SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

GUIDANCE FOR PREPARATION OF ENTRIES FOR THE EUROPEAN DIRECTORY OF THE OCEAN-OBSERVING SYSTEM (EDIOS)

DELIVERABLE D4.6B

EMODnet European Marine Observation and Data Network

Project Acronym : SeaDataNet II
Project Full Title : SeaDataNet II: Pan-European infrastructure for ocean and marine data management
Grant Agreement Number : 283607

SEVENTH FRAMEWORK PROGRAMME

Deliverable number	Short Title
D4.6b	Guidance notes for EDIOS
Long title	
Guidance for preparation of entries for the European directory of the ocean-observing system (EDIOS)	
Short description	
The document provides guidance notes to the project partners to prepare the entries for the European directory of the ocean-observing system (EDIOS).	
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History

Version	Authors	Date	Comments
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2.0	D. Schaap, V. Tosello	28/11/2013	

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1. What is the European Directory of the Ocean-observing System (EDIOS)?

The European Directory of the Ocean-observing System (EDIOS) is an information system for marine observing stations (including moored buoys, coastal installations, seabed stations, drifting buoys, repeated sections and sampling stations, airborne repeated tracks, etc) where there are routine, repeated, and consistent long-term observations of the marine environmental conditions and where the data may be made available for use in real-time, or near real-time as well as in delayed-mode. This directory includes discovery information on location, measured parameters, data availability, responsible institutes and links to data-holding agencies.

The original EDIOS project ran from 2001 – 2004 and was an initiative of the European Global Ocean Observing System (EuroGOOS). Input was via a mixture of Metadata Input Forms (MIFs), spreadsheets and database export files. Five regional coordinators collected and collated input from 30 countries and these were checked and loaded to the EDIOS database. The front-end query and map interface was designed by MARIS.

The latest version of EDIOS (V1) is part of the SeaDataNet II project and also feeds into the EMODNet Physics pilot project. See the service at: http://www.seadatanet.org/Metadata/EDIOS
This document is intended to assist in compiling and completing EDIOS entries. Its focus is on the content of EDIOS entries and complements the User Manual (http://www.seadatanet.org/content/download/11284/75105/file/SDN2_D46_NC_UserManualforUpdatingMetadataDirectories.pdf) which explains in some detail how to produce XML files in manual or automatic mode.

EDIOS is hierarchical and has been complex to implement using ISO19115. However the Mikado software tool now includes EDIOS. Three schemas are provided: these are for (1) observing programmes, (2) series and (3) platforms. The old (V0) EDIOS entries will not be upgraded but can be retrieved also from the SeaDataNet portal as examples for producing new entries (http://www.seadatanet.org/Metadata/EDIOS).

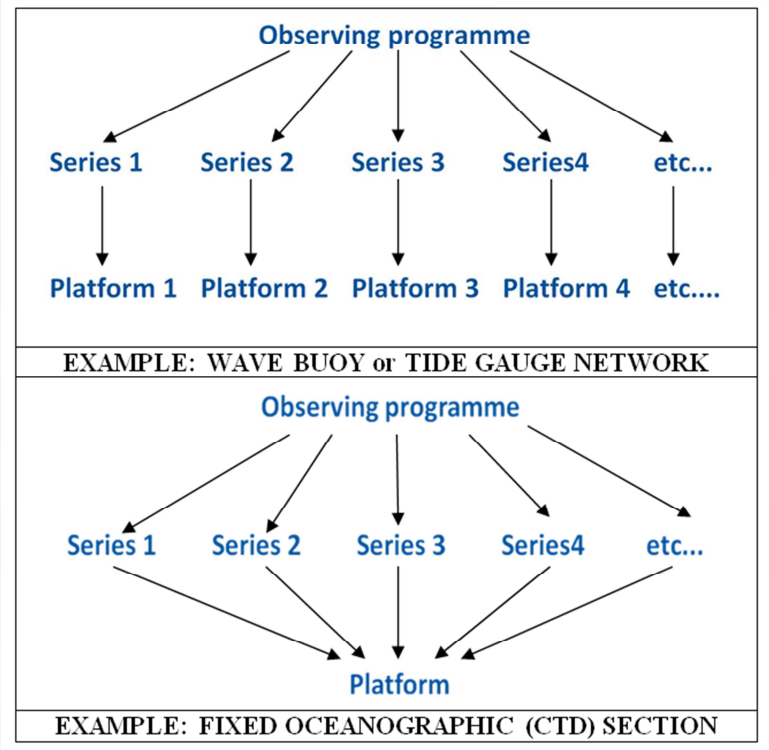
Examples of Observing Programmes

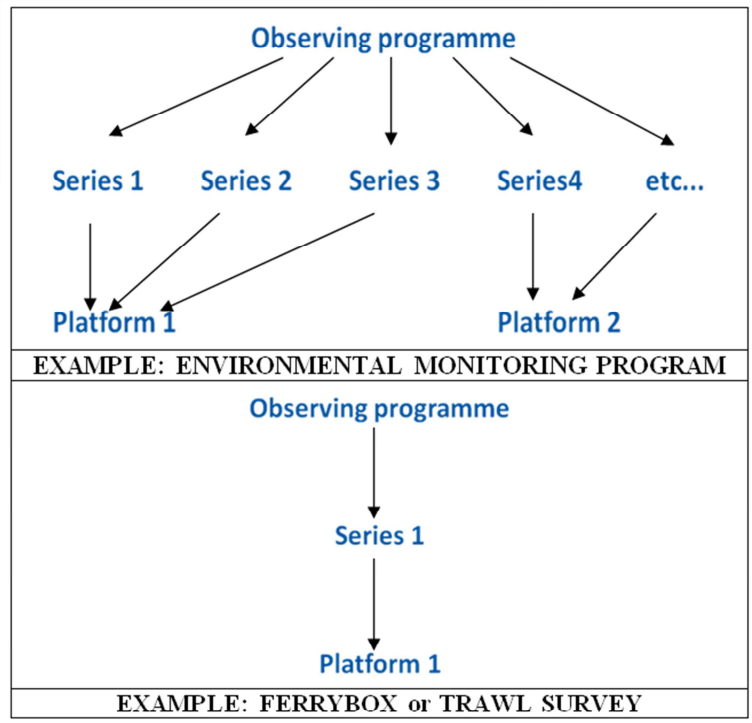
- **Swedish Real Time Oceanographic Monitoring Network - Moored Buoys (SMHI)**
- **Bathing waters monitoring programme**
- **CSEMP Shellfish Contaminants Programme**
- **RECOPESCA - Network of fishing effort and environment parameters**
- **XBT network of IRD in Atlantic and Indian Ocean**
- **Norwegian Sea Monitoring Programme Fixed Oceanographic Sections**
- **Norwegian Coast Monitoring Programme Fixed Stations and Ferry Box**
- **Mackerel Egg Survey**
- **Irish Groundfish Survey (International Bottom Trawl Survey)**
- **NIEA Cetacean Monitoring Northern Ireland**
- **Marine Turtle Entanglement Surveys**
- **Marine Environmental Monitoring Network in the North Sea and Baltic Sea**

Observing programmes may connect to series and platforms in a variety of ways. Some possible combinations are shown below. So, for example, for a Wave Buoy or Sea Level network, the observing programme would connect to a number of series, each of which is linked to an individual platform record. This contrasts with a fixed CTD section: here the programme again connects to a number of individual series, but they are all linked to the same platform – e.g. a research vessel. A further example is an environmental monitoring programme, where more than one organisation may contribute to the observing programme, so although the observing programme links to a number of series (i.e. stations), some observations may be collected by one research vessel and others by a different vessel. The fourth example given below shows the case where the observing programme has

only one series as might be the case for a FerryBox route or a fisheries survey. Note: These are just a few examples of different possibilitites; it is not intended to be comprehensive and other combinations are possible.

Examples of EDIOS observing programmes, series and platforms





2. HOW TO CREATE NEW EDIOS ENTRIES

Step 1: Prepare your XML files via the MIKADO tool in manual or automatic mode (export from your database).

As noted above, EDIOS consists of three related schemas for: observing programmes, series and platforms. You have to **first create the programmes, then the series and finally the platforms**. An EDIOS programme can relate to multiple series. Therefore an EDIOS Programme identifier is used in the EDIOS series form as the EDIOS programme reference, while the EDIOS series identifier(s) is used in the EDIOS platforms form as the EDIOS series reference. Detailed instructions how to do this can be found in the MIKADO User Manual.

As for EDMED and EDMERP, if you are not the national EDIOS coordinator, you should send your XML files to the national coordinator as they have the responsibility of managing the local EDIOS information and forwarding the XML files to the central database which is managed by BODC.

Note ► It is important that the content of the EDIOS records is as complete and comprehensive as possible, so that they will be of maximum use to those who search the Directory. To assist with this, these guidance notes describe the required content of the fields of the EDIOS XML records, which complements the information provided by the User manual and the MIKADO manual.

Note ► Do not use 'unusual' characters in filenames (e.g. ž, ð, ö, å, ê). Do not leave blank spaces in filenames – use underscore ('_') instead.

All of the fields should be completed if at all possible, but as an absolute minimum you must ensure that you have assembled the following mandatory information for generating valid XML records. The mandatory fields, listed below, are shown with red asterisks at the manual interface of MIKADO and with bold characters at the queries of the automatic mode of MIKADO.

Mandatory Observing Programme information:

- EDIOS program identifier (local identifier)
- Program acronym
- Program Name
- Start date
- Sea-areas
- Abstract
- Data Access Restriction
- Collate Centre (EDMO reference)
- Principal investigator/laboratory
- Coordinating institute (EDMO reference)

Example of an observing prgramme: MAWS – UK Met Office Marine Automatic Weather Station Network (Met Office Surface Marine Programme)

Mandatory Series information:

- EDIOS series identifier (local identifier)
- Series acronym
- Series Name
- Geographic coverage (bounding box)

- Start date
- Abstract
- Parameters
- Quality control procedures
- Collate Centre (EDMO reference)

Example of series names connected to the MAWS observing programme.: K1, K2, K3, K4, K5, etc.

Mandatory Platform information:

- EDIOS platform identifier (local identifier)
- Platform Name
- Platform class
- Platform Owner (EDMO reference)
- Collate Centre (EDMO reference)

Example of a platform connected to the MAWS observing programme through the Series, K1: moored surface buoy, K1 (MAWS Moored Buoy)

The Creation and Revision Dates are also mandatory, but are generated by MIKADO.

In addition, you have to map your metadata with the following vocabularies which are used by MIKADO for the construction of the EDIOS XML format:

- European Directory of Marine Organisations (EDMO)
- European Directory of Marine Environmental Research Projects (EDMERP)
- C19 (Sea Areas)
- P02 (Parameters Discovery Vocabulary)
- L05 (SeaDataNet Device categories)
- L06 (SeaVoX Platform Classes)
- L08(Data Access Restriction Policies)
- L12 (Parameter quality control procedures)
- L26 (EDIOS permitted sampling interval units)

MIKADO provides functionality for manual and automatic mapping. However, if you do not succeed in recognizing your metadata within the fields of the vocabularies ask for help from the corresponding scientist or contact the central vocabulary managers.

