‘Technology of the future’ the winner at iNEMO design contest

Videocam device for aerial photography bags top prize

By NG SAI YING

HOW would you like to unlock your smartphone by tilting it? Or work out with a “smart” dumbbell that can detect the angle of your swing?

These were some of the entries to the Singapore Area University iNEMO Design Contest 2013 which aimed to showcase creative application ideas for ST’s iNEMO MEMS sensor-fusion modules.

The competition was organised by STMicroelectronics (STM), the world’s top MEMS (micro-electromechanical) manufacturer. It closed last Friday.

Competitors were required to conceptualise systems integrating various MEMS sensors such as accelerometers, gyroscopes and magnetometers.

MEMS technology essentially provides the “smart” functionality in modern-day electronics, making it able to “sense” specific changes in its environment and react accordingly.

“This is the MEMS sensor is easily found within any kind of mobile terminal, so you have it inside mobile phones, consumer products, in industrial devices. But it’s our vision that these kind of products will generate the new applications and new ideas. Working together with these people, I think it is also our responsibility to educate them to build what will be the technology of the future,” said Fabio Pasolini, general manager of Motion MEMS, STM.

“Technology of the future” is an apt phrase to use: A video camera stabiliser for aerial photography bagged the top prize of $10,000, while a “smart” dumbbell capable of detecting swing angle and velocity came in as the first runner-up. A “smart” bicycle application aimed at enhancing rider safety was the second runner-up.

Interestingly, team 3D Motion Passcode integrated MEMS motion-sensing capability into a smartphone security application. A prototype showed that smartphones could be unlocked by tilting or rotating the device, rather like a 3D game, adding a new dimension in security.

The invention, named “Air Signature”, was built on the idea of using gesture as a signature, something that will be more intuitive than simple number and pattern passwords.

The team from the National University of Singapore comprising Nizra Mohamed Nilufer and Leow Kai Chun is applying for a US patent. They foresee that this security technology can be further developed for other electronic devices – even credit cards and car keys.

The competition is angled as an educational endeavour with no plans for commercialisation underway, though Mr Pasolini commented that “these achievements perfectly reflect the vision STMicroelectronics has for MEMS technology, pushing its boundaries beyond the applications in smartphones, consumer electronics and automotive safety that we are more familiar with to create new applications and markets”.