3th Plenary Meeting
SPLIT, 24-25 September, 2014

SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

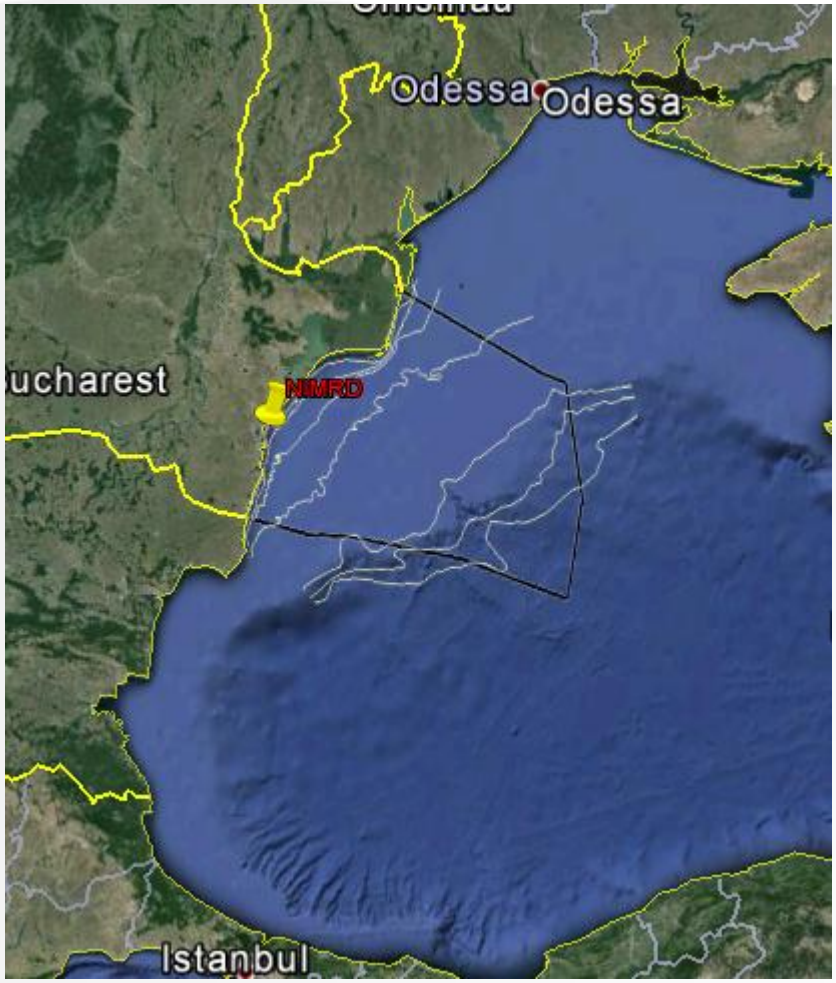
Work flow from data collection to the CDI

National Institute for Marine Research and Development

Luminita Buga, George Sarbu

INCDM

Constanta,
ROMANIA



NIMRD is the leading marine research institution in Romania, as well as national coordinator and focal point with respect to international research tasks and responsibilities in the field of marine science.

Romanian coast ~ 240 Km

NIMRD data collection

Historical data (1963-1999)

text format, one file per cruise

physical / chemical data

Recent data (2000- present)

excel format

physical / chemical data

Historical data
1. Reformatting data files

Text files (NATO TU-BS format)

