



SeaDataNet

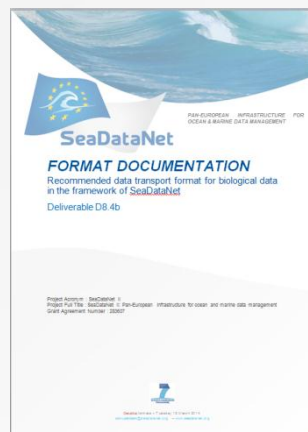
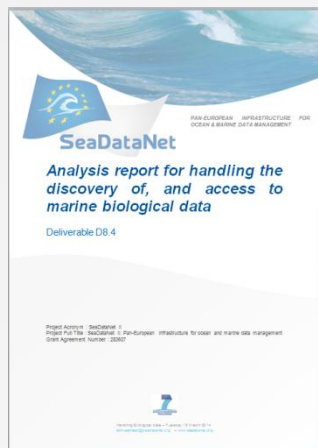
PAN-EUROPEAN INFRASTRUCTURE
FOR OCEAN & MARINE DATA
MANAGEMENT

Status of tests with handling marine biological data in SeaDataNet - follow-up of SeaDataNet Deliverable 8.4

TTT 23 September 2014

Deliverables

- D8.4a Analysis report with required adaptations for marine biological data
- D8.4b Format documentation
- Example files



Code	Station	Time	Accession	Latitude	Longitude	Local ID	Depth	Minimum Observation Depth	Maximum Observation Depth	QV SEADATANET
18	18	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	1	1
19	19	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
20	20	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
21	21	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
22	22	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
23	23	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
24	24	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
25	25	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
26	26	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
27	27	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1
28	28	1978-08-05T08:02:13	2.82361	51.24411	MACROBIL_1351	449	25	21.5	21.5	1

D8.4a Analysis report

- Analysis
 - Types of data
 - Data use and applications
 - Standards and practices in the biological community
 - Requirements
 - Required adaptations of SeaDataNet infrastructure
- Data transport format
- Towards operational data exchange

D8.4b Format documentation

- Format:
 - CDI metadata
 - ODV biology variant
 - Mandatory fields (8 + 10)
 - Optional fields: P01 & P06 terms
 - Semantic header
- Version: BioODV_1.0

Example files

- Types
 - Grab/core benthos 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

- Example 1:** Grab/core benthos community data (BioODV_1.0_MacroB) - This example demonstrates how to cover both density and biomass of infaunal (in this case macrobenthos) community data.

CDI mandatory fields	CDI optional fields	ODVbio mandatory fields	ODVbio optional fields
All mandatory CDI fields	No specific optional CDI fields	Cruise	DensityPerUnitEffort [unit]*
		Station	AFDWBiomassPerUnitEffort [unit]*
		Type	AFDWBiomass [unit]*
		yyyy-mm-ddThh:mm:ss.sss	...
		Longitude [degrees_east]	
		Latitude [degrees_north]	
		LOCAL_CDI_ID	
		EDMO_code	
		Bot. Depth [m]	
		MinimumObservationDepth	
		MaximumObservationDepth	
		SampleID*	
		SamplingEffort [unit]*	
		SubSampleID*	
		SubSamplingCoefficient*	
		ScientificName*	
		ScientificNameID*	
		Sex*	
		LifeStage*	
		ObservedIndividualCount*	

(*) fields indicated require paired QC flag column

- Example 2:** Vertical Profile zooplankton community data (BioODV_1.0_ZooP) - This example demonstrates how to cover zooplankton data from vertical net sampling of different depth zones.