Step 2: Once all the information related to EDIOS has been completed, save the XML files locally.

Step 3: When the EDIOS XML Validation Service becomes available, validate your XML files.

Step 4: Send your XML files by email to the central Pan-European Coordinator at BODC.

The remainder of this document describes each of the fields in EDIOS; this is done in three sections:

1. Observing programmes
2. Series
3. Platforms

2.1. EDIOS OBSERVING PROGRAMME INPUT

There are 4 main tabs for the EDIOS observing programme information: 'Program', 'Chief scientist', 'Coordinating institute', and 'Point of contact'. Under the 'Program' tab, there are 7 sub-tabs: 'Identification', 'When', 'Where', 'What', 'Activity' and 'Completed by' (Figure 1 to Figure 10).

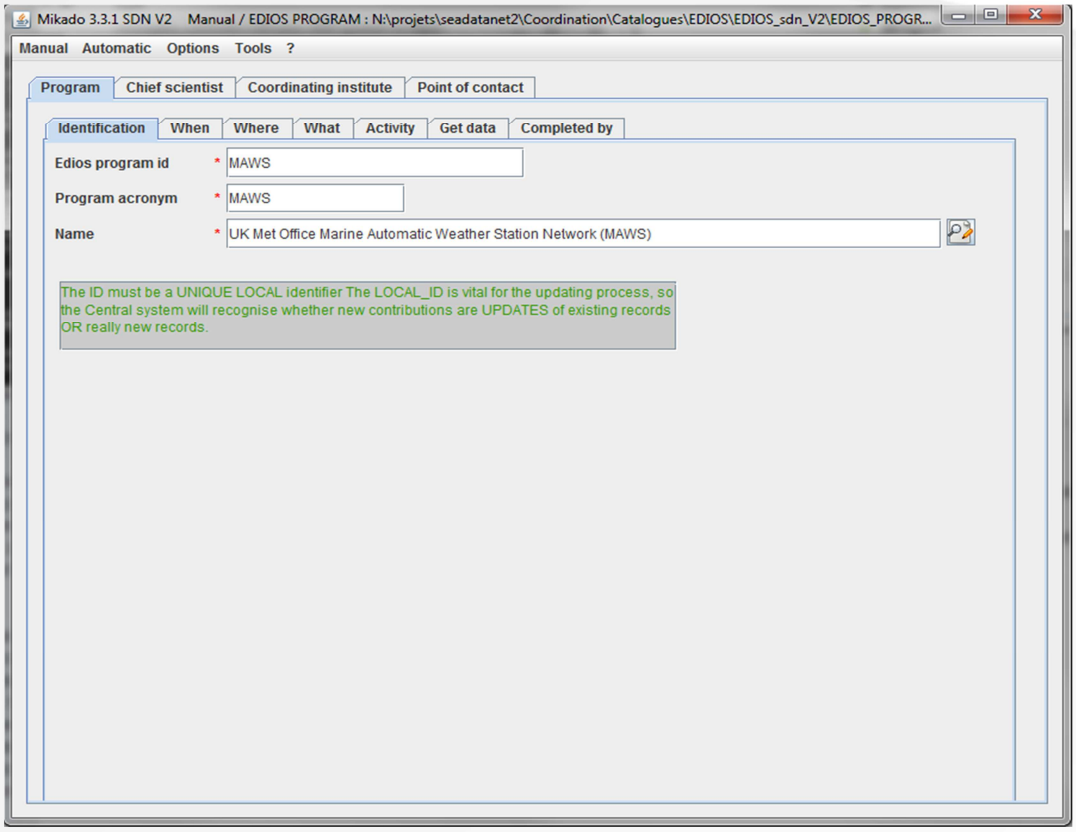


Figure 1 - EDIOS Program information window 'Identification'

Program Id (edios_observing_program_identifier): This is a mandatory field. It must be unique. Please do not use all upper case characters. **Mandatory.**

Examples of EDIOS programme identifiers (local identifier):

- MON_BH, MON_NH, MON_NH, MON_NS, …
- SMHI MOORED BUOY, SMHI TIDE GAUGE, …
- GR1, GR2, GR3, GR4, …
- RADIALES_PROGRAM, …
- UA_MedGLOSS_BS, …

Program Acronym (EDIOS PROGRAM ABBREVIATED NAME): This is a shortened version of the observing program name. [Abbreviated name of the EDIOS Observing Programme; <= 50 varchars]. **Mandatory.**

Program Name (EDIOS PROGRAM NAME): This is a mandatory field. It should be unique, and describe the observing program. Please do not use all upper case characters. [Descriptive name of the EDIOS Observing Programme; <= 200 varchars]. **Mandatory.**

Programme identification information tips

- The programme must have a name, e.g. 'Not available' or 'Unknown' are NOT acceptable names
- Programme names should be unique, e.g. NO duplicate programme names from an organisation
- Programme name should NOT be all UPPER CASE

- The programme acronym must NOT be 'Not available' or 'Unknown'
- Programme description should NOT be all UPPER CASE
- There should NOT be identical programme descriptions from the same originator

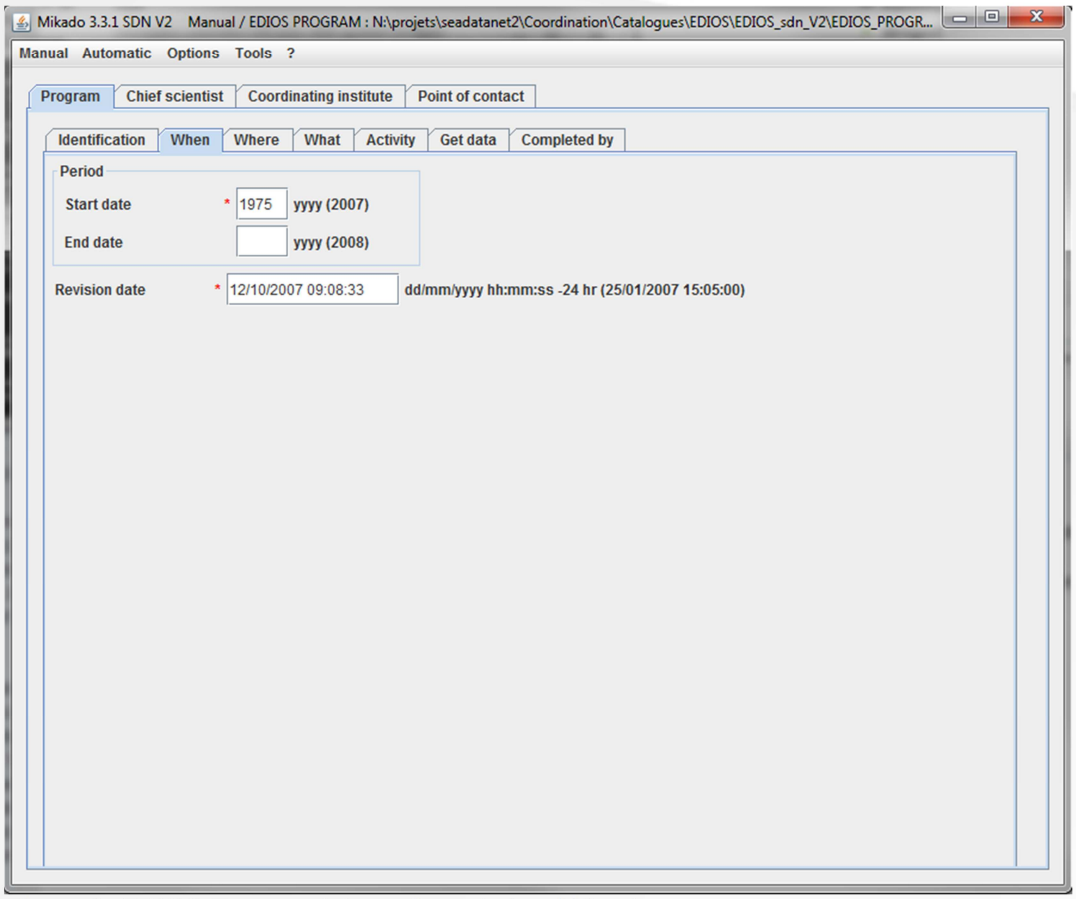


Figure 2- EDIOS Program information window 'When'

Start date (Begin Year or Date): (date in iso8601, format YYYY or YYYY/MM/DD): This is **mandatory** and should be the earliest year when observations began for the program. This does not mean when real time measurements began, but when any form of observations started.
End date (date in iso8601, format YYYY or YYYY/MM/DD): On almost all occasions this field will be left empty, as EDIOS is a directory of in-going observing programs (i.e. it is expected that the observations are continuing). It is NOT the latest date for which measurements have been received. The end date cannot be in the future.
Revision date: When using Mikado in Manual or Automatic mode this field is completed automatically.

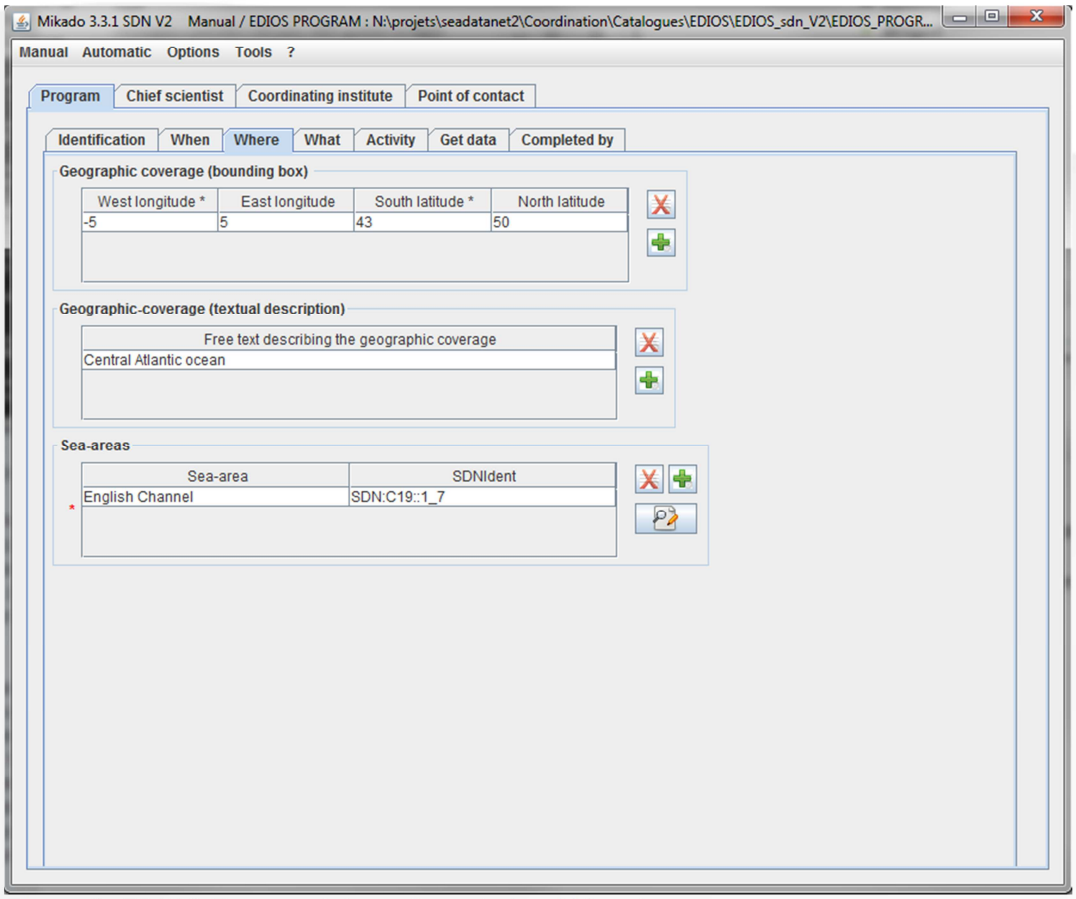


Figure 3- EDIOS Program information window 'Where'

Geographic coverage (bounding box): limits of dataset in degrees latitude and longitude. This needs to cover all of the positions included in the Series records, but it is not mandatory as the bounding box can be calculated from the Series records. Several Bounding Boxes may be provided to give a better representation of coverage. Northern latitudes and eastern longitudes are entered as positive and southern latitudes and western longitude are entered as negative. Values can be entered to 4 decimal places.

