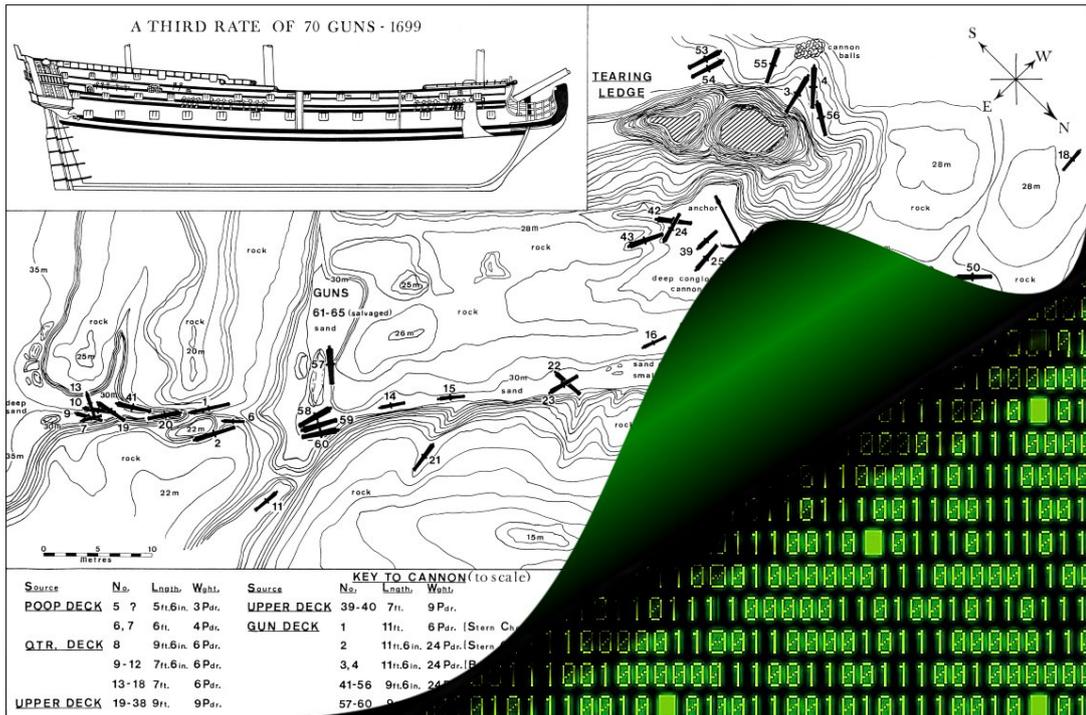




## Site Recorder Database Schema



# Site Recorder Database Schema

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## Contents

1	Introduction	4
1.1	Rationale	4
1.2	About Site Recorder	4
1.3	Object Types	5
2	Notes	7
2.1	Object names	7
2.2	Wordlists	7
2.3	Units	7
2.4	Height and Depth	8
2.5	Date Format	8
2.6	Property Types	9
3	Container Objects	10
3.1	Site	10
3.2	Project	11
3.3	Layer	11
3.4	Manager	12
3.5	Spatial Objects	13
3.6	Artefact	13
3.7	Feature	15
3.8	Sector	16
3.9	Sample	17
3.10	Survey Point	18
3.11	Target	19
3.12	Wreck	20
3.13	Image Basemap	21
3.14	Search Area	22
3.15	Drawing Frame	23
3.16	Fix Point	23
3.17	Data Point	24
4	Event Objects	25
4.1	Event	25
4.2	Dive Log Event	25
5	Measurement Objects	27
5.1	Depth/Height Measurement	27
5.2	Position Measurement	28
5.3	Distance Measurement	28
5.4	Offset Measurement	30
5.5	Ties Measurement	30
5.6	Radial Measurement	31
6	Other Objects	32
6.1	Contact	32
6.2	Image	33
6.3	Source	34
6.4	Task	35
6.5	Logbook	35
7	Index	36

# 1 Introduction

## 1.1 Rationale

This document describes a core recording schema that can be used to capture information about any maritime or intertidal archaeological site and the work done on it. The word *core* is crucial as the schema used by Site Recorder is only a subset of the data that could be recorded but it is a subset that may be shared by other recording systems. Use of a core standard allows the additional data to be recorded that are crucial to research databases yet still allows direct comparisons to be made between objects that are at the heart of intra-site analyses and generic analysis and rendering tools.

## 1.2 About Site Recorder

Site Recorder 4 is a fully-featured and versatile Information Management System (IMS) specifically designed for use in maritime and intertidal archaeology. Site Recorder is powerful yet easy to learn and has been designed by archaeologists for archaeologists.

Site Recorder can be used to collect together all of the information about an underwater or inter-tidal archaeological site in one place. Separate pieces of information can then be associated with one another allowing easy location, analysis and interpretation of the information. Unlike most similar Geographic Information System (GIS) programs, Site Recorder is designed for collecting information not just displaying it. Site Recorder has been designed to replace the separate surveying, drawing, finds handling and reporting programs usually used on site with one single program. All data can be geo-referenced and time-stamped allowing true 4 dimensional analysis.

An archaeological site and the work done on that site can be recorded in a set of objects within the Site Recorder program. These objects are used to represent real-world entities such as Artefacts, Survey Points, Measurements and Dive Logs. These individual objects can represent something that physically exists such as an Artefact, something that happened such as a Dive or they can be containers to group together other objects such as a Layer.

These objects can relate to any phase of work on a site. Surveys are done looking for a site; these will generate objects such as target points. Subsequent dives to investigate targets may generate artefact points and will generate Dive objects. A pre-disturbance survey will generate survey points, measurements and dives. An excavation will add features, drawings, photographs and the like.

This document starts by describing the types of objects that can be recorded then goes on to list the information that can be recorded about each object and the associations that can exist between objects.

### 1.3 Object Types

Site Recorder is a computer program used to record things that exist or happen, most usually in or around an archaeological site. These things are called objects and the programs can contain many different types of objects.

