NOAA Environmental Information Services (NEIS)

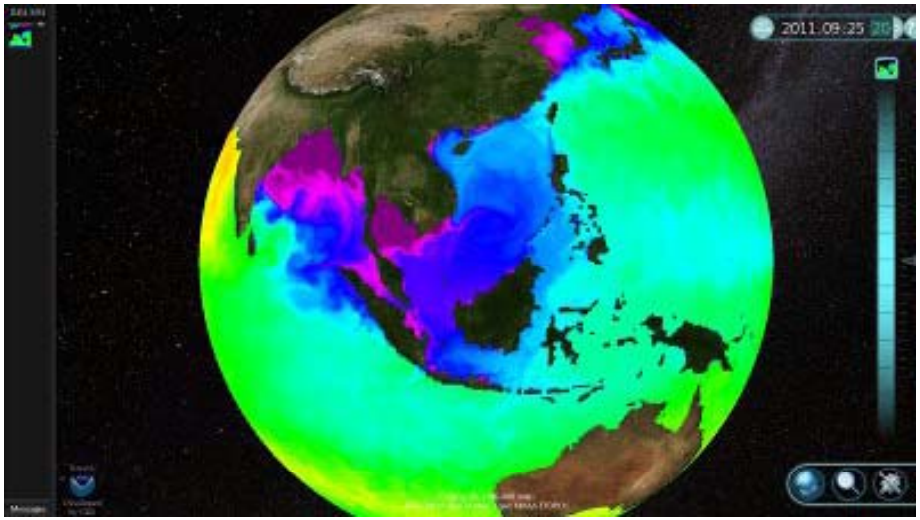
Lightning Talk
EDM Conference
May 15th, 2012

Jebb Q Stewart
NOAA/OAR/ESRL/GSD

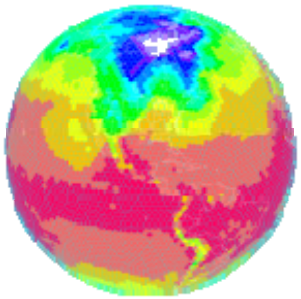
What is NEIS?

--

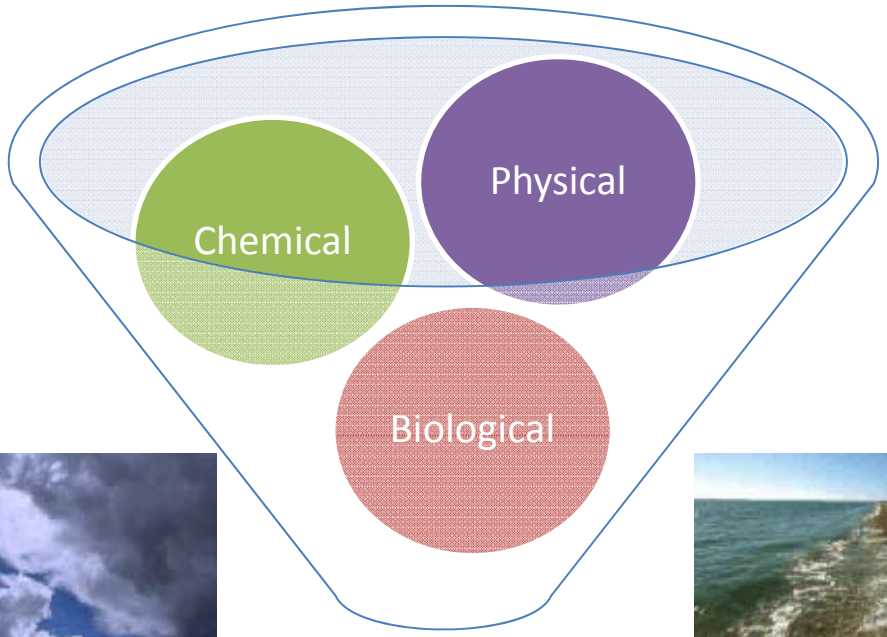
A framework of layered services designed to help NOAA's mission by facilitating the discovery, access, integration, and understanding of all NOAA data (past, present, and future).