Geographic-coverage (textual description): General description of the geographic distribution of the data, using geographic names and/or latitude and longitude as appropriate. For offshore data, the ocean/sea areas should be clearly identified, while for coastal and estuarine data the description should include the name of the region/country. Maximum 2000 characters.

Select the appropriate **Sea-areas** from a list, in this case Vocabulary C19, available from:
http://seadatanet.maris2.nl/v_bodc_vocab_v2/search.asp?lib=C19 or
http://seadatanet.maris2.nl/v_bodc_vocab_v2/vocab_relations.asp?lib=C19
Only include an ocean (e.g. Atlantic, Pacific, Indian) if the data set has ocean wide coverage. **Mandatory**.

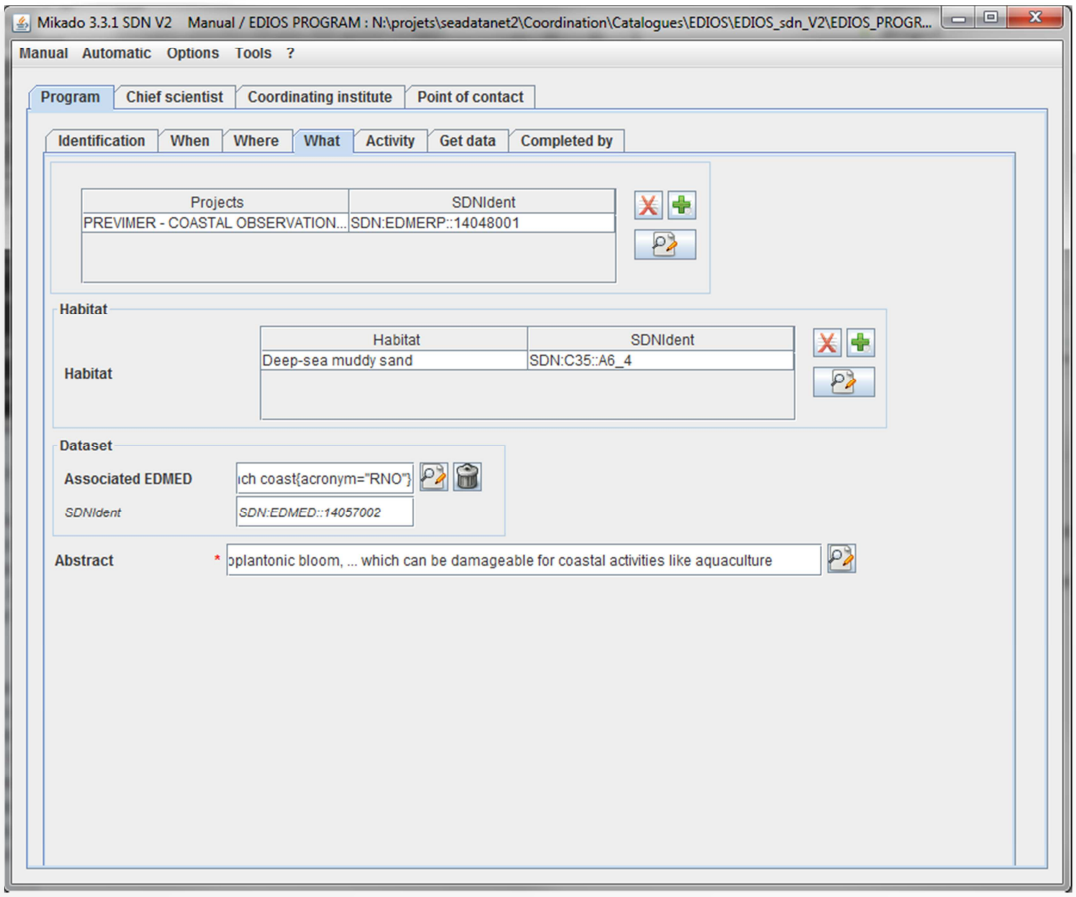


Figure 4- EDIOS Program information window 'What'

Projects: Links to the European Directory of Marine Environmental Research Projects (EDMERP). Users can select relevant projects, providing they already exist in EDMERP. Clicking on the green '+' will provide a menu of projects. If the relevant project is not included on the list, it must be added to EDMERP (see: http://www.seadatanet.org/Metadata/How-to-contribute).
Habitat: Links to lists habitat descriptions. Clicking on the '+' will provide a menu of habitats.
Dataset: If the Observing Programme is associated with an EDMED record, the EDMED Identifier should be included here.
Abstract: This is a concise description and should contain brief statements describing the observing programme. Text should **NOT** be all upper case. Please check spelling before submitting entry. The description should be unique (i.e. no two programmes should have identical descriptions). This is a **Mandatory** field. Maximum 4000 characters.
Some example abstracts are below:

- **Example 1:**
  POSEIDON is a comprehensive marine monitoring and forecasting system, that aims to improve environmental surveillance and facilitate sea transport, rescue and safety of life at sea, fishing and aquaculture, protection of the marine ecosystem, etc. POSEIDON enhanced considerably the capabilities to manage, protect and develop the marine resources of the Greek Seas and to promote Greek Operational Oceanography.

- **Example 2:**
  The Environment Agency monitors 497 marine bathing waters and 5 inland waters. Sampling is conducted 20 during May to September only.

  There are two main sets of standards for measuring bathing water quality: the minimum standard and the stricter guideline standard. All bathing waters must meet the minimum standard; the

stricter guideline standard is used by the European Bathing Waters directive to assess bathing waters across all member states.

Data held in Defra's Bathing Water Database and Environment Agency archive.
Further information at: http://www.environment-agency.gov.uk/yourenv/eff/1190084/water/213925/bathing/?lang=_e

- **Example 3:**
  Time series of physical and chemical data are generated by the BSH observational network MARNET. Here, the instrument chains are connected to special surface buoys, unmanned light vessels or fixed platforms. In contrast to moorings the data are not stored internally but transmitted directly to a land station. In general the data are received every hour by the land station and allow an up-to-date description of the state of the ocean.

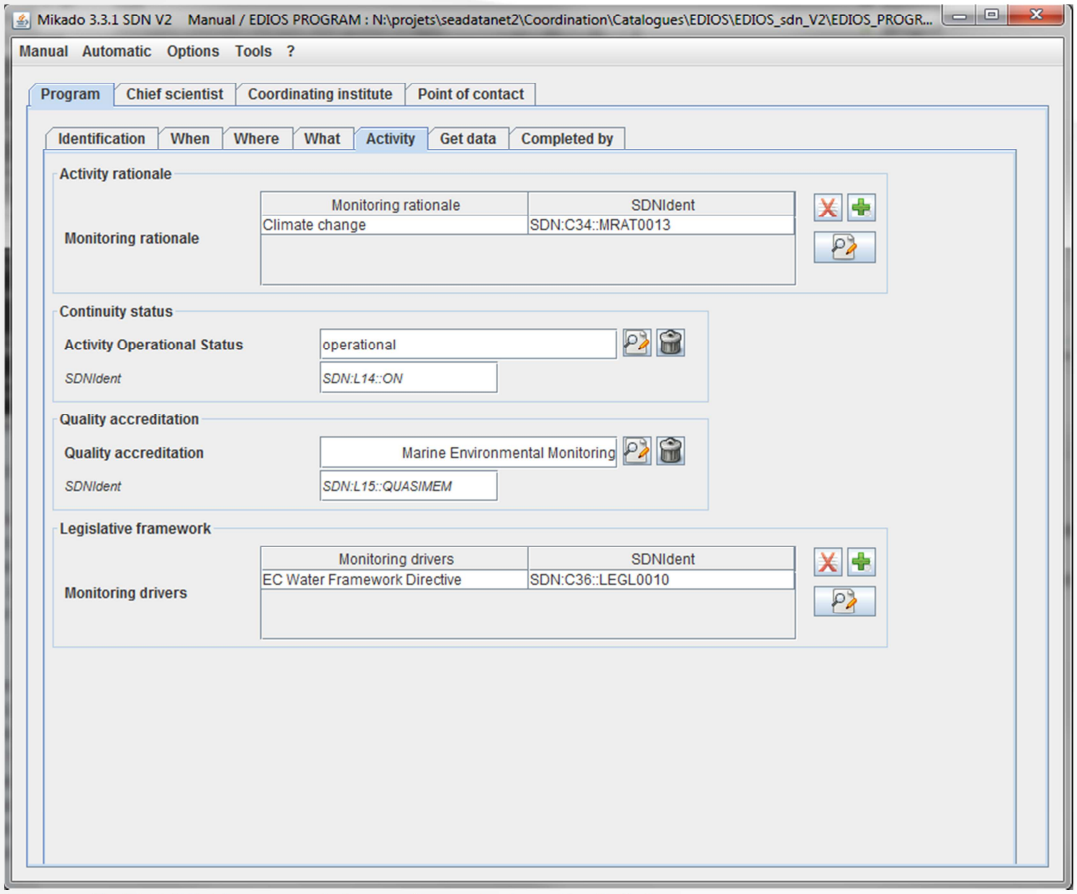


Figure 5- EDIOS Program information window 'Activity'

Monitoring rationale: Click on the icon to select the appropriate values from the list.
Continuity status: Click on the icon to select the appropriate value from the list.
Quality accreditation: Click on the icon to select the appropriate value from the list.
Legislative framework: Click on the icon to select the appropriate values from the list.

