n°12

Factsheets

ERTMS DEPLOYMENT IN BELGIUM & THE NETHERLANDS

CROSSING BORDERS AT HIGH SPEED

Belgium and the Netherlands are two countries with a long-standing railway tradition, but which also invested massively to develop a modern High-speed rail network in recent years. In both countries, High Speed has by definition a European dimension, as lines connect Amsterdam and Brussels to London, Paris or Cologne. It also comes with a specific challenge – cross-border traffic – in which ERTMS can play a major role. It therefore does not come as a surprise that Belgium and the Netherlands were the first ones to achieve a High-speed ERTMS Level 2 cross-border connection in revenue service since the end of 2009.

What are the main High-speed projects in Belgium? What is the status of ERTMS deployment?

Located at the very heart of Europe, Belgium is a country of which invested massively in the past few years to upgrade its railway network. It subsequently became the first European country to have a complete network of High-speed lines from border to border in commercial service, with links to the UK, France, The Netherlands and Germany.

The two most recent connections to Germany (HSL3) and the Netherlands (HSL4), are already running in commercial service with ERTMS level 2:

- **HSL 3** connects the city of Liège to the German border. The 56 km long line (42 km dedicated high-speed tracks, 14 km modernized lines) came into commercial operation on the 15th June 2009. It is currently used by international Thalys trains and ICE trains. After completion of the line, the travel time between Liège and Cologne has been cut to one hour, whilst Liège to Aachen is achieved in about 20 minutes at speeds up to 260 km/h.

- **HSL 4** connects Antwerp to the Dutch border, where it meets the HSL Zuid (see below). The line is 40 km long, and consists of a dedicated high speed track. It is connected to a modernised railway line that runs from Brussels to Antwerp. HSL4 first opened in June 2009 and since December 2009, Thalys trains are running using ERTMS Level 2. Trains are now travelling at up to 160 km/h from Brussels to Antwerp (47 km), whilst on the "dedicated" part of the line reaching speeds up to 300km/h. HSL 4 is currently used by Thalys and fast internal InterCity trains.

What are the main High-speed projects in the Netherlands? What is the status of ERTMS deployment?

Like Belgium, the Netherlands has one the most densely spread railway networks in Europe and a significant railway culture and tradition. The government approved in 1997 the first national High-speed rail project, known as HSL Zuid, which links Amsterdam with the Belgian border and is viewed as a crucial step in linking the country to Brussels, London and Paris.

The HSL Zuid is a dedicated 125 km High-speed rail line. It features state-of-the-art ERTMS level 2 technology. Whilst the northern part (from Amsterdam to Rotterdam) is in commercial service with ERTMS level 1 since September 2009 (used by TRAXX locomotives and Thalys trains), the southern section is in commercial service with ERTMS level 2 since December 2009.

Avenue Louise 221, B-1050 Brussels, Belgium
Tel: + 32 2 626 12 60, Fax: + 32 2 626 12 61, ertms@unife.org

What are the benefits brought by ERTMS to passengers on the high-speed line crossing Belgium and the Netherlands?

Amsterdam, Paris and Brussels are now closer than ever thanks to the new High-speed line linking Belgium and The Netherlands, whilst travelling times to Paris and Cologne have equally been reduced thanks to HSL3:

- From Amsterdam, it now takes 3h18 to reach Paris (51 minutes travelling time reduction) and 1h54 to reach Brussels;
- From Paris, travelling time to Cologne has been cut to 3h14 (36 minutes reduction).

This considerable travelling time reductions bring significant benefits to passengers, facilitating and improving travel of both tourist and business travellers.

As a side effect of railway investments, modernization and upgrade, Belgium now enjoys two of the most spectacular railway stations in Europe: the fully-renovated "Antwerpen Centraal" Station, and the scenic, futuristic Liège-Guillemins station, which was designed by Santiago Calatrava and has become the city's landmark, known all over Europe.

Will ERTMS also benefit directly to infrastructure managers and train operators?

Yes - ERTMS also considerably reduces infrastructure and maintenance costs and increases safety, reliability, capacity and interoperability. Once the full line from Paris to Amsterdam will be equipped, it will also strongly reduce the number of signalling systems required to run on this line – from seven to one. This will greatly facilitate operations along the lines for both existing operators and new entrants.

Are Belgium and the Netherlands also planning ERTMS investment on their freight and conventional networks?

Yes - in addition to HSL Zuid, The Netherlands is also installing ERTMS on its freight network. In particular, the Betuweroute, part of the Havenspoorlijn, is now operating since July 2007 with ERTMS level 2 without any fallback system. The rest of the Havenspoorlijn, the new railway link connecting the Europoort of Rotterdam with Germany, is to be fitted with ERTMS level 1. The Netherlands has also opted for ERTMS to be installed in a commuter line: Amsterdam-Utrecht (30 km, 4-lanes). This line, where the legacy system "ATB" was installed, is now operated with ERTMS level 2. Lastly the new "Hanzelijn" line, connecting the cities of Lelystad and Zwolle, is fully equipped with ERTMS level 2 and in operation since the end of 2012.

On the Belgian side, the country goes forward to fully equip its entire network in the long run. Frame contracts have been signed in this respect comprising a migration strategy at thousands of signals via the legacy system TBL1+ together with ETCS level 1. TBL1+ ensures a fast increase of the safety level until 2015 and ETCS Level 1 makes the network interoperable for ETCS trains. The whole network shall finally be operated in the ETCS level 2 mode. It has also plans to upgrade the High Speed connections with France and the UK to ERTMS – however final completion dates for these sections have not yet been provided.

SUPPLIERS

ALSTOM AnsaldoSTS AŽD PRAHA BOMBARDIER CAF mermec group SIEMENS THALES