Distinguishing Open Source and Open Standards: No Time to Waste

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Procrastination

I know you have been putting off trying to understand the difference between two seemingly connected concepts – open source software and open software standards. And, I can understand why. The word "open" is used extensively in articles, marketing materials, email lists, and blogs. But what does this term really mean? The definitions vary, sometimes referring to a software product's interfaces (Application Programming Interfaces, APIs) and sometimes to the source code. Open implies that both are exposed, but the phrases open source and open standards still mean different things.

History may also be a factor in the confusion. For many, open source was synonymous with an operating system called Linux and a Web server called Apache, which seemed about as far away and as useful to geospatial users as Mars. The term open standard simply wasn't in the geospatial vocabulary until the OpenGIS Foundation, what's now the Open Geospatial Consortium (OGC) ®, came on the scene in 1994.

But, it's now 2006 and times have changed. There are now many open source geospatial software packages and the newly formed Open Source Geospatial Foundation (http://www.osgeo.org) aims to formalize some of the efforts. There are more than a dozen approved OpenGIS® Specification standards (http://www.opengeospatial.org/specs/?page=specs), implemented in hundreds of packages and products. So, it's time to stop procrastinating and get the difference between these important, but very different concepts, clear in everyone's heads.

Open Source

Open source refers to whether or not the code behind software is made available, among other things. If it is made available, and users can copy, modify and redistribute the source code without paying royalties or fees, it's termed open source. (For the complete story, visit the Open Source Initiative http://www.opensource.org/.) The opposite of open source is proprietary, that's when the code is not shared. My goal here is not to argue one vs. the other but to explain that they are simply two different ways of distributing and licensing software.

Open Standards

First, let's take a step back and make sure we are all on the same page regarding what a standard is. This is from Bob Sutor, the Vice President of Standards and Open Source for the IBM Corporation: "A *standard* is like a blueprint. It provides guidance to someone when he or she actually builds something." He goes on to note that it's a

blueprint upon which many people need to agree. OGC develops consensus on "blueprints" for software APIs.

An open standard can mean that a standard is open to anyone to use, even though it has restrictive licensing or requires a fee. The OGC goes a bit further and defines open standards as being:

- Freely and publicly available – They are available free of charge and unencumbered by patents and other intellectual property.
- Non discriminatory – They are available to any one, any organization, any time, any where with no restrictions.
- No license fees - There are no charges any time for their use.
- Vendor neutral - They are vendor neutral in terms of their content and implementation concept and do not favor any vendor over another.
- Data neutral – The standards are independent of any data storage model or format.
- Agreed to by a formal, member based consensus process – The standards are defined, documented, and approved by a formal, member driven consensus process. The consensus group remains in charge of changes and no single entity controls the standard.

The key aspect of OGC open standards is that they are freely available for anyone to access and implement at any time. Software developers and development organizations, whether create commercial or open source software, decide if they want to implement specific standards. It's important to realize that software packages, whether open source or proprietary, can interoperate if they all implement the same standard.

Ready for the Future

Now, that wasn't so bad, was it? Open source software is like getting a recipe, for you or anyone to modify and share as you like; open standards are community agreed upon "blueprints" that are available to all without fee or license. If you keep those ideas in mind you'll be in fine shape to make sense of the next few years in the geospatial industry!