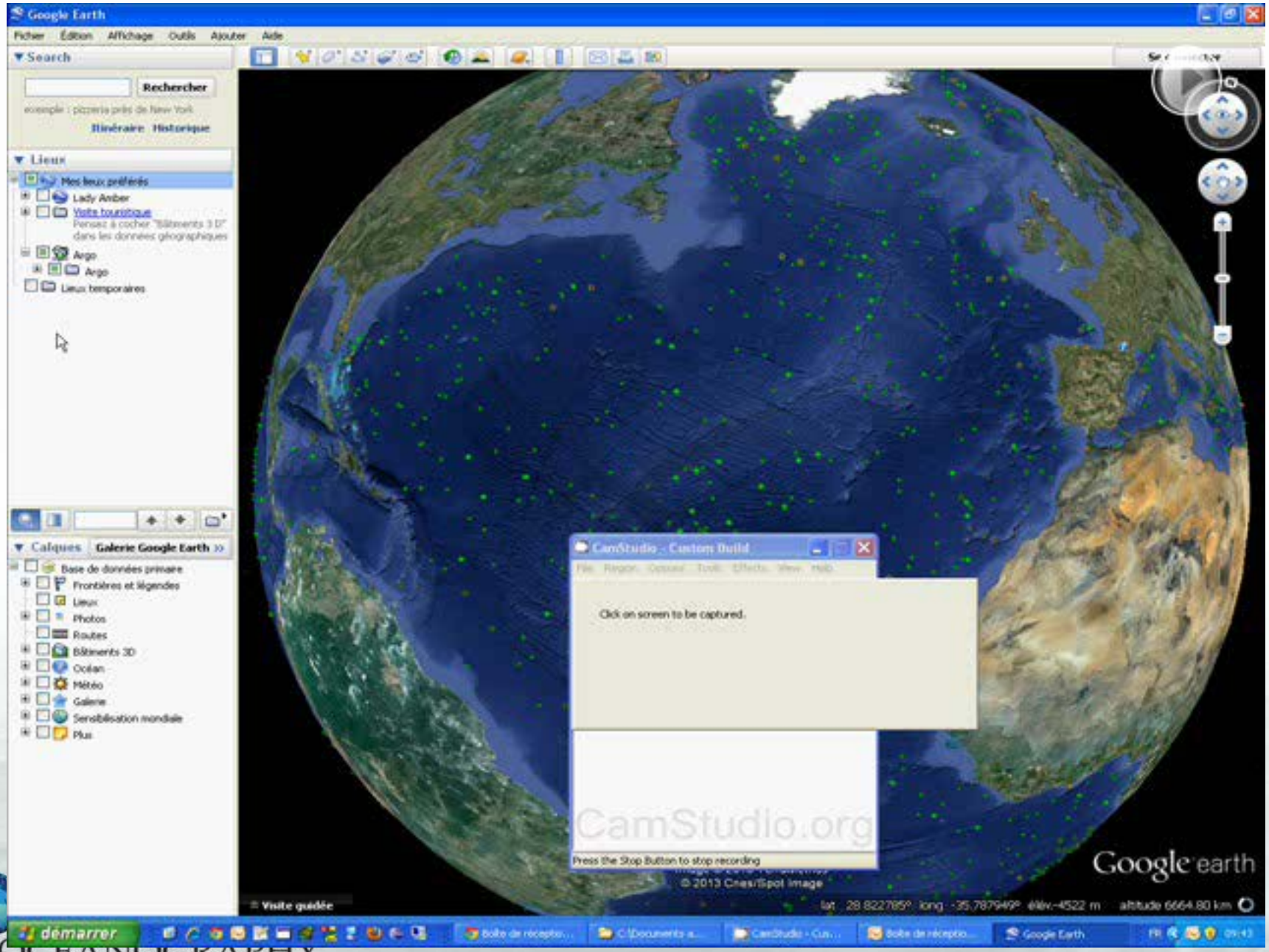
Google™ Earth

M. Belbeoch / S. Diggs

Argo AST-14

Wellington, New Zealand: 2013.03.21



OCEANOGRAPHY
UC San Diego

Kurt Schwehr

Ph. D 2006
Ph. D Dissertation Title:
Paleomagnetic and Stratigraphic Techniques for Identifying Sediment Processes on Continental Margins

http://schwehr.org

Google Oceans Contact

Kurt Schwehr
SIO Grad

GIS Data Engineer for Oceans at Google

Currently Kurt Schwehr is working on pulling as much exciting data into Google Earth/Maps as possible for the world's oceans

Favorite moment at SIO:
I had a great time playing pool in the New Zealand Antarctic base after spending a few weeks mapping the southern ocean.