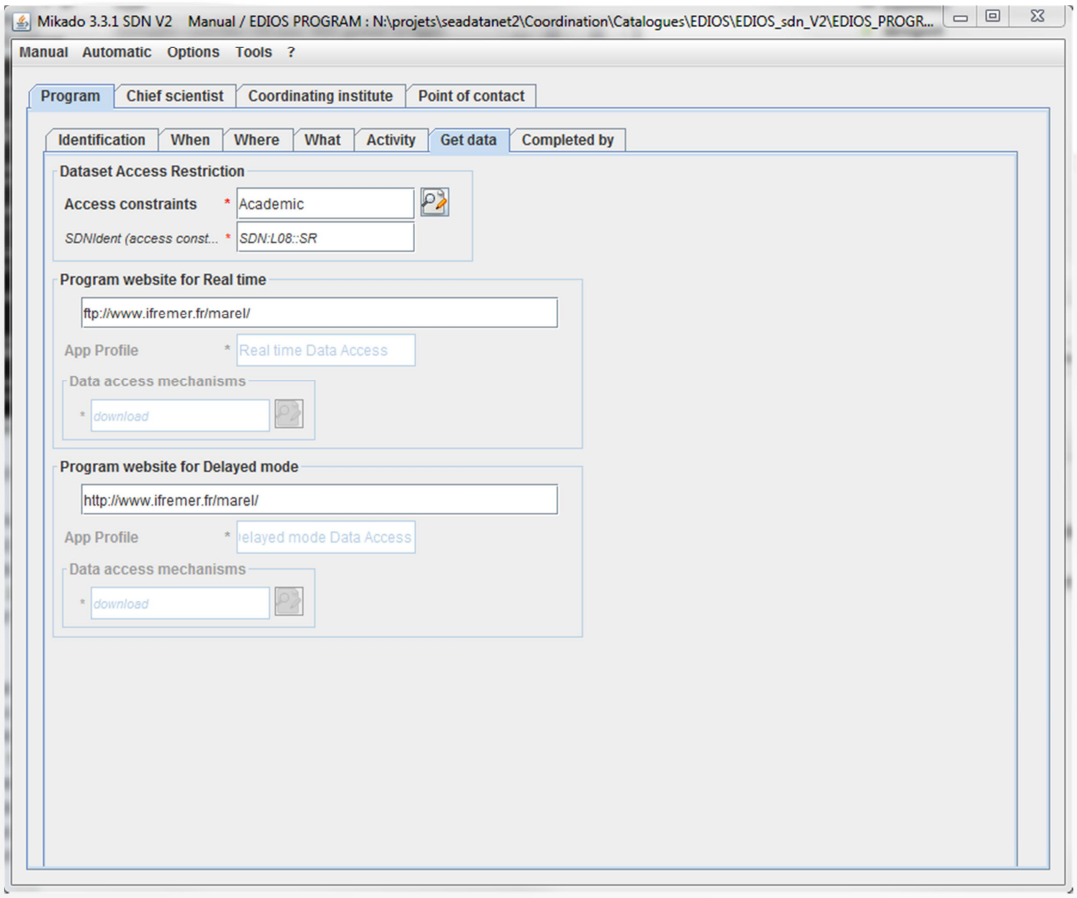


Figure 6- EDIOS Program information window 'Get data'

Dataset Access Restriction: Is the dataset freely available, by request, only available by special arrangement, restricted, etc.? Click on the icon to select the appropriate value from the list (L08: http://seadatanet.maris2.nl/v_bodc_vocab_v2/search.asp?lib=L08 **Mandatory**.
Real time Distribution website: URL to further information about the data set or to the data set itself. Maximum 160 characters. Must start with http or https.
Delayed mode Distribution website: URL to further information about the data set or to the data set itself. Maximum 160 characters. Must start with http or https.

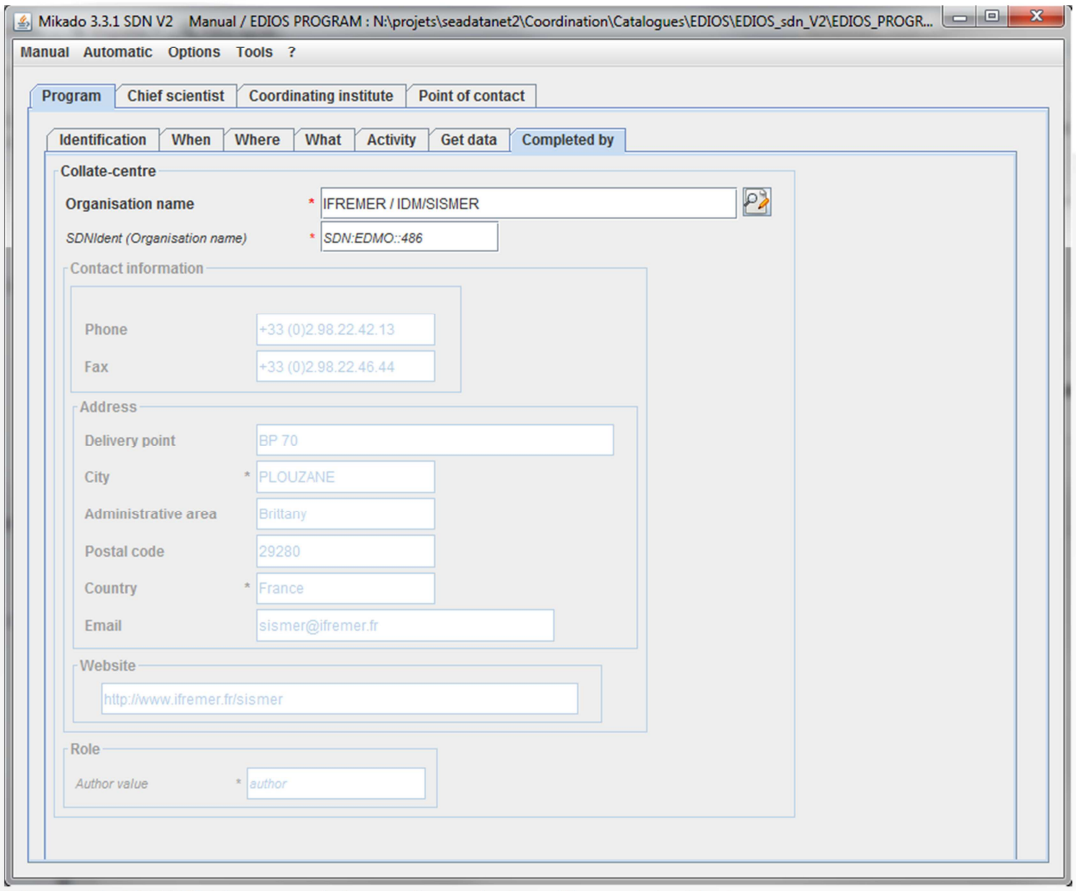


Figure 7- EDIOS Program information window 'Completed by'

Completed by (Collate Centre): The Completed by page contains information about the organisation that prepared the EDIOS description. To retrieve a Collate-centre, click on the icon to bring up a new window with the list of organizations from EDMO. A short cut to finding the Collate centre is to type * then followed by the initial letters of the organisation name; this will retrieve the name and SeaDataNet EDMO code (e.g. Typing * followed by 'IFRE' will bring up the first name and code for the first occurrence of IFREMER on the list. Pressing <return> will move to the next occurrence. Click OK to confirm the code and close the window. **Mandatory**

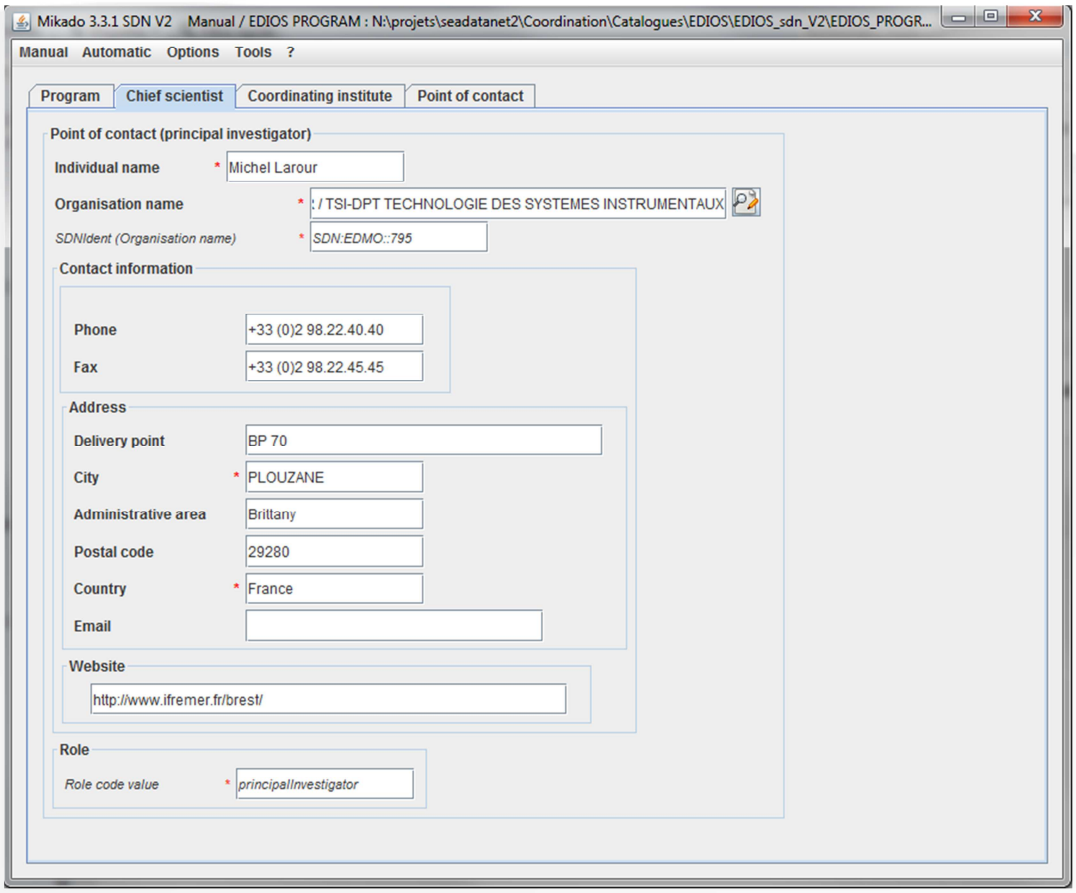


Figure 8- EDIOS program window 'Chief scientist'

The second tab 'Chief scientist' gives information on the principal investigator/person in charge of the EDIOS program.
The organisation name is that of the Chief Scientist/Person in charge of the observing programme. To retrieve an organisation name, click on the icon to bring up a new window with the list of organizations from EDMO. A short cut to finding the organisation name is to type * then followed by the initial letters of the organisation name; this will retrieve the name and SeaDataNet EDMO code (e.g. Typing * followed by 'IFRE' will bring up the first name and code for the first occurrence of IFREMER on the list. Pressing <return> will move to the next occurrence. Click OK to confirm the code and close the window. All other relevant information will be retrieved from EDMO and added to the page. The role will be added as 'coordinator'.

For the point of contact phone, fax, address and email which are related to the organisation name (retrieved from EDMO catalogue) may be modified to be related to the identified person, the EDIOS program point of contact for related data.

