



SeaDataNet

*PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT*

Making SeaDataNet more fit for handling biological data

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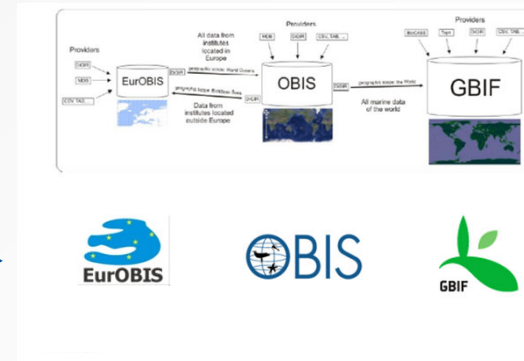
IMDIS, 23-25 September 2013

Objective

- **SDN II extension to marine biological data**

SeaDataNet II will undertake actions to make SeaDataNet better fit for handling marine biological data sets and establishing interoperability with biology infrastructure developments.

EMODNET biology
EUROBIS & (OBIS and GBIF)
EUROMARINE
WORMS (& PESI, 4D4Life, EOL)
LIFEWATCH



Objective

Original DOW task description :

WP8.3: Defining extended metadata format for CDI to support handling of marine biological data

- D8.4 Analysis report with required adaptations for marine biological data
 - ✓ required adaptations of the CDI format
 - ✓ required extensions of the vocabularies
 - ✓ possible need for support of extra data formats
 - ✓ proposed exchange protocol for handling marine biological data

Approach

- Look at the types of data concerned and corresponding minimal requirements
- Look at data use and applications and corresponding minimal requirements
- Look at existing standards and practices in the biological community
- Compare to available standards within SeaDataNet approach



SeaDataNet

PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

Example data



```
<?xml version="1.0" encoding="UTF-8"?>
<SimpleDarwinRecordSet
  xmlns="http://rs.tdwg.org/dwc/xsd/simpledarwincore/"
  xmlns:dc="http://purl.org/dc/terms/"
  xmlns:dwc="http://rs.tdwg.org/dwc/terms/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://rs.tdwg.org/dwc/xsd/simpledarwincore/ http://rs.tdwg.org/dwc/xsd/
<SimpleDarwinRecord>
  <dc:modified>2006-05-04T18:13:51.0Z</dc:modified>
  <dc:language>en</dc:language>
  <dwc:baseOfRecord>Taxon</dwc:baseOfRecord>
  <dwc:scientificNameID>http://research.calacademy.org/research/ichthyology/catalog/fishesoc
  <dwc:acceptedNameUsageID>http://research.calacademy.org/research/ichthyology/catalog/fishesoc
  <dwc:originalNameUsageID>http://research.calacademy.org/research/ichthyology/catalog/fishesoc
  <dwc:nameAccordingToID>http://research.calacademy.org/research/ichthyology/catalog/getref.asp?id=22764</dwc:nameAccordingToID>
  <dwc:namePublishedInID>http://research.calacademy.org/research/ichthyology/catalog/getref.asp?id=671</dwc:namePublishedInID>
  <dwc:scientificName>Centropyge flavicauda Fraser-Brunner 1933</dwc:scientificName>
  <dwc:parentNameUsage>Centropyge kausi, 1860</dwc:parentNameUsage>
  <dwc:acceptedNameUsage>Centropyge fisheri (Snyder 1904)</dwc:acceptedNameUsage>
  <dwc:originalNameUsage>Centropyge flavicauda Fraser-Brunner 1933</dwc:originalNameUsage>
  <dwc:nameAccordingTo>Allen, G.R. 1980. Butterfly and angelfishes of the world. Volume II. Mergus Publishers. Pp. 149-352.</dwc:nameAccordingTo>
  <dwc:namePublishedIn>Fraser-Brunner, A. 1933. A revision of the chaetodont fishes of the subfamily Pomacanthinae. Proceedings of the General
    Meetings for Scientific Business of the Zoological Society of London 1933 (pt 3, no.30): 543-599, Pl. 1.</dwc:namePublishedIn>
  <dwc:higherClassification>Animalia>Chordata>Vertebrata>Osteichthyes>Actinopterygii>Neopterygii>Teleostei>Acanopterygii>Perciformes
    >Percoidae>Pomacanthidae>Centropyge</dwc:higherClassification>
  <dwc:kingdom>Animalia</dwc:kingdom>
  <dwc:phylum>Chordata</dwc:phylum>
  <dwc:class>Osteichthyes</dwc:class>
  <dwc:order>Perciformes</dwc:order>
  <dwc:family>Pomacanthidae</dwc:family>
  <dwc:genus>Centropyge</dwc:genus>
  <dwc:specificEpithet>flavicauda</dwc:specificEpithet>
  <dwc:scientificNameAuthorship>Fraser-Brunner 1933</dwc:scientificNameAuthorship>
  <dwc:taxonRank>species</dwc:taxonRank>
  <dwc:nomenclaturalCode>ICZN</dwc:nomenclaturalCode>
  <dwc:taxonomicStatus>accepted</dwc:taxonomicStatus>
</SimpleDarwinRecord>
</SimpleDarwinRecordSet>
```