<u>CDI mandatory fields</u>	<u>CDI optional fields</u>	<u>ODVbio mandatory fields</u>	<u>ODVbio optional fields</u>
<i>All mandatory CDI fields</i>	No specific optional CDI fields	Cruise	<u>DensityPerUnitEffort [unit]*</u>
		Station	...
		Type	
		<u>yyy-mm-ddThh:mm:ss.sss</u>	
		<u>Longitude [degrees_east]</u>	
		<u>Latitude [degrees_north]</u>	
		<u>LOCAL_CDI_ID</u>	
		<u>EDMO_code</u>	
		<u>Bot. Depth [m]</u>	
		<u>MinimumObservationDepth</u>	
		<u>MaximumObservationDepth</u>	
		<u>SampleID*</u>	
		<u>SamplingEffort [unit]*</u>	
		<u>SubSampleID*</u>	
		<u>SubSamplingCoefficient*</u>	
		<u>ScientificName*</u>	
		<u>ScientificNameID*</u>	
		<u>Sex*</u>	
		<u>LifeStage*</u>	
		<u>ObservedIndividualCount*</u>	

(*) fields indicated require paired QC flag column

- Example 3:** Fish trawl data (BioODV_1.0_DemFish) - This specific example demonstrates how to cover demersal fish population data resulting from towed net fish trawls. The example demonstrates how to deal with subsampling storing information on the applied SubSamplingCoefficient and storing identifiers for both sample and subsample. The example includes both real counts of fish and derived densities per unit effort. Furthermore exemplary cases for including length-frequency data (counts and densities for different size classes), individual fish length measurements, and age information are available.

CDI mandatory fields	CDI optional fields	ODVbio mandatory fields	ODVbio optional fields
All mandatory CDI fields	Tracks (Curves)	Cruise	<u>SubSamplingCoefficient</u> *
		Station	<u>ObservedMinLength</u> [unit]*
		Type	<u>ObservedMaxLength</u> [unit]*
		<u>yyy-mm-ddThh:mm:ss.sss</u>	<u>ObservedIndividualLength</u> [unit]*
		<u>Longitude</u> [degrees_east]	<u>DensityPerUnitEffort</u> [unit]*
		<u>Latitude</u> [degrees_north]	<u>Age</u> [unit]*
		<u>LOCAL_CDI_ID</u>	<u>SampleDuration</u> [unit]*
		<u>EDMO_code</u>	
		<u>Bot. Depth</u> [m]	
		<u>MinimumObservationDepth</u>	
		<u>MaximumObservationDepth</u>	
		<u>SampleID</u> *	
		<u>SamplingEffort</u> [unit]*	
		<u>SubSampleID</u> *	
		<u>SubSamplingCoefficient</u> *	
		<u>ScientificName</u> *	
		<u>ScientificNameID</u> *	
		<u>Sex</u> *	
		<u>LifeStage</u> *	
		<u>ObservedIndividualCount</u> *	

- Example 4:** Biota pollutant concentration data (BioODV_1.0_BiotaPol) - This example demonstrates how to cover data on pollutant concentrations in biota.

<u>CDI mandatory fields</u>	<u>CDI optional fields</u>	<u>ODVbio mandatory fields</u>	<u>ODVbio optional fields</u>
<i>All mandatory CDI fields</i>	<i>No specific optional CDI fields</i>	Cruise	<u>Lead_per_unit_wet_weight_of_biota[unit]*</u>
		Station	...
		Type	
		<u>yyyy-mm-ddThh:mm:ss.sss</u>	
		<u>Longitude [degrees_east]</u>	
		<u>Latitude [degrees_north]</u>	
		<u>LOCAL_CDI_ID</u>	
		<u>EDMO_code</u>	
		<u>Bot. Depth [m]</u>	
		<u>MinimumObservationDepth</u>	
		<u>MaximumObservationDepth</u>	
		<u>SampleID*</u>	
		<u>SamplingEffort [unit]*</u>	
		<u>SubSampleID*</u>	
		<u>SubSamplingCoefficient*</u>	
		<u>ScientificName*</u>	
		<u>ScientificNameID*</u>	
		<u>Sex*</u>	
		<u>LifeStage*</u>	
		<u>ObservedIndividualCount*</u>	

(*) fields indicated require paired QC flag column

Roadmap for implementation

SDN training: Biology workshop (21/05/2014, Ostend)

- 1) Format testing for well-defined biology data types
- 2) Download manager (testing, listing issues, adapting software)
- 3) Ocean Data Viewer (detailing requirements, listing developments, adapting software)
- 4) Machine-to-machine interface: creating data flow for public biology data

