 'Get Deployment' button in the top right area, next to the 'Add Record' button. The rest of the form fields remain the same.

3.1.1 Instruments Description Tab

This tab is used to enter descriptive information for each individual instrument with the data being stored in the *Instruments* table. This tab is the only one that requires data entry for using the Toolbox.

The screenshot shows the 'Instruments' application window with the 'Description' tab selected. The form contains the following fields and values:

- InstrumentID:** SBE16PLUSV2-7136
- Category:** CTD
- Make:** SEABIRD
- Model:** SBE16PLUS V2 SEACAT
- SerialNumber:** 7136
- Asset Number:** 1152201
- BarCode:** 6826
- Sensors:** CTD, ECO-AFL/FL, ECO-NTU, PAR
- Description:** SEABIRD CTD SBE16Plus V2 SEACAT PROFILER
- Status:** ☒
- Capability:** 350m Max (Housing) - Strain Gauge Pressure sensor (330m) ECO-AFL/FL, ECO-NTU, PAR
- Purchase Date:** 01/11/12
- Expiry Date:** 01/11/22
- Asset Life (Years):** 10
- Project:** IMOS
- Custodian:** AIMS_jluetchford
- Comment:** (empty)

Additional features include buttons for 'Get Deployment', 'Add Record', and 'Lock Record for Edits'. An 'Image' section shows a photo of the instrument with the path 'images\Instruments\SBE16.bmp'. A 'Location' table shows 'Start Date' as 21/03/17 and 'Location Notes' as NRSYON-1703-SUB. The record was last modified on 22/05/2017 by Admin.

Figure 3.1.1 Instruments form – Description Tab.

InstrumentID

Must be unique for each instrument and is the Primary Key. The format of the InstrumentID is up to the user but should demonstrate consistency for multiple entries. This field is the minimum required to create an Instrument record. Examples created using a combination of Instrument make, model and serial number are:
SBE37SMP-9092
RDIADCP-18058
WQM_045

This screenshot is similar to the previous one but highlights the 'InstrumentID' field with a red rectangle, emphasizing its importance as the Primary Key.

Category

Field for assigning a category to the instrument to use for grouping/filtering, e.g. ADCP, Temp Logger. The format of this field is up to the user but should be entered consistently for record filtering.

The screenshot shows the 'Instruments' form. At the top, there are two dropdown menus for 'Make' (SEABIRD) and 'Model' (SBE16PLUS V2 SEACAT). Below these are three tabs: 'Description', 'Maintenance/Location', and 'Sensors'. The 'Description' tab is active. The form contains several fields: 'InstrumentID' (SBE16PLUSV2-7136), 'Category' (CTD), 'Make' (SEABIRD), 'Model' (SBE16PLUS V2 SEACAT), 'SerialNumber' (7136), 'Asset Number' (1152201), 'BarCode' (6826), 'Sensors' (CTD,ECO-AFL/FL, ECO-NTU, PAR), and 'Description' (SEABIRD CTD SBE16Plus V2 SEACAT PROFILER). The 'Category' field is highlighted with a red rectangle.

Make

Field for describing the make or brand of the instrument. This field should be entered consistently to enable filtering. Consistent entry of this field is also used to identify the instrument Make in the Toolbox.

Examples are:

RDI

WetLabs

Benthos

Seabird

The screenshot shows the 'Instruments' form. At the top, there are two dropdown menus for 'Make' (SEABIRD) and 'Model' (SBE16PLUS V2 SEACAT). Below these are three tabs: 'Description', 'Maintenance/Location', and 'Sensors'. The 'Description' tab is active. The form contains several fields: 'InstrumentID' (SBE16PLUSV2-7136), 'Category' (CTD), 'Make' (SEABIRD), 'Model' (SBE16PLUS V2 SEACAT), 'SerialNumber' (7136), 'Asset Number' (1152201), 'BarCode' (6826), 'Sensors' (CTD,ECO-AFL/FL, ECO-NTU, PAR), and 'Description' (SEABIRD CTD SBE16Plus V2 SEACAT PROFILER). The 'Make' field is highlighted with a red rectangle.

Model

Field for entering the specific model of the instrument. The format is up to the user but should be entered consistently to enable filtering.

Consistent entry of this field, combined with the Make enables the Toolbox to identify the appropriate parser for importing the data.

Examples are:

ADCP – Workhorse Sentinel NEMO

WQM

ACR866

SBE39

The screenshot shows the 'Instruments' form. At the top, there are two dropdown menus for 'Make' (SEABIRD) and 'Model' (SBE16PLUS V2 SEACAT). Below these are three tabs: 'Description', 'Maintenance/Location', and 'Sensors'. The 'Description' tab is active. The form contains several fields: 'InstrumentID' (SBE16PLUSV2-7136), 'Category' (CTD), 'Make' (SEABIRD), 'Model' (SBE16PLUS V2 SEACAT), 'SerialNumber' (7136), 'Asset Number' (1152201), 'BarCode' (6826), 'Sensors' (CTD,ECO-AFL/FL, ECO-NTU, PAR), and 'Description' (SEABIRD CTD SBE16Plus V2 SEACAT PROFILER). The 'Model' field is highlighted with a red rectangle.

SerialNumber

Field for entering the instrument serial number – can contain text characters.

The screenshot shows the 'Instruments' form. At the top, there are filters for 'Make' (SEABIRD) and 'Model' (SBE16PLUS V2 SEACAT). Below these are tabs for 'Description', 'Maintenance/Location', and 'Sensors'. The form fields are as follows: 'InstrumentID' is 'SBE16PLUSV2-7136' (highlighted in red); 'Category' is 'CTD'; 'Make' is 'SEABIRD'; 'Model' is 'SBE16PLUS V2 SEACAT'; 'SerialNumber' is '7136' (highlighted with a red rectangle); 'Asset Number' is '1152201'; 'BarCode' is '6826'; 'Sensors' is 'CTD,ECO-AFL/FL, ECO-NTU, PAR'; 'Description' is 'SEABIRD CTD SBE16Plus V2 SEACAT PROFILER'; and 'Status' is checked.

Asset Number

Field for recording organisational internal registration information.

This screenshot is identical to the previous one, but the 'Asset Number' field, which contains '1152201', is highlighted with a red rectangle instead of the 'SerialNumber' field.

Barcode

Field for recording any Bar Code information.

This screenshot is identical to the previous ones, but the 'BarCode' field, which contains '6826', is highlighted with a red rectangle instead of the 'Asset Number' field.

Sensors

Field for recording type of sensors housed within the instrument e.g. pressure, temp, conductivity etc.

The screenshot shows the 'Instruments' form with the 'Sensors' field highlighted by a red rectangle. The form contains the following fields:

View All Instruments Or Filter Using Drop-Down Boxes Below	
Make	SEABIRD
Model	SBE16PLUS V2 SEACAT
Description Maintenance/Location Sensors	
InstrumentID	SBE16PLUSV2-7136
Category	CTD
Make	SEABIRD
Model	SBE16PLUS V2 SEACAT
SerialNumber	7136
Asset Number	1152201
BarCode	6826
Sensors	CTD, ECO-AFL/FL, ECO-NTU, PAR
Description	SEABIRD CTD SBE16Plus V2 SEACAT PROFILER
Status	<input checked="" type="checkbox"/>
Capability	350m Max (Housing) - Strain Gauge Pressure sensor (330m) ECO-AFL/FL, ECO-NTU, PAR

Description

Field for entering a meaningful instrument description
E.g. "Seabird SBE 39 temperature recorder".

The screenshot shows the 'Instruments' form with the 'Description' field highlighted by a red rectangle. The form contains the following fields:

View All Instruments Or Filter Using Drop-Down Boxes Below	
Make	SEABIRD
Model	SBE16PLUS V2 SEACAT
Description Maintenance/Location Sensors	
InstrumentID	SBE16PLUSV2-7136
Category	CTD
Make	SEABIRD
Model	SBE16PLUS V2 SEACAT
SerialNumber	7136
Asset Number	1152201
BarCode	6826
Sensors	CTD, ECO-AFL/FL, ECO-NTU, PAR
Description	SEABIRD CTD SBE16Plus V2 SEACAT PROFILER
Status	<input checked="" type="checkbox"/>
Capability	350m Max (Housing) - Strain Gauge Pressure sensor (330m) ECO-AFL/FL, ECO-NTU, PAR

Status

Field for indicating if the instrument is still part of the instrument pool. This enables the user to turn off the availability of the instrument in other forms without removing it from the database. Generally used if an instrument is lost or unserviceable.

The screenshot shows the 'Instruments' form with the 'View All Instruments Or Filter Using Drop-Down Boxes Below' header. The 'Make' dropdown is set to 'SEABIRD' and the 'Model' dropdown is set to 'SBE16PLUS V2 SEACAT'. The 'Description' tab is selected, showing fields for InstrumentID (SBE16PLUSV2-7136), Category (CTD), Make (SEABIRD), Model (SBE16PLUS V2 SEACAT), SerialNumber (7136), Asset Number (1152201), BarCode (6826), Sensors (CTD, ECO-AFL/FL, ECO-NTU, PAR), and Description (SEABIRD CTD SBE16Plus V2 SEACAT PROFILER). The 'Status' field at the bottom is highlighted with a red box and contains a checked checkbox.

Capability

Field for entering sensor and housing capabilities/ranges.

The screenshot shows the 'Instruments' form with the 'Asset Number' (1152201), 'BarCode' (6826), 'Sensors' (CTD, ECO-AFL/FL, ECO-NTU, PAR), and 'Description' (SEABIRD CTD SBE16Plus V2 SEACAT PROFILER) fields visible. The 'Status' field is checked. The 'Capability' field is highlighted with a red box and contains the text: '350m Max (Housing) - Strain Gauge Pressure sensor (330m) ECO-AFL/FL, ECO-NTU, PAR'. Other fields include 'Purchase Date' (01/11/12), 'Expiry Date' (01/11/22), 'Asset Life (Years)' (10), 'Project' (IMOS), 'Custodian' (AIMS_jluetchford), and 'Comment'.

Purchase Date

Field for entering date of purchase. Entered in dd/MM/yy format.

The screenshot shows the 'Instruments' form with the 'Sensors' (CTD, ECO-AFL/FL, ECO-NTU, PAR) and 'Description' (SEABIRD CTD SBE16Plus V2 SEACAT PROFILER) fields visible. The 'Status' field is checked. The 'Capability' field contains the text: '350m Max (Housing) - Strain Gauge Pressure sensor (330m) ECO-AFL/FL, ECO-NTU, PAR'. The 'Purchase Date' field is highlighted with a red box and contains the date '01/11/12'. Other fields include 'Expiry Date' (01/11/22), 'Asset Life (Years)' (10), 'Project' (IMOS), 'Custodian' (AIMS_jluetchford), and 'Comment'.

Expiry Date

Field for estimated lifespan of instrument or date instrument became redundant. Entered in dd/MM/yy format.

This screenshot shows a data entry form with several fields. The 'Expiry Date' field, containing the value '01/11/22', is highlighted with a red rectangular box. Other visible fields include 'Status' (checked), 'Capability' (350m Max (Housing) - Strain Gauge Pressure sensor (330m) ECO-AFL/FL, ECO-NTU, PAR), 'Purchase Date' (01/11/12), 'Asset Life (Years)' (10), 'Project' (IMOS), 'Custodian' (AIMS_jluetchford), and a 'Comment' text area. At the bottom, there is a record navigation bar showing 'Record: 14 of 8' and a 'Filtered' status.

Asset Life (Years)

Field for estimated lifespan of instrument.

This screenshot shows the same data entry form as above, but with the 'Asset Life (Years)' field, containing the value '10', highlighted with a red rectangular box. The 'Expiry Date' field now contains '01/11/22'. The rest of the form and the bottom navigation bar remain the same.

Project

Field for assigning instrument to a project.

This screenshot shows the same data entry form, with the 'Project' field, containing the value 'IMOS', highlighted with a red rectangular box. The 'Asset Life (Years)' field now contains '10'. The rest of the form and the bottom navigation bar remain the same.

Custodian

Dropdown box assigning instrument to an individual – data sourced from Personnel table.

This screenshot shows the same data entry form, with the 'Custodian' dropdown field, containing the value 'AIMS_jluetchford', highlighted with a red rectangular box. The 'Project' field now contains 'IMOS'. The rest of the form and the bottom navigation bar remain the same.

Comment

Field for adding ancillary information about the instrument. This could include information relating to its being lost or unserviceable.

A screenshot of a web form. The 'Comment' field is a large text area, highlighted with a red rectangle. Above it are fields for 'Expiry Date' (01/11/22), 'Asset Life (Years)' (10), 'Project' (IMOS), and 'Custodian' (AIMS_jluetchford). A 'Record' button is to the right. At the bottom, there is a status bar showing 'Record: 1 of 8', a 'Filtered' button, and a 'Search' field.

Image

Field for linking to an image of the instrument. This image is displayed in the image frame above. Choose Bitmap (.BMP) for optimal display.

A screenshot of a web form. At the top, there is a large image frame showing two SBE instruments. Below it, the 'Image' field is a text box containing 'images\Instruments\SBE16.bmp', with 'Add/Change' and 'Remove' buttons. Below this is a 'Location' table with columns 'Start Date', 'End Date', and 'Location Notes'. The first row shows '21/03/17' and 'NRSYON-1703-SUB'. The table is highlighted with a red rectangle.

Location

This subform shows the current location of the instrument based on entries in the DeploymentDescription table and the Maintenance/Location tab of this form.

A screenshot of a web form. The 'Image' field and 'Location' table are visible. The 'Location' table is highlighted with a red rectangle. Below the table, there is a status bar showing 'Record Last Modified: 22/03/2017 09:03' and 'By: Admin'.

3.1.2 Maintenance/Location Tab

This tab is used for entering information relating to the instruments maintenance and calibration. This data is stored in the *Maintenance_Instruments* table. This data is optional and not required for operation of the Toolbox.

Instruments

View All Instruments Or Filter Using Drop-Down Boxes Below

Make: SEABIRD Model: SBE16PLUS V2 SEACAT Status: Show All

► Description Maintenance/Location Sensors

InstrumentID: SBE16PLUSV2-7134

Date	Calibrated?	Maintenance Notes	Location Notes	Calibration File
07/03/2017 Modified By: sbymes	<input checked="" type="checkbox"/>	Returned from service and cal at Seabird. Seabird did not recover data from previous deployment.	AIMS	
08/11/2016 Modified By: cbarlet	<input type="checkbox"/>	ex YON1603 Flushed, batts removed, in instrument store to be sent to CSIRO in Jan 2017	AIMS	
21/01/2016 Modified By: jluetchf	<input type="checkbox"/>	Returned from CSIRO	AIMS	
08/12/2015 Modified By: jluetchf	<input checked="" type="checkbox"/>			
18/11/2015 Modified By: jluetchf	<input type="checkbox"/>	Sent to CSIRO for cal.	CSIRO	
06/03/2015 Modified By: sbymes	<input checked="" type="checkbox"/>	Returned from calibration at CSIRO	AIMS	\\PEARL\ocean\OGT ECH\Instruments\Seabird\Calibration docs and repair
17/12/2014 Modified By: jzier	<input type="checkbox"/>	Sent to CSIRO for cal	CSIRO	

Record: 1 of 11 No Filter Search

Record: 6 of 8 Filtered Search

Figure 3.1.2 Instruments – Maintenance/Location Tab

Data Fields:

- Date** Date of instrument service activity.
- Calibrated** Tick box to indicate if service is an instrument calibration.
- Maintenance Notes** Memo field for entering details of instrument service. Use Shift + F2 to view contents in a larger window.
- Location Notes** Assign a location for instrument if not in the field.
- Calibration File** Filename and optionally path to calibration information.

3.1.3 Sensors Tab

This tab is used for entering/viewing specific instrument-sensor configurations. This data is stored in the *InstrumentSensorConfig* table. If entered, this data is used by the toolbox.

The screenshot shows the 'Instruments' window with the 'Sensors' tab selected. At the top, there are filters for 'Make' (SEABIRD) and 'Model' (SBE16PLUS V2 SEACAT), along with a 'Status' button and a 'Show All' button. Below these, there are tabs for 'Description', 'Maintenance/Location', and 'Sensors'. The 'Sensors' tab is active, showing a table with the following columns: SensorID, Date, StartConfig, EndConfig, Current Configuration, and Comment. The table contains 6 records, with the first three having comments about pairing. The bottom record is marked with an asterisk and is currently selected. At the bottom of the window, there is a 'Record' section showing '1 of 6' records and a 'Filtered' status.

SensorID	Date	StartConfig	EndConfig	Current Configuration	Comment
PARS-302	28/11/13	01/11/2012	16/03/2015	<input type="checkbox"/>	entered for first time on this date but has been paired this way since new.
NTUS-476	28/11/13	01/11/2012	16/03/2015	<input type="checkbox"/>	entered for first time on this date but has been paired this way since new.
FLS-2701	28/11/13	01/11/2012	16/03/2015	<input type="checkbox"/>	entered for first time on this date but has been paired this way since new.
PARS-283	16/03/15	16/03/2015		<input checked="" type="checkbox"/>	
NTUS-477	16/03/15	16/03/2015		<input checked="" type="checkbox"/>	
FLS-2745	16/03/15	16/03/2015		<input checked="" type="checkbox"/>	
*				<input type="checkbox"/>	

Figure 3.1.3 Instruments-Sensors Tab

Data Fields:

SensorID field for entering the unique sensor ID. This data is available via a dropdown box that references the Sensors table. Data must be entered into the Sensors table prior to making an entry here as this is a Foreign Key.

Date Date of data entry in dd/MM/yy format.

StartConfig Date when sensor is first configured to the instrument in dd/MM/yyyy format

EndConfig Date when sensor is removed from the instrument in dd/MM/yyyy format.

CurrentConfig Tick box indicating if the sensor is currently attached to instrument.

Comment Enter any extra information here.

3.2 Field Trip Form

The FieldTrip form is used for entering field related information.

Note: Because of referential integrity linking data in the DeploymentData and CTDDData tables, *deleting/altering a Field Trip record causes the related records in these tables to be deleted/altered.*

This form has four tabs for entering the data

Trip Details Description of field trip and dates. This is the only tab that requires filling for the Toolbox

Trip Event Log Tab for entering daily trip activities.

Personnel Tab for assigning personnel to the trip.

Images Tab for referencing images/photos for the trip.

The screenshot shows a web application window titled "Field Trip". Inside, there's a yellow header bar with "Field Trip Information" and a small icon. Below this is a tabbed interface with four tabs: "Trip Details" (selected), "Trip Event Log", "Personnel", and "Images". The "Trip Details" tab contains the following fields and controls:

- Field Trip Number:** A text input field containing "006659". To its right are two buttons: "New Record" and "Open Deployment Form".
- Start Date:** A date input field containing "21/03/2017" with a calendar icon to its right.
- Finish Date:** A date input field containing "05/04/2017" with a calendar icon to its right.
- Get Report:** A button located below the date fields.
- Description:** A large text area containing the text: "Q-IMOS South mooring service. NRSBGC/MMP sampling at Yongala. MMP Burdekin Mooring service and Holbourne Island Service. Due to Cyclone Debbie - weather restrictions resulted in none of the dive loggers and Border Island TG being serviced."
- Last Modified:** A label with the value "09/05/17 14:36".

At the bottom of the window is a footer bar with record navigation controls: "Record: 1 of 1", a "Filtered" button, and a "Search" input field.