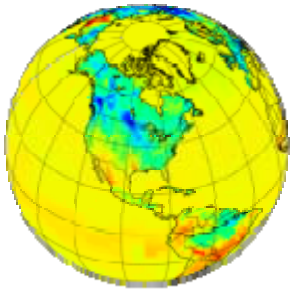


Data Integration

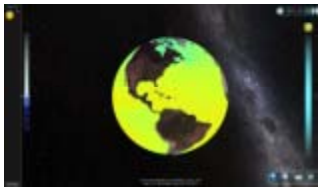


FIM



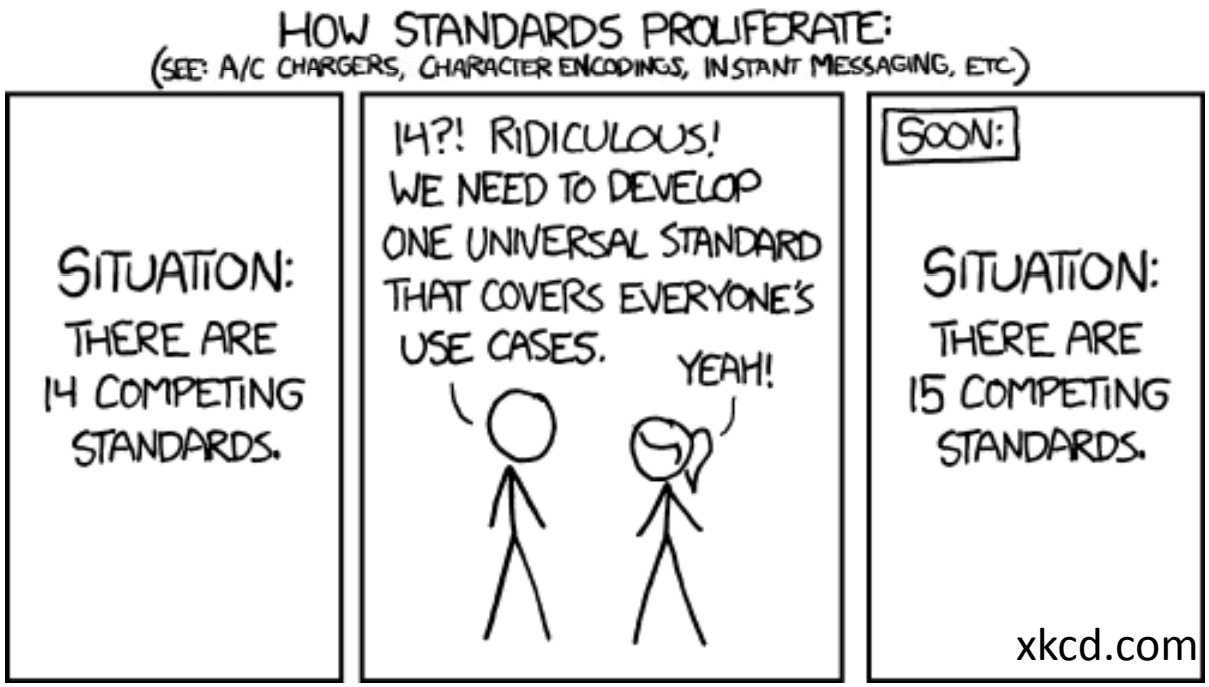


Carbon Tracker



Biological, Chemical, and Physical data are all interrelated

Standards


HOW STANDARDS PROLIFERATE:
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC)
SITUATION: THERE ARE 14 COMPETING STANDARDS.
14?! RIDICULOUS! WE NEED TO DEVELOP ONE UNIVERSAL STANDARD THAT COVERS EVERYONE'S USE CASES.
YEAH!
SOON:
SITUATION: THERE ARE 15 COMPETING STANDARDS.
xkcd.com

