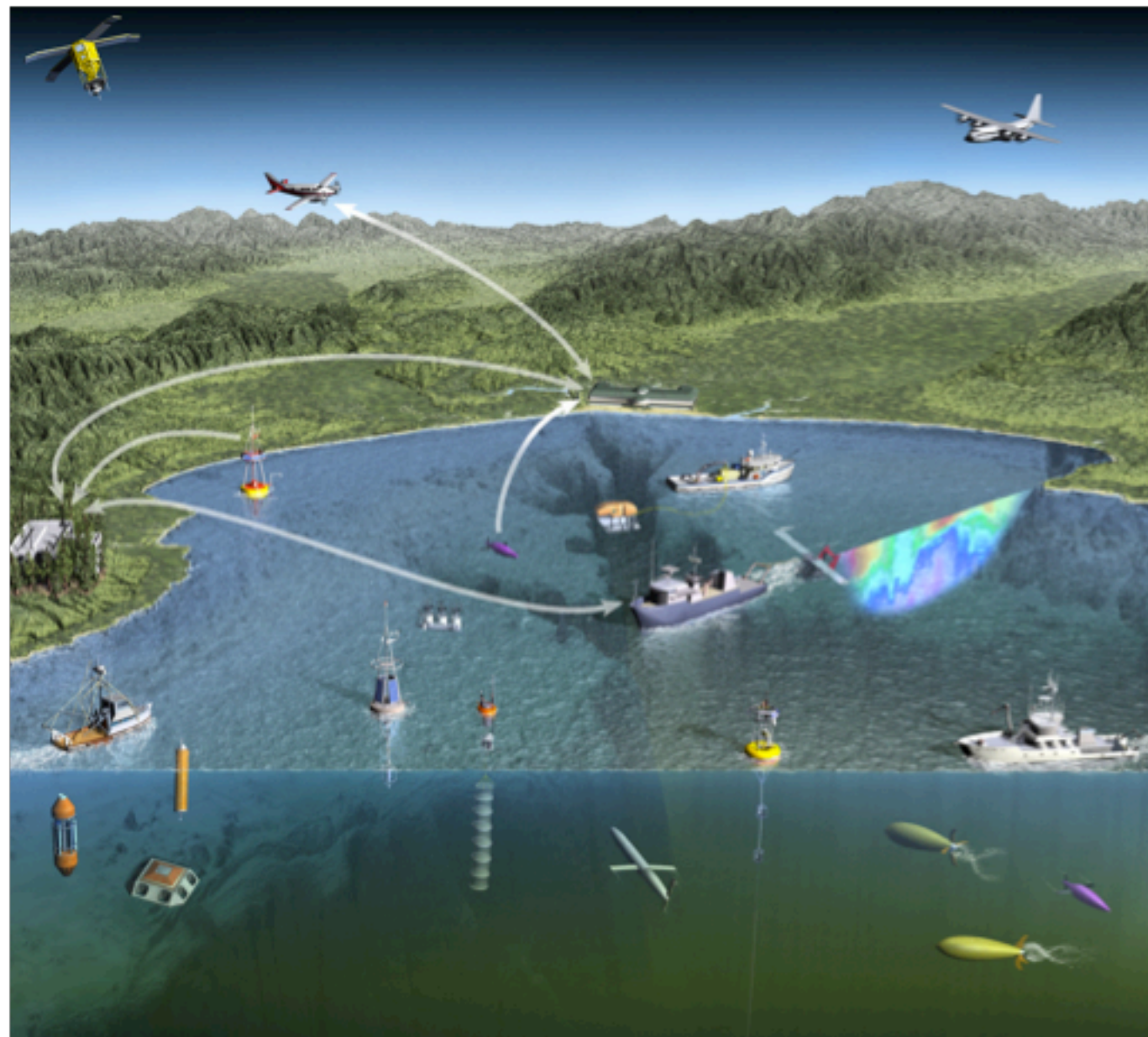


STOQS

The Spatial Temporal Oceanographic Query System

a geospatial database web application designed for providing efficient access to *in situ* oceanographic measurement data across any dimension