The role of the point of contact also needs to be included.
This information is **Mandatory**.

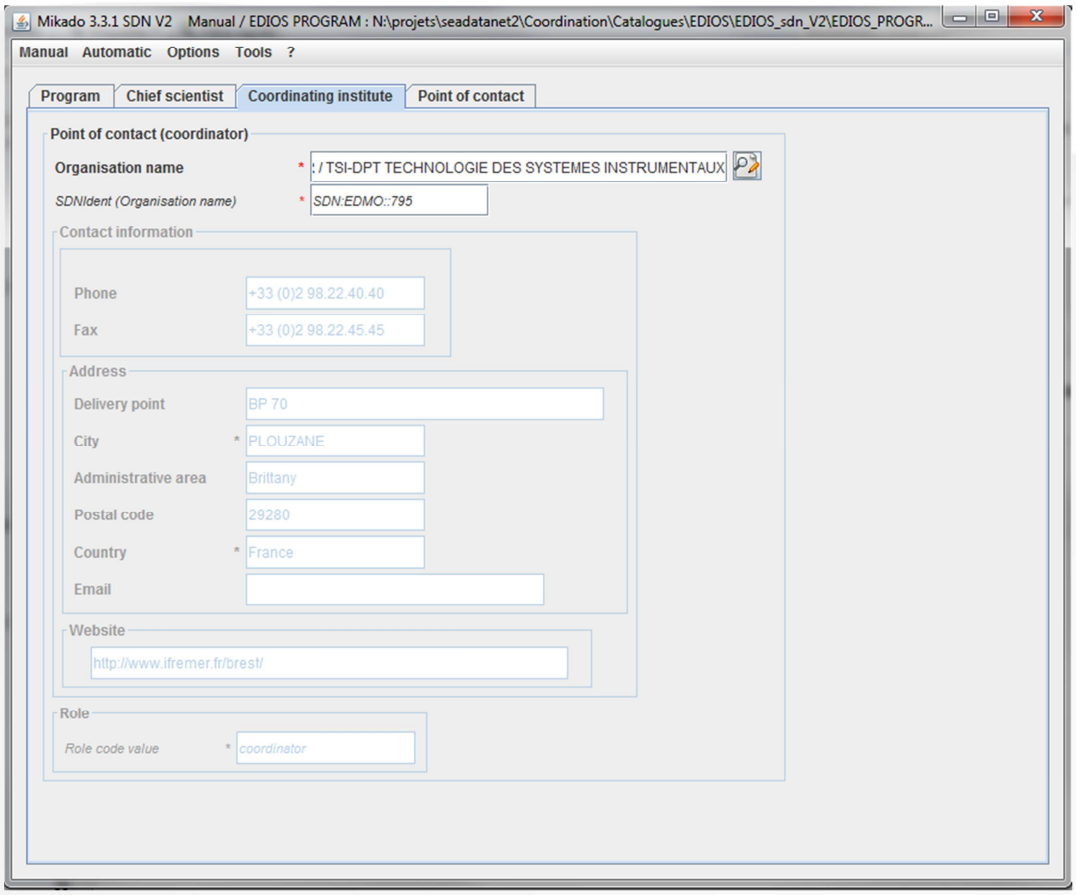


Figure 9- EDIOS program window 'Coordinating institute'

Coordinating organization: This is the organisation that coordinates the observing programme. To retrieve a coordinating organisation, click on the icon to bring up a new window with the list of organizations from EDMO. A short cut to finding the Collate centre is to type * then followed by the initial letters of the organisation name; this will retrieve the name and SeaDataNet EDMO code (e.g. Typing * followed by 'IFRE' will bring up the first name and code for the first occurrence of IFREMER on the list. Pressing <return> will move to the next occurrence. Click OK to confirm the code and close the window. All other relevant information will be retrieved from EDMO and added to the page. The role will be added as 'coordinator'. This information is **Mandatory**.

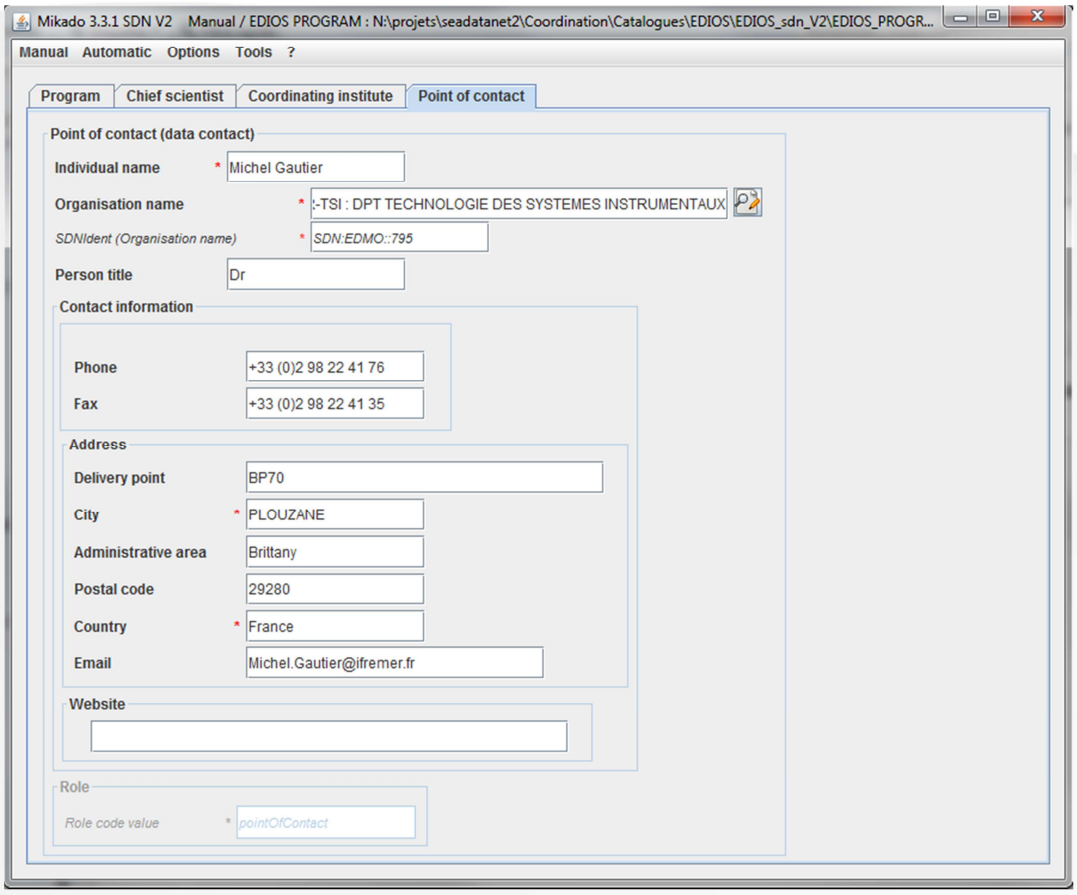


Figure 10- EDIOS program window 'Point of contact'

Point of contact: This is the person and organisation that to whom questions about the observing programme should be addressed. First, type in the person's name. Then to retrieve a coordinating organisation, click on the icon to bring up a new window with the list of organizations from EDMO. A short cut to finding the Collate centre is to type * then followed by the initial letters of the organisation name; this will retrieve the name and SeaDataNet EDMO code (e.g. Typing * followed by 'IFRE' will bring up the first name and code for the first occurrence of IFREMER on the list. Pressing <return> will move to the next occurrence. Click OK to confirm the code and close the window. All other relevant information will be retrieved from EDMO and added to the page. The role will be added as 'coordinator'.

For the point of contact phone, fax, address and email which are related to the organisation name (retrieved from EDMO catalogue) may be modified to be related to the identified person, the EDIOS program point of contact for related data.

2.2. EDIOS Series input

There are 5 tabs for the EDIOS series information: 'Identification', 'Where', 'When', 'What' and 'Completed by' (Figure 11 to Figure 16).

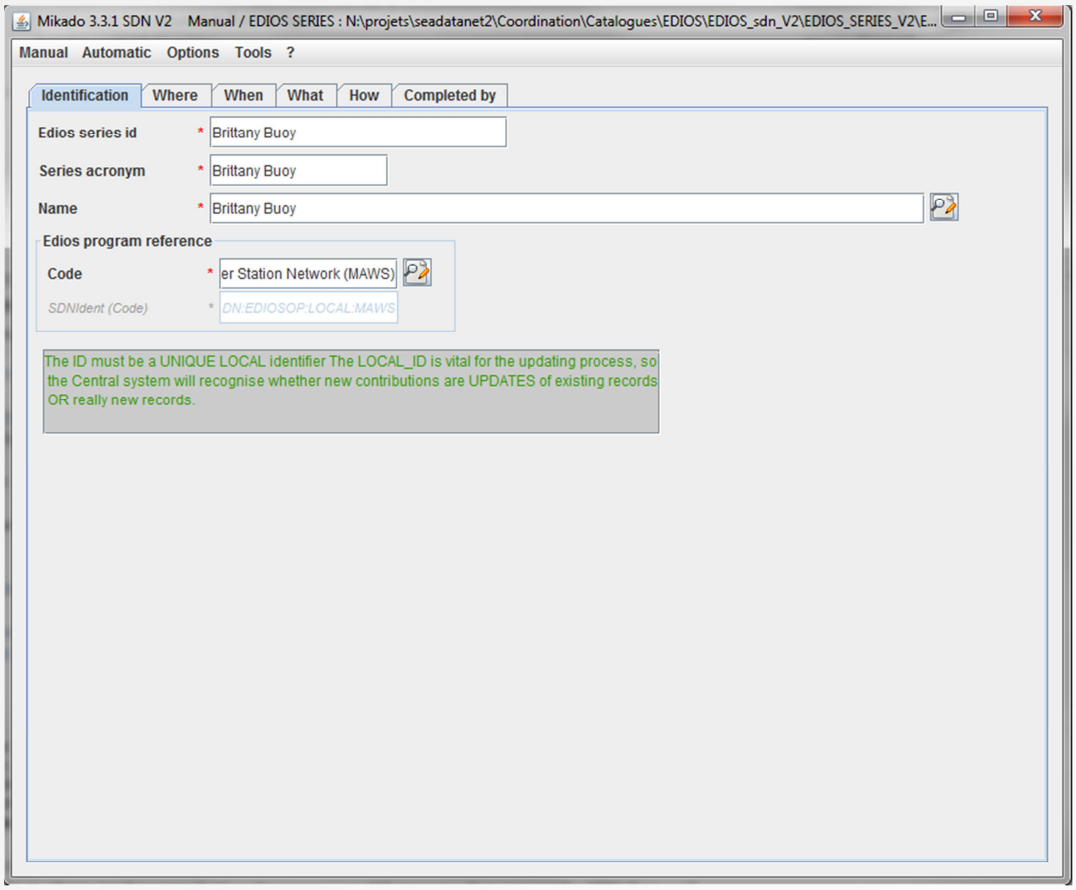


Figure 11 - EDIOS series window 'Identification'