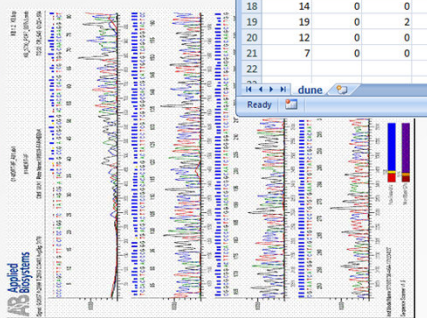
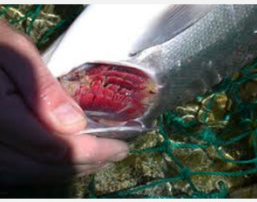
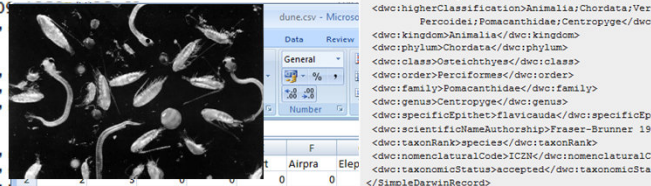
WGPDMOexample.txt - Kladblok

Bestand Bewerken Opmaak Beeld Help

```
00, BLUK,74,2004,3,2,,,,,,,,,,,,,
20, BLUK,1,GR1,,,,,4,,,,,,,,,,,,,
21,1, BLUK,,T19,NA,NON,NA,,,,,GRS,,,,,
90,74E9,CEND7/04,DEFRA,,,,,
91,CEND7/04,77,+55 19.234,-001 15.123,HLS,2004070
03,CEND7/04,77,CF,1,1,,LIMANDA LIMANDA,ITLN,RS,,
04,CEND7/04,77,1,1,1,OW,M,NS,,K,3,,,,,
10,CEND7/04,77,1,1,WO,,LNMEA,CM,,1,,17,,,,,
10,CEND7/04,77,1,1,EP,,LYMP CYS,AFNR,,1,,1,,,,,
10,CEND7/04,77,1,1,EP,,SKIN ULC,AFNR,,1,,0,,,,,
10,CEND7/04,77,1,1,EP,,EPID PAP,AFNR,,1,,0,,,,,
04,CEND7/04,77,1,2,1,OW,F,NS,,K,3,,,,,
10,CEND7/04,77,1,2,WO,,LNMEA,CM,,1,,18,,,,,
10,CEND7/04,77,1,2,EP,,LYMP CYS,AFNR,,1,,1,,,,,
10,CEND7/04,77,1,2,EP,,SKIN ULC,AFNR,,1,,0,,,,,
10,CEND7/04,77,1,2,EP,,EPID PAP,AFNR,,1,,1,,,,,
04,CEND7/04,77,1,3,4,OW,F,NS,,K,2,,,,,
10,CEND7/04,77,1,3,WO,,LNMEA,CM,,1,,21,,,,,
10,CEND7/04,77,1,3,EP,,SKIN ULC,AFNR,,1,,0,,,,,
10,CEND7/04,77,1,3,EP,,LYMP CYS,AFNR,,1,,4,,,,,
04,CEND7/04,77,1,4,1,OW,F,NS,,K,3,,,,,
10,CEND7/04,77,1,4,WO,,LNMEA,CM,,1,,23,,,,,
10,CEND7/04,77,1,4,EP,,SKIN ULC,GRADE,,1,,3,,,,,
10,CEND7/04,77,1,4,EP,,EPID PAP,GRADE,,1,,1,,,,,
10,CEND7/04,77,1,4,EP,,LYMP CYS,GRADE,,1,,0,,,,,
```

dune.csv - Microsoft Excel spreadsheet showing columns for Airpra and Elep.