Multi-platform observation campaigns



CF-NetCDF Trajectory

```
Dataset {  
    Float64 time[time = 50355];  
    Float64 depth[time = 50355];  
    Float64 temperature[time = 50355];  
    Float64 oxygen[time = 50355];  
    Float64 nitrate[time = 50355];  
    Float64 bbp420[time = 50355];  
    Float64 bbp700[time = 50355];  
    Float64 fl700_uncorr[time = 50355];  
    Float64 latitude[time = 50355];  
    Float64 longitude[time = 50355];  
    Float64 salinity[time = 50355];  
    Float64 biolume[time = 50355];  
} auv/dorado/2010/netcdf/Dorado389_2010_300_00_300_00_decim.nc;
```

Platforms



Martin



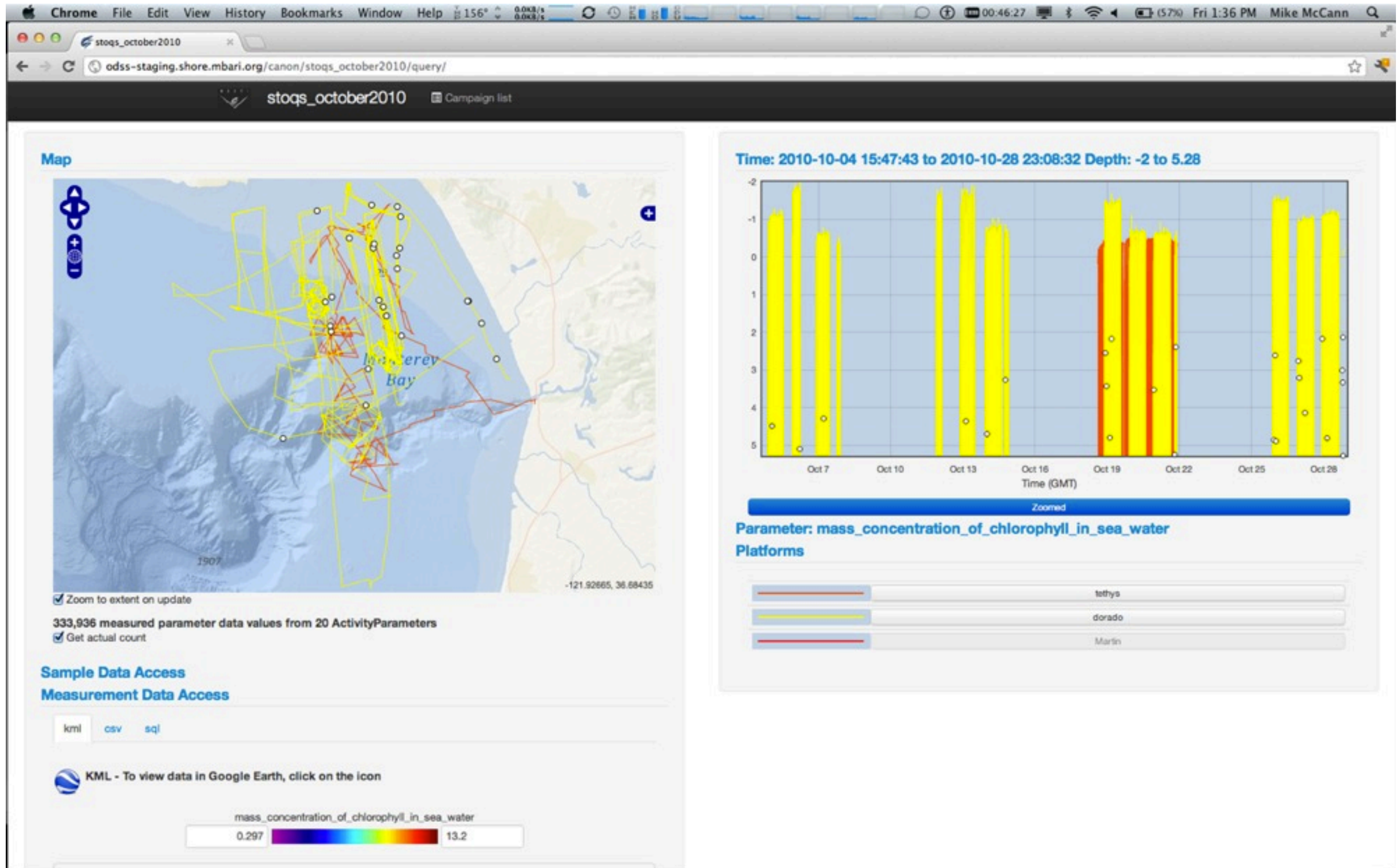
Dorado
with
Gulper
water
samplers



Tethys



STOQS User Interface



Architecture

HTML5

jQuery & AJAX

OpenLayers

Flot

Twitter Bootstrap

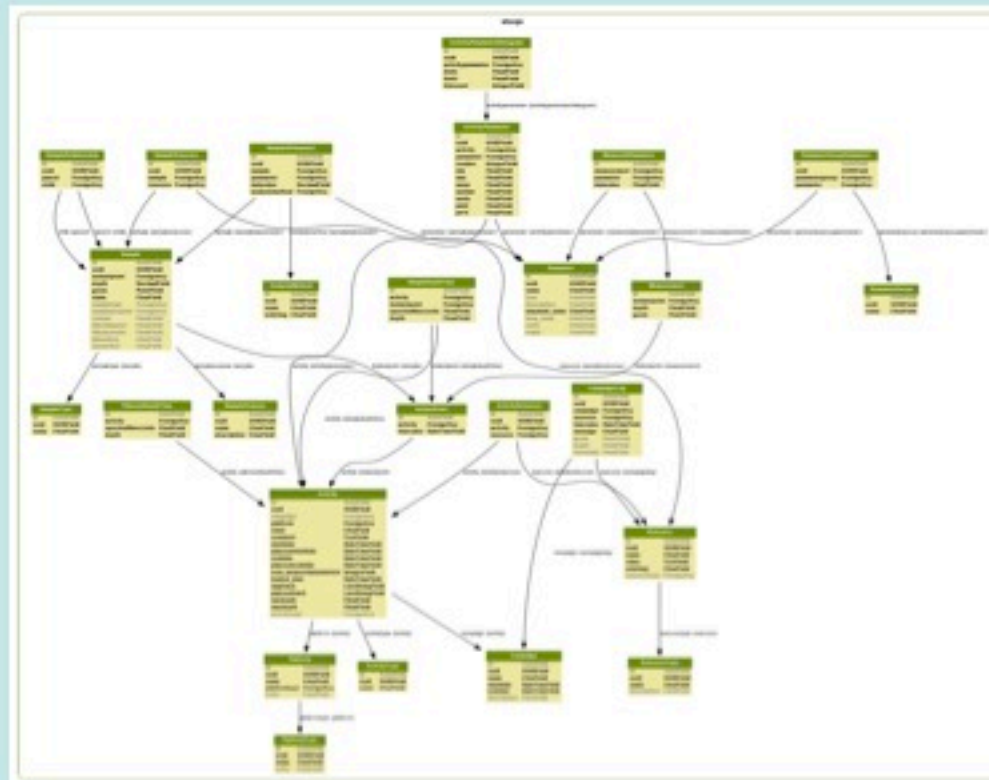
Client
Server

Python with
pydap, numpy, etc.

