

Technology Paper

Making Mobile Data a Reality



Wireless Roaming on Trains

Uniquely the Brand Communications Solution is offering train passengers a reliable, high speed and seamless mobile connection throughout the whole journey, allowing the mobile user access to their LAN, e-mail or internet on rail journeys. This type of wireless access is being used to help more and more people back into using the train.

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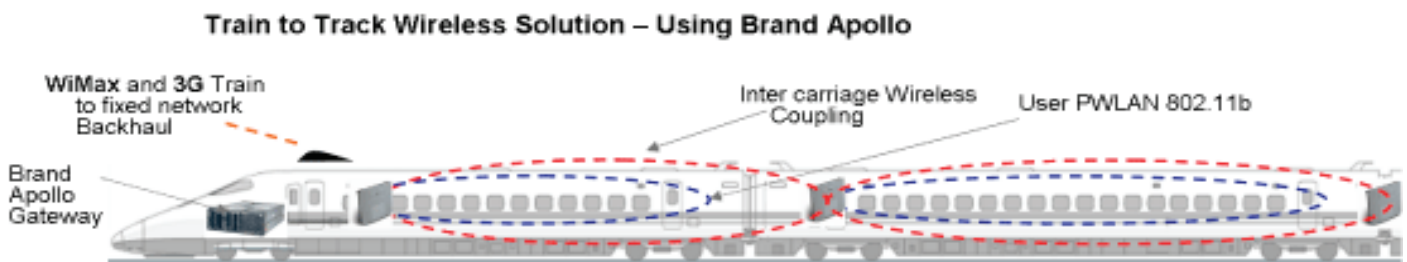
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Train Operators are realising that the demand for internet access from their business travelling customer is increasing. Many surveys carried out over the past eighteen months show that wireless net access could tempt many more people into using the train, with over 72% of business travellers saying Wifi web access would make them likely to choose trains over cars and planes.

To exploit these opportunities, train operators need a fast, reliable way to allow their passengers to connect to both the web and the passengers LAN from any location along the train route, even through area with little communications coverage including tunnelled sections.

Solution Overview

Information can now be directly accessed from the internet or a corporate LAN at any time, from any location on track using the Brand Communications solution. The system works by flooding rail carriages with a wireless signal that allows passengers to connect to the internet via a control unit located in the train. Passengers can use any laptop or PDA fitted with a standard Wifi adapter.



Key to the operation of the system is the communications engine developed by Brand Communications. The system automatically manages data devices and aggregated bandwidth from whatever is available to it along a given route. The system can be sending data down all the public bearer operator networks, switched and packet at the same time and will automatically bring on-line high speed Microwave, PWLAN or Satellite as they come into range. The system continually monitors the performance and integrity of each data pipe to ensure that optimal use is made of it. The system can provide seamless roaming across all the bearers or aggregate them as required to achieve a high-speed service, ensuring continuity of connection with the end user having to re-start their internet session. The system has also been tested with 3G handsets and technology and the train solution will incorporate this as it becomes generally available.

If the signal is lost, for instance during travel through a tunnel, the control unit will recover the internet connection when the train has regained a signal, buffering data so that users do not have to re-connect to the internet.

The solution also includes the Brand Communications web optimiser engine which ensures that heavy graphics are optimised for un-wired connections, reducing the size of web site downloads and so enhancing the user experience.

Solution Benefits

The key to a successful train born project or any other mobile solution for that matter is the management of the backhaul – it must be reliable and very intelligent and have a total understanding of the characteristics and limitations of each bearer type.

Brand are currently working on many different train projects over Europe and our solution is very universal and has been fully tested with a multitude of bearers from Wifi, WiMax, Satellite, GPRS and 3G. There are also versions adapted to work with asymmetric satellite including DVB and also DAB.

Brand has developed and patented a bonding mechanism which when coupled to it's communications link management software delivers the complete solution. Brand can bond multiple and dissimilar pipes, to create a high speed link that is tolerant of failure and delivers good quality of service to the passengers on the train. It can be enabled to have prioritisation should the solution require to support some voice based applications such as VoIP or the train operator wishes to run train management applications which carry a higher priority access to the bandwidth over customer use.

The Brand solution is not a bespoke one. It is a standards based solution that has been used for a number of years for all kinds of remote and mobile working and have over hundreds of thousands of users worldwide. Typical enterprise solutions include organisations like NGT (National Grid Transco), who have thousands of users working on a system in the UK. The Iridium satellite data network also uses our product as are many other consumer and enterprise mobile data applications.

Brand is a 14 year old privately owned company who specialise in this market place. That long term experience puts Brand in a unique position to understand the needs of the mobile user or application. The Brand solution will enhance the train wireless solution into a fully functional reliable system.