Series Id: This must be UNIQUE. It is used to recognise recorded when they have been updated and resubmitted. **Mandatory**
Series Acronym: This is a shortened version of the series name. **Mandatory**
Series Name: It should be unique within the programme and describe the series (i.e. it should clearly identify the station, route, area). It is **NOT** the same as the programme name. **Mandatory**
EDIOS Programme Reference: This is the link back from the series to the programme record previously defined (LOCAL_ID) in the Observing Programme section. **Mandatory**

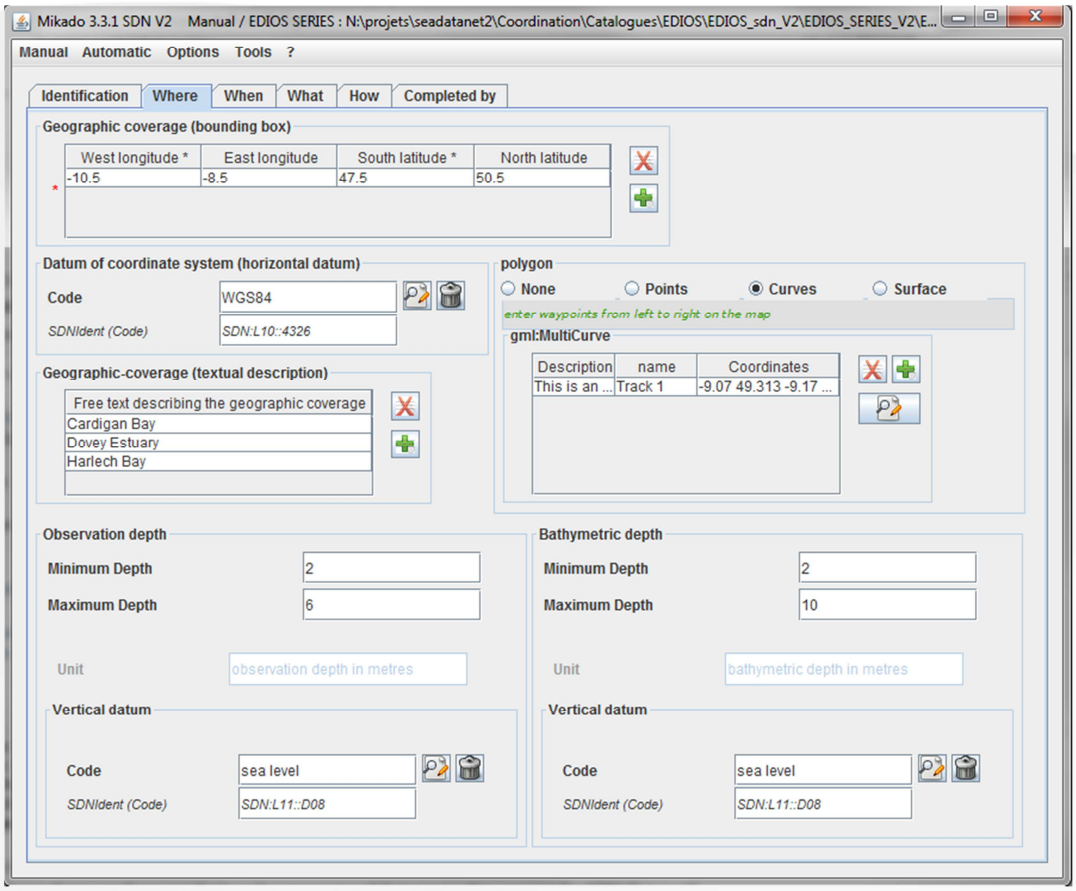


Figure 12 - EDIOS series window 'Where'

Geographic coverage: Mandatory. This refers to the individual series.
If it is a point, then enter the latitude into the 'South latitude' box and longitude into the 'West longitude' box.
If the series is a cruise track, then waypoints (latitude/longitude pairs) should be added under 'Polygon' and 'Curves'. They should be entered from west to east.
For a surface (area), enter waypoints anticlockwise and repeat the first waypoint as last waypoint.

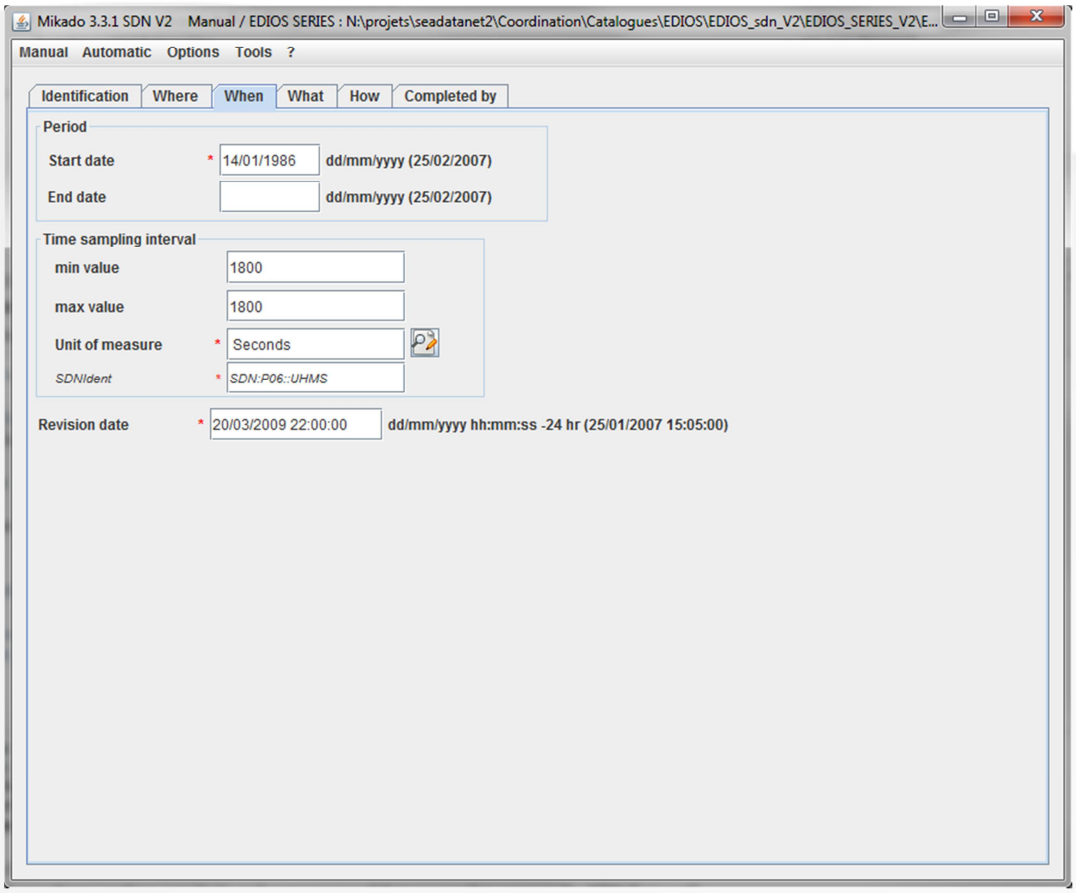


Figure 13 - EDIOS series window 'When'

Start date dd/mm/yyyy **Mandatory.** This is the start date of the individual series, and should be day, month, year.
End date: This will usually be left empty as measurements are continuing.
Sampling interval: Unit of measurement is selected from a list. Note this refers to time intervals only. The Vocabulary is L26 (EDIOS permitted sampling interval units):
http://seadatanet.maris2.nl/v_bodc_vocab_v2/search.asp?lib=L26

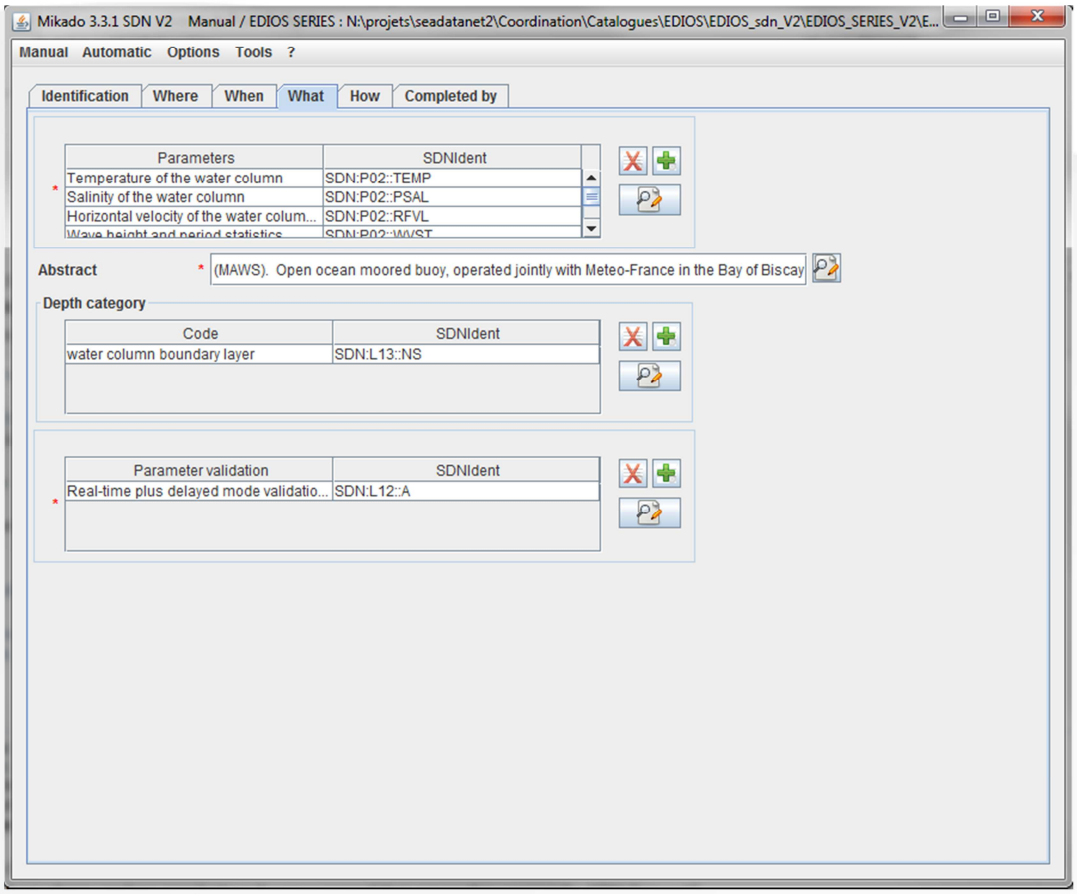


Figure 14 - EDIOS series window 'What'

Parameters measured: Mandatory. These are selected from vocabulary P02:
http://seadatanet.maris2.nl/v_bodc_vocab_v2/search.asp?lib=P02 or
http://seadatanet.maris2.nl/v_bodc_vocab_v2/vocab_relations.asp?lib=P02
Each parameter only needs to be included once – e.g. if there are 3 temperature sensors on the same mooring, only include 'TEMP' once.
Abstract: Mandatory. This is for the series and is **NOT** the same one as used at the programme level.