Minnesota Mapserver

GeoDjango ORM & web framework

Postgres + PostGIS



Activity

activity (planneddepthtime)

activity (instantpoint)

activity (activityresource)

resource (activit

Activity	
id	AutoField
uuid	UUIDField
campaign	ForeignKey
platform	ForeignKey
name	CharField
comment	TextField
startdate	DateTimeField
enddate	DateTimeField
plannedenddate	DateTimeField
parameters	IntegerField
loaded_date	DateTimeField
maptrack	LineStringField
plannedtrack	LineStringField
mindepth	FloatField
maxdepth	FloatField
activitytype	ForeignKey

platform (activity)

activitytype (activity)

campaign (activity)

Platform	
id	AutoField
uuid	UUIDField
name	CharField
platformtype	ForeignKey
color	CharField

ActivityType	
id	AutoField
uuid	UUIDField
name	CharField

platformtype (platform)

PlatformType	
id	AutoField
uuid	UUIDField
name	CharField
color	CharField

Campaign	
id	AutoField
uuid	UUIDField
name	CharField
startdate	DateTimeField
enddate	DateTimeField
description	CharField

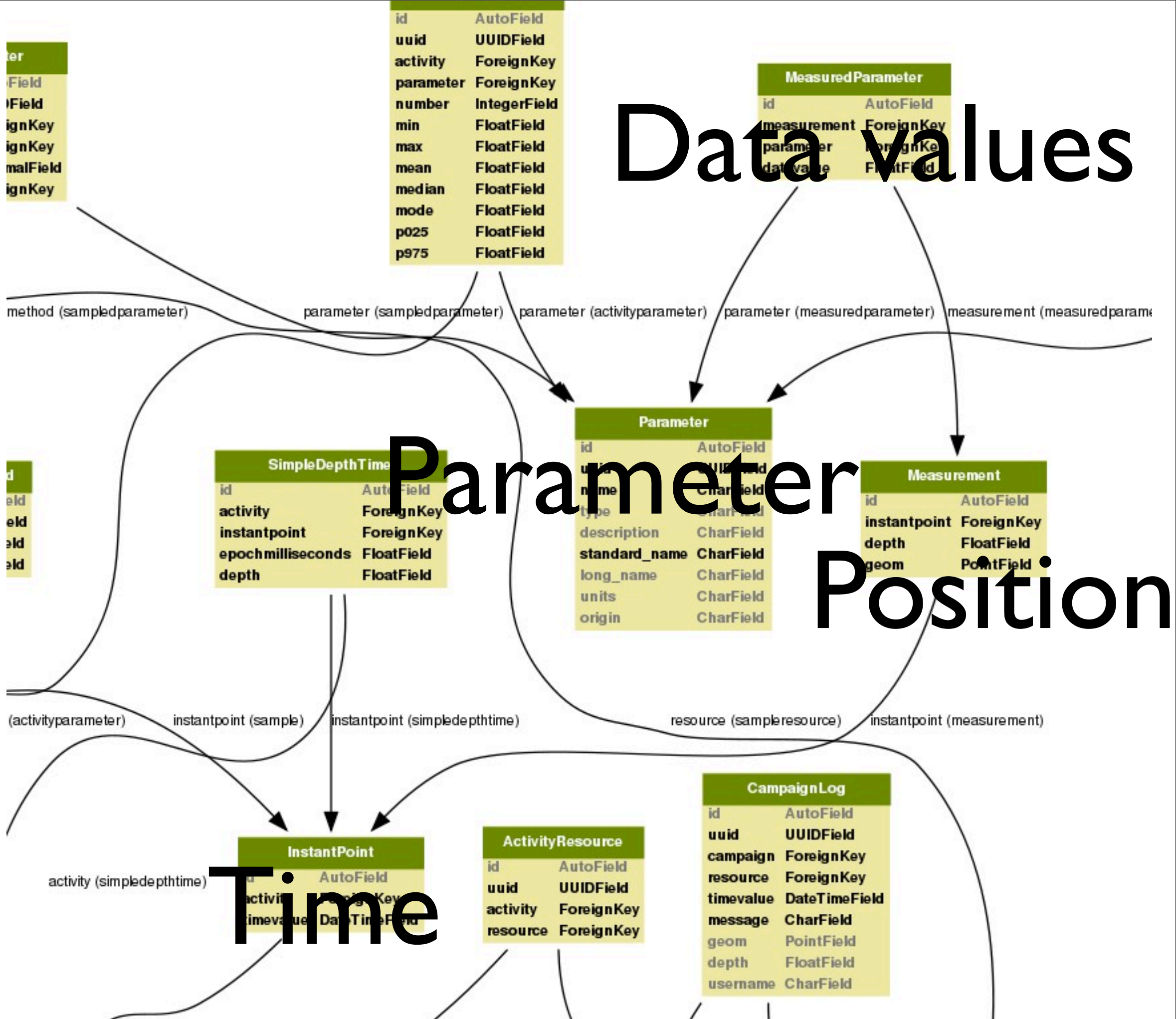
campe

Data values

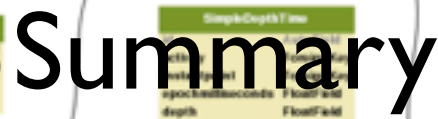
Parameter

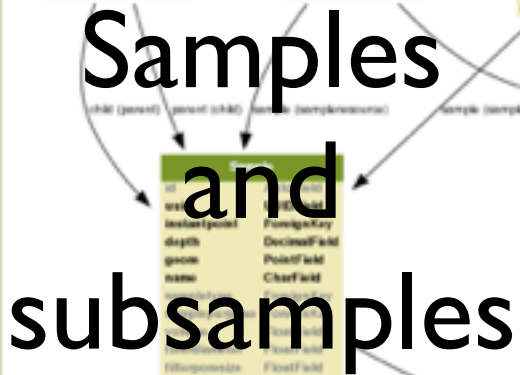
Position

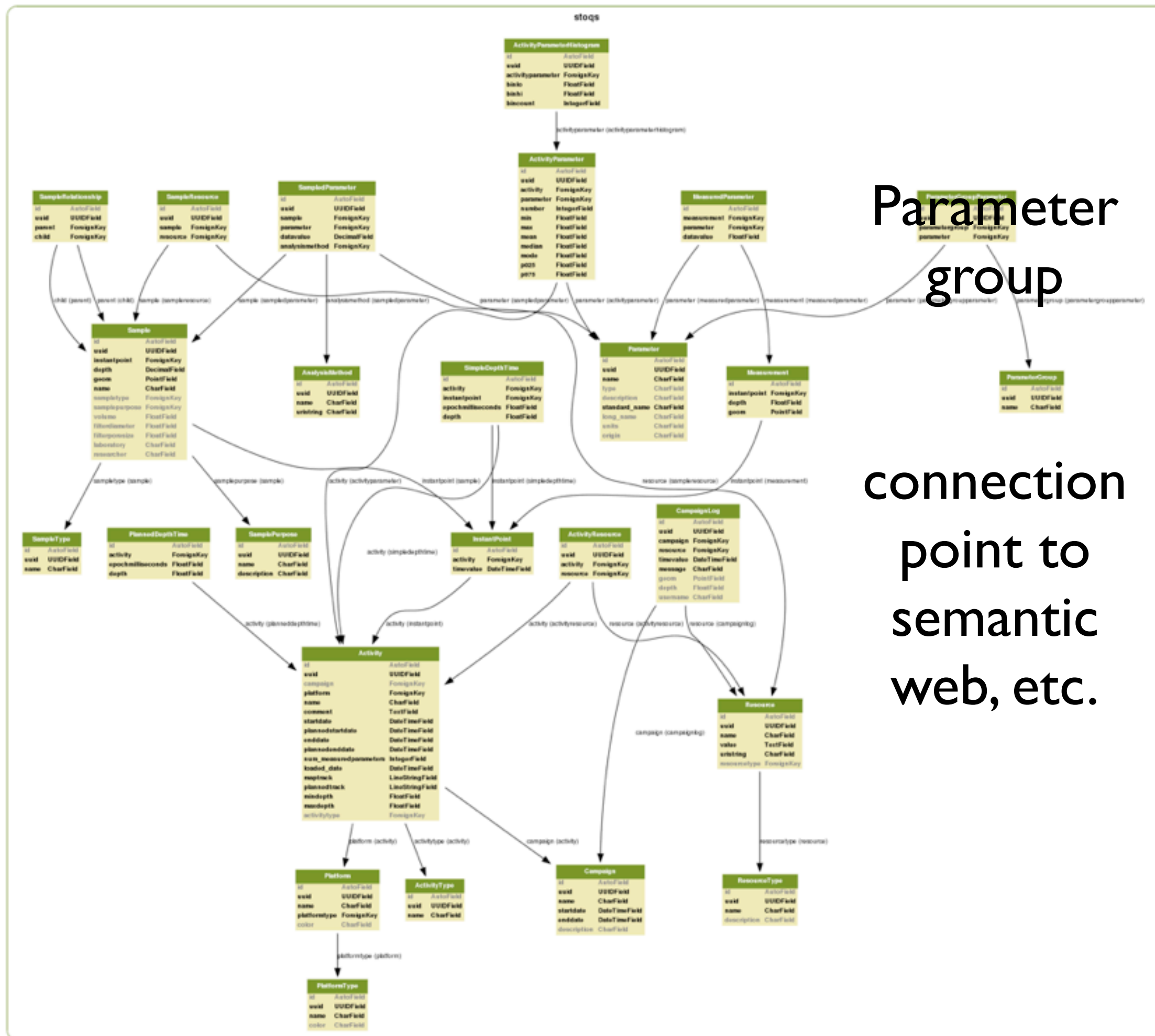
Time



Summary







Parameter
group

