

Improving internet access on the move

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The on-board entertainment and internet access enjoyed by train passengers could soon be transformed by new technology developed at the University of York.

Researchers in the Department of Electronics have overcome two of the major technological challenges which severely limit the services currently provided on trains.

In order to offer internet services in any location, trains need to be equipped with a dish, or 'reflector', that both transmits to and receives signals from an orbiting satellite. At the moment this is only possible on a relatively small number of routes where there is sufficient headroom between the carriages and tunnels or overhead cables. Using alternative technology to satellites results in reduced bandwidth and patchy geographical coverage.

A dome-like 'lens', which is much lower in height, is an alternative to a dish but these have previously been very expensive to make and less effective at receiving signals. Dr John Thornton, Research Fellow at the University of York, has developed a much simpler version using common plastics that outperforms those currently available.

The team led by Dr Thornton has also invented a system that will allow a single lens to track more than one satellite at a time, offering train operators increased reliability and the opportunity to offer passengers a much broader range of services.

Dr Thornton said: "There is a growing expectation among consumers that they should be able to enjoy access to the internet and other media wherever they are.

"Providing these services on a moving vehicle such as a train, anywhere in Europe, is a huge technological challenge and that is reflected in the limited number of routes where they are currently enjoyed by passengers.

"Our research should make it far easier for train operators to offer a broader range of internet and live media services in many more locations and at a lower cost."

Source: University of York

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