The objects are brought together into collections or families which can be 'owned' by another object, this is a handy way of collecting together similar objects or ones related to each other. The hierarchy of objects forms a 'tree' shape with the Site at the root of the tree and all the many other objects branching out from it.

Objects that can be in a Site Recorder file include:

- Sites and Shared Sites
- Projects
- Layers
- Artefacts, Features and Sectors
- Images
- Events
- Sources
- Wrecks
- Dive Logs and ROV Logs
- Survey Points
- Measurements
- Drawing Frames
- Drawing objects
- Image basemaps
- Samples
- Targets
- Logbooks
- Fix Points

#### Site

The Site is the object that represents the ship, monument or structure being recorded.

#### Project

The Site object can contain one or more projects and these are used to collect together sets of Layer objects. Project objects can be used to record all the work done in a particular excavation season, fieldwork session or survey.

#### Layer

Each Project can contain a number of Layer objects. The layers are used to collect together different types of other objects that are associated with each other. The different types of Layers are used to collect together different kinds of objects:

- Survey layer                      Survey points and measurements
- General layer                      Drawing objects such as lines and points, images, Targets, Wrecks and Samples
- Artefact layer                      Artefacts, Features and Sectors
- Data layer                              Data points

#### Survey Points and Measurements

Survey objects include Survey Points, Measurements and Drawing Frames. Survey Point objects are used to represent the control points and detail points installed on the site. Each individual measurement made between these points are recorded in separate Measurement objects. A number of different measurement types are supported:

- Distance A distance measurement between two Survey Points
- Depth The depth of a Survey Point
- Offset A horizontal or vertical offset measurement between a baseline and a Survey Point
- Tie A tie measurement between a baseline and a Survey Point
- Radial A distance and direction measured from one Survey Point to another
- Position The position of a Survey Point taken from a GPS or acoustic positioning system

### **Drawing Frames**

Drawing or planning frames can be added to the chart. The drawing made on site can be copied into the frame in the computer by tracing over a scanned image of the drawing. Once done the frame and copied drawing can be positioned on the chart.

### **Drawing Objects**

Drawing objects include points, lines (polylines), rectangles, circles and text. Drawing objects can be used to draw such things as maps, trench outlines, contours and the like.

### **Recording Objects**

Archaeology objects include Artefacts, Features and Sectors:

- Artefact A find or any kind of object on the site to be recorded
- Feature An archaeological recording Feature
- Sector Used for defining an area of the site such as a trench

### **Dive Logs**

Dive Logs and ROV Logs are used to record information about dives and ROV dives.

### **Contacts**

Information about people such as archaeologists and divers can be recorded.

### **Images**

Image objects are used to record information about any image object including photographs, drawings and video clips. Images can be linked to other objects such as Artefacts and Dive Logs.

### **Image Basemaps**

Image objects are used to show base map pictures on the chart such as side-scan sonar traces, geo-referenced multibeam echo sounder (MBES) images, scanned site plans or photomosaics. Image basemaps can also be shown as simple icons on the chart, useful for associating linked images or video clips on the site plan

### **Events**

Event objects are used to record things that have happened on site or to the site.

### **Sources**

Sources such as documents, reports and letters can be recorded along with a link to the source if available in a digital form.

### **Targets**

Targets are used to record positions and information about things found during geophysical survey using magnetometers, side-scan sonars, sub-bottom profilers and pulse-induction metal detectors.

**Wrecks**

Information about known wrecks and reported wrecks can be recorded.

**Logbooks**

Logbooks can be used to record day-to-day events, ideas, interpretation and thoughts as text documents.

## 2 Notes

### 2.1 Object names

The names of objects are very important in the Site programs as they are used to tie together Survey Points to measurements, associations between Artefacts, divers to dive logs and so on.

Object names must be unique so two objects cannot be given the same name, this applies to objects of any type not just objects of the same type. Names can be up to 30 characters long, so 'Artefact 2315' is a valid name while 'LargeLumpOfConcretionFoundUnderGun243' is not. Names can contain spaces but not the characters ', ; / . : \ " ? \* |'

**Default Names**

When a new object is created a default name is suggested. The default name is made up from properties of the layer the new object has been added to. The new name is made up from the layer's Name Header with the next free number, padded out to the number of digits in the layer's Name Digits property.

For example, if the layer's Name Header property is 'Gun' and the Name Digits property is 4 then the name offered for the first object on that layer is 'Gun0001' then if the Name Header property is 'Coin - ' and the Name Digits property is 3 then the name offered for the first object on that layer is 'Coin - 001'. In the cases above, if the names had already been used then the next free name would be offered; 'Gun0002' and 'Coin - 002'

**Full Names and the Site Code**

Duplicate names are not allowed in the Site itself however duplicates could occur where data from two sites is merged together. In cases where exported site data is to be used outside of the Site program it is recommended that the name is prepended with the site code. For example, if the Site Code is 'MRT2004' and the object name is 'A0132' then the full name of the object is 'MRT2004 A0132'.

Where data is to be exported this is offered as an option to be done automatically as the file is exported.

### 2.2 Wordlists

The wordlists and thesauri used by Site Recorder are described in the document 'Site Recorder Wordlists Vx.xx.doc'

### 2.3 Units

All measurements are recorded internally in standard units. For display, these internal units are converted to the display units by scaling. The internal units are:

Distance	metres
Depth and height	metres
Position coordinate	metres
Angle	degrees
Speed	metres per second
Weight	kilogrammes

## 2.4 Height and Depth

Site programs can display up and down or Z-axis co-ordinates as depths or heights. When depths are displayed the Z co-ordinate is positive downwards, when heights are displayed the Z co-ordinate is positive upwards.

For example, a point with a depth of 12m would have a height displayed as -12m. The labels on Z-axis properties change between 'Depth' and 'Height' accordingly. Sometimes the two conventions are described as being Eastings, Northings and Up (ENU) or Eastings, Northings and Down (END).

## 2.5 Date Format

Dates are exported in the form:

HH:MM DDD dd MMM YYYY

HH	Hours
MM	Minutes
DDD	Day as three letter code
dd	Date
MMM	Month as three letter code
YYYY	Year

Example: 09:57 Thu 13 Nov 2008

## 2.6 Property Types

There are a number of different types of properties and each has a specific use. For example, String (word) properties are used for recording text information such as names and descriptions and Real (number) properties are used to record real numbers such as lengths and weights.