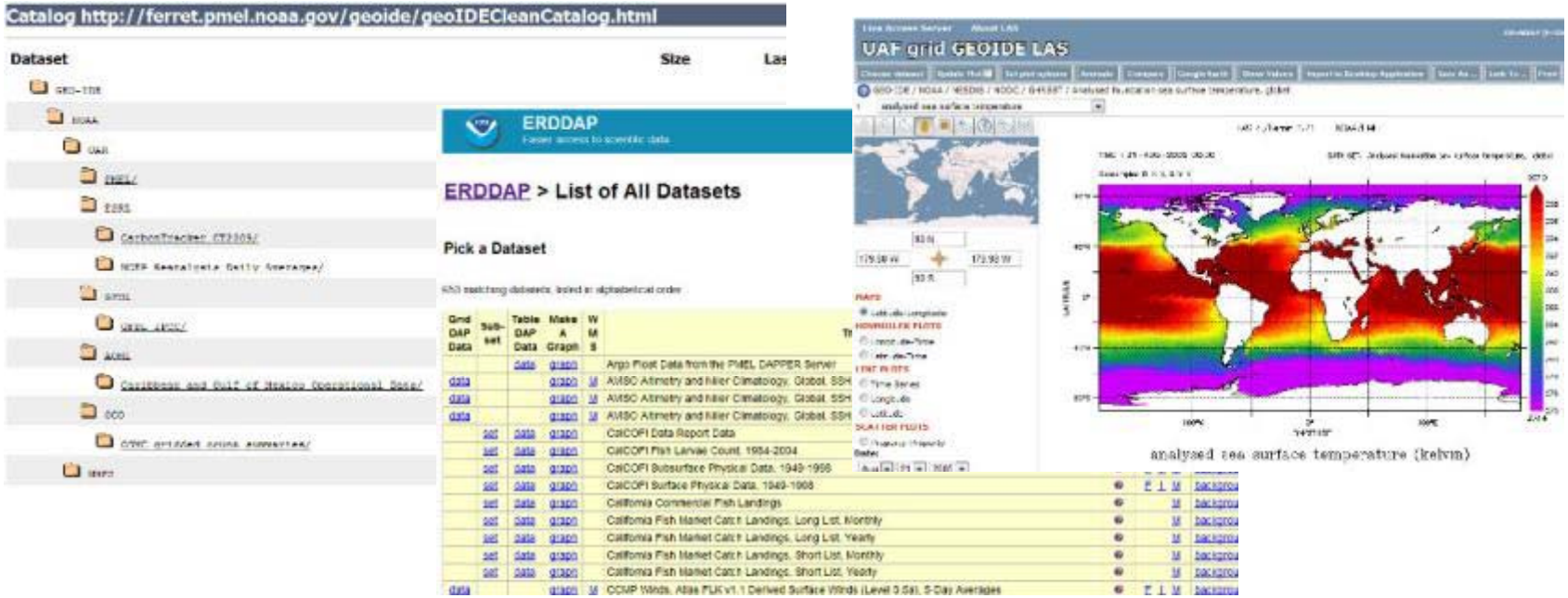
Lots of Great Technology Exists.