One cruise /file

```
D(m) T(degC) S(ppt) Sig-T DO(uM) PO4(uM) SiO4(uM) NO3(uM) NO2(uM) NH4(uM)
9999 1977  4 22  9 55 45  5.00 30  2.00   33 DA1 1
   0   8.39  14.76  11.38 399.3   0.48  20.3   4.19   1.51 -88.00
   5   7.75  14.76  11.45 398.4   0.19  17.2   3.64   1.47 -88.00
  10   6.67  16.20  12.68 306.8 -88.00 -88.0 -88.00 -88.00 -88.00
  20   6.61  18.31  14.34 292.1   0.15   6.3   3.49   1.81 -88.00
  30   6.59  18.33  14.36 284.9   0.05  12.5   4.66   1.89 -88.00
9999 1977  4 22  8 30 45  5.00 29 55.00   32 DA2 1
   0   8.41  13.06  10.06 383.6   0.34  25.0   3.81   1.43 -88.00
   5   8.21  13.75  10.61 395.2   0.38  25.0   3.49   1.54 -88.00
  10   7.94  14.45  11.19 402.8   0.15  15.6   3.03   1.31 -88.00
  20   6.98  18.31  14.31 285.4   0.15  14.1   3.81   1.94 -88.00
  30   6.61  18.57  14.54 282.7   0.10  11.0   3.86   2.25 -88.00
9999 1977  4 22  7  0 45  5.00 29 48.00   26 DA3 1
   0   9.74   1.85   1.18 322.0   0.24  75.1  10.24   1.87 -88.00
   5   8.60  12.00   9.21 294.3   0.19  42.2   4.54   1.65 -88.00
  10   8.39  12.45   9.58 376.0   0.15  43.8   4.23   1.51 -88.00
  20   6.78  17.81  13.93 280.9   0.10  15.6   3.35   1.99 -88.00
  25   6.64  18.57  14.54 272.9   0.10  14.1   3.81   2.11 -88.00
9999 1977  4 22  6  0 45  5.00 29 41.00   13 DA4 1
   0   8.94   9.18   6.98 337.2   0.15  56.3   6.31   2.23 -88.00
   5   9.88  11.20   8.45 338.1   1.10  48.5   4.86   1.56 -88.00
  10   8.45  11.91   9.15 347.9   0.19  43.8  13.70   1.36 -88.00
9999 1977  4 22 10 45 45  0.00 30  2.00   34 DB1 1
   0   8.82  13.80  10.59 -88.0   0.10  20.9   3.05   1.65 -88.00
   5   8.11  13.93  10.77 -88.0   0.24  20.9   4.97   1.67 -88.00
  10   7.11  15.32  11.95 -88.0   0.10  15.6   3.94   1.67 -88.00
  20   6.51  18.06  14.15 -88.0   0.34  13.0   2.87   1.79 -88.00
  30   6.43  18.51  14.51 -88.0   0.00  11.7   3.42   2.05 -88.00
9999 1977  4 22  9 35 45  0.00 29 55.00   33 DB2 1
   0   8.57  12.56   9.65 -88.0   0.19  20.9   2.93   2.45 -88.00
```

```
*Data files: gd-77xx.chm - gd-80xx.chm

*Format: Station data file format of the NATO TU-BS project.

*Ship name: Gilortul or Palamida (RMRI, Constantza, Romania).

*Expedition: 6 W-E transects in front of Danube mouths,
 twice a year between 1977 and 1980, sampling at the standard depths.

*Parameters: Temperature (deg. C), salinity (ppt), density (Sig-t),
 dissolved oxygen (uM), phosphates (uM), silicates (uM), nitrites (uM)
 and nitrates (uM).

*Instruments and methods: Nansen bottles with reversible thermometers,
 dissolved oxygen by standard Winkler titration, salinity by Mohr-Knudsen
 method, phosphates, silicates, nitrites and nitrates by methods given in
 "A practical handbook of seawater analysis" by J.D.H. Strikland &
 T.S. Parsons 1972 and "Methods of seawater analysis" by K.Grasshoff,
 M.Ehrhardt, K.Kremling 1976, using a spectrophotometer Beckman Model 25.

*Accuracy: 0.01 deg.C for temperature, 5uM for oxygen, 0.02ppt
 for salinity, 0.01uM for phosphates, 0.05uM for silicates, 0.01uM
 for nitrites and 0.05uM for nitrates.

*Processing (if applied):

*Principal investigators: Gheorghe Serpoianu, Adriana Cociasu
 Vasile Diaconu, (RMRI, Constantza, Romania).
```

