



Nomad Digital

NORWAY GETS  
CONNECTED WITH  
ON-BOARD  
ENTERTAINMENT





# NSB ROUTES



## THE CHALLENGE

Norges Statsbaner (NSB) is Norway's largest passenger railway company. Operated by the Government of Norway, NSB serves over 52 million passengers a year, both intercity and regionally. In order to serve its passengers better, NSB required a broadband train connectivity solution for a host of benefits including passenger internet, on board entertainment and operational applications, including retrieval of CCTV footage and passenger counting data.

The solution also had to involve the ability for the moving train to switch between a number of different mobile operators including nation-wide broadband 450 MHz coverage outside of 3G coverage in urban areas. NSB required a system with the ability to switch to proprietary radio such as WiMAX, to upgrade bandwidth in tunnel areas.

Timescales for the solution involve a fleet wide rollout for delivery by 2012 for existing rolling stock. In addition NSB have ordered 50 new Stadler trains to be scheduled for delivery starting in 2010, which will also arrive, fitted with Nomad's kit.



*“This is the first time that a national railway in Europe has installed an integrated IP solution for their trains which allows Internet access, live passenger information, on-board entertainment and operational applications. It has been a pleasure to work with NSB on bringing train travel into the 21st Century.*

*Nigel Wallbridge,  
Executive Chairman,  
Nomad Digital*

## THE SOLUTION

With experience on both the Heathrow Express project and the Southern project, Nomad were the best partner for NSB due to their extensive knowledge of multi-bearer switching and deploying WiMAX trackside networks.

Because of Norway's fluctuations in mobile signal and tunnelled tracks then this was the perfect solution for NSB as they could combine high-speed trackside networks with economic 3G solutions.

### Real-time Passenger Information Systems

Included within the passenger WiFi requirement is a portal page that passengers can log on to and gain real time information about their journey, as well as key information about the destination that they are heading to. They are also able to use this portal to log onto the internet with a credit card.

Nomad's Fleetmanager system and Service Desk is used for the added purpose to diagnose and report errors on the system.

### Entertainment at the Touch of your Fingertips

In addition to the high speed internet service, Nomad has also supplied NSB with the ability for adding entertainment onto their portal so that passengers can enjoy films, games or music whilst on inter-city or commuter journeys.

Content for the entertainment portal is stored on the on-train server and manageable remotely in order to update new and remove old content.





## THE RESULT

Due to the consistent effort of Nomad and NSB, now passengers will have facilities to improve their passengers' experience through on-board WiFi and entertainment applications. These services will enable passengers to use the commute time better for working and sending email correspondence.

NSB will also have access to enhanced operational benefits to improve real time security and operational benefits, in order to reduce costs and improve their business efficiencies.

**“Choosing Nomad as a partner has enabled us to give our customers both the ability to connect and entertain, whilst travelling on long journeys.**

**Nomad’s experience in the worldwide railway market has meant that they have consistently met all of our requirements, as well as been flexible and accommodating to our needs.**

**Now, we have increased the quality of passenger experience, while enjoying the benefits of new revenue channels.”**

**Arne Vidar Hesjedal,  
Project Manager,  
Strategy & Business Development  
NSB**



# 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

### Entertainment Possibilities

Nomad is a thought leader in the field of vehicle to shore communication possibilities, and understands the possibilities for developing new revenue streams for train operators and passengers.

With extensive experience in developing and installing on-board media systems, Nomad understands that through offering both free of charge and charged content, companies will enhance their value added services to entice customers into using their services.

## PHASE 2 EXPANSION

Nomad has been discussing other possibilities with NSB regarding the expansion of wireless services on further fleets, trackside WiMAX networks where there is reduced coverage, or operational and security benefits to staff and passengers.

These benefits will provide added services to supplement NSB's business portfolio, whilst enhancing their company / passenger relationship.