THREDDS
Google Earth
MERMAid
Grads Data Server

LAS
NASA World Wind
REVERB
OGC Services

ERDDAP
GeoPortal
iRODS

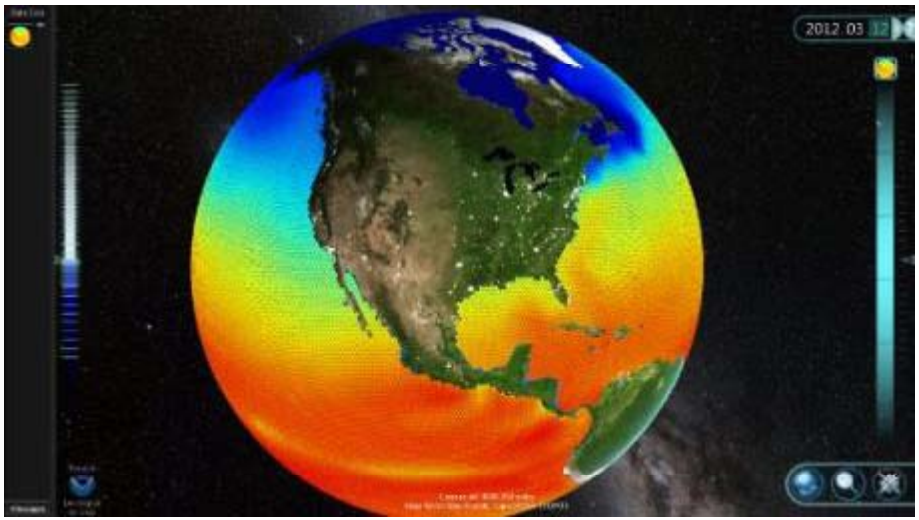
More…



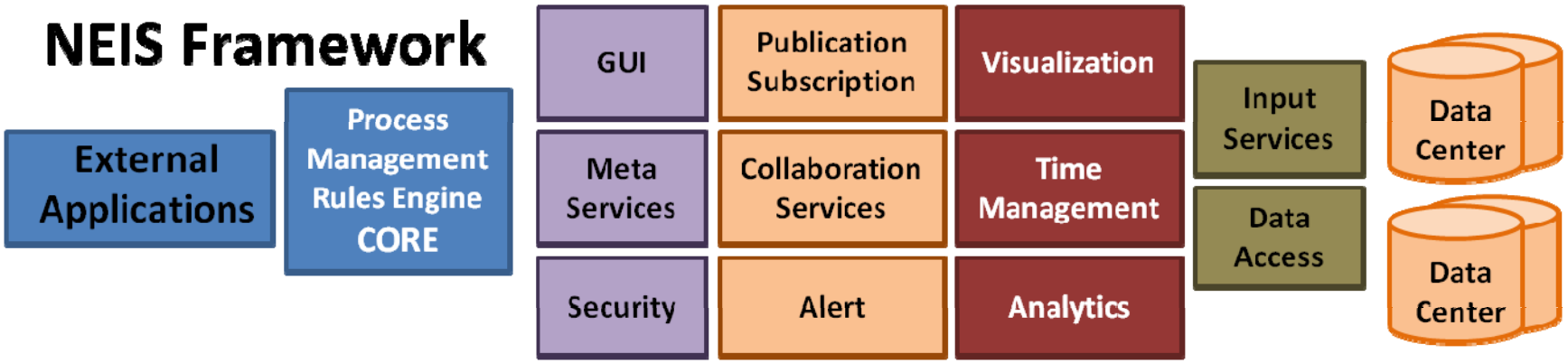
ESRL Global Systems Division

NEIS Concept

Take advantage of existing technology where we can to quickly find and access to data across all time, 100 of years in the past to 100 years in the future or more, from the top of the atmosphere to the bottom of the ocean though a single application.



NEIS Framework



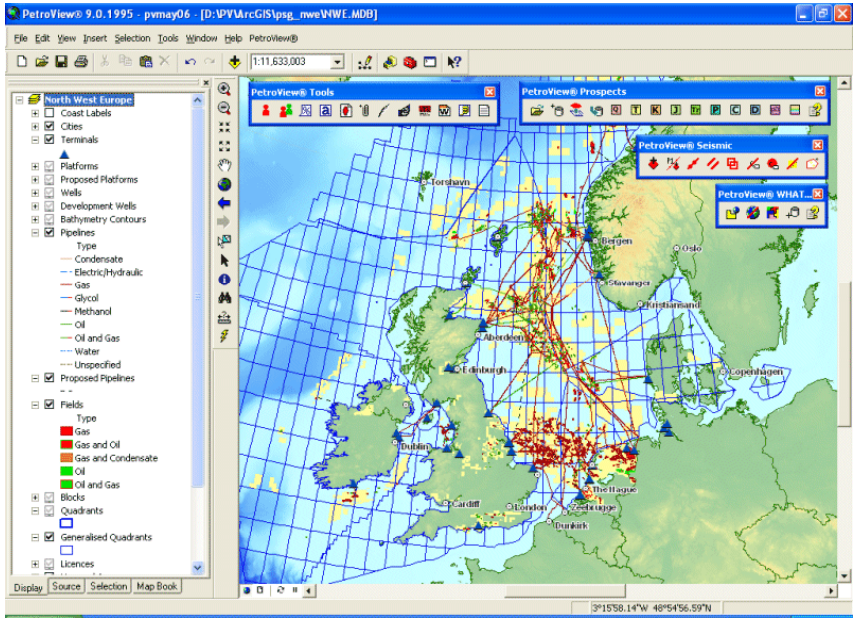
Another Visualization System?

NEIS is not just another visualization system but a framework created to work with existing systems. This framework could be used by other systems.