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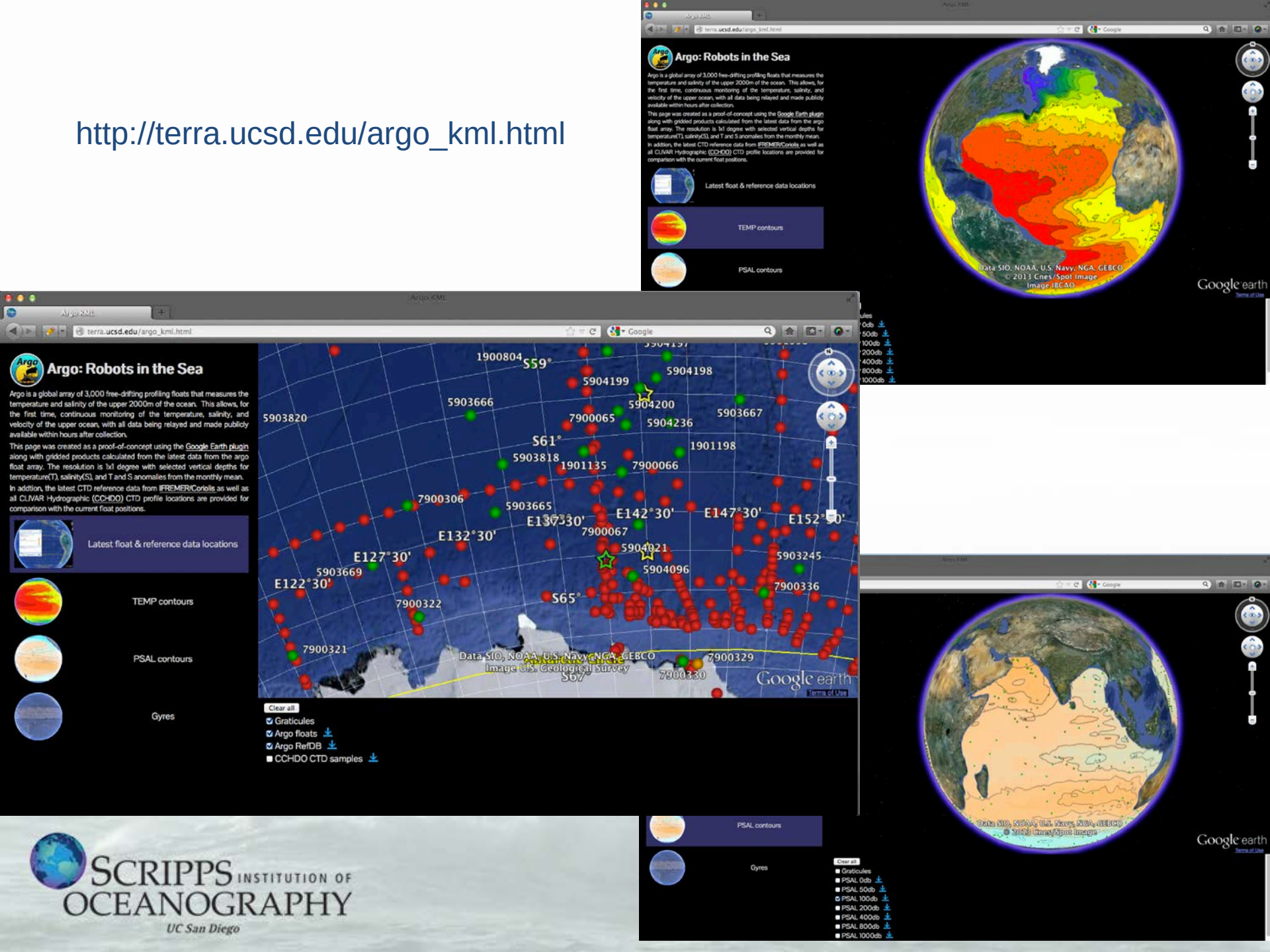
http://terra.ucsd.edu/argo_kml.html



