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> PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

Product Definition and Processing: Data Flow and Procedures

SeaDataNet



Rhode 18-20 Sept 2012

OUTLINE

- WP10 objectives
- DoW
- Role of Partners
- Deliverables (D10.1 due data Sept 2012)
- SDN2-MyO2 Joint Meeting
- Data Policy
- QC strategy
- CDI Content and Statistics per Sea Region
- Conclusions sdn-userdesk@seadatanet.org - www.seadatanet.org

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WP10 Objectives

- To validate data access and processing services provided by SDN infrastructure
- To analyze the coherency, the coverage and the quality of the data sets at full basin scale for European adjacent seas
- •To coordinate and support the harmonization between sea basins
- To bring examples of products which can be generated using SDN historical data base



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Role of Partners

- Work done by regional groups. Regional coordinators (RC) lead the activities
- A leading team (one or more partners + data centers) guide the QC process
- Activities in communication with regional organizations (BlackSeaGOOS, MONGOOS, BOOS, NOOS, etc) and ongoing projects (MyOcean) in order to develop true synergies at regional level

Med Sea	INGV	Simona Simoncelli
Black Sea	METU	Devrim Tezcan
North Atlantic	IFREMER	Christine Coatanoan
North Sea	MUMM	Serge Scory
Arctic Waters	IMR	Helge Sagen
Doltio Coo	СМЦІ	Johan Krancell



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Description of Work (DoW)

•Use data access service to prepare aggregated data sets at full basin scale for all European seas

•Select relevant data types to serve operational oceanography (MyO), ocean modeling and climate change communities

•Prepare aggregated data sets and control internal data coherency, coverage and overall quality

•Generate a set of generic data products (ex. gridded Climatologies)

•Use ODV and DIVA tools for QC and climatology computation

This improves the SDN database quality, illustrate the content per sea region (time, depth and spatial coverage, quality) and demonstrate the capabilities of SDN infrastructure



WP10 Deliverables

Commonspecifications,selected parameters, definition ofQC, aggregation and analysisprocedures

V1 AGGREGATED DATASET

Examples of data productsgriddedfields/profiles and relative stdSept 2014

V2 AGGREGATED DATASET

Delive- rable Number 61	Deliverable Title	Delivery date 64
D10.1	Common specifications, selected parameters, aggregation, control and processing procedures	12
D10.2	First release of the aggregated data sets products	24
D10.3	Release of examples of data products	36
D10.4	Final version of aggregated data sets	46

Sept 2015

Sept 2012

Sept 2013



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SDN2-MyO2 Joint Meeting

- The objective was to define MyO2-SDN2 interaction
- How to elaborate jointly Regional T&S product for 25 years reanalysis planned in MyOcean2 and SDN2 aggregated products and define the interfaces between the two projects
- Define a common time schedule
- Define data flow and information exchanges
- QC strategies
- Interface



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Data Policy

DATA ACCESS	N DATA
Unrestricted	37045 (43%)
By Negotiation	32241
SeaDataNet Licence	16343 (19%)
No Access	66
Academic	27
Commercial Charge	36

Statistic of data access policy for **the Mediterranean Region** for the period **1990-2012** (T, S)

Data sets for selected data types (Temperature, Salinity,...) in most cases should be **unrestricted**, or fall **under SDN license**.

SDN data centers are requested formally to give permission to use restricted data sets for internal purpose in preparing statistical data products (climatologies)



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Deliverable D10.1 (due Sept 30, 2012)

Define the **methodology and scope of data products** for coordinating and supporting the harmonization between sea basins

- Define relevant parameters (T, S)
- Use data access services
- Check their database content per sea region (time, spatial coverage, quality)
- Monitor the percentage of unrestricted data
- Define the methodology to create aggregated data sets
- Propose a set of generic data products (climatologies)
- Report gaps to NODCs





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CDI Content and Statistics per Sea Region

- Time period 1990-2012
- Temperature and salinity
- All intruments
- Statistics about data policy
- \rightarrow Some issues to be clarified



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SELECTION CRITERIA

Search		Search Clea	2		
Free search	2		Date (yyyymmdd) from	199001C to 2012091 3	
Variable groupings	 Acoustics Optical properties Other physical oceanographic Water column temperature and 	measurements salinity	Instrument type	All >2000 Hz top-bandwidth single-channel seismi >2000 Hz top-bandwidth sub-bottom penetrator 1000 Hz top-bandwidth multi-channel seismic r	2
Sampling interval	All	\$?	Measuring area type	point	?
Cruise/Station name	2		Platform type	All O	
Projectname	2			beach/intertidal zone structure	?
Datasetname	2		Instrument depth (m) from	to ?	
Waterdepth (m) from	to ?		Originator	All	?
Country	All	\$?	CDI partner	All	?
COLEXPORT VERSION 2		COLEXPORT VERSION 2	s. 2	COLEXPORT VERSION 2	

Because of bounding boxes selection criteria the Mediterranean Sea was divided into three regions in order to avoid data in the Atlantic and in the Black Sea

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DATA DISTRIBUTIONS FOR T & S (1990-2012)







