

## Tapping a window of opportunity

(Ref: 4.08-2)

**Large glass panels that can respond to a small vibration are the subject of a new technology transfer agreement between a Parisian high-tech company and a UK marketing company. The technology enables a large glass area to act like a sensitive computer screen. It responds to a light tap or even a spoken word to offer details of the topic chosen. The panels can be used in shop windows and other display areas to provide interactive information for all kinds of sales, tourism and publicity.**

Imagine you are looking into the window of an estate agent and see a house that you might like to buy and by tapping on its picture you could immediately access all the details including an interactive tour of the rooms. Or you are sitting around a glass table in a café with a group of friends wondering where to go next and the table top displays all the local attractions. Maybe the table or the window will even speak to you or play some music.

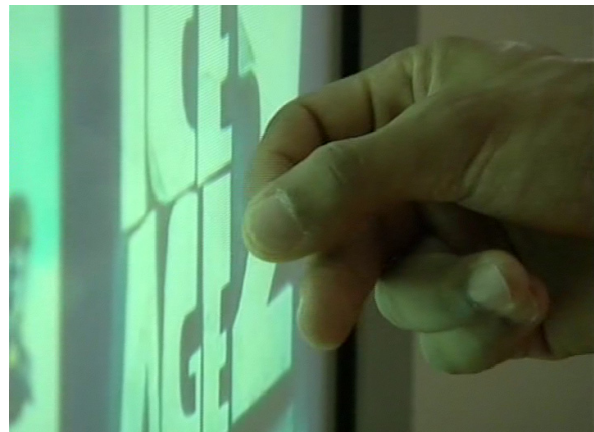
Both of these entertaining scenarios are now possible, thanks to technology developed by a French company, Intelligent Vibrations (I-VIBE), set up in Paris to exploit spin-offs from university research. Laurence Faigenbaume of the Paris Ile de France IRC based at the research support agency Anvar Ile de France, has known the company since it was first set up. "All their products are based on the detection of vibrations," she explains, "and we have helped them to write two technology offers, one for these intelligent windows and another for a sensor to detect and measure gas in air. The reactive windows have attracted a lot of interest and we believe they will ensure international success for the company."

### *Instant click*

Meanwhile in the UK, the Midlands IRC (MIRC) was working on a technology mission to Paris.

"We had been approached by a marketing company, CV1 Products Limited in Coventry," recalls MIRC's Steve Shorthouse. "They were looking for innovative technology that could be used in merchandising. We had come across I-Vibe in 2001 on a previous product search and were impressed enough to continue to look for applications for their technology. CV1's needs seemed to be a close match."

Following preliminary discussions between Alexander Hicks of CV1 and Jean-Pierre Nikolovski of Intelligent Vibrations, the two IRCs organised a meeting in Paris. MIRC provided some financial help and escorted the British company, while both IRCs assisted in the



negotiations. The technology match and the synergy were so good that the two men signed an agreement on the spot.

"We specialise in marketing and advertising at the point of purchase," explains Hicks. "We were looking for products that would make posters and printed images work harder. With Intelligent Windows, we can display text, graphics and video from a computer monitor or a back projection unit, either on a window or on a large glass panel in a frame. One application we are working on just now is the display of financial services for a major UK bank and we are also field testing several demonstration units. If you

analyse the hits you can also use it for market research."

### *How it works*

The technology is based around acoustic waves. At each corner of the glass panel, which can be several square metres in area, is a tiny sensor that detects bulk acoustic waves from the noise made by tapping it or from a human voice. The sensors are wired up to a computer that works out the point on the glass that has been tapped. They were first used to receive signals from a digital stylus, but when this proved unsuitable for commercial use, Nikolovski and his colleagues realised that the hand could also be a stylus and began to work on adapting the system to large areas for intelligent windows.

"The problem was to make sensors that could pick up very small vibrations, but not be affected by background chatter or traffic noise," he explains. "Now we have refined the system so that it can pick up a voice from across the pavement. We can also reverse the sensors so that the window acts as a microphone and talks to the user."

The patented system can use conventional graphics packages to create displays but relies on special design software to convert the impact point into a picture, a web page or a multimedia display. A new application often needs its own software solution.

### *Table talk*

The latest application is to turn the intelligent window from vertical to horizontal to form a table, and it has the enthusiastic support of both the IRCs and the partners in the agreement. The back projection comes from underneath the table, and transforms it into an information panel suitable for bars, hotels, company reception areas, railway stations and many other places. The talk-back feature makes it very user-friendly and Nikolovski foresees many other applications. "You could use it as a decorative panel for a party or even as a juke box. As hard disks get bigger you will be able to store your favourite movies. It's

also a very easy way to teach technophobes how to use computers.

"The glass is only 14 cm thick," he explains "and it is tough enough for public use. Spilt food or drink won't hurt it and you can wipe it clean, unlike a touch-sensitive screen which is easily damaged."

The IRC network database has been a key factor in the distribution of this unusual technology. "The IRC has been terrific," concludes Alex Hicks. "Without the help of Louise Richardson and Kate Duggan, none of this would have happened. I told them what we wanted and they found it." CV1 has been working hard to promote the technology - the intelligent window was featured on the BBC's Tomorrow's World programme and exhibited at the Innovate 2002 event in London.

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