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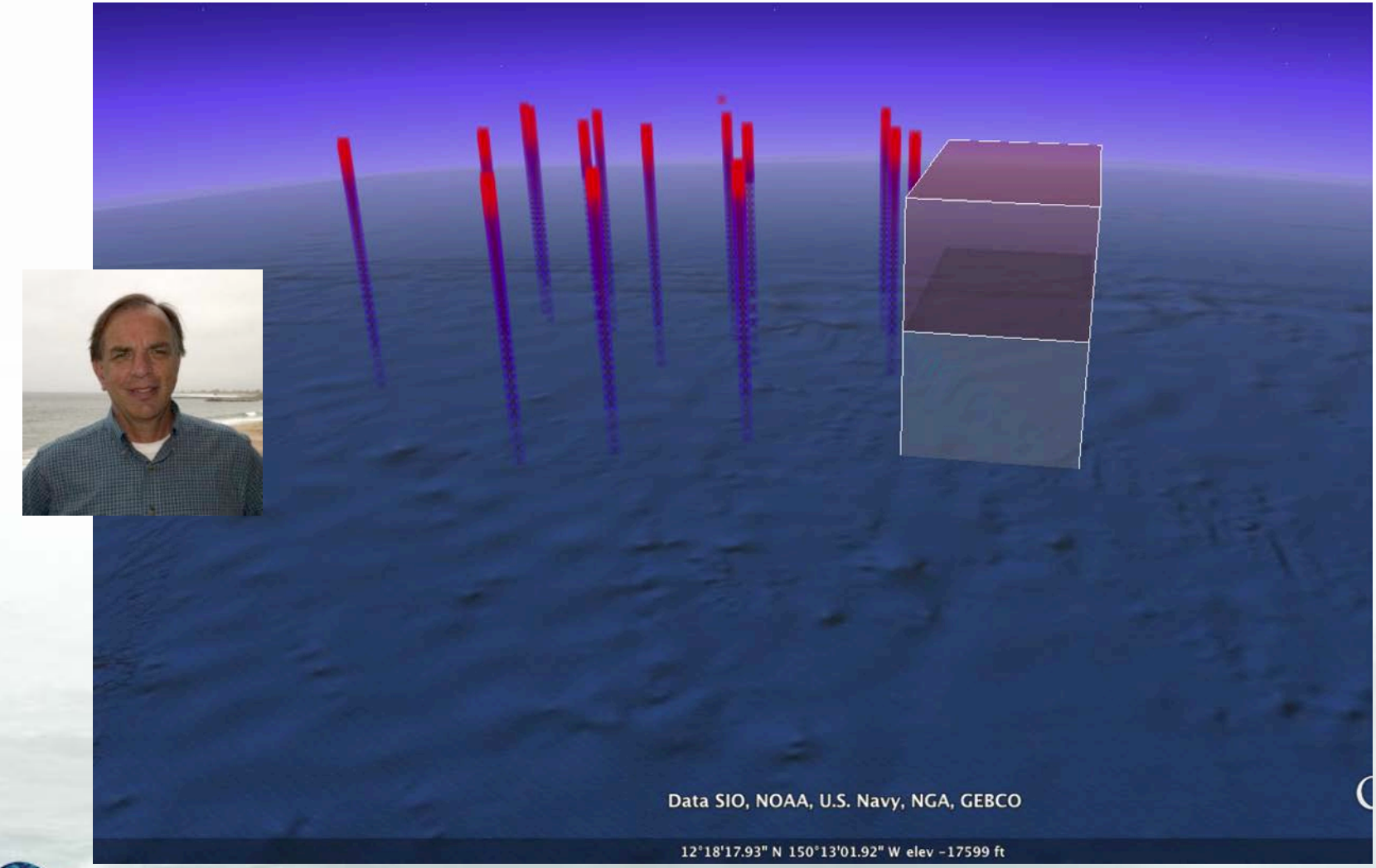
Things Argo Users Would Like to See:
3D gridded fly-throughs



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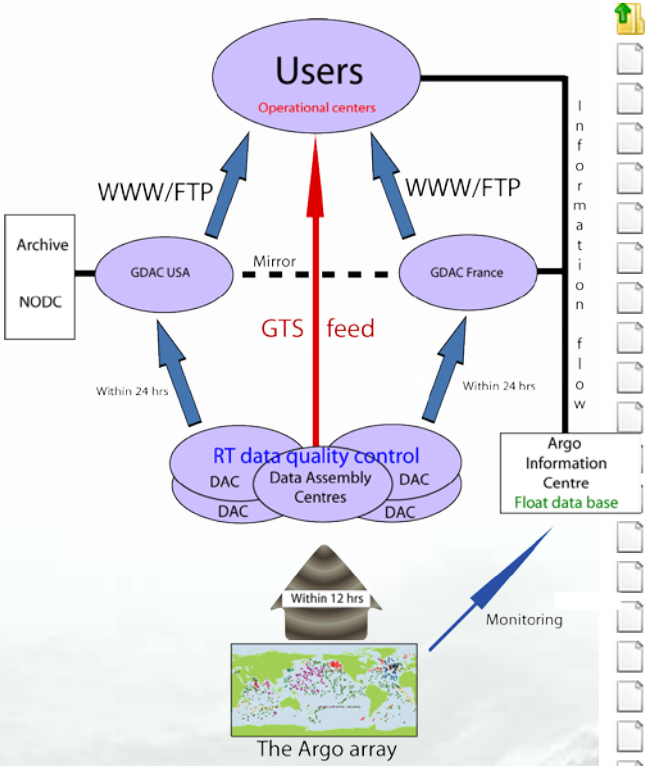

ftp://ftp.ifremer.fr/ifremer/argo/latest_data/

LS LIVESTRONG:Daily Pl Garmin: Ö-Files Tran GMapToGPX USA Google (USA-En) Garmin to

