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Weather Based Internet Map Services: Bringing NOAA's Weather Data to your Desktop

Bernd Haupt, Penn State Univ., University Park, PA; and M. C. Kelly, R. Baxter, and J. Spayd

Dramatic changes in Internet-based technologies have had a dramatic impact on how data in general and GIS data in particular are accessed and utilized. The Internet offers the ability to acquire and disseminate information in a matter of seconds for a wide range of users including business, agriculture, recreational activities, as well as more pressing needs such as emergency management and disaster prevention. A common theme throughout these diverse users is the need for enhanced access to weather data.

Here, we demonstrate how Penn State uses NWS/NOAA (National Weather Service/ National Oceanic and Atmospheric Agency) data and serves them GIS-ready Internets Mapping Services (IMS). We will provide background on GIS and its functions as well as describe the GIS based weather data services that can be accessed free of charge via the Internet.

The IMS developed by Penn State allow any user with an Internet connection and GIS software to add GIS real-time weather to his application with a click of a button. The services we currently provide are three temporal satellite and radar images, fourteen NDFD (National Digital Forecast Database) and four NDGD (National Digital Guidance Database) datasets, all provided by NWS/NOAA. These services are updated 24/7 365 days a year at predetermined time intervals. By delivering these services via the Internet through Internet Map Services the bulk of the effort remains on the server side saving the user time and effort since there is no need to download, reformat, or reproject the data. For example, the user no longer downloads hundreds of megabytes of compressed data that can potentially expand to thousands of files and several gigabytes. In addition, these continuous services contain real-time stamps, such as time and date. The data also come with metadata which gives the user information about each data set used in the IMS.

Based on user input and feedback, we are constantly adding new data. Recent requests from organizations such as the National Hurricane Center in Miami alerted us to additional data layers that could bring an added dimension to the services and provide even more time sensitive data to users in the field.

First Author

Presenting
Bernd Haupt
Earth and Environmental Systems Institute
Penn State Univ.
2217 Earth & Engineering Science Bldg.
University Park, PA 16802
Phone Number: n/a
Email: bjhaupt@psu.edu

Second Author

Maurie Caitlin Kelly
nstitutes of Energy and the Environment
Penn Ststae Univ.

117 Land & Water Research Building
University Park, PA 16802
Phone Number: n/a
Email: mck4@psu.edu

Third Author

Ryan Baxter
Penn Sate Univ.

Fourth Author

James Spayd
Penn State Univ.