

## ATTACHMENT A

By Gary Robinson:

In my first column in the IEEE Bulletin I said I would use my experiences with multiple standards developing organizations (SDOs) to explain and compare the various organizations. As a columnist for an IEEE publication, I should logically start with the IEEE, but something happened recently that caused me to change my plan.

I again heard an old criticism.

### **The critics**

For the past few years I have repeatedly heard the criticism that SDOs are too slow. Then they launch into a litany of complaints about why consortia are better, or why the market can't wait for a standard. I usually don't respond; I have the disadvantage of knowing what I'm talking about.

I'll explain why I disagree with this criticism, but first let's consider one standard that was produced in a very short time.

### **Speedy resolution**

In November of 1996, Netscape decided that it would be a good thing to make JavaScript into a formal (de jure) standard. I'll leave all that went into that decision for another time; suffice it to say that this was a major decision for Netscape. JavaScript was both wildly popular and had a large market presence. Netscape also has only one standards person to deal with factors such as time to market, strong competition, and multiple competing implementations, which formed part of the decision equation. In the end, Netscape decided to submit JavaScript to ECMA ([www.ecma.ch](http://www.ecma.ch)). ECMA agreed to accept the contribution as a starting point, and formed Technical Committee 39, TC39.

ECMA, previously known as the European Computer Manufacturers Association, has international membership encompassing Europe, the US, and the Pacific Rim. Its membership used to be limited to vendors that had manufacturing plants in Europe. Now, membership is open to any interested company that the rest of the membership approves. ECMA's main goal is to generate a tightly written, disciplined standard and then fast-track the ECMA standard through ISO/IEC JTC1.

ECMA typically works in three main areas: telephony, media, (optical/magnetic disks, tapes), and networking. Since the membership belongs to companies, company views--not personal or academic ones--are the norm.

TC39 held three meetings and about 10 face-to-face and teleconferenced editing meetings. In April 1997, the committee sent a draft standard to the ECMA General Assembly for final approval. The GA meeting in June will probably approve the document as an ECMA standard and contribute it to ISO/IEC JTC1 for fast-track processing.

### **Why did it work?**

Skeptics might say that it is easy to produce a standard from a completed document like JavaScript, and that anyone could massage the contents for a few months and then forward it to another committee for a vote. Again, since I was there, I have to deal with the facts.

The contributed document was sufficient for Netscape's internal use; it was not an international standard. Microsoft and Borland also had implementations and submitted specifications derived from their JavaScript implementations.

Competition between designs and documentation was very keen. None of the participants knew each other, and time to completion was very important to the committee and the market. The group quickly agreed upon the objectives. But, because there was a significant lack of standards experience within the membership, it took a couple of months to build trust among the players and define roles.

However, because there was a common set of objectives, everyone contributed to achieving the end goal. They completed the project on schedule and unanimously agreed on the final product.

TC 39 completed a highly contentious standard, got agreement between all parties, and produced a complete open specification between November 22, 1996, and April 22, 1997--five months that included Christmas and New Year's.

#### **How it worked**

First and foremost, this standard passed quickly because it was processed in ECMA. Not every standard lends itself to ECMA's process, but this one fit in perfectly. ECMA prefers a small group of dedicated representatives from companies willing to keep a set of product objectives in mind. Politics, petty competitions, and academic puffery are kept to a minimum. ECMA also provides professional, experienced support to move the work along and to keep it from slowing down over minor issues.

As a standardization venue, ECMA best suits companies that have to produce a quality, on-time product based upon international standards. Projects must be reasonable in size, and should be focused on the short or medium term, with ISO as the final target. Also, IPR issues must be kept to a minimum. Meetings are held anywhere in the world that is convenient to the participants.

The key to making a standard move quickly through a process--any process--is illustrated here. Proponents have to know what they want, how to manage the process, and when they're done. The formal process is not slow in itself. Often, participants in the process who are there to "help" the standard, or who are just there, slow things down. If we view standards as a study in project management, we can make them much more efficient and much more productive.

It's not the process that's slow; it's the people and their motivations.