| | Airpra | Elep |
|----|--------|------|
| 3 | 13 | 0 |
| 4 | 4 | 2 |
| 5 | 16 | 0 |
| 6 | 6 | 0 |
| 7 | 1 | 0 |
| 8 | 8 | 0 |
| 9 | 5 | 2 |
| 10 | 17 | 0 |
| 11 | 15 | 0 |
| 12 | 10 | 2 |
| 13 | 11 | 0 |
| 14 | 9 | 0 |
| 15 | 18 | 2 |
| 16 | 3 | 2 |
| 17 | 20 | 0 |
| 18 | 14 | 0 |
| 19 | 19 | 2 |
| 20 | 12 | 0 |
| 21 | 7 | 0 |
| 22 | | |



Vissoort : Schol Datum : 04/07/2008

Vaartuig : O89 PK : Vissenj : bokken

Zone : N Visuren : Totale vangst : 11060

| Sortering | 1 | 2 | 3 | 4 | 5 |
|-------------|--------|--------|--------|--------|--------|
| Tot. vangst | 1880 | 3491 | 4289 | 1210 | 190 |
| Monster | 25.460 | 36.450 | 48.100 | 61.200 | 91.200 |
| 24 | | | | | |
| 25 | | | | | |
| 26 | 3 | | | | |
| 27 | 7 | | | | |
| 28 | 20 | | | | |
| 29 | 23 | | | | |
| 30 | 27 | 1 | | | |
| 31 | 14 | 12 | | | |
| 32 | 5 | 29 | | | |
| 33 | 1 | 29 | 5 | | |
| 34 | | 21 | 16 | | |
| 35 | | 6 | 20 | | |
| 36 | | 1 | 27 | 4 | |
| 37 | | | 15 | 8 | |
| 38 | | | | 21 | 2 |
| 39 | | | | 28 | 2 |
| 40 | | | | 16 | 2 |
| 41 | | | 1 | 14 | 4 |
| 42 | | | | 3 | 10 |
| 43 | | | | 3 | 10 |
| 44 | | | | 1 | 9 |
| 45 | | | | 1 | 22 |
| 46 | | | | | 10 |
| 47 | | | | 1 | 5 |
| 48 | | | | | 10 |
| 49 | | | | | 4 |
| 50 | | | | | 2 |

Types of data

- Observation and results

- Occurrence
- Density
- Biomass
- Body morphology
- Condition
- Substance concentrations or ratios
- Sequencing material



FORMAT & FIELD
REQUIREMENTS


- Biological components (=non-taxonomic groups)

- benthos, plankton, fish, birds, mammals, ...



FORMAT & FIELD
REQUIREMENTS

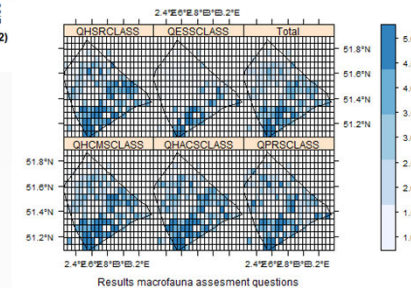
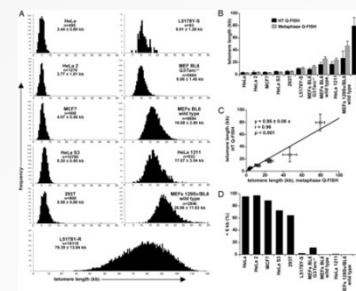
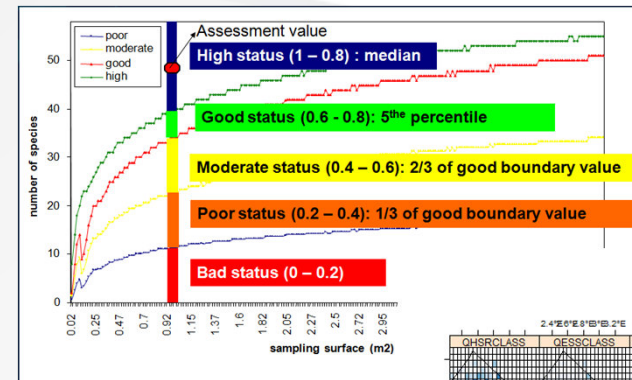
Types of data

- Geometry and sampling protocol  FORMAT & FIELD REQUIREMENTS
 - Point
 - soft-bottom grabs & cores (depth layer separation possible)
 - vertical net and water samples (multiple depths possible)
 - static net samples
 - hard-bottom sampling (scraping or visual)
 - static observations/underwater photography
 - Curve
 - net trawl, dredge or sledge
 - transect observations/underwater video
 - Surface
 - surface observations

Data applications

- Species lists
- Species distribution
- Species richness
- Index calculations
BEQI, AMBI, BQI, ...
Biological Valuation
- Population studies
- MSFD?, OSPAR?, ICES?...

