

SEA ODC – An Implementation of Web Portal and B2B Services for Managing of Oceanographic Data Sets Collected in South-East Adriatic

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Project:

FAO AdriaMed
ADRICOSM-EXT
ADRICOSM-STAR
IBMK internal
Calypso
IAEA
MytiAd
IRSN
MED POL
ECOPORT 8
ENVEurope

Instrument:

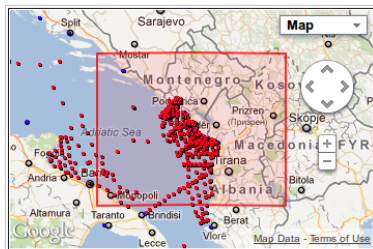
box corer
corer
CTD
diving
grab
net
roseta
Shipek grab

Period:

From: 2002 Aug 21
Until: 2011 Apr 19
N: 43.17920
W: 17.00000 21.00000
E: 40.77926
S: 41.90478N 22.82324E

Season:

From: Jan 01
Until: Dec 31
Time of day:
From: 00 00
Until: 23 59

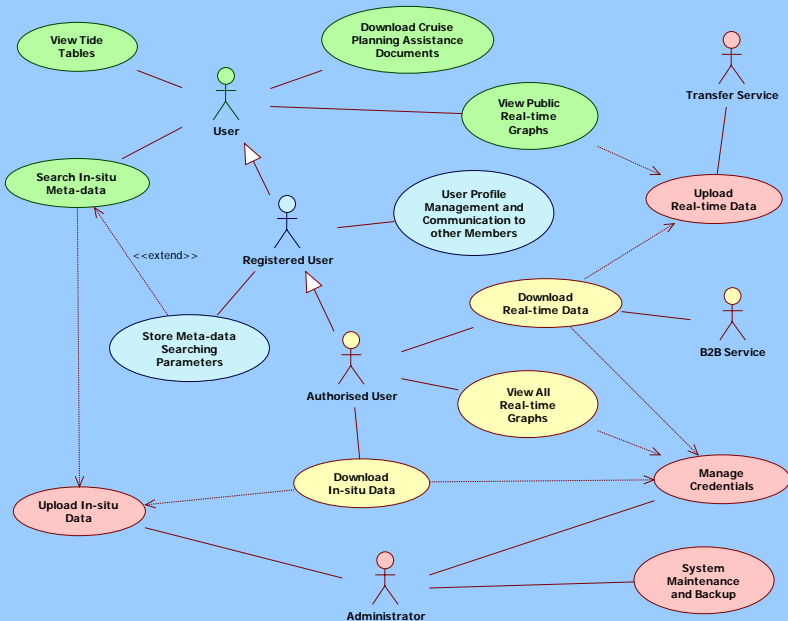
 Count Meta-data / Download

1130 samples in-situ / 821 samples in database



Ministarstvo
nauke
Crne Gore


1. Web Portal Features



2. Approach, Tools and Technologies

- Object-oriented analysis and design used during development
- Joomla, open source Content Management System and its web application framework used for portal implementation
- Combination of PHP, Javascript and Java applets used for active content implementation
- Combination of OTT Hydras 3, Java application and PHP used for collecting and transferring real-time data from sensors to portal
- Data transfer protected by https protocol
- MySQL, open source relational database management system used for storage of meta-data and datasets
- Tide T@bles Java applet developed based on Michael Foreman's Fortran 77 source code, using constituents compatible with Patrick Caldwell's version of Foreman's software

3. In-situ Data Sets



**South-East Adriatic
Oceanographic Data Center**

Hi, Aleksander Jovic [Logout](#)

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Project:
 FAO AdriaMed
 ADRICOSM-EXT
 ADRICOSM-STAR
 IBMK Internal
 Calypso
 IAEA
 MytiAd
 IRSN
 MED POL
 ECOPORT B
 ENVEurope


Instrument:
 box corer
 corer
 CTD
 diving
 grab
 net
 roseta
 Shipek grab

Period:
 From: 2002 - Aug - 21
 To: 2011 - Apr - 19
 Unit: N
 Value: 42.56041
 From: 18.39569 18.89569 E
 To: 42.26231
 Unit: S
 Value: 42.41136N 18.84500E

Season:
 From: Jan - 01
 To: Dec - 31
 Unit: From
 Time of day: 00 - 00
 To: 23 - 59
 Unit: From