Info per dataset

+

In house software

ODV / SDN format

```
//
//SDN_parameter_mapping
//<subject>SDN:LOCAL:PRES</subject><object>SDN:P011::PRESPS02</object><units>SDN:P061::UPDB</units>
//<subject>SDN:LOCAL:DEPH</subject><object>SDN:P011::ADEPZZ01</object><units>SDN:P061::ULAA</units>
//<subject>SDN:LOCAL:TEMP</subject><object>SDN:P011::TEMPPR01</object><units>SDN:P061::UPAA</units>
//<subject>SDN:LOCAL:PSAL</subject><object>SDN:P011::PSLTZZ01</object><units>SDN:P061::UUUU</units>
//<subject>SDN:LOCAL:DENS</subject><object>SDN:P011::SIGTEQ01</object><units>SDN:P061::UKMC</units>
//<subject>SDN:LOCAL:DOXY</subject><object>SDN:P011::DOXYZZXX</object><units>SDN:P061::UPOX</units>
//<subject>SDN:LOCAL:PHOS</subject><object>SDN:P011::PHOSZZXX</object><units>SDN:P061::UPOX</units>
//<subject>SDN:LOCAL:SLCA</subject><object>SDN:P011::SLCAZZXX</object><units>SDN:P061::UPOX</units>
//<subject>SDN:LOCAL:NTRA</subject><object>SDN:P011::NTRAZZXX</object><units>SDN:P061::UPOX</units>
//<subject>SDN:LOCAL:NTRI</subject><object>SDN:P011::NTRIZZXX</object><units>SDN:P061::UPOX</units>
//
```

Cruise	Station	Type	yyyy-mm-	Longitude	Latitude	LOCAL_CDI	EDMO_CDI	Bot. Depth	PRES [dec	QV:SEADA	DEPH [me	QV:SEADA	TEMP [Cel	QV:SEADA	P
GD77-04	DD2	B	1977-04-2	29.91667	44.83333	701403	697	42			9	0	0	8.82	0
											9	5	0	8.25	0
											9	10	0	7.75	0
											9	20	0	6.58	0
											9	30	0	6.58	0
											9	40	0	6.57	0

Coupling table

```
// LOCAL_CDI_ID;MODUS;FORMAT;FILENAME
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70203;1;ODV;danube/GD77-04_00DA2_H09.txt
70303;1;ODV;danube/GD77-04_00DA3_H09.txt
70403;1;ODV;danube/GD77-04_00DA4_H09.txt
70503;1;ODV;danube/GD77-04_00DB1_H09.txt
70603;1;ODV;danube/GD77-04_00DB2_H09.txt
70703;1;ODV;danube/GD77-04_00DB3_H09.txt
70803;1;ODV;danube/GD77-04_00DB4_H09.txt
70903;1;ODV;danube/GD77-04_00DC1_H09.txt
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701103;1;ODV;danube/GD77-04_00DC3_H09.txt
701203;1;ODV;danube/GD77-04_00DC4_H09.txt
701303;1;ODV;danube/GD77-04_00DD1_H09.txt
701403;1;ODV;danube/GD77-04_00DD2_H09.txt
701503;1;ODV;danube/GD77-04_00DD3_H09.txt
701603;1;ODV;danube/GD77-04_00DD4_H09.txt
701703;1;ODV;danube/GD77-04_00DE1_H09.txt
701803;1;ODV;danube/GD77-04_00DE2_H09.txt
701903;1;ODV;danube/GD77-04_00DE3_H09.txt
702003;1;ODV;danube/GD77-04_00DE4_H09.txt
```

Historical data
2. CDIs XML generation

Text files (NATO TU-BS format)

```
D(m) T(degC) S(ppt) Sig-T DO(uM) PO4(uM) SiO4(uM) NO3(uM) NO2(uM) NH4(uM)
9999 1977  4 22  9 55 45  5.00 30  2.00   33 DA1 1
   0   8.39  14.76  11.38 399.3   0.48  20.3   4.19   1.51 -88.00
   5   7.75  14.76  11.45 398.4   0.19  17.2   3.64   1.47 -88.00
  10   6.67  16.20  12.68 306.8 -88.00 -88.0 -88.00 -88.00 -88.00
  20   6.61  18.31  14.34 292.1   0.15   6.3   3.49   1.81 -88.00
  30   6.59  18.33  14.36 284.9   0.05  12.5   4.66   1.89 -88.00
9999 1977  4 22  8 30 45  5.00 29 55.00   32 DA2 1
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  20   6.98  18.31  14.31 285.4   0.15  14.1   3.81   1.94 -88.00
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  20   6.78  17.81  13.93 280.9   0.10  15.6   3.35   1.99 -88.00
  25   6.64  18.57  14.54 272.9   0.10  14.1   3.81   2.11 -88.00
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   5   9.88  11.20   8.45 338.1   1.10  48.5   4.86   1.56 -88.00
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9999 1977  4 22 10 45 45  0.00 30  2.00   34 DB1 1
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   5   8.11  13.93  10.77 -88.0   0.24  20.9   4.97   1.67 -88.00
  10   7.11  15.32  11.95 -88.0   0.10  15.6   3.94   1.67 -88.00
  20   6.51  18.06  14.15 -88.0   0.34  13.0   2.87   1.79 -88.00
  30   6.43  18.51  14.51 -88.0   0.00  11.7   3.42   2.05 -88.00
9999 1977  4 22  9 35 45  0.00 29 55.00   33 DB2 1
   0   8.57  12.56   9.65 -88.0   0.19  20.9   2.93   2.45 -88.00
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 "A practical handbook of seawater analysis" by J.D.H. Strikland &
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*Processing (if applied):

*Principal investigators: Gheorghe Serpoianu, Adriana Cociasu
 Vasile Diaconu, (RMRI, Constantza, Romania).
```

In house software

Excel metadata tables

STATION_NAME	STATION_DATE	STATION_LON	STATION_LAT	CDI_ID	STATION_water	DATASET_NAME	DATASET_ID
ConstantaE-1NM	2008-03-19T14:00	28.6833	44.1667	M_200803_1	16	MN-200803	200803
ConstantaE-5NM	2008-03-19T15:15	28.7833	44.1667	M_200803_2	32	MN-200803	200803
ConstantaE-10NM	2008-03-19T16:15	28.883	44.1667	M_200803_3	35	MN-200803	200803
ConstantaE-20NM	2008-03-19T18:00	29.1333	44.1667	M_200803_4	45	MN-200803	200803
ConstantaE-30NM	2008-03-19T19:30	29.3667	44.1667	M_200803_5	52	MN-200803	200803
VamaVeche-5m	2008-03-20T07:30	28.5963	43.7474	M_200803_6	5	MN-200803	200803
VamaVeche-20m	2008-03-20T07:45	28.6211	43.7512	M_200803_7	20	MN-200803	200803
Mangalia-5m	2008-03-20T08:15	28.5946	43.8	M_200803_8	5	MN-200803	200803
Mangalia-20m	2008-03-20T08:40	28.6366	43.8	M_200803_9	20	MN-200803	200803
Costinesti-5m	2008-03-20T11:00	28.6447	43.945	M_200803_10	5	MN-200803	200803
Costinesti-20m	2008-03-20T11:20	28.674	43.9312	M_200803_11	20	MN-200803	200803
Costinesti-30m	2008-03-20T12:00	28.72435	43.9357	M_200803_12	30	MN-200803	200803
EforieS-5m	2008-03-20T14:10	28.6534	44.0493	M_200803_13	5	MN-200803	200803
EforieS-20m	2008-03-20T14:35	28.678	44.0481	M_200803_14	20	MN-200803	200803
ConstantaS-5m	2008-03-20T15:15	28.6489	44.1383	M_200803_15	5	MN-200803	200803

CRUISE | DATASET | STATION | NIMRD_PARAMETER_GROUP | PARAMETER

MIKADO
(automatic)

XML files

```
<?xml version="1.0" encoding="UTF-8" ?>
<!--  this file has been created using MIKADO version 2.5  -->
<Metadata xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:gml="http://www.opengis.net/gml"
 xsi:noNamespaceSchemaLocation="cdi_sdn_v1.6_gml_4.53.xsd">
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- <mdLang>
   <languageCode value="en" />
  </mdLang>
- <mdChar>
   <CharSetCd value="utf8" />
  </mdChar>
- <mdHrLv>
   <ScopeCd value="dataset" />
  </mdHrLv>
 <mdHrLvName SDNIdent="SDN:L231:6:CDI">Common Data Index record</mdHrLvName>
- <mdContact>
   <rpOrgName SDNIdent="SDN:EDMO::697">National Institute for Marine Research and
    Development "Grigore Antipa"</rpOrgName>
  - <rpCntInfo>
    - <cntPhone>
       <voiceNum>40 241 543288</voiceNum>
       <faxNum>40 241 831274</faxNum>
      </cntPhone>
    - <cntAddress>
       <delPoint>300 Mamaia Blvd.</delPoint>
       <city>Constanta</city>
```
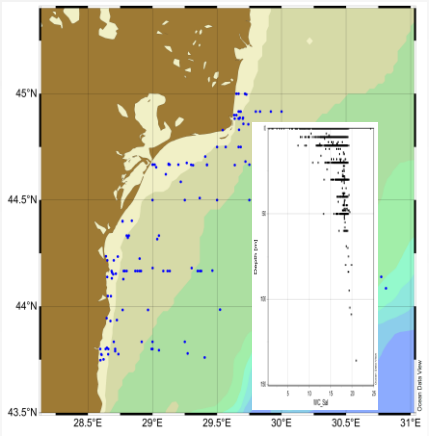
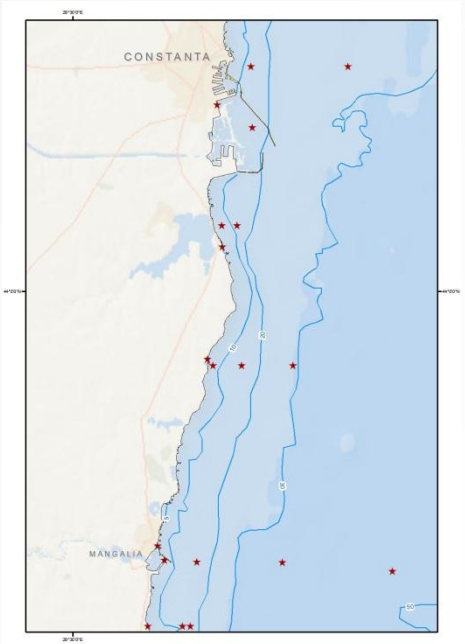

