NOAA Earth Information System Before HIWPP

Visualization

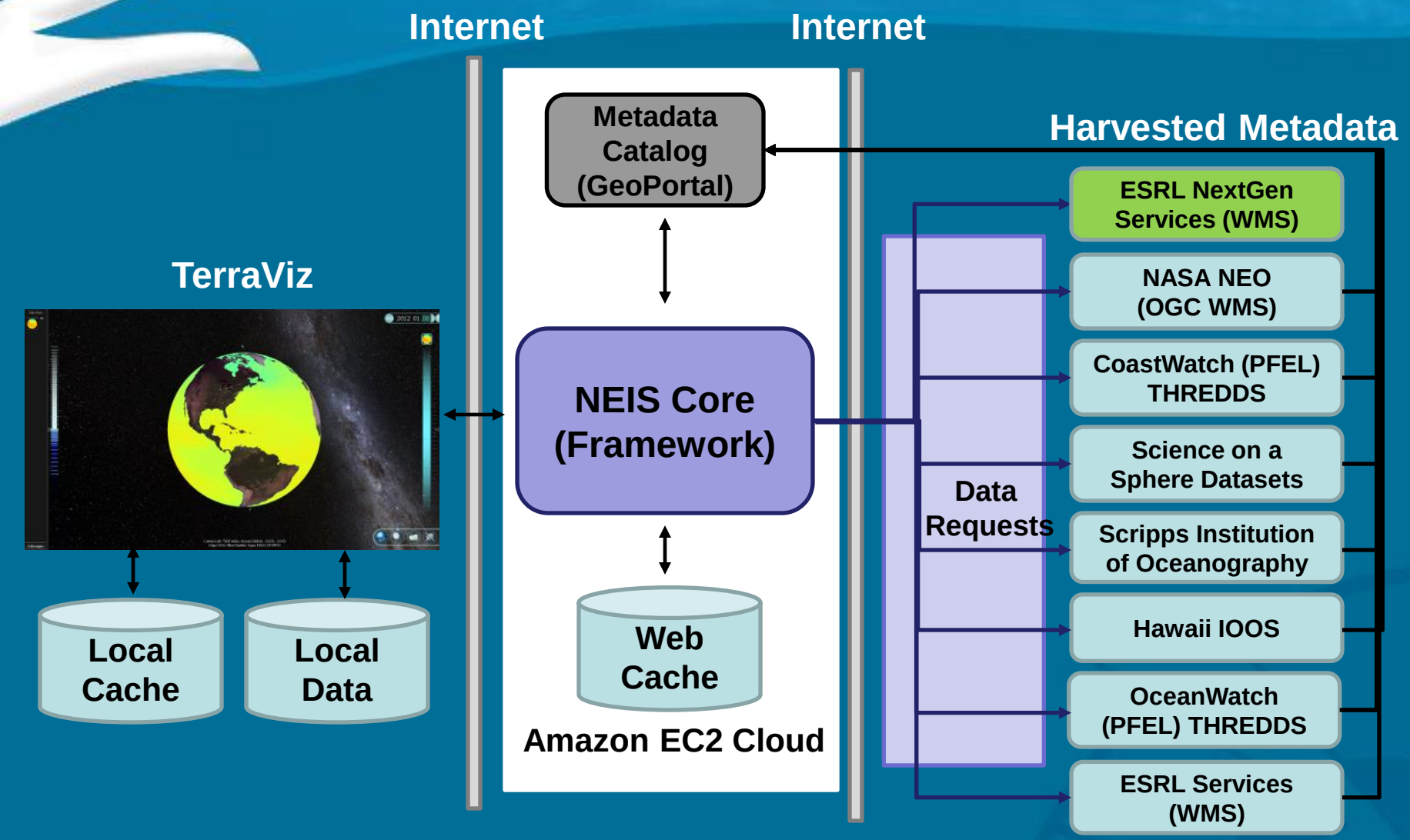
- Basic Viewer built on Unity Game Engine
- Pull in data from other sources
- Single Sphere