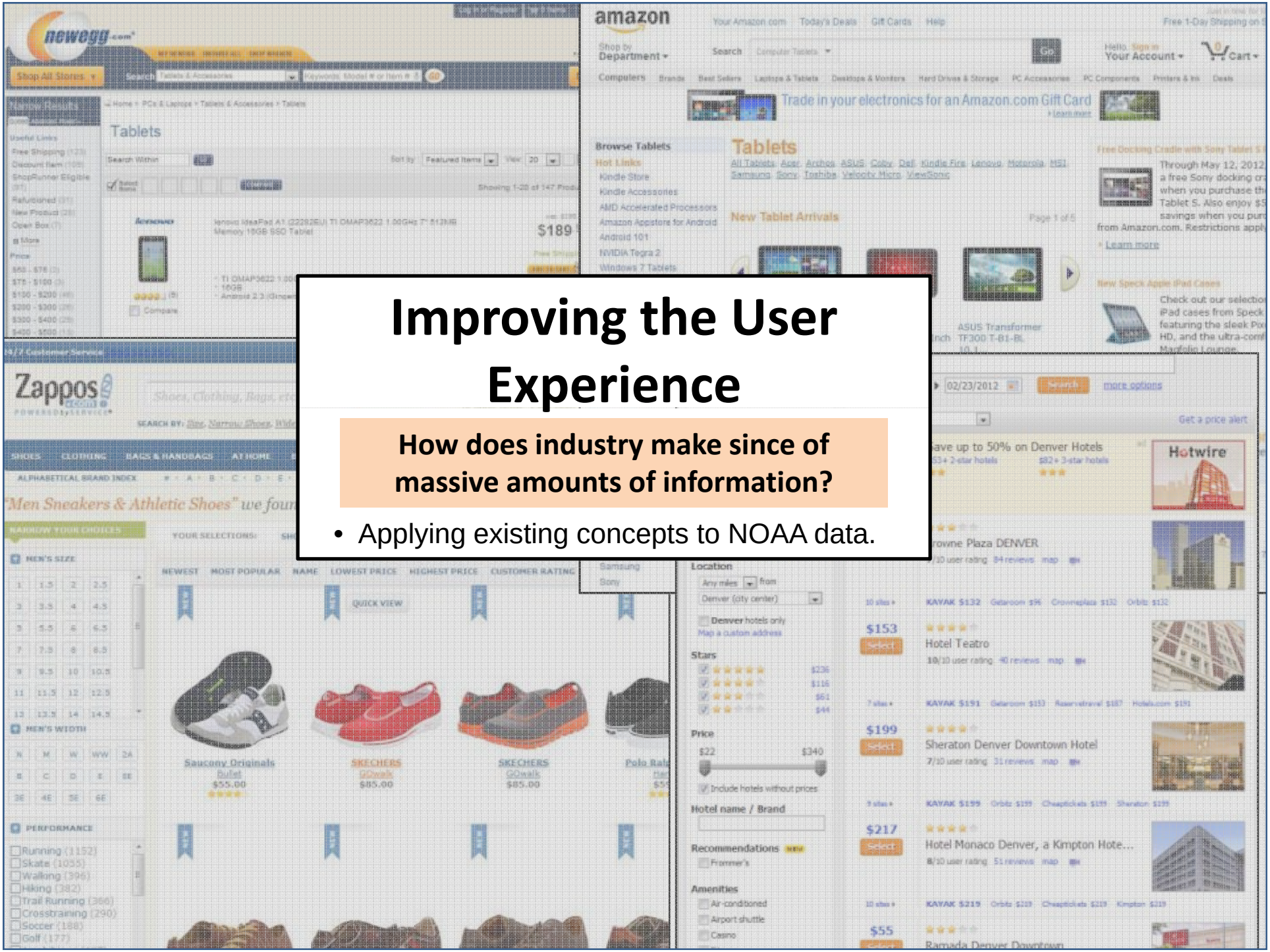
Other systems work well for their intended purposes, but…

- Offer limited data discovery and access, often requiring another application to find new data.
- Have limited support for non-static data.

Another Visualization System - Continued



- Synchronizing and animating data from different services difficult.
- Limited support for cross data source data interrogation.



Improving the User Experience

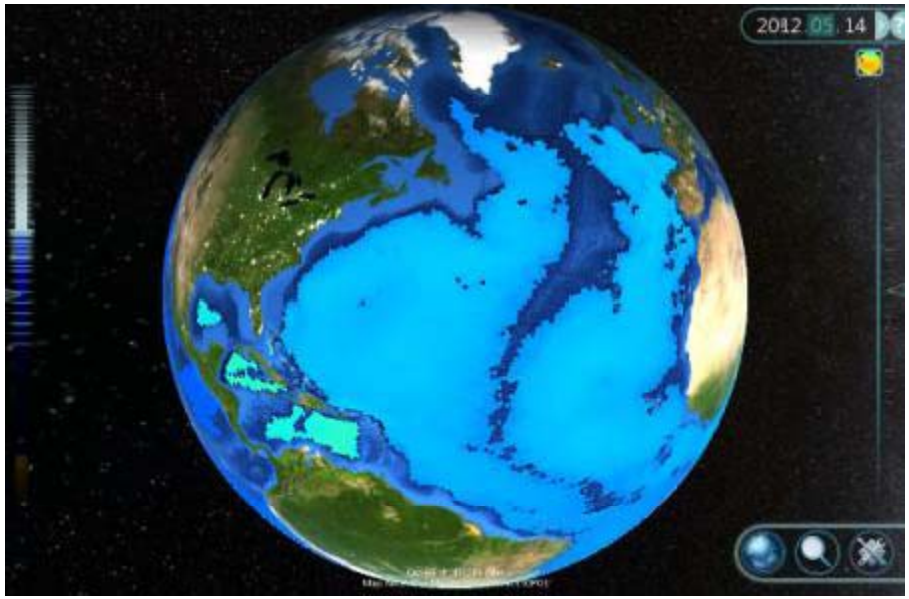
How does industry make since of massive amounts of information?

- Applying existing concepts to NOAA data.

NEIS - Finding and Discovering Data

- NEIS is using Apache Solr to index ISO metadata records from metadata catalogs (currently GeoPortal).
- Solr provides temporal and geospatial filtering.
- Using facets on keywords, service name to fine tune searches.