Count Meta-data / Download

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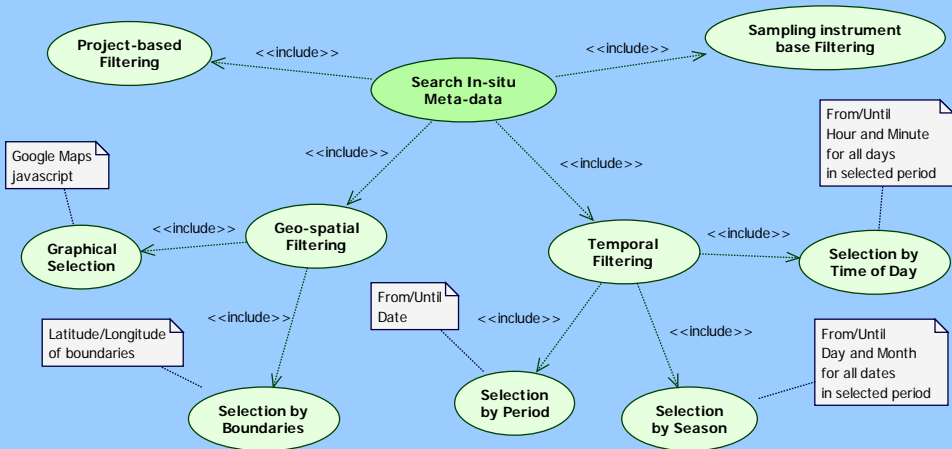
Map data ©2012 Google, InR Atlas, Source: US Dept

Datasets are freely available for research community only (i.e. for registered and previously authorized users).
 Downloaded file (data.bt) is compatible with Ocean Data View (ODV) format.

[Download Records](#)

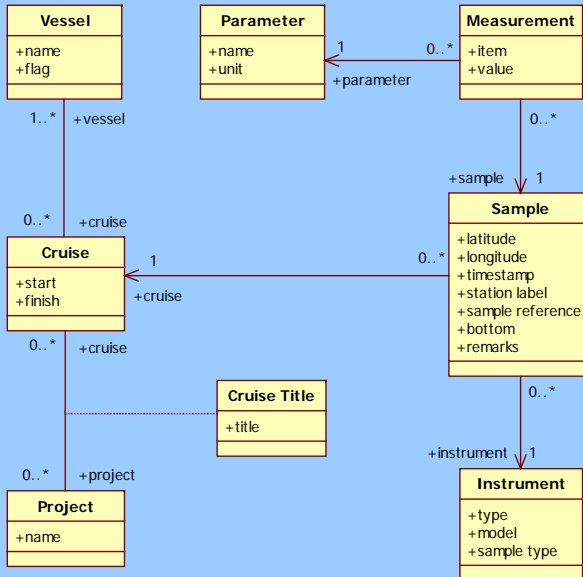
int	Sample ID	Station label	Timestamp	Latitude Longitude	Bottom	Instrument Model	Sample type	Reference Remarks	Cruise Vessel [Flag]	Project
1)	2	cala02	2002-08-21 13:10:38	42.341833 18.680500	45.5	CTD SBE 9	data	cala02.dat 86 records	FAO AdriaMed 2002 G. Dalmacija [IT]	FAO AdriaMed
2)	22	cala14	2002-08-24 08:47:13	42.293167 18.693333	86	CTD SBE 9	data	cala14.dat 167 records	FAO AdriaMed 2002 G. Dalmacija [IT]	FAO AdriaMed
3)	23	c1	2002-08-24 07:40:00	42.362167 18.578667	103	CTD SBE 9	data	c1.dat 202 records	FAO AdriaMed 2002 G. Dalmacija [IT]	FAO AdriaMed
4)	24	c2	2002-08-24 08:38:49	42.274833 18.461500	198	CTD SBE 9	data	c2.dat 391 records	FAO AdriaMed 2002 G. Dalmacija [IT]	FAO AdriaMed
5)	26	cala15	2002-08-24 11:53:56	42.309500 18.501167	116	CTD SBE 9	data	cala15.dat 231 records	FAO AdriaMed 2002 G. Dalmacija [IT]	FAO AdriaMed
6)	27	Mh01	2004-07-19 14:42:16	42.371500 18.548667	104	CTD SBE 9	data	Mh01.csv 209 records	FAO AdriaMed 2004 G. Dalmacija [IT]	FAO AdriaMed
7)	28	Mh02	2004-07-19 15:22:49	42.326333 18.496500	125	CTD SBE 9	data	Mh02.csv 247 records	FAO AdriaMed 2004 G. Dalmacija [IT]	FAO AdriaMed
8)	29	Mh03	2004-07-19 17:02:30	42.287167 18.436833	200	CTD SBE 9	data	Mh03.csv 403 records	FAO AdriaMed 2004 G. Dalmacija [IT]	FAO AdriaMed
9)	30	Mh04	2004-07-19 17:11:22	42.268000 18.419333	230	CTD SBE 9	data	Mh04.csv 468 records	FAO AdriaMed 2004 G. Dalmacija [IT]	FAO AdriaMed

