SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

CNR-ISAC AND CNR-ISMAR EXPERIENCE REPORTS

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Summary

1) Tools used

2) Easy parts

3) Difficult parts:

4) Problems faced and Devised solutions

- CNR ISAC ROMA

- CNR ISMAR La Spezia

5) Available Data

- CNR ISAC ROMA:

- CNR ISMAR La Spezia :

6) Conclusions

Tools used

CNR-ISAC

- NEMO 1.4.5 to create:
  - The ODV file from the CTD ASCII file (NORBAL 1 cruise, March-April 2000)
  - The summary_file.txt
  - The coupling file (**** needs to be modified!→ see the “Problems faced” slide)
- NEMO batch mode to create one ODV file per CTD file (all CTDs)
- EXCEL to MANUALLY(!) create the summary_file.xls
- MIKADO 2.4 to create one CDI file per ODV file (first CTD only)
- IDL program to produce CDI .xml files for all ODV files (ISAC)
- IDL automatic procedure to correct the coupling file

CNR-ISMAR

- MIKADO to create a CDI model for the other CDIs (CTD only)
- FORTRAN programs to produce CDIs .xml and ODV files, and to make data QC.

Easy parts

CNR-ISAC

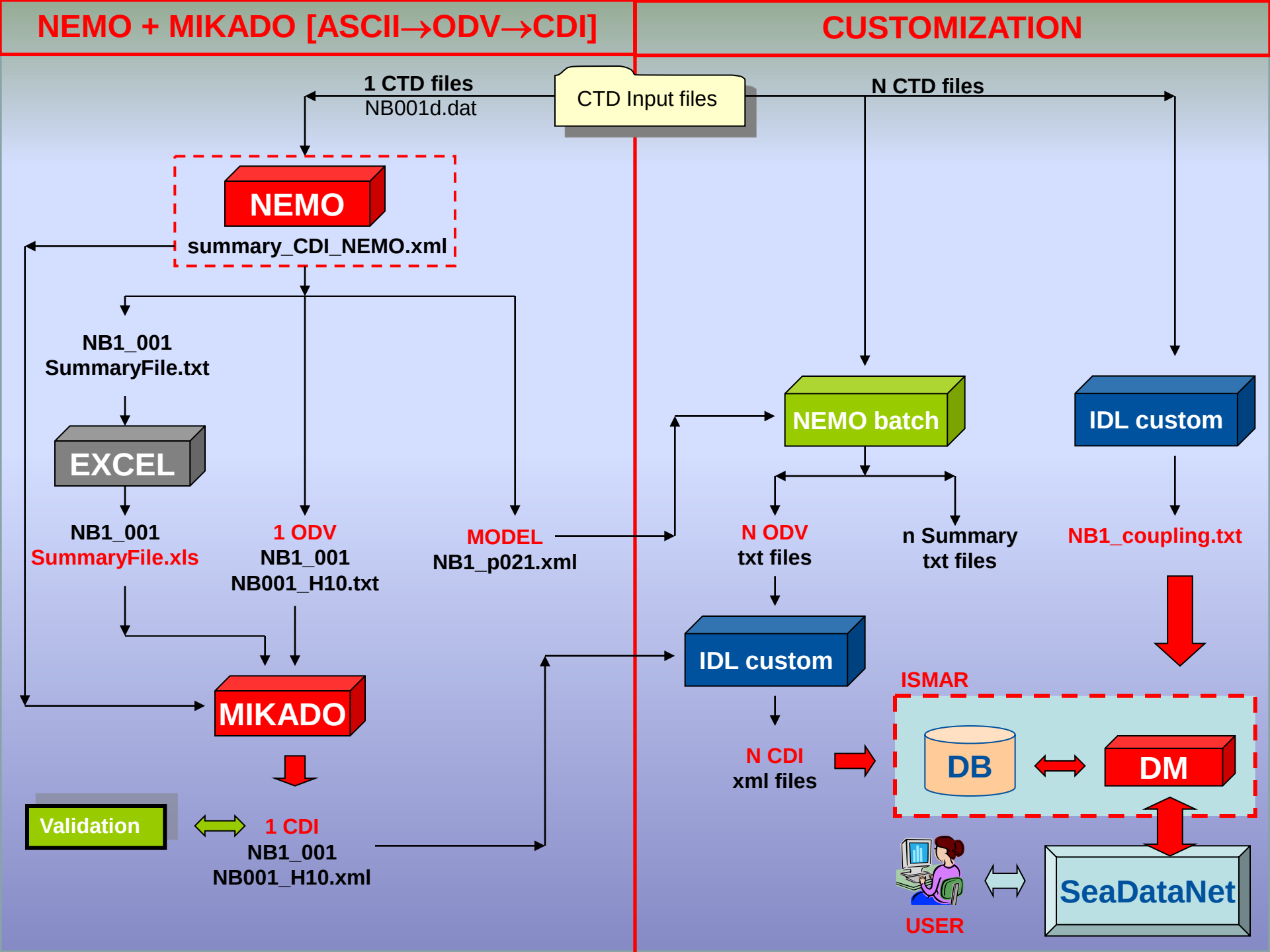
- Using NEMO manually to trasform one ASCII CTD file in ODV format
- Using NEMO in batch mode for rest of CTDs