### **R - Real (number) properties**

Real number properties are used to record numbers with fractions such as 10.6 and 427.567. In some cases a maximum or minimum value is set for the property, if a different value is entered then a warning message is shown.

### **I - Integer (number) properties**

Integer number properties are used to record integer or non-fractional numbers such as 10 and 427. In some cases a maximum or minimum value is set for the property, if a different value is entered then a warning message is shown.

### **S - String (word) properties**

String word properties are used to record words and short sentences.

### **SS – Long String (word) properties**

Long String word properties are used to record text.

### **W - Wordlist properties**

Wordlist properties are String properties where the range of allowed values is contained within a controlled vocabulary such as a wordlist or thesaurus. Only values in the wordlist can be set in this property type. Alternatively, the list may be made up of a particular range of values allowed for the property; in this case the range of values is set by a table in the Word Lists.

### **L – Link property**

Wordlist properties are String properties where the range of allowed values is made up from the names available objects of a particular type such as Dive Logs or Contacts.

### **P - Position (number) properties**

Position properties are real number properties that can show the same number in different formats. These properties are used for positions of objects so the same position can be shown in grid (Easting and Northing) format or Geographical (Latitude and Longitude) format.

### **D – Date**

Date properties are used to represent dates and times

### **B – Boolean**

A value that can be true or false, yes or no

### **F – Filepath**

The filename and folder path of a file on the computer or network

## 3 Container Objects

### 3.1 Site

#### 3.1.1 Description

The Site 'object' is the one that represents the complete shipwreck, monument or structure being recorded; in fact it can represent any place where human activity occurred and material remains were deposited.

#### 3.1.2 Properties

Name	Ty	Description
Name	S	This is the name for the object
Description	SS	A short description of the object
Site Code	S	The site code, see Note below
Site Type	S	The type of site that is being recorded
File Version	S	The version number for this data set
Created by	S	The name of the person or organisation who created the site file
Publisher	S	The name of the organisation who has published this information
Copyright	S	The details of any copyright on this information
Identifier	S	A unique name that identifies this Site file
Keywords	SS	Keywords that can be helpful when searching for information in this file
Date Modified	D	The date the Site was last modified or changed
Measurement errors	R, R, R	The measurement error value used for each measurement type: position, depth, distance
Distance units	S	The distance units used for display
Artefact units	S	The measurement units used for recording artefacts
Speed units	S	The speed units used for display
Weight units	S	The weight units used for display
Depth or Height	S	Z axis measurements are displayed as depth (positive down) or height (positive up)
Co-ordinate Frame	S	This is the co-ordinate frame used to display position co-ordinates
Projection	S	The name of the map projection used for this site, Local grid or Universal Transverse Mercator (UTM)
Datum	S	The name of the geodetic datum used for this site
UTM Zone	I	The Universal Transverse Mercator (UTM) projection zone and hemisphere
Lat/Long degrees format	S	Angle given as degrees, degrees and minutes or degrees, minutes and seconds
File Name	S	The site file name
Folder	S	The folder where the site file is stored
Date Created	D	The date the Site file was created
Notes	SS	Used for recording any other information about the object not covered in the other properties

#### Note: Site Code

The Site Code is a unique code name used to identify the site itself. The code is not usually shown but is attached to the names of objects when they are exported. The Site Code is used to help differentiate between an Artefact called 'A0001' on the *Mary Rose* site and one with the same name found on, say, the *Monitor* ironclad.

#### 3.1.3 Contains

PROJECTS

## 3.2 Project

### 3.2.1 Description

The Site object can contain one or more Projects and these are used to collect together sets of Layer objects. Project objects can be used to group together a number of Layers that record all the work done in a particular excavation season, fieldwork session or survey.

### 3.2.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Description	SS	A description of the object
Notes	SS	Used for recording any other information about the object not covered in the other properties

### 3.2.3 Contains

LAYERS

## 3.3 Layer

### 3.3.1 Description

Layers can be used to collect together objects of the same or different types that are related in some way. For example, a Layer can be used to contain all the cannons found on the site, all the Artefacts found in a single trench or all the primary control points used on the site. The layering concept is similar to the transparent overlays used in many drawing programs so it allows you to view and plot related aspects of the Site separately or in combination.

### 3.3.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Parent	L	The name of the PROJECT that contains this Layer
Description	SS	A description of the object
Notes	SS	Used for recording any other information about the object not covered in the other properties

#### Note: Layer Types

The different types of Layers are used to collect together different kinds of objects:

Survey Layer	Survey points and measurements
General Layer	Drawing objects such as lines and points, images, Targets, Wrecks and Samples
Artefact Layer	Artefacts, Features and Sectors
Data Layer	Data points

### 3.3.3 Contains

SPATIAL OBJECTS

## 3.4 Manager

### 3.4.1 Description

Managers have a similar role to Layers but Managers act as containers for collections of objects that do not get shown on the Chart and have no position co-ordinates. These objects are only seen when exporting data in particular file formats such as XML.

### 3.4.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name

### 3.4.3 Contains

NON-SPATIAL OBJECTS

## 3.5 Spatial Objects

### 3.6 Artefact

#### 3.6.1 Description

Artefact objects are used to record information about finds. A single type of Artefact object is used to record information about many different kinds of finds. The basic information applies to all types of finds but information specific to a particular type of find can be recorded in the Notes.