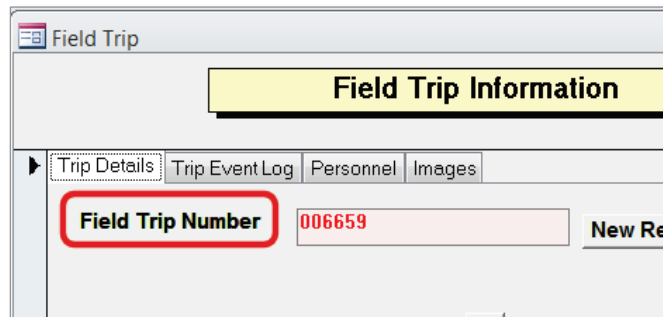
Figure 3.2.1 Field Trip Information - Field Trip Details Tab

3.2.1 Field Trip - Field Details Tab

This tab is used to enter trip meta-data. Data entered into this tab is saved to the *FieldTrip* table. All records are used by the Toolbox. This is the only tab that requires data entry for the Toolbox.

Field Trip Number

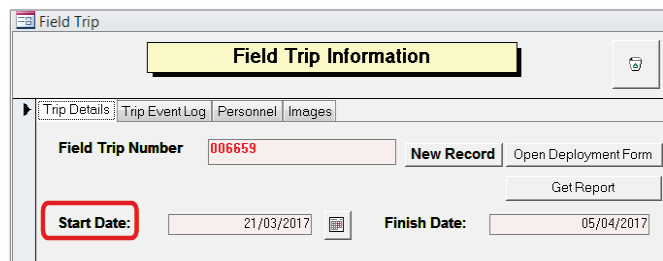
Field for entering unique FieldID – this can be text – and is the minimum field required by the Database for a record to be created.



The screenshot shows the 'Field Trip' window with the 'Field Trip Information' tab selected. The 'Field Trip Number' field is highlighted with a red box and contains the value '006659'. Other tabs visible are 'Trip Details', 'Trip Event Log', 'Personnel', and 'Images'. A 'New Record' button is also visible.

Start Date

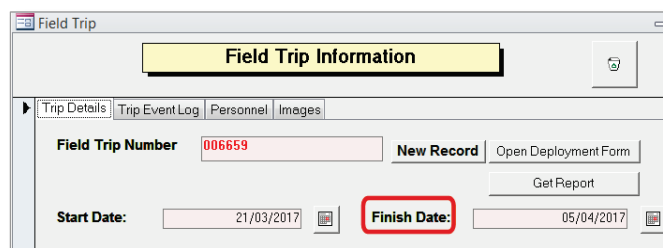
Start date for field trip – can be selected from the date picker or entered in the format dd/MM/yyyy.



The screenshot shows the 'Field Trip' window with the 'Field Trip Information' tab selected. The 'Start Date' field is highlighted with a red box and contains the value '21/03/2017'. The 'Finish Date' field contains '05/04/2017'. Buttons for 'New Record', 'Open Deployment Form', and 'Get Report' are visible.

Finish Date

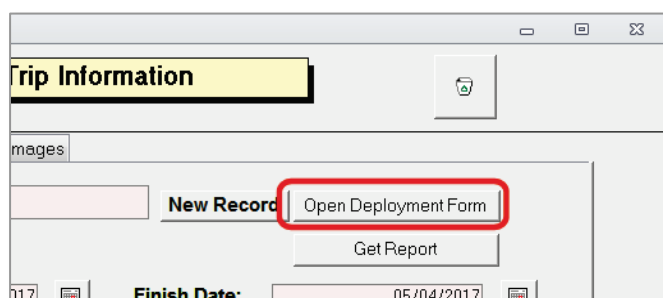
Finish date for field trip – can be selected from the date picker or entered in the format dd/MM/yyyy.



The screenshot shows the 'Field Trip' window with the 'Field Trip Information' tab selected. The 'Finish Date' field is highlighted with a red box and contains the value '05/04/2017'. The 'Start Date' field contains '21/03/2017'. Buttons for 'New Record', 'Open Deployment Form', and 'Get Report' are visible.

Open Deployment Form

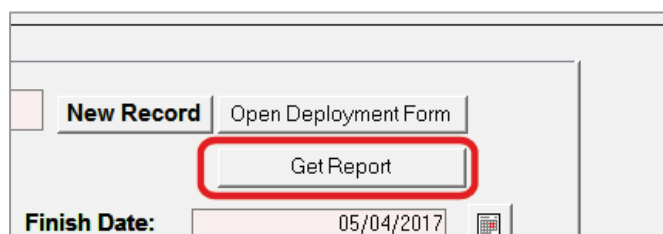
Action box that opens the DeploymentData form – filtered for the field trip.



The screenshot shows the 'Field Trip' window with the 'Field Trip Information' tab selected. The 'Open Deployment Form' button is highlighted with a red box. The 'Field Trip Number' field contains '006659'. The 'Start Date' field contains '21/03/2017' and the 'Finish Date' field contains '05/04/2017'. Buttons for 'New Record' and 'Get Report' are also visible.

Get Report

Produces a report based on information filled in the Trip Event Log.



The screenshot shows the 'Field Trip' window with the 'Field Trip Information' tab selected. The 'Get Report' button is highlighted with a red box. The 'Field Trip Number' field contains '006659'. The 'Start Date' field contains '21/03/2017' and the 'Finish Date' field contains '05/04/2017'. Buttons for 'New Record' and 'Open Deployment Form' are also visible.

3.2.2 Field Trip - Trip Event Log Tab

This tab is used for entering trip details by date. Data is saved to the *FieldEventLog* table.

The screenshot shows a web application window titled "Field Trip". Inside, there's a yellow header bar labeled "Field Trip Information". Below it are four tabs: "Trip Details", "Trip Event Log" (which is selected), "Personnel", and "Images". The "Trip Event Log" tab contains a form with the following fields:

- FieldTripID**: A text input field containing "006659".
- Date**: A date picker showing "17/03/2017".
- Event**: A text area containing the following text:
Deploy Yongala Bottom Frame NRSYON-1703-SUB
Recover Yongala Bottom Frame NRSYON-1609-SUB
Recover Yongala Surface Buoy
NRSYON BGC Sampling

There is a "Preview Report" button to the right of the Date field. At the bottom of the form, there's a record navigation bar showing "Record: 1 of 1" and a "Search" button. The bottom of the window also shows a similar bar, but with a "Filtered" button instead of "No Filter".

Figure 3.2.2 Field Trip – Event Log Tab

Data Fields:

- | | |
|------------------------------|--|
| <u>FieldTripID</u> | This field is automatically populated when the other fields are entered. |
| <u>Event</u> | Description of the event(s). |
| <u>Preview Report</u> | Produces a preview of report of the events for the entire trip. |

3.2.3 Field Trip - Personnel Tab

This tab is used for entering field personnel information. Data is saved in the *FieldTripPersonnel* table.

The screenshot shows a web application window titled "Field Trip". Inside, there's a yellow header bar labeled "Field Trip Information". Below it, a tabbed interface has four tabs: "Trip Details", "Trip Event Log", "Personnel" (which is active), and "Images". The "Personnel" tab displays a form titled "Field Personnel". The form contains the following fields: "FieldTripID" (text input with value "006659"), "StaffID" (dropdown menu with value "AIMS_cbartlett"), "FirstName" (text input with value "Chris"), "LastName" (text input with value "Bartlett"), "Organisation" (text input with value "AIMS"), and "Comment" (text area with value "Dive Supervisor"). To the right of the form is a small icon of a document with a red 'X'. At the bottom of the form, there's a record navigation bar showing "Record: 1 of 1", navigation arrows, a "No Filter" button, and a "Search" input field. The bottom of the window shows a global record navigation bar with "Record: 1 of 1", navigation arrows, a "Filtered" button, and a "Search" input field.

Figure 3.2.3 Field Trip – Personnel Tab

Data Fields:

<u>FieldTripID</u>	Auto-filled.
<u>StaffID</u>	Dropdown box to enter field staff – sourced from the Personnel Table. This is a Foreign Key.
<u>FirstName</u>	Auto-filled based on StaffID.
<u>LastName</u>	Auto-filled based on StaffID.
<u>Organisation</u>	Auto-filled based on StaffID.
<u>Comment</u>	Extra information as required.

3.2.4 Field Trip - Images Tab

This tab provides the ability to reference images associated with the field trip. Data is saved in the *FieldImages* table.

The screenshot shows a software window titled "Field Trip". Inside, there's a yellow header "Field Trip Information". Below it are tabs: "Trip Details", "Trip Event Log", "Personnel", and "Images". The "Images" tab is selected, showing a form for "Field Images". The form has three main input fields: "FieldTripID" with the value "006659", "Date" with "22/03/2017", and "Description" with "Yongala bottom frame before deployment". Below these is a large image of a red metal frame with various sensors and cables. Under the image, the file path "F:\Field\GBROOS\Trip6659\camera\IMG_4680.JPG" is displayed, along with "Add/Change" and "Remove" buttons. At the bottom of the window, there are record navigation controls showing "Record: 1 of 1", a "No Filter" status, and a "Search" field.

Figure 3.2.4 Field Trip – Images Tab

Data Fields:

FieldTripID Auto-filled.

Date Date of image – can be entered using date picker or in dd/MM/YYYY format.

Image File and path for the image. Note this image is not stored in the database. This facility is for referencing the image.

3.3 Sites Form

The Sites form is used for entering data related to the mooring site. Data is saved in the *Sites* Table.

Note: Because of referential integrity linking data in the DeploymentData and CTDDData tables, deleting/altering a Site record causes the related records in these tables to be deleted/altered.

Fields shaded in pink are used by the Toolbox.

The screenshot shows the 'Sites' form with the 'Site Information' tab selected. The form contains several fields for site data, with some fields shaded in pink. The 'SITE NAME' is 'Myrmidon Reef' and the 'SITE ID' is 'GBRMYR-1505'. The 'Latitude' is '18' degrees and '13.247' minutes, and the 'Longitude' is '147' degrees and '20.718' minutes. The 'Depth' is '216'. The 'Research Activity' is 'IMOS - Central and Northern GBR'. The 'Description' is 'IMOS Myrmidon Reef Slope Mooring, Deployed 19/05/2015 - 10/11/2015'. The 'Comment' field is empty. The 'Document' field contains a file path. The 'Image' field contains a file path. The 'Datum' is 'WGS84'. The 'Lock Record for Edits' checkbox is unchecked. The 'Last Modified' date is '05/02/16 14:31' and the user is 'fmcallis'.

Figure 3.3 Sites Form

Research Activity Filter

Allows user to filter sites based on Research Activity.

This screenshot shows the 'Sites' form with the 'Research Activity Filter' dropdown menu highlighted by a red box. The filter is currently set to 'All'.

Site Name

A descriptive Site identifier. This field does not have to be unique, and can be used to group repeated visits to the same site for later filtering.

This screenshot shows the 'Sites' form with the 'SITE NAME' field highlighted by a red box. The 'SITE NAME' is 'Myrmidon Reef'.

SiteID

This is the Primary Key and is used to link the data to other tables/forms. SiteID must be unique. It is the minimum field required to complete a Sites record.

The screenshot shows the 'Site Information' form for 'Myrmidon Reef'. The 'SITE ID' field, containing 'GBRMYR-1505', is highlighted with a red rectangle. Other visible fields include 'Latitude degrees' (18), 'Latitude minutes' (13.247), 'Longitude degrees' (147), and 'Latitude' (-18.2207833333333).

Latitude degrees/Latitude minutes

Use these fields to enter GPS latitude data in degrees and decimal minutes separately. The form will use this field to calculate the latitude in decimal degrees which is saved in the Sites table.

The screenshot shows the 'Site Information' form for 'Myrmidon Reef'. The 'Latitude degrees' (18) and 'Latitude minutes' (13.247) fields are highlighted with a red rectangle. The 'Latitude' field shows the calculated decimal value: -18.2207833333333.

Longitude degrees/Longitude minutes

Use these fields to enter GPS longitude data in degrees and decimal minutes separately. The form will use this field to calculate the longitude in decimal degrees which is saved in the Sites table.

The screenshot shows the 'Site Information' form for 'Myrmidon Reef'. The 'Longitude degrees' (147) and 'Longitude minutes' (20.718) fields are highlighted with a red rectangle. The 'Longitude' field shows the calculated decimal value: 147.3453. The 'Depth' field is also visible with the value 216.

Latitude/Longitude

These fields represent the actual GPS information stored in the database in signed decimal degree format. (North/East Positive; South/West negative). GPS information can be entered here directly.

The screenshot shows the 'Site Information' form for 'Myrmidon Reef'. The 'Latitude' (-18.2207833333333) and 'Longitude' (147.3453) fields are highlighted with a red rectangle. Other fields like 'SITE ID', 'Latitude degrees', 'Latitude minutes', 'Longitude degrees', 'Longitude minutes', and 'Depth' are also visible.

Nominal Latitude
degrees/Nominal Latitude
minutes

Optional field for setting the nominal latitude for the site. Use these fields to enter GPS nominal latitude data in degrees and decimal minutes separately. The form will use this field to calculate the Nominal Latitude in decimal degrees which is saved in the Sites table.

h Activity [Show All](#)

[Get Deployment](#) [New Record](#)

3333 **Nominal Latitude degrees** 18 S **Nominal Latitude** -18.2196333333333 **Datum:** WGS84

453 **Nominal Latitude minutes** 13.178 N **Nominal Longitude** 147.343683333333

Nominal Longitude degrees 147 E

Nominal Longitude minutes 20.621 W

Nominal Longitude
degrees/Nominal Longitude
minutes

Optional field for setting the nominal longitude for the site. Use these fields to enter GPS nominal longitude data in degrees and decimal minutes separately. The form will use this field to calculate the Nominal Longitude in decimal degrees which is saved in the Sites table.

h Activity [Show All](#)

[Get Deployment](#) [New Record](#)

3333 **Nominal Latitude degrees** 18 S **Nominal Latitude** -18.2196333333333 **Datum:** WGS84

453 **Nominal Latitude minutes** 13.178 N **Nominal Longitude** 147.343683333333

Nominal Longitude degrees 147 E

Nominal Longitude minutes 20.621 W

Nominal Latitude/Nominal
Longitude

Use these fields if the nominal site position is to be entered as decimal degrees. These fields represent the actual data stored in the Sites table, while the above fields are calculated in the form.

Activity [Show All](#)

[Get Deployment](#) [New Record](#)

Nominal Latitude degrees 18 S **Nominal Latitude** -18.2196333333333 **Datum:** WGS84

Nominal Latitude minutes 13.178 N **Nominal Longitude** 147.343683333333

Nominal Longitude degrees 147 E

Nominal Longitude minutes 20.621 W

Datum

Field for geodetic datum, eg WGS84.

The screenshot shows a web form with a 'Show All' button at the top. Below it is a 'New Record' button. The form contains fields for 'Nominal Latitude' and 'Nominal Longitude'. The 'Nominal Latitude' field has a dropdown menu with 'S' and 'N' options, and a text input field containing '-18.219633333333'. The 'Nominal Longitude' field has a dropdown menu with 'E' and 'W' options, and a text input field containing '147.343683333333'. A 'Datum' field is highlighted with a red box and contains the value 'WGS84'.

Depth

Depth in meters at the site.

The screenshot shows a 'Site Information' form. The 'SITE NAME' is 'Myrmidon Reef' and the 'SITE ID' is 'GBRMYR-1505'. The form includes fields for 'Latitude degrees' (18), 'Latitude minutes' (13.247), 'Longitude degrees' (147), and 'Longitude minutes' (20.718). There are also dropdown menus for 'S/N' and 'E/W'. The 'Depth' field is highlighted with a red box and contains the value '216'. The 'Depth Description' field contains the text 'Total at deployment'.

Depth Description

Free text field to enter depth datum information, e.g. total at deployment; MSL; LAT etc.

The screenshot shows a 'Site Information' form. The 'SITE NAME' is 'Myrmidon Reef' and the 'SITE ID' is 'GBRMYR-1505'. The form includes fields for 'Latitude degrees' (18), 'Latitude minutes' (13.247), 'Longitude degrees' (147), and 'Longitude minutes' (20.718). There are also dropdown menus for 'S/N' and 'E/W'. The 'Depth' field contains the value '216'. The 'Depth Description' field is highlighted with a red box and contains the text 'Total at deployment'. The 'Research Activity' field contains the text 'IMOS - Central and Northern GBR'.

Research Activity

Optional field for assigning a project or activity to the site. Can then be used for grouping/filtering records. Entries in this field will create a generated dropdown list for further data entry.

Site Information

Research Activity Filter

SITE NAME Myrmidon Reef Get Deployment

SITE ID GBRMYR-1505

Latitude degrees 18 **S** **Latitude** -18.220783333333 **Nominal Latitude degrees** 18

Latitude minutes 13.247 **N** **Nominal Latitude minutes** 13.178

Longitude degrees 147 **E** **Longitude** 147.3453 **Nominal Longitude degrees** 147

Longitude minutes 20.718 **W** **Nominal Longitude minutes** 20.621

Depth 216

Depth Description Total at deployment

Research Activity IMOS - Central and Northern GBR

Description

Field for entering further descriptive information about the site.

Description IMOS Myrmidon Reef Slope Mooring. Deployed 19/05/2015 - 10/11/2015. Hint: would want to search on. eg. Ningaloo - Northern Edge

Comment

Field for entering further information about the site.

Comment 19/05/2015 - 10/11/2015. would want to search on. eg. Ningaloo - Northern Edge

Document

Hyperlink field for referencing further documentation for the site, e.g. mooring diagram.

Document docs\IMOS\Q-IMOS\Trp6167\Mooring_GBRMYR_1505.pdf Add/Change Remove Last Modified: 05/02/16 14:31

Image

Field for referencing an image associated with the site, e.g. a map.

Image: images\IMOS\CentralGBR.png Add/Change Remove

☐ Lock Record for Edits

Lock Record for Edits

Tick box for allowing/preventing edits to the record.

The screenshot shows a software interface with a light gray background. On the left, there is a vertical sidebar with a white box containing the text 'at you' and 'dge' in red. Below this is a small white square and a white rectangular box. The main area contains the text 'Image:' followed by a text box containing 'images\IMOS\CentralGBR.png'. Below the text box are two buttons: 'Add/Change' and 'Remove'. Below these buttons is a checkbox labeled 'Lock Record for Edits', which is highlighted with a red rounded rectangle. At the bottom, there is a text box containing 'By: fmcallis'.

3.4 Deployment Description Form

This form is used for entering the deployment and recovery metadata associated with each individual instrument. Data is saved in the *DeploymentData* table. Related records must be entered in the Instruments, FieldTrip and Sites tables/forms prior to entering the deployment record.

This form has three tabs for entering the data:

- Instrument Setup** Used for entering descriptive information about the instrument and mooring.
 - Deployment** Used for entering specific deployment information and instrument sampling regime.
 - Recovery** Used for entering specific information about the instrument recovery
- Red Fields are the minimum required to create a deployment record
 - Blue fields are read-only and not saved to the DeploymentData table. They show data that is linked from other tables.
 - Pink shaded fields are used by the Toolbox.

Instrument Deployment Description

Filter by Research Activity: Show All

Deployment Trip: 005698 Research Activity: IMOS - Southern GBR

Recovery Trip: 005909 Site Name: One Tree East

Site: GBR0TE-1303 Site Description: IMOS One Tree East Mooring. Deployed 25/03/2013 - 06/04/2014.