Index of /ifremer/argo/latest_data/

Name	Size	Date Modified
[parent directory]		
D20121206_prof.nc	18.5 kB	12/31/12 4:07:00 PM
D20121209_prof.nc	17.7 kB	12/31/12 4:13:00 PM
D20121211_prof.nc	30.2 kB	12/31/12 4:17:00 PM
D20121212_prof.nc	18.5 kB	12/31/12 4:18:00 PM
D20121213_prof.nc	30.2 kB	12/31/12 4:22:00 PM
D20121217_prof.nc	41.9 kB	12/31/12 4:34:00 PM
D20121218_prof.nc	104 kB	12/31/12 4:38:00 PM
D20121219_prof.nc	16.0 kB	12/31/12 4:42:00 PM
D20121221_prof.nc	88.7 kB	12/31/12 4:46:00 PM
D20121229_prof.nc	41.9 kB	12/31/12 5:08:00 PM
D20121230_prof.nc	100 kB	12/31/12 5:10:00 PM
D20130108_prof.nc	101 kB	1/9/13 1:04:00 AM
D20130110_prof.nc	135 kB	1/11/13 1:06:00 AM
D20130112_prof.nc	77.4 kB	1/13/13 1:02:00 AM
D20130114_prof.nc	41.9 kB	1/15/13 1:03:00 AM
D20130116_prof.nc	100 kB	1/17/13 2:07:00 AM
D20130117_prof.nc	65.3 kB	1/18/13 1:02:00 AM
D20130118_prof.nc	59.4 kB	1/19/13 1:02:00 AM
D20130123_prof.nc	100 kB	1/24/13 3:00:00 AM
D20130124_prof.nc	36.2 kB	1/25/13 1:14:00 AM
D20130128_prof.nc	18.8 kB	1/29/13 1:02:00 AM
D20130129_prof.nc	102 kB	1/30/13 2:04:00 AM
D20130130_prof.nc	53.6 kB	1/31/13 1:03:00 AM
D20130131_prof.nc	36.0 kB	2/1/13 1:03:00 AM
D20130201_prof.nc	65.3 kB	2/2/13 1:03:00 AM
D20130202_prof.nc	30.2 kB	2/3/13 2:02:00 AM
D20130203_prof.nc	36.2 kB	2/4/13 1:02:00 AM

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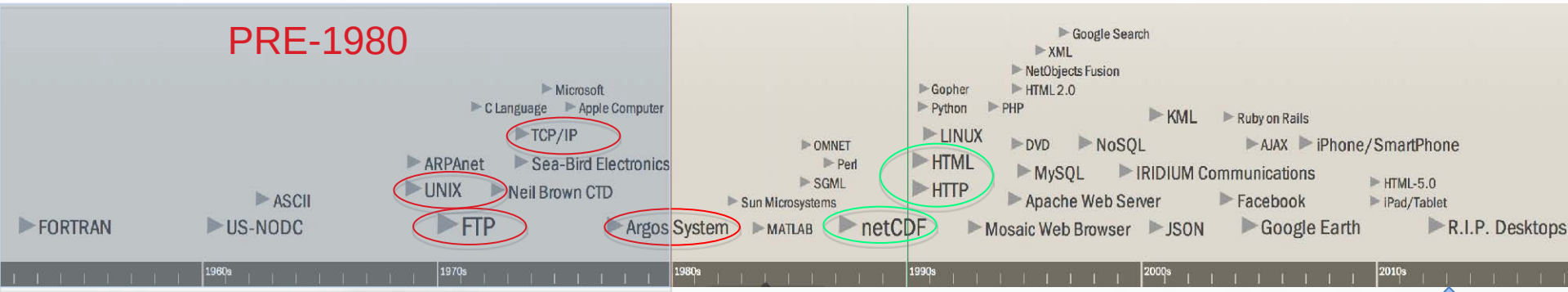
The Argo Data Delivery System



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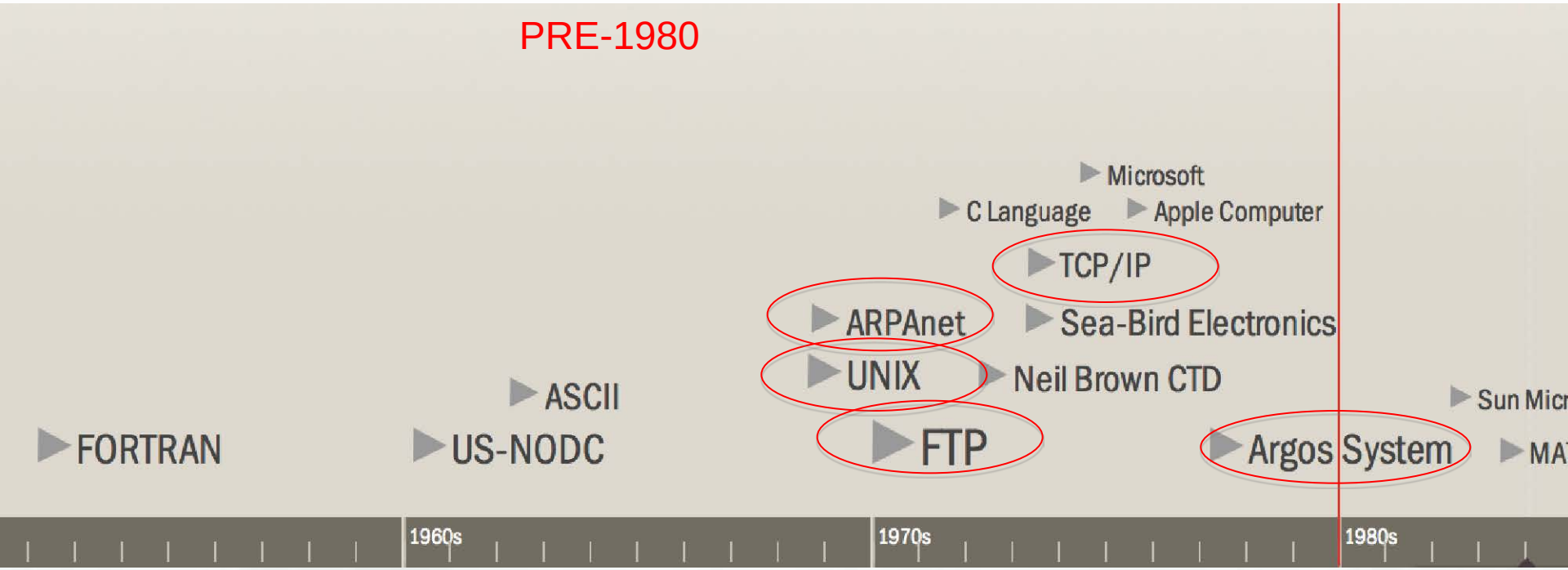
PRE-1980