Historical data
3. Quality control

ODV / SDN data files
No QC

ODV software for
local climatology



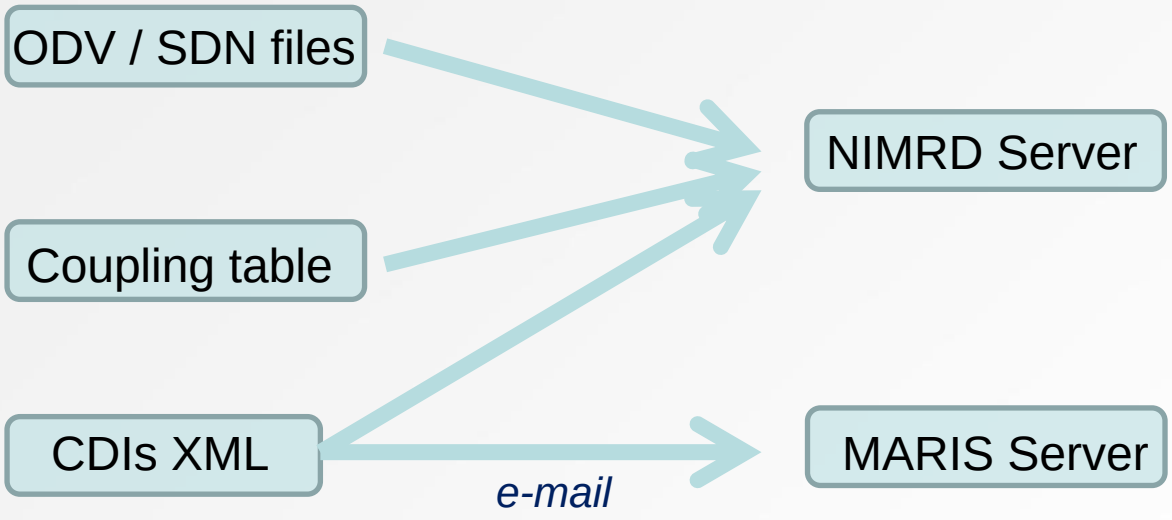
GIS for local bathymetry
and coast line



ODV / SDN data files
With SDN quality flags

Historical data

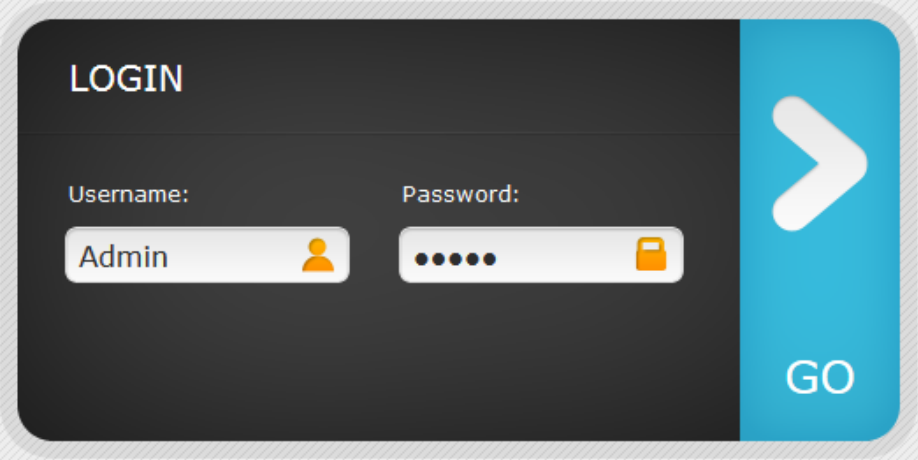
4. Archiving & submitting to SDN central CDI catalog