InstrumentID: RDIADCP-UVS16775 Site Depth: 58 m Total at deployment

SensorID: Site GPS: 23° 28.999' S, 152° 10.356' E

Instrument Setup | **Deployment** | Recovery

Station: CURRENTS Transect End Site:

Deployment Type: Mooring

Make: RDI

Instrument Model: ADCP - WORKHORSE SENTINEL-300 S/N 16775

InstrumentID: RDIADCP-UVS16775

SensorID:

Capability: 300kHz, Pressure 200m Max

Sample Type: currents, Temp

Instrument Depth (m): 8

Depth Datum: from bottom

DeploymentId: 8B1AD387-B616-4108-A341-2B689930D9DF

Hint: Use Ctrl + TAB to move between form pages

Locked to Edits Last Modified: 28/10/14 04:30 By: fmcallis

Record: 2 of 9 Filtered Search

Figure 3.4.1 Instrument Deployment Description Form

3.4.1 Deployment Description - Instrument Setup Tab

Used for entering descriptive information about the instrument and mooring.

Filter by Research Activity

Allows the user to filter the records based on a Research Activity in the drop-down box.

The screenshot shows the 'Instrument Deployment Description' form. The title bar reads 'Instrument Deployment Description'. The main title is 'Instrument Deployment Description'. Below the title is a search bar labeled 'Filter by Research Activity:'. The form contains several fields: 'Deployment Trip' (005698), 'Recovery Trip' (005909), 'Site' (GBROTE-1303), 'InstrumentID' (RDIADCP-UVS16775), and 'SensorID'. On the right side, there are labels for 'Research Activity:', 'Site Name:', 'Site Description:', 'Site Depth:', and 'Site GPS:'.

Deployment Trip

Select the field trip the instrument was deployed from the drop-down box. This is not used by the Toolbox but is required to form a record. This is a Foreign Key linking the Deployment Trip to the FieldTrip table.

The screenshot shows the 'Instrument Deployment Description' form. The title bar reads 'Instrument Deployment Description'. The main title is 'Instrument Deployment Description'. Below the title is a search bar labeled 'Filter by Research Activity:'. The form contains several fields: 'Deployment Trip' (005698), 'Recovery Trip' (005909), 'Site' (GBROTE-1303), 'InstrumentID' (RDIADCP-UVS16775), and 'SensorID'. On the right side, there are labels for 'Research Activity:', 'Site Name:', 'Site Description:', 'Site Depth:', and 'Site GPS:'.

Recovery Trip

Select the field trip the instrument was recovered from the drop-down box. This field is used by the Toolbox. Within the database, it indicates that the instrument has been recovered and that the record is completed. This is a Foreign Key linking the Recovery Trip to the FieldTrip table.

The screenshot shows the 'Instrument Deployment Description' form. The title bar reads 'Instrument Deployment Description'. The main title is 'Instrument Deployment Description'. Below the title is a search bar labeled 'Filter by Research Activity:'. The form contains several fields: 'Deployment Trip' (005698), 'Recovery Trip' (005909), 'Site' (GBROTE-1303), 'InstrumentID' (RDIADCP-UVS16775), and 'SensorID'. On the right side, there are labels for 'Research Activity:', 'Site Name:', 'Site Description:', 'Site Depth:', and 'Site GPS:'.

Site

Select the Site from the drop-down box. This is a Foreign Key linking the Site to the Sites table.

The screenshot shows the 'Instrument Deployment Description' form. The title bar reads 'Instrument Deployment Description'. The main title is 'Instrument Deployment Description'. Below the title is a search bar labeled 'Filter by Research Activity:'. The form contains several fields: 'Deployment Trip' (005698), 'Recovery Trip' (005909), 'Site' (GBROTE-1303), 'InstrumentID' (RDIADCP-UVS16775), and 'SensorID'. On the right side, there are labels for 'Research Activity:', 'Site Name:', 'Site Description:', 'Site Depth:', and 'Site GPS:'.

InstrumentID

Use the fields within the Instrument Setup tab to filter through to the specific instrument. Once selected it will appear in this field. This is a Foreign Key linking the InstrumentID to the Instruments table.

The screenshot shows the 'Instrument Deployment Description' form. The title bar reads 'Instrument Deployment Description'. The main title is 'Instrument Deployment Description'. Below the title is a search bar labeled 'Filter by Research Activity:'. The form contains several fields: 'Deployment Trip' (005698), 'Recovery Trip' (005909), 'Site' (GBROTE-1303), 'InstrumentID' (RDIADCP-UVS16775), and 'SensorID'. On the right side, there are labels for 'Research Activity:', 'Site Name:', 'Site Description:', 'Site Depth:', and 'Site GPS:'.

Sensor ID

Use the field within the Instrument Setup tab to select the specific sensor. Once selected it will appear in this field. This is a Foreign Key linking the Sensor to the Sensors table.

Instrument Deployment Description

Filter by Research Activity: []

Deployment Trip	005698
Recovery Trip	005909
Site	GBROTE-1303
InstrumentID	RDIADCP-UVS16775
SensorID	

Station

Field for entering a description for the type of data collected, e.g. Waves, Currents, Temperature etc.

Instrument Setup | Deployment | Recovery

Station	CURRENTS	Transect End Site	
Deployment Type	Mooring		
Make	RDI		
Instrument Model	ADCP - WORKHORSE SENTINEL-300 S/N 16775		
InstrumentID	RDIADCP-UVS16775		
SensorID			

Deployment Type

Field for entering the type of instrument deployment, e.g. Mooring, Bottom Frame, Surface Buoy etc. Entries will generate a list that populates the drop-down box.

Instrument Setup | Deployment | Recovery

Station	CURRENTS	Transect End Site	
Deployment Type	Mooring		
Make	RDI		
Instrument Model	ADCP - WORKHORSE SENTINEL-300 S/N 16775		
InstrumentID	RDIADCP-UVS16775		
SensorID			

Make

Drop-down field for filtering the make (brand) of the instrument – sourced via the Instruments table.

Instrument Setup | Deployment | Recovery

Station	CURRENTS	Transect End Site	
Deployment Type	Mooring		
Make	RDI		
Instrument Model	ADCP - WORKHORSE SENTINEL-300 S/N 16775		
InstrumentID	RDIADCP-UVS16775		
SensorID			

Instrument Model

Drop-down field for selecting the model and serial number of the instrument. Once selected this will automatically fill the InstrumentID fields.

Instrument Setup | Deployment | Recovery

Station	CURRENTS	Transect End Site	
Deployment Type	Mooring		
Make	RDI		
Instrument Model	ADCP - WORKHORSE SENTINEL-300 S/N 16775		
InstrumentID	RDIADCP-UVS16775		
SensorID			
Capability	300kHz, Pressure 200m Max		

InstrumentID

InstrumentID from instrument tables, this will auto-fill based on selection in the Model field above.

The screenshot shows the 'Instrument Setup' tab of a web form. The 'InstrumentID' field is highlighted with a red box. The form contains the following fields and values: Station: CURRENTS; Deployment Type: Mooring; Make: RDI; Instrument Model: ADCP - WORKHORSE SENTINEL-300 S/N 16775; InstrumentID: RDIADCP-UVS16775; SensorID: (empty dropdown); Capability: 300kHz, Pressure 200m Max; Sample Type: currents, Temp.

SensorID

Drop-down field for selecting individual sensors configured to the instrument based on the entry in the InstrumentSensorConfig table. This is only necessary if separate meta-data is required to be entered for each sensor.

The screenshot shows the 'Instrument Setup' tab of a web form. The 'SensorID' field is highlighted with a red box. The form contains the following fields and values: Station: CURRENTS; Deployment Type: Mooring; Make: RDI; Instrument Model: ADCP - WORKHORSE SENTINEL-300 S/N 16775; InstrumentID: RDIADCP-UVS16775; SensorID: (empty dropdown); Capability: 300kHz, Pressure 200m Max.

Capability

Autofilled from Instruments table based on InstrumentID selection. Can be edited in this form.

The screenshot shows the 'Instrument Setup' tab of a web form. The 'Capability' field is highlighted with a red box. The form contains the following fields and values: Station: CURRENTS; Deployment Type: Mooring; Make: RDI; Instrument Model: ADCP - WORKHORSE SENTINEL-300 S/N 16775; InstrumentID: RDIADCP-UVS16775; SensorID: (empty dropdown); Capability: 300kHz, Pressure 200m Max; Sample Type: currents, Temp.

Sample Type

Autofilled from Instruments table based on InstrumentID selection. Can be edited in this form.

The screenshot shows the 'Instrument Setup' tab of a web form. The 'Sample Type' field is highlighted with a red box. The form contains the following fields and values: Station: CURRENTS; Deployment Type: Mooring; Make: RDI; Instrument Model: ADCP - WORKHORSE SENTINEL-300 S/N 16775; InstrumentID: RDIADCP-UVS16775; SensorID: (empty dropdown); Capability: 300kHz, Pressure 200m Max; Sample Type: currents, Temp.

Instrument Depth

Nominal instrument depth based on mooring design and site depth.

This screenshot shows the 'Instrument Setup' tab of a data entry form. The 'Instrument Depth (m)' field, which contains the value '8', is highlighted with a red rectangle. Other visible fields include Station (CURRENTS), Deployment Type (Mooring), Make (RDI), Instrument Model (ADCP - WORKHORSE SENTINEL-300 S/N 16775), InstrumentID (RDIADCP-UVS16775), SensorID, Capability (300kHz, Pressure 200m Max), Sample Type (currents, Temp), Depth Datum (from bottom), and DeploymentId (881AD387-B616-4108-A341-2B689930D9DF).

Depth Datum

Datum used for instrument depth, e.g. from bottom, below surface.

This screenshot shows the same 'Instrument Setup' form as above. The 'Depth Datum' field, which contains the value 'from bottom', is highlighted with a red rectangle. All other fields and their values remain the same.

DeploymentID

This is an auto-generated field created when entering a new record. It creates a single unique ID which is the Primary Key for the DeploymentData record.

This screenshot shows a close-up of the bottom portion of the form. The 'DeploymentId' field, containing the unique ID '881AD387-B616-4108-A341-2B689930D9DF', is highlighted with a red rectangle. Above it are the 'Sample Type' (currents, Temp), 'Instrument Depth (m)' (8), and 'Depth Datum' (from bottom) fields. At the bottom of the form, there is a status bar showing 'Locked to Edits', 'Last Modified: 28/10/14 04:30', and a record navigation bar indicating 'Record: 2 of 9'.

Locked to Edits

Tick this field to prevent edits to a record when viewed via the add/edit forms portal. Note this lock only applies to the form view. All records can be altered/deleted when viewed via the tables.

The screenshot shows the 'Instrument Deployment Description' form. At the bottom left, the 'Locked to Edits' checkbox is highlighted with a red rectangle. The form contains various fields for deployment details, including 'Deployment Trip', 'Recovery Trip', 'Site', 'InstrumentID', 'SensorID', 'Station', 'Deployment Type', 'Make', 'Instrument Model', 'InstrumentID', 'SensorID', 'Capability', 'Sample Type', 'Instrument Depth (m)', 'Depth Datum', and 'DeploymentID'. A red note on the right side says 'Hint: Use Ctrl + TAB to move between form pages'.

Transect End Site

Rarely used field, added in for horizontal transect type deployments that have a start and end site.

The screenshot shows the 'Instrument Deployment Description' form. The 'Transect End Site' dropdown menu is highlighted with a red rectangle. The form contains various fields for deployment details, including 'Deployment Trip', 'Recovery Trip', 'Site', 'InstrumentID', 'SensorID', 'Station', 'Deployment Type', 'Make', 'Instrument Model', 'InstrumentID', 'SensorID', 'Capability', 'Sample Type', 'Instrument Depth (m)', 'Depth Datum', and 'DeploymentID'. A red note on the right side says 'Hint: Use Ctrl + TAB to move between form pages'.

3.4.2 Deployment Description - Deployment Tab

Used for entering data associated with the instrument deployment and sampling regime.

The screenshot shows the 'Instrument Deployment Description' window with the 'Deployment' tab selected. The window is titled 'Instrument Deployment Description' and has a 'Filter by Research Activity' dropdown set to 'IMOS - Southern GBR'. The 'Show All' button is visible. The 'Deployment Trip' is '005698', 'Recovery Trip' is '005909', 'Site' is 'GBR0TE-1303', 'InstrumentID' is 'RDIADCP-UVS16775', and 'SensorID' is empty. The 'Research Activity' is 'IMOS - Southern GBR', 'Site Name' is 'One Tree East', 'Site Description' is 'IMOS One Tree East Mooring. Deployed 25/03/2013 - 06/04/2014.', 'Site Depth' is '58 m Total at deployment', and 'Site GPS' is '23° 28.999' S, 152° 10.356' E'. The 'Time Switch On' is '22:19:00 24/03/2013', 'Time Start Deploy' is '06:04:00 25/03/2013', 'Time End Deploy' is '06:20:00 25/03/2013', 'Time Zone' is 'UTC/GMT', 'Estimated Retrieval Date' is '20/03/2014', 'Estimated Deployment Duration (days)' is '360', and 'Corrected For Magnetic Variation' is unchecked. The 'Setup By' is 'AIMS_gbrinkman'. The 'Instrument Setup' section lists: max range=70.87m, Temp: 20°C, duration=400, ensemble interval=00:20:00.00, ping interval=00:00:04:00, pings per ensemble=30, number of depth cells=17, depth cell size=4, blanking distance 1.76m, standard deviation=0.56, BW: Wide, storage required=13.57MB, power usage=370Wh => 0.8, deployment files=OTE22.dpl. The 'Copy and Paste Previous Setup for this Instrument' section lists: max range=70.55m, duration=192, ensemble interval=00:10:00.00, ping interval=00:00:04:00, pings per ensemble=40, number of depth cells=15, depth cell size=4, blanking distance 1.00m, standard deviation=0.56, storage required=11.97 MB, power usage=447.63Wh/100% Batt, deployment files=OTE20. The window has a status bar at the bottom showing 'Locked to Edits', 'Last Modified: 28/10/14 04:30', 'By: fmcallis', and 'Record: 1 of 9'.

Figure 3.4.2 Deployment Description – Deployment Tab

Time Switch On

Enter the time the instrument was started in the format hh:mm:ss dd/MM/yyyy. In the absence of other instrument deployment times this data used by the Toolbox to trim the start of the data when data is QC'd.

This screenshot is a zoomed-in view of the 'Time Switch On' field in the 'Instrument Deployment Description' window. The field is highlighted with a red rectangle. The value entered is '22:19:00 24/03/2013'. The window title is 'Instrument Deployment Description' and the 'Filter by Research Activity' dropdown is set to 'IMOS - Southern GBR'. The 'Show All' button is visible. The 'Deployment Trip' is '005698', 'Recovery Trip' is '005909', 'Site' is 'GBR0TE-1303', 'InstrumentID' is 'RDIADCP-UVS16775', and 'SensorID' is empty. The 'Research Activity' is 'IMOS - Southern GBR', 'Site Name' is 'One Tree East', 'Site Description' is 'IMOS One Tree East Mooring. Deployed 25/03/2013 - 06/04/2014.', 'Site Depth' is '58 m Total at deployment', and 'Site GPS' is '23° 28.999' S, 152° 10.356' E'. The 'Time Start Deploy' is '06:04:00 25/03/2013', 'Time End Deploy' is '06:20:00 25/03/2013', 'Time Zone' is 'UTC/GMT', 'Estimated Retrieval Date' is '20/03/2014', 'Estimated Deployment Duration (days)' is '360', and 'Corrected For Magnetic Variation' is unchecked. The 'Setup By' is 'AIMS_gbrinkman'. The 'Instrument Setup' section lists: max range=70.87m, Temp: 20°C, duration=400, ensemble interval=00:20:00.00, ping interval=00:00:04:00, pings per ensemble=30, number of depth cells=17, depth cell size=4, blanking distance 1.76m, standard deviation=0.56, BW: Wide, storage required=13.57MB, power usage=370Wh => 0.8, deployment files=OTE22.dpl. The 'Copy and Paste Previous Setup for this Instrument' section lists: max range=70.55m, duration=192, ensemble interval=00:10:00.00, ping interval=00:00:04:00, pings per ensemble=40, number of depth cells=15, depth cell size=4, blanking distance 1.00m, standard deviation=0.56, storage required=11.97 MB, power usage=447.63Wh/100% Batt, deployment files=OTE20. The window has a status bar at the bottom showing 'Locked to Edits', 'Last Modified: 28/10/14 04:30', 'By: fmcallis', and 'Record: 1 of 9'.

Time Start Deploy

Enter the time the instrument/mooring commences deployment in the format hh:mm:ss dd/MM/yyyy. This information can be used to check sensor has responded to a change in environment. In the absence of other instrument deployment times this data used by the Toolbox to trim the start of the data when data is QC'd.

The screenshot shows the 'Instrument Deployment Description' form. The 'Time Start Deploy' field is highlighted with a red box. The form contains the following data: Deployment Trip: 005698, Recovery Trip: 005909, Site: GBR0TE-1303, InstrumentID: RDIADCP-UVS16775, SensorID: (empty), Time Switch On: 22:19:00 24/03/2013, Time Start Deploy: 06:04:00 25/03/2013, Time End Deploy: 06:20:00 25/03/2013, Time Zone: UTC/GMT, Estimated Retrieval Date: 20/03/2014, and Estimated Deployment Duration (days): 360.

TimeEndDeploy

Enter the time the instrument/mooring finishes deployment in the format hh:mm:ss dd/MM/yyyy. This information can be used to check the sensor starts to stabilise at its assigned depth. This data is used by the Toolbox to nominally indicate the start of good data when data is QC'd.

The screenshot shows the 'Instrument Deployment Description' form. The 'Time End Deploy' field is highlighted with a red box. The form contains the following data: Deployment Trip: 005698, Recovery Trip: 005909, Site: GBR0TE-1303, InstrumentID: RDIADCP-UVS16775, SensorID: (empty), Time Switch On: 22:19:00 24/03/2013, Time Start Deploy: 06:04:00 25/03/2013, Time End Deploy: 06:20:00 25/03/2013, Time Zone: UTC/GMT, Estimated Retrieval Date: 20/03/2014, and Estimated Deployment Duration (days): 360.

Time Zone

Enter the appropriate time zone from the drop down list. This data used by the timeOffsetPP and timeMetaOffsetPP pre-processing routines in the Toolbox. Note: The time zone selected is used for all times recorded in the form.

The screenshot shows the 'Instrument Deployment Description' form. The 'Time Zone' dropdown menu is highlighted with a red box. The form contains the following data: Deployment Trip: 005698, Recovery Trip: 005909, Site: GBR0TE-1303, InstrumentID: RDIADCP-UVS16775, SensorID: (empty), Time Switch On: 22:19:00 24/03/2013, Time Start Deploy: 06:04:00 25/03/2013, Time End Deploy: 06:20:00 25/03/2013, Time Zone: UTC/GMT, Estimated Retrieval Date: 20/03/2014, and Estimated Deployment Duration (days): 360.

Estimated Retrieval Date

Enter the date the instrument is planned to be recovered. This data is used within the Instruments form and can be used for managing available instrumentation.

