



*Final plenary meeting – Brest – 16-17 September, 2015*



**SeaDataNet**

PAN-EUROPEAN INFRASTRUCTURE  
FOR OCEAN & MARINE DATA  
MANAGEMENT

## **New format extensions for catalogues interoperability**

M. Fichaut, IFREMER

S. Brégent, ALTRAN

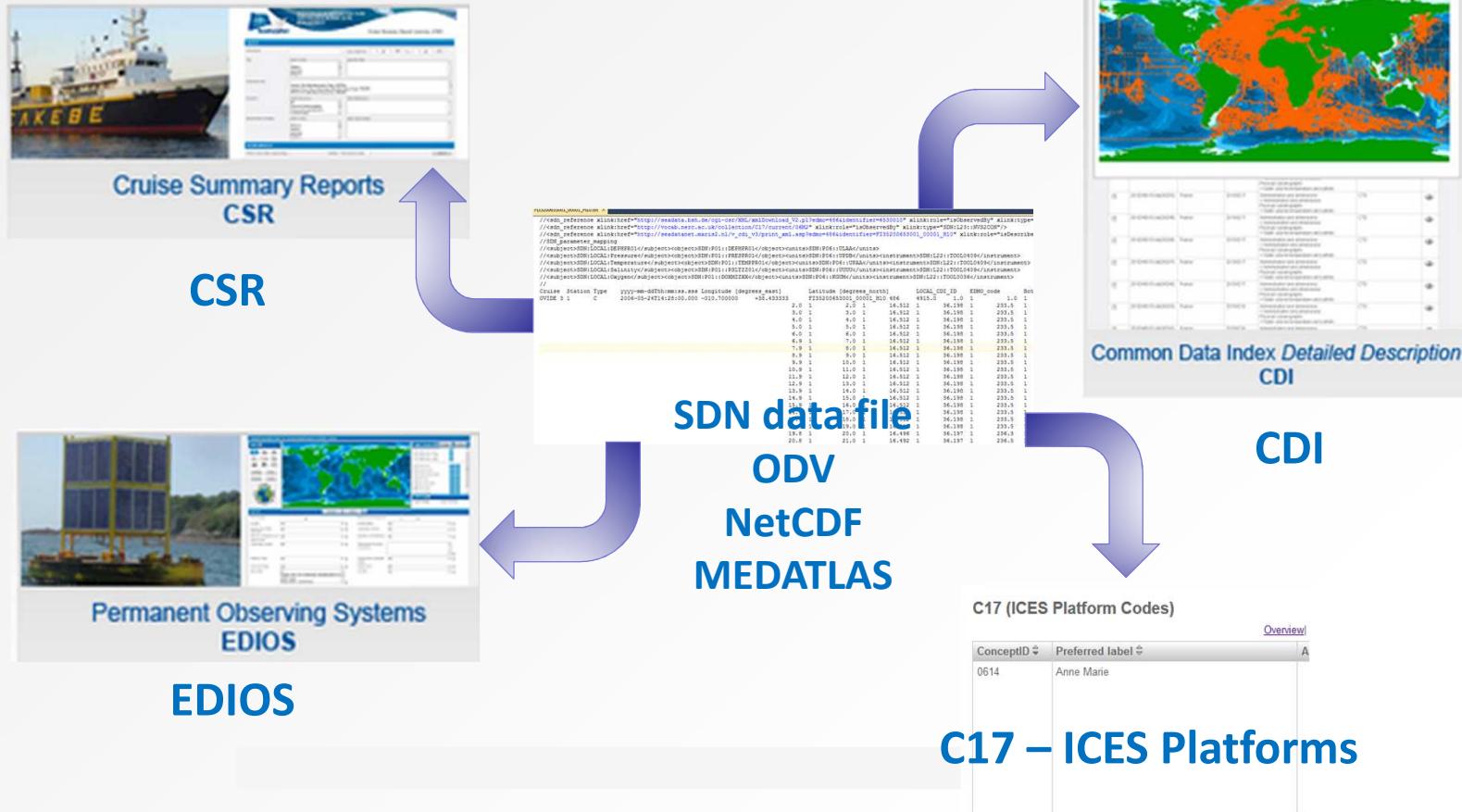
## New format extensions

- For all SeaDataNet formats
  - ODV
  - NetCDF
  - MEDATLAS
- Catalogue interoperability is possible through the `<sdn_reference>` tag



# Catalogue interoperability

- `<sdn_reference>` tag is used for linkage to external references



## Syntax of the **<sdn\_reference>** tag

3 mandatory attributes:

```
<sdn_reference xlink:href=URI xlink:role=text xlink:type=URN  
sdn:scope=EDMO_code||':'||LOCAL_CDI_ID/>
```

