HYDRO INTERNATIONAL INTERVIEWS MARK REICHARDT

The Great Standardisation Payoff

The Open Geospatial Consortium (OGC), established in 1994, develops standards for geospatial and location-based services. From its first approved implementation specification in 1997 and the first interoperability programme testbed in 1999 to todayâ€™s broad array of standards and initiatives, the OGC continues its forward momentum. More than 25 standards are now freely available to address challenges identified at the time of the organisationâ€™s founding. But the real measure of OGCâ€™s success is that these standards, collectively forming a reference architecture for interoperability, are being implemented in communities and organisations around the world. We asked OGC president and CEO Mark Reichardt to tell us more about where the OGC is headed.<P>

What is the OGC?
It's a not-for-profit, voluntary, consensus-based, standards development organisation. We enable developers and users of spatial-data products and services to collaborate and advance the development of international standards for geospatial interoperability. Our 377 members represent organisations from 35 countries worldwide; 42% are commercial, 26% universities, 18% government, 8% not-for-profits, and 6% are research organisations.

The OGC is managed by a small staff of 16 having expertise in geographic information systems and geomatics, remote sensing, IT and web services, finance, public relations and administration. We possess a variety of skills and bring in consultants when we need to. At the core of the organisation are our members, who drive the development of OGC standards.
As geospatial technology becomes more widely used, we are seeing a growing level of participation from a wide range of sectors. This is making things really interesting in terms of diversity and new points of view.

When disaster strikes, the OGC is used as a testbed. Can you expand on what role the OGC played in the aftermath of 9/11?
OGC's activities are based on real-world interoperability issues raised by our user community. The 9/11 tragedy was an emergency situation that highlighted many interoper¬ability challenges. Several weeks after the attack we received a call from Alan Leidner, a veteran of New York City government, who was aware that we were about to commence a major interoperability testbed designed to accelerate the pace at which new standards could be developed and tested. He requested that OGC leverage the NYC experience in the testbed to give the geospatial industry an opportunity to learn from such an extreme event. Understanding that solutions would not be immediately forthcoming, he helped empower both our members and communities everywhere to deal with such emergencies in the future by focusing our testbed programme on developing and testing standards quickly and thoroughly.

OGC enables business to make money. Why do you supply free information?
In the early 1990s, OGC founders led by David Schell recognised the need for a trusted forum that would enable industry, government and others to work together to address interoper¬ability through the development of open standards. By adopting OGC standards, government and businesses can lower costs. Technology providers can also reduce expenditure by using open standards in development, and their standards-based products can enter markets more quickly. We provide standards freely because they have more chance of being used than those that come at a price.

How is the OGC funded?
Funding for the OGC consensus and outreach programmes comes from annual membership fees. A range of membership levels are available, to minimise barriers to participation. Our interoperability programme of testbed and pilot initiatives is funded directly by OGC members to address their urgent interoperability requirements. This funding supports the OGC staff and consultants necessary for planning and managing these initiatives. More importantly, funding provides cost-sharing to encourage industry participation in these initiatives. This approach allows OGC to make standards freely available.

What are the benefits of OGC membership in the current global financial crisis?
Members recognise that their pooled investment in our programmes yields a level of industry-wide interoper¬ability that simply could not otherwise be achieved, reducing technology risks and costs. For technology users the need for customised integration is reduced, enabling rapid mobilisation of new technology and lower costs. Technology providers can bring their products to market more quickly, reduce development costs, discover early through testbeds and pilot projects what's possible and what's needed in market sectors, and make product development decisions based on actual user requirements.

How much has OGC's membership grown over recent years?
In 1994 the OGC had eight founding members. That grew to 205 by 2000. Today we have 377. Our growth has been steady and in line with the ongoing need for standards development. Despite the economic downturn, membership has continued to grow, indicating that we provide true value for our members.

How do you plan to increase membership from Africa and South America?
Our board has placed a priority on increasing membership participation and board representation from these regions. Recently the board created a Global Advisory Council to attract leaders from under-represented areas who will help define OGC strategic direction for their geographic areas. Council members will help us link with other associations and organisations representing interests in their geographic areas.

What are the advantages of interoperability?
Interoperability benefits developers; they don't need to design and maintain a proprietary set of interfaces, they build interfaces that implement the standard and then spend those freed-up development funds doing something that gives them more competitive advantage. Interoperability benefits users; they are not locked into a single vendor but can instead connect new systems to old and add components from multiple suppliers without paying for custom integration.

Some believe OGC has not moved fast enough on issues of security and access management. What is your view on this, and what are you doing to address these concerns?
Developing security standards is not the core mission of the OGC, whose members work to ensure that OGC standards work with proven IT security standards developed by the broader IT standards development organisations. Requirements for testing OGC standards interoper¬ability with security standards are defined by our members. Recently, OGC members started a Security Domain Working Group to advance an interoperable security framework for OGC Web Services to enable protected geospatial information processing. By design, any given OGC standard must remain agnostic to the desired security and authentic¬ation framework. By using existing IT security standards, security-related aspects of geospatial processing can be addressed in an interoperable way.

Why did Google Earth submit to the OGC its KML standard for modelling and storing geographic features, and what is the benefit for users?
Google submitted KML to us so that it could be evolved within the OGC consensus process. As a result, KML has become an adopted OGC implementation standard. A major goal was to move toward one international language for expressing geographic annotation and visualisation on existing or future web-based online and mobile 2D maps and 3D earth-browsers. This will enable greater uptake and interoperability of earth-browser implementations. In addition, the OGC and Google will ensure that the KML community is engaged in the process and kept informed of progress. The OGC process will be used to ensure proper lifecycle management of the KML standard, including issues like backward compatibility. Google and the OGC believe that having KML fit within our standards will encourage broader implementation and greater interoperability and sharing of earth-browser content. I invite readers to visit our website (website 1) for a more thorough discussion regarding the move of KML to OGC – it's in the Preamble of the KML standard.

It's our impression that the hydrographic world is making less use of OGC standards than the geomatics industry. Is this true?
There is a significant level of standards activity by OGC members in areas related to 'water': hydrography, hydrology and meteorology. Members are in the process of forming a hydrology domain working group to better serve the needs of this community.

The hydrographic sector seems to have trouble combining data sets. Do you actively contact manufacturers of hydrographic equipment about your OGC standards?
We reach out to manufacturers based on the maturity of our standards and the recommendations of our members. Adoption of standards will happen quickly when there is demand from the users and buyers of hydrographic equipment. OGC members from the ocean-observing community recently participated in a workshop for ocean-sensor manufacturers and observed a growing interest in incorporating standards. It all comes back to market forces and business needs; manufacturers will not change anything in the absence of sound business justification.

In the last issue of Hydro international, Google geospatial technologist Ed Parsons asked, "How will you ensure that the OGC remains relevant as an organisation and stays on the cutting edge? It's done this very well in the past, identifying many key issues over the last 20 years. However, I can imagine that this must be more difficult today, given the wide community of disparate users and their many different areas of focus." What is your response?
Given the range of expertise and market knowledge embodied by our members, OGC has managed to identify and properly position consortium activities to support the next generation of platform technology. We have excellent partici¬pation by academic and research organisations. They help us evolve standards to facilitate the rapid transfer of geospatial research results into the field for broad application.
OGC has alliances with over 20 standards and professional organisations to collaborate on interoperability issues that none of us could accomplish alone. For instance, we work with the IEEE to advance sensor web enablement standards that will help make sensors, transducers and sensor-data repositories discoverable, accessible and useable via the web. Given these and other activities, we hope to stay ahead of the curve.