New Technology Transforms Any Surface Into A Touch Screen

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New technology developed by a group at the Nanyang Technological University allows any surface to become a digital touch screen. The technology uses sensors and web cameras to pick up contact — even a light touch — on the surface.

The technology, once released, will be accessible to a large audience. It uses low-cost sensors and low-cost web cameras to make any surface sensitive to touch. Researchers say that any surface including a wall, window, tabletop or whiteboard, among other surfaces, can be used. The sensors are then hooked up to a flat-panel TV to display interactions.

Researchers at the Nanyang Technological University are calling the technology STATINA, which stands for Speech Touch and Acoustic Tangible Interfaces for Next-generation Applications. STATINA can be used for meetings, presentations and creative projects, though the possibilities are numerous. Researchers say it can make a wall or whiteboard into a virtual whiteboard, where all notes are displayed on a TV and saved on a computer.

The researchers at the university did not say whether STATINA might be used to make a current monitor or television screen into a touch screen, able to use touch applications such as Windows 8. The technology could provide a new wave of inexpensive electronics devices.

“Our innovative system is able to transform surfaces such as wooden tables, aluminum, steel, glass and even plastics into low-cost touch screens. It means in future, you could play computer games or draw sketches on walls or windows since almost all surfaces can be made touch-sensitive with our system,” said Nanyang Technological University Assistant Professor Andy Khong, in a university statement.

The group that developed STATINA has won awards for the new technology. The team won the Prestigious Engineering Achievement Award 2012 in December, presented by the Institution of Engineers Singapore (IES).

An article of the development and research for STATINA has been published in academic publications, patents and conference papers. The latest findings were published in the IEEE journal.

In the future, Professor Khong and his team of researchers are working to commercialize their invention. Commercialization also involves developing a more compact system and expanding its capabilities to include tracking fingers and stylus movements using optical cameras.

The project to develop STATINA was initially funded by the Media Development Authority (MDA) under
the National Research Foundation (NRF) Co-Spac grant call. Additional funding was recently awarded and the NRF Proof-of-Concept Grant was given to the group. The NRF Proof-of-Concept grant awards innovative research up to $250,000 for the development of a commercially viable prototype. The team is also working with the Institute of Technical Education under the Ministry of Education Translation Innovation Fund (MOE-TIF).

It is still a ways off before STATINA makes it to the consumer market, however it offers possibilities in computing, as well as innovation in other industries. The technology could be used in toys, home appliances, and other products beyond whiteboard functionality. It is also possible that the device could be used in collaborative art projects and other activities.