OCEANOGRAPHY DATABASE ADMINISTRATION

Recent data

1. ODV / SDN format & CDIs XML file generation



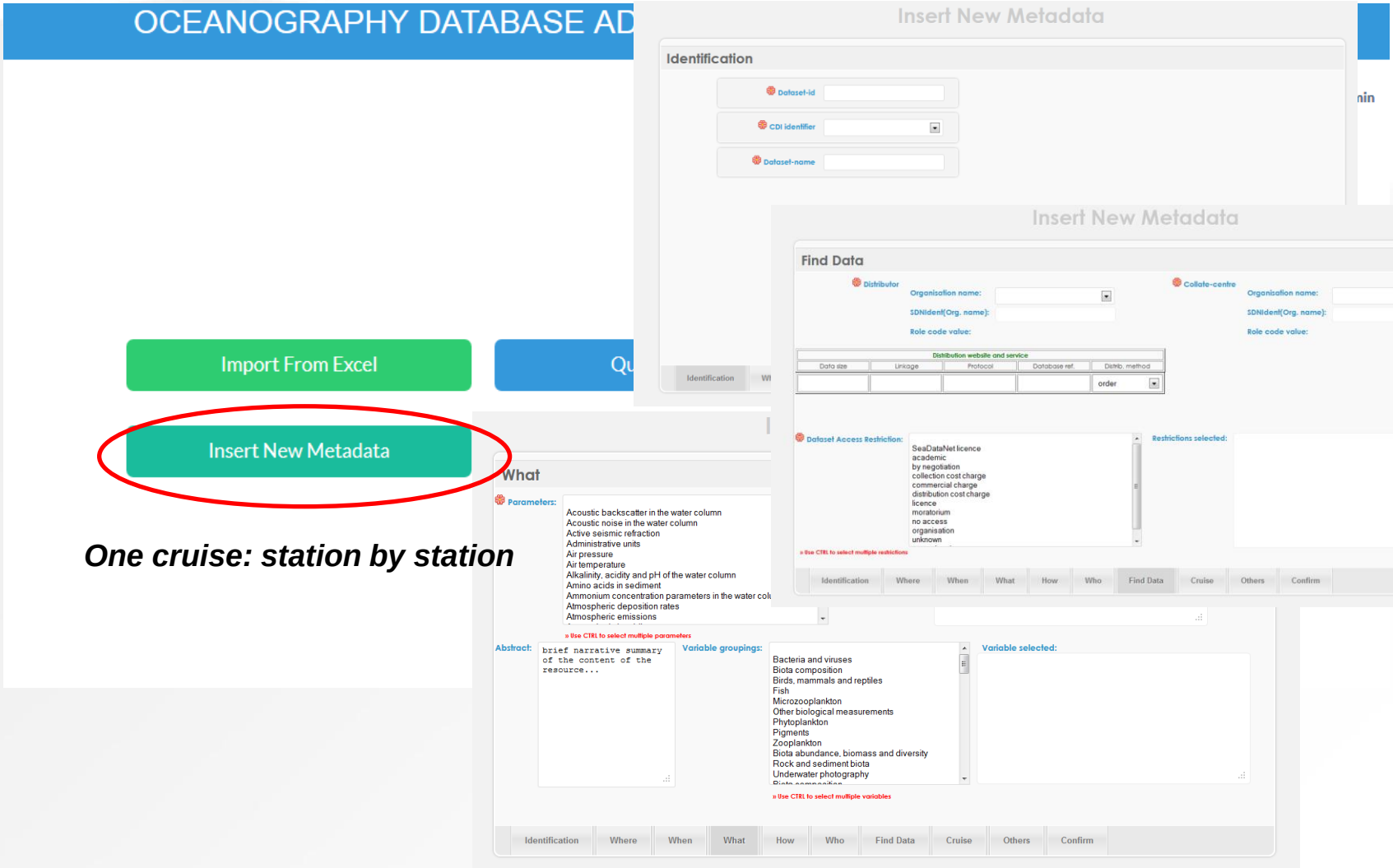
NIMRD internal DB

OCEANOGRAPHY DATABASE ADMINISTRATION

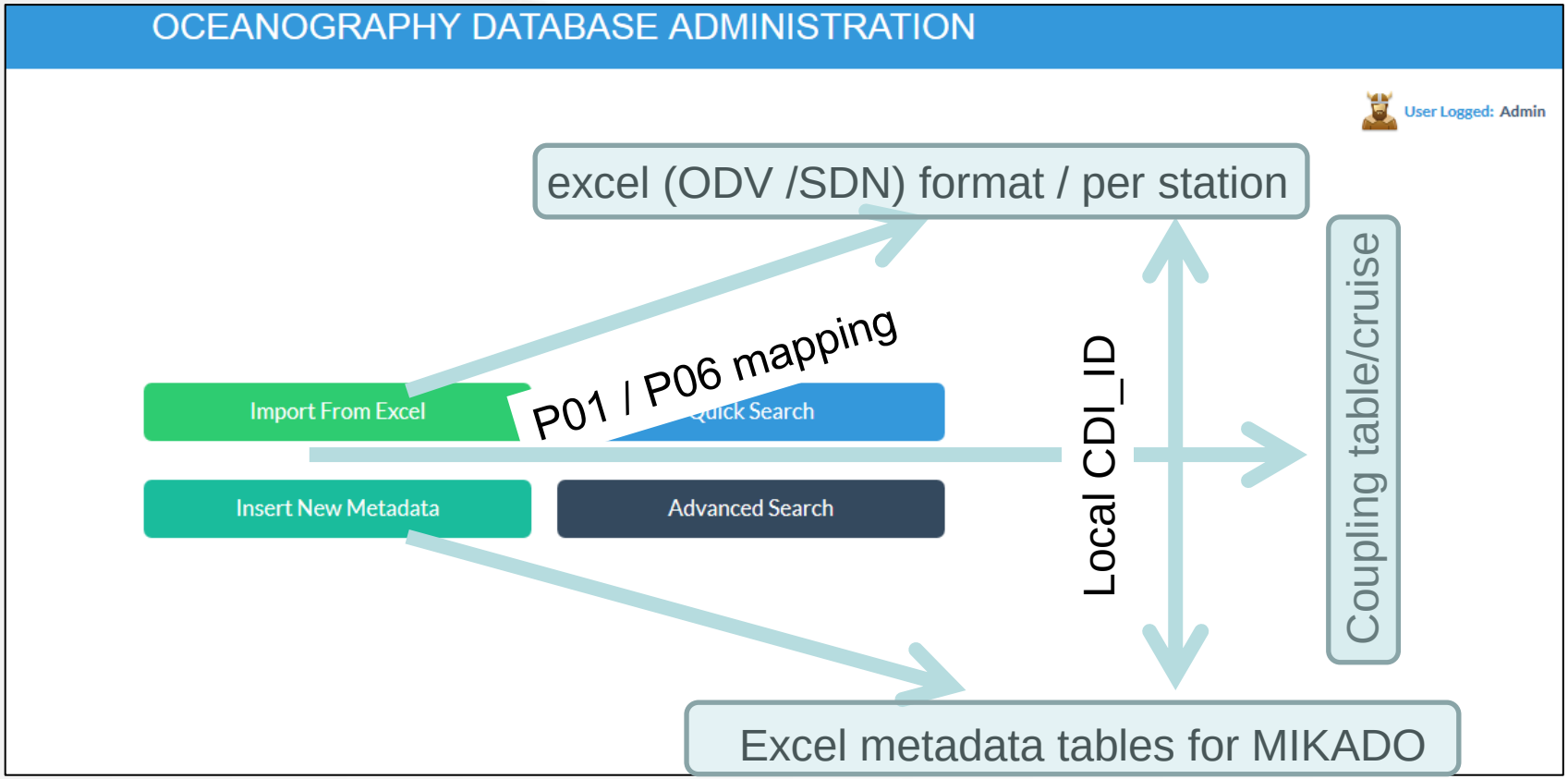
User Logged: Admin

excel (ODV) format / per cruise

QC



One cruise: station by station

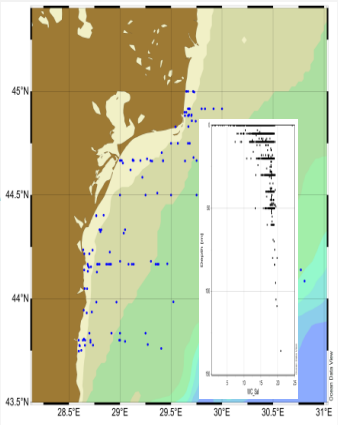

OCEANOGRAPHY DATABASE ADMINISTRATION
User Logged: Admin
excel (ODV /SDN) format / per station
P01 / P06 mapping
Import From Excel
Quick Search
Insert New Metadata
Advanced Search