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Google Search
XML
NetObjects Fusion
Gopher
HTML 2.0
Python
PHP
KML
Ruby on Rails
LINUX
DVD
NoSQL
AJAX
iPhone/SmartPhone
HTML
MySQL
IRIDIUM Communications
HTML-5.0
HTTP
Apache Web Server
Facebook
iPad/Tablet
CDF
Mosaic Web Browser
JSON
Google Earth
R.I.P. Desktops

1990s 2000s 2010s

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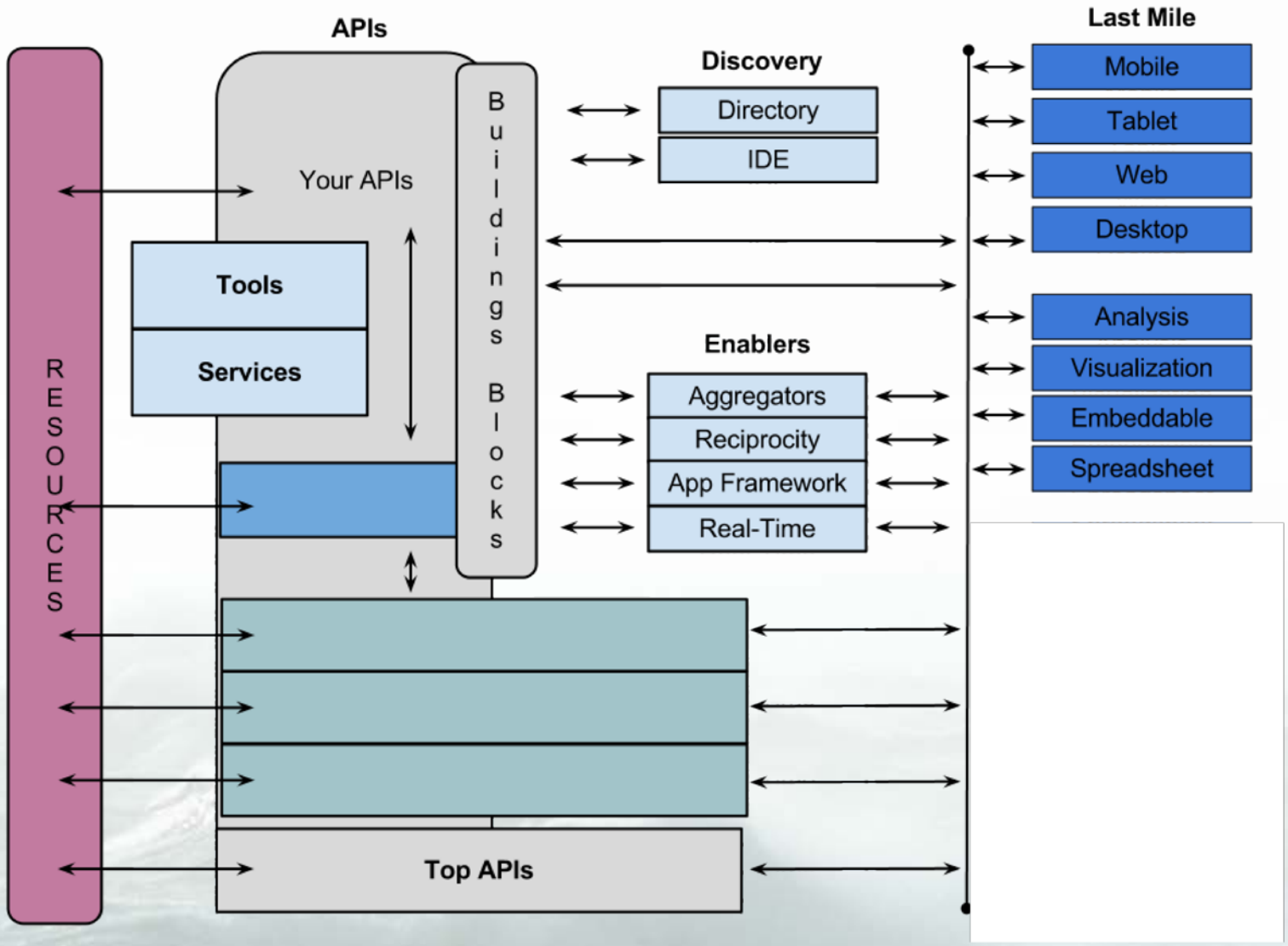
Generic API