3. In-situ Data Sets



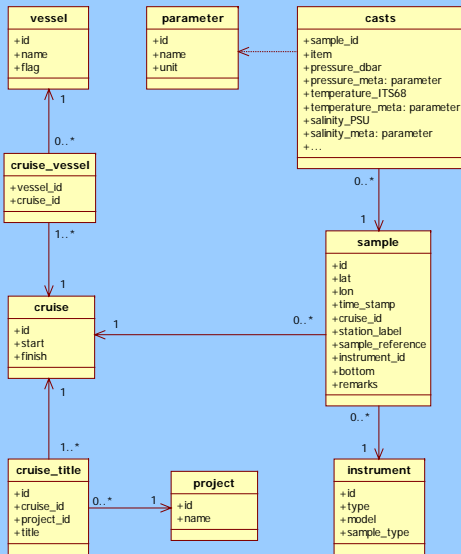
Meta-data filtering options

3. In-situ Data Sets



In-situ data model

3. In-situ Data Sets



Database implementation

4. Tide Tables Java Applet

(281/011R) Bar, Montenegro

42°05.266'N, 019°04.516'E

Pressure
1013.25
[mb]

LAT
Reference Level

7 days
Prediction Period

2012
Year

04
Month

01
Day

< >

Now

CET/CEST
Timezone

Reset

Tide Graph

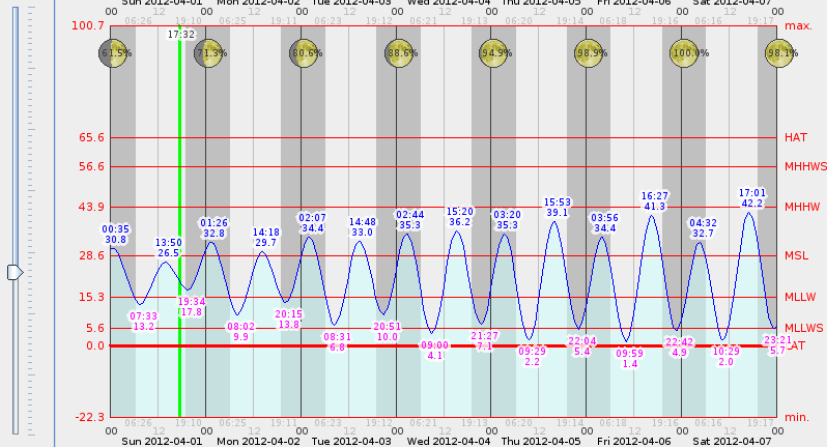
Tide Table

Constituents

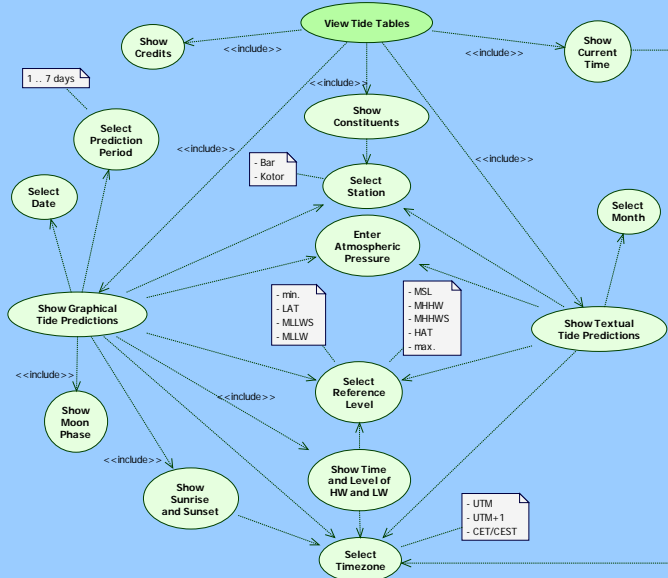
About ...