➔ FORMAT & FIELD REQUIREMENTS



Standards and practices in the biological community

Biodiversity Information Standards (TDWG)

- non-profit scientific & educational association affiliated with International Union of Biological Sciences.
- development of standards for the exchange of biological/biodiversity data.

ABCD (Access to Biological Collections Data)

- schema for biological collection records with numerous specific extensions (1200 concepts in ABCD 2.06)

Darwin Core (DwC)

- versioned body of standards to facilitate the sharing of information about biological diversity

OBIS schema

- Darwin core V2 specifically aimed at ocean biogeographic information

LSID: Life Science Identifier

persistent, globally unique identifiers for biological objects including taxonomic names, specimen records, images and DNA sequences...

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Standards and practices in the biological community

- **Some large marine integrative databases**
 - **Macroben [MarBEF (FP6)]**
 - **Macrobenthos**
 - **Manuela [MarBEF (FP6)]**
 - **Meiobenthos**
 - **LargeNet [MarBEF (FP6)]**
 - **Benthos and plankton**
 - **Hermione DB [Hermione (FP7)]**
 - **Deep sea observations**
 - **IMERS [regional survey database]**
 - **Benthos, Plankton, Seabirds, ...**

| | <u>OBIS required</u> | <u>MarBEF MacroBEN</u> | <u>MarBEF LargeNet</u> | <u>MarBEF Manuela</u> | <u>Hermione DB</u> | <u>IMERS</u> |
|-------------------------|----------------------|------------------------|---------------------------------------|---------------------------------------|--|----------------------------|
| Survey | | / | / | / | cruise | trip |
| LocationID | | statcode | stat_code | stat_code | seaname | namedplace |
| Longitude | X | lat | lat | lat | lat | start longitude |
| Latitude | X | long | long | long | long | start latitude |
| WKTFootPrint | | / | / | / | / | start longitude |
| WKTFootPrint | | / | / | / | / | start latitude |
| WKTFootPrint | | / | / | / | / | end longitude |
| WKTFootPrint | | / | / | / | / | end latitude |
| / | | | | | | |
| MinimumDepth | | depth | bottom depth | depth_min | sample_depth | sampling depth |
| MaximumDepth | | depth | bottom depth | depth_max | sample_depth | sampling depth |
| EventID | | / | / | / | eventID, eventlabel | eventid |
| InstitutionCode | X | institute | institute | institute | institute | institute |
| SamplingProtocol | | (mesh, equipment) | sample_method, subsample protocol, | sample_method | samplingequipment | instrument |
| EventDate | | day, month, year | sample_year, sample_month, sample_day | sample_year, sample_month, sample_day | date_time, sample_year, sample_month, sample_day | startdate, enddate |
| FieldNumber | | replicate | sample_id, replicate | sample, replicate | replica_id | Sample ID |
| SampleSize | | Area | sample_area | sample_area | sample_surface_volume | distance, volume, filtered |
| ScientificName | X | / | cleancode | cleancode | species | Taxon |
| ScientificNameID | | aphia_id | aphia_id | aphia_id | aphia_ID | aphia_ID |
| Sex | X | / | / | / | / | gender |
| LifeStage | | stage | stage | stage | lifestage | lifestage |
| ObservedIndividualCount | | count | count | abundance | count | count |

Compare to available standards within SeaDataNet

- Current Data transport format useful for biological data?

⇒ Not as it is;

in order to adequately describe the biological observations we need:

- Additional information elements needed
 - In format (or in CDI)
- Adapted parameter vocab
- More generic semantic header

