NASA SBIR 2006 Phase I Solicitation

S8.04 Spatial and Visual Methods for Search, Analysis and Display of Science Data

Lead Center: SSC

Participating Center(s): ARC

This subtopic seeks technical innovation and unique approaches to exploit spatial tools in order to increase the use of NASA research data, models, simulations, and visualizations. The goal is to facilitate NASA's Science and Exploration Missions, and outreach to the interested public. The tools should be easy to use by non-specialists, from scientists and policy makers to the general public. Tools and services will be prototyped for accessing and fusing (or mashing) image and vector data with popular Web-based or stand-alone applications. Tools can be plug-ins or enhancements to existing software or on-line services. Tools and the products might be used for broad public dissemination or for communicating within a narrower scientific community.

For example, an authoring tool may help a non-GIS expert to map a National Weather Service modeled hurricane path over a background of NASA MODIS sea surface temperatures, in turn draped on a visualization of the globe served by GoogleEarth.

To promote interoperability, tools shall use industry standard protocols, formats, and APIs. For example a tool may manipulate XML of various types, such as GML, SensorML, KML; or use standard services, such as WSDL and UDDI. Applications may subset, filter, merge, and reformat existing spatial data; provide links to attribute data; or visualize results. Combining NASA research data with popular geospatial services is encouraged. Examples of popular applications and services currently include:

- Imagery servers: e.g., NASA DAACs, OGA servers (USGS, NOAA, DOI), Microsoft Terraserver, Google Maps;
- Mapping platforms: e.g., Google Earth, NASA WorldWind;
- Map servers: e.g., Census Bureau, EPA Maps, Google Maps, MapQuest, Yahoo Maps.