

Interactive Visualization Using NOAA's Earth Information Services and TerraViz

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The NOAA Earth Information Services (NEIS) is a framework of layered services designed to help the discovery, access, understanding, and visualization of data from the past, present, and future. It includes a visualization component named TerraViz that is a multiplatform tool, running on desktops, web browsers, and eventually mobile devices. The goal is to ingest "big data" and convert that information into efficient formats for real-time visualization. Designed for a world where everything is in motion, NEIS and TerraViz allow fluid data integration and interaction across 4D time and space, providing a tool for NOAA's vast collection of information.

TerraViz is built using the Unity game engine. While a game engine may seem a strange choice for data visualizations, the philosophy is to take advantage of existing off-the-shelf technologies. Video games are a multi-billion dollar industry, and represent an ideal choice for pushing millions of points of data to a user in real-time. We will provide a hands-on demonstration and exhibit of TerraViz visualizing a variety of NOAA's global data sets and regional information including sea level rise in the Washington DC area and exploring the ocean floor in a submarine.



Figure 1. NEIS harvests metadata from multiple data providers and combines it into a cohesive search interface.

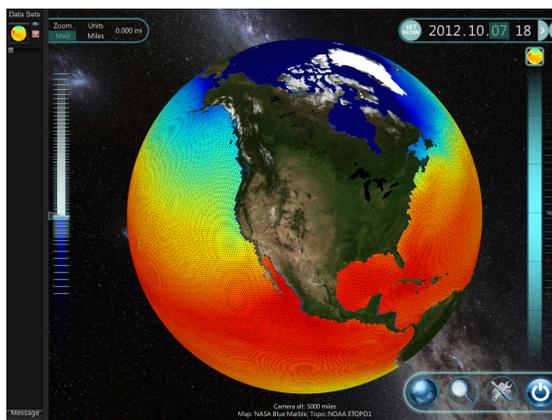


Figure 2. Visualizing the 4D Flow-following Finite-volume Icosahedral Model (FIM).