1) Format testing

P01 terms for ODV bio

ConceptID	Label			
MINWDIST	Minimum depth below surface of the water body			
MAXWDIST	conceptid	preflabel		
SAMPID01	SDBIOL01	Abundance of unspecified biological entity per unit volume of the water body		
AREABEDS	SDBIOL02			
SSAMID01	SDBIOL03	conceptid	preflabel	
SSAMPC01	SDBIOL04	OBSINDLX	Length of unspecified biological entity	
SCNAME01	SDBIOL05	OBSMAXLX		
SNANID01	SDBIOL06	OBSMINLX	conceptid	preflabel
ENTSEX01	SDBIOL07	SOVO0001	SAMPPROT	Sampling protocol
LSTAGE01	SDBIOL08	SOVO0004	ZDRZZ01	Sample duration
OCOUNT01	SDBIOL09	PBBIOTUK	LENTACK	Length of sampling track
	SDBIOL10	SOVO0005		Start Latitude
	SDBIOL11	SOVO0006		End Latitude
		AGEBENTX		Start Latitude
		SOVO0003		End Latitude
		SOVO0002		

1) Format testing

IFREMER:

REPHY dataset

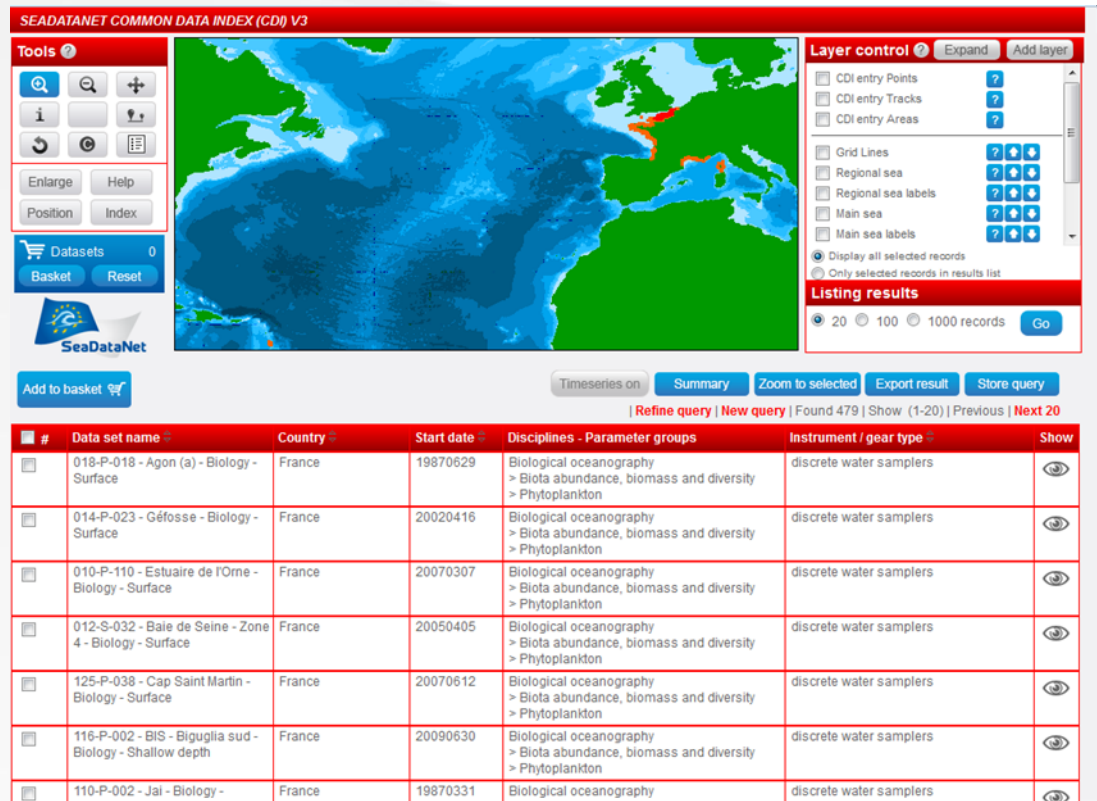
Phytoplankton monitoring

479 CDI records in test portal

-> 479 ODV bio files

222.392 occurrences

SEADATANET COMMON DATA INDEX (CDI) V3



Tools

Enlarge Help
Position Index

Datasets 0
Basket Reset

SeaDataNet

Add to basket

Layer control Expand Add layer

☐ CDI entry Points ?
☐ CDI entry Tracks ?
☐ CDI entry Areas ?