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

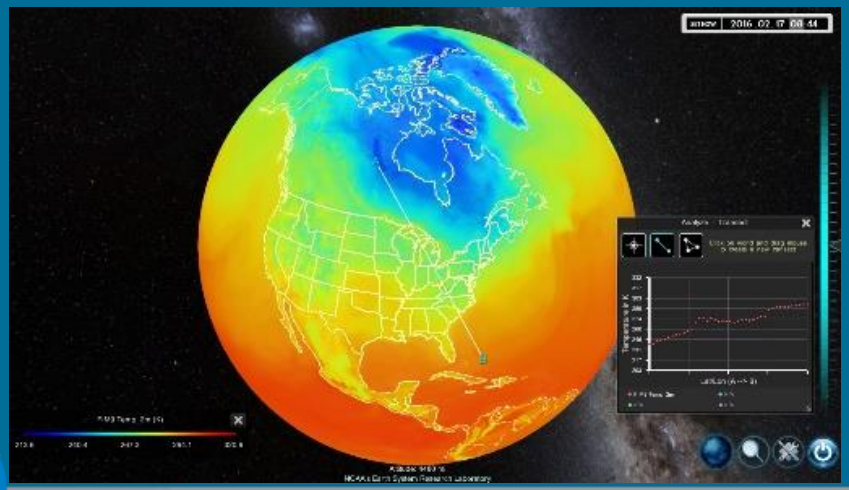
Pre-HIWPP Architecture

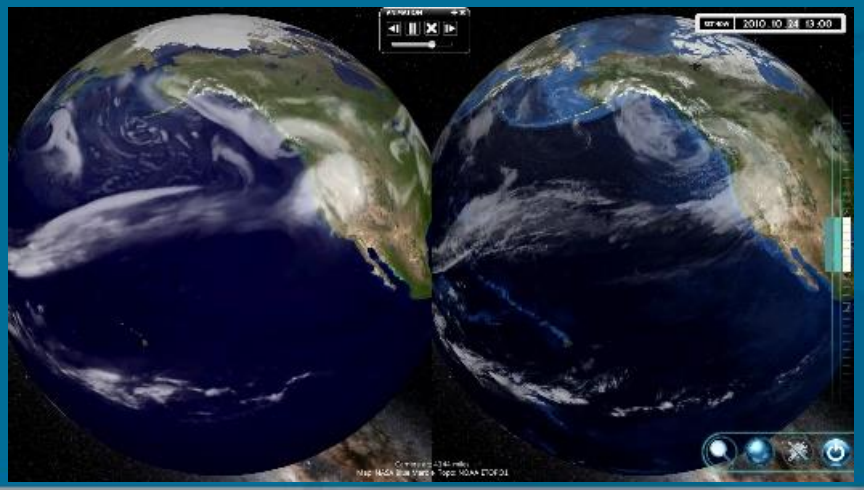


HIWPP Development

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

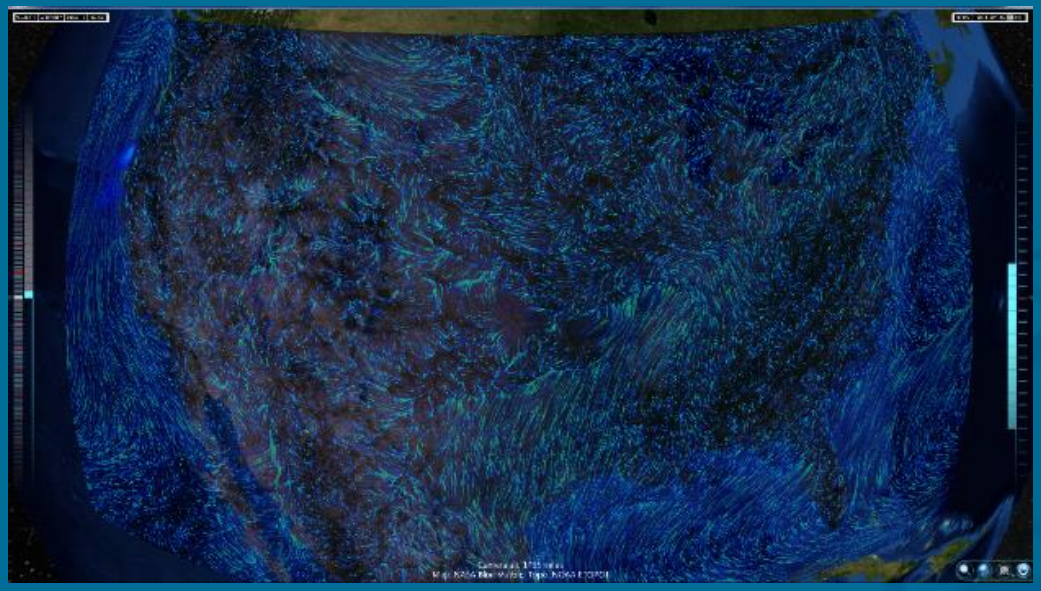




