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Conference Proceedings
London, 25 May 2011

Using innovative transport technologies to stimulate regional development

Sustainable, cost-effective solutions to improve accessibility to, from and within peripheral regions in North-West Europe

Using innovative transport technologies to stimulate regional development: 25 May, 2011

Improved transport links underpin jobs and growth, as reflected in the EU's 2020 Strategy, the European Commission's review of Trans-European Networks, and a new transport White Paper. Meanwhile, a major debate on future EU Cohesion Policy and funding streams post-2013 continues, all within the framework of a new European Territorial Agenda.

The Sintropher conference explored:

- how innovative transport technologies can enhance regional connectivity;
- the barriers and opportunities across the EU;
- making things happen – in particular financing of investments and capturing development benefits.

Contents

Additional conference resources, including video presentations, audio recordings and slide presentations, can be found on the Sintropher conference website: **www.sintropherconference.eu** and clicking on downloads

Faster trains and the new railway age

There is a key potential market for tilting trains on lines complementing the HS network, says Pierre Laconte, former Director, UITP, particularly at national borders which are less well served by national operators. A case in point is the forthcoming link between Brussels, Luxembourg and Strasbourg

A study by the International Association of Public Transport (UITP) suggests that the relationship between density, transport and land use is critical. Urban density is the key to modal split, and rail has a brighter future in regions with dense human settlements. Mr Laconte outlined the traditional relationship between railways, the economy and the ways in which transport modes have influenced development patterns.

In the railway age, he suggested, the railway was connected with, and supported by, the industrial world through private investment in infrastructure, rolling stock and operations; all well rewarded, at the time, by the market. Conditions changed in the US when the automobile was allowed to use the growing road network mostly free of charge, while the railroads' infrastructure did not get the same public support. Railways had tended to produce high density development around the stations, whereas roads and car parks could be developed anywhere, and their land use and space consumption was much higher than that required by a rail-oriented city.

As a result, unbridled US urban sprawl has become common and, as sprawl cannot be served effectively by rail, rail use has declined. Over time, a similar urban dispersal model also gradually became dominant across much of Europe.

Yet, says Mr Laconte, economic and environmental pressures are finally seeing a reversal in this trend, and he continued to outline the many benefits that fast rail services – aside from high speed rail – have to offer.

A revolution in rail transport started in Japan in 1962: the Shinkansen (220 km/h), followed in 1976 by the European high speed (HS) train: in France, the TGV PSE (270 Km/h), followed in 1991 by the German ICE (300 km/h) and the new ICX (250 km/h). The latest models allow a speed of up to 350 km/hour on dedicated straight track. Double-deck rolling stock allows the capacity of trains to be adapted to meet traffic growth on existing HS lines. The network is constantly expanding, with the main equipment suppliers being Alstom, Ansaldo/Bombardier, Bombardier/Talgo and Siemens.

The number of train sets and the length of track is also expanding, mainly in Europe and Asia, but also in Morocco, Turkey and Argentina. Yet in the US and UK, lack of political support has prevented HS rail from finding the right conditions for development.

The Birmingham-London supertrain is being proclaimed as the totem of a new golden age in British transport. Already, however, many experts suggest that the reality will fail to match the rhetoric. ' "High-speed" rail will, in fact, almost certainly slow down the journeys of more rail users than it speeds up,' proclaimed an article in the UK daily newspaper *The Daily Telegraph.*

The Advanced Passenger Train

Back in the 1980s, the UK developed a medium speed rail system (the Advanced Passenger Train) based on increasing speed on existing tracks, thanks to a system allowing the trains to tilt when travelling around curves. The pioneering UK technology was abandoned, but similar continental technology developed by Fiat Ferroviaria (Pendolino) was introduced nearly 20 years later, and the well-known UK 'tilting trains' designed in Italy were successfully adopted by Virgin for the West Coast main line.