**xlink:href** = URL or URN of the XML document:

[http://seadatanet.maris2.nl/v\\_cdi\\_v3/print\\_xml.asp?edmo=486&identifier=8575](http://seadatanet.maris2.nl/v_cdi_v3/print_xml.asp?edmo=486&identifier=8575)

**xlink:role** = purpose of the document: *isDescribedBy* or *isObservedBy*

**xlink:type** = URN of the document type: L23 vocab: *SDN:L23::CDI*

1 optional attribute:

[**sdn:scope** = used only in ODV files: *486:8575*]

# Examples

- Reference to a CSR

```
<sdn_reference xlink:href="http://seadata.bsh.de/cgi-csr/XML/xmlDownload\_V2.pl?edmo=486&identifier=6530010"  
xlink:role="isObservedBy" xlink:type="SDN:L23::CSR"/>
```

- Reference to a platform

```
<sdn_reference  
xlink:href="http://vocab.nerc.ac.uk/collection/C17/current/06M2"  
xlink:role="isObservedBy" xlink:type="SDN:L23::NVS2CON"/>
```

- Reference to CDI

```
<sdn_reference  
xlink:href="http://seadatanet.maris2.nl/v\_cdi\_v3/print\_xml.asp?edmo=486&identifier=FI35200653001\_00001\_H10" xlink:role="isDescribedBy"  
xlink:type="SDN:L23::CDI">
```

```

//<sdn_reference xlink:href="http://seadata.bsh.de/cgi-csr/XML/xmlDownload_V2.pl?edmo=486"
//<sdn_reference xlink:href="http://vocab.nerc.ac.uk/collection/C17/current/06M2" xlink:re
//<sdn_reference xlink:href="http://seadatanet.maris2.nl/v_cdi_v3/print_xml.asp?edmo=486&
//SDN_parameter_mapping
//<subject>SDN:LOCAL:DEPHPR01</subject><object>SDN:P01::DEPHPR01</object><units>SDN:P06::l
//<subject>SDN:LOCAL:Pressure</subject><object>SDN:P01::PRESPR01</object><units>SDN:P06::l
//<subject>SDN:LOCAL:Temperature</subject><object>SDN:P01::TEMPPR01</object><units>SDN:P06::C
//<subject>SDN:LOCAL:Salinity</subject><object>SDN:P01::PSLTZZ01</object><units>SDN:P06::‰
//<subject>SDN:LOCAL:Oxygen</subject><object>SDN:P01::DOXMZZXX</object><units>SDN:P06::KGU
//
```

Cruise	Station	Type	yyyy-mm-ddThh:mm:ss.sss	Longitude [degrees_east]	Latitude
OVIDE	3	C	2006-05-24T14:28:00.000	-010.700000	+38.433333 FI35200653
				2.0	1
				3.0	1
				4.0	1
				5.0	1
				6.0	1
				6.9	1
				7.9	1
				8.9	1
				9.9	1
				10.9	1
				11.9	1
				12.9	1
				13.9	1
				14.9	1
				15.9	1
				16.9	1
				17.9	1
				18.9	1
				19.8	1
				20.8	1
				21.8	1
				22.8	1

In ODV data files,  
 <sdn\_reference> lines are above the  
 SDN\_parameter\_mapping lines

```
*DC HISTORY=
*
*DM HISTORY=
*
*COMMENT
*
*SDN_parameter_mapping
*<subject>SDN:LOCAL:DEPTH</subject><object>SDN:P01::ADEPZ201</object><units>SDN:P06::UI
*<subject>SDN:LOCAL:PRES</subject><object>SDN:P01::PRESPR01</object><units>SDN:P06::UI
*<subject>SDN:LOCAL:TEMP</subject><object>SDN:P01::TEMPPR01</object><units>SDN:P06::UI
*<subject>SDN:LOCAL:PSAL</subject><object>SDN:P01::PSLTZ201</object><units>SDN:P06::UI
*<subject>SDN:LOCAL:DOX2</subject><object>SDN:P01::DOXM22XX</object><units>SDN:P06::K0
*EDMO_CODE=486
*LOCAL_CDI_ID=ET35200653001_00001_H10
*<sdn_reference xlink:href="http://seadata.bsh.de/cgi-csr/XML/xmlDownload_V2.pl?edmo=486">
*<sdn_reference xlink:href="http://vocab.nerc.ac.uk/collection/C17/current/06MM" xlink:type="simple">
*<sdn_reference xlink:href="http://seadatanet.maris2.nl/v_cdi_v3/print_xml.asp?edmo=486">
*SURFACE SAMPLES=
*
*DEPTH PRES TEMP PSAL DOX2
 1.0    1.0 16.512 36.198 233.500 11111
 2.0    2.0 16.512 36.198 233.500 11111
 3.0    3.0 16.512 36.198 233.500 11111
 4.0    4.0 16.512 36.198 233.500 11111
 5.0    5.0 16.512 36.198 233.500 11111
 6.0    6.0 16.512 36.198 233.500 11111
 7.0    7.0 16.512 36.198 233.500 11111
 8.0    8.0 16.512 36.198 233.500 11111
 9.0    9.0 16.512 36.198 233.500 11111
10.0   10.0 16.512 36.198 233.500 11111
11.0   11.0 16.512 36.198 233.500 11111
12.0   12.0 16.512 36.198 233.500 11111
13.0   13.0 16.512 36.198 233.500 11111
```

