



Nomad Digital

HIGH-SPEED PASSENGER WIFI





HEATHROW EXPRESS LINE

For Mainline rail services and London Underground Bakerloo, Circle, District and Hammersmith and City Lines

London Paddington  

Change here for free transfer service to Terminal 4

Heathrow Terminals 1 2 3

Heathrow Terminal 5



THE CHALLENGE

Heathrow Express is London's fastest and most frequent service to and from Heathrow Airport. With links to all terminals, it services on average 15,000 passengers per day, and provides a reliable and consistent service to ensure that a first-class experience is delivered.

In order to provide customers with a better experience, Heathrow Express required a reliable high-speed, high-bandwidth Internet link with its trains. The challenge was to ensure that, on a time-sensitive journey of 15 minutes, passengers would have the opportunity to access the Internet reliably and quickly to check business and personal email, even in the 6 km tunnel section of the route.





THE SOLUTION

Nomad Digital partnered with T-Mobile to build an optimised wireless network along the entire Heathrow Express route. This has enabled T-Mobile to offer passengers an on-board WiFi service with a typical broadband connection speed of 2Mbps to each train.

Nomad's High-Speed Data

Nomad's data tunnel work's by seamlessly switching between the best available signal, without packet loss, high latency or timing out of sessions.

The on-board systems is managed by a central unit called the CCU, which uses defined channels to transmit data to the Home Agent located at the customers Network Operations Centre. The system is fully scalable and can add any application to the network, thus adding a new dimension to transport companies services.



Passenger WiFi in Tunnels

In an industry first, Nomad has provided Heathrow Express's customers with high-speed broadband connectivity in the 6 km tunnel using WiMAX radios. Carriage-mounted 'shark-fin' aerials have created the necessary high-speed radio transmission links, whilst electronics are mounted in custom-built storage units along the track to provide even faster speeds than standard cellular networks in order to provide customers with faster communications where there is usually no signal.



THE RESULT

Heathrow Express has maintained its reputation for delivering outstanding customer service, proactively catering to the demands of the modern traveller, whether on business or leisure. The high-speed connectivity service is provided on a journey, which (although short) is critical to the passenger in communicating either prior to, or immediately on return from overseas air travel at the busiest international airport in the world.

The installation of Nomad's wireless connectivity system on the entire fleet was carried out seamlessly and without interruption to service with each five-car train being equipped in just one and a half days whilst in the workshops for routine maintenance.

Since integration, Nomad's high-speed system has consistently provided high-speed access for the millions of business and consumer passengers travelling on the service every year, and has cemented Heathrow Express as the UK's number one train operator.

“The new Wi-Fi HotSpot service has enabled customers aboard the Heathrow Express to make more effective use of their time. The usage, from the time of launch, has been consistently twice the assumed level in the original business case with an average session log-on time of about 20 minutes. Delivering outstanding customer service is what our customers expect, and giving our time-sensitive travellers the choice to connect throughout the 15 minute trip to or from the airport is an excellent example of how Heathrow Express stays online.”

**Brian Raven,
Managing Director,
Heathrow Express**



Nomad Digital

About Nomad Digital

Nomad Digital is the world's premier provider of high-speed data communication solutions to the transportation sector.

Nomad specialises in the provision of "always on" mobile data solutions to operators, delivering an enhanced customer experience, additional revenues and reduced operational costs. Applications include;

- Passenger WiFi
- Real-time CCTV
- Operational data download
- Integrated media systems

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BUSINESS CASE

Broadband communication at high-speeds

By providing a broadband tunnel capable of high-speeds, Heathrow Express now has new ways of enhancing their passengers experience and developing new revenue streams through a chargeable WiFi model.

In addition, streaming information between train and shore has enabled Heathrow Express to have a fully integrated communications platform that is able to incorporate a number of additional applications at little cost. The inclusion of an integrated applications solution with a broadband tunnel, enhance Heathrow Express as a innovator in the transportation sector.

THE FUTURE OF HEATHROW EXPRESS

Heathrow Express has already extended the Nomad system to provide mobile ticketing options to customers, in order to speed up their travel between Heathrow and London.

Heathrow Express is also discussing further commercial possibilities for the system. In addition to passenger WiFi benefits, the fact that moving trains can now have a consistent, high-speed data connection creates major opportunities for the development of other operational and security applications.

Delivery of live CCTV e.g. to a Control Centre, or transfer of 'real-time' operational and management information, are just some of the opportunities available to train operators and asset owners.