The screenshot shows the 'Instrument Deployment Description' form. The 'Estimated Retrieval Date' field is highlighted with a red box. The form contains the following data: Deployment Trip: 005698, Recovery Trip: 005909, Site: GBR0TE-1303, InstrumentID: RDIADCP-UVS16775, SensorID: (empty), Time Switch On: 22:19:00 24/03/2013, Time Start Deploy: 06:04:00 25/03/2013, Time End Deploy: 06:20:00 25/03/2013, Time Zone: UTC/GMT, Estimated Retrieval Date: 20/03/2014, and Estimated Deployment Duration (days): 360.

Estimated Deployment Duration (days)

This field can be used to calculate the Estimate Retrieval Date above. This is a calculated field and is not saved to the table.

Setup By

Use the dropdown box to enter a person from the Personnel table.

Corrected For Magnetic Variation

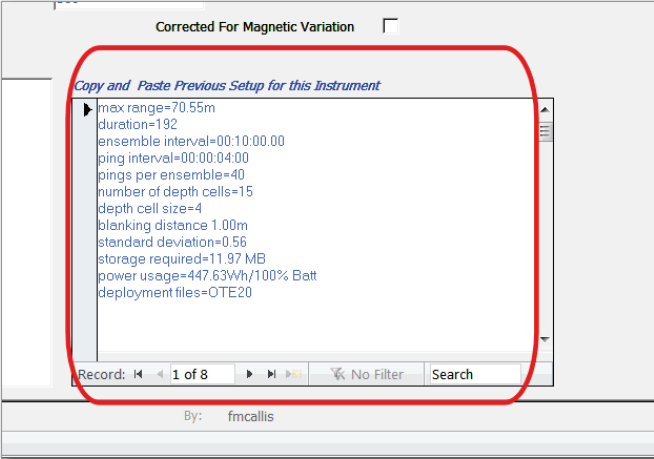
Tick box for ADCP instruments to indicate if instrument has been corrected for magnetic correlation.

Instrument Setup

Free text field for entering instrument sampling regime. This can be copied and pasted from the subform to the right.

Instrument Setup Subform

Use this subform to view previous setup information for the specific instrument. This information can then be copied and pasted into the Instrument Setup Field.



The screenshot displays a software window titled "Corrected For Magnetic Variation" with a checkbox. Below the title bar, a red rounded rectangle highlights a section titled "Copy and Paste Previous Setup for this Instrument". This section contains a list of parameters: max range=70.55m, duration=192, ensemble interval=00:10:00.00, ping interval=00:00:04.00, pings per ensemble=40, number of depth cells=15, depth cell size=4, blanking distance 1.00m, standard deviation=0.56, storage required=11.97 MB, power usage=447.63Wh/100% Batt, and deployment files=OTE20. At the bottom of the window, there is a "Record:" field showing "1 of 8", a "No Filter" button, a "Search" button, and a "By: fmcallis" label.

Corrected For Magnetic Variation ☐

Copy and Paste Previous Setup for this Instrument

- max range=70.55m
- duration=192
- ensemble interval=00:10:00.00
- ping interval=00:00:04.00
- pings per ensemble=40
- number of depth cells=15
- depth cell size=4
- blanking distance 1.00m
- standard deviation=0.56
- storage required=11.97 MB
- power usage=447.63Wh/100% Batt
- deployment files=OTE20

Record: 1 of 8 No Filter Search

By: fmcallis

3.4.3 Deployment Description - Recovery Tab

Used for entering data associated with the instrument recovery.

The screenshot shows the 'Instrument Deployment Description' window with the 'Recovery' tab selected. The interface includes a filter section at the top, a main data entry area, and a status bar at the bottom.

Filter by Research Activity: **Show All**

Deployment Trip: 005698 **Research Activity:** IMOS - Southern GBR
Recovery Trip: 005909 **Site Name:** One Tree East
Site: GBROTE-1303 **Site Description:** IMOS One Tree East Mooring. Deployed 25/03/2013 - 06/04/2014.
InstrumentID: RDIADCP-UVS16775 **Site Depth:** 58 m Total at deployment
SensorID: **Site GPS:** 23° 28.999' S, 152° 10.356' E

Instrument Setup | Deployment | Recovery

Time Last In Position: 00:21:00 06/04/2014
Time On Deck: 00:41:00 06/04/2014 **Time Zone:** UTC/GMT
Time Switch Off: 00:30:00 07/04/2014

Time First Good Data: 06:30:00 25/03/2013 **Time Check GPS:** 01:13:00 07/04/2014 **Total Instrument Drift:**
Time Last Good Data: 00:15:00 06/04/2014 **Time Check Instrument:** 01:13:15 07/04/2014 **+00:00:15**

File Name: OTE22001.000
Image File: GBROTE-1303_RDIADCP-UVS16775.jpg **Create Image Filename**
Plot File: GBROTE-1303_RDIADCP-UVS16775.fig
Link File1: RDIADCP-UVS16775-Cal_1301.txt
Link File2: GBROTE-1303_RDIADCP-UVS16775_1303_Setup.dpl

Comment: Faultlog file: 16775_faultlog_1403 - 1 fault during pre-deploy testing

Data Recovery (%) 100.00%
FileSize 13448162
File Size Unit Bytes
Downloaded By AIMS_jzier

Locked to Edits **Last Modified:** 10/05/17 15:37 **By:** Admin

Record: 2 of 9 **Filtered** **Search**

Figure 3.4.3 Deployment Description – Recovery Tab

Time Last In Position

Time and date the instrument was last in position, i.e. time at which recovery of mooring/instrument starts. Entered in format hh:mm:ss dd/MM/yyyy. This value is used by the Toolbox to trim the end of the data when data is QC'd.

This close-up view of the 'Recovery' tab shows the 'Time Last In Position' field highlighted with a red rectangle. The field contains the value '00:21:00 06/04/2014'. Other fields visible include 'Time On Deck' (00:41:00 06/04/2014), 'Time Switch Off' (00:30:00 07/04/2014), 'Time First Good Data' (06:30:00 25/03/2013), and 'Time Last Good Data' (00:15:00 06/04/2014). The 'Time Zone' is set to 'UTC/GMT'.

Time on Deck

Time and Date to indicate when instrument is out of the water. Can be used to check in and out of water readings. Entered in format hh:mm:ss dd/MM/yyyy. In the absence of other recovery times this data is used to trim the end of the data file by the Toolbox when data is QC'd.

Time Last In Position	00:21:00 06/04/2014	
Time On Deck	00:41:00 06/04/2014	Time Zone: UTC/GMT
Time Switch Off	00:30:00 07/04/2014	
Time First Good Data	06:30:00 25/03/2013	Time Check GPS
Time Last Good Data	00:15:00 06/04/2014	Time Check Instr

Time Switch Off

Time and Date to indicate when instrument is turned off. Entered in format hh:mm:ss dd/MM/yyyy. In the absence of other recovery times this data used to trim the end of the data file by the Toolbox when data is QC'd.

Instrument Setup Deployment Recovery		
Time Last In Position	00:21:00 06/04/2014	
Time On Deck	00:41:00 06/04/2014	Time Zone: UTC/GMT
Time Switch Off	00:30:00 07/04/2014	
Time First Good Data	06:30:00 25/03/2013	Time Check GPS
Time Last Good Data	00:15:00 06/04/2014	Time Check Instr

Time First Good Data

Field to show start of stabilised data. Entered in format hh:mm:ss dd/MM/yyyy. The Toolbox uses this field to trim the start of the data file overriding any other times when QC'd.

Time Last In Position	00:21:00 06/04/2014	
Time On Deck	00:41:00 06/04/2014	Time Zone: UTC/GMT
Time Switch Off	00:30:00 07/04/2014	
Time First Good Data	06:30:00 25/03/2013	Time Check GPS
Time Last Good Data	00:15:00 06/04/2014	Time Check Instru

Time Last Good Data

Field to show end of good/stable data. Entered in format hh:mm:ss dd/MM/yyyy. The Toolbox uses this field to trim the end of the data file overriding any other times when QC'd.

Time Last In Position	00:21:00 06/04/2014	
Time On Deck	00:41:00 06/04/2014	Time Zone: UTC/G
Time Switch Off	00:30:00 07/04/2014	
Time First Good Data	06:30:00 25/03/2013	Time Check C
Time Last Good Data	00:15:00 06/04/2014	Time Check I

Time Check GPS

Field for checking clock drift of instrument on recovery. Enter the GPS time here in format hh:mm:ss dd/MM/yyyy.

Time Zone: UTC/GMT		
13	Time Check GPS	01:13:00 07/04/2014
14	Time Check Instrument	01:13:15 07/04/2014
		Total Instrument Drift: +00:00:15

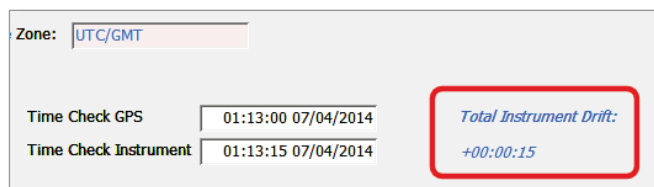
Time Check Instrument

Field for checking clock drift of instrument on recovery. Enter the Instrument time here in format hh:mm:ss dd/MM/yyyy.

Time Zone: UTC/GMT		
013	Time Check GPS	01:13:00 07/04/2014
014	Time Check Instrument	01:13:15 07/04/2014
		Total Instrument Drift: +00:00:15

Total Instrument Drift

Shows the calculated clock drift based on the entries in the Time Check fields. This value is not saved to the table.



File Name

Enter the instrument data file name. When using the Toolbox – this must have the supported filename extension and format for the instrument (see: <https://github.com/aodn/imos-toolbox/wiki/SupportedInstruments>)

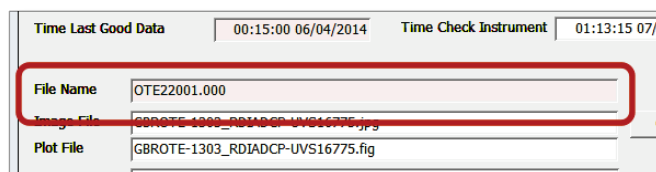
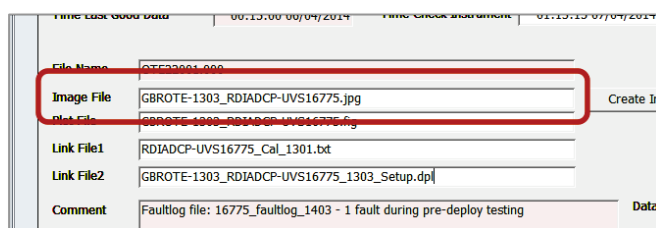


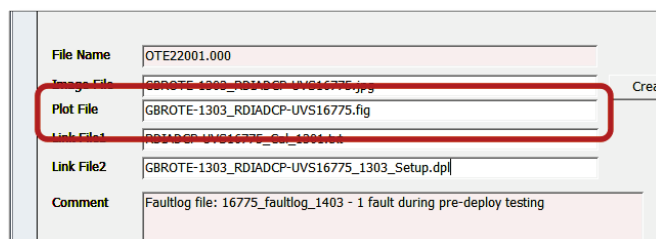
Image File

Optional field for entering an image filename associated with instrument. This can be a photo of the sensor on recovery to show level of fouling. The “Create Image Filename” button to the right will create a default filename comprising the Site Code and InstrumentID.



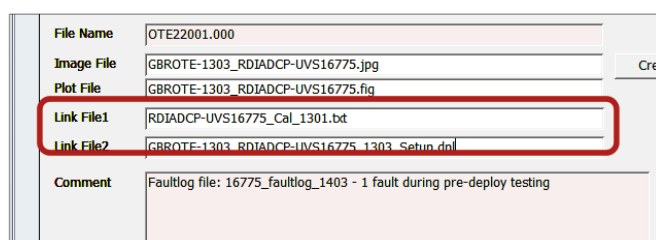
Plot File

Optional field for entering a file showing a plot/graph of the data.



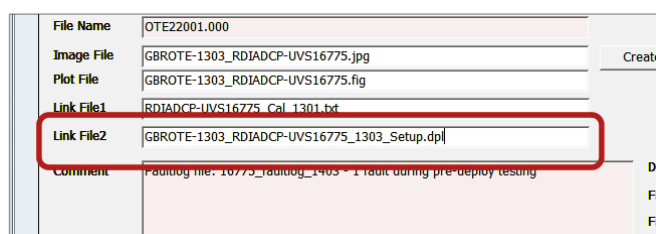
Link File 1

Optional field for entering a file linked to the data e.g. calibration file



Link File 2

Optional field for entering a file linked to the data e.g. deployment setup file.



Comment

Field for entering ancillary information associated with instrument, eg any failure or issues with the data.

This screenshot shows a data entry form with a 'Comment' field highlighted by a red rectangle. The field contains the text: 'Faultlog file: 16775_faultlog_1403 - 1 fault during pre-deploy testing'. Above the comment field, there are fields for 'Link File1' (RDIADCP-UVS16775_Cal_1301.DL) and 'Link File2' (GBROTE-1303_RDIADCP-UVS16775_1303_Setup.dol). To the right of the comment field, there are labels for 'Data Recov', 'FileSize', 'File Size U', and 'Downloaded'. At the bottom of the form, there is a 'Locked to Edits' status, a 'Last Modified' date of '10/05/17 15:37', and a 'Record' count of '2 of 9' with a 'Filtered' status and a search bar.

Data Recovery (%)

Field for entering percentage of data recovered based on expected.

This screenshot shows a data entry form with the 'Data Recovery (%)' field highlighted by a red rectangle. The field contains the value '100.00%'. Other visible fields include 'FileSize' (13448162), 'File Size Unit' (Bytes), and 'Downloaded By' (AIMS_jzier). The bottom of the form shows 'By: Admin'.

File Size

Numerical field for entering the size of the data file.

This screenshot shows a data entry form with the 'File Size' field highlighted by a red rectangle. The field contains the value '13448162'. Other visible fields include 'Data Recovery (%)' (100.00%), 'File Size Unit' (Bytes), and 'Downloaded By' (AIMS_jzier). The bottom of the form shows 'By: Admin'.

File Size Unit

Dropdown box with standard file size units, eg bytes, samples etc.

This screenshot shows a data entry form with the 'File Size Unit' dropdown menu highlighted by a red rectangle. The dropdown is currently set to 'Bytes'. Other visible fields include 'Data Recovery (%)' (100.00%), 'FileSize' (13448162), and 'Downloaded By' (AIMS_jzier). The bottom of the form shows 'By: Admin'.

Downloaded By

Use the dropdown box to enter a person from the Personnel table.

This screenshot shows a data entry form with the 'Downloaded By' dropdown menu highlighted by a red rectangle. The dropdown is currently set to 'AIMS_jzier'. Other visible fields include 'File Size Unit' (Bytes) and 'Data Recovery (%)' (100.00%). The bottom of the form shows 'By: Admin'.

3.5 Sensors Form

This form is used to enter descriptive information for each individual sensor. For the purposes of this database, a sensor differs from an instrument in that it is not able to log autonomously. Sensors are attached to individual instrument platforms. Data is stored in the *Sensors* table. Fields highlighted in pink are used by the toolbox.

This form has two tabs:

Sensor Used to enter sensor description - similar to the Instruments form

Maintenance Used to enter maintenance and servicing history

The screenshot shows a web application window titled "Sensors" with two tabs: "Sensor" (selected) and "Maintenance". The main heading is "Sensors Description and Maintenance". The form contains the following fields and controls:

- Sensor ID:** SBE4-3395 (highlighted in pink)
- Image:** images\Instruments\SBE4Cond.bmp
- Make:** SEABIRD
- Model:** SBE4
- Serial Number:** 3395 (highlighted in pink)
- Parameter:** Conductivity (highlighted in pink)
- Units:** S/m
- Capability:** 6800m
- Description:** SBE4 conductivity sensor purchased in June 2016
BN: 008126
- PurchaseDate:** 07/06/2016
- Custodian:** ALMS_jluetchford (dropdown menu)
- AssetNumber:** 1282201
- Status:** ☒
- Document:** (empty text box)
- Buttons:** "Add/Change" and "Remove" buttons are present next to the "Image", "Model", "Serial Number", "Parameter", and "Document" fields.
- Footer:** "Modified By: jluetchf" and "On: 28/02/2017 09:21:30".

An image of the SBE4 conductivity sensor is displayed on the right side of the form, with the text "Quick disconnect" overlaid. The bottom of the window shows a record navigation bar: "Record: 3 of 4", "Filtered", and a "Search" button.

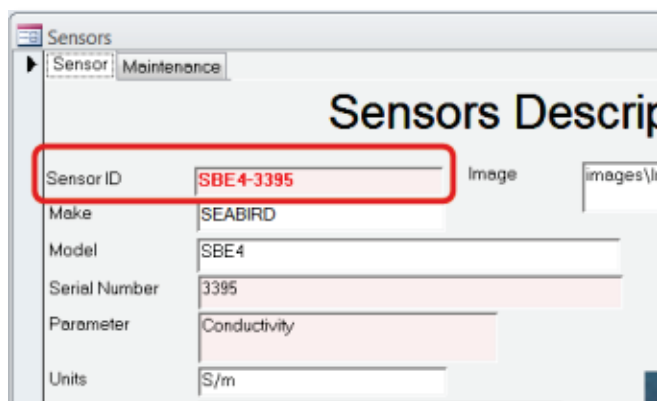
Figure 3.5.1 Sensors-Sensor Tab

3.5.1 Sensors - Sensors Tab

This page is used to enter metadata associated with each sensor

SensorID

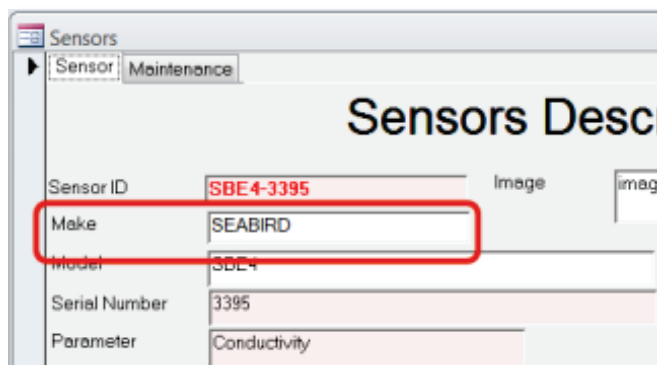
This is the Primary Key - a unique ID used to link Sensor to other tables.. The format of this ID is up to the user but should be entered consistently for sensors of the same type. This is the minimum field required to create a sensor record.



The screenshot shows the 'Sensors Description' form. The 'Sensor ID' field is highlighted with a red rectangle and contains the text 'SBE4-3395'. Other fields visible include 'Make' (SEABIRD), 'Model' (SBE4), 'Serial Number' (3395), 'Parameter' (Conductivity), and 'Units' (S/m).

Make

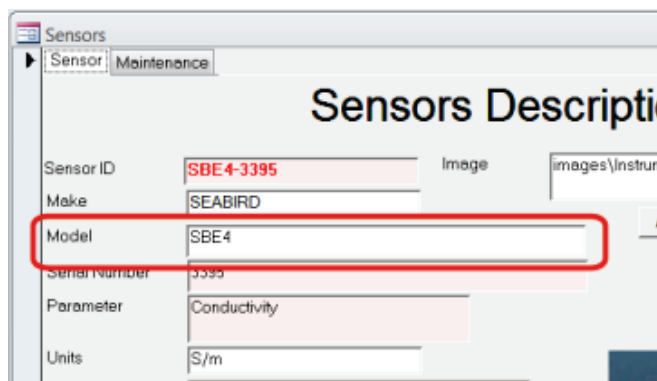
Field for entering the Make (Brand) of Sensor, e.g. Seabird, WetLabs etc. This should be entered consistently so it can be used to filter instruments by using the FilterByForm tool in ACCESS.