#### 3.6.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this Artefact
Position	P	This is the 3D position of the primary reference point on the object
Heading	R	The heading of the object
Previous Name	S	The previous name or names for this object
Object Class	W	The purpose for which the object was made, such as 'ordnance'. Uses ARCH OBJECT CLASS wordlist
Object Type	W	The name by which the object is known, such as 'spoon' Uses ARCH OBJECT TYPE wordlist
Material	W	The primary material the object is made of Uses ARCH MATERIAL wordlist
Description	SS	A description of the object
Dive Found	L	The name of the DIVE LOG on which the object was first found
Date Found	D	The date on which the object was found
Dive Recovered	L	This is the name of the DIVE LOG when the object was recovered
Date Recovered	D	The date on which the object was recovered
Collect Method	W	The method used to recover the object Uses ARCH COLLECT METHOD wordlist
Recovery Reference	S	This is the name or reference for the container in which the artefact was recovered
Recorded By	L	The name of the CONTACT who recorded this object
Length	R	The length or longest dimension of the artefact
Width	R	The width of the artefact at its widest point
Diameter	R	The diameter of the artefact at its widest point, if applicable
Height	R	The height or thickness of the artefact
Weight	R	The weight of the artefact
Condition	W	An estimate of the condition of the artefact Uses ARCH CONDITION wordlist
Completeness	W	An estimate of the completeness of the artefact as a percentage Uses ARCH COMPLETENESS wordlist
Number of Items	I	The number of items associated with this finds record, used for bulk finds
Associated By	W	How the Artefact is associated with another object Uses ARCH ASSOCIATION wordlist
Associated With	L	The other OBJECT associated with this Artefact. Where multiple associations exist relate this Artefact with another Artefact or Feature that contains it
Part Number	I	The part number for this Artefact, there may be multiple parts on separate finds records
Location Description	S	This is a description for the location of the object which may include a trench name, a site grid reference or a text description.
Seabed Type	W	The type of seabed in which the artefact was found Uses SEABED TYPE wordlist
Location Type	W	The type of location for the Artefact such as inboard or outboard

Conservation Reference	S	The conservation reference number
Pre-Treatment	W	The primary conservation pre-treatment given to the Artefact Uses ARCH PRETREATMENT wordlist
Storage Medium	W	The medium in which the Artefact is stored Uses ARCH STORAGE MEDIUM wordlist
Storage Location	W	The place the Artefact is stored Uses ARCH STORAGE LOCATION wordlist
Provisional Date	D	A provisional date given to the object
Museum Name	S	The name of the museum the Artefact was sent to
Date to Museum	D	The date the Artefact was shipped to the museum
Notes	SS	Used for recording any other information about the object not covered in the other properties

### 3.6.3 Links

The links to other objects include:

Name	No	Description
IMAGE	0..n	Links to zero or more Image objects
SOURCE	0..n	Links to zero or more Source objects
SAMPLE	0..n	Links to zero or more Sample objects
SURVEY POINT	0..2	Links to zero or 2 Survey Point objects
DISTANCE	0..1	Links to zero or 1 Distance measurements

### 3.6.4 Associations

Can be associated with another ARTEFACT, a FEATURE or a SECTOR

### 3.6.5 Layer

This object can be added to an Artefact Layer

## 3.7 Feature

### 3.7.1 Description

Features help record the relationship of artefacts and other cultural remains to each other and the situation in which they are found. Feature objects can be used to represent such things as large concretions, areas containing particular deposits or the 'ghost' remains of a container that has long since disappeared leaving just the contents.

### 3.7.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this Artefact
Description	SS	A description of the object
Position	P	This is the 3D position of the primary reference point on the object
Heading	R	The heading of the object
Description	SS	A description of the object
Associated By	W	How the Artefact is associated with another object Uses ARCH ASSOCIATION wordlist
Associated With	L	The other OBJECT associated with this Artefact. Where multiple associations exist relate this Artefact with another Artefact or Feature that contains it
Length	R	The length or longest dimension of the object
Width	R	The width of the object at its widest point
Height	R	The height or thickness of the object
Interpretation	S	The interpretation what the Feature is or was
Provisional Date	S	A provisional date given to the object
Phase	S	The phase of the object, see below
Dive Allocated	L	The name of the DIVE LOG on which the object was allocated
Date Allocated	D	The date on which the object was allocated
Recorded By	L	The name of the CONTACT who recorded this object
Location Description	S	This is a description for the location of the object which may include a trench name, a site grid reference or a text description.
Notes	SS	Used for recording any other information about the object not covered in the other properties

#### Note: Phase

A conceptual unit used in archaeology to organize time. Phases are characterized by the common use of a certain technology, decoration style or other aspect of artefact manufacture across a region.

### 3.7.3 Links

The links to other objects include:

Name	No	Description
IMAGE	0..n	Links to zero or more Image objects
SOURCE	0..n	Links to zero or more Source objects
SAMPLE	0..n	Links to zero or more Sample objects
SURVEY POINT	0..2	Links to zero or 2 Survey Point objects
DISTANCE	0..1	Links to zero or 1 Distance measurements

### 3.7.4 Associations

Can be associated with another FEATURE, an ARTEFACT or a SECTOR

### 3.7.5 Layer

This object can be added to an Artefact Layer

## 3.8 Sector

### 3.8.1 Description

Sectors can be used to represent areas within a site or collections of Artefacts and Features. For example, a Sector can be used to represent a particular area of seabed or to represent the extents of a trench. As well as providing a graphical representation of the area on the site plan it is possible to associate Artefacts and Features with this Sector providing information about relationships between these objects.

### 3.8.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this Artefact
Position	P	This is the 3D position of the primary reference point on the object
Heading	R	The heading of the object
Description	SS	A description of the object
Associated By	W	How the Artefact is associated with another object Uses ARCH ASSOCIATION wordlist
Associated With	L	The other OBJECT associated with this Artefact. Where multiple associations exist relate this Artefact with another Artefact or Feature that contains it
Date Allocated	D	The date on which the object was allocated
Recorded By	L	The name of the CONTACT who recorded this object
Location Description	S	This is a description for the location of the object which may include a trench name, a site grid reference or a text description.
Notes	SS	Used for recording any other information about the object not covered in the other properties

### 3.8.3 Links

The links to other objects include:

Name	No	Description
IMAGE	0..n	Links to zero or more Image objects
SOURCE	0..n	Links to zero or more Source objects
SAMPLE	0..n	Links to zero or more Sample objects
SURVEY POINT	0..2	Links to zero or 2 Survey Point objects
DISTANCE	0..1	Links to zero or 1 Distance measurements

### 3.8.4 Associations

Can be associated with another SECTOR

### 3.8.5 Layer

This object can be added to an Artefact Layer

## 3.9 Sample

### 3.9.1 Description

Sample objects are used to record information about samples taken from the site.

