

Web 2.0, Mashups, and the Unidata Community

Rudolf B. Husar and Erin M. Robinson, Washington University in St. Louis

The contents of cyberspace are increasingly generated and distributed by individuals. This is as manifested by the explosive growth of web-based [social software](#) like wikis, picture-sharing services, and blogs. This architectural, technological, and cultural transformation of the Internet, commonly referred to as [Web 2.0](#), is good news for the Unidata community since it offers new possibilities for sharing and harvesting community-provided content as well as collaboratively creating new things. In this note we share a few of our early experiences incorporating the new, participatory Internet into our research using the May 2007 Georgia Fires as a use case.

The fires in southern Georgia began in late April 2007 and continued throughout May. Initial event analysis began with filtering and harvesting user-contributed web content. The [Google Blog Search](#) of "[Florida smoke](#)" returned [several thousand entries](#), many of them unrelated to the wildfires. Visually scanning the blog entries yielded a number of interesting posts, which were bookmarked and tagged [070508+Florida+Smoke](#) in the social bookmarking tool [del.icio.us](#). Additional [smoke photos](#) were found in the photo-sharing service, [Flickr](#). Together, these tools yielded a rich but only qualitative description of the Georgia Fires.

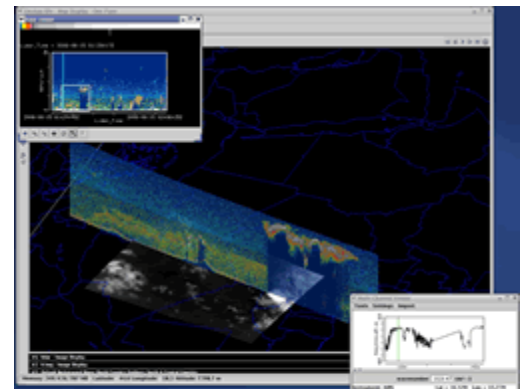
The tools and methods of quantitative analysis are also changing. Large monolithic, "do-it-all" software tools are giving way to web service modules, combined through service chaining. Application software can now be created using [Service Oriented Architecture](#), (SOA). Service modules are published and found through repositories and catalogs. Adherence to standard interfaces then allows binding (loose coupling) and dynamic integration of [\(SOA\)](#). The [DataFed](#) air quality analysis applications are built using web services and workflow integration software. For the Georgia Smoke analysis, this meant easy data access, processing and viewing of federated smoke-related datasets. Service orientation not only lowers the entry resistance for service providers, but it also allows the creation of unanticipated, user-defined applications or [mashups](#). One of the most impressive mashups is [Weather Bonk](#), an integration of [many services](#) including Weather Service Forecasts, webcams, Yahoo Geocoding/Maps/Traffic and Google Maps.

[Wikis](#), originally used to collaboratively write and discuss documents, are now also used as a general user-defined workspace to organize web content and as a client for mashups through incorporation of RSS feeds, Google Maps, structured data etc. The Georgia Smoke Event [wiki page](#) is an example of this functionality, containing structured metadata which describes the event in a standard way, links to harvesting queries, data resources viewable in Google Earth as well as providing an event summary written and [discussed](#) collaboratively by the community.

As this short teaser shows, the entry resistance to any particular Web 2.0 application is rather low. A clear challenge to the Earth Science community is determining how to apply these tools in research and education.

IDV Developer Workshop at SSEC

Unidata IDV developers Don Murray and Jeff McWhirter spent several days last month at University of Wisconsin's Space Science Engineering Center (SSEC) for a first-ever IDV Developer's Workshop. SSEC is in the process of developing the next generation of McIDAS—dubbed McIDAS-V (or Mc-V for short). They are looking at using the IDV framework and the underlying VisAD library to develop visualization and analysis tools for multi-spectral and hyper-spectral data. In response to an invitation from the McIDAS development group, Don and Jeff developed a course for Java programmers interested in using the IDV framework to develop customized applications. The two- and a half-day course presented an overview of the framework as well as examples of using it to import new datasets and create new displays. Materials from the course will be used in the upcoming Advanced IDV Training Workshop being included in response to an action item from the Policy Committee.



Hyperspectral slicing using AIRS, MODIS and Calypso data in McIDAS-V - Prototype
(courtesy Tom Rink, SSEC)

Eight programmers from SSEC attended the course. One of them, Tom Rink, whose [HYDRA](#) application was recently highlighted in [BAMS](#), found the course extremely useful. As Tom put it:

The hands-on, open-discussion, format of the workshop was really the ideal way for developers to see the key aspects of the IDV's architecture; much better than web documents alone, though they are a necessary resource. The IDV development framework will provide an excellent platform for the new [HYDRA](#) viewer, now under construction, thus bring new capabilities and data to both HYDRA and the IDV.

In addition, Don and Jeff met with the McIDAS User's Group (MUG) support staff to get input on any changes needed to the IDV framework to support the Mc-V development. They also took the opportunity to meet with Bill Hibbard and other VisAD developers to discuss solutions to some performance issues in VisAD and the IDV.

These meetings and the ideas generated have already led to new features and performance improvements that benefit all IDV users. Thanks to SSEC for providing this opportunity!

NetCDF



Ah Paris! City of Light. City of Culture. City of Romance. City of netCDF. What's that? **NetCDF**? Hmmmm... how did that last one slip into the list? For Unidata [SOARS](#) student Shanna-Shaye Forbes it seems quite natural. With SOARS's blessing and support, Shanna traveled to Paris to attend the [GO-ESSP](#) Sixth Annual Workshop. The [agenda](#) filled two and a half full days with sessions beginning at eight or nine o'clock in the morning and stretching through until 5:15. Lunch and dinner breaks provided opportunities for informal discussion.



Shanna walked away from the conference with a couple of important takeaways. The first was an enhanced understanding of the relevance and importance of her project, the netCDF-4 C++ API. She picked up a lot of information from presentations and discussions on how standards are being developed and the necessity for collaboration in their development that filled out knowledge gained in the classroom.

The extremely knowledgeable and agile SOARS staff, Anneliese Calhoun and Rebecca Haacker-Santos really made the trip come together in a very compressed timeframe: two days. That's impressive.

Unidata Committee Nominations

A call for nominations to Unidata's Governing Committees will be in e-mail within a very few days. Members are appointed for three-year terms, and in general, meetings are held twice each year. Here are links to the [Policy Committee](#) and the [Users Committee](#) that will provide you with additional information on how each one contributes to the Unidata enterprise. If someone you know would be a good addition to either committee, nominate them by sending e-mail to nominations@unidata.ucar.edu.

NOTE: *Here is a [glossary](#) containing expansions of acronyms used in this month's e-letter articles. We strive to keep overall [list](#) as current as possible, and we welcome your suggested inclusions on additional terms and their definitions.*