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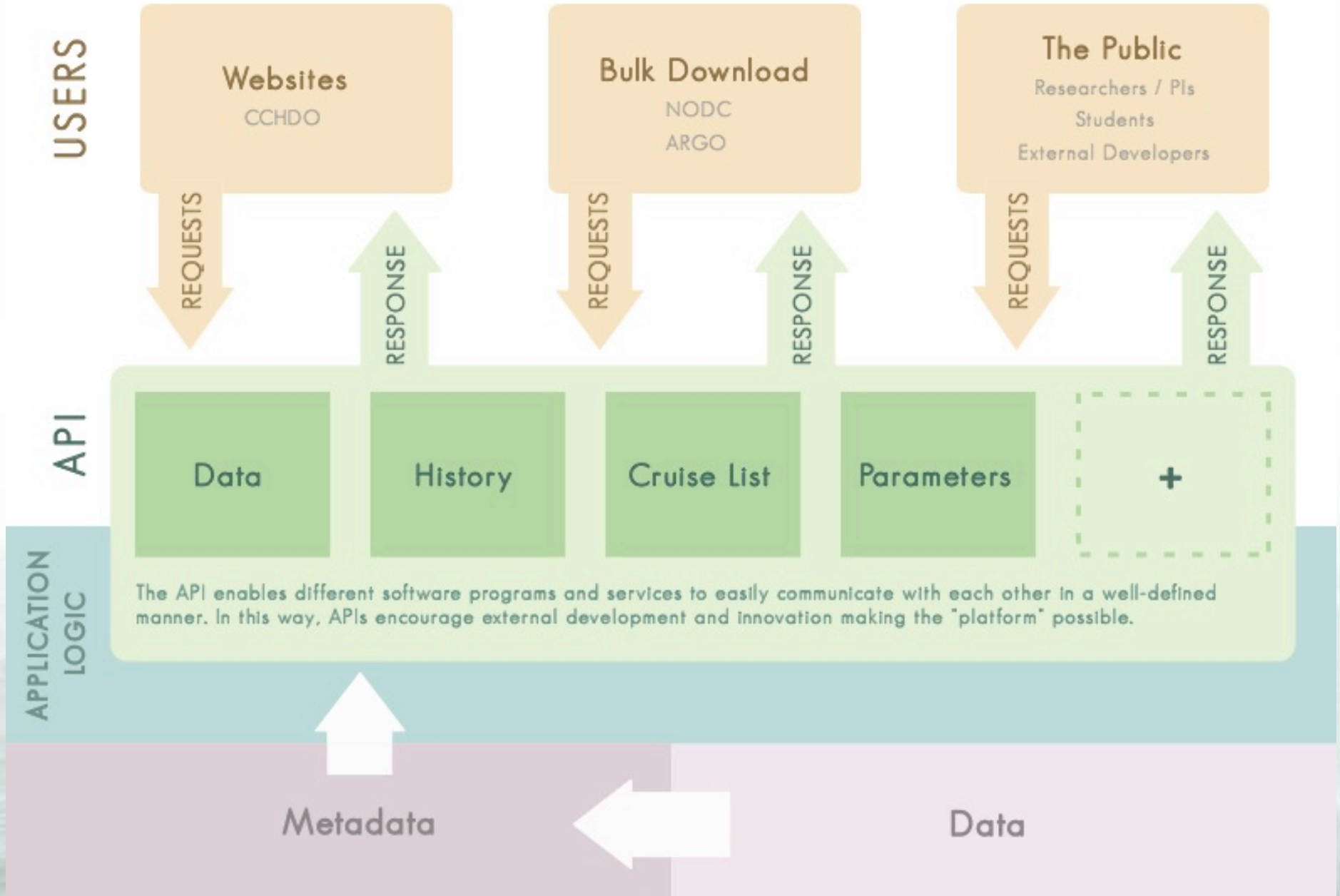
An agreement from CCHDO to the users. Users make a well-defined API call and get back a well-defined and stable response (which is not encumbered by HTML layout).