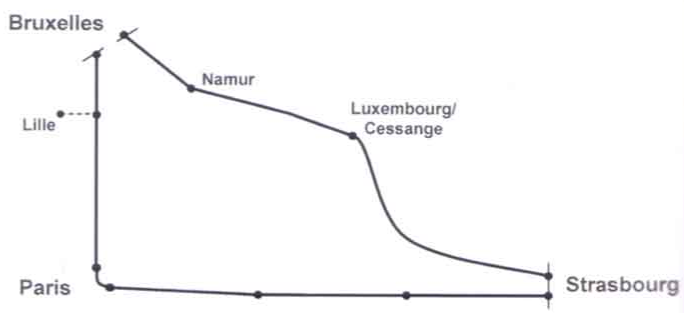
The system allows Virgin's trains to handle sharp curves much faster than before, increasing their commercial speed by some 30 per cent. Passenger comfort has been shown to be greater than in conventional trains when traversing curves. In addition, in the event of a crash, passenger safety is higher – as was shown by a spectacular accident that resulted in only one fatality. The carriages remain intact in the event of an incident, and shock absorption is concentrated at the front.

About 500 tilting train sets have been sold and their supply is becoming ever more diversified. Delivery is notoriously slow, which in the UK slows down their expansion to other trunk lines.

The operating experience in Italy, Switzerland and Germany indicates that the relative complexity of the tilting system suggests that it is best managed by a single operator as opposed to a combination of players.

Yet there is a key potential market for tilting trains on lines complementing the HS network, particularly at national borders, which are less well served by national operators. A case in point is the potential link between Brussels, Luxembourg and Strasbourg, presently served by three national operators with a combination of traditional rolling stock, and with the trip taking more than five hours for a distance of 450 km.

Currently, passengers for the Strasbourg parliament take the HS train via Lille and Paris, which takes four hours. The line has finally won support despite SNCF lobbyists, because the four



'The operating experience in Italy, Switzerland and Germany indicates that the relative complexity of the tilting system suggests that it is best managed by a single operator as opposed to a combination of players'
Pierre Laconte

Tilting train technology developed by Fiat Ferroviaria (Pendolino) was successfully adopted by Virgin for the UK West Coast main line

operators involved – Swiss, Belgian, Luxembourg and French – having jointly commissioned a study by McKinsey, were convinced by the the study's surprising and persuasive results.

The study indicated that the use of a tilting train was set to make an operating profit of €5 million per annum, as opposed to the current heavy losses, because of the huge attraction of shorter traveling times. The plan is to provide three trains per day from Brussels to Zurich, and additional onward trains to Brussels, Luxembourg and Strasbourg. The agreement has been made, and the project looks set to move ahead. The Swiss operator will oversee the call for tenders, in effect acting as a single operator across three EU countries. The final Memorandum of Understanding will be signed next year, and the service should be operational by 2016 if all goes to plan. It makes economic and environmental sense to have a much more direct, tilting link via Namur and Luxembourg, which are bypassed on the HS route.

The choice was between using French Railways' HS services via Lille and Paris airport and developing a tilting train service run as a single operation, responsible for the whole link (and its continuation to Basel, Zurich and the successful Swiss tilting rail network). On 20 May 2011, an agreement between all parties involved was announced in the press in favour of a tilting train.

The liberalisation of passenger rail services in Europe is also opening the door for transnational private operators to use existing track. There is a strong movement in France towards the privatisation of rapid regional express services (TER). The Alsace region is strongly in favour of becoming independent from the SNCF, making it quite possible that we would have a combination of different public transport authorities, or a new private operator, that could play a key operational role.

Future steps: technology

Another technical innovation still has to fully materialise on the market: bogies combining the rigidity needed for HS on straight dedicated track and the light flexibility and tilting capacity needed where the service continues on conventional track. In France, the TGV travels at 300 km per hour on the straight tracks, and then suddenly falls back to 150 km per hour when on normal track, and it has no tilting capacity.

There seems to be great potential for a seamless travelling future future that is partly TGV, partly tilting and partly using diesel train if needed. Such a system could certainly have great potential relevance in the UK for the planning of HS2, where some 'classic compatible' trains will continue to Scotland on conventional track. ■