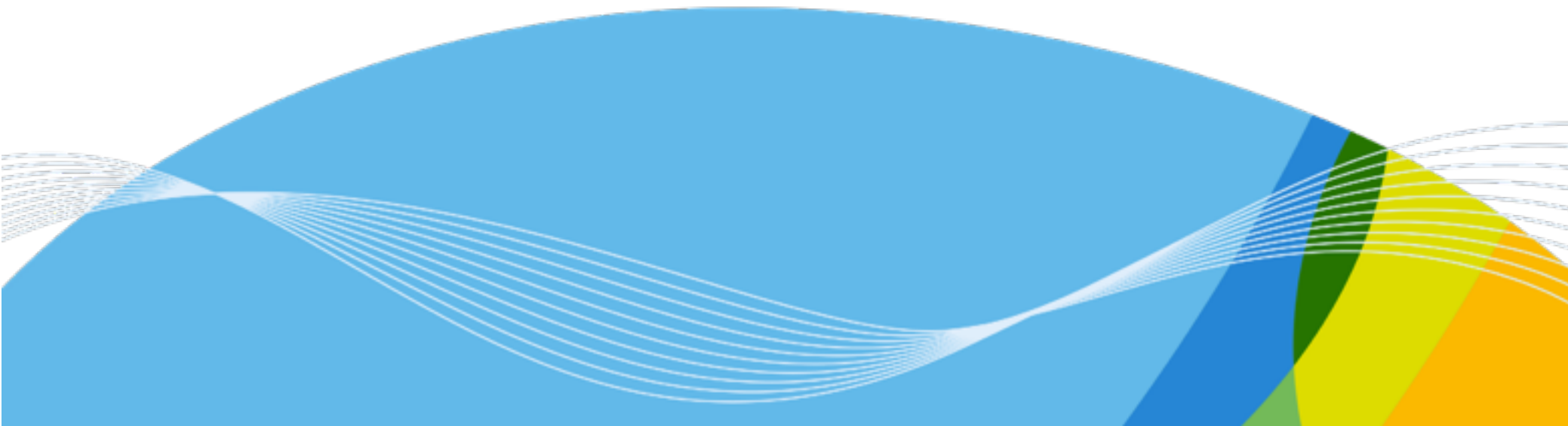




FINNISH METEOROLOGICAL INSTITUTE

Workflows

Finnish Meteorological Institute
Kimmo Tikka & Pekka Alenius



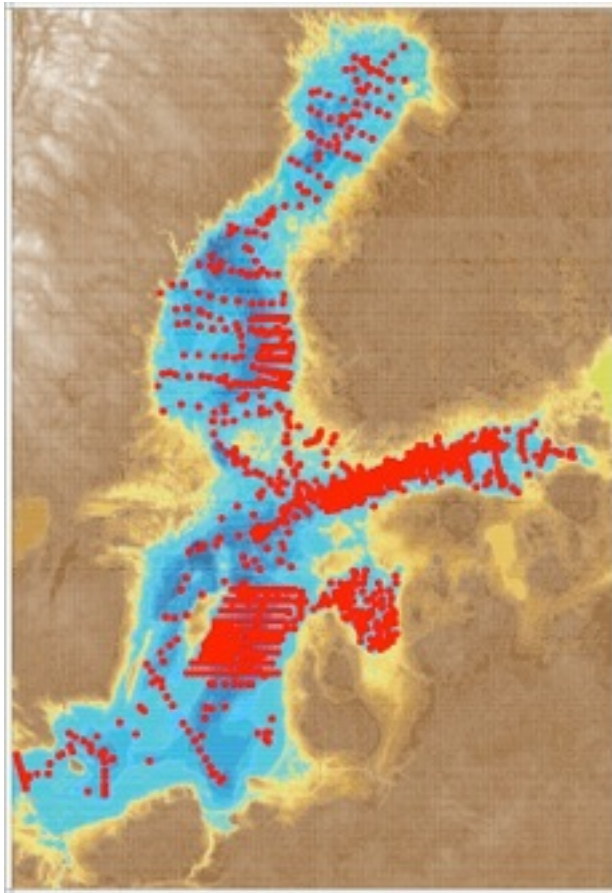
Observations

- Open sea data from RV Aranda
 - CTD casts
 - Watersamples
 - Weather station
 - Flowthrough
- Fixed CTD-stations
- Argo floats
- Moorings
 - buoys e.g. ICOS station in Utö island
- Coastal chemical monitoring via Finnish Environmental Inst.