CNR-ISMAR

- MIKADO is very useful to find and to verify common vocabularies and other standard CDI SeaDataNet info

Difficult parts

- VERY CUMBERSOME to convert large numbers of single station SummaryFile.txt into .xls MANUALLY (1 cruise may have hundreds of CTDs!!) → custom IDL/FORTRAN code to remedy this
- VERY CUMBERSOME to create a CDI .xml for each station running MIKADO manually for each station → again, IDL/FORTRAN custom code needed
- Validation of CDI xml file
- NEMO batch mode difficult to understand (ISMAR used FORTRAN code)
- SeaDataNet QC procedures must be implemented “at home” (e.g. IDL or Fortran)
- DM software installation not very user friendly


NEMO + MIKADO [ASCII→ODV→CDI]
CUSTOMIZATION
1 CTD files
NB001d.dat
CTD Input files
N CTD files
NEMO
summary_CDI_NEMO.xml
NB1_001
SummaryFile.txt
EXCEL
NB1_001
SummaryFile.xls
1 ODV
NB1_001
NB001_H10.txt
MODEL
NB1_p021.xml
MIKADO
Validation
1 CDI
NB1_001
NB001_H10.xml
NEMO batch
N ODV
txt files
n Summary
txt files
IDL custom
N CDI
xml files
IDL custom
NB1_coupling.txt
ISMAR
DB
DM
USER
SeaDataNet

Problems faced by ISAC

1) CDI xml validation problem: The validator is out of date and the users are not informed (e.g. « OUT OF DATE « warning on web site

Solution (manual):

- Open the xml manually with MIKADO using Menu: Manual, Open, CDI
  if you don't have any errors, send your XML to cdi-support@maris.nl for final validation

2) CDI XML problems:

2.1) The ODV version should be "0.4", instead in the xml CDI created by MIKADO you find "1.0« (NOT WRITTEN IN MANUAL):

The XML sequence below contains the XML tag with the incorrect value:

```
<distorFormat>
 <formatName SDNIdent="SDN:L241:2:ODV">Ocean Data View ASCII input</formatName>
 <formatVer>SDN 1.0</formatVer>
</distorFormat>
```

SOLUTION:

Modify manually the summary_CDI_NEMO_NB1.xml

- var38 = '0.4' instead of 'SND 0.1'

Problems faced by ISAC

2.2) The local CDI ID second appearance doesn't match the first one (NOT WRITTEN IN MANUAL):

- The first CDI ID appearance is in the following tag:

<mdFileID>SDN:CDI:LOCAL:"CDI ID"</mdFileID>

For example: <mdFileID>SDN:CDI:LOCAL:NB1_001_NB001_H10</mdFileID>

- The second occurance (Not easy to understand) is locate here:

```
<dataIdInfo>
  <idCitation>
    <resTitle>.....</resTitle>
    <resAltTitle>...</resAltTitle>
```

And the correct XML tag should be : <resAltTitle>"CDI ID"</resAltTitle>

For example :

```
<dataIdInfo>
  <idCitation>
    <resTitle>.....</resTitle>
    <resAltTitle>NB1_001_NB001_H10</resAltTitle>
```

SOLUTION:

Modify manually the summary_CDI_NEMO_NB1.xml

- var5 = LOCAL_CDI_ID instead of DATASET_ID
- add "distinct" in the var 10 in the SQL query to avoid mistakes during the CDIs generation.

Problems faced by ISAC

3)

3.1) The instrument type declared in NEMO setup is not present in the .xml CDI file created by MIKADO

QUESTION: We set the NEMO "Data type" field of the "Station Tab" as "H10 : CTD stations"
This seems not to have any effect.
We don't see ANY other place in NEMO or MIKADO where we can add this info, nor can we find anything pertinent in the NEMO manual.