In MEDATLAS data files,  
<sdn\_reference> lines are just  
after the LOCAL\_CDI\_ID line

## ***netCDF***

Variable is a 3D array

```
char SDN_XLINK(INSTANCE, REFMAX,  
STRING177) ;
```

```
SDN_XLINK:long_name = "External resource linkages" ;
```

Content of variable is an array of <sdn\_reference> with syntax explained before

## ***Impact on SDN tools***

- NEMO
  - creation of the <sdn\_reference> tag in the SDN files
- DM, SPLITTER, ODV
  - read the tags
  - generate the <sdn\_reference> on CDI if not exists
- Convertors (MedSDN2CFPOINT and OdvSDN2CFPOINT)
  - read and convert the tags
  - generate the <sdn\_reference> on CDI if not exists

## ***NEMO and catalogue interoperability***

- Since v1.6.0 Cruise tab is also available for conversion to ODV and NetCDF
- → local CSR identifier and C17 ship code can be input to generate the **<sdn\_reference>** linkage to **CSR catalogue** and to the **platform vocabulary** (**list C17**)
- → the linkage to **CDI** catalogue is done automatically when NEMO generate the **LOCAL\_CDI\_ID**

[File] Cruise / Collection Station Data Convert

```
* Sea-Bird SBE 19plus V2 Data File:  

* FileName = C:\pelgas13\ctd\HEX\R0171.hex  

* Software Version Seasave V 7.22.5  

* Temperature SN = 6213  

* Conductivity SN = 6213  

* System UpLoad Time = Apr 28 2013 01:06:33  

* NMEA Latitude = 43 39.82697 N  

* NMEA Longitude = 002 20.05026 W  

* NMEA UTC (Time) = Apr 28 2013 01:06:01  

* Store Lat/Lon Data = Append to Every Scan  

** Ship: Thalassa - golfe de Gascogne  

** campagne : Pelgas13 23 avril - 4 juin 2013  

* Real-Time Sample Interval = 0.2500 seconds  

* System UTC = Apr 27 2013 23:06:33  

# nquan = 12  

# nvalues = 497  

# units = specified  

# name 0 = prdM: Pressure, Strain Gauge [db]  

# name 1 = tv290C: Temperature [ITS-90, deg C]  

# name 2 = cOmS/cm: Conductivity [mS/cm]  

# name 3 = wetStar: Fluorescence, WET Labs WETstar [m]  

# name 4 = obs3+: OBS, D & A 3plus [NTU]  

# name 5 = obs3+1: OBS, D & A 3plus, 2 [NTU]  

# name 6 = scan: Scan Count  

# name 7 = dz/dtM: Descent Rate [m/s]  

# name 8 = sal00: Salinity, Practical [PSU]  

# name 9 = sigma-é00: Density [sigma-theta, kg/m^3]  

# name 10 = nbins: number of scans per bin  

# name 11 = flag: flag  

# span 0 = 1.000, 497.000  

# span 1 = 11.4484, 13.0955  

# span 2 = 40.313965, 41.591011  

# span 3 = 0.5565, 6.2129  

# span 4 = 0.2942, 0.6530  

# span 5 = 1.7982, 2.2049  

# span 6 = 859, 3085
```

### Cruise / Collection Description

**Validate step**

**Server initialisation**

**XML Initialisation**

**Reset**



#### ▼ Reference \*

Input the references of the cruise / collection

**Cruise / collection reference \***

FI35200704004

**Local CSR Identifier**

7040040

**Cruise / collection name**

PELGAS 2007

**Ship**

35HT - Thalassa

**Location**

**Data Source**

**Archiving Centre**

**Type of data**

**Comments**



# NEMO

## Cruise tab for conversion to ODV

Linkage to CSR catalogue

Linkage to C17 vocab list

### Cruise / Collection Description

Validate step

Server initialisation

XML Initialisation

Reset

+

#### ▼ Reference \*

Input the references of the cruise / collection

Cruise / collection reference \*

FI35200704004

Local CSR Identifier

7040040

Cruise / collection name

PELGAS 2007

Ship

35HT - Thalassa

▶ Location

▶ Data Source

▶ Archiving Centre

▶ Type of data

▶ Comments



# *Thanks for your attention*



[sdn-userdesk@seadatanet.org](mailto:sdn-userdesk@seadatanet.org) – [www.seadatanet.org](http://www.seadatanet.org)