NEIS – Data Access



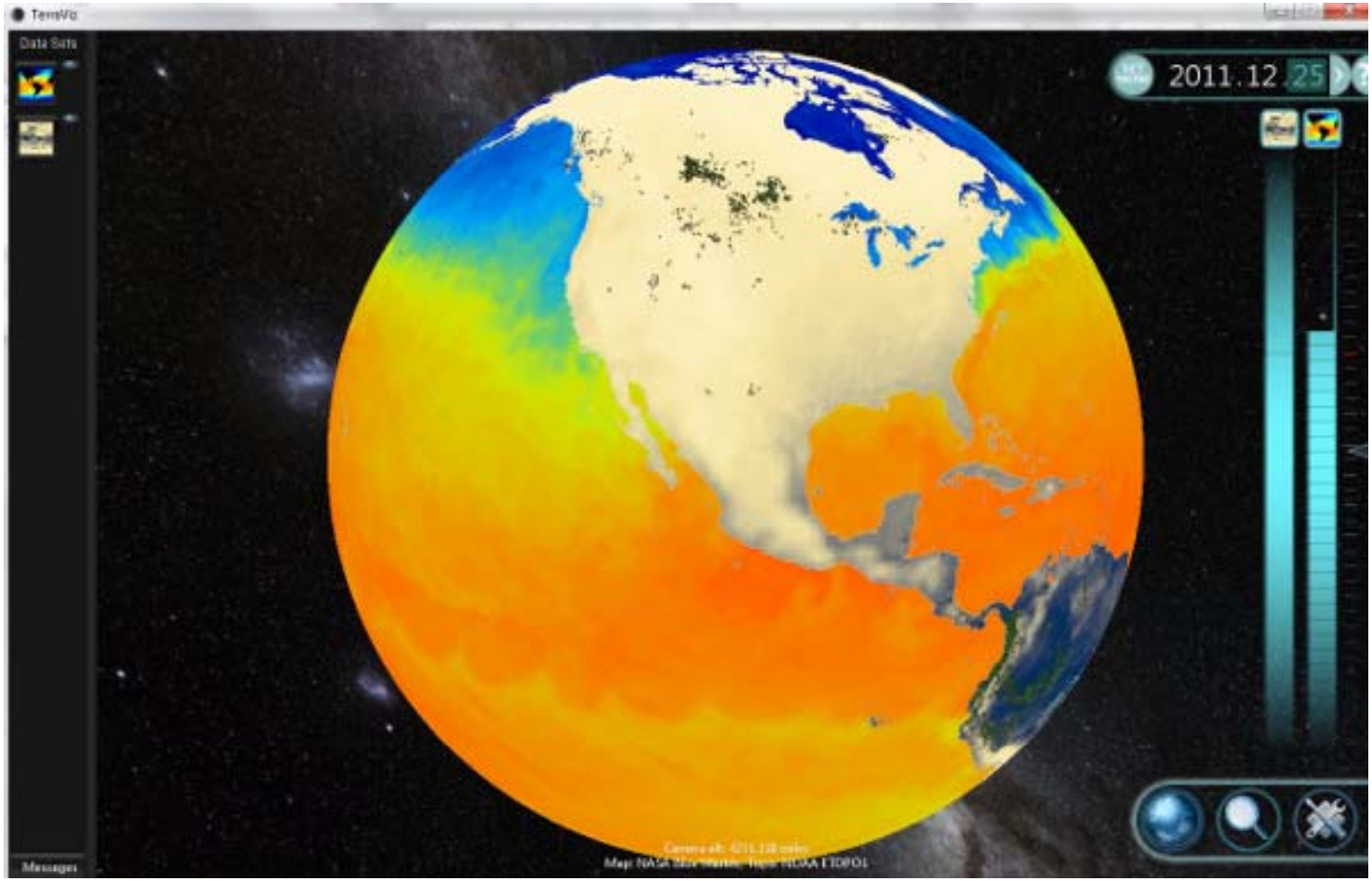
Works with existing data catalogs (GeoPortal) and data access methods (OGC WMS.)