### 3.9.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this object
Position	P	This is the 3D position of the primary reference point on the object
Sample Type	W	The Sample type, such as Sediment or Environmental Uses SAMPLE TYPE wordlist
Description	SS	A description of the object
Reason for Sampling	S	The reason the Sample was collected
Dive Found	L	The name of the DIVE LOG on which the object was first found
Date Found	D	The date on which the object was found
Location Description	S	This is a description for the location of the object which may include a trench name, a site grid reference or a text description.
Weight	R	The weight of the Sample in the current weight units
Sent To	S	The name of the person or organisation the Sample was sent to
Analysis Date	S	The date calculated from analysis of the sample (if applicable)
Material	W	The material type identified from the Sample Uses ARCH MATERIAL wordlist
Notes	SS	Used for recording any other information about the object not covered in the other properties

### 3.9.3 Links

None

### 3.9.4 Layer

This object can be added to a General Layer

### 3.10 Survey Point

#### 3.10.1 Description

Survey Point objects are used to record information about control and detail points used in the survey. These points are used to position Artefacts, structure and any other object whose position has been recorded. All measurements are made at or between Survey Points.

#### 3.10.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this object
Description	SS	A description of the object
Position	P	This is the 3D position of the primary reference point on the object
Position Error	R, R, R	This is the current estimate of the position error for the point, or an estimate of the accuracy of the computed position given as the dimensions (semi-major, semi-minor) and orientation (theta) of an ellipse and a Z-axis error
Status	S	This shows the current status of the point; Used, Not Used or Ignored
Is Fixed	B	Determines if the position of this Point will remain fixed during the next adjustment. The position of the point will not be moved and the current estimate of position error will not be altered
Dive Reference	L	The DIVE LOG on which the point was installed or positioned

#### 3.10.3 Links

The links to other objects include:

Name	No	Description
DIVE LOG	0..n	Links to one Dive Reference

#### 3.10.4 Layer

This object can be added to a Survey Layer

### 3.11 Target

#### 3.11.1 Description

Targets are used to record information about anomalies found during search operations or geophysical survey work. These objects can be used to record the position, size and shape of sidescan sonar targets, the position, size and estimated mass of magnetometer targets as well as the position of targets found during visual or other searches.

#### 3.11.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this object
Position	P	This is the 3D position of the primary reference point on the object
Target Type	W	Target type such as magnetometer, visual, sidescan sonar Uses TARGET TYPE wordlist
Priority	S	Target importance – Low, medium, High
Description	S	A description of the object
Reference	S	The runline number or some other reference for the target
Position Accuracy	R	An estimate of the accuracy of the given position. This sets the radius of the position accuracy circle shown on the chart
Date Valid	D	The date and time the target was recorded
Length	R	The dimensions of a sidescan sonar target
Width	R	The dimensions of a sidescan sonar target
Height	R	The dimensions of a sidescan sonar target
Heading	R	The heading or orientation of a sidescan sonar target
Field Strength	R	The magnetic field strength of a magnetometer target
Water Depth	R	The depth of water over the Target
Sensor Depth	R	The depth of the towfish when making the measurements
Sensor Height	R	The height of the towfish above the seabed
Half Width	R	The half-width of a magnetometer target
Size	R	An estimate of the size of a magnetometer target in the current weight units
Notes	SS	Used for recording any other information about the object not covered in the other properties

#### 3.11.3 Links

The links to other objects include:

Name	No	Description
IMAGE	0..n	Links to zero or more Image objects
SOURCE	0..n	Links to zero or more Source objects

#### 3.11.4 Layer

This object can be added to a General Layer

## 3.12 Wreck

### 3.12.1 Description

Wreck objects can be used to record information about ship and aircraft wrecks – both located wrecks and those that have been recorded but have not yet been found. Some of the properties relate only to wreck sites that have been found and investigated while other properties only relate to wrecks that are known. Both types of information are available in one Wreck object as for some wreck sites the physical remains and the history are known.

### 3.12.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this object
Position	P	This is the 3D position of the primary reference point on the object
Position Accuracy	R	An estimate of the accuracy of the given position. This sets the radius of the position accuracy circle shown on the chart
Location Description	S	This is a description for the location of the object which may include a trench name, a site grid reference or a text description.
Reference	S	A general reference number or code for the wreck
Date found	D	The date the wreck was located
Seabed Type	W	The type of seabed the Wreck was found in Uses SEABED TYPE wordlist
Burial Extent	W	The extent of burial of the Wreck Uses SITE BURIAL EXTENT wordlist
Site Energy	W	The average energy level around the Wreck Uses SITE ENERGY wordlist
Site Exposure	W	The degree of exposure such as submerged or inter-tidal Uses SITE EXPOSURE wordlist
Site Integrity	W	The integrity of the wreck such as scattered or intact Uses SITE INTEGRITY wordlist
Site File	F	File name and path to a linked Site Recorder file
Craft Type	S	The type of this craft or vessel
Date Built	D	The date the craft was built
Date Lost	D	The date the craft was lost
Period	W	The historical period of the craft Uses HISTORICAL PERIOD wordlist
Construction	W	The primary method(s) of construction Uses CRAFT CONSTRUCTION wordlist
Propulsion	W	The primary method(s) of propulsion Uses CRAFT PROPULSION wordlist
Manner of Loss	W	The way in which the craft was lost Uses CRAFT LOSS wordlist
Nationality	S	The nationality of the craft
Port of Registration	S	The port the craft was registered at
Port of Departure	S	The port the vessel departed from on its final voyage
Destination	S	The port the vessel was heading to on its last voyage
Hull Length	R	The dimensions of the craft
Hull Breadth	R	The dimensions of the craft
Hull Draft	R	The dimensions of the craft
Displacement	R	The displacement of the hull
Cargo	SS	The cargo carried at the time of loss
Armament	SS	The armament carried at the time of loss
Crew	SS	The crew at the time of loss
Builder	S	Where and who built the vessel
Master	S	The master of the vessel
Owners	S	The owners of the vessel

Notes	SS	Used for recording any other information about the object not covered in the other properties
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### 3.12.3 Links

The links to other objects include:

Name	No	Description
IMAGE	0..n	Links to zero or more Image objects
SOURCE	0..n	Links to zero or more Source objects

### 3.12.4 Layer

This object can be added to a General Layer

## 3.13 Image Basemap

### 3.13.1 Description

This point is used to record images such as photographs, sketches or drawings. The object can have a defined position and orientation so it is possible to identify from where a photograph was taken or a sketch made.