☐ Grid Lines ?
☐ Regional sea ?
☐ Regional sea labels ?
☐ Main sea ?
☐ Main sea labels ?

☒ Display all selected records
☐ Only selected records in results list

Listing results

☒ 20 ☐ 100 ☐ 1000 records Go

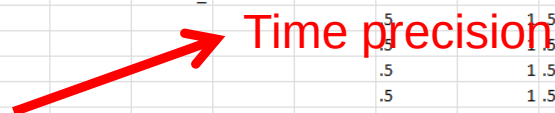
Timeseries on Summary Zoom to selected Export result Store query

Refine query New query Found 479 | Show (1-20) | Previous | Next 20

#	Data set name	Country	Start date	Disciplines - Parameter groups	Instrument / gear type	Show
☐	018-P-018 - Agon (a) - Biology - Surface	France	19870629	Biological oceanography > Biota abundance, biomass and diversity > Phytoplankton	discrete water samplers	
☐	014-P-023 - G�fosse - Biology - Surface	France	20020416	Biological oceanography > Biota abundance, biomass and diversity > Phytoplankton	discrete water samplers	
☐	010-P-110 - Estuaire de l'Orne - Biology - Surface	France	20070307	Biological oceanography > Biota abundance, biomass and diversity > Phytoplankton	discrete water samplers	
☐	012-S-032 - Baie de Seine - Zone 4 - Biology - Surface	France	20050405	Biological oceanography > Biota abundance, biomass and diversity > Phytoplankton	discrete water samplers	
☐	125-P-038 - Cap Saint Martin - Biology - Surface	France	20070612	Biological oceanography > Biota abundance, biomass and diversity > Phytoplankton	discrete water samplers	
☐	116-P-002 - BIS - Biguglia sud - Biology - Shallow depth	France	20090630	Biological oceanography > Biota abundance, biomass and diversity > Phytoplankton	discrete water samplers	
☐	110-P-002 - Jai - Biology -	France	19870331	Biological oceanography	discrete water samplers	

```
//
//SDN_parameter_mapping
//<subject>SDN:LOCAL:MinimumObservationDepth</subject><object>SDN:P01::MINDPCDI</object><units>SDN:P06::ULAA</units>
//<subject>SDN:LOCAL:MaximumObservationDepth</subject><object>SDN:P01::MAXDPCDI</object><units>SDN:P06::ULAA</units>
//<subject>SDN:LOCAL:SampleID</subject><object>SDN:P01::SAMPID01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:SamplingEffort</subject><object>SDN:P01::SASIZE01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:SubsampleID</subject><object>SDN:P01::SSAMID01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:SubSamplingCoefficient</subject><object>SDN:P01::SSAMPC01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:ScientificName</subject><object>SDN:P01::SCNAME01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:ScientificNameID</subject><object>SDN:P01::SNAMID01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:Sex</subject><object>SDN:P01::ENTSEX01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:LifeStage</subject><object>SDN:P01::LSTAGE01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:ObservedIndividualCount</subject><object>SDN:P01::OCOUNT01</object><units>SDN:P06::UUUU</units>
//<subject>SDN:LOCAL:IndividualCountperLiter</subject><object>SDN:P01::SDBIOL01</object><units>SDN:P06::UCPL</units>
//
```