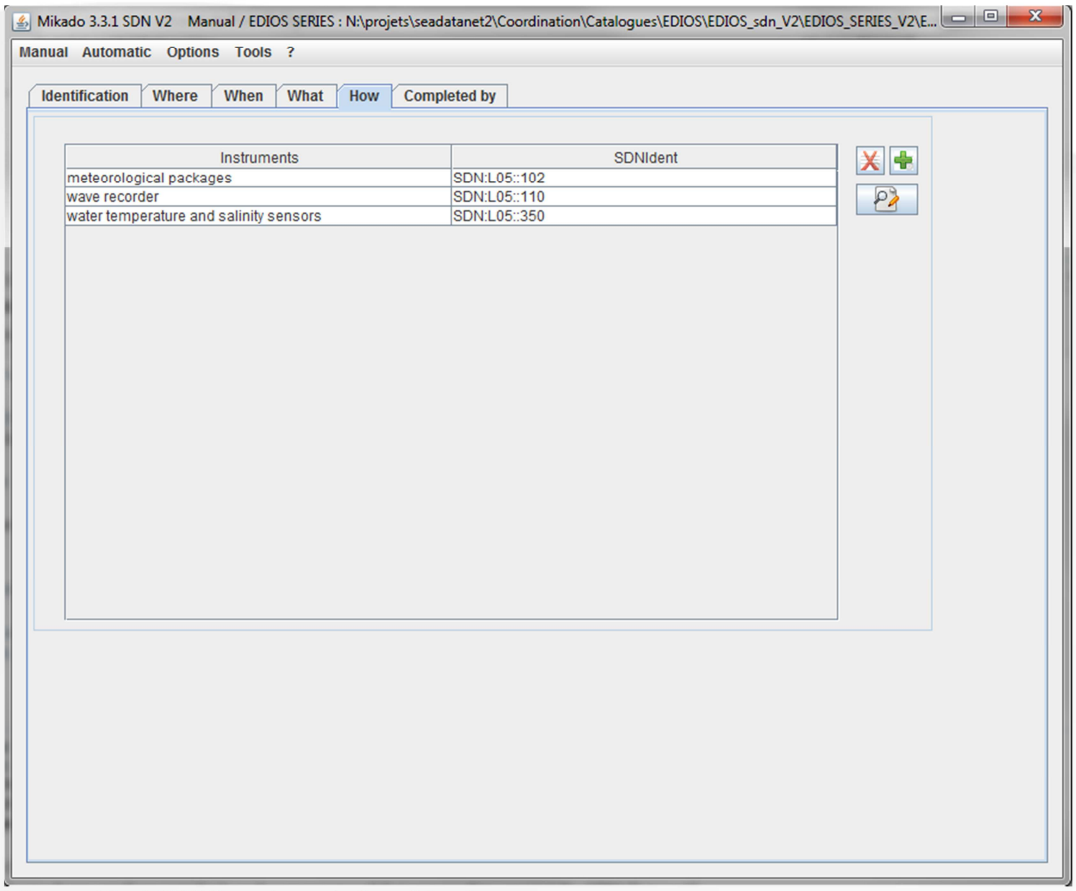


Figure 15 - EDIOS series window 'How'

Instruments: This links to the L05 (SeaDataNet Device categories) vocabulary. Users can select relevant instruments, providing they already exist in the L05 vocabulary:
http://seadatanet.maris2.nl/v_bodc_vocab_v2/search.asp?lib=L05

Clicking on the '+' will provide a menu of instruments. If the relevant instrument is not included on the list, it must be added to L05. Include as many instruments as necessary.

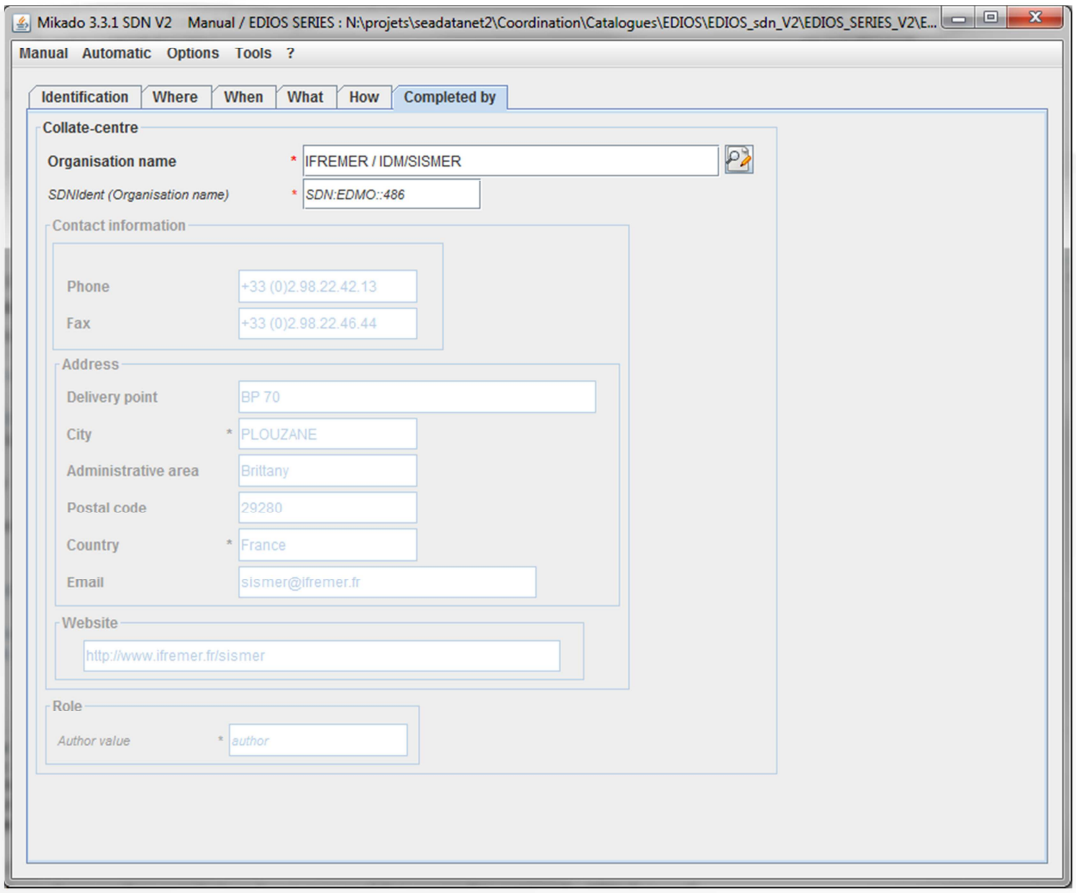


Figure 16 - EDIOS series window 'Completed By'

Completed by (Collate Centre): The Completed by page contains information about the organisation that prepared the EDIOS description. To retrieve a Collate-centre, click on the icon to bring up a new window with the list of organizations from EDMO. A short cut to finding the Collate centre is to type * then followed by the initial letters of the organisation name; this will retrieve the name and SeaDataNet EDMO code (e.g. Typing * followed by 'IFRE' will bring up the first name and code for the first occurrence of IFREMER on the list. Pressing <return> will move to the next occurrence. Click OK to confirm the code and close the window. **Mandatory**

2.3. EDIOS PLATFORM INPUT

There are 4 tabs for the EDIOS Platform information: 'Identification', 'How', 'Who' and 'Completed by' (Figure 17 to Figure 20).

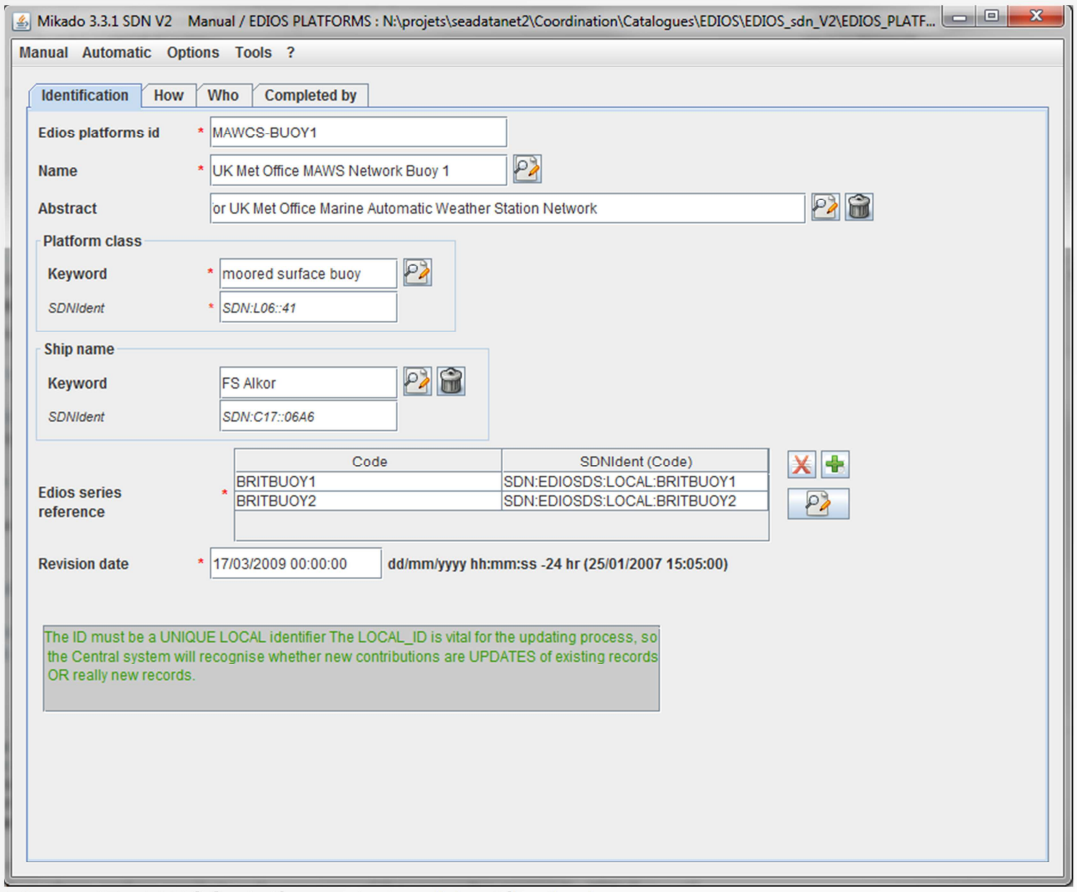


Figure 17 - EDIOS platform window 'Identification'

Platform Id: Mandatory. This must be UNIQUE. It is used to recognise updated records.
Platform Name: Mandatory. It should be unique within the programme and describe the platform. '**Not available**' or '**not known**' are **NOT** acceptable.
Platform class: Mandatory. This is selected from vocabulary L06, SeaVox Platform Categories (e.g. Research vessel, coastal structure):
http://seadatanet.maris2.nl/v_bodc_vocab_v2/search.asp?lib=L06

EDIOS Series Reference: Mandatory. This is the LOCAL_ID of the series to which the platform is related. If the user inputs *SERIES1* for the series code, then the SDNIdent will be *SDN:EDIOSDS:LOCAI:SERIES1.* It links back to series record previously defined. Note: a platform record can link to more than one series.