### 3.13.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this object
Description	SS	A description of the object
Position	P	This is the 2D position of the primary reference point on the object
Width Scale	R	The scale of the image drawn on the chart
Height Scale	R	The scale of the image drawn on the chart
Angle	R	The rotation angle of the image as drawn on the chart
File	F	The file name and path to the linked image
Show on Chart	B	With this option checked the image is visible on the chart, otherwise it is shown as an icon
Source	S	The source of the image, where it came from
Copyright	S	The copyright for the image, if any

### 3.13.3 Links

None

### 3.13.4 Layer

This object can be added to a General Layer

### 3.14 Search Area

#### 3.14.1 Description

Search Areas are used for guiding divers, boats or ROVs over pre-defined tracks for search or mapping work. The search area is divided up into individual lanes or runlines with a specified distance apart. Lead in and lead-out lines extend the runlines beyond the search area to help keep the boat on track when towing sensors on long tow cables.

#### 3.14.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this object
Position	P	This is the 2D position of the primary reference point on the object
Heading	R	The heading of the object
Length	R	The size of the search area in current distance units
Width	R	The size of the search area in current distance units
Line Spacing	R	The spacing between runlines over the Search Area
Run In/Out Length	R	The length of the run in and run out lines
Arrival Circle Radius	R	The size of the arrival circle
Notes	SS	Used for recording any other information about the object not covered in the other properties

#### 3.14.3 Links

None

#### 3.14.4 Layer

This object can be added to a General Layer

## 3.15 Drawing Frame

### 3.15.1 Description

Drawing frames are used to record small areas of the site in great detail. A frame is placed over the area to be recorded and the diver draws visible features on a scale drawing or directly on to a clear sheet mounted on the drawing frame itself.

### 3.15.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this object
Description	SS	A description of the object
Position	P	This is the 3D position of the primary reference point on the object
Heading	R	The heading of the object
Length	R	The dimensions of the frame in the current distance units
Width	R	The dimensions of the frame in the current distance units
Spacing	R	The distance between the strings on the frame. The spacing has to be the same along the length and the width
Description	S	A description of the object
Notes	S	Used for recording any other information about the object not covered in the other properties

### 3.15.3 Links

None

### 3.15.4 Layer

This object can be added to a Survey Layer

## 3.16 Fix Point

### 3.16.1 Description

Fix points are used to record positions during tracking

### 3.16.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Layer	L	The name of the LAYER that contains this object
Description	SS	A description of the object
Position	P	This is the 3D position of the primary reference point on the object
Position Accuracy	R	An estimate of the accuracy of the position of the Fix Point
Valid Time	T	The time and date the Fix Point was created
Fix Type	S	The type of fix used to create the point: Single fix, average fix or timed fix
Number Averaged	I	For average fixes this is the number of positions used in the average

### 3.16.3 Links

None

### 3.16.4 Layer

This object can be added to a General Layer

### 3.17 Data Point

#### 3.17.1 Description

This represents a measurement taken at a particular point on the site such as a water depth, a magnetometer reading or the depth of sand cover over an object.

#### 3.17.2 Properties

Name	Ty	Description
Layer	L	The name of the LAYER that contains this object
Position	P	This is the 3D position of the primary reference point on the object
Value	R	The value or number associated with the point
Valid Time	D	The time and date that the Data Point was created
Timestamp	D	The timestamp for the data point in milliseconds

#### 3.17.3 Links

None

#### 3.17.4 Layer

This object can be added to a Data Layer

## 4 Event Objects

### 4.1 Event

#### 4.1.1 Description

Event objects are used to record activities such as excavations, watching briefs and sampling.

#### 4.1.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Description	SS	A description of the object
Activity Type	W	The activity recorded by this Event Uses EVENT TYPE wordlist
Title	S	A title for the Event
Start Date	D	The date the Event was started
Organisation	S	The organisation(s) associated with the Event
Notes	SS	Used for recording any other information about the object not covered in the other properties

#### 4.1.3 Links

The links to other objects include:

Name	No	Description
IMAGE	0..n	Links to zero or more Image objects
SOURCE	0..n	Links to zero or more Source objects
CONTACT	0..n	Links to zero or more Contact objects

#### 4.1.4 Layer

None

## 4.2 Dive Log Event

#### 4.2.1 Description

Dive Logs and ROV Logs are used to record information about dives undertaken on the Site. Dive Logs are used to record dives made by divers and ROV logs are used to record dives made by Remotely Operated Vehicles (ROVs), the only differences are the names of the people involved.

#### 4.2.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Diver 1 / Pilot	L	This is the name of the first diver or ROV pilot CONTACT
Diver 2 / ROV	L	This is the name of the second diver or the ROV CONTACT
Supervisor	L	This is the name of the dive or ROV Supervisor CONTACT
Time In	D	This is the time and date on which the dive started
Time Out	D	This is the time and date on which the dive stopped
Duration	S	The duration of the dive
Maximum Depth	R	This is the maximum depth reached on this dive in the current distance units
Task	W	This is the primary task to be completed on the dive Uses DIVE TASK wordlist
Location Description	S	A description of the primary location for the dive

Visibility	W	This is the typical visibility on this dive Uses DIVE VISIBILITY wordlist
Current	W	The typical water current on the dive Uses DIVE CURRENT wordlist
Weather	S	The weather conditions during the dive
Dive Platform	S	The vessel or platform used for the dive
Gas Mix	W	The primary gas mix used during the working part of the dive Uses DIVE GAS MIX wordlist
Decompression	S	Any decompression completed during the dive
Search Radius	R	The radius of search completed during the dive
Notes	SS	Used for recording any other information about the object not covered in the other properties