The screenshot shows the 'Sensors Description' form. The 'Make' field is highlighted with a red rectangle and contains the text 'SEABIRD'. Other fields visible include 'Sensor ID' (SBE4-3395), 'Model' (SBE4), 'Serial Number' (3395), 'Parameter' (Conductivity), and 'Units' (S/m).

Model

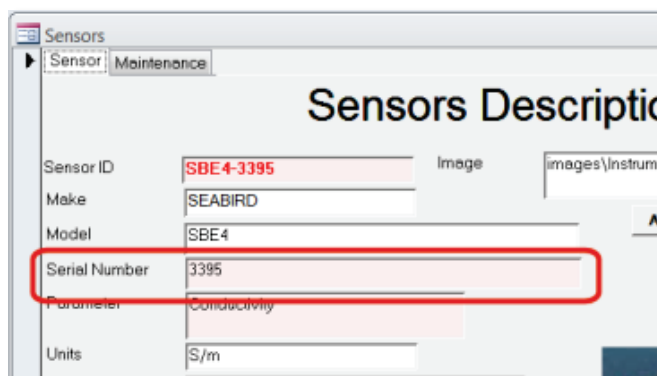
Field for entering the Model of Sensor, e.g. ECO-NTUS, SBE29 etc. This should be entered consistently so it can be used to filter instruments by using the FilterByForm tool in ACCESS.



The screenshot shows the 'Sensors Description' form. The 'Model' field is highlighted with a red rectangle and contains the text 'SBE4'. Other fields visible include 'Sensor ID' (SBE4-3395), 'Make' (SEABIRD), 'Serial Number' (3395), 'Parameter' (Conductivity), and 'Units' (S/m).

Serial Number

Field for entering the Sensor serial number.



The screenshot shows the 'Sensors Description' form. The 'Serial Number' field is highlighted with a red rectangle and contains the text '3395'. Other fields visible include 'Sensor ID' (SBE4-3395), 'Make' (SEABIRD), 'Model' (SBE4), 'Parameter' (Conductivity), and 'Units' (S/m).

Parameter

Field for entering the instrument parameter(s). If more than one, separate by comma. For the Toolbox, these parameter names should conform to the IMOS parameter names, e.g. CPHL, TURB etc.

See:

<https://github.com/aodn/imos-toolbox/blob/master/IMOS/imosParameters.txt>

The screenshot shows the 'Sensors Description' form. The 'Parameter' field, which contains the text 'Conductivity', is highlighted with a red rectangle. Other fields visible include Sensor ID (SBE4-3395), Make (SEABIRD), Model (SBE4), Serial Number (3395), Units (S/m), and Capability (6800m).

Units

Field for entering the units measured for each parameter, e.g. ug/L, NTU etc.

The screenshot shows the 'Sensors Description' form. The 'Units' field, which contains the text 'S/m', is highlighted with a red rectangle. Other fields visible include Sensor ID (SBE4-3395), Make (SEABIRD), Model (SBE4), Serial Number (3395), Parameter (Conductivity), and Capability (6800m).

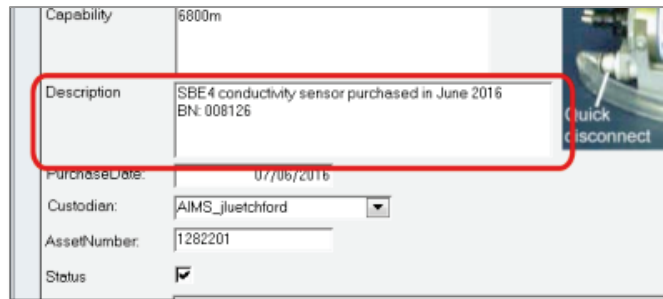
Capability

Field for entering the capability or range of the sensor, e.g. FL 0-25, Pressure 300m, etc.

The screenshot shows the 'Sensors Description' form. The 'Capability' field, which contains the text '6800m', is highlighted with a red rectangle. Other fields visible include Serial Number (3395), Parameter (Conductivity), Units (S/m), Description (SBE4 conductivity sensor purchased in June 2016 BN: 008126), PurchaseDate (07/06/2016), Custodian (AIMS_jluetchford), and AssetNumber (1282201).

Description

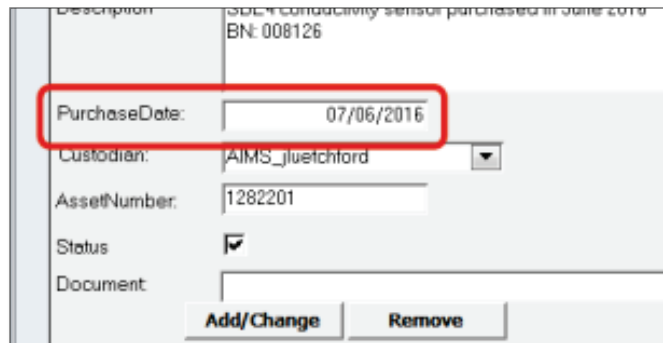
Field for entering a text description of the instrument, e.g. Combination Fluorometer and Turbidity Sensor.



A screenshot of a web-based form for instrument management. The 'Description' field is highlighted with a red rectangle. It contains the text 'SBE4 conductivity sensor purchased in June 2016' and 'BN: 008126'. Other visible fields include 'Capability' (6000m), 'PurchaseDate' (07/06/2016), 'Custodian' (AIMS_jluetchford), 'AssetNumber' (1282201), and 'Status' (checked). A small image of a sensor is visible in the top right corner.

Purchase Date

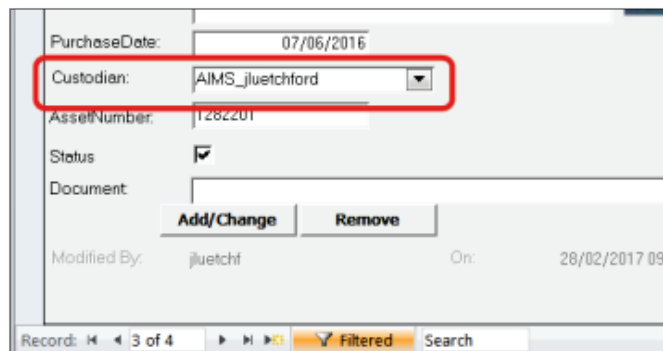
Field for entering the purchase date of the instrument. Can be entered using the date picker or in the format dd/mm/yyyy.



A screenshot of the same instrument form, but the 'PurchaseDate' field is highlighted with a red rectangle. It shows the date '07/06/2016'. The 'Description' field is visible above it, and 'Custodian', 'AssetNumber', and 'Status' are visible below it. At the bottom, there are 'Add/Change' and 'Remove' buttons.

Custodian

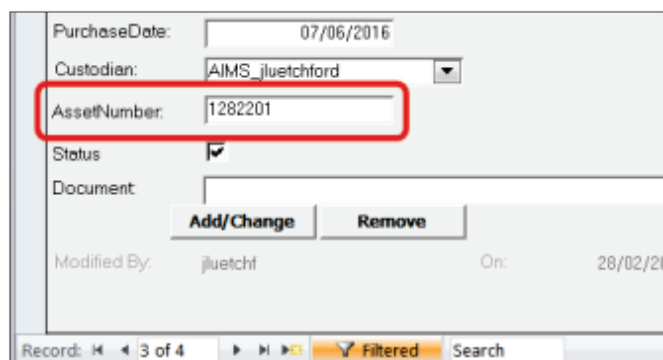
Dropdown box for assigning ownership/responsibility of the sensor. Data for this field is accessed from the personnel table.



A screenshot of the instrument form with the 'Custodian' dropdown menu highlighted by a red rectangle. The selected value is 'AIMS_jluetchford'. Other fields like 'PurchaseDate', 'AssetNumber', and 'Status' are visible. At the bottom, there are 'Add/Change' and 'Remove' buttons, and a status bar showing 'Record: 3 of 4' and 'Filtered'.

AssetNumber

Field for adding in an internal/organisational tracking number.



A screenshot of the instrument form with the 'AssetNumber' field highlighted by a red rectangle. It contains the value '1282201'. The 'PurchaseDate', 'Custodian', and 'Status' fields are visible above it. At the bottom, there are 'Add/Change' and 'Remove' buttons, and a status bar showing 'Record: 3 of 4' and 'Filtered'.

Status

Field for indicating if the sensor is current and usable. Because of referential integrity any alteration/deletion to a sensor in this table will flow through to related records and alter/delete them.

A screenshot of a web form for sensor management. The 'Status' field is highlighted with a red rectangle and contains a checked checkbox. Above it are fields for 'Custodian' (AIMS_jluetchford) and 'AssetNumber' (1282201). Below the 'Status' field are 'Add/Change' and 'Remove' buttons. At the bottom, there is a 'Record: 3 of 4' indicator and a 'Filtered' status.

Document

Field for entering a filename containing relevant information about the sensor, e.g. calibration, manual etc.

A screenshot of a web form for sensor management. The 'Document' field is highlighted with a red rectangle and is currently empty. Above it are fields for 'Custodian' (AIMS_jluetchford) and 'AssetNumber' (1282201). Below the 'Document' field are 'Add/Change' and 'Remove' buttons. At the bottom, there is a 'Record: 3 of 4' indicator and a 'Filtered' status.

Image

Field for entering a filename for an image of the sensor. If an appropriate path is included, the image will display in the form. Bitmap (.bmp) images display best.

A screenshot of a web form titled 'Sensors Description and Maintenance'. The 'Image' field is highlighted with a red rectangle and contains the filename 'images\Instruments\SBE4Cond.bmp'. Below the 'Image' field are 'Add/Change' and 'Remove' buttons.

3.5.2 Sensors - Maintenance Tab

Similar to the Instruments form, this tab allows the user to add in maintenance and calibration information. Data is stored in the *Maintenance_Sensors* table. This data is optional and not required for operation of the Toolbox.

Date	Calibrated?	Maintenance Notes	Location Notes	Calibration File
07/11/2016 Modified By: sbyrnes	<input type="checkbox"/>	Sent to wetlabs for cal	wetlabs	
13/12/2016 Modified By: cbarlet	<input checked="" type="checkbox"/>	Returned from calibration at Wetlabs	AIMS	\\PEARL\\ocean\\OGT ECH\\Instruments\\Wetlabs\\calibration docs\\ECO\\FLRT\\108\\
* Modified By:	<input type="checkbox"/>			

Figure 3.5.2 Sensors-Maintenance Tab.

Data Fields:

<u>Date</u>	Date of sensor service activity.
<u>Calibrated</u>	Tick box to indicate if service is a sensor calibration.
<u>Maintenance Notes</u>	Memo field for entering details of instrument service. Use Shift + F2 to view contents in a larger window.
<u>Location Notes</u>	Assign a location for sensor if not in the field.
<u>Calibration File</u>	Filename and optionally path to calibration information.

3.6 CTD Data Form

This form is used to enter CTD (Conductivity/Temperature/Depth) data which is saved to the *CTDDData* table. The form is designed for data collected from profiling CTD's because of the difference in their deployment information to a moored instrument. This data can also be processed using the Toolbox – when in profiling mode.

Figure 3.6 CTD Data Form.

Field Descriptions

Filter by Research Activity

This field allows the user to filter down on records based on their Research Activity entry. The Research Activity field is populated via the Sites table/form and/or entry in the Research Activity field at the bottom of this form.

Site

This field can be entered optionally by the dropdown box which is linked to the Sites table or a new site can be entered here. If a Site from the dropdown box is selected it will automatically fill the GPS fields (latitude and longitude) and the Research Activity field. It is worthwhile creating an entry in the Sites table/form if the site will be used for multiple entries.

Station

This field has a dropdown box that can be used to enter a standardised description of the profile being taken, i.e.

Deployment CTD, Recovery CTD, Calibration CTD. This list can be edited in the forms properties.

Alternatively a different value can be entered here.

The screenshot shows the 'CTD Deployments' form. The 'Station' dropdown menu is highlighted with a red box and contains the text 'Recovery CTD'. Other visible fields include 'Site: GBRCH-1603', 'Field Trip: 006514', and 'Cast Number: 1'.

FieldTrip

Select a Field Trip ID from the dropdown box – this box is filled from the FieldTrip table. This is a Foreign Key.

The screenshot shows the 'CTD Deployments' form. The 'Field Trip' dropdown menu is highlighted with a red box and contains the text '006514'. Other visible fields include 'Site: GBRCH-1603', 'Station: Recovery CTD', and 'Latitude degrees: 22'.

Cast Number

Enter cast number here for multiple casts taken at same site.

The screenshot shows the 'CTD Deployments' form. The 'Cast Number' input field is highlighted with a red box and contains the text '1'. Other visible fields include 'Site: GBRCH-1603', 'Station: Recovery CTD', and 'Field Trip: 006514'.

GPS – Degree/Minute

As for the Sites table, GPS information for the site can be entered in the form degrees minutes. This information is not stored in the table but is used to calculate the decimal degree values which are.

The screenshot shows the 'CTD Deployments' form. The GPS input fields are highlighted with a red box. These include 'Latitude degrees: 22', 'Latitude minutes: 24.487', 'Longitude degrees: 151', and 'Longitude minutes: 59.599'. Other visible fields include 'Site: GBRCH-1603', 'Station: Recovery CTD', 'Field Trip: 006514', and 'Filename: GB16028'.

Latitude/Longitude

These fields represent the actual GPS information stored in the database in signed decimal degree format. (North/East Positive; South/West negative).

A screenshot of a web form for data entry. At the top, there's a dropdown menu with 'CH-1603' selected. Below it is a dropdown for 'CTD'. To the right, 'Cast Number:' is followed by a text box containing '1'. In the center, there are two text boxes: 'Latitude' with the value '-22.4081166666667' and 'Longitude' with the value '151.993316666667'. These two boxes are enclosed in a red rectangular highlight. To the left of these boxes are directional buttons: 'S' and 'N' for latitude, and 'E' and 'W' for longitude. Below the latitude/longitude section, there's a date field with '01/10/2016' and a 'Start Time:' field with '00:29'. To the right of the start time is a 'ZONE:' dropdown menu with 'UTC/GMT' selected. Further right are 'Niskin #1:' and 'Niskin #2:' fields.

Filename

Filename for CTD .

A screenshot of a web form showing various data entry fields. The 'Filename:' field contains 'GB16028' and is highlighted with a red rectangular box. Other visible fields include 'Longitude degrees' (151), 'Longitude minutes' (59.599), 'Start Date' (01/10/2016), 'Start Time' (00:29), 'Finish Date' (01/10/2016), 'Finish Time' (00:44), 'Instrument' (SBE19PLUSV2-7360), 'Instrument Depth' (86), 'Station Depth' (91), and 'Station Depth Datum' (Total). The 'ZONE:' dropdown is set to 'UTC/GMT'. A description at the bottom reads 'Shared with GBRCCCH-1609 deployment'.

Start Date/Finish Date

Start and Finish dates for the CTD data in format dd/mm/yyyy.

A screenshot of a web form focusing on date and time fields. The 'Start Date:' and 'Finish Date:' fields, both containing '01/10/2016', are highlighted with a red rectangular box. Other fields include 'Longitude degrees' (151), 'Longitude minutes' (59.599), 'Filename:' (GB16028), 'Start Time', 'Finish Time', 'Instrument' (SBE19PLUSV2-7360), 'Instrument Depth' (86), 'Station Depth' (91), and 'Station Depth Datum' (Total). The 'ZONE:' dropdown is set to 'UTC/GMT'.

Start Time/Finish Time

Start and finish times for the CTD in the format hh:mm.

A screenshot of a web form focusing on time fields. The 'Start Time:' and 'Finish Time:' fields, containing '00:29' and '00:44' respectively, are highlighted with a red rectangular box. Other fields include 'Longitude' (151.993316666667), 'Filename:' (GB16028), 'Start Date' (01/10/2016), 'Finish Date' (01/10/2016), 'Instrument' (SBE19PLUSV2-7360), 'Instrument Depth' (86), 'Station Depth' (91), and 'Station Depth Datum' (Total). The 'ZONE:' dropdown is set to 'UTC/GMT'.

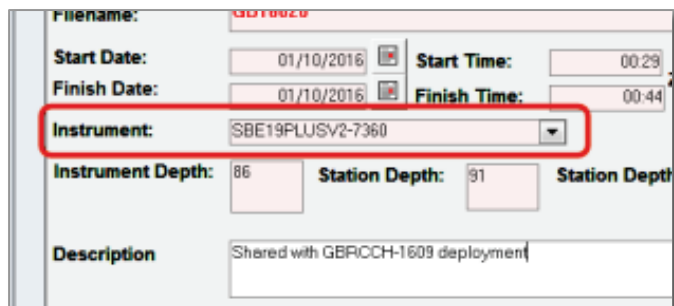
Zone

Time zone for recorded time e.g. CST, UTC etc.

A screenshot of a web form focusing on the time zone field. The 'ZONE:' dropdown menu, which is currently set to 'UTC/GMT', is highlighted with a red rectangular box. Other visible fields include 'Longitude' (151.993316666667), 'Niskin #1' through 'Niskin #5' fields, 'Station Depth Datum' (Total), and time fields 'ne:' (00:29) and 'ime:' (00:40).

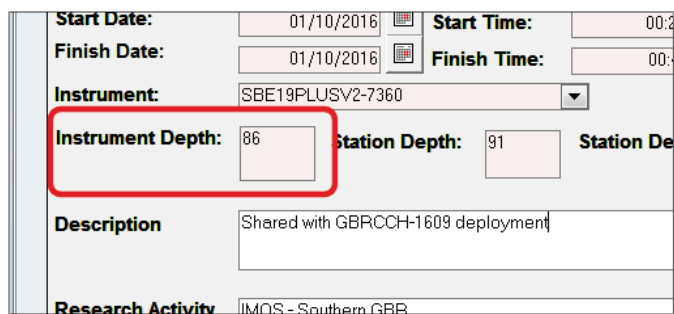
Instrument

Dropdown box to select the CTD instrument being used. Note this will select instruments that have a Category defined in the Instruments table as CTD.

A screenshot of a data entry form. The 'Instrument' field is a dropdown menu showing 'SBE19PLUSV2-7360'. It is highlighted with a red rectangle. Other fields visible include 'Start Date' (01/10/2016), 'Finish Date' (01/10/2016), 'Start Time' (00:29), and 'Finish Time' (00:44).

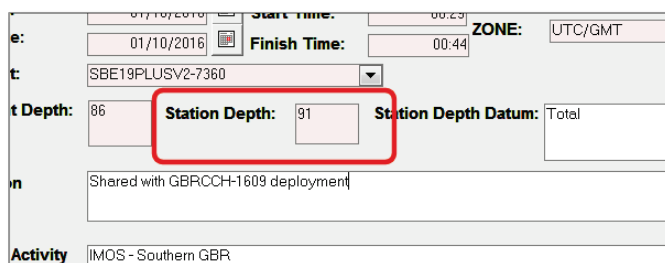
Instrument Depth:

Maximum depth for the CTD cast in metres.

A screenshot of the same data entry form. The 'Instrument Depth' field, which contains the value '86', is highlighted with a red rectangle. The 'Station Depth' field contains the value '91'.