3.2) The description (or abstract or var08) is set to "Not specified“in the .xml CDI file by default

MARIS asked us to provide a description (e.g. "Measurement taken during a cruise“)

QUESTION: It is not clear how we can make this change in NEMO (NOT WRITTEN IN MANUAL)

Problems faced by ISAC

3.3) The CDI file name mentions a cruise acronym NB1 (e.g. NB1_001_NB001_H10.xml) but in the CDI only a station name is declared (meaning that the measurement was taken at a buoy and not during a research cruise).

QUESTION:

We were requested to produce an ODV (.txt) and CDI (.xml) file for EACH CTD station of the cruise and not a multi-station ODV collection so the CDI declares a single station. We can't find where put information about the cruise name.

SOLUTIONS

3.1:

Open the CDI with MIKADO in automatic mode,

Test the Query and modify manually VAR04 from "XBT…." to "CTD CRUISE NAME"

3.2, 3.3:

Open the CDI with MIKADO in manual mode. Then you can see a new window with lots of tabs.

- modify the tab "What" from "Not specified" in "Measurement taken during a cruise"
- modify the tab "Cruise Station" put the right name of the Cruise and the Cruise id

Problems faced by ISAC

4) In the Coupling.txt created by NEMO the field “FILENAME” does not contain the ODV file path but only the file name

DETAILS: In NEMO you set (SECTION 6.5.1 of NEMO manual):

output file name = C:\username\NEMO\cruise_name\file_name

output directory prefix = C:\username\NEMO

RESULT: file name in the mapping table will be only : file_name

(the manual INCORRECTLY says that file name in the mapping table will be: cruise_name\file_name)

SOLUTION

PATH IN THE COUPLING FILE HAS TO BE ADDED BY HAND OR A CUSTOM PROGRAM.

Problems faced by ISMAR

- In NEMO working on meteo-marine time series data from buoys or stations on piers:
  - difficulties in selecting the proper value for End of station and Data termination indicator in File Description in case you have to deal with one file per station;
  - lack of appropriate Data type in Station Description (mandatory);
  - inconsistency of Sensor's depth value for this kind of data in Station Description (mandatory);
  - difficulties with the hh24:mm time format in Station Description (switch to 00:00-23:50 time range);
  - inability to choose as an option "above sea surface" for Measured parameter in Data Description (mandatory).

- We encountered problems/difficulties to pass from NEMO to MIKADO expecially for correctly fill-in the "bounding box coordinates" and other description fields

Problems faced by ISMAR

- Same CDI validator problem as for ISAC
- Same problems to generate a valid CDI xml file from Mikado starting by Nemo as for ISAC, but we have other two problems reported from MARIS:

  1) The start and end date values when measurement was taken are equal. They should be different, since this is a time series and in the ODV file the end date is present.

  Our answer: There isn't a clear place where to set the start and end values for time series. In the Station Tab it seems that this can be done in the Acquisition History parameter but it isn't marked as mandatory.

  2) The coordinates are incorrect. They contain the character “E” in a field where the values should be of the type “real”.

  Our answer: As specified at pag.39/40 of Nemo Manual the characters "E", "W", "N", "S", are necessary to have valid formats when you deal with NDDDMMSS format for longitude and NDDMMSS format for latitude. If you press on "Test" button Nemo finds this is correct, otherwise it gives you an error with the latitude/longitude format.

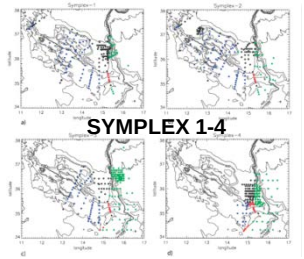
  •DM software installation not user friendly: e.g. not enough detail on installation on servers different from Windows; e.g. permissions to be given to the folders are not always clearly written in the Manual.