Working towards ERDDAP, and other OGC services for data access

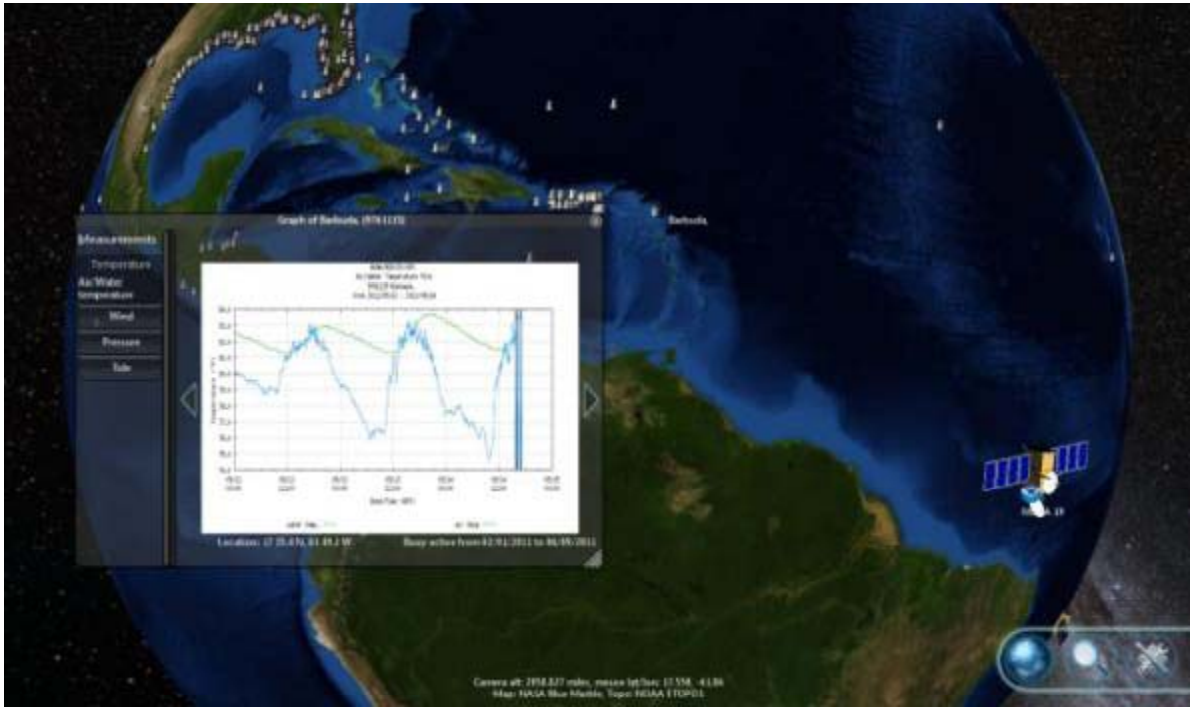
NEIS – Features

Integrates data from disparate data sources synchronized both temporally and geospatially.

Quick access data through time using “Time Wheel” with dynamic time striding.



NEIS - Features



3D KML with Metadata overlays

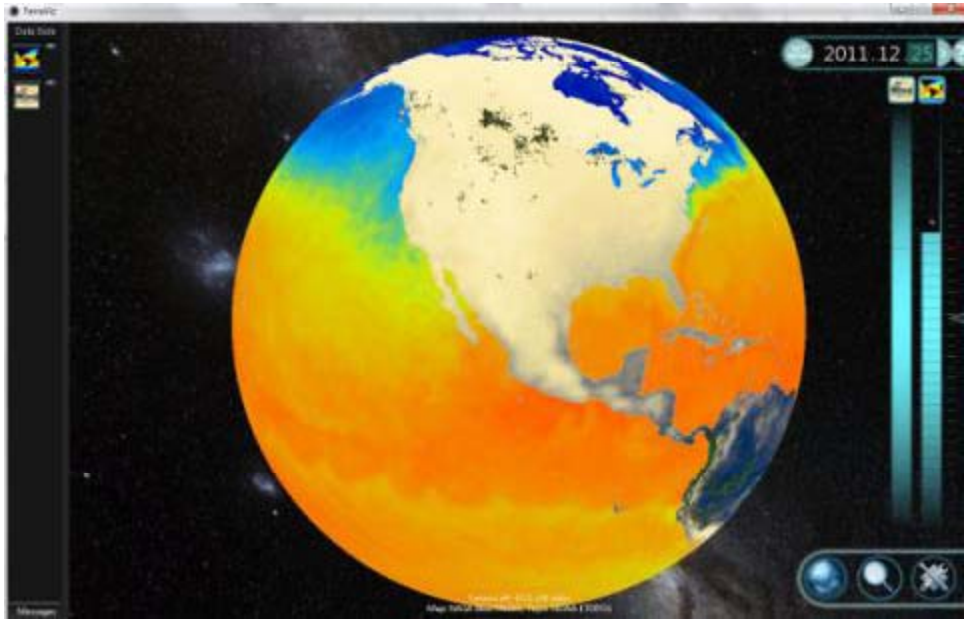
Integrated data plotting

NEIS - Features

Annotation – Basic drawing capabilities

Multiuser/Collaboration – real time screen sharing with web cams

NEIS - Future



What's next?

