NOAA Earth Information System
Before HIWPP

Visualization
• Basic Viewer built on Unity Game Engine
• Pull in data from other sources
• Single Sphere

Services
• Harvested Metadata from multiple sources
• Proxy for common data requests
• Limited one off support for FIM Native Grid

Discoverable and Interoperable Data were main focus
Pre-HIWPP Architecture

Internet

TerraViz

Local Cache
Local Data

Internet

Harvested Metadata

Metadata Catalog (GeoPortal)

NEIS Core (Framework)

Data Requests

Amazon EC2 Cloud

Web Cache

ESRL NextGen Services (WMS)

NASA NEO (OGC WMS)

CoastWatch (PFEL) THREDDSS

Science on a Sphere Datasets

Scripps Institution of Oceanography

Hawaii IOOS

OceanWatch (PFEL) THREDDSS

ESRL Services (WMS)
Visualization enhancements
- Side By Side Spheres for Visual Comparison – up to 4
- Greatly improved local data capability
- Tiled data
- Analysis tools
  - Sampling
  - Transect
- Annotation Capabilities
HIWPP Development

Visualization enhancements continued…

- New Visualization types including contours, wind barbs, particles
- Custom color palettes
- Point Data
- Custom Algorithms
- Improved performance on lower end systems
**Server Side Enhancements**

- High Performance data ingest and delivery processing multiple Terabytes daily
- Grid, Imagery, and Point data ingest
- Advancement in server side GPU techniques for algorithms and compression.
- Advancements in Micro Service technology to improve agility, stability, and performance
- Monitoring and automatic problem resolution.
SOSx – Science on a Sphere Explorer (SOSx)

NEIS/TerraViz heavily used for scientific presentations at NOAA booth at AMS and AGU for scientific presentations.

Continued research with NESDIS VIIRS team for data visualization

Raytheon interested in Technology for DOD applications
Test Program
Lessons Learned

• Initial Concept targeted “Trusted User” Program (Limited Users)
  ▪ High performance computers/Network

• Morphed into open data initiative (Anyone and everyone)
  ▪ Limited resources

• Limited Feedback from users for feature requests, improvements, or general comments

• No room for error