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|----|---|------------|------|-----------|-----------|----------|------------|---------|-----------|-----------|---------|--------|---------|
| 1 | //Data documentation at http://www.bodc.ac.uk/data/documents/series/49486/ | | | | | | | | | | | | |
| 2 | //SDN_parameter_mapping | | | | | | | | | | | | |
| 3 | //<subject>SDN:LOCAL:Chronological Julian Date</subject><object>SDN:P011::CIDY1101</object><units>SDN:P061::UTAA</units> | | | | | | | | | | | | |
| 4 | //<subject>SDN:LOCAL:CurDir</subject><object>SDN:P011::LCSAEL01</object><units>SDN:P061::UABB</units> | | | | | | | | | | | | |
| 5 | //<subject>SDN:LOCAL:CurSpd</subject><object>SDN:P011::LCSAEL01</object><units>SDN:P061::UVBB</units> | | | | | | | | | | | | |
| 6 | //<subject>SDN:LOCAL:Temp</subject><object>SDN:P011::TEMPPR01</object><units>SDN:P061::UPAA</units> | | | | | | | | | | | | |
| 7 | // | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | Cruise | Station | Type | yyyy-mm | Longitude | Latitude | I-LOCAL_CC | EDMO_co | Bot.Depth | Chronolog | QV:SEAD | CurDir | QV:SEAD |
| 10 | RCM.C | 1185/C/BC* | | 1983-08-2 | 1.4153 | 54.5855 | 49486 | 43 | 27 | 2445568 | 1 | 322 | 1 |
| 11 | | | | | | | | | | 2445568 | 1 | 321 | 1 |
| 12 | | | | | | | | | | 2445568 | 1 | 321 | 1 |
| 13 | | | | | | | | | | 2445568 | 1 | 322 | 1 |
| 14 | | | | | | | | | | 2445568 | 1 | 323 | 1 |
| 15 | | | | | | | | | | 2445568 | 1 | 324 | 1 |
| 16 | | | | | | | | | | 2445568 | 1 | 322 | 1 |
| 17 | | | | | | | | | | 2445568 | 1 | 323 | 1 |
| 18 | | | | | | | | | | 2445568 | 1 | 324 | 1 |
| 19 | | | | | | | | | | 2445568 | 1 | 327 | 1 |
| 20 | | | | | | | | | | 2445568 | 1 | 328 | 1 |
| 21 | | | | | | | | | | 2445569 | 1 | 329 | 1 |

Information elements required

- Identified crucial elements for mentioned applications:

- Survey *(ABCD)*
- LocationID *(DwC)*
- Longitude *(OBIS)*
- Latitude *(OBIS)*
- WKTFootprint *(OBIS)*
- MinimumDepth *(OBIS)*
- MaximumDepth *(OBIS)*
- EventID *(DwC)*
- SamplingProtocol *(DwC)*
- EventDateTime *(DwC)*
- FieldNumber *(OBIS)*
- SampleSize *(OBIS)*
- ScientificName *(OBIS, DwC)*
- ScientificNameID *(DwC)*
- LifeStage *(OBIS, DwC)*
- Sex *(OBIS, DwC)*
- ObservedIndividualCount *(OBIS, DwC)*

Adapted parameter vocabulary

- P01 not very efficient for describing biological community observations
 - Generates huge amount of P01 entries
 - ex: MEIF0033 -*Abundance of Daptonema spp. (WoRMS 2455) per unit area of the bed by sieving and picking under an optical microscope*
 - 1 meiobenthos core => > 150 # taxa x lifestages x gender (x different taxonomic precision)
- Link to WoRMS, but:
 - Taxonomy changes continuously (WoRMS has the most up-to-date names list)
 - No way of performing QC on taxon list
 - No way of validating new entries

Adapted parameter vocabulary

Solution:

- Using more generic P011 terms
 - *SDBIOL01* Abundance of unspecified biological entity per unit volume of the water body
 - *SDBIOL02* Abundance of unspecified biological entity per unit area of the bed
 - *SDBIOL03* Ash-free dry weight biomass of unspecified biological entity per unit area of the bed
 - *SDBIOL04* Wet weight biomass of unspecified biological entity per unit volume of the water body
 - *SDBIOL05* Wet weight biomass of unspecified biological entity per unit area of the bed
- Include separate taxon, lifestage and gender fields

| <u>ScientificName</u> | ScientificNameID | Sex | LifeStage |
|-----------------------|--------------------|---------|-----------|
| Scophthalmus maximus | urn:lsid:marinespe | Unknown | Adult |

More generic semantic header

- Include references to external vocabularies
 - For example ICES vocab server: <http://vocab.ices.dk/matrix>
- Clarify subject, object and unit
- Use Darwin Core compliant terminology

| Proposal: | <u>example1</u> | <u>example2</u> |
|---------------------|---|---|
| • Name | matrix | density[ind/m ²] |
| • Reference | http://vocab.ices.dk/matrix | / |
| • MeasurementType | / | http://www.seadatanet.org/urnurl/SDN:P011::SDBIOL02 |
| • MeasurementUnit | / | http://www.seadatanet.org/urnuSDN:P061::UPMS |
| • MeasurementMethod | / | / |

More generic semantic header

- ```
//<Field Index="21"
Name="Density[m2]"
Description="Abundance of unspecified biological entity per unit area of the bed (individuals/m2)"
MeasurementTypeReference="http://www.seadatanet.org/urnurl/SDN:P01::SDBIOL02"
MeasurementUnitReference="http://www.seadatanet.org/urnurl/SDN:P061::UPMS"
MeasurementMethodReference=""
>
```

## Suggested format

HEADER  
Describing columns

```
//Field 1 is; Unit, Type of measurement; method of measurement...
//Field 2 is.....; Unit, Type of measurement; method of measurement...
//....
```