Levels in cm

Sun 2012-04-01 17:32:19 +0200



4. Tide T@bles Java Applet



Application features

4. Tide Tables Java Applet

(281/011R) Bar, Montenegro

42°05.266'N, 019°04.516'E

Pressure
1013.25
[mb]

LAT
Reference Level

7 days
Prediction Period

2012
Year

04
Month

01
Day

< >

Now

CET/CEST
Timezone

Reset

Tide Graph

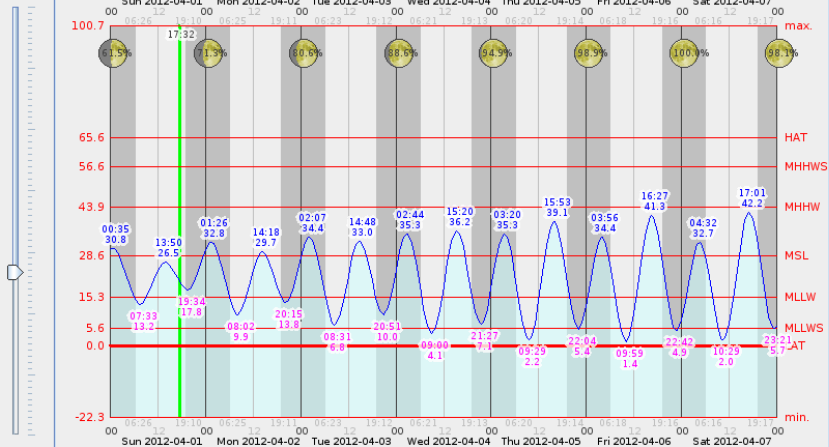
Tide Table

Constituents

About ...

Levels in cm

Sun 2012-04-01 17:32:19 +0200



4. Tide T@bles Java Applet

(281/011R) Bar, Montenegro

42°05.266'N, 019°04.516'E

Pressure
1013.25
[mb]

LAT

Reference Level

1 month

Prediction Period

2012

Year

04

Month

01

Day

< >

Now

CET/CEST

Timezone

Reset

Tide Graph

Tide Table

Constituents

About ...

Levels in cm

Sun 2012-04-01 17:32:27 +0200

Sun	2012-04-01	00:35	30.8	07:33	13.2	13:50	26.5	19:34	17.8
Mon	2012-04-02	01:26	32.8	08:02	9.9	14:18	29.7	20:15	13.8
Tue	2012-04-03	02:07	34.4	08:31	6.8	14:48	33.0	20:51	10.0
Wed	2012-04-04	02:44	35.3	09:00	4.1	15:20	36.2	21:27	7.1
Thu	2012-04-05	03:20	35.3	09:29	2.2	15:53	39.1	22:04	5.4
Fri	2012-04-06	03:56	34.4	09:59	1.4	16:27	41.3	22:42	4.9
Sat	2012-04-07	04:32	32.7	10:29	2.0	17:01	42.2	23:21	5.7
Sun	2012-04-08	05:09	30.7	11:00	4.0	17:36	41.7		
Mon	2012-04-09	00:02	7.7	05:49	28.6	11:33	7.2	18:12	40.0
Tue	2012-04-10	00:47	10.5	06:34	26.5	12:08	11.2	18:50	37.2
Wed	2012-04-11	01:44	13.8	07:33	24.6	12:45	15.6	19:36	34.0
Thu	2012-04-12	03:19	16.6	09:19	23.4	13:35	19.8	20:57	31.1
Fri	2012-04-13	05:25	17.1	11:54	24.8	16:08	23.0	23:18	30.6
Sat	2012-04-14	06:48	15.5	13:19	28.0	18:48	21.8		
Sun	2012-04-15	00:38	31.8	07:32	13.4	14:02	31.3	19:49	19.2
Mon	2012-04-16	01:29	32.9	08:03	11.5	14:34	34.2	20:29	16.5
Tue	2012-04-17	02:08	33.4	08:29	9.9	15:01	36.6	21:02	14.1
Wed	2012-04-18	02:41	33.4	08:53	8.8	15:26	38.5	21:31	12.2
Thu	2012-04-19	03:12	33.0	09:16	8.3	15:51	39.9	21:59	10.8
Fri	2012-04-20	03:41	32.5	09:39	8.2	16:15	40.7	22:26	10.3
Sat	2012-04-21	04:09	31.8	10:02	8.7	16:39	41.0	22:53	10.6
Sun	2012-04-22	04:36	30.9	10:24	9.7	17:04	40.9	23:22	11.6
Mon	2012-04-23	05:03	29.8	10:47	11.0	17:30	40.4	23:53	13.1
Tue	2012-04-24	05:31	28.4	11:10	12.8	17:57	39.3		
Wed	2012-04-25	00:30	14.9	06:02	26.9	11:34	14.8	18:26	37.7
Thu	2012-04-26	01:17	16.6	06:43	25.2	12:01	17.1	18:59	35.5
Fri	2012-04-27	02:29	17.7	07:58	23.6	12:37	19.6	19:48	32.8
Sat	2012-04-28	04:12	17.5	10:20	23.5	13:43	22.0	21:46	30.5
Sun	2012-04-29	05:30	15.5	12:08	25.6	17:05	22.6	23:29	30.3
Mon	2012-04-30	06:23	12.7	13:00	28.6	18:57	19.3		