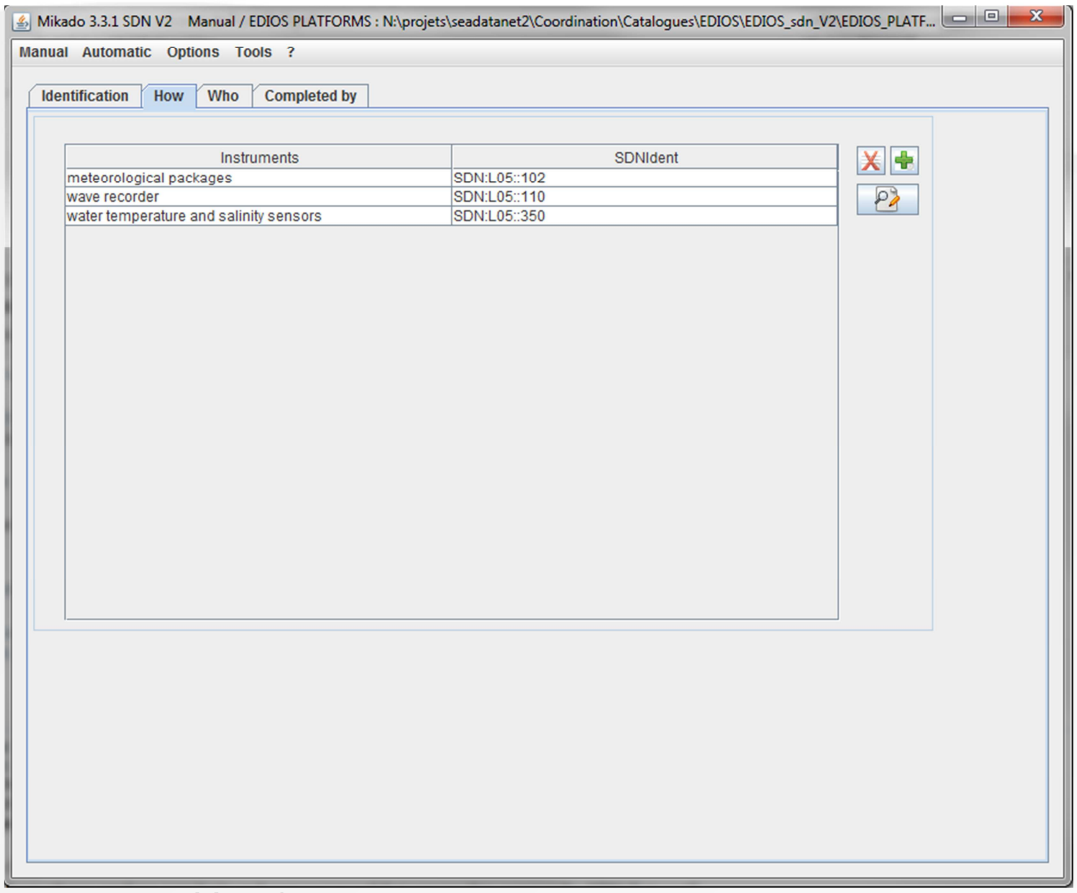


Figure 18 - EDIOS platform window 'How'

Instruments: This links to the L05 (SeaDataNet Device categories) vocabulary. Users can select relevant instruments, providing they already exist in the L05 vocabulary:
http://seadatanet.maris2.nl/v_bodc_vocab_v2/search.asp?lib=L05
Clicking on the '+' will provide a menu of instruments. If the relevant instrument is not included on the list, it must be added to L05. Include as many instruments as necessary.

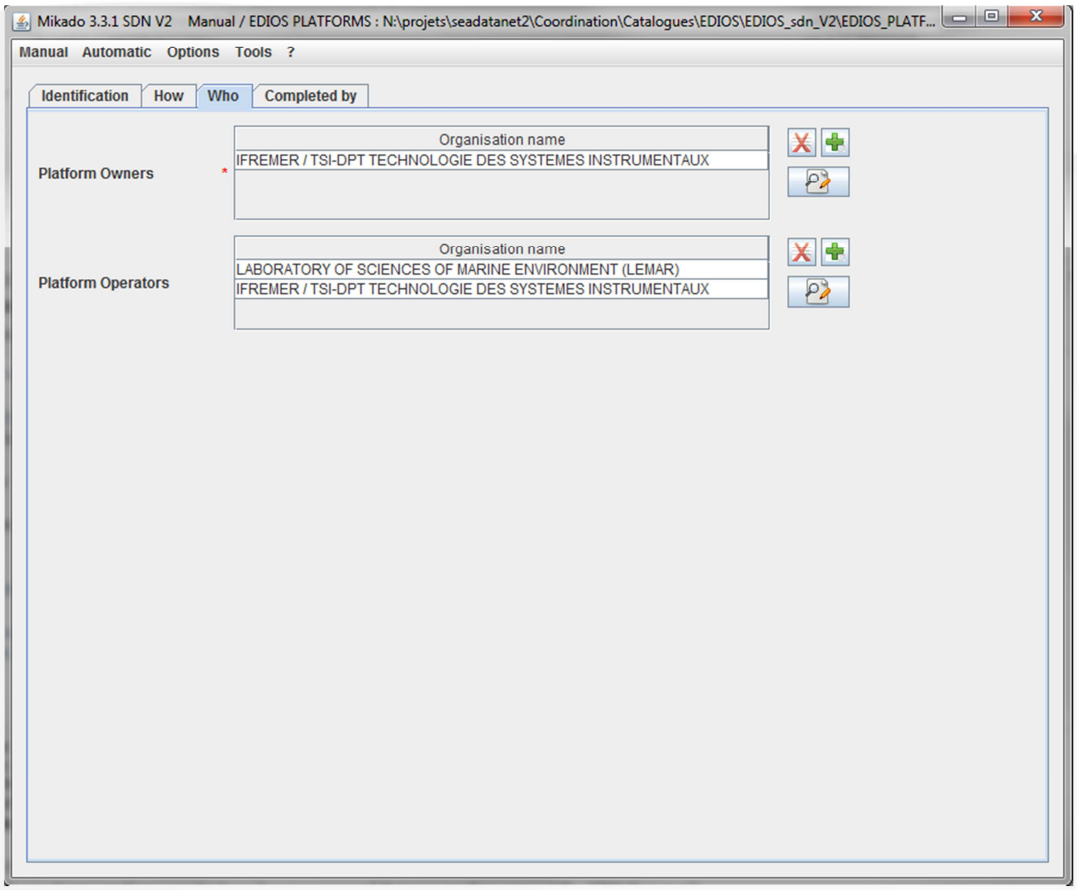


Figure 19 - EDIOS platform window 'Who'

Platform Owner: This covers information about the organisation which owns the platform. To retrieve a list of organisations, click on the '+' to bring up a new window with the list of organizations from EDMO. A short cut to finding the relevant organization name is to type * then followed by the initial letters of the organisation name; this will retrieve the name and SeaDataNet EDMO code (e.g. Typing * followed by 'IFRE' will bring up the first name and code for the first occurrence of IFREMER on the list. Pressing <return> will move to the next occurrence. Click OK to confirm the code and close the window. **Mandatory.**

Platform Operator: This can also be included. The mechanism for adding organizations is the same as that described above for Platform Owner.

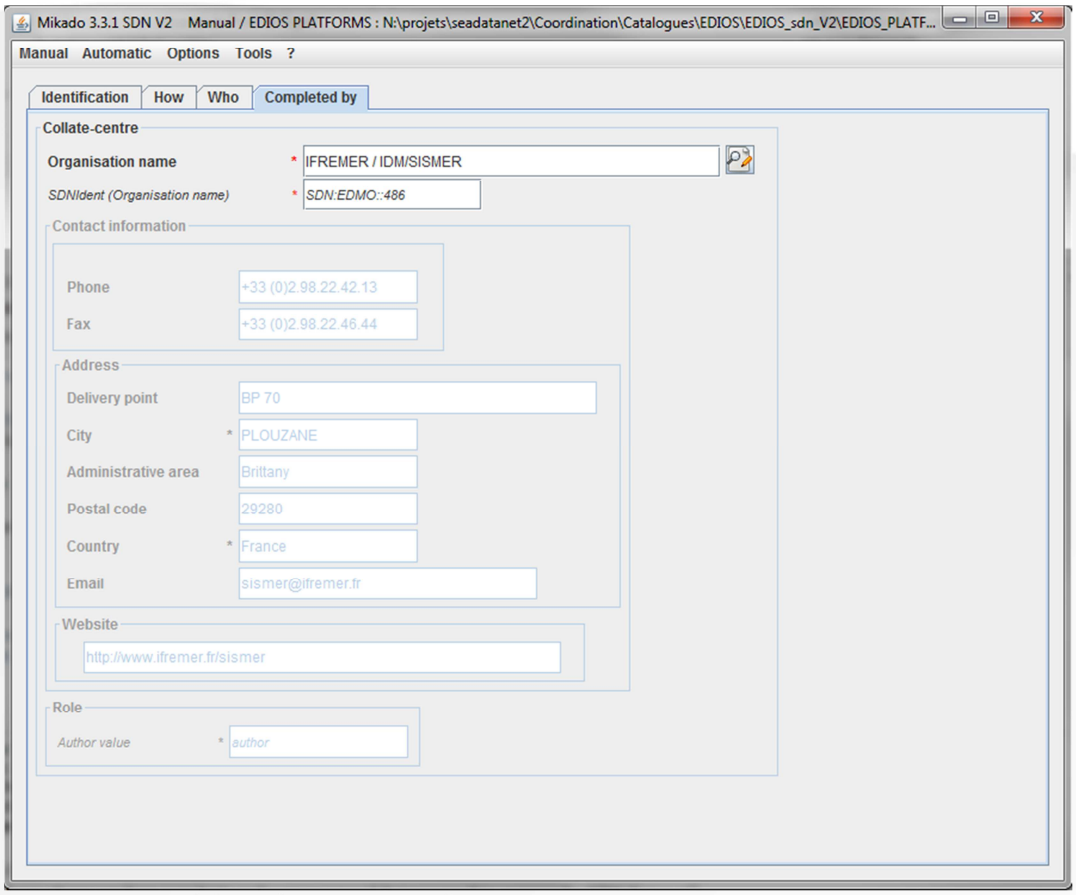


Figure 20 - EDIOS platform window 'Completed by'

Completed by (Collate Centre): The Completed by page contains information about the organisation that prepared the EDIOS description. To retrieve a Collate-centre, click on the icon to bring up a new window with the list of organizations from EDMO. A short cut to finding the Collate centre is to type * then followed by the initial letters of the organisation name; this will retrieve the name and SeaDataNet EDMO code (e.g. Typing * followed by 'IFRE' will bring up the first name and code for the first occurrence of IFREMER on the list. Pressing <return> will move to the next occurrence. Click OK to confirm the code and close the window. **Mandatory**