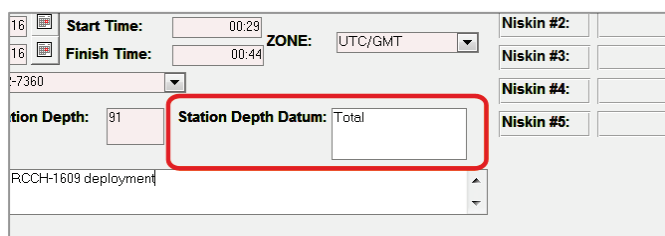
Station Depth

Depth at site for the given cast in metres.

A screenshot of the data entry form. The 'Station Depth' field, containing the value '91', is highlighted with a red rectangle. The 'Station Depth Datum' field is set to 'Total'.

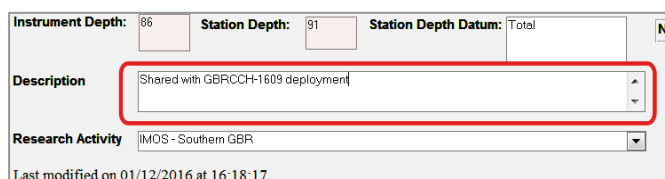
Station Depth Datum

Datum for station/site depth for the given cast, e.g. Total, MSL, LAT etc.

A screenshot of the data entry form. The 'Station Depth Datum' field, containing the value 'Total', is highlighted with a red rectangle. The 'Niskin' fields (Niskin #2, #3, #4, #5) are visible on the right.

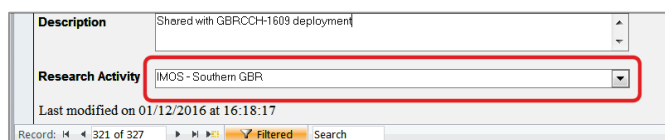
Description

Field for entering any descriptive information.

A screenshot of the data entry form. The 'Description' text area, containing the text 'Shared with GBRCCCH-1609 deployment', is highlighted with a red rectangle. The 'Research Activity' field is set to 'IMOS - Southern GBR'.

Research Activity

Auto-filled if Site is from the Sites table, optionally can be entered here.

A screenshot of the data entry form. The 'Research Activity' dropdown menu, showing 'IMOS - Southern GBR', is highlighted with a red rectangle. The 'Last modified' timestamp is '01/12/2016 at 16:18:17'.

Niskins/Chlorophyl

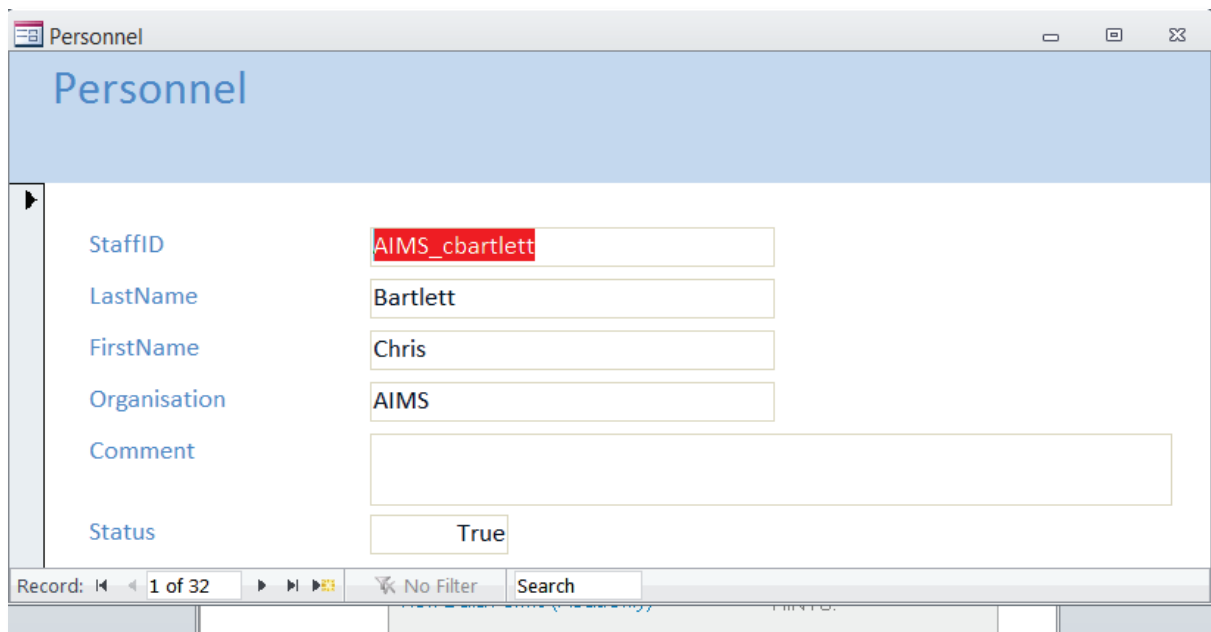
Fields for entering information about Niskin numbers and depths attached to the CTD cast.

The screenshot shows a software interface with a sidebar on the left containing labels '667', '667', and 'MT'. The main area contains a form with a red border. At the top of the form are two checked checkboxes: 'Niskin' and 'Chlorophyl'. Below them are two column headers: 'Niskin Depth' and 'Depth Datum'. The form contains five rows of input fields, each labeled 'Niskin #1' through 'Niskin #5'. The first three rows have pre-filled values: Niskin #1 has a depth of 0 and datum 'from surface'; Niskin #2 has a depth of 19 and datum 'from bottom'; Niskin #3 has a depth of 70 and datum 'from bottom'. The last two rows, Niskin #4 and Niskin #5, have empty input fields for both depth and datum.

	Niskin Depth	Depth Datum
Niskin #1:	0	from surface
Niskin #2:	19	from bottom
Niskin #3:	70	from bottom
Niskin #4:		
Niskin #5:		

4. Personnel Form

This form is used to enter Personnel information. Data is stored in the *Personnel* table.



The screenshot shows a web-based form titled "Personnel". The form contains the following fields:

- StaffID**: A text input field containing "AIMS_cbartlett".
- LastName**: A text input field containing "Bartlett".
- FirstName**: A text input field containing "Chris".
- Organisation**: A text input field containing "AIMS".
- Comment**: A large text area that is currently empty.
- Status**: A text input field containing "True".

At the bottom of the form, there is a navigation bar with the following elements:

- Record: 1 of 32
- No Filter
- Search

Figure 3.7 Personnel Form

Data Fields:

<u>StaffID</u>	Unique ID (Primary Key) for person. Minimum field required to create a record.
<u>LastName</u>	Surname of Person
<u>FirstName</u>	First Name of Person
<u>Organisation</u>	Optional field for entering associated organisation
<u>Comment</u>	Any comments associated with person
<u>Status</u>	True/False field for indicating if staff member is still current

5. Database Tips

5.1 Filter Records Using Quick Access Toolbar

Access has built-in filtering tools that make it very quick to navigate through records. Follow the instruction to enable them onto the toolbar so that they are readily available.

When Access is opened select from the top menu

File -> Options -> Quick Access Toolbar

This should bring up a window that looks similar to the one below

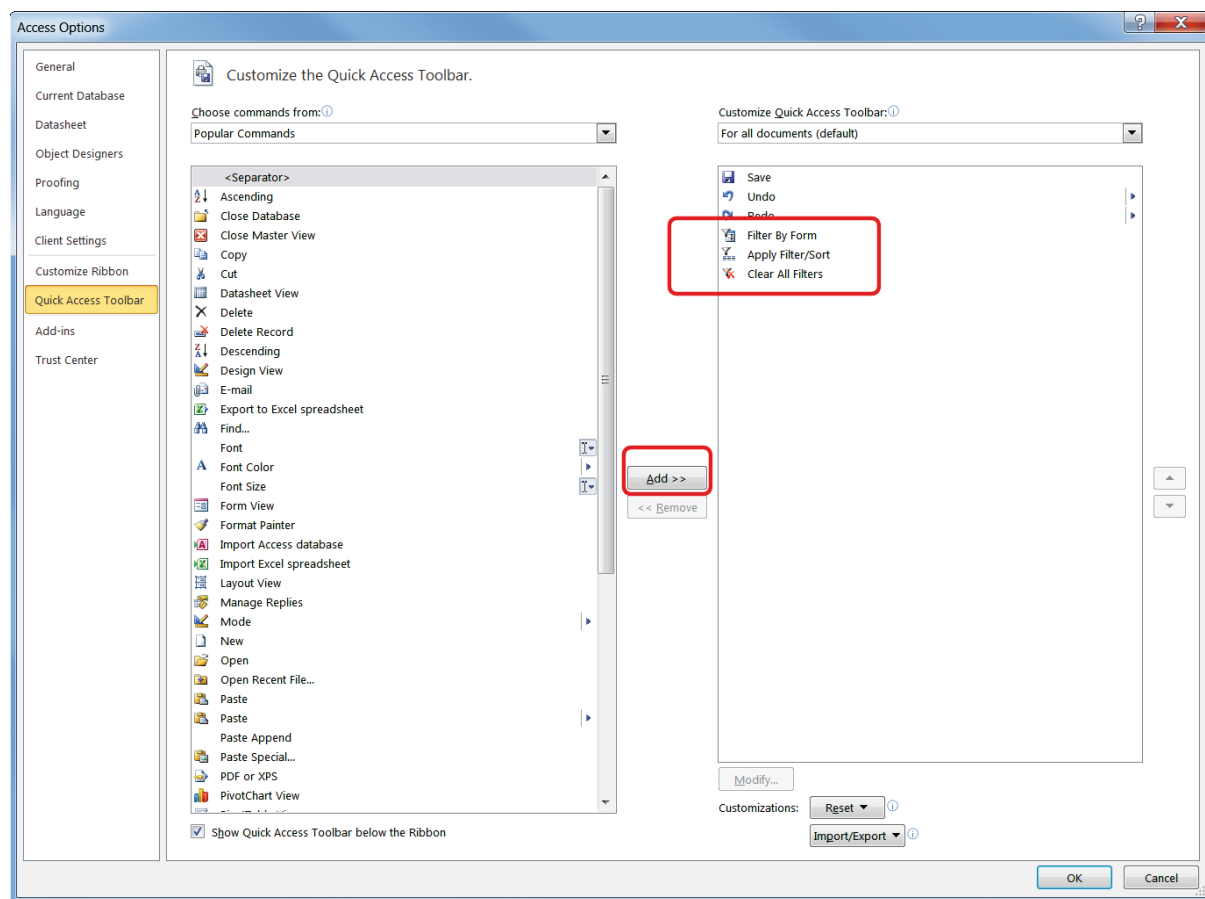


Figure 5.1 Quick Access Toolbar - modifying to add in Filter tools.

From the left hand window - **Choose commands from** - browse to find the tools:

- Filter by Form
- Apply Filter/Sort
- Clear All Filters

Use the Add button to add them your customised Quick Access Toolbar similar to the figure above.

Select Ok and then close and re-open the database to enable. They should appear in you Toolbar below the Main Menu.

- Filter By Form Button** Select this button to filter individual fields based on their values – using the dropdown box. Multiple filters can be applied.
- Apply Filter/Sort** Select this button to apply the selected filters
- Clear All Filters** Select this button to clear all filters and show all records.

5.2 Filter Records Using Context Menu

Another powerful filtering tool is to use the right-click context menu

Using the mouse – right-click into any field to bring up a context menu that allows sorting and more advanced filtering tools as shown below.

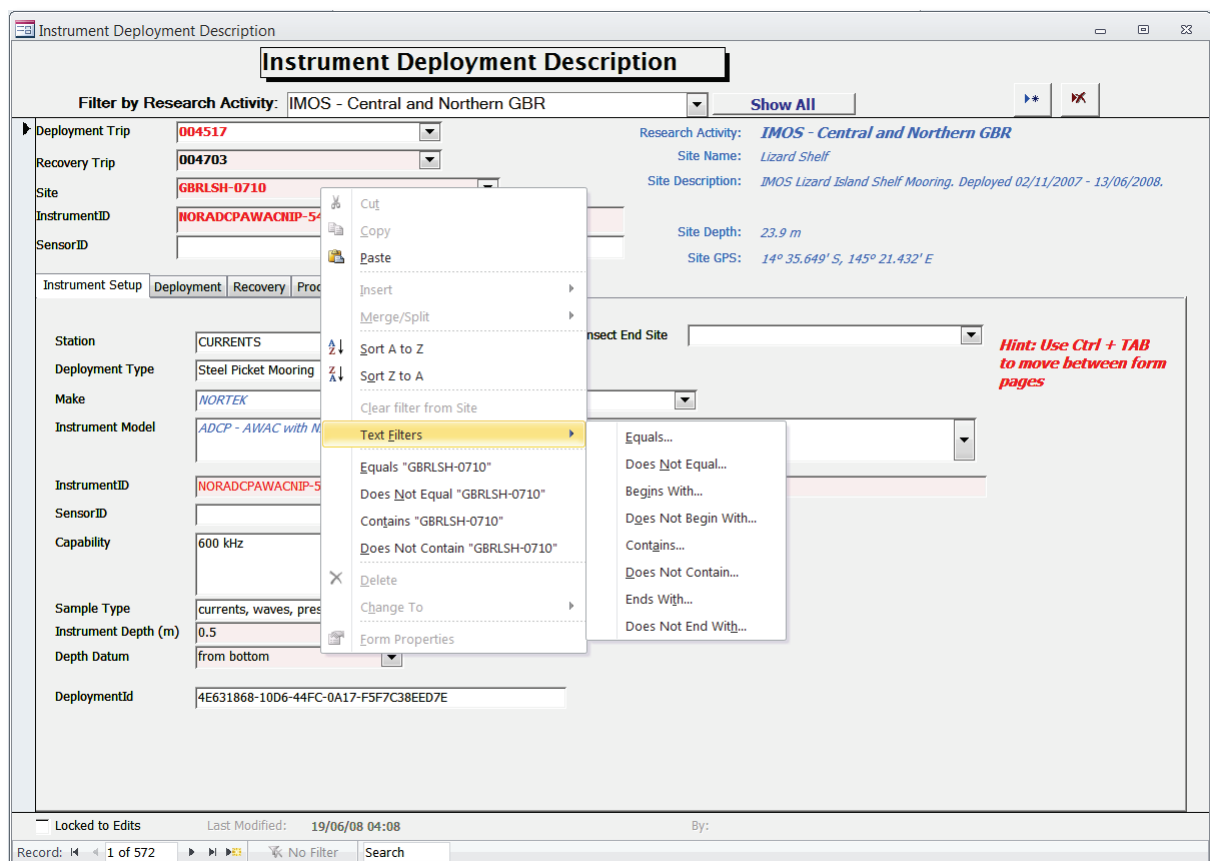


Figure 5.2 Context Filter menu.

5.3 Keyboard Shortcuts

Use the **Tab** key to move between fields.

Use **Ctrl + Apostrophe** to enter the same value in a field as for previous record – based on how records are sorted.

Use **Ctrl + Tab** to move between pages on forms that have multiple tabs.

Use **Esc** to undo entry into a field. Multiple pressing will undo entering a record.

Use **Shift + F2** to zoom the contents of a field in a pop-up window.

6. Quick Start Guide

To enter data for the first time it is recommended that initially an investment is made into populating the Instruments table with the known instruments – see Chapter 3 - Entering Data for guidance on how to enter data into this table. The following details the steps for entering a single instrument on a mooring into the database for the first time.

Note: For all forms – fields shaded in pink represent those used/required by the IMOS Toolbox. Fields that have red text represent the minimum required to create a persistent record.

Open the database – the Switchboard will open automatically.

6.1 Add Instrument Record

- If the Instrument Record does not exist - Select Add/Edit Forms -> Add/Edit Instruments
- Click the **Add Record** button on the form to add a new record
- Enter the information for the instrument – a unique InstrumentID being the minimum required field for a record.
- Once the data has been entered close the form as you would any other window.

The screenshot shows a web-based form for adding an instrument record. The form is titled "Instruments" and has a header with "View All Instruments Or Filter Using Drop-Down Boxes Below". Below this are dropdown menus for "Make" (WETLABS) and "Model" (WQM), and a "Status" button labeled "Show All". The form is divided into several sections: "Description", "Maintenance/Location", and "Sensors". The "Description" section contains fields for "InstrumentID" (WQM_073), "Category" (WQM), "Make" (WETLABS), "Model" (WQM), "SerialNumber" (073), "Asset Number" (1024201), "BarCode" (005568), "Sensors" (CTD, DO, FLNTU), "Description" (WETLABS WATER QUALITY METER), "Status" (checked), "Capability" (OCEAN, FL 0-30, NTU 0-10, PRESS 350m), "Purchase Date" (17/03/08), "Expiry Date" (17/03/15), "Asset Life (Years)" (7), "Project" (IMOS), "Custodian", and "Comment". To the right of the form is a section for "Image" with a button "Add Record" and a checkbox "Lock Record for Edits". Below the image is a "Location" section with "Start Date" (07/12/15), "End Date", and "Location Notes" (AIMS). At the bottom right, it says "Record last Modified: 16/09/2009 14:58" and "By:". The bottom of the form has a status bar with "Record: 18 of 42", "Filtered", and a "Search" button.

Figure 6.1 Example Instrument record for Wetlabs WQM

6.2 Add Field Trip Record(s)

The next step is to create a field trip entry for the deployment trip. Generally records would be entered when an instrument has been deployed and recovery information would be left blank until the instrument is recovered. However this example will include the creation of both deployment and recovery trips.

From the Switchboard:

- Select the Add/Edit Forms -> Add/Edit Field Trip Information
- Click the **New Record** button on the form to add a new record
- Enter the information for the Deployment Field Trip – the unique Field Trip Number being the minimum required field for a record (can be text).

The screenshot displays a web application window titled "Field Trip". The main heading is "Field Trip Information". Below this, there are tabs for "Trip Details", "Trip Event Log", "Personnel", and "Images". The "Trip Details" tab is active. The form contains the following fields and controls:

- Field Trip Number:** A text input field containing "006163".
- New Record:** A button.
- Open Deployment Form:** A button.
- Get Report:** A button.
- Start Date:** A date input field containing "19/03/2015".
- Finish Date:** A date input field containing "01/04/2015".
- Description:** A large text area containing the following text:
Sth GBR(IMOS) - Swains, Capricorn Bunkers
Service IMOS Yongala NRS mooring
Service Holbourne Is bottom frame
Deploy WQ mooring at the mouth of the Burdekin
Service IMOS Capricorn Channel mooring
Service IMOS Heron South Mooring
Service IMOS OTE Mooring
Service Loggers at Heron Island and One Tree Island
- Last Modified:** A label showing "03/03/16 14:13".

At the bottom of the window, there is a footer bar with the text "Record: 1 of 1", a "Filtered" button, and a "Search" input field.

Figure 6.2.1 Example Deployment Field Trip Record

- Add another record to create a Recovery Trip. This Trip is referenced by the Toolbox for the data.

Field Trip

Field Trip Information

Trip Details
Trip Event Log
Personnel
Images

Field Trip Number
006319
New Record
Open Deployment Form
Get Report

Start Date:
18/09/2015
Finish Date:
29/09/2015

Description
QIMOS - Service Yongala NRS Realtime - surface and Frame, service Holbourne Island mooring, service Heron South and One Tree Island moorings. Unable to service temperature loggers at Heron and One Tree and Heron South AQD due to time constraints. Load at AIMS, unload Rosslyn Bay marina.