4. Tide Tables Java Applet

(281/011R) Bar, Montenegro

42°05.266'N, 019°04.516'E

Pressure
1013.25
[mb]

LAT

1 month

2012

04

01



Now

CET/CEST

Reset

Tide Graph

Tide Table

Constituents

About ...

Sun 2012-04-01 17:32:32 +0200

Name	Amp	G	Name	Amp	G	Name	Amp	G
Z0	99.4330	0.00	O01	0.3763	62.90	M4	0.0749	183.77
SA	8.6615	335.11	UPS1	0.2200	105.57	SN4	0.0291	128.20
SSA	4.2593	158.31	OQ2	0.0342	18.37	MS4	0.0397	283.30
MSM	0.8825	216.34	EPS2	0.0596	118.68	MK4	0.0443	13.84
MM	0.7975	108.70	2N2	0.2024	69.30	S4	0.0797	237.18
MSF	0.3625	69.81	MU2	0.2423	89.31	SK4	0.0423	94.73
MF	1.0866	238.71	N2	1.5692	74.82	2MK5	0.0408	167.74
ALP1	0.0440	92.31	NU2	0.2913	68.23	2SK5	0.0323	321.23
2Q1	0.0637	144.64	H1	0.1434	359.43	2MN6	0.0165	49.23
SIG1	0.0901	26.29	M2	9.0958	75.71	M6	0.0178	85.26
Q1	0.2667	59.66	H2	0.1552	352.79	2MS6	0.0283	131.68
RH01	0.0360	12.95	MKS2	0.0357	344.79	2MK6	0.0355	193.08
O1	1.5863	28.58	LDA2	0.1080	56.98	2SM6	0.0203	237.49
TAU1	0.0201	65.24	L2	0.2225	96.36	MSK6	0.0123	115.32
BET1	0.0384	114.30	T2	0.2348	123.10	3MK7	0.0301	62.95
NO1	0.1395	332.86	S2	5.4152	77.82	M8	0.0114	215.31
CHI1	0.0546	83.11	R2	0.0199	184.95			
PI1	0.0898	4.23	K2	1.7259	73.94			
P1	1.5924	34.78	MSN2	0.1083	207.78			
S1	0.3885	203.29	ETA2	0.1150	90.89			
KL	4.9276	40.01	M03	0.0250	221.76			
PSI1	0.1587	76.37	M3	0.1496	188.82			
PHI1	0.1051	339.90	S03	0.0183	12.75			
THE1	0.1278	5.92	MK3	0.0270	68.60			
J1	0.1877	20.09	SK3	0.1580	116.39			
S01	0.0397	42.72	MN4	0.0145	155.78			

Vertical scrollbar

4. Tide T@bles Java Applet

(281/011R) Bar, Montenegro

42°05.266'N, 019°04.516'E

Pressure 1013.25 [mb]

LAT Reference Level

1 month Prediction Period

2012 Year

04 Month

01 Day

Now

CET/CEST Timezone

Reset

Tide Graph Tide Table Constituents About ...

Sun 2012-04-01 17:32:40 +0200

Tide T@bles

v1.1

(2011-11-06 12:36)

Graphical tide prediction software written in Java
based on Mike Foreman methods and his Fortran 77 source code

For more details and original software package please see:

http://www.pac.dfo-mpo.gc.ca/sci/osap/projects/tidpack/tidpack_e.htm

Constituents used in this software are compatible with Caldwell's version of Foreman's software. This package is available at:

<http://uhslc.soest.hawaii.edu/uhslc/jaslsoft2.html>

Aleksandar Jovicic [aleksandar@jovicic.name]

4. Tide Tables Java Applet

(281/012) Kotor, Montenegro

42°25.438'N, 018°46.189'E

Pressure
1013.25
[mb]

