

# TECHNOTRENDS®

## Newsletter

Published by Burrus Research Associates / [www.burrus.com](http://www.burrus.com)

December, 2005

XXI, No. 12



### **Wiki's: Groupware For The Rest Of Us**

**By  
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All too often, e-mail is used as a tool for electronic collaboration. When that happens, your e-mail load increases greatly as your productivity and effectiveness diminishes. Why? Because e-mail does not have the features needed to allow teams to easily work together on a project, share documents, and make changes that can be tracked. Fortunately, in the mid-1990's, a new type of software was designed for that purpose. Groupware, or as it is sometimes called, teamware, is software that enables co-workers scattered throughout a building or around the world to use networked computers to share ideas, data, and programs almost as if they were sitting at the same desk. It functions like a secure, highly versatile online service that is dedicated to an organization's use. Today, there are many sophisticated versions of groupware on the market, ranging from IBM's Lotus Notes to Microsoft's new P2P groupware product Groove, which allow for file sharing without a central server. The latest versions have audio and video conferencing capabilities, and they are designed to operate in a secure environment. One of the biggest downsides of today's groupware is that they are enterprise applications designed from the top down, and all require learning a new user interface.

#### **Enter the Wiki**

A Wiki is basically a group blog (Web log) that can be easily edited by its readers. Think of it as a Web page that can be edited like a word processor. In contrast, blogs are written by one person and posted as static documents for many people to read.

#### **Fast and Easy Team Collaboration**

A Wiki can be used as a quick way to collaborate with colleagues, or as a way for corporate teams to manage projects. And, because a Wiki can be hosted, team members have access to it from anywhere in the world 24/7. Another great feature of a Wiki is that instead of distributing additional documents team members might need to review or contribute to as e-mail attachments that need to be downloaded into each person's computer, documents can be posted to a Wiki. Once they are posted, team members can not only read them, but they can make additions or corrections to them. If a change is made to a document, members of the team can be automatically notified of the change, and it is easy to track who made it. If you would like to try to set up your own Wiki, one of the best ways is to visit Web sites designed to help you quickly set one up. Two good examples are Socialtest and JotSpot. Both can provide hosted Wiki's with prices ranging from free to \$9.

### **TECHNOLOGY NEWS HIGHLIGHTS**

#### **REAL-TIME TRANSLATION**

Recent breakthroughs in speech-to-speech translation technology will soon make it possible for a person to speak in any language even if they are not fluent speakers of the particular language. The new system being developed by computer science experts at Carnegie Mellon University detects what a person is saying by

tracking muscle movements through electrodes placed on the mouth and cheeks. It then translates the words into the desired language and projects them audibly. Another component of the system is designed to deliver conversations in a narrow beam that can be focused toward a specific individual in the audience. In this way, the individual can listen to the translated speech without the need for headphones, while others nearby can hear the original language without distraction.

For information: Alex Waibel, InterACT, Carnegie Mellon University, 407 S. Craig St., Office 205, Pittsburgh, PA 15213; phone: 412-268-7676; fax: 412-268-5578; email: [waibel@cs.cmu.edu](mailto:waibel@cs.cmu.edu); Web site: [www.cs.cmu.edu](http://www.cs.cmu.edu)

## **BLACK ICE DETECTORS**

A new system to warn drivers of potentially dangerous driving conditions, such as nearly invisible black ice, is currently being tested in select areas of Canada. Sensors resembling hockey pucks are embedded in the road, and when the pavement temperature drops below freezing, they turn bright red, signaling that conditions are ideal for the formation of black ice. A side benefit of the sensors is that they can indicate when salting may not be necessary, especially in late fall and early spring when large temperature gradients may exist between air and pavement, or on bridges and overpasses where conditions can vary greatly. They can also be calibrated to change color at other temperatures to indicate, for example, when specific types of de-icing compounds maybe most effective. The devices cost under \$20 (Canadian) and are expected to have a two to three year lifespan.

For information: Traction Technologies, 230-1210 Summit Dr., Kamloops, BC V2C 6M1; phone: 250-372-7676; fax: 250-828-2743; Web site: [www.tractiontech.ca](http://www.tractiontech.ca)

## **PREDICTING RESPONSE TO ANTIDEPRESSANTS**

Determining the optimum combination of drugs and appropriate dosages to treat depression can take months for some patients, but recent research has revealed that a new monitoring technology may be effective at predicting whether certain medications will have an adverse affect on patients undergoing antidepressant therapy. For example, by analyzing brain wave activity, researchers noted that certain patterns were indicative of increasing thoughts of suicide. The system could someday be used to fine tune antidepressant prescriptions and dosages in a matter of days. In a related study, the technology is being tested as a diagnostic tool to assess the severity of dementia and Alzheimers, and to monitor the effectiveness of drug therapies more quickly and concisely.

For information: Aspect Medical Systems, Inc., 141 Needham St., Newton, MA 02464; phone: 617-559-7000; fax: 617-559-7400; email: [bis\\_info@aspectms.com](mailto:bis_info@aspectms.com); Web site: [www.aspectmedical.com](http://www.aspectmedical.com)

## **FIGHTING FIRE WITH NOISE**

Students at the University of West Georgia have discovered a new way to extinguish fires using noise. Dubbed the Prometheus Project, their experiments have shown that low-frequency sounds can effectively suppress flames, especially in low-gravity environments, such as spacecraft, where traditional methods are inefficient, difficult to use, and may even pose a serious toxic threat. In contrast, sound waves are impervious to the effects of a zero-gravity environment and produce no contaminants.

For information: Dmitriy Plaks, University of West Georgia, 1601 Maple St., Carrollton, GA 30118; phone: 678-839-5000; email: [Dmitriyp13@excite.com](mailto:Dmitriyp13@excite.com); Web site: [www.westga.edu](http://www.westga.edu)

## **SELF-ADJUSTING DOOR**

Prototypes of a new automatic door that can sense the shape of a person or object and open just enough to let them pass through have been developed in Japan. Made of several horizontal sliding segments that open in the center, the new portal can provide access for a wide variety of objects from a small package to a full-size vehicle. Because the new door doesn't need to open completely every time, it can save energy, more easily maintain stable indoor temperatures, and minimize the amount of dirt and other pollutants that inadvertently get swept inside.

For information: Rikiya Fukuda; Web site: [www.snipurl.com/jp3h](http://www.snipurl.com/jp3h) (available in Japanese only)

## **PLUGGING INTO BROADBAND**

In an effort to expand high-speed Internet access, providers are now looking at power lines as a distribution medium. Using a new networking technology called BPL (broadband-over-power-line), broadband access could conceivably be taken into any room equipped with an electrical outlet. Although distance is still a limiting factor, the first system recently installed in Manassas, Virginia, is capable of speeds of up to 800 Kbps. Panasonic claims their new HD-PLC (high-definition power-line communications) will be capable of over 170 Mbps. The HD-PLC chip will be compatible with Ethernet and utilize standard Internet Protocol to provide stable, high-speed data, voice and video transmissions over home power lines.

For information: Panasonic, Matsushita Electric Industrial Co. Ltd., 1006, Kadoma, Kadoma City, Osaka 571-8501, Japan; phone: +81-6-6908-1121; Web site: [www.panasonic.co.jp/global](http://www.panasonic.co.jp/global)

## **UNDERWATER BREATHING APPARATUS MIMICS FISH GILLS**

A new technology for underwater breathing may make it possible for humans to stay submerged for up to several days. It utilizes a silicon-based polymer membrane to draw oxygen from water, similar to the manner in which fish "breathe." The membrane maximizes contact area with the water to extract as much oxygen as possible. It then pumps the gas into a storage bladder through a line that is regulated by the wearer's breathing. Because the system requires no heavy storage tanks, it gives divers greater mobility, making it suitable for military and rescue applications as well as recreational diving.

For information: InfoSciTex, 303 Bear Hill Road, Waltham, MA 02451; phone: 781-890-1338; fax: 781-890-1330; Web site: [www.infoscitex.com](http://www.infoscitex.com)

## **SYNTHETIC MUSCLES OPERATE AT THE SPEED OF LIGHT**

MIT scientists are working on a way to speed up the reaction time of artificial muscles, a project that could some day have robots running circles around human beings. Synthetic muscles in use today rely on an electric current running through an ion-rich electrolyte in order to respond to a stimulus. The process is relatively slow, taking up to 100 times longer than human muscles. The new technique uses specific frequencies of light to activate a wave of charge through the length of the polymer. The result is a synthetic muscle that operates 1000 times faster than its human counterpart.

For information: Sidney Yip, MIT, Department of Nuclear Science and Engineering, 77 Massachusetts Ave., Cambridge, MA 02139; phone: 617-253-3809; email: [syip@mit.edu](mailto:syip@mit.edu); Web site: <http://web.mit.edu>

## **QUICKER, MORE RELIABLE IRIS SCANS**

As a security device, iris scans have had limited appeal, primarily because the cameras used require short-range (9-22 inches), still images (3 second exposures) to capture adequate detail. But a new system called “Iris on the Move” will be able to identify up to twenty people per minute, at distances up to ten feet, as they move through a security portal. The scanner also has a wider range of view than earlier devices. The new system is already being used in a small number of government facilities.

For information: Sarnoff Corporation, 201 Washington Rd., CN 5300, Princeton, NJ 08540; phone: 609-734-2000; Web site: [www.sarnoff.com](http://www.sarnoff.com)

## **GENE LINKED TO OBESITY IN MICE**

Researchers in Canada made an unexpected discovery while investigating the role of a specific gene (called p107) in muscle formation. When mice were genetically altered to lack the p107 gene, muscle development appeared to be unaffected, however, they did exhibit 40 percent less fat and 25 percent lower body weight than normal mice. Closer examination revealed that almost all of their fat was comprised of “brown” fat – which is used to generate body heat – as opposed to “white” fat – which is linked to obesity, diabetes, heart disease, and other health problems. The research may prove to be instrumental in developing new methods for treating obesity in humans.

For information: Dr. Anthony Scime, Ottawa Health Research Institute, 725 Parkdale Avenue, Ottawa, Ontario K1Y 4E9; phone: 613-761-4395; fax: 613-761-4920; email: [info@ohri.ca](mailto:info@ohri.ca); Web site: [www.ohri.ca](http://www.ohri.ca)

## **IN STEP WITH NEW SURVEILLANCE TECHNOLOGY**

A new form of surveillance is capable of identifying people by the way they walk. The system takes various measurements – including length of stride, swing of the leg, time interval between steps, and foot pressure – to quantify a person’s typical gait. The information can also be used as an anti-theft mechanism. Sensors that have been programmed with pertinent information may be installed into valuable devices such as laptops and cell phones. The sensors recognize their owner’s walk and send out an alert when would-be thieves attempt to wander off with them.

For information: Ailisto Heikki, Research Professor, VTT, Kaitovayla 1, P. O. Box 1100, Fin-90571 Oulo, Finland; phone: +358-20-722-2233; fax: +358-20-722-2320; email: [Heikki.Ailisto@vtt.fi](mailto:Heikki.Ailisto@vtt.fi); Web site: [www.vtt.fi](http://www.vtt.fi)

## **RELIABLE, REAL-TIME SOUND SEPARATION**

Japanese researchers recently unveiled a new technology capable of isolating specific sounds from unwanted background noise in real time. The device utilizes a minimum of two microphones, which analyze and separate audio signals. A high-speed processor running a proprietary separation algorithm then filters out everything except the targeted sound. To keep cost low, the developers used mainly off-the-shelf components. The result is a hand-held system that operates on batteries with a high degree of accuracy. Applications for the device include voice communication in noisy settings as well as troubleshooting machinery in industrial areas by analyzing operating sounds.

For information: Kobe Steel, Ltd., Shinko Building, 10-26, Wakinohamacho 2-chome, Chuo-ku, Kobe, Hyogo 651-8585, Japan; phone: +81-78-261-5111; fax: +81-78-261-4123; email: [www-admin@kobelco.co.jp](mailto:www-admin@kobelco.co.jp); Web site: [www.kobelco.co.jp](http://www.kobelco.co.jp)