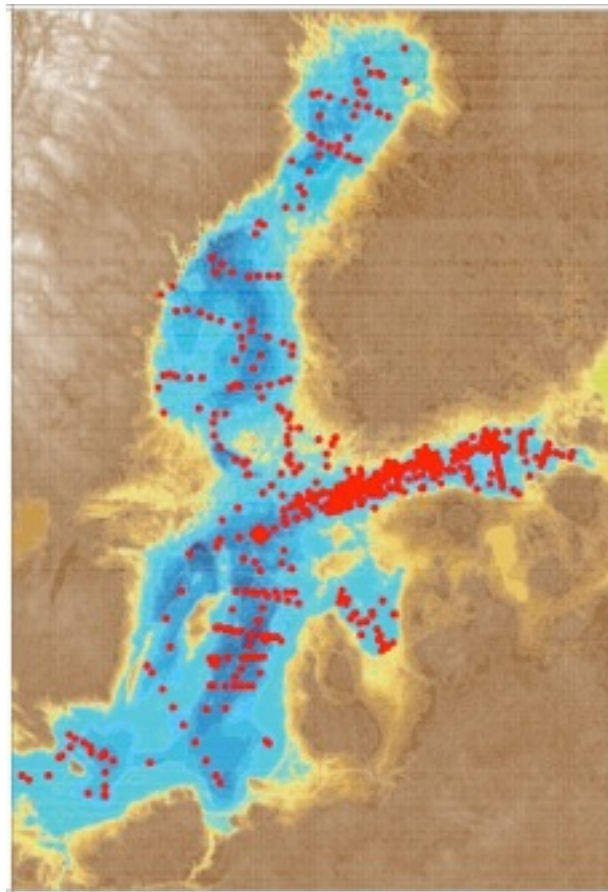


Data coverage, spatial

- CTD stations



- Watersample stations



CTD parameters

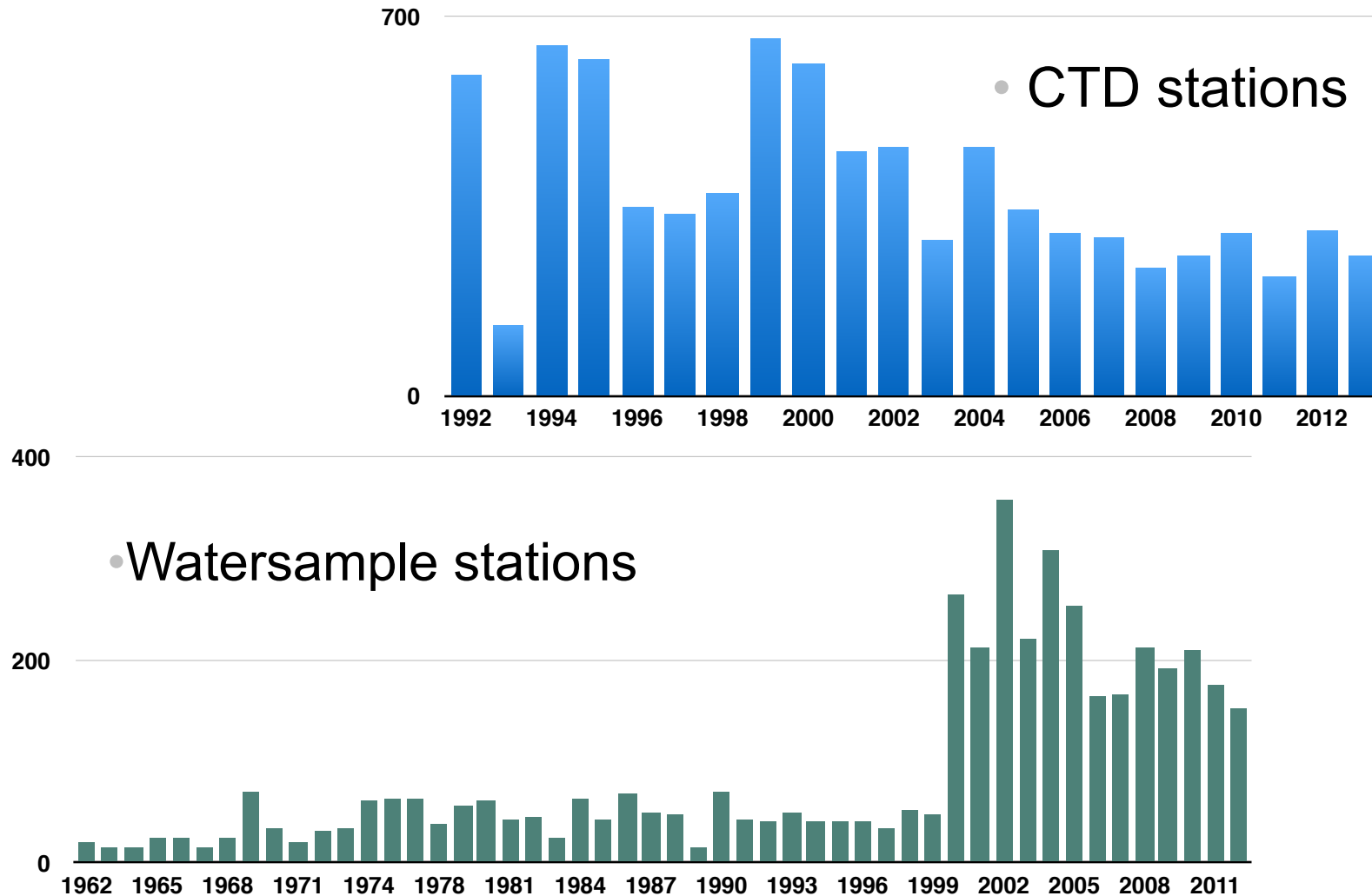
- Conductivity
- Temperature
- Pressure
- Diss. Oxygen
- Fluorecence