HAT
Reference Level

7 days
Prediction Period

2012
Year

11
Month

11
Day

< [Slider] >

Now

CET/CEST
Timezone

Reset

Tide Graph

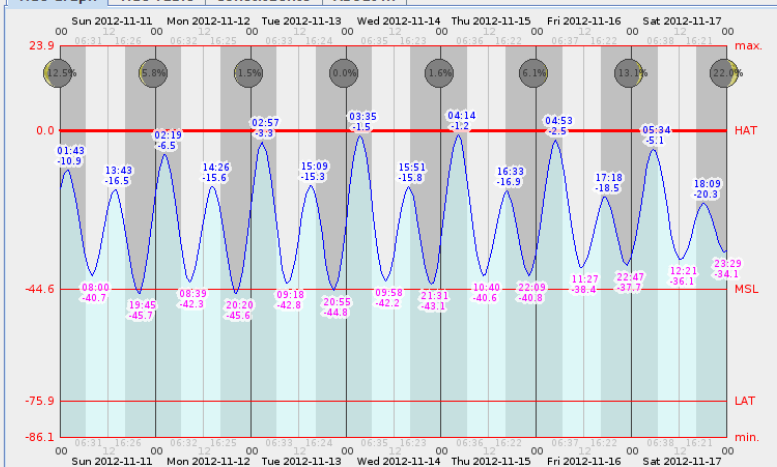
Tide Table

Constituents

About ...

Levels in cm

Sun 2012-04-01 17:34:24 +0200



4. Tide Tables Java Applet

(281/012) Kotor, Montenegro

42°25.438'N, 018°46.189'E

Pressure
988.09
[mb]

max.
Reference Level

3 days
Prediction Period

2012
Year

11
Month

14
Day

< [Slider] >

Now

CET/CEST
Timezone

Reset

Tide Graph

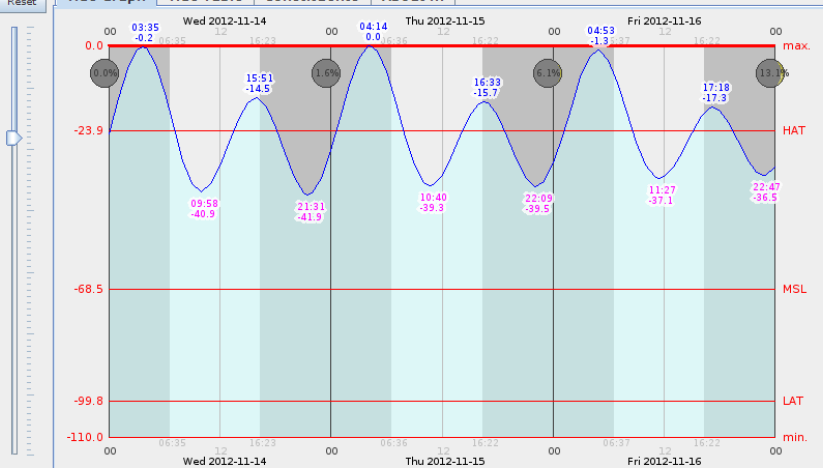
Tide Table

Constituents

About ...

Levels in cm

Sun 2012-04-01 17:46:55 +0200



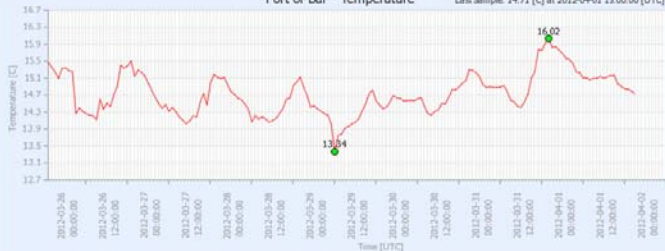
5. Permanent Stations Data



NOTICE: Station is still in testing phase so please do not use data for official purposes

Port of Bar - Temperature

Last Sample: 14.71 [C] at 2012-04-01 15:00:00 [UTC]