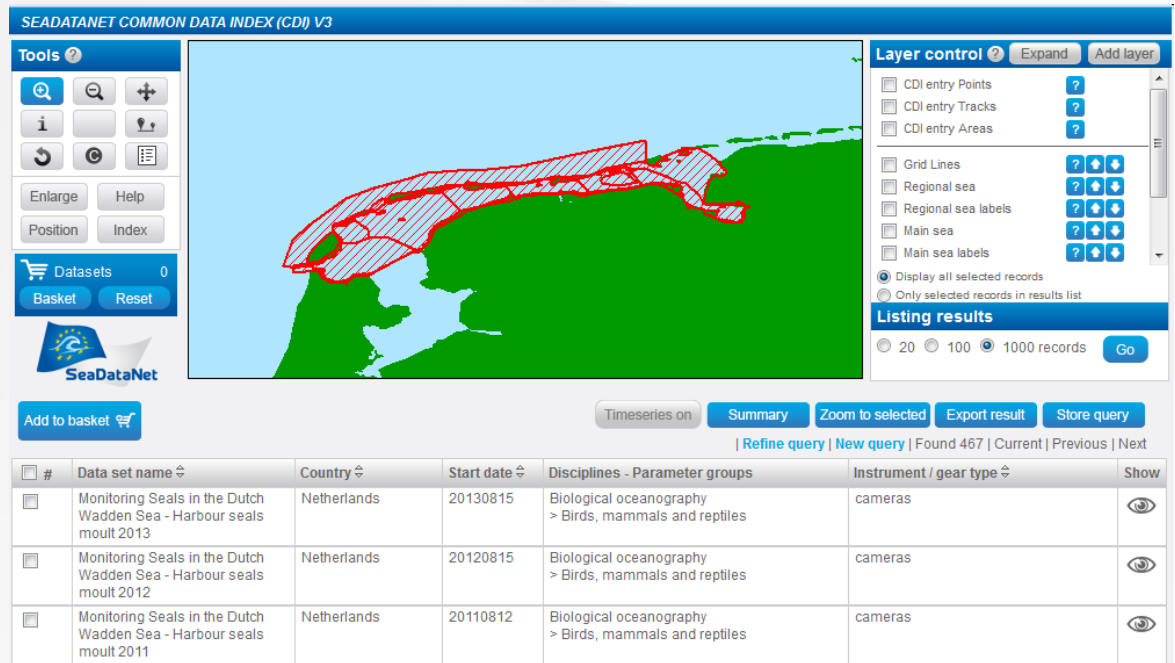
Cruise	Station	Type	yyyy-mm-ddThh:mm:ss	Longitude	Latitude	LOCAL_CD	EDMO_cor	Bot. Dept	Minimum	QV:SEAD	Maximum	QV:SEAD	SampleID	QV:SEAD	Sampling	QV:SEAD	Subsaml	QV:SEAD	SubSamp	QV:SEAD	Scientific
001-P-015	1001022_E*		1992-01-07T14:00:00.000	23334994	51.068649	1001022_E	486	0.0	.5	1.5	1	50021	1	9	50021	1	1	1	1	Prorocent	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Dinophysi	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Chaetocer	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Thalassior	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Guinardia	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Guinardia	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Chaetocer	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Asterione	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Pseudo-ni	
									.5	1.5	1	50021	1	9	50021	1	1	1	1	Dinophysi	
001-P-015	1001022_E*		1992-02-06T14:00:00.000	23334994	51.068649	1001022_E	486	0.0	.5	1.5	1	50022	1	9	50022	1	1	1	1	Dinophysi	
									.5	1.5	1	50022	1	9	50022	1	1	1	1	Thalassios	
									.5	1.5	1	50022	1	9	50022	1	1	1	1	Chaetocer	
									.5	1.5	1	50022	1	9	50022	1	1	1	1	Leptocylir	
									.5	1.5	1	50022	1	9	50022	1	1	1	1	Skeleton	
									.5	1.5	1	50022	1	9	50022	1	1	1	1	Guinardia	
									.5	1.5	1	50022	1	9	50022	1	1	1	1	Guinardia	
									.5	1.5	1	50022	1	9	50022	1	1	1	1	Asterione	
									.5	1.5	1	50022	1	9	50022	1	1	1	1	Nitzschia	



1) Format testing

- IMARES:
 - Seal counts
 - Aeroplane-Cameras
 - Benthos monitoring
 - Benthos samplers
 - Demersal Young Fish
 - Beam trawls
- 467 CDI files
 - > 52 SHP - files
 - > 415 ODV - files

SEADATANET COMMON DATA INDEX (CDI) V3



Tools

Enlarge Help
Position Index

Datasets 0
Basket Reset

SeaDataNet

Layer control Expand Add layer

☐ CDI entry Points ?
☐ CDI entry Tracks ?
☐ CDI entry Areas ?