HIWPP Development

Visualization enhancements continued…

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

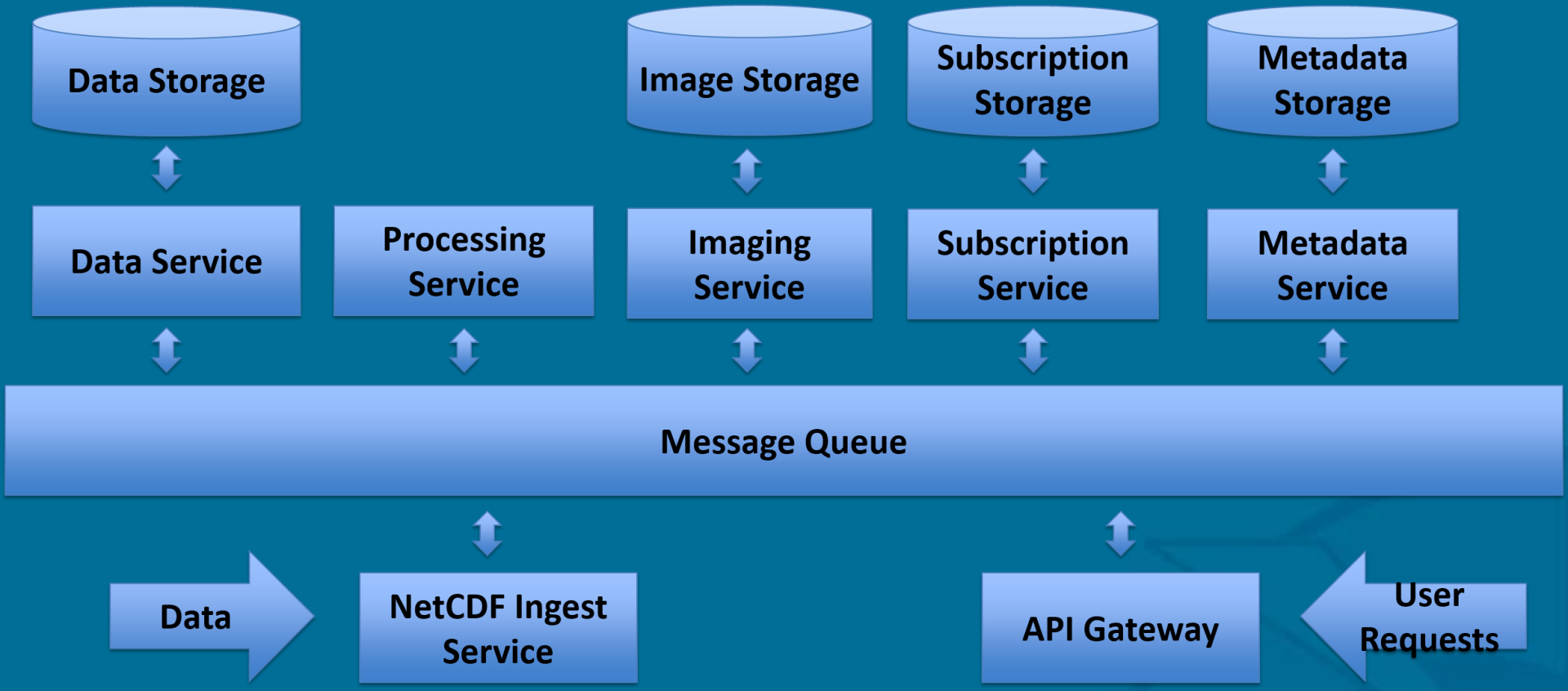


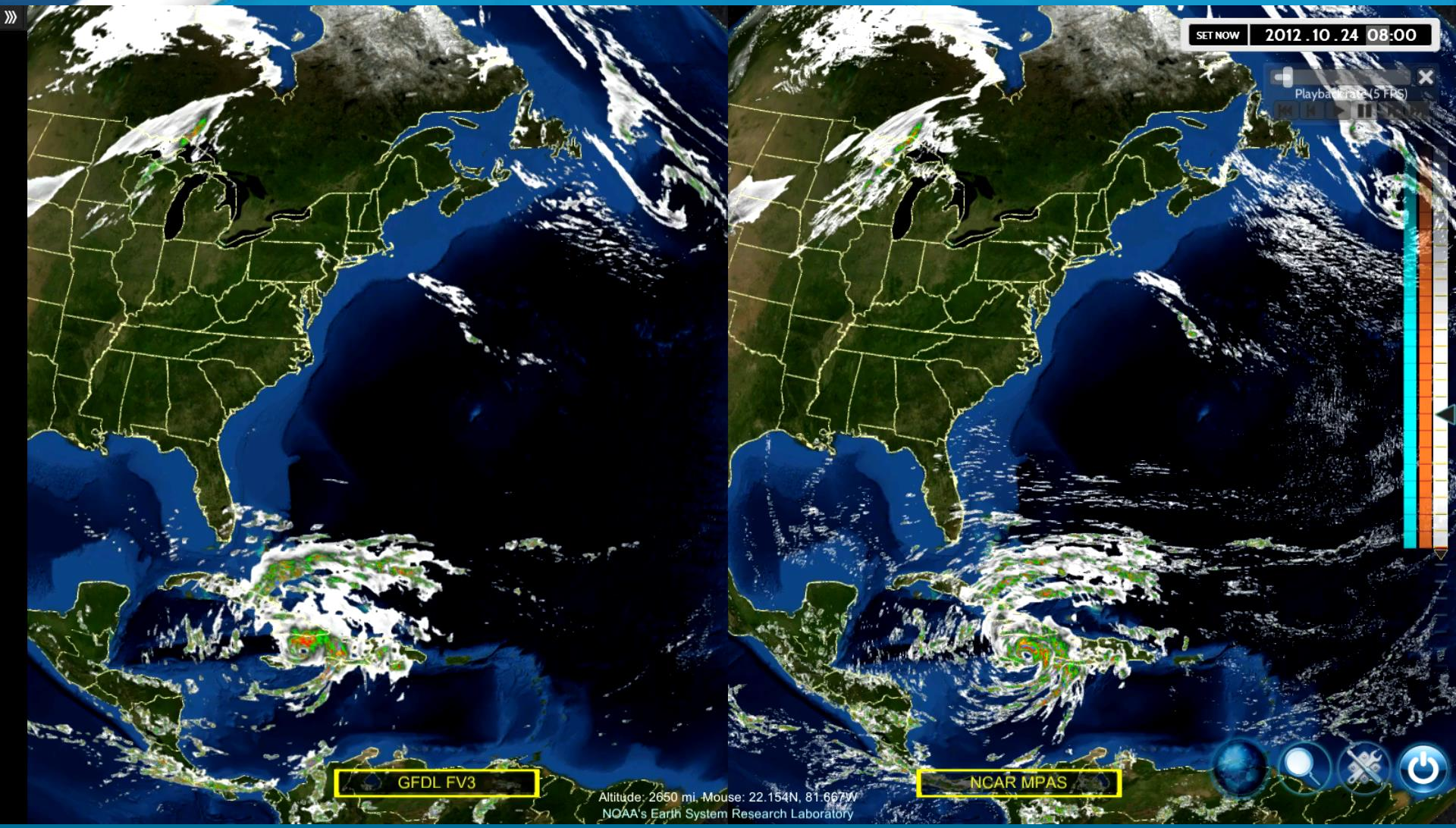
HIWPP Development

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.

HIWPP Architecture




SET NOW
2012 .10 .24 08:00
Playback rate (5 FPS)
GFDL FV3
NCAR MPAS
Altitude: 2650 mi, Mouse: 22.154N, 81.667W
NOAA's Earth System Research Laboratory

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