Water sample data

- Ammonium
- Nitrate-nitrite
- Nitrite
- Total Nitrogen
- Phosphate
- Total Phosphorus
- Silicate
- Alkalinity



Data coverage, temporal





Data from RV to shore

- Onboard RV Aranda: all data stored in LIMS and databases
- LIMS: primary input system for chemical & sampling data
- Quality procedures:
 - Certified methods and procedures
 - Automatic procedures run on ship's servers
 - data uploads into db and data send to the institute near real time
 - Experts quality check, flag and accept the data afterwards
 - Accepted data delivered



Databases

- Laboratory Information System, ArandaLIMS (c Innovatics Ltd)
- Relational MySQL-databases for
 - stations data, SUMPPU
 - flow through data, ALGABASE
 - share common metadata
 - weather data, ArandaWeatherChannel AWC
 - schemas & sw developed inhouse

Search: id										
id	visit_id	parameter_id	paramversion_id	depth	value	standard_depth_id	dataset_id	quality_id	approved	log_id
20169	14474	13	18	1	8.17	1	9	12001	00000001	47186
20170	14474	14	54	1	7.75	1	9	12001	00000001	47187
20171	14474	15	25	1	0.69	1	9	12002	00000001	47188
20172	14474	21	29	1	1.18	1	9	12002	00000001	47189
20173	14474	18	33	1	12.21	1	9	12002	00000001	47190
20174	14474	12	42	1	0	1	9	12002	00000001	47191
20175	14474	11	37	1	7.45	1	9	12002	00000001	47192
20176	14474	4	46	1	0.67	1	9	12002	00000001	47193



CDI

- Mikado automatic queries from
 - measurement database - SUMPPU
 - auxiliary database - FODC
- Datasets
 - one station
 - FODC_<type>_<basecode>_<baseindex>
 - type: CTD | BOTTLE | FLOW | METEO
 - FODC_CTD_34AR_2013010001,
FODC_BOTTLE_34AR_2013010001
- CDIs sent to MARIS with email (why not ftp)
 - once, twice a year — more frequent delivers to come
 - Logging of sent CDIs in the database



Mikado 3.3.3 SDN V2 Automatic / CDI 19139 : /Users/tikkak/nodc/data/seadatanet/CDI2013/Oostende_CDI_FODC_BOTTLE_2014-04-17 kopio.xml

Manual Automatic Options Tools ?

Connection Queries

Requests

- Main Query
 - ✓ :\$ Cdi identifier
- Single subqueries
 - ✓ var01 Collate Centre
 - ✓ var02 Measuring area type
 - ✓ var03 Horizontal Datum
 - ✓ var04 Dataset name
 - ✓ var05 Dataset-id
 - ✓ var06 Revision date (dataset)
 - ✓ var08 Abstract (dataset)
 - ✓ var09 Data Holding Centre
 - ✓ var12 Platform
 - ✓ var15 Cruise name
 - ✓ var16 Cruise short name
 - ✓ var17 Cruise start date
 - ✓ var18 Station name
 - ✓ var19 Station short name
 - ✓ var20 Station start date
 - ✓ var21 Time resolution value
 - ✓ var22 Time resolution unit
 - ✓ var28 Start date (dataset)
 - ✓ var29 End date (dataset)
 - ✓ var30 Minimum depth of instrument
 - ✓ var31 Maximum depth of instrument
 - ✓ var34 Vertical datum
 - ✓ var35 Water depth
 - ✓ var36 Distributor
 - ✓ var45 Vertical resolution value
 - ✓ var46 Vertical resolution unit
 - ✓ var47 Horizontal resolution value
 - ✓ var48 Horizontal resolution unit
 - ✓ var80 EDMED Reference
 - ✓ var81 CSR Reference