In Practice: How an API works

- Simple HTTP request :
  http://hdo.ucsd.edu/search/map/ids?shapes=rectangle%3A165.23438%2C-47.98992_165.23438%2C-35.74651_178.94531%2C-35.74651_178.94531%2C-47.98992_165.23438%2C-47.98992&min_time=1967&max_time=2013

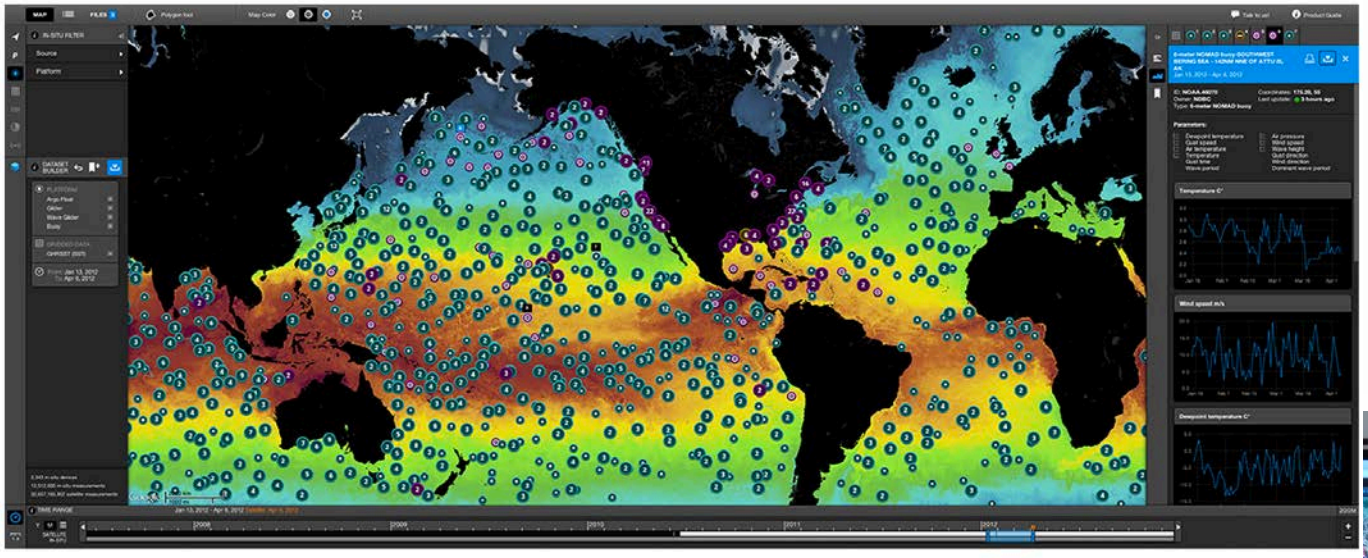
- Returns JSON:


```
> cchdo_cruise
▼Object {i: Object, limited: false, t: Object, id_t: Object}
  ▼i: Object
    ▼8906: Object
       contacts: "John A. Church"
       country: "Australia"
       cruise_dates: "1993-09-11/1993-10-05"
       name: "09FA0793"
       programs: "Pacific Current Meter, PCM07, Pacific Repeat, PR06, PR11, P06, Southern, South West Pacific"
       ship: "FRANKLIN"
     ▶__proto__: Object
    ▼8916: Object
       contacts: "John A. Church, Matthias Tomczak"
       country: "Australia"
       cruise_dates: "1989-08-15/1989-09-27"
       name: "09FA1089_1"
       programs: "Southern, Pacific Current Meter, PCM07, Pacific Repeat, PR06, PR11, P06, Southern"
       ship: "FRANKLIN"
```

The World's Ocean Data at Your Fingertips

Access measurements and create datasets in minutes, not days.
Spend your time analyzing data, instead of searching for it.