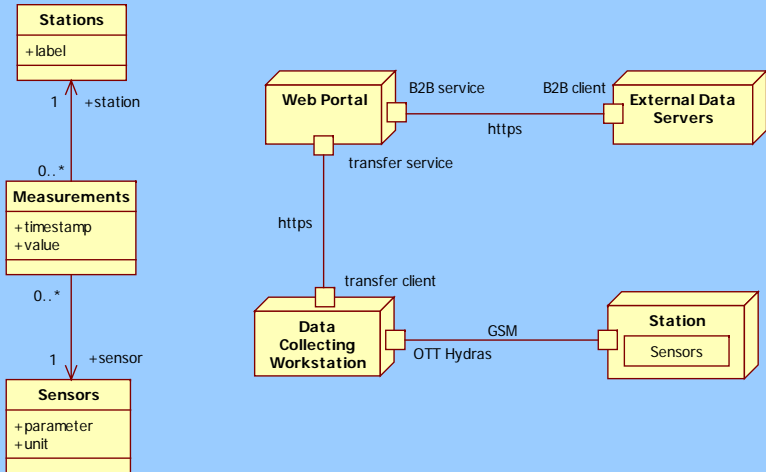


Port of Bar - Salinity

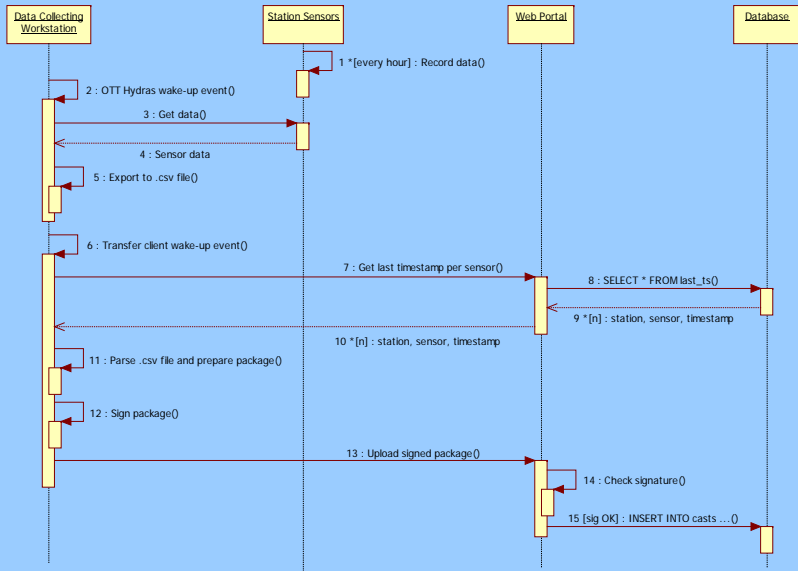
Last Sample: 35.08 [ppt] at 2012-04-01 15:00:00 [UTC]



5. Permanent Stations Data

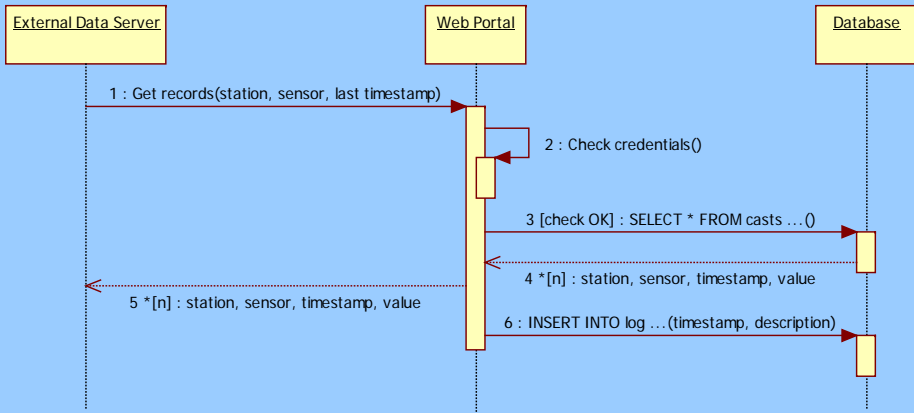


5. Permanent Stations Data



Sensors to portal data transfer

5. Permanent Stations Data



5. Permanent Stations Data



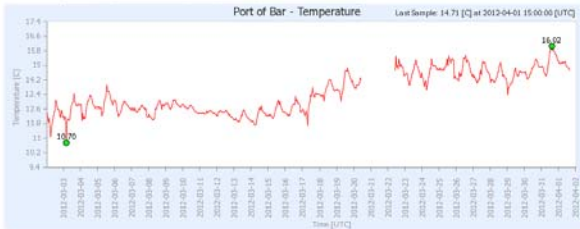
NOTICE: Station is still in testing phase so please do not use data for official purposes

Sensor ID	Parameter	Value	Unit	Last sample [UTC]
0001	Temperature	14.71	C	2012-04-01 15:00:00
0002	pH	8.40		2012-04-01 15:00:00
0003	Conductivity	53.00	mS/cm	2012-04-01 15:00:00
0004	Salinity	35.08	ppt	2012-04-01 15:00:00
0005	Chlorophyll A	0.02	ug/l	2012-04-01 15:00:00
0006	LDO	99.70	%	2012-04-01 15:00:00
0007	LDO	8.11	mg/l	2012-04-01 15:00:00
0008	Depth	0.50	m	2012-04-01 15:00:00
0009	Voltage	14.06	V	2012-04-01 15:00:00