#### 4.2.3 Links

The links to other objects include:

Name	No	Description
IMAGE	0..n	Links to zero or more Image objects
FIX POINT	0..n	Links to zero or more Fix Point objects
CONTACTS	0..n	Three Contact objects for Diver 1, Diver 2, Supervisor

#### 4.2.4 Layer

None

## 5 Measurement Objects

### 5.1 Depth/Height Measurement

#### 5.1.1 Description

Depth or height measurement objects are used to define the measured depth of survey points. The measurements can be depths where the values are positive downwards or heights where the values are positive upwards. Measurements made underwater are usually depths from a dive computer where the depth increases downwards. For inter-tidal and terrestrial work heights are more often used.

#### 5.1.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Description	SS	A description of the object
From Point	L	The name of the SURVEY POINT the measurement was made at or from
Value	R	The measured value
Computed Value	R	The value of the measurement computed by the adjustment. This is a product of the adjustment process and is not required when importing measurements
Residual	R	The difference between the measured value and the computed value (measured – computed)
w-Test value	R	The normalised residual, the residual divided by the measurement error. This is a product of the adjustment process and is not required when importing measurements
Estimated Error	R	An estimate of the measurement error associated with this type of measurement in the current distance units. Distance measurements are typically 0.05m, depth measurements 0.1m and position measurements are defined by the accuracy of the measuring instrument.
Correction	R	Any correction to be applied to the raw value before processing
Status	S	The status of the measurement after processing
Is Ignored	B	Set if the measurement is to be ignored when processing the measurements
Dive Reference	L	The name of the DIVE LOG when the measurement was made. This associates the measurement with a Dive Log and hence with the Diver or Divers on that dive.

#### 5.1.3 Links

The links to other objects include:

Name	No	Description
SURVEY POINT	0..1	Used for From Point
DIVE LOG	0..n	Links to one Dive Reference

#### 5.1.4 Layer

Measurement behaviour defined by linked Survey Points

## 5.2 Position Measurement

### 5.2.1 Description

Position measurements are used to define the measured position of survey points. Position measurements are most often provided by GPS receivers or underwater acoustic positioning systems.

### 5.2.2 Properties

As Depth Measurement but including:

Name	Ty	Description
Raw value Y	R	The value of the measurement in both the X and Y axes. These may be defined in grid coordinates as Eastings and Northings or in geographical coordinates as Latitude and Longitude.
Computed Value Y	R	The value of the measurement computed by the adjustment in the Y axis
Residual Y	R	The difference between the measured value and the computed value (measured – computed) in the Y axis
w-Test Y	R	The normalised residual in the Y axis

### 5.2.3 Links

The links to other objects include:

Name	No	Description
SURVEY POINT	0..1	Used for From Point
DIVE LOG	0..n	Links to one Dive Reference

### 5.2.4 Layer

Measurement behaviour defined by linked Survey Points

## 5.3 Distance Measurement

### 5.3.1 Description

These measurements are used to add direct distance measurements between Survey Points, usually taken using a tape measure.

### 5.3.2 Properties

As Depth Measurement but including:

Name	Ty	Description
To Point	L	The name of the SURVEY POINT the distance measurement was made to. The measurement is made from the From Point to the To Point.
Is Reversed	B	Reverses the zero end of the tape

#### Note: Is Reversed Property

Site Recorder defines the zero end of a tape measurement to be at the Survey Point that comes first in a natural sort order. For a measurement made between points CP01 and CP02 the zero end will be at CP01, for a measurement made between points E and F the zero will be at point E. However, offset and tie measurements may be made with the tape reversed, to allow for this the Is Reversed property has been added.

### 5.3.3 Links

The links to other objects include:

<b>Name</b>	<b>No</b>	<b>Description</b>
SURVEY POINT	0..2	Used for From Point and To Point
DIVE LOG	0..n	Links to one Dive Reference

### 5.3.4 Layer

Measurement behaviour defined by linked Survey Points

## 5.4 Offset Measurement

### 5.4.1 Description

Offset measurements are used to position survey points relative to a tape baseline between two Survey Points. An offset measurement is a distance measured at right angles to the baseline.

### 5.4.2 Properties

As Depth Measurement but including:

Name	Ty	Description
Baseline	L	The name of the DISTANCE baseline the offset is measured from
Along	R	The measurement along the baseline from the From Point to where the Offset measurement meets the baseline
Offset	R	The perpendicular distance from the baseline to the point being positioned
Is Right	B	Set if the offset point is to the right of the baseline when looking along the baseline from the From Point to the To Point
Offset Type	S	The type of offset measured, horizontal or vertical

### 5.4.3 Links

The links to other objects include:

Name	No	Description
SURVEY POINT	0..1	Used for To Point
DISTANCE	0..1	Used for Baseline
DIVE LOG	0..n	Links to one Dive Reference

### 5.4.4 Layer

Measurement behaviour defined by linked Survey Points

## 5.5 Ties Measurement

### 5.5.1 Description

Ties measurements are used to position survey points relative to a tape baseline between two Survey Points. A tie measurement is a distance measured from the baseline to the survey point, at least two ties are required to position the point.

### 5.5.2 Properties

As Depth Measurement but including:

Name	Ty	Description
Baseline	L	The name of the DISTANCE baseline the ties are measured from
Along 1	R	The measurement along the baseline from the From Point to where the first Offset measurement meets the baseline
Offset 1	R	The first distance from the baseline to the point being positioned
Along 2	R	The measurement along the baseline from the From Point to where the second Offset measurement meets the baseline
Offset 2	R	The second distance from the baseline to the point being positioned
Along Check	R	The measurement along the baseline from the From Point to where the check Offset measurement meets the baseline
Offset Check	R	The check distance from the baseline to the point being positioned
Is Right	B	Set if the offset point is to the right of the baseline when looking

		along the baseline from the From Point to the To Point
Residual	R	The difference between the check distance measured and computed values (measured – computed). The computed measurement is calculated from the position of the offset point as given by the offset 1 and Offset 2 measurements

**5.5.3 Links**

The links to other objects include:

Name	No	Description
SURVEY POINT	0..1	Used for To Point
DISTANCE	0..1	Used for Baseline
DIVE LOG	0..n	Links to one Dive Reference

**5.5.4 Layer**

Measurement behaviour defined by linked Survey Points

**5.6 Radial Measurement**

**5.6.1 Description**

A radial measurement is used to position a Survey Point relative to another Survey point using a distance measurement and an azimuth angle, usually referenced to magnetic North.