connection
point to
semantic
web, etc.

Live Demo





stoqs

Spatial Temporal Oceanographic Query System

<http://code.google.com/p/stoqs>

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Django, Python, Research,
KML, GIS, OPeNDAP,
NetCDF, AJAX, Mapping,
Mapserver, OpenLayers,
Oceanography, data

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Links

External links[MBARI](#)[OPeNDAP](#)[ODSS](#)[CF-NetCDF](#)**Groups**[General discussion](#)

About STOQS

STOQS (Spatial Temporal Oceanographic Query System) is a geospatial database web application designed for providing efficient access to *in situ* oceanographic measurement data across any dimension. Where "dimension" is considered in the broadest sense, for example: any spatial dimension, time, the collection of platforms, any other parameter value in the database.

Use Case

Precondition:

Observational data from a variety of platforms (Gliders, AUVs, Shipboard systems) are individually available from OPeNDAP servers.

Goal:

Retrieve data by parameter name across all platforms in a specific area over a specific span of time

Data Management Niche

STOQS complements other data management technologies such as NetCDF and OPeNDAP by providing an ability to index data retrieval across parameter and spatial dimensions in addition to the *a priori* indexed coordinate dimensions of CF-NetCDF. It also provides a functional bridge between NetCDF and Geographic Information Systems technologies.

Operation

After installation, data is loaded into STOQS from a variety of data sources, including OPeNDAP data sets, other relational databases, and flat files. Products are delivered in a variety of formats, including KML, via REST-style web requests. STOQS was developed at the Monterey Bay Aquarium Research Institute and is used within the Oceanographic Decision Support System to provide data management for campaign-oriented multi-platform investigations of oceanographic processes.

Examples

The MBARI Oceanographic Decision Support System hosts <http://odss.mbari.org/canon/default/query/> to provide access to upper water column *in situ* measurement data collected as part of the Controlled, Agile and Novel Observing Network (CANON) project.

Installation

To install STOQS start by following the instructions in the [README](#) file.

Acknowledgments

Development of the STOQS software is supported at MBARI with funding from the David and Lucile Packard Foundation