Local CDI_ID
Coupling table/cruise
Excel metadata tables for MIKADO

2. Quality control

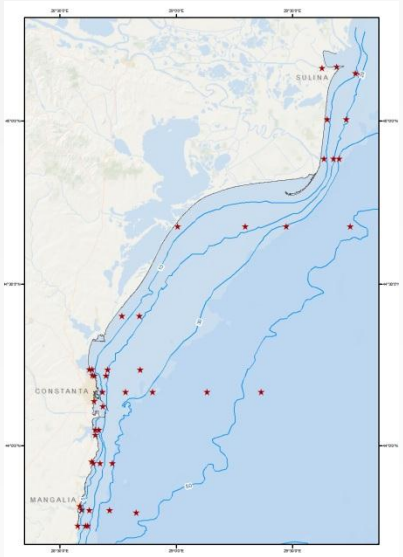
ODV / SDN data files
QC

ODV / SDN data files
Final QC

ODV software for
local climatology



GIS for local bathymetry
and coast line



Any possible QF change ⇒ report to data responsible

2. CDIs XML generation & submission to SDN

Excel metadata tables

MIKADO
(automatic)

XML files

CDIs XML → *e-mail* → MARIS Server

3. Data & CDIs XML Updates

Any data / metadata updates ⇔ inside NIMRD DB
(same LOCAL_CDI_ID)