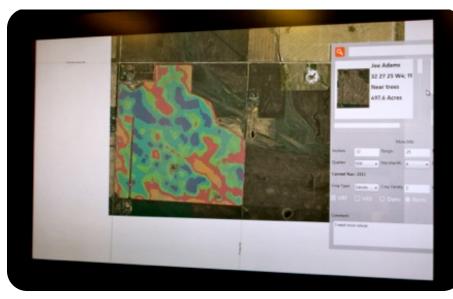# Improving Farmer Collaboration with Digital Tabletops

By Teddy Seyed

Decisive Farming and the Agile Surface Engineering (ASE) Lab at the University of Calgary have recently completed a project examining ways in which a digital tabletop could be used as a management tool for precision farming. Specifically, we looked at improving collaboration between Decisive Farming and their clients.

The primary service that Decisive Farming provides is precision farming. Precision farming techniques integrate a broad range of data about a given piece of farmland, such as soil fertility, local weather trends and crop pricing. With this information, a farmer can then make informed decisions and plan seed varieties, crop mixtures, and harvest windows for optimum yield.

The result of the project was a digital tabletop/tablet application that replaces older paper- and web-based approaches which involved multiple web forms and extensive email communication. With this application, farmers are now able to collaborate more directly with Decisive Farming (using a large digital surface) and see

the planning process in a more intuitive format.

Overall, the project has been a successful venture for all parties. The project has provided Decisive Farming with a more streamlined and collaborative approach for demonstrating their precision farming processes. The ASE Lab has also benefited by being able to explore multiple research angles while developing the application. In addition,

the students involved gained valuable technical experience.

The project with Decisive Farming is based on results from SurfNet's first year and was funded by an NSERC Engage grant.
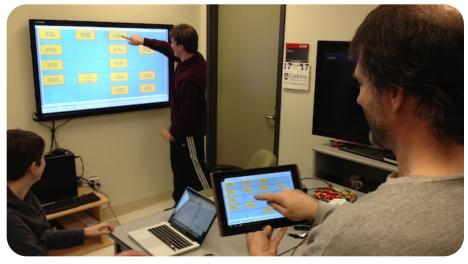
In This Issue

Building a Better Cardwall for Agile Software Development

By Robert Biddle, Judith Brown, Stevenson Gossage, and Jeff Wilson

At Carleton University, the SurfNet team is working on a surface application to support agile software development teams. The application is primarily an electronic cardwall, similar to current physical cardwalls where paper cards pinned to a wall show the status of projects in development. Although this kind of software already exists, the Carleton team has ambitious objectives for their application. They intend to make the electronic cardwall so effective that it is easier to use than a physical one, and to make it work as a distributed application so that teams can work as effectively across large distances as they can while co-located.

The project involves several sub-projects. One involves observational studies of co-located teams using physical cardwalls to capture the essence of how current cardwalls are actually used in order to inform the design of the user interactions. This part of the project has been undertaken by Masters student Stevenson Gossage. Another sub-project is the creation of the distributed architecture, which involves a back-end server, and JavaScript clients for touch-screen applications. These applications must work on both large wall displays and on mobile devices such as iPhones, iPads, and Android devices that communicate with the server using AJAX and "Comet" push technology. This portion of the project is being handled by undergrad student Jeff Wilson.

Post-Doc Judith Brown and Dr. Robert Biddle are co-supervisors, and SurfNet industry partner Bedarra Research Labs is actively supporting the project. The current prototype is installed on devices at Carleton and at Bedarra's location in Kanata.

SurfNet is Two!

On February 1st we celebrate our second birthday. Highlights from this past year include:

For SurfNet contact information please go to:
www.nsercsurfnet.ca/pmwiki.php?n=SurfNet.Contact

Our second annual SurfNet Workshop and Industry Open House
- Our 2011 Workshop had around 100 attendees from across Canada, the US, France, Germany, the UK and Austria
- Our industry open house was a huge success again with almost two dozen demos from across Canada

Strong Network growth
- Over 50 network trainees and 9 former trainees
- 14 collaborating researchers from around the world and growing
- Over 70 current projects including 3 spin-off projects with industry
- Over 20 industrial/organizational partners actively involved in current projects
- 12 completed projects
- Our first patent

SurfNet

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