EDAC: Interoperability and Multi-application

At the Earth Data Analysis Center (EDAC) we provide a variety of geospatial data acquisition, processing, visualisation and application development services for clients in fields including public health, environmental analysis, transportation security, air quality, disaster management, and border security. We also maintain a state-wide clearinghouse for geospatial data that delivers over 500,000 datasets per year to end-users over the Web. These diverse activities and services require the efficient use and reuse of data and data services in day-to-day operations. The OpenGIS suite of specifications (OpenGIS Web Map Server Implementation Specification (WMS), OpenGIS Web Feature Server Implementation Specification (WFS), OpenGIS Web Coverage Server Implementation Specification (WCS), and OpenGIS Geography Markup Language Specification (GML)) and a complementary set of open source applications play a crucial role in our activities.

DOQQ

Availability of open standards that are both clearly defined and available for implementation without restrictions facilitates interoperability between application components leveraged through development of framework data services usable across projects. This allows us to develop data services usable in both applications and clearinghouse. For example, we have developed Web Map Services for the state-wide collection of over 8,000 USGS Digital Ortho Photo Quads (DOQQ). These services are being integrated into several client applications and are being prepared for deployment within our clearinghouse. Our use of Minnesota MapServer, an open-source internet mapping application, as the platform for these services will allow us to deploy this same data as Web Coverage Services for use in the delivery of sub-set, mosaicked DOQQs to clearinghouse users. OGC standards facilitate the efficient use and management of large datasets (more than 750GB in the case of the state-wide DOQQs) across multiple applications and projects, allowing both for viewing data (WMS) and for its delivery (WFS and WCS).

Health

Another example of the crucial role played by standards in our daily operations is provided by a prototype Public Health Distributed Data Management and Mapping application for the New Mexico Department of Health that uses WFS services to generate GML representations of boundaries (census blocks, block groups, and tracts and counties); these are then merged with attributes for these geometries provided by other distributed-data providers to generate interactive mapping views. Interoperability and support for additional standards (XML in this case) facilitates the programmatic integration of OGC Web service products within broader applications.

EDAC use of OGC standards has generally greatly enhanced our use of large datasets in multiple applications whilst facilitating development of distributed geospatial applications built upon an interoperable foundation. This provides great flexibility as new data and services become available; it also provides the ability to further leverage investments made in the development of those open services upon which our applications are based.

https://www.gim-international.com/content/article/edac-interoperability-and-multi-application