



Dublin: 15.02.2008 10:07 AM

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Education & Science

'See-through-the-wall' radar to be commercialised

13.02.2008 - A team of researchers at Dublin Institute of Technology (DIT) have created a new radar system based on ultra-wideband (UWB) technology that can be used in a variety of applications ranging from post-disaster emergency evacuations to medical operations and anti-collision systems in the cars of the future.

The team, with the backing of Enterprise Ireland and under the guidance of Bell Labs' Centre for Telecommunications Value-Chain Research (CTVR), has developed new antenna designs for UWB detection systems.

UWB precision radar imaging technology – 'see-through-the-wall' radar – can be used in a range of different sectors, from locating persons buried underground in emergency situations, to providing accurate data on patients under ongoing medical supervision, to vehicular anti-collision systems.

The team at the DIT's Antenna & High Frequency Research Group (AHFR), part of the CTVR's wider research group, has developed new antenna designs that increase the levels of accuracy of UWB radar systems.

In turn, improved accuracy of UWB radar will ultimately allow developers to create applications that can be promoted and marketed commercially.

"This research work, which has already been the subject of papers published in some of the world's leading scientific journals, is also hugely significant from a commercial point of view," said Professor Donal O'Mahony, director of CTVR.

"Our goal from the beginning has been to facilitate the efforts of companies in Ireland to unlock the commercial value of this new technology," O'Mahony added.

Last year, the DIT team developed new antenna designs to allow for high-speed links between communication devices.

In addition, vehicular or automotive radar systems are currently being promoted as another possible use for UWB technology. These systems can potentially be used to improve automotive safety through collision avoidance systems, safer use of airbags, restraint system arming and parking assistance.

The use of UWB technology in communications systems evolved during the Eighties to meet the needs of US government agencies, especially for communications systems with low intercept and detection probability. Today, interest in UWB devices extends to civilian use.

By John Kennedy

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