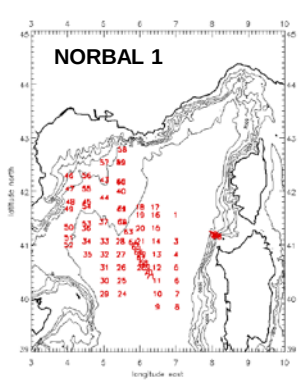
Available Input data

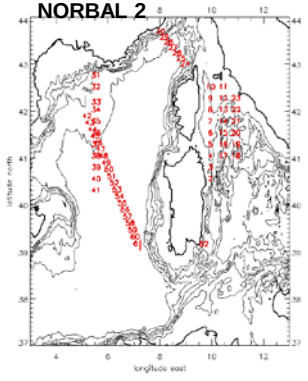
BY ISAC: Cruises 1996-2013

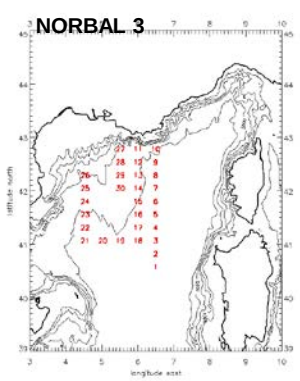
Cruise name	Start	End	Area	Parameters
SYMPLEX 1	12/04/1996	12/05/1996	CHANNEL OF SICILY	CTD, ADCP, biogeochemistry
SYMPLEX 2	19/07/1997	12/08/1997	CHANNEL OF SICILY	CTD, ADCP, biogeochemistry
SYMPLEX 3	27/03/1998	20/04/1998	CHANNEL OF SICILY	CTD, ADCP, biogeochemistry
SYMPLEX 4	19/10/1999	10/11/1999	CHANNEL OF SICILY	CTD, ADCP, biogeochemistry
NORBAL1	24/03/2000	19/04/2000	NW MEDITERRANEAN	CTD, ADCP, biogeochemistry and bio-optics
NORBAL2	04/12/2001	27/12/2001	NW MEDITERRANEAN	CTD, ADCP, biogeochemistry and bio-optics
NORBAL3	20/09/2002	09/10/2002	NW MEDITERRANEAN	CTD, ADCP, biogeochemistry and bio-optics
NORBAL4	05/03/2003	25/03/2003	NW MEDITERRANEAN	CTD, ADCP, biogeochemistry and bio-optics
NORBAL5	17/04/2003	25/04/2003	NW MEDITERRANEAN	CTD, ADCP, biogeochemistry and bio-optics
ALT1	03/08/2004	21/08/2004	TYRRHENIAN	CTD, ADCP, biogeochemistry and bio-optics
ADR06	11/01/2006	31/01/2006	ADRIATIC	CTD, ADCP, biogeochemistry and bio-optics
EMED-BIOOPT	08/09/2006	27/09/2006	EASTERN MEDITERRANEAN	CTD, ADCP, biogeochemistry and bio-optics
EMED-BIOOPT 2	20/04/2007	10/05/2007	EASTERN MEDITERRANEAN	CTD, ADCP, biogeochemistry and bio-optics
ADR02	17/10/2008	29/10/2008	S. ADRIATIC, MONTENEGRO COAST	CTD, ADCP, biogeochemistry and bio-optics
PRIMI	06/08/2009	07/09/2009	S. TYRRHENIAN, CH. OF SICILY, CH. SARDINIA, NW. IONIAN	CTD, ADCP, biogeochemistry and bio-optics
TYR01	29/10/2010	22/11/2010	COASTAL TYRRHENIAN SEA	CTD, ADCP, biogeochemistry and bio-optics
WMED-BIOOPT 2012	22/03/2012	10/04/2012	TYRRHENIAN SEA, SARDINIAN SEA	CTD, ADCP, biogeochemistry and bio-optics
WMED-BIOOPT 2013	10/04/2013	29/04/2013	COASTAL TYRRHENIAN SEA	CTD, ADCP, biogeochemistry and bio-optics