Last Modified:
13/01/16 08:55

Record:
1 of 1
Filtered
Search

Figure 6.2.2 Example Recovery Trip Record

Close this form.

6.3 Add Site Record

The next essential record is the Site record.

From the Switchboard:

- Select the Add/Edit Forms -> Add/Edit Site Information
- Click the **New Record** button on the form to add a new record
- Enter the information for the Site – the unique Site ID being the minimum required field for a record. GPS information can be entered as either degrees and decimal minutes or decimal degrees. Entering in either format will automatically populate the other one.

The screenshot shows a web-based application window titled 'Sites'. The main section is 'Site Information'. At the top, there's a 'Research Activity Filter' dropdown and a 'Show All' button. Below this, the form contains several fields:

- SITE NAME:** Heron South
- SITE ID:** GBRHIS-1503
- Latitude:** 23 degrees, 30.797 minutes, S. Nominal Latitude: -23.5132833333333.
- Longitude:** 151 degrees, 57.292 minutes, E. Nominal Longitude: 151.954866666667.
- Depth:** 44
- Depth Description:** Total at deployment
- Research Activity:** IMOS - Southern GBR
- Description:** IMOS Heron Island South Mooring. Deployed 30/03/2015 - 25/09/2015. A hint box says: 'Hint: Include any terms that you would want to search on. eg. Ningaloo - Northern Edge'.
- Comment:** (Empty text area)
- Document:** docs\IMOS\Q-IMOS\Trp6163\Mooring_GBRHIS_1503.pdf
- Image:** images\IMOS\CapBunkers.png
- Buttons:** Add/Change, Remove, Lock Record for Edits (checkbox).
- Footer:** Last Modified: 05/02/16 14:03, By: fmcallis.


Figure 6.3 Example Site Record.

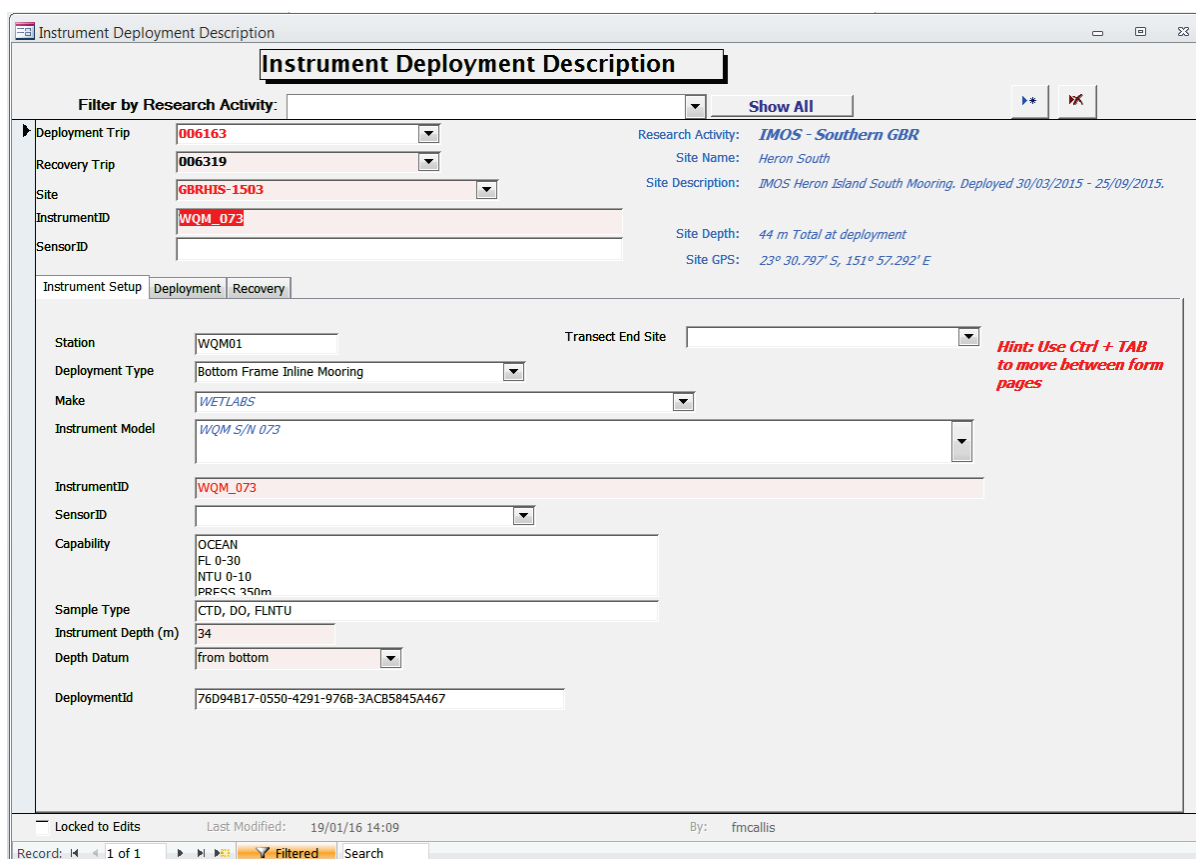
6.4 Create Deployment Data Record

6.4.1 Instrument Setup Tab Entry

Now a Deployment Data record can be created.

From the Switchboard:

- Select the Add/Edit Forms -> Add/Edit Deployment Data.
- Use the navigation controls at the bottom of the form to add a new record by selecting 
- DeploymentTrip, Site and InstrumentID fields are the minimum required for a record. Blue fields reference linked data from other tables and are not editable.
- Use the dropdown boxes at the top of the form to select the Deployment Trip, Recovery Trip and Site (remember Recovery Trip can be left blank until the recovery information is available but is required for processing data using the Toolbox).
- Use the fields in the Instrument Setup tab to enter information relating to the instrument.
- Use the Make and Instrument Model dropdown boxes to filter and select the required instrument. The InstrumentID, Capability and Sample Type fields will automatically fill based on this selection. The InstrumentID at the top of the form will also auto-fill.
- Enter the depth information.
- The DeploymentID will be automatically created.



The screenshot shows the 'Instrument Deployment Description' form, specifically the 'Instrument Setup' tab. The form is divided into several sections. At the top, there's a 'Filter by Research Activity' dropdown set to 'IMOS - Southern GBR' and a 'Show All' button. Below this, the 'Deployment Trip' is set to '006163', 'Recovery Trip' to '006319', and 'Site' to 'GBRHS-1503'. The 'InstrumentID' is 'WQM_073'. The 'SensorID' field is empty. To the right, 'Research Activity' is 'IMOS - Southern GBR', 'Site Name' is 'Heron South', and 'Site Description' is 'IMOS Heron Island South Mooring. Deployed 30/03/2015 - 25/09/2015'. Further right, 'Site Depth' is '44 m Total at deployment' and 'Site GPS' is '23° 30.797' S, 151° 57.292' E'. The 'Instrument Setup' tab is active, showing fields for 'Station' (WQM01), 'Transect End Site' (empty), 'Deployment Type' (Bottom Frame Inline Mooring), 'Make' (WETLABS), and 'Instrument Model' (WQM S/N 073). Below these, 'InstrumentID' is 'WQM_073', 'SensorID' is empty, 'Capability' is 'OCEAN FL 0-30 NTU 0-10 PRESS 350m', 'Sample Type' is 'CTD, DO, FLNTU', 'Instrument Depth (m)' is '34', 'Depth Datum' is 'from bottom', and 'DeploymentId' is '76D94B17-0550-4291-976B-3ACB5845A467'. A red hint text on the right says 'Hint: Use Ctrl + TAB to move between form pages'. At the bottom, there's a status bar showing 'Locked to Edits', 'Last Modified: 19/01/16 14:09', 'By: fmcallis', and a record count of '1 of 1'.

Figure 6.4.1 Example Record for the Deployment Data – Instrument Setup

6.4.2 Deployment Tab Entry

- Select the Deployment Tab to enter information relating to the Instrument/Mooring deployment.
- Enter the Relevant times for the Instrument using hh:mm:ss DD/MM/YYYY format – only one time is required by the Toolbox – Time End Deploy being the most relevant.
- Enter a time zone or select from the dropdown box. Note this time zone will apply for all times in the record – the database does not support mixed zones for a record.
- If estimated retrieval date is not known – enter the estimated deployment duration and the date will be calculated.

The screenshot shows a web-based form titled "Instrument Deployment Description". The form is divided into several sections. At the top, there is a "Filter by Research Activity" dropdown and a "Show All" button. Below this, the "Deployment Trip" is set to "006163", "Recovery Trip" to "006319", "Site" to "GBRHIS-1503", and "InstrumentID" to "WQM_073". The "SensorID" field is empty. To the right, the "Research Activity" is "IMOS - Southern GBR", "Site Name" is "Heron South", and "Site Description" is "IMOS Heron Island South Mooring. Deployed 30/03/2015 - 25/09/2015.". The "Site Depth" is "44 m Total at deployment" and "Site GPS" is "23° 30.797' S, 151° 57.292' E". The form has three tabs: "Instrument Setup", "Deployment" (selected), and "Recovery". The "Deployment" tab contains fields for "Time Switch On" (21:58:00 29/03/2015), "Time Start Deploy" (05:17:00 30/03/2015), "Time End Deploy" (05:45:00 30/03/2015), "Time Zone" (UTC/GMT), "Estimated Retrieval Date" (26/09/2015), "Estimated Deployment Duration (days)" (180), "Setup By" (AIMS_sbyrnes), and "Corrected For Magnetic Variation" (unchecked). The "Instrument Setup" section shows "1min/15min Samples", "WQM0073autonomousSetup.ttl", and "WQM0073SetupScriptResult". A "Copy and Paste Previous Setup for this Instrument" button is present. A text area on the right contains the following text: "1min/15min Samples", "BLIS ON", "Purge When Insitu On", "BLIS Volume: 28µl", "Setup file: 07320120524.nsf", and "BPA50IM-029". At the bottom, there is a "Record: 1 of 7" indicator, a "Filtered" status, and a "Search" button. The footer shows "Locked to Edits", "Last Modified: 19/01/16 14:09", and "By: fmcallis".

Figure 6.4.2 Example Deployment Description – Deployment

6.4.3 Recovery Tab Entry

- Select the Recovery tab to enter the Recovery information for the Instrument/Mooring.
- Enter the Relevant times for the Instrument using hh:mm:ss DD/MM/YYYY format – only one time is required by the Toolbox – Time Last in Position being the most relevant. The time zone will be filled based on the entry on the Deployment page.
- Time First Good and Time Last Good are used by the Toolbox to over-ride the other start/finish times for trimming the data. These times are usually known only after the data has been checked.
- Time Check GPS and Time Check Instrument are used to record any clock drift in the instrument.
- Enter the Filename for the data. When using the Toolbox – this must have the supported filename extension and format for the instrument (see: <https://github.com/aodn/imos-toolbox/wiki/SupportedInstruments>).
- Enter a comment if there are any issues with the instrument – this will be included in the global attributes for the netcdf file produced by the Toolbox.

The record is now ready for the data to be processed using the Toolbox.

The screenshot shows the 'Recovery' tab of the 'Instrument Deployment Description' form. The form is titled 'Instrument Deployment Description' and has a 'Filter by Research Activity' dropdown set to 'IMOS - Southern GBR'. The 'Deployment Trip' is '006163', 'Recovery Trip' is '006319', 'Site' is 'GBRHIS-1503', and 'InstrumentID' is 'WQM_073'. The 'SensorID' field is empty. The 'Research Activity' is 'IMOS - Southern GBR', 'Site Name' is 'Heron South', and 'Site Description' is 'IMOS Heron Island South Mooring. Deployed 30/03/2015 - 25/09/2015'. The 'Site Depth' is '44 m Total at deployment' and 'Site GPS' is '23° 30.797' S, 151° 57.292' E'. The 'Time Last In Position' is '23:32:00 25/09/2015', 'Time On Deck' is '00:02:00 26/09/2015', and 'Time Switch Off' is '06:51:00 26/09/2015'. The 'Time Zone' is 'UTC/GMT'. The 'Time First Good Data' is '05:50:00 30/03/2015', 'Time Check GPS' is '07:19:00 26/09/2015', 'Time Last Good Data' is '23:30:00 25/09/2015', and 'Time Check Instrument' is '07:14:37 26/09/2015'. The 'Total Instrument Drift' is '-00:04:23'. The 'File Name' is 'WQM0073_1509.dat', 'Image File' is 'GBRHIS-1503_WQM_073.jpg', 'Plot File' is empty, 'Link File1' is empty, and 'Link File2' is empty. The 'Comment' is 'Sensor clean but a lot of long growth on the frame. DO drops out between 1330 26/06/2015 and 1630 01/09/2015'. The 'Data Recovery (%)' is empty, 'FileSize' is '159047587', 'File Size Unit' is 'Bytes', and 'Downloaded By' is 'AIMS_chartlett'. The form is locked to edits, last modified on 19/01/16 at 14:09, by fmcallis. The record is 1 of 1, filtered, and a search bar is present.

Figure 6.4.3 Example Deployment Description – Recovery

Appendix A Tables and Definitions

This appendix contains the field definitions for each of the tables in the database. Fields shaded pink are used by the IMOS Toolbox. Fields with red text are the minimum required to create a record. Listed under each table are the relationships it has with the other tables.

Table A1: Instruments

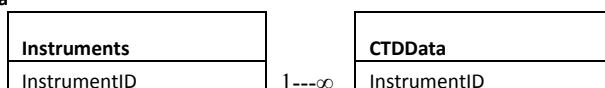
Essential table – Populated via the Instruments Form

Columns

Name	Type	Size	Description
InstrumentID	Text	255	Unique ID for instrument
Make	Text	255	Select existing make from list or add new one - eg RDI
Model	Text	255	Select existing model from list or add new one - eg ADCP - WORKHORSE SENTINEL
SerialNumber	Text	255	Enter serial number for instrument
AssetNumber	Text	255	Internal Organisation Asset Number
BarCode	Text	255	Asset Barcode
PurchaseDate	Date/Time	8	Date of Instrument Purchase
ExpiryDate	Date/Time	8	Date of Instrument Expiry
AssetLifeYears	Long Integer	4	Asset life in years
Category	Text	255	Select existing category from list or add new one
Sensors	Text	255	Select existing sensors from list or add new one
Description	Text	255	Select existing description from list or add new one
Capability	Text	255	Enter instrument capability
Status	Yes/No	1	Is the instrument a current and serviceable instrument?
Project	Text	255	Project Instrument purchased under
Image	Text	255	Image of Instrument
Comment	Text	255	Additional comments
Custodian	Text	255	Asset Custodian
Modified	Date/Time	8	Date/Time record is modified in the database - auto-filled in form
ModifiedBy	Text	255	Record last modified by - auto-filled in form

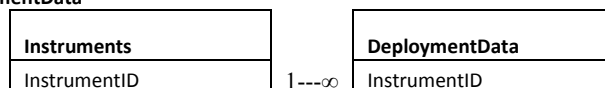
Relationships

Instruments - CTDDData



Attributes: Enforced, Left Join
RelationshipType: One-To-Many

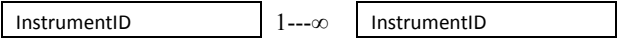
Instruments - DeploymentData



Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

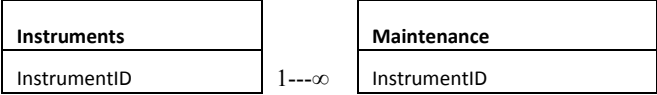
Instruments - InstrumentSensorConfig





Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

Instruments - Maintenance



Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Table A2: FieldTrip

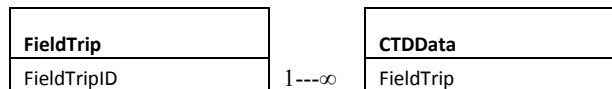
Essential Table – populated via the FieldTrip Form

Columns

Name	Type	Size	Description
FieldTripID	Text	50	Unique field Trip ID
FieldDescription	Memo	-	Descriptive text for field trip
DateStart	Date/Time	8	Start date for field trip
DateEnd	Date/Time	8	End date for field trip
Modified	Date/Time	8	Date/Time record last modified

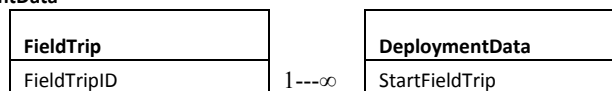
Relationships

FieldTrip - CTDDData



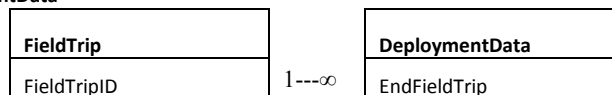
Attributes: Enforced, Left Join
RelationshipType: One-To-Many

FieldTrip - DeploymentData



Attributes: Enforced, Cascade Updates, Cascade Deletes, Left Join
RelationshipType: One-To-Many

FieldTrip - DeploymentData



Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

FieldTrip - FieldEventLog



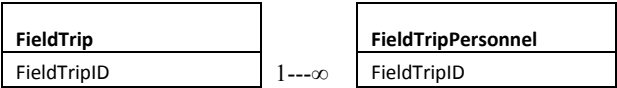
Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

FieldTrip - FieldImages



Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

FieldTrip - FieldTripPersonnel



Attributes: Enforced, Left Join
RelationshipType: One-To-Many

Table A3: Sites

Essential Table – Populated via the Sites Form

Columns

Name	Type	Size	Description
Site	Text	50	Unique Site ID
SiteName	Text	255	Site Name (Not unique)
NominalLongitude	Double	8	Nominal Longitude in decimal degrees
NominalLatitude	Double	8	Nominal Latitude in decimal degrees
Longitude	Double	8	Longitude in decimal degrees
Latitude	Double	8	Latitude in decimal degrees
Datum	Text	50	Site GPS Datum eg, WGS84
Description	Text	255	Site Description eg, Scott Reef Lagoon
Depth	Double	8	Site Depth in metres
DepthTxt	Text	255	Depth Datum eg, total at deployment; MSL; LAT
Image	Text	100	Link to image file for site
Document	Anchor	-	Link to document describing site, eg mooring diagram
ResearchActivity	Text	100	General Research Activity for site, eg IMOS
Completed	Yes/No	1	Lock record for editing
Comment	Text	255	Further comments for site
Modified	Date/Time	8	Record modified date (auto-filled)
ModifiedBy	Text	255	Record modified by (auto-filled)

Relationships

Sites - CTDDData



Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Sites - DeploymentData



Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

Table A4: DeploymentData

Essential Table - Populated via the Deployment Data Form.

