VIEWPOINT Michel van Liefferinge

Delivering interoperability in the Single European Railway Area

The European Rail Traffic Management System has now reached a level of maturity and stability to permit rapid deployment, which will help to reduce operating costs and improve the competitiveness of rail, believes **Michel van Liefferinge.**

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With a background in telecommunications engineering, Michel van Liefferinge had 20 years' experience in the signalling division of Alstom where he served in various posts including Vice President, Railways, and Managing Director of Alstom's ERTMS development centre in Charleroi. A consultant since April 2011, he is currently acting as UNIFE General Manager.

This month, the European Commission's Rail Interoperability & Safety Committee is expected to vote on the European Railway Agency's proposals for an update to the Control Command & Signalling TSI, introducing the first maintenance release for Baseline 3 of the ERTMS specifications.

The European signalling supply industry is looking forward to a positive vote in the RISC, which will further improve the stability of ETCS while ensuring backward compatibility. To protect the significant investment already made using Baseline 2, particularly in countries like Italy and Spain, the industry has made concerted efforts to ensure that vehicles fitted with Baseline 3 onboard equipment will be able to run with Baseline 2 trackside equipment.

In addition to facilitating interoperability, ERTMS offers major advantages in terms of capacity, speed, and reliability — all of which are fundamental to successful railway operation. As the European Union seeks to shift passenger and freight traffic away from roads, an efficient and attractive rail network is essential. By targeting the integration of European national networks, ERTMS is a fundamental building block supporting the aspiration of a Single European Railway Area.

In addition, ETCS has now been voluntarily adopted as the preferred choice for train control and ATP in more than 40 countries outside Europe, demonstrating that it is truly state of the art when it comes to signalling technology.

Interoperability within ERTMS is not just about geography, but also between suppliers. Having multiple suppliers offers a more open market with increased competition, driving lower costs for the customer. For example, the 650 km Madrid – Barcelona high speed line carries at least 16 trains a day each way using ETCS trackside equipment from three different manufacturers and onboard units from four more.

However, there is still much to be done at the political level to ensure that the benefits of ERTMS are realised throughout the European rail sector. Timely execution of all the actions agreed in the 2012 Memorandum of Understanding, signed by all relevant stakeholders (RG 5.12 p3), is needed to achieve the deployment objectives set by the European Commission and being followed up by ERTMS Co-ordinator Karel Vinck. Among them, the elimination of national rules and convergence towards harmonised operating rules is paramount.

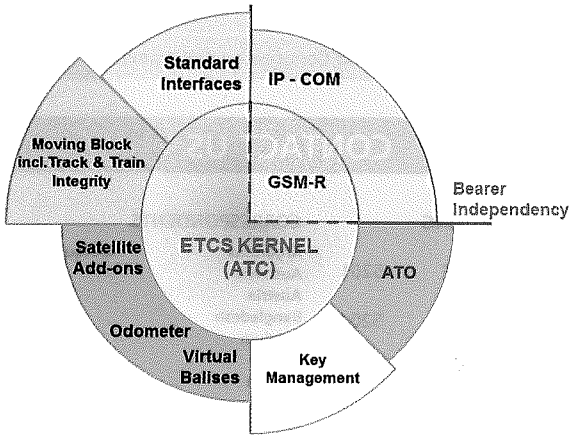

Fig 1. The evolution of ERTMS must accommodate additional functionality around a backwards-compatible core.

It is up to the rail sector to ensure that all available funding is used as effectively as possible to encourage greater deployment. So we welcome the confirmation that the EU's Connecting Europe Facility multi-annual framework has earmarked between €700m and €1·1bn for ERTMS in the 2014-20 budget period.

> *'More than 1 billion train-km have now been operated using ERTMS-equipped trains'*

The European railway supply industry is committed to making ERTMS a success, offering its full support to ensure that Baseline 3 is a stable system. Stability and a clear roadmap are essential to enable potential adopters to plan their investment, including long-term maintenance of this flexible, software-based train control system. Of course, if ERTMS is to remain the leading CCS technology it will need to have the capability for adding new functions. This paradox must be solved by adopting an architecture under which a stable ETCS kernel that ensures backward compatibility is independent from any additional functionalities (Fig 1).

A good example of the strong public-private support for future development of ERTMS is the collaborative effort by the whole sector for continuing enhancement in the context of Shift2Rail. This European joint undertaking for railway research has dedicated one of its five Innovation Programmes to Advanced Traffic Management Control Systems, which aim to build on existing ERTMS and ETCS technology.

ERTMS has clearly emerged as one of the most successful European industrial development programmes, helping to make rail transport more competitive against both air and road. The system has now reached a stage of maturity where, globally, more than 1 billion train-km have now been operated using ERTMS-equipped trains.

Complete national network deployments are underway in more and more countries, with Belgium and Norway joining Luxembourg, Denmark and Switzerland, to cite a few European examples. Nevertheless, we believe the sector must continue to speed up deployment, with EU support, as a shorter migration from the 'Class B' legacy signalling systems will drive down the overall cost and further increase the competiveness of rail.

Despite the naysayers and a handful of reluctant railway administrations that are still dragging their feet, ERTMS has become *the* single worldwide standard for interoperable signalling. The European industry should be proud of its achievements. ■