Check All

query

```

SELECT var sql
var01 fe.collater_EDMO
var02 'point'
var03 '4326'
var04 fd.LOCAL_ID
var05 fd.LOCAL_ID
var06 curdate()
var08 concat('Finnish ',fd.CDltype,' data')
var09 fe.dataset_id

FROM fodc.CDI_dataset fd, sumppu.visit sv, sumppu.cruise sc, sumppu.base sb, sumppu.station s
s, fodc.CDI_EDMO fe, fodc.fv_station fs

WHERE fd.baseindex = right(':',10) and fd.baseindex = sv.baseindex and sv.cruise_id = sc.id and
sc.base_id = sb.id and sv.station_id = ss.id and fd.CDltype = substring(substring_index(':',
':$', '_', 2) FROM locate(':', substring_index(':', '_', 2))+1) and
fd.CDltype = fe.CDltype and fs.sumppu_station_id = ss.id and
fd.baseindex collate 'utf8_swedish_ci' = sv.baseindex collate 'utf8_swedish_ci'

ORDER BY fd.baseindex

```

Test

check

```

:$ = [FODC_BOTTLE_34AR_2009010248]
var01 = [1725]
var02 = [point]
var03 = [4326]
var04 = [FODC_BOTTLE_34AR_2009010248]
var05 = [FODC_BOTTLE_34AR_2009010248]
var06 = [2014-05-20]
var08 = [Finnish BOTTLE data]
var09 = [1725]
var12 = [31]
var18 = [AALTOP1]
var19 = [AALTOP1]
var20 = [1996-09-11]
var28 = [2009-08-14T13:11:00Z]
var29 = [2009-08-14T14:00:00Z]
var36 = [1725]

```



Software

• Download manager

- DM on a virtual linux server
- DM version 1.4.4 in production
- Data in ODV format
- 24/7 monitoring

• Mikado

- CDIs
- Cruise summary reports

• ODV

- Reports, Quality control

• 'SUMPPU' db tables & web-interface

The screenshot displays the SUMPPU web interface. On the left, a sidebar lists 'TABLES & VIEWS' including auth_role, auth_user, auth_userrole, base, bntbottom, bntbottomlog, bntlength, bntlif, bntliflog, bntlinktree, bntsample, bntspecie, bntspecie, bntspecie, bntvalue, bntvalue, bntvalue, cruise, cruiseinp, cruiseinp, dataset, dataset, dataset, datavalue, and datavalue. The main content area shows a search bar with 'Sumppu@to' and a table of data. The table has columns: Time, Departure, Time, Lat, Lon, Qualified, Parameters, Des, Variations, and App. The data rows show various time and location entries.

Time	Departure	Time	Lat	Lon	Qualified	Parameters	Des	Variations	App
07:12	11.09.2013	07:46	60.116833	24.963450	18.0	18.0			false
09:33			59.965350	25.234700	60.0	60.0			false
12:24	11.09.2013	12:53	59.846500	24.837803	102.0	102.0			false
15:41			59.700167	24.030167	66.0	66.0			false
19:55			59.483500	22.884667	83.0	83.0			false
07:32	12.09.2013	07:54	59.806500	21.362700	78.0	78.0			false
11:15			59.815200	21.336617	92.0	92.0			false
12:43			59.936833	21.221000	120.0	120.0			false
14:34			60.058133	21.198333	89.0	89.0			false
20:18			60.256133	21.951733	48.0	48.0			false
09:58	13.09.2013	10:15	61.129333	20.912767	42.0	42.0			false
10:56	13.09.2013	11:20	61.175483	20.768817	70.0	70.0			false
12:23	13.09.2013	12:44	61.217983	20.620667	88.0	88.0			false
13:35	13.09.2013	13:57	61.260500	20.472200	107.0	107.0			false
14:45	13.09.2013	15:07	61.302967	20.323383	121.0	121.0			false
16:11	13.09.2013	16:27	61.345667	20.174517	124.0	124.0			false
17:26	13.09.2013	17:45	61.388167	20.025350	125.0	125.0			false
18:43	13.09.2013	19:01	61.430667	19.879067	112.0	112.0			false
19:58	13.09.2013	20:19	61.473167	19.728517	89.0	89.0			false



Weather in Finland





FINNISH METEOROLOGICAL INSTITUTE