Columns

Name	Type	Size	
DeploymentId	Text	50	Code-generated unique ID
StartFieldTrip	Text	50	Field Trip ID of Deployment Trip
EndFieldTrip	Text	50	Field Trip ID of Recovery Trip
Site	Text	50	Use to link to sites data table (which contains lat and long)
EndSite	Text	50	If Deployment is a Transect, end point for transect. Use to link to sites data table (which contains lat and long)
Station	Text	255	Station code
DeploymentType	Text	50	Type of deployment, eg mooring, frame, block etc
InstrumentID	Text	50	Use to link to Instruments_Id in Instruments table (Instrument description)
SensorID	Text	50	Use to link Sensor_Id in Sensors table
Sampling	Memo	-	Instrument sampling information
MagVarCor	Yes/No	1	Instrument corrected for magnetic variation?
Sampletype	Text	255	Sample - eg Temperature, Pressure etc. Autofilled from Instruments table
Capability	Text	255	Instrument Capability - eg 300 MHz etc. Autofilled from Instruments table
FileName	Text	255	Catalogue number/Sample number/File name - should ideally be unique
PersonnelSetup	Text	50	Instrument Setup by? – Sourced from table Personnel
PersonnelDownload	Text	50	Instrument Downloaded by? – Sourced from table Personnel
TimeSwitchOn	Date/Time	8	Time instrument is switched on
TimeFirstWet	Date/Time	8	Time instrument first in water
TimeFirstInPos	Date/Time	8	Time instrument first in position
TimeEstimatedRetrieval	Date/Time	8	Date Instrument is estimated to be retrieved
TimeLastInPos	Date/Time	8	Time instrument last in position
TimeOnDeck	Date/Time	8	Time instrument on deck
TimeSwitchOff	Date/Time	8	Time instrument switched off
TimeFirstGoodData	Date/Time	8	Time of first good data
TimeLastGoodData	Date/Time	8	Time of last good data
TimeDriftGPS	Date/Time	8	Time drift check for Instrument - GPS Time
TimeDriftInstrument	Date/Time	8	Time drift check for Instrument - Instrument Time
TimeZone	Text	50	Time zone eg UTC, CST etc
InstrumentDepth	Double	8	Depth of instrument/sample
DepthTxt	Text	50	Depth Datum or alternate text description of depth eg shallow, deep if measured depths are not used
ImageFile	Text	255	The name of an image file associated with instrument/sensor
PlotFile	Text	255	The name of a plot file associated with instrument/sensor
LinkFile1	Text	255	The name of a file to be linked to record - this is optional and may include images, data reports etc
LinkFile2	Text	255	The name of a file to be linked to record - this is optional and may include images, data reports etc
Comment	Memo	-	Any additional comment to be attached to record
DataRecovery	Double	8	Approximate Raw Data recovered (%)
FileSize	Double	8	File Size
FileSizeUnit	Text	255	File Size Units eg: bytes, samples etc
Modified	Date/Time	8	Date/Time record is modified in the database (autofilled by form)
Complete	Yes/No	1	Is the record complete? Locked to further editing.
DataStatus	Text	255	Status of Data and Processing
ModifiedBy	Text	255	Record last modified by (autofilled in form)

Relationships

FieldTrip - DeploymentData

FieldTrip		DeploymentData
FieldTripID	1---∞	StartFieldTrip

Attributes: Enforced, Cascade Updates, Cascade Deletes, Left Join
RelationshipType: One-To-Many

Field - TripDeploymentData

FieldTrip		DeploymentData
FieldTripID	1---∞	EndFieldTrip

Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Instruments - DeploymentData

Instruments		DeploymentData
FieldTripID	1---∞	StartFieldTrip

Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

Personnel - DeploymentData

Personnel		DeploymentData
StaffID	1---∞	PersonnelSetup

Attributes: Enforced, Left Join
RelationshipType: One-To-Many

Personnel - DeploymentData

Personnel		DeploymentData
StaffID	1---∞	PersonnelDownload

Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

Sensors - DeploymentData

Sensors		DeploymentData
SensorID	1---∞	SensorID

Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Sites - DeploymentData

Sites		DeploymentData
SensorID	1---∞	Site

Attributes:	Enforced, Cascade Updates, Left Join
RelationshipType:	One-To-Many

Table A5: CTDDData

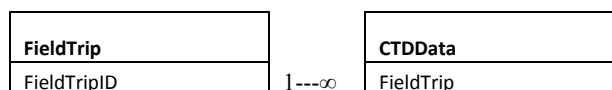
Populated via the CTDDData Form.

Columns

Name	Type	Size	Description
FieldTrip	Text	50	Field Trip ID
Latitude	Double	8	Latitude in Decimal Degrees
Longitude	Double	8	Longitude in Decimal Degrees
Site	Text	255	Description of Location eg Scott Reef Lagoon (also linked to SITES table)
Station	Text	255	Station Code - Eg for transects - transect number
InstrumentID	Text	50	Use to link to Instruments_Id in Instruments table (Instrument description)
FileName	Text	255	File name - should ideally be a unique identifier
CastNumber	Long Integer	4	Cast Number for multiple casts at same site
Niskin	Yes/No	1	Niskins samples collected (Yes/No)
Chlorophyll	Yes/No	1	Chlorophyll samples collected (Yes/No)
DepthNiskin01	Double	8	Depth (m) for Niskin # 1
DepthDatumNiskin01	Text	255	Datum of Depth for Niskin #1
DepthNiskin02	Double	8	Depth (m) for Niskin # 2
DepthDatumNiskin02	Text	255	Datum of Depth for Niskin #2
DepthNiskin03	Double	8	Depth (m) for Niskin # 3
DepthDatumNiskin03	Text	255	Datum of Depth for Niskin #3
DepthNiskin04	Double	8	Depth (m) for Niskin # 4
DepthDatumNiskin04	Text	255	Datum of Depth for Niskin #4
DepthNiskin05	Double	8	Depth (m) for Niskin # 5
DepthDatumNiskin05	Text	255	Datum of Depth for Niskin #5
DateFirstInPos	Date/Time	8	Date instrument first in position
TimeFirstInPos	Date/Time	8	Time instrument first in position
DateLastInPos	Date/Time	8	Date instrument last in position
TimeLastInPos	Date/Time	8	Time instrument last in position
TimeZone	Text	50	eg, GMT, EST, CST, WST
InstrumentDepth	Text	50	Deepest Depth of instrument/sample
InstrumentDepthDatum	Text	255	Datum for instrument depth
SiteDepth	Text	50	Depth of site (m)
SiteDepthDatum	Text	255	Datum used for depth, eg LAT, total at deployment
Linkfile1	Text	255	The name of a file to be linked to record - this is optional and may include images, data reports etc
Linkfile2	Text	255	The name of a file to be linked to record - this is optional and may include images, data reports etc
Comment	Text	255	Any additional comment to be attached to record
ResearchActivity	Text	255	Enter the research descriptor eg IMOS
DateModified	Date/Time	8	Date record last modified
TimeModified	Date/Time	8	Time record last modified
ModifiedBy	Text	255	Record last modified by

Relationships

FieldTrip - CTDDData



Attributes:

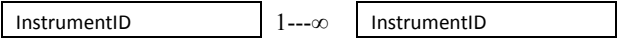
RelationshipType:

Enforced, Left Join

One-To-Many

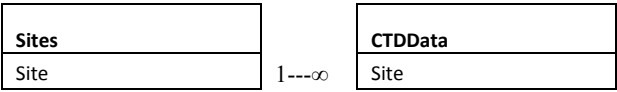
Instruments - CTDDData





Attributes: Enforced, Left Join
RelationshipType: One-To-Many

Sites - CTDDData



Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Table A6: Sensor

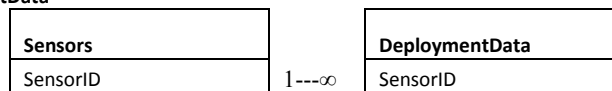
Populated via the Sensors Form.

Columns

Name	Type	Size	Description
SensorID	Text	255	Unique Sensor Id
Make	Text	255	Make of Sensor - eg Wetlabs
Model	Text	255	Model of Sensor - eg ECO-PAR
SerialNumber	Text	255	Serial Number of Sensor
Parameter	Text	255	What is measured by sensor- eg PAR
Units	Text	255	Units measured by sensor - eg watts m-2
Capability	Text	255	Capability of Sensor - eg 60m
Description	Text	255	Text Description of Sensor - eg Wetlabs ECO-PAR
Status	Yes/No	1	Is the sensor still operational?
Image	Text	255	Link to image of sensor
Document	Memo	-	Additional documentation for sensor
Modified	Date/Time	8	Date record last modified - auto-filled by form
ModifiedBy	Text	255	Record last modified by - auto-filled by form

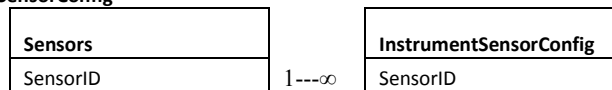
Relationships

Sensors - DeploymentData



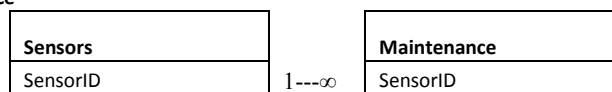
Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Sensors - InstrumentSensorConfig



Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Sensors - Maintenance



Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Table A7: InstrumentSensorConfig

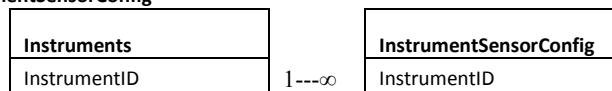
Populated via the Instruments Form.

Columns

Name	Type	Size	Description
InstrumentID	Text	50	Unique ID for instrument
SensorID	Text	50	Unique ID for sensor
DateModified	Date/Time	8	Date record is modified in the database
StartConfig	Date/Time	8	Date sensor configured to instrument
EndConfig	Date/Time	8	Date sensor removed from instrument
CurrentConfig	Yes/No	1	Is this the current Instrument/Sensor configuration
Comment	Text	255	Comments

Relationships

Instruments - InstrumentSensorConfig



Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

Sensors - InstrumentSensorConfig



Attributes: Not Enforced, Left Join
RelationshipType: One-To-Many

Table A8: Maintenance_Instruments

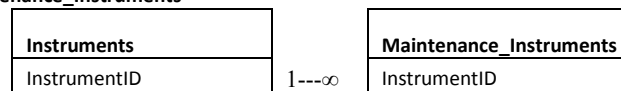
Populated via the Instruments Form.

Columns

Name	Type	Size	Description
InstrumentID	Text	50	Unique ID of instrument
Date	Date/Time	8	Date of maintenance
Calibrated	Yes/No	1	Is the instrument being calibrated?
MaintenanceNotes	Memo	-	Description of maintenance being undertaken
LocationNotes	Text	255	Physical location of instrument
CalibrationFile	Text	255	Link to any calibration documents
ModifiedBy	Text	255	Record modified by - auto-filled by form

Relationships

Instruments – Maintenance_Instruments



Attributes:

RelationshipType:

Enforced, Inherited, Cascade Updates, Left Join

One-To-Many (External)

Table A9: Maintenance_Sensors

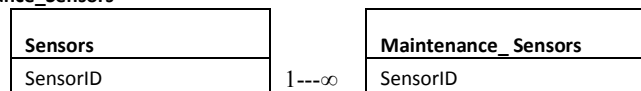
Populated via the Sensors Form.

Columns

Name	Type	Size	Description
SensorID	Text	50	Unique ID of sensor - links to Sensor Table
Date	Date/Time	8	Date of maintenance
Calibrated	Yes/No	1	Is the instrument being calibrated?
MaintenanceNotes	Memo	-	Description of maintenance being undertaken
LocationNotes	Text	255	Physical location of instrument
CalibrationFile	Text	255	Link to any calibration documents
ModifiedBy	Text	255	Record modified by - auto-filled by form

Relationships

Sensors – Maintenance_Sensors



Attributes:

RelationshipType:

Enforced, Inherited, Cascade Updates, Left Join

One-To-Many (External)

Table A10: Personnel

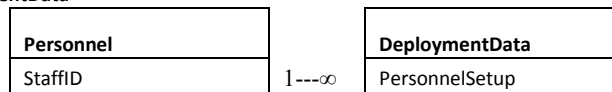
Populated via the Personnel Form.

Columns

Name	Type	Size	Description
StaffID	Text	50	Unique staff ID
LastName	Text	50	Staff surname
FirstName	Text	50	Staff first name
Organisation	Text	50	Organisation - eg AIMS
Comment	Text	255	Additional comments - can include currency of employment

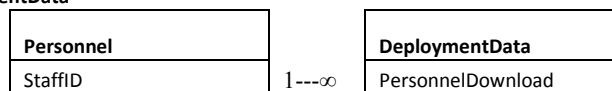
Relationships

Personnel - DeploymentData



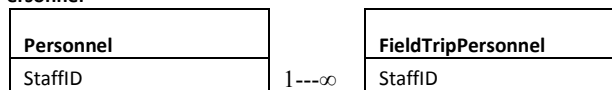
Attributes: Enforced, Left Join
RelationshipType: One-To-Many

Personnel - DeploymentData



Attributes: Enforced, Cascade Updates, Left Join
RelationshipType: One-To-Many

Personnel - FieldTripPersonnel



Attributes: Enforced, Cascade Updates, Cascade Deletes, Left Join
RelationshipType: One-To-Many

Table A11: FieldEventLog

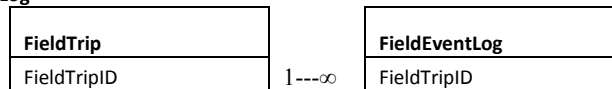
Populated via the Field Trip Form.

Columns

Name	Type	Size	Description
FieldTripID	Text	50	Field Trip Number
Date	Date/Time	8	Date
Event	Memo	-	Details of events that occurred

Relationships

FieldTrip - FieldEventLog



Attributes:

RelationshipType:

Enforced, Cascade Updates, Left Join

One-To-Many

Table A12: FieldTripPersonnel

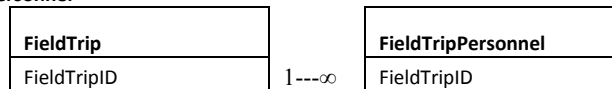
Populated via the Field Trip Form.

Columns

Name	Type	Size	Description
FieldTripID	Text	50	Field Trip ID from FieldTrip table
StaffID	Text	50	Staff ID from Personnel table
Comment	Text	255	Comments

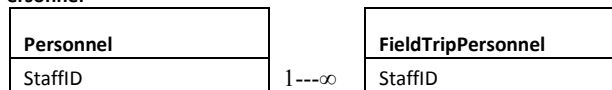
Relationships

FieldTrip - FieldTripPersonnel



Attributes: Enforced, Left Join
RelationshipType: One-To-Many

Personnel - FieldTripPersonnel



Attributes: Enforced, Cascade Updates, Cascade Deletes, Left Join
RelationshipType: One-To-Many

Table A13: FieldImages

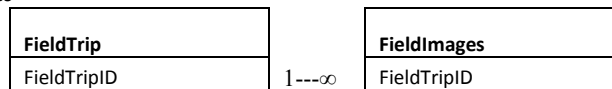
Populated via the Field Trip Form.

Columns

Name	Type	Size	Description
FieldTripID	Text	50	Field Trip Number
Date	Date/Time	8	Date
Image	Text	255	Filename and optional path to image
Description	Text	255	Description of image

Relationships

FieldTrip - FieldImages



Attributes:

RelationshipType:

Enforced, Cascade Updates, Left Join

One-To-Many

Appendix B Ancillary Forms

The database provides a few other forms that provide extra functionality for the user. These forms are accessed directly using the Navigation Pane to the left of the main window. Open this pane and select the Forms Object Type to view all the forms. Double click on any of the forms to open them.

B1 frmgetSiteDistance

This form can be used to calculate the distance and bearing (Great Circle) between two sites. The user can choose existing sites in the database using the dropdown box, or alternatively enter the decimal latitude and longitude values into the fields. Press calculate to get the desired values

The screenshot shows a Microsoft Access window titled 'Sites'. Inside, there is a form titled 'Distance and Bearing between Sites'. The form is divided into two identical sections for two different sites. Each section contains a 'Site' dropdown menu, a 'SiteName' text box, a 'Latitude' text box, and a 'Longitude' text box. Between the two sections, there are three output fields: 'Distance :', 'Distance (nm) :', and 'Bearing:', each followed by a text box. To the right of these output fields is a green 'Calculate' button. The form has a light blue header bar with the title 'Distance and Bearing between Sites'.

Figure B1 frmgetSiteDistance – used for calculating Great Circle Distance and Bearing between sites.

B2 frmTimeConvert

This form has two functions:

Time Zone Converter used to calculate date/time in different time zones. Enter the desired values in the white boxes then press Convert Time to produce an answer in the blue Converted Date/Time box.

Time Calculator used to add/subtract time values to a start time. Enter the desired values in the white box and press + or – to add or subtract the amount. Result is displayed in the blue Calculated Date/Time box.

The screenshot shows a Windows-style application window titled "Date/Time Convert". It contains two main sections: "Time Zone Converter" and "Time Calculator".

Time Zone Converter Section:

- Input fields: "Date/Time" (white box) and "Time Zone" (dropdown menu).
- Output field: "Converted Date/Time" (blue box).
- Time Zone: "Time Zone" (dropdown menu).
- Action: "Convert Time" button.

Time Calculator Section:

- Input fields: "Date/Time" (white box) and "Days:" (white box with "0").
- Input fields: "Hours:" (white box with "0").
- Input fields: "Minutes:" (white box with "0").
- Input fields: "Seconds:" (white box with "0").
- Output field: "Calculated Date/Time" (blue box).
- Action: "+" button and "-" button.

Figure B2 frmTimeConvert – used for converting/calculating date times

B3 frmImportTables

This form is used for importing all tables from an existing database to the current database. Note that any tables with the same name will be over-written. The primary use of this form is for updating an older database to the current one.

Use this form with caution!



Figure B3 frmImportTables – used for updating data to the current database

Appendix C Visual Basic References

The Database utilises a significant amount of code. In order for this code to function properly the following references must be made available. This should only need to be checked if the Database is not functioning properly.

To enable the references – go to

Database Tools -> Visual Basic -> Tools -> References

Ensure the below references are selected – or those appropriate to the version of Office and Access being used.

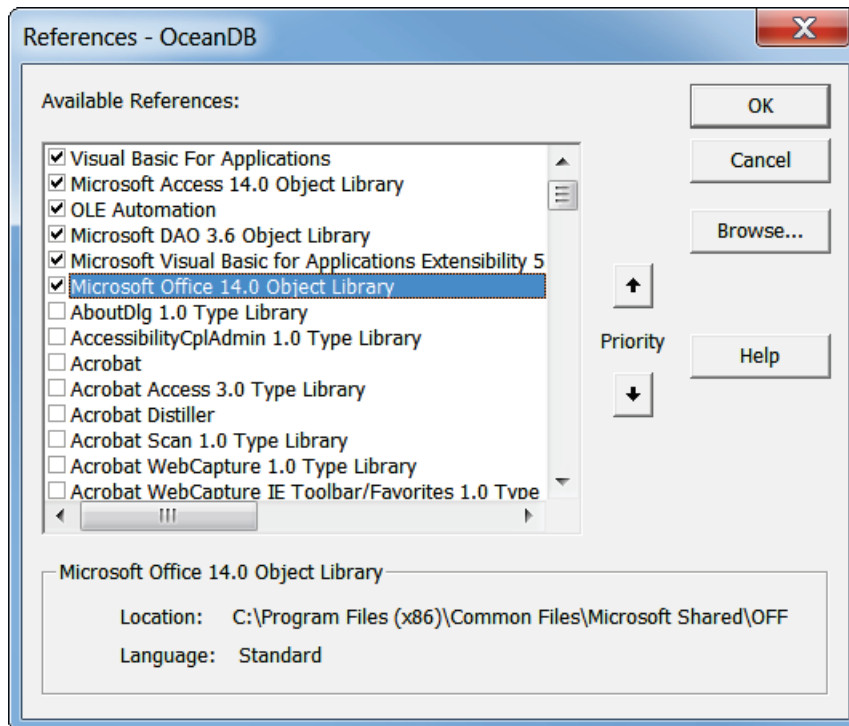


Figure C VBA References required for VBA Code.