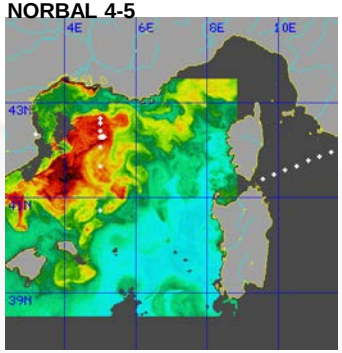
Available Input data

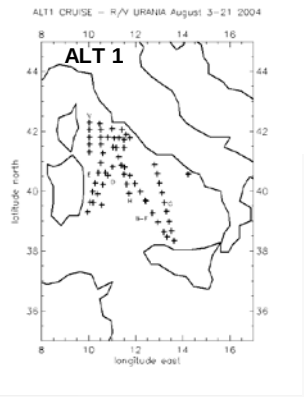

SYMPLEX 1-4


NORBAL 1

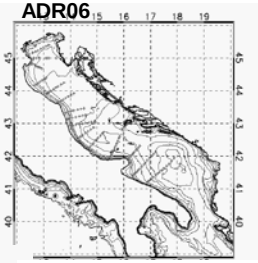

NORBAL 2

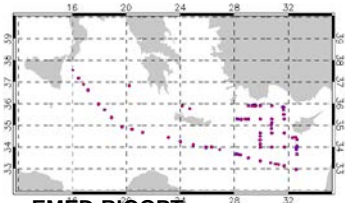

NORBAL 3

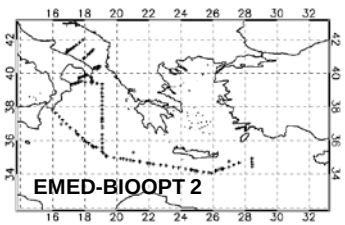

NORBAL 4-5

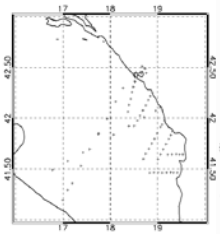


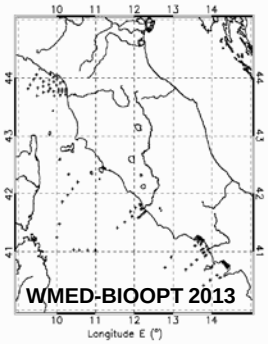
ALT 1

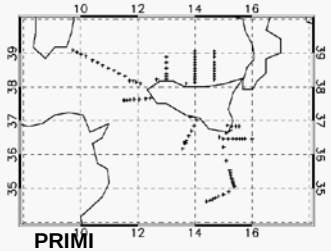

ADR06

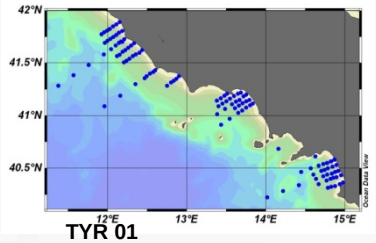

EMED-BIOOPT

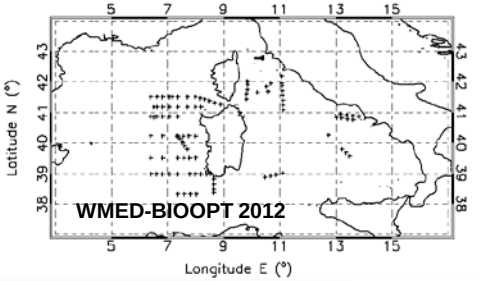

EMED-BIOOPT 2


ADR 02


WMED-BIOOPT 2013


PRIMI


TYR 01


WMED-BIOOPT 2012

Available Input data

BY ISMAR: Cruises 2004-2013

Adriaseismic	MAMBA2011	Medgoos08	MOORING	TYRRMOUNTS09
BIOFUN08	MAMBA2011	Medgoos10	Odissea1	VENUS1
Biofun09	Marmes05	Medgoos11	Panarea 2010	VENUS2
BONIFACIO11	Medbio04	Medgoos12	SESAME IT5 - KMnet08	Vetimer-3
Bonifacio2010	Medbio06	Medocc05	Sesame_IT4_08	VETIMER-4
COCOPRO13	MEDBIO2_07	Medocc06	SesameKM3_0308	
EUROFLEETS11	Medbio6 Medgoos13	Medocc07	Sicily09	
EUROFLEETS12	Medco08	Medsudmed06	SICILY2011	
ICHNUSSA2012	Medgoos05	MEDSUDMED08	Tirreno09	
Km3net07	Medgoos06	MIDDLE08	TOSCA2011	
MAMBA2010	Medgoos07	Middle09	TOSCA2012	

Conclusions

ISAC

- It's not possible to run NEMO and MIKADO automatically, without any "human help“ or custom programs, in order to get all validated files prescribed by SeaDataNET relative to a huge number of stations in a cruise.
- Using NEMO+MIKADO+IDL procedures, ISAC is, however, ready to process all its cruises and put them on the DM installed by ISMAR (ISAC DM within 2013).
- SeaDataNet QC IDL SW is being implemented

ISMAR

- We are ready for processing every CTD cruises from QC to the creation of CDI/ODV files using our Fortran procedures, but at this time we have some difficulties to do the same with other type of data like time series from buoys or stations on piers using only Nemo and Mikado.

Contacts

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SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

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