☐ Grid Lines ?
☐ Regional sea ?
☐ Regional sea labels ?
☐ Main sea ?
☐ Main sea labels ?

☒ Display all selected records
☐ Only selected records in results list

Listing results

☐ 20 ☐ 100 ☒ 1000 records Go

Add to basket Timeseries on Summary Zoom to selected Export result Store query

Refine query New query Found 467 | Current | Previous | Next

#	Data set name	Country	Start date	Disciplines - Parameter groups	Instrument / gear type	Show
☐	Monitoring Seals in the Dutch Wadden Sea - Harbour seals moult 2013	Netherlands	20130815	Biological oceanography > Birds, mammals and reptiles	cameras	
☐	Monitoring Seals in the Dutch Wadden Sea - Harbour seals moult 2012	Netherlands	20120815	Biological oceanography > Birds, mammals and reptiles	cameras	
☐	Monitoring Seals in the Dutch Wadden Sea - Harbour seals moult 2011	Netherlands	20110812	Biological oceanography > Birds, mammals and reptiles	cameras	

//											
//SDN_parameter_mapping											
//<subject>SDN:LOCAL:MinimumObservationDepth</subject><object>SDN:P01::MINWDIST</object><units>SDN:P06::ULAA</units>											
//<subject>SDN:LOCAL:MaximumObservationDepth</subject><object>SDN:P01::MAXWDIST</object><units>SDN:P06::ULAA</units>											
//<subject>SDN:LOCAL:SampleID</subject><object>SDN:P01::SAMPID01</object><units>SDN:P06::UUUU</units>											
//<subject>SDN:LOCAL:SamplingEffort</subject><object>SDN:P01::AREABEDS</object><units>SDN:P06::SQKM</units>											
//<subject>SDN:LOCAL:SubsampleID</subject><object>SDN:P01::SSAMID01</object><units>SDN:P06::UUUU</units>											
//<subject>SDN:LOCAL:SubSamplingCoefficient</subject><object>SDN:P01::SSAMC01</object><units>SDN:P06::UUUU</units>											
//<subject>SDN:LOCAL:ScientificName</subject><object>SDN:P01::SCNAME01</object><units>SDN:P06::UUUU</units>											
//<subject>SDN:LOCAL:ScientificNameID</subject><object>SDN:P01::SNAMID01</object><units>SDN:P06::UUUU</units>											
//<subject>SDN:LOCAL:Sex</subject><object>SDN:P01::ENTSEX01</object><units>SDN:P06::UUUU</units>											
//<subject>SDN:LOCAL:LifeStage</subject><object>SDN:P01::LSTAGE01</object><units>SDN:P06::UUUU</units>											
//<subject>SDN:LOCAL:ObservedIndividualCount</subject><object>SDN:P01::OCOUNT01</object><units>SDN:P06::UUUU</units> <instrument>SDN:L22::TOOLZZZ</instrument>											
//											
Cruise	Station	Type	yyyy-mm-ddThh:mm:ss	Longitude	Latitude	LOCAL_EDMO_CC	Bot. Depth	Minimum	QV:SEADA	Maximum	QV:SEADA
Harbour seals pups 1989	Harbour seals pups 1989	*	3/07/1989			Dutch	1340	0	0	1	0

Minimum	QV:SEADA	Maximum	QV:SEADA	SampleID	QV:SEADA	SamplingEffort	QV:SEADA	SubsampleID	QV:SEADA	SubsampleID	QV:SEADA	ScientificName	QV:SEADA	ScientificNameID	QV:SEADA	Sex	QV:SEADA	LifeStage	QV:SEADA	Observed	QV:SEADA	TANET
0	1	0	1	Harbour_s	1	2692	1	Harbour_s	1	1	1	Phoca vitu	1	urn:lsid:	1	B	1	pup	1	108	1	
Empty Longitude and Latitude																						