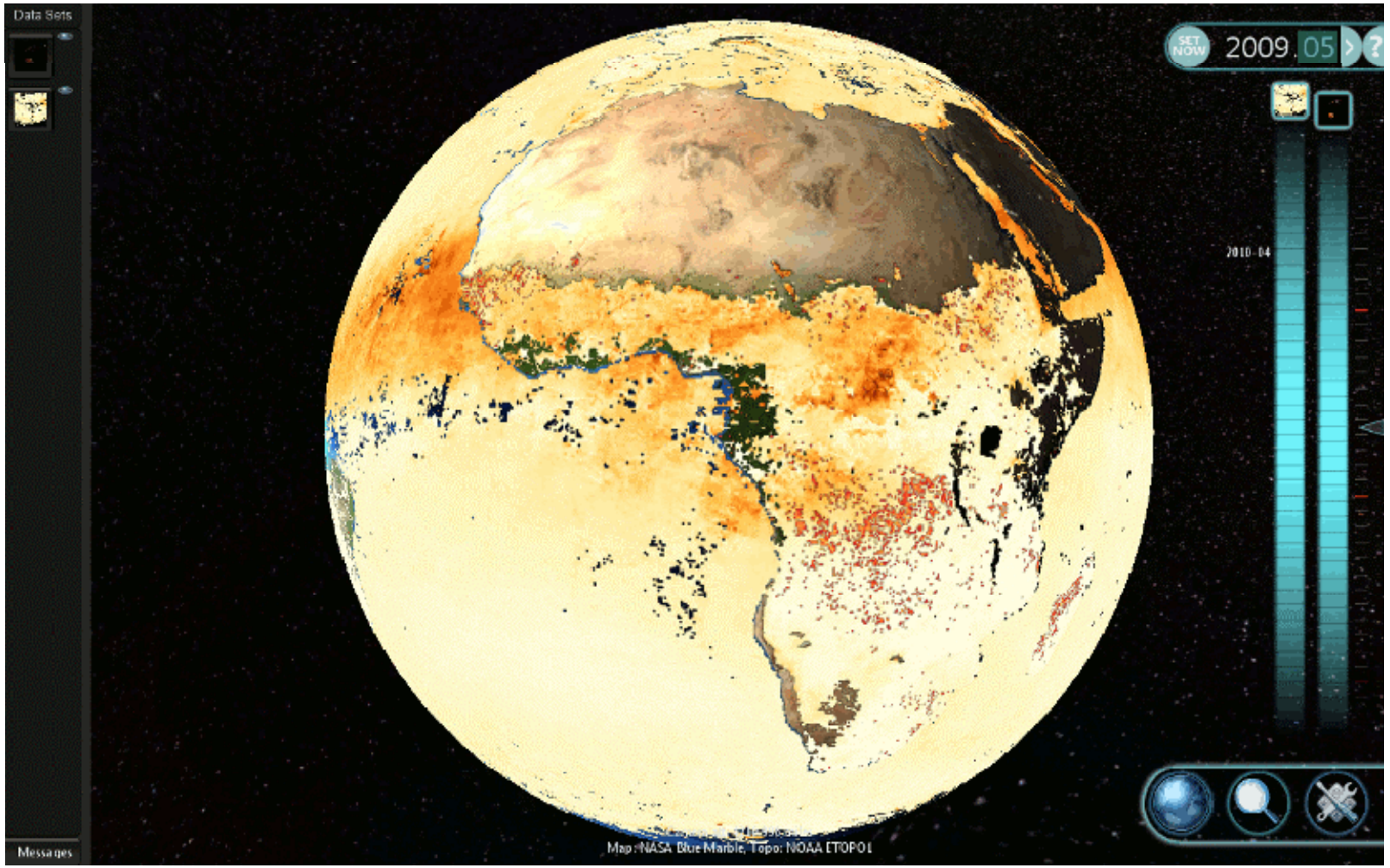
Understand more data access protocols. Eventually support ERDDAP and variety of OGC services

Cross Service Processing

Continued improvement for data discovering and searching

More …

NEIS/TerraViz in Action



TerraViz – Developed by GSD is a show case of NEIS capabilities

Questions?

Jebb.Q.Stewart@noaa.gov

More information in Data Integrations section tomorrow

Questions?

Jebb.Q.Stewart@noaa.gov

More information in Data Integrations section tomorrow

Questions?

Jebb.Q.Stewart@noaa.gov

More information in Data Integrations section tomorrow