Japan researchers testing tiny ear computer

March 1 2014, by Miwa Suzuki

An engineer of Japanese machinery maker NS West wears the 'Earclip-type Wearable PC', equipped with vital sensors such as pulse meter, thermometer and bluetooth wireless communication device, in Tokyo, on February 20, 2014

A tiny personal computer that is worn on the ear and can be controlled with the blink of an eye or the click of a tongue is being tested in Japan.

The 17-gram (0.59-ounce) wireless device has bluetooth capability and is

equipped with a GPS, compass, gyro-sensor, battery, barometer, speaker and microphone.

Wearable computing is thought by many commentators to be the next big thing in technology, with products such as Google Glass at the forefront.

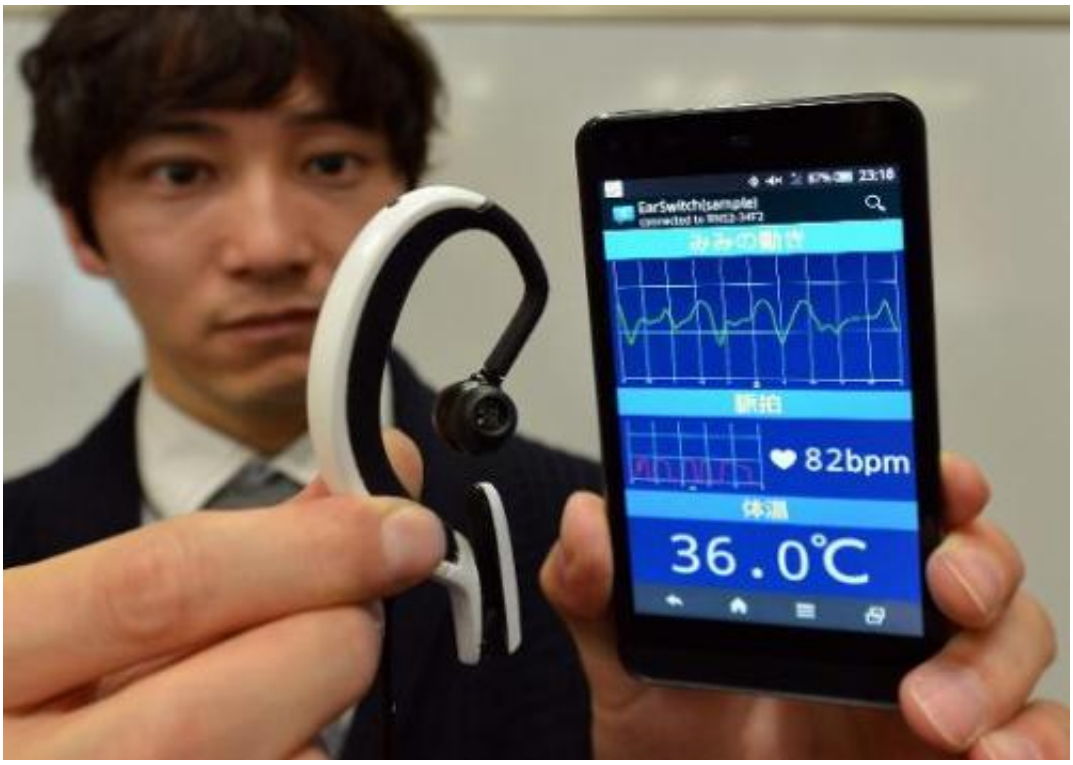
The device, known at the moment as the "Earclip-type Wearable PC" has a microchip and data storage, enabling users to load software, said engineer Kazuhiro Taniguchi of Hiroshima City University.

Its designs are based on traditional "ikebana" flower arrangements.

"We have made this with the basic idea that people will wear it in the same way they wear earrings," Taniguchi told AFP in a recent interview as he showcased a black prototype.

The system, which developers are hoping to have ready for Christmas 2015, can be connected to an iPod or other gadget and would allow the user to navigate through software programmes using facial expressions, such as a raised eyebrow, a stuck-out tongue, a wiggle of the nose or by clenching teeth.

The device uses infrared sensors that monitor tiny movements inside the ear, which differ depending on how the eyes and mouth move.



An engineer of Japanese machinery maker NS West shows the 'Earclip-type Wearable PC', equipped with vital sensors, such as pulse meter, thermometer and bluetooth wireless communication device, in Tokyo, on February 20, 2014

Because the user does not have to move either hand, its developers say it can serve as "a third hand" for everyone from caregivers to rock-climbers, motorbike riders to astronauts, as well as people with disabilities.

"Supposing I climb a mountain, look at the sky at night and see a bright star up there, it could tell me what it is," Taniguchi said.

"As it knows what altitude I'm at, which direction I'm looking and at what angle, it could tell me, 'The bright star you are seeing now is Sirius'."

Using a smartphone to connect to the Internet would mean you could be automatically put in touch with people in faraway places who are doing the same thing as you.

"This could connect you with a person who is looking at the same star at a remote place at the same time," enabling the people to swap impressions, Taniguchi said.

A second version of the device might be pressed into use to help relatives keep an eye on elderly family in greying Japan.

The earpiece, which could also function as a hearing aid, could monitor the wearer's health, including their pulse and body temperature, while logging how often they eat and sneeze, offering early warning of the onset of illness.

An onboard accelerometer could tell when the user falls and instruct the smartphone to pass information to relatives, or call an ambulance based on GPS data.

Tests are being carried out in Hiroshima, with the aim of commercialising the device from April 2016.