Empty Longitude and Latitude

1) *Format testing*

- IMGW:
 - National Environment Monitoring
 - Macrophytes, zoobenthos, zooplankton, phytobentos
 - 5 ODV files
 - > No CDI records yet
 - >35.000 occurrences
- HCMR
- Aarhus University DKU

1) Format testing

- Non critical issues -> FAQ
 - Feedback phase
 - Testing phase

1) *Format testing*

- Non critical issues -> FAQ
- Critical issues:
 - 1) Local CDI ID $\Leftrightarrow$ eventID (Example: IFREMER IMARES, IMGW,)
 - No info on start and end time
 - No info start and end position
 - No info on sampling protocol
 - Not in CDI either

=> Include in data files (ODV)

OR => Make CDI ID = eventID obligatory

1) *Format testing*

- Non critical issues -> FAQ
- Critical issues:
 - 1) Local CDI ID $\Leftrightarrow$ eventID (Example: IFREMER IMARES, IMGW,)
 - No info on start and end time
 - No info start and end position
 - No info on sampling protocol
 - Not in CDI either

=> Include in data files (ODV)

OR => Make CDI ID = eventID obligatory
 - 2) Empty Latitude/longitude (Example: IMARES seal data)
=> some data products not fit for ODV?

2) Download manager: format creation

- ODV bio file generation has been tested
- Allow special forms ISO 8601 DateTime
(eg. 1979-04, 2012-06-03T03, 2011-04-02T06:04:01/ 2011-04-02T06:08:12)

```
<?xml version="1.0" encoding="UTF-8"?>
- <root>
  <updated>2014-08-29T07:00:00+02:00</updated>
  - <codes type="odv">
    <code local="SurveyNo" to="SDN:LOCAL:Cruise" from=""/>
    <code local="Station" to="SDN:LOCAL:Station" from=""/>
    <code local="Date" to="SDN:LOCAL:yyyy-mm-ddThh:mm:ss.sss" from=""/>
    <code local="Longitude" to="SDN:LOCAL:Longitude, degrees_east" from=""/>
    <code local="Latitude" to="SDN:LOCAL:Latitude, degrees_north" from=""/>
    <code local="BotDepth" to="SDN:LOCAL:Bot. Depth, m" from=""/>
    <code local="Type" to="SDN:LOCAL:Type" from=""/>
    <code local="MinDepth" to="SDN:LOCAL:MinimumObservationDepth, m" from="SDN:P01::MINWDIST, SDN:P06::ULAA" qflag="fMinDepth"/>
    <code local="MaxDepth" to="SDN:LOCAL:MaximumObservationDepth, m" from="SDN:P01::MAXWDIST, SDN:P06::ULAA" qflag="fMaxDepth"/>
    <code local="SampleID" to="SDN:LOCAL:SampleID, #" from="SDN:P01::SAMPID01, SDN:P06::UUUU" qflag="fSampleID"/>
    <code local="Area" to="SDN:LOCAL:SamplingEffort, m^2" from="SDN:P01::AREABEDS, SDN:P06::UMSQ" qflag="fArea"/>
    <code local="SubSampleID" to="SDN:LOCAL:SubsampleID, #" from="SDN:P01::SSAMID01, SDN:P06::UUUU" qflag="fSubSampleID"/>
    <code local="SubCoef" to="SDN:LOCAL:SubSamplingCoefficient, none" from="SDN:P01::SSAMPC01, SDN:P06::UUUU" qflag="fSubCoef"/>
    <code local="LatinName" to="SDN:LOCAL:ScientificName, none" from="SDN:P01::SCNAME01, SDN:P06::UUUU" qflag="fLatinName"/>
    <code local="WormsID" to="SDN:LOCAL:ScientificNameID, #" from="SDN:P01::SNAMID01, SDN:P06::UUUU" qflag="fWormsID"/>
    <code local="Sex" to="SDN:LOCAL:Sex, none" from="SDN:P01::ENTSEX01, SDN:P06::UUUU" qflag="fSex"/>
    <code local="Stage" to="SDN:LOCAL:LifeStage, none" from="SDN:P01::LSTAGE01, SDN:P06::UUUU" qflag="fStage"/>
    <code local="Count" to="SDN:LOCAL:ObservedIndividualCount, #" from="SDN:P01::OCOUNT01, SDN:P06::UUUU" qflag="fCount"/>
    <code local="WetWeight" to="SDN:LOCAL:WetWeight, g" from="SDN:P01::SDBIOL05, SDN:P06::UGRM" qflag="fWetWeight"/>
    <code local="DryWeight" to="SDN:LOCAL:DryWeight, g" from="SDN:P01::SDBIOL08, SDN:P06::UGRM" qflag="fDryWeight"/>
  </codes>
</root>
```