DATA TABLE

| Field 1 | Field 2 | Field 3 | Field ... |
|---------|---------|---------|-----------|
|         |         |         |           |
|         |         |         |           |
|         |         |         |           |
|         |         |         |           |
|         |         |         |           |
|         |         |         |           |
|         |         |         |           |
|         |         |         |           |
|         |         |         |           |

## Suggested format

HEADER  
Describing columns

```
//Field 1 is; Unit, Type of measurement; method of measurement...
//Field 2 is.....; Unit, Type of measurement; method of measurement...
//....
```

DATA TABLE

| Field 1        | Field 2 | Field 3 | Field ...                                        |
|----------------|---------|---------|--------------------------------------------------|
| 17 core fields |         |         | # additional fields                              |
|                |         |         | From: SDN, OBIS, ICES, DwC, IOOSbiology, ...     |
|                |         |         | Templates that include certain additional fields |

# Core Fields

| Field | BIODEF                         | SDN <u>version</u>                   | <u>Origin</u> |
|-------|--------------------------------|--------------------------------------|---------------|
| Core  | <u>Survey</u>                  | <u>Cruise</u>                        | SDN ODV       |
| Core  | <u>LocationID</u>              | <u>Station</u>                       | SDN ODV       |
| Core  | <u>Longitude</u>               | <u>Longitude[degrees_east]</u>       | SDN ODV       |
| Core  | <u>Latitude</u>                | <u>Latitude[degrees_north]</u>       | SDN ODV       |
| Core  | <u>WKTFootPrint</u>            | <u>Latitude1</u>                     | CDI           |
| Core  | <u>WKTFootPrint</u>            | <u>Longitude1</u>                    | CDI           |
| Core  | <u>WKTFootPrint</u>            | <u>Latitude2</u>                     | CDI           |
| Core  | <u>WKTFootPrint</u>            | <u>Longitude2</u>                    | CDI           |
| Core  | <u>/</u>                       | <u>Bot. Depth (m)</u>                | SDN ODV       |
| Core  | <u>MinimumDepth</u>            | <u>MinimumObservationDepth (CDI)</u> | CDI           |
| Core  | <u>MaximumDepth</u>            | <u>MaximumObservationDepth (CDI)</u> | CDI           |
| Core  | <u>EventID</u>                 | <u>localCDid</u>                     | SDN ODV       |
| Core  | <u>InstitutionCode</u>         | <u>EDMOCODE</u>                      | SDN ODV       |
| Core  | <u>SamplingProtocol</u>        | <u>InstrumentType</u>                | CDI           |
| Core  | <u>EventDate</u>               | <u>yymmddThh:ss</u>                  | ODV           |
| Core  | <u>FieldNumber</u>             | <u>FieldNumber</u>                   | OBIS          |
| Core  | <u>SampleSize</u>              | <u>SampleSize</u>                    | OBIS          |
| Core  | <u>ScientificName</u>          | <u>ScientificName</u>                | OBIS          |
| Core  | <u>ScientificNameID</u>        | <u>ScientificNameID</u>              | <u>DwC</u>    |
| Core  | <u>Sex</u>                     | <u>Sex</u>                           | OBIS          |
| Core  | <u>LifeStage</u>               | <u>LifeStage</u>                     | OBIS          |
| Core  | <u>ObservedIndividualCount</u> | <u>ObservedIndividualCount</u>       | OBIS          |



## Examples/templates

- macrobenthos community data with density and biomass values.
- zooplankton community with samples from different depths
- demersal fish population data with densities for different size classes and individual fish measurements (examples of subsamples are included)
- pollutant concentrations in biota specimens