Temperature
pH
Conductivity
Salinity
Chlorophyll A
LDO [%]
LDO [mg/l]
Depth
Voltage

Week 15 days Month

Show



Download Datasets

From

2011

Jan

01

Until

2012

Apr

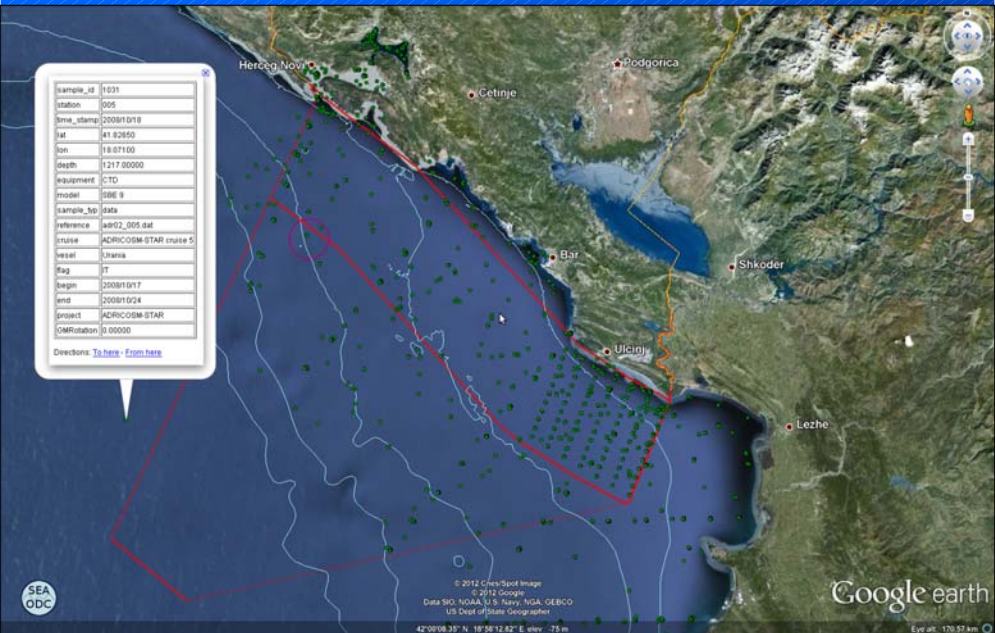
01

Download Records

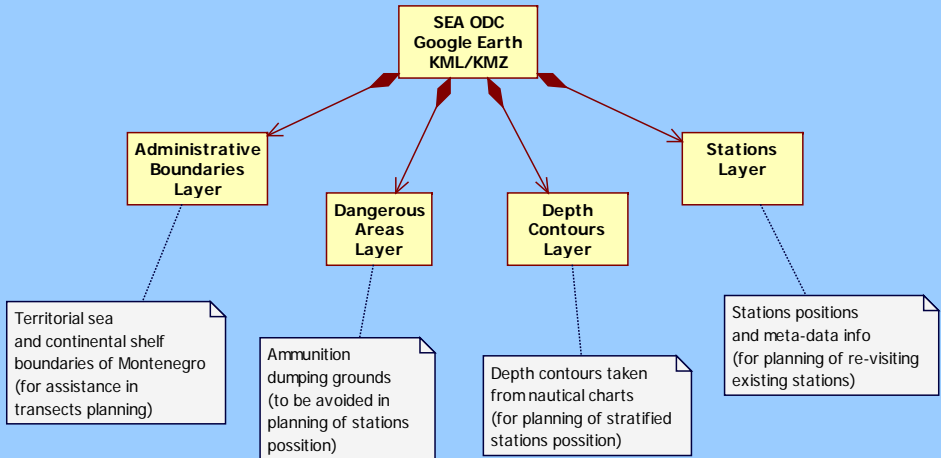
Datasets are freely available for research community only (i.e. for registered and previously authorized users).

Data
available to
authorized
users

6. Google Earth KML/KMZ



6. Google Earth KML/KMZ



Layers and its possible usage

SEA ODC – An Implementation of Web Portal and B2B Services for Managing of Oceanographic Data Sets Collected in South-East Adriatic

Aleksandar Jovicic¹ (aleksandar@jovicic.name)

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Zoran Kljajic^{1,2} (biokotor@gmail.com)

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² Institute of Marine Biology, Kotor, Montenegro

<https://www.oceanography.me>