**5.6.2 Properties**

As Depth Measurement but including:

Name	Ty	Description
To Point	L	The name of the SURVEY POINT the distance measurement was made to. The measurement is made from the From Point to the To Point.
Distance	R	The measured distance from the From Point to the To Point
Azimuth	R	The angle between site plan North and the line joining the From Point to the To Point
Is Forward	B	Set if the angle is measured from the From Point to the To Point, otherwise it is measured in the reverse direction.

**5.6.3 Links**

The links to other objects include:

Name	No	Description
SURVEY POINT	0..2	Used for From Point and To Point
DIVE LOG	0..n	Links to one Dive Reference

**5.6.4 Layer**

Measurement behaviour defined by linked Survey Points

## 6 Other Objects

### 6.1 Contact

#### 6.1.1 Description

Contact objects are used to record details about who works on or has been involved with the project along with their contact information and capabilities.

Information about people can be added to the Site as Contacts so you can keep information about people who have worked on the site, have provided information or are useful contacts. People are also associated with Dive Logs as divers or dive supervisors.

#### 6.1.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Initials	S	The initials are used as a short form way of identifying a Contact, this is used to identify changes and additions they have made to the Site. The initials cannot be the same as the name of any other object
Organisation	S	The name of the organisation the Contact is associated with
Role	W	The role of the Contact in this project Uses PERSON ROLE wordlist
Address	S	The postal or mailing address for the Contact
Telephone #1	S	The telephone number for the Contact
Telephone #2	S	The telephone number for the Contact
Email	S	The email address for the person
Qualifications	S	Any relevant qualifications held by this Contact
Notes	SS	Used for recording any other information about the object not covered in the other properties

#### 6.1.3 Links

None

#### 6.1.4 Layer

None

## 6.2 Image

### 6.2.1 Description

Site Recorder manages photographs, scanned drawings, video clips and other pictures using Image objects. These objects not only record basic information about the image but can also provide a link to the image file if it is available on the computer or network. The link provides a way to display or edit the image or play the video clip from within Site Recorder.

### 6.2.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Description	SS	A description of the object
File Type	S	Image file type such as TIFF, JPEG, GIF
Image Type	W	The kind of image such as Photograph, scanned document Uses IMAGE TYPE wordlist
Image Subject	W	The subject of the image such as a dive log scan, artefact photo Uses IMAGE SUBJECT wordlist
File Path	F	The file name and path on the computer or network to the linked image
Image Source	S	The source of the image, where it came from
Copyright	S	The copyright for the image, if any

### 6.2.3 Links

None

### 6.2.4 Layer

None

## 6.3 Source

### 6.3.1 Description

Documents, reports, letters and other sources can be recorded using Source objects. As with Images, Source objects record information about the document but also provide a link to the document if available on the computer or network. The link provides a way to display or edit the document from within Site Recorder.

### 6.3.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Description	SS	A description of the object
Title	S	The title of the Source
Document	S	The name of the document that contains the paper or article
Author	S	The author of the Source
Source Type	W	The type of source such as monograph, article, unpublished etc Uses the SOURCE TYPE wordlist
Page	S	The pages referenced
Date Published	S	The date of publication
Catalogue Reference	S	A catalogue reference such as ISBN
Publisher	S	The publisher of the Source
Copyright	S	The copyright for the Source, if any
Location	S	The location for the source such as library or owner
File Path	F	The file name and path to the linked source if electronic
Hyperlink	S	The URL of a web site
Notes	SS	Used for recording any other information about the object not covered in the other properties

### 6.3.3 Links

None

### 6.3.4 Layer

None

## 6.4 Task

### 6.4.1 Description

Tasks are actions to be completed or simply 'things to do'. The Tasks list can be used as a reminder of outstanding jobs to be done by the project team or as a record of work done on site.

### 6.4.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Description	SS	A description of the object
Task State	W	The current status of the task such Uses the TASK STATUS wordlist
Priority	S	The priority of the Task – Low, medium, High
Assigned To	S	The name of the Contact the task is assigned to
Created By	S	The name of the Contact who created the Task

### 6.4.3 Links

None

### 6.4.4 Layer

None

## 6.5 Logbook

### 6.5.1 Description

The Logbook can be used to record notes or any other information in text form. It is recommended that the Logbook be used for recording all Site notes so that they stay with the other Site information.

### 6.5.2 Properties

Name	Ty	Description
Name	S	This is the name for the object, see Site::Name
Description	SS	A description of the object
FilePath	F	The file name and path for the Logbook file

### 6.5.3 Links

None

### 6.5.4 Layer

None

## 7 Index

About Site Recorder .....	4	Object types .....	5
Artefact .....	13	Offset measurement .....	30
Contact .....	32	Position measurement .....	28
Data Point .....	24	Project .....	11
Date format .....	8	Property types .....	9
Depth / height measurement .....	27	Radial measurement .....	31
Distance measurement .....	28	Rationale .....	4
Dive Log Event .....	25	Sample .....	17
Drawing Frame .....	23	Search Area .....	22
Event .....	25	Sector .....	16
Feature .....	15	Site .....	10
Fix Point .....	23	Source .....	34
Height and depth .....	8	Survey Point .....	18
Image .....	33	Target .....	19
Image Basemap .....	21	Task .....	35
Layer .....	11	Ties measurement .....	30
Logbook .....	35	Units .....	7
Manager .....	12	Wordlists .....	7
Object names .....	7	Wreck .....	20