BIODEF11\_DemFish - Notepad

```
File Edit Format View Help
//<AdditionalFields>
//<Field Index="18" Name="SubsamplingCoefficient" Description="Proportion of the subsample compared to originally collected total sample in case of subsa
//<Field Index="19" Name="observedMinLengthInCm" Description="record minimum length in centimeters if measuring more than one individual for aggregate le
//<Field Index="20" Name="observedMaxLengthInCm" Description="record maximum length in centimeters if measuring more than one individual for aggregate le
//<Field Index="21" Name="observedIndividualLengthInCm" Description="record maximum length in centimeters if single individual is observed and measured (
//<Field Index="22" Name="Density_per_m2" Description="Abundance of unspecified biological entity per unit area of the bed (individuals/m²)" Measurement
//</CoreFields>
//</AdditionalFields>
Survey LocationID Longitude Latitude WKTFootPrint EventID SamplingProtocol EventDate MinimumDepth MaximumDepth F
RV Pelagia/199402 Voordelta2 3,56706 51,80916 LINestring(3.56289 51.72211, 3.57123 51.89621) VD_1201 Beam Trawl; 5m width; 20cm high;
RV Pelagia/199402 Voordelta2 3,56706 51,80916 LINestring(3.56289 51.72211, 3.57123 51.89621) VD_1201 Beam Trawl; 5m width; 20cm high;
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RV Pelagia/199402 Voordelta3 3,56732 51,80632 LINestring(3.56390 51.79867, 3.56988 51.80866) VD_1202 Beam Trawl; 5m width; 20cm high;
RV Pelagia/199402 Voordelta3 3,56732 51,80632 LINestring(3.56390 51.79867, 3.56988 51.80866) VD_1202 Beam Trawl; 5m width; 20cm high;
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RV Pelagia/199402 Voordelta3 3,56732 51,80632 LINestring(3.56390 51.79867, 3.56988 51.80866) VD_1202 Beam Trawl; 5m width; 20cm high;
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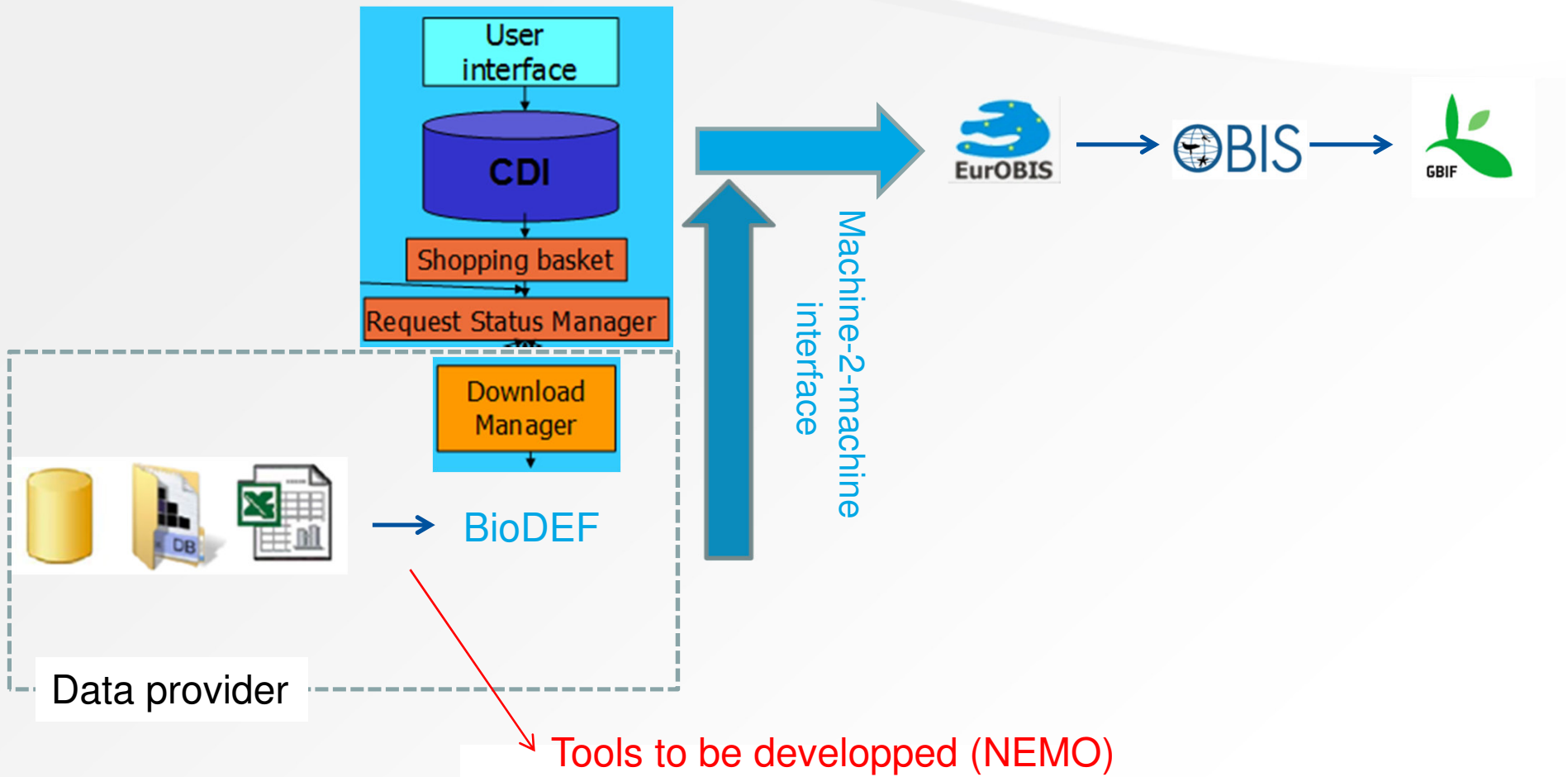
## ***Important differences with ODV***

- DwC & OBIS terminology for core fields
- High number of fixed fields
- Includes text fields
- Date time: iso 8601; extended possibilities
- Trajectory <> track of trawl
- Vertical profile <> vertical net haul plankton
- Header can include external references and vocabularies

=> Increasing compatibility with SDN ODV

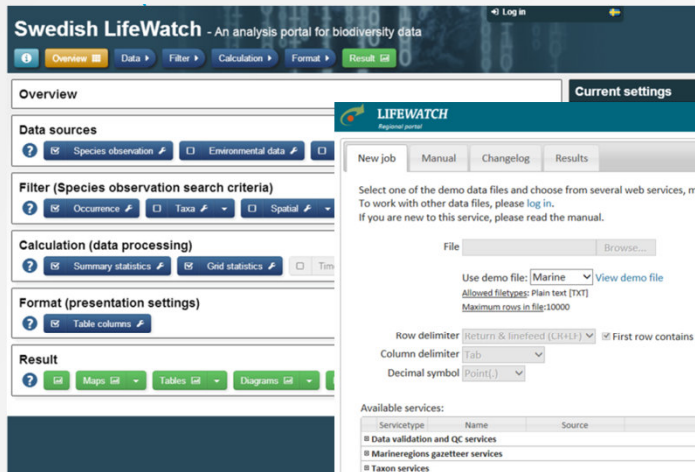