ARCTIC SEA

sdn-userdesk@seadatanet.org - www.seadata





SeaDataNet Selection criteria for North Atlantic Ocean

Water column Temperature and Salinity

CDI EXPORT VERSION 2





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Mediterranean Sea

"N. DATI 1990-2012 Med Sea" 9000 10000

TEMPERATURE	SALINITY
83285	67529

INSTRUMENT TYPE			N DATA
CTD	CTD		24419
Bathythermogr	aphs		9166
Discrete Water Sa	amplers		8211
Salinity Sens	sor		6139
Current Meters Water Temperature Sensor Thermistor Chains Current Profiler			1172
			732
			974
			353
DATA ACCESS	N D.	ATA	
Unrestricted	37	045	43
By Negotiation	322	241	38
SeaDataNet Licence	16.	343	19
No Access	6	6	0
Academic	2	7	0
eaccommercial Charge	3	6	0

Total number: 85758 sdn-userdesk@seadatanet.org - www.seadatanet.org - www.seadatanet.org - www.seadatanet.org - www.seadatanet.org



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Black Sea

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Total number:	30193
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TEMPERATURE	SALINITY
23859	23433
INSTRUMENT TYPE	N DATA
CTD	12069
Bathythermographs	67
Discrete Water Samplers	11422
Salinity Sensor	491
Transmissometers	713
Water Temperature Sensor	902

DATA ACCESS	N DATA	%
Unrestricted	3976	13
By Negotiation	5018	17
SeaDataNetLi cence	20181	67
t.org _{cademic}	1018	3



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3

Arctic Sea



Total number: 2750 !!!!very few data!!!

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Baltic Sea



TEMPERATURE		S	ALINITY	
107673			106957	
INSTRUMENT TYPE		N DATA		
CTD		73040		
Continuous Water Samplers			80	
Water Temperature Sensor			26	
Discrete Water Samplers			38024	
ПАТА	ND	АТА	0/_	

DATA ACCESS	N DATA	%
Unrestricted	55654	51
SeaDataNet Licence	53524	49
By Negotiation	185	0
Licence	63	0

Total number 109426



Total number of available data on CDI for the period 01/01/1990-10/09/2012 : 98504



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	YEAR	N DATA
-	1990	4945
	1991	39 1 0
	1992	3187
	1993	3813
	1994	3313
	1995	3527
	1996	3557
	1997	5019
	1998	4513
	1999	3120
	2000	3618
	2001	4688
	2002	5123
	2003	5138
	2004	5162
	2005	5670
	2006	5975
	2007	6390
	2008	7055
	2009	5775
	2010	2772
	2011	2737
	2012	670

11	
C.D.	hablah
Seau	acanec

SeaDataNet		
INSTRUMENT TYPE		
СТД		
Bathythermographs	12223	
Discrete Water Samplers	6336	
Salinity Sensor	37543	
Current Meters	1172	
Water Temperature Sensor	732	
Thermistor Chains	0	
Current Profiler	0	

TEMPERATURE	SALINITY
97009	63438

DATA ACCESS	N DATA
Unrestricted	39007
By Negotiation	12910
SeaDataNet Licence	45082
No Access	24
Academic	1367
Licence	114

40%

13%

46%

(from ChristineCOATANOAN)



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TO BE CLARIFIED



•REGION SELECTION

USING THE TOOL "SELECT BY BOX" FOR THE MED (-9.25°W-36.5°E 30°N-46°N), SOME DATA IN THE ATLANTIC OCEAN AND IN THE BLACK SEA ARE INCLUDED. IN THIS CASE THE NUMBER OF DATA TO ORDER IS 121476 INSTEAD OF 85758

•DATA OUTSIDE THE SELECTED TIME INTERVAL



•IN THE STATISTICS THE SUM OF ANNUAL DATA IS NOT EQUAL TO THE NUMBER OF THE SELECTED DATA (87179 INSTEAD OF 85758)



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THE VARIOUS SUB-BASINS SHOULD BE DIVIDED INTO THE FOLLOWING BOXES TO OPTIMIZE THE REGION SELECTION

REGIONS	SEARCH BOXES
Arctic	2
Atlantic	6
Baltic	2
Black Sea	1
Mediterranean Sea	3
NE Atlantic	1
North Sea	4

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2012	2
2011	405
2010	2311
2009	3112
2008	2481
2007	3613

Some time lag in observation available in the portal

Data gaps, mostly near coasts

CDI EXPORT VERSION 2





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CDI EXPORT VERSIO



Gaps increase when looking at a shorter time span and more recent data.

CDI EXPORT VERSION 2



(from Bäck Örjan)

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Relevant parameters have been defined

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Conclusions

- Data access services have been used to analyze the SDN infrastructure content
- Database content per sea region (time, spatial coverage, quality) has been analyzed
- Restricted data have been monitored
- The methodology to create aggregated data sets and the QC strategy have been defined in synergy with MyO



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Future Needs & Developments

- Region selection can be improved
- Data coverage is not homogeneous in space and time
- There are still a large percentage of restricted data in the Mediterranean (38%) and Black Sea (17%)
- Maps of restricted data per region to identify the regions with highest restricted data coverage (to be included in the D.10.1
- User interface developments will improve the data download procedure (number of requests, new query processor)
- New release of ODV will enhance our QC and aggregating capabilities.net.org www.seadatanet.org