For technology experts concerned about how electronic voting systems will perform on election day, what better tools to use to monitor the situation than those of their trade: the Web and open source development.

Led by a team from the Verified Voting Foundation and Computer Professionals for Social Responsibility (CPSR), the Election Incident Reporting System (EIRS) is designed as a tool to help the Election Protection Coalition identify and react to problems voters may have in either exercising their right to vote or having their votes recorded as intended.

EIRS (http://www.voteprotect.org) had its genesis about four months ago, according to Will Doherty, Verified Voting's executive director. Since then, a team consisting of between 30 and 35 people -- a few paid but most volunteers -- have worked to ready the system for Nov. 2.

Grants from various organizations and donations -- for example, a CPSR board member donated rack space at a colocation center in San Francisco -- have been key elements to making the project happen, said Erik Nilsson, chair of the CPSR working group on voting technology.

The challenges of managing such a large and complex project are magnified by the fact that the people working on it are geographically dispersed, and that the deadline for completing it is inflexible, Nilsson said. The team consists of about five core developers, roughly the same number of people focused on testing, three people actively working on the user interface and an architecture team of four who are also responsible for security and the physical hardware. However, the team has gained an advantage from using open-source toolkits, such as PHP.
Surveyor, which is used to create online surveying instruments and manage the results, he said.

In addition, the development teams behind these toolkits have supported the EIRS team. "The head guy for PHP Surveyor in Australia has been really helpful," Nilsson said.

Other open-source software packages used in EIRS include AdvoKit -- used to manage tasks, campaigns and volunteers -- and MapServer, which produces clickable maps (for example, those on the site showing where incidents have taken place in previous elections).

While the EIRS web site lists a range of technical and other tasks with which the group needs help (http://www.verifiedvoting.org/eirs/teams-jobs.php [2]), Doherty said that they are not planning to add much more functionality between now and election day. The exception is more detail about election incidents: Currently when a user clicks on the a map to view incidents in a chosen location, only the number of incidents is displayed, but this will shortly be enhanced with detail about particular incidents, he said.

If all works as planned on election day, incidents reported via EIRS may result in the timely dispatch of legal or technical experts to problem locations. These could include some of the 1,300 TechWatch volunteers that Verified Voting has recruited with an eye to bringing technically minded citizens to monitor the use of electronic voting systems.

"We're placing big bets on this," said Nilsson, whose experience as a technologist involved with voting extends back to his role as a software developer supporting the historic 1994 election in South Africa. His hopes are that through rapidly acquiring information about voting problems as they occur, EIRS will help election protection advocates using the system to quickly resolve issues on Nov. 2. "We can close the loop, for example telling county election officials, 'You've got a problem in this church basement in Peoria and you need to deal with it'."


Links: