



New Products

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EDITORS' INTRO

In this issue, we cover initiatives for building a ubiquitous city and rewarding excellence in the design of virtual worlds. We also highlight a robot that scares away pest birds, technology that harvests electricity from the wind generated by passing traffic, a taxi navigation system, an adaptor that provides Ethernet connectivity over residential power lines, and a bracelet that vibrates when your cell phone rings. Finally, we present a cell phone that can sense motion. Please continue to send pointers to upcoming products with exciting possibilities, your feedback on existing products, and your personal experiences with them (your name will be included with your review). Email us at pvcproducts@computer.org.

—Maria Ebling and Eyal de Lara



Figure 2. The Robop robotic scarecrow resembles a peregrine falcon and scares away pest birds.

INITIATIVES

U-CITY

Given this issue's theme, we decided to start not with a product or service, but with a new kind of city—a “ubiquitous city,” or U-city. Songdo City, which is being built just outside of Seoul, is such a city.

Its developers envision integrating data from all major information sources, businesses, and individuals, as well as from city infrastructure. Although those of us in computer science might react with a “well, of course,” the developers aren't proposing this integration just because it's the obvious thing to do in our high-tech world. Instead, they view the technology as a critical enabler for creativity and inspiration. They hope that Songdo City citizens will determine what the city of the 21st century will be. To learn more, see www.songdo.com.

A VIRTUAL OSCAR!

In May, two virtual real-estate moguls in the gamelike online spaces of Second Life and Entropia Universe announced the creation of the Virtual Worlds Academy. The academy aims to



Figure 1. The Virtual Worlds Academy will host the first Virtual World Awards in early 2008, with winners receiving the Avatar award for achievements in fields such as “Best Virtual World.”

recognize outstanding accomplishments in the virtual-world industry.

The academy will also host the first Virtual World Awards. Winners will receive the Avatar award (see figure 1) for achievements in fields such as “Best Virtual World,” “Best Virtual Fashion Designer,” and “Most Dynamic Virtual Economy.” Nominations are due 15 November 2007 at www.vvawards.com. The winners will be announced in “live” ceremonies in the respective virtual worlds early next year.

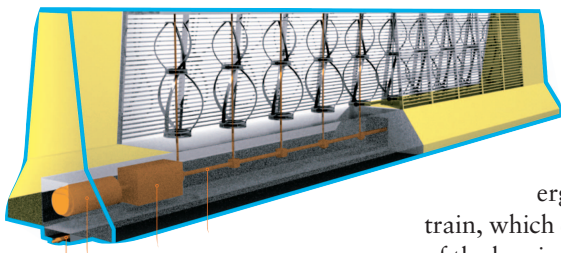
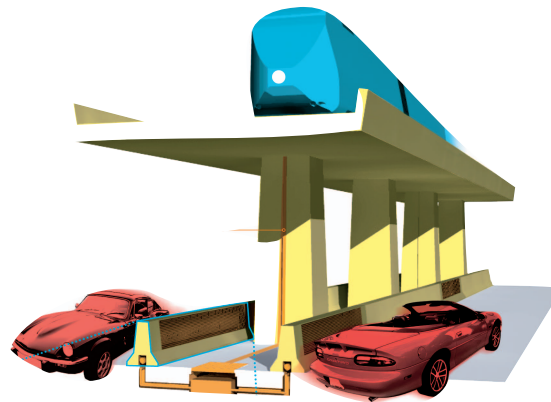
APPLICATIONS

A SCARECROW FOR THE 21ST CENTURY

Pigeons and other small birds are a staple of Europe's churches and plazas. However, the absence of natural predators and the propensity of tourists and city dwellers to feed the birds have resulted in a public hazard. The birds fly up at people, and their droppings make surfaces slippery and dangerous. To rid itself of its pigeon pests, the city of Liverpool recently deployed a high-tech robotic scarecrow. Robop—short for robotic bird of prey—looks, moves, and sounds like a peregrine falcon (see figure 2). Birds such as pigeons and gulls have a natural fear of the falcon, and Robop exploits this to scare them away. Although it doesn't currently fly (a flying prototype is being researched), Robop flaps its wings, moves its head from side to side, and rocks gently on its feet. Robop also plays a digitized version of a real falcon's call. To prevent attentive birds from uncovering Robop's ruse, its software randomizes the sequence of wing and head movements, as well as the frequency and intensity of its calls.

NEW PRODUCTS

Figure 3. Houston-based landscape architect Mark Oberholzer has proposed harnessing the wind that highway traffic creates to generate electricity. (illustration by Erich Nagler for *Metropolis* magazine)



Robop also senses wind direction and turns its head into the wind as a real falcon would. To save battery life, Robop turns itself on and off automatically at dawn and dusk. The bird also turns itself off when its sensors detect increased loads on the wings caused by heavy snow or high winds. Robop provides a Web-based interface that you can access over a cell phone data connection to remotely reprogram the bird or check its battery level. For more information, see www.robop.co.uk.

HARVESTING ELECTRICITY FROM TRAFFIC

Mark Oberholzer, a Houston-based landscape architect, has proposed harnessing the wind that highway traffic creates to generate electricity. The approach (which is still in the conceptual phase) involves replacing sections of the concrete Jersey barriers that separate highway lanes with compact wind turbines (see figure 3). The wind that cars and trucks create as they move along the barrier will rotate the turbines to generate electricity. The design captures the wind from both directions using double-stacked Darius turbines, which have sets of aerofoils that are vertically

mounted on a shaft that rotates along its vertical axis. Oberholzer has suggested using the energy to power a light-rail

train, which could be next to or on top of the barrier. By using the energy close to its generation point, this approach minimizes energy loss due to distribution and reduces infrastructure requirements. A similar concept, proposed at the University of Arizona, would use overhead highway wind turbines. However, the overhead turbines could negatively affect bird populations; Oberholzer's Jersey barrier design should have no impact on birds.

HIGH-TECH CABBIES

New York cabbies will soon be going high-tech. This past May, New York City's Taxi and Limousine Commission approved a plan to require cabs to begin installing equipment that will let riders view a map showing where the cab is going, find information about restaurants and other sites of interest, and, perhaps most important, pay the fare via credit card. In addition, the GPS technology will automate record keeping by noting where fares are picked up and dropped off. It's also expected to provide information about traffic congestion.

Cabbies have objected to the equipment as being expensive (up to US\$7,200 for equipment and fees over three years) and intrusive on their privacy. However, test drivers, who received the system for

free in exchange for testing it, report that customers are using the equipment and like the convenience. The equipment is expected to be in all yellow cabs by the end of 2007. For more information, see www.nyc.gov/html/tlc/html/passenger/taxicab_serv_enh.shtml.

COMPONENTS

ETHERNET OVER POWER LINES

The MegaPlug AV 200 Mbps Ethernet Adapter by Actiontec Electronics is designed to transfer movies, music, and other rich media over existing residential electrical wiring. MegaPlug provides an alternative way to extend or create a high-bandwidth Ethernet network in areas of the home where Ethernet cabling is unavailable. To add a computing device to the network, you plug the adapter into a power outlet and connect the device to the adapter with an Ethernet cable. A MegaPlug network can support up to 16 devices. MegaPlug uses 128-bit AES (Advanced Encryption Standard) encryption to prevent neighbors from eavesdropping or accessing the connection. Each adapter measures 2.25" wide, 3.25" tall, and 2" thick—small enough to be used without interfering with adjacent outlets (see figure 4). A MegaPlug AV kit, which includes two Ethernet adapters, sells for \$169.99.



Figure 4. Actiontec Electronics' MegaPlug Ethernet adapter lets you transfer movies, music, and other rich media over residential wiring.

BLUEQ

BlueQ is a bracelet device that vibrates when your cell phone rings. It's intended to be used when you're in a noisy environment such as a dance club or walking through the streets of a major city, or

when your cell phone is stashed away in your purse or backpack. The device uses Bluetooth technology, lets you travel up to 30 feet away from your phone, and has a standby time of approximately 30 hours.

The bracelet comes in basic black (see figure 5a), but you can personalize it by downloading your favorite photo to create a Qskin (see figure 5b). Now your electronic gizmo is also a fashion statement. For more information, see www.bqwireless.com.

DEVICES

MOTION-SENSING CELL PHONES

GestureTek recently announced that NTT DoCoMo has licensed its motion-sensing technologies for use in their new FOMA 904i handsets (see figure 6). GestureTek's motion-sensing technology, called EyeMobile Engine, will enable the cell phones to be used for playing games and is expected to support gesture-based map browsing later in the year. Ultimately, NTT DoCoMo expects to use the technology to support a broader range of features, including menu scrolling and picture browsing.

Unlike other motion-sensing technologies, which are based on accelerometers, GestureTek's technology uses the cameras already embedded in handsets to track motion. This approach saves the cost and power consumption of adding new sensors to handsets and requires only installing some additional software. It will also let companies bring motion-sensing cell phones to market quickly at minimal cost.

If motion sensing becomes an important handset feature, we wouldn't be surprised to see a switch in the underlying technology. Accelerometers are generally considered more accurate and flexible because they sense motion in three dimensions, whereas camera-based sensing only uses two. However, until accurate and flexible accelerometers are needed, this cost-saving, camera-based approach seems prudent. **E**

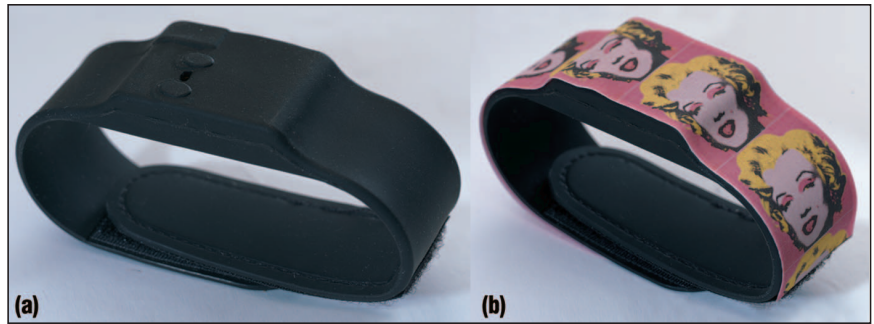


Figure 5. The BlueQ device vibrates when your cell phone rings. The device (a) resembles a bracelet and (b) can be personalized by adding a Qskin that you create by downloading a photo.



Figure 6. NTT DoCoMo has licensed GestureTek's EyeMobile Engine technology, which uses the cameras embedded in cell phone handsets to track motion.

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