3) Ocean Data Viewer: Format reading

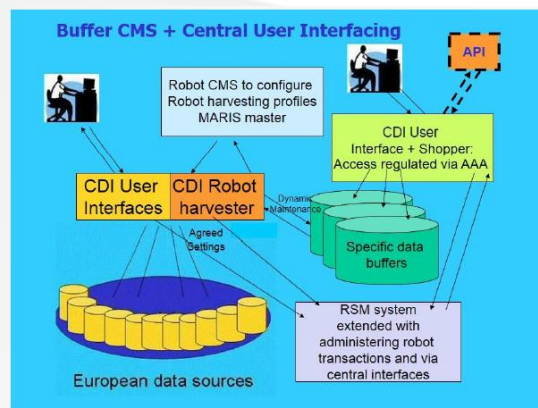
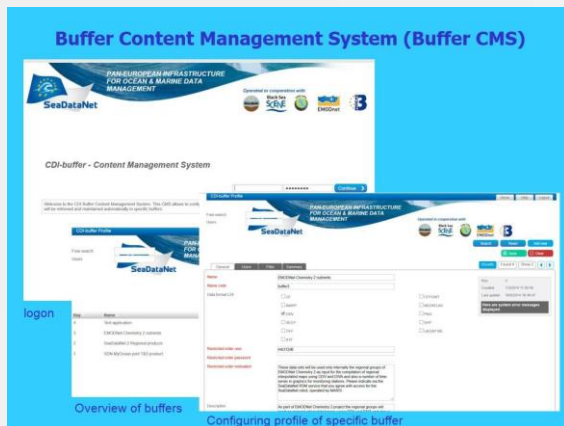
- Read and display text variables
- Aggregate single local CDI data files
- Allow special forms ISO 8601 DateTime
(eg. 1979-04, 2012-06-03T03, 2011-04-02T06:04:01/ 2011-04-02T06:08:12)
- Incorporate information from CDI
- Develop appropriate filtering and visualisation tools



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4) Machine-to-machine interface: data flow



- Machine to machine services – API
 - Create_order: enabling to configure a discovery profile for shopping in an authorised central buffer database;
 - Get_order_info: enabling to retrieve info from the RSM about the progress of the order processing;
 - Download_order: enabling to download the orders, when ready, as zip files with metadata and data sets.
 - Services secured by SDN CAS (AAA) login

4) Machine-to-machine interface: data flow

- Data flow using data buffer has been discussed within EMODNet biology meeting Horta 09/2014
- Candidates are IFREMER, IMARES, IMGW and possibly Aarhus univ.
- Need to define specific profile (Specify: datatype, region, datacenters, etc) => in the SeaDataNet buffer system a subset is created.
- The SDN robot builds up a (consistently updated) specific subset of data relevant for EMODNet-Biology.
- To create this buffer an agreement of involved data centers is required. => An email will be sent by EMODNet Biology data providers to MARIS to specify involved data
- Deadline of data delivery: december 2014

In conclusion

- Decide on mentioned critical issues
- Finalise testing phase format
 - Adapt documentation where needed
 - Add to documentation:
 - FAQ
 - Additional examples with list of already used P01 concepts
- Discuss developments on DM and ODV
- Prepare buffer for data flow of biology data in the framework of EMODNet Biology(before december 2014)



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