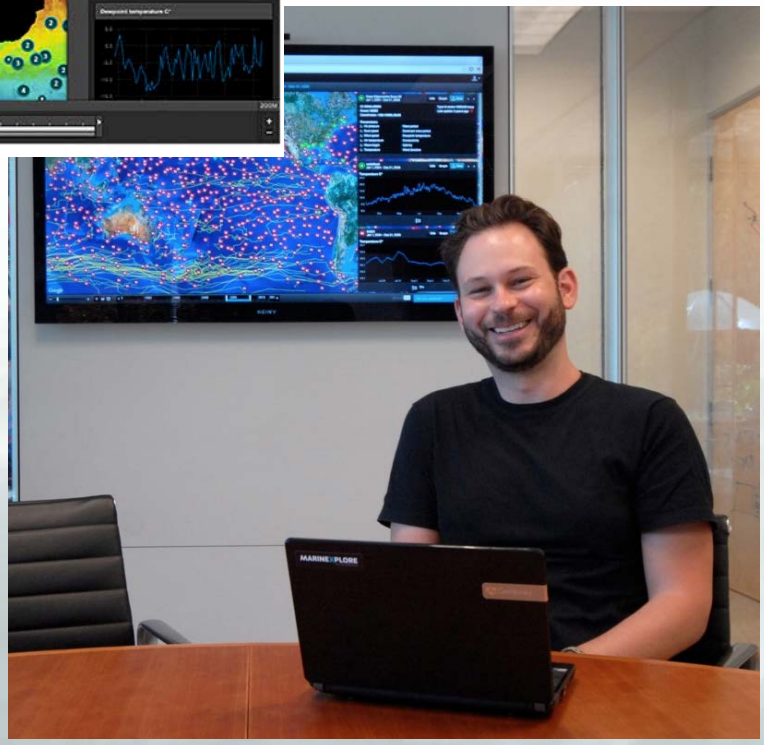
MARINEXPLORE



MARINEXPLORE

John Graybeal and Nico Danan join the Marinexplore team

With the cost of data acquisition decreasing, the amount of information and humans discussing the oceans is increasing rapidly. But data alone can be misleading. Proper analysis requires people to interpret it. Meet two bright ocean minds joining our team and helping us make oceanographic data management useful, understandable, and meaningful. Starting on May 1, cofounder and leader of Marine Metadata Interoperability Project John Graybeal will bring his rich experience in marine data system to Marinexplore, as Senior Data Manager for Metadata and Semantics. Our second new team member, joining us as Community Manager, is Nico Danan, a natural born community builder, diver and entrepreneur.



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SOCIB Balearic Islands Coastal Observing and Forecasting System

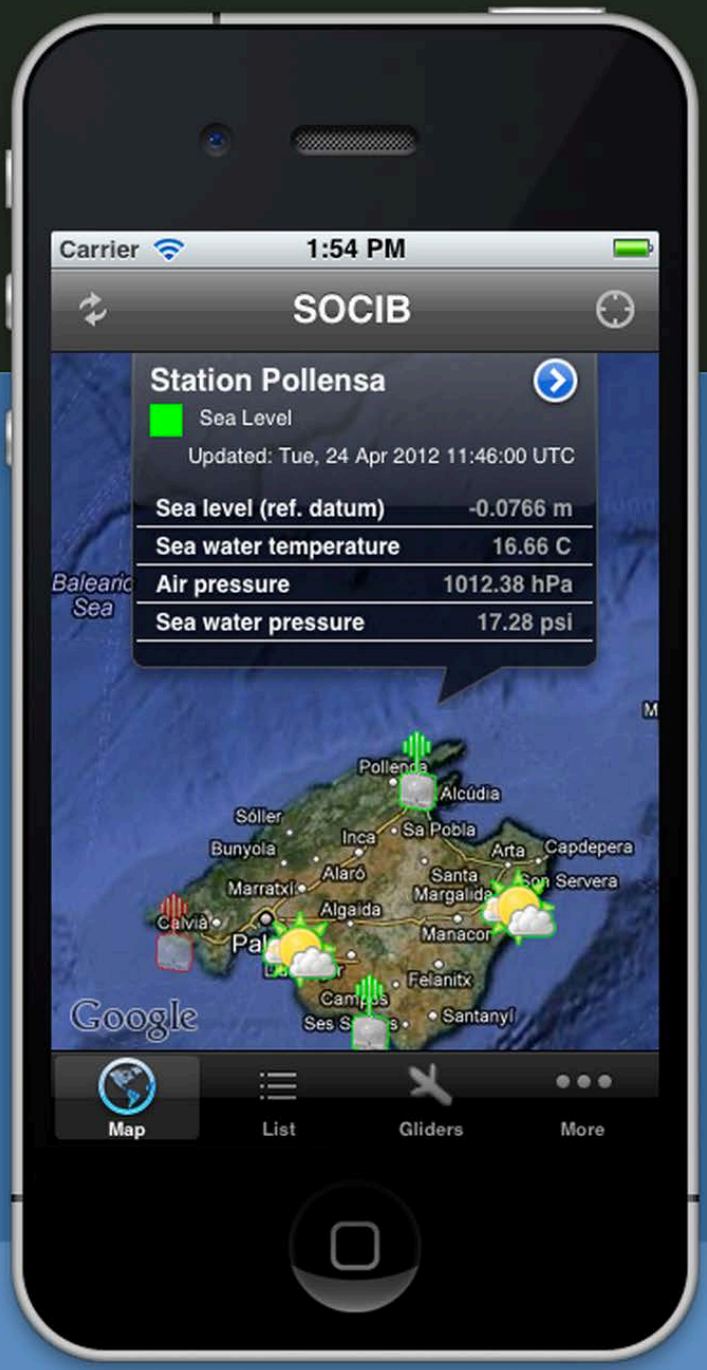
Socib Applications for modern web browsers and mobile platforms.

- Dapp 1.0 (drifters)
- Lw4nc 2.0 (models)
- Beamon (beaches)

Modern web browsers

- Gapp 1.0 (gliders)
- Sapo
- …

Apple iOS/Android



Built with the **best** technologies

All this software has been developed using the most cutting edge technologies like the **Sencha Frameworks for Web and Mobile platforms**. But there's much more to see. Dive in by pressing one of the buttons below.

Glider APP → lw4nc 2

So, What's the Plan?

Q: Should an outreach API be part of the "Argo Global Mission"?

Q: What changes need to be made in the current data delivery system?

A: None, it's built on the current system

Q: Who does this work?

A: ATC, Coriolis, CCHDO, possibly US-NODC (CSIRO?)

Q: How much will it cost and who will pay for it?

A: Minimal Cost for basic implementation

Q: How long will it take?

A: 6-12 months

Other questions?