## Data exchange protocols



# Tools

- Ocean Data Viewer
- Taxonomic QC: WoRMS and LifeWatch taxon match tools
- Spatial QC: Geographic services
- Outlier occurrences (spatial and physico chemical)
- BioVEL data processing workflows (index calculations, species distr. maps,



**Swedish LifeWatch** - An analysis portal for biodiversity data

Overview | Data | Filter | Calculation | Format | Result

**Overview**

**Data sources**

Filter (Species observation search criteria)

Calculation (data processing)

Format (presentation settings)

Result



**BioVeL**  
Biodiversity Virtual e-Laboratory

Home | About BioVeL | Workflows | Resources | Support | News and Updates | Events | Contact

Workflows | About Workflows

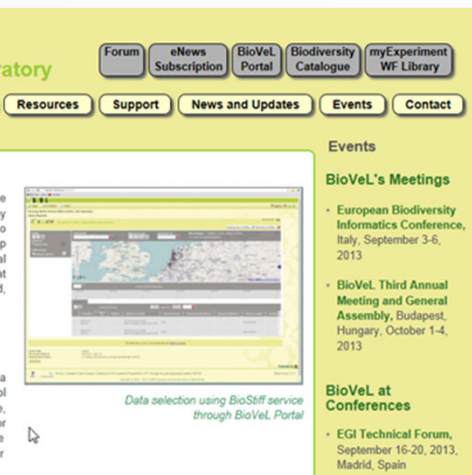
**About Workflows**

The quantity and heterogeneity of data in the biodiversity sciences have given rise to many distributed resources. Typically, researchers wish to combine these resources into multi-step computational tasks for a range of analytical purposes. Workflows, made of modularised units that can be repeated, shared, reused and repurposed, offer a practical solution for this task.

**RUN**

Workflows are executed through the BioVeL portal, a simple web interface that provides access to a pool of ready-made workflows and allows you to manage, share and save workflow results. You can monitor and interact with running workflows through the portal, changing parameters and directing your analyses.

sdn-userdesk@seadat



Forum | eNews Subscription | BioVeL Portal | Biodiversity Catalogue | myExperiment WF Library

Events

**BioVeL's Meetings**

- European Biodiversity Informatics Conference, Italy, September 3-6, 2013
- BioVeL Third Annual Meeting and General Assembly, Budapest, Hungary, October 1-4, 2013

**BioVeL at Conferences**

- EGI Technical Forum, September 16-20, 2013, Madrid, Spain

Data selection using BioStiff service through BioVeL Portal

## ***Outlook***

- Working towards more compatibility with SDN ODV
- Testing data submission in the framework of EMODNet Biology
- Tools to be developed/adapted
- Extensive training session in SDN training course in Ostend May 2014



PAN-EUROPEAN INFRASTRUCTURE  
FOR OCEAN & MARINE DATA  
MANAGEMENT

Thank You !

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