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Expert Report Paves Way for £3.5 billion European Rail Traffic Management System

The Strategic Rail Authority and Railway Safety today published a cross industry report on the fitment of the European Rail Traffic Management System ('ERTMS') in Britain.

For the past year the ERTMS Programme Team ('EPT') has been analysing the various technical options for introducing the system, which embrace state-of-the-art train and track technologies. ERTMS enables trains to operate on compatible signalling systems across European borders ('interoperability'), provides Automatic Train Protection (ATP) safety systems, and can increase network capacity to enable growth in passenger numbers.

The fitment of an ERTMS system is required under EU Directives on 'Interoperability' and is programmed to become standard across all of Europe's mainline networks, as existing systems are renewed. It was also recommended by Professor Uff and Lord Cullen in their report on train protection systems, which recognised that more work was required to determine the programme for fitment.

Commenting, SRA Chairman, Richard Bowker, said:

" Today's report is a major step towards the development of the right ERTMS system for Britain which will provide the benefits of European compatibility, an even safer journey for passengers and greater network capacity. Safety is paramount. ERTMS will be introduced. But the basic systems ready for use now are simply not good enough and would actually reduce capacity and force people onto our already crowded roads.

" This will be the biggest technical and operational change seen on the network for 100 years. It is essential that the system we choose is robust and reliable.

" The Health and Safety Commission has the programme team's very comprehensive and helpful report to validate. They will now consult on the report, and consider its implications. Meanwhile, the Project Team will continue with its development work to enable early deployment of the system as set out in the Strategic Plan."

Rod Muttram, Chief Executive of Railway Safety, and Co-Chairman of the ERTMS Programme Board, said:

"This report should be seen not as an end in itself but as the first stage of implementing one of the most important systems in UK Railway history. The

team remains in place, and the development is underway. The aim is to implement the right system which not only delivers improved safety but also contributes to improved capacity and reliability, all essential to delivering the better railway we all want".

The key findings of today's report are:

ERTMS is specified at 3 Levels, each of which delivers Automatic Train Protection.

Level 1, whilst it is available for earlier installation, reduces capacity by over 10% - forcing more travellers to use the road network - and also requires additional lineside equipment with additional risks to track workers. Level 1 systems that are currently available are therefore not suitable for network-wide application in Britain. Rapid implementation of Level 1 would reduce transport safety overall.

Planning should be based on the higher performance Level 2 system currently under development, but which is not ready yet. This could increase capacity by up to 10%. Preparatory work has started for the introduction of this ERTMS system through an SRA-funded Early Deployment Scheme initiative, to support national implementation from 2008.

The West Coast Route Modernisation includes a version of ERTMS Level 2 as part of its detailed fitment programme, with systems due to go operational by 2005. It is the largest ERTMS programme in Europe. Train Protection & Warning System (TPWS) technology, to be operational on all trains by the end of 2003, is expected to mitigate over 80% of ATP preventable fatalities and is already delivering real safety benefits on many routes.

Notes to Editors

1. The high speed Trans - European Network (TENs) routes covered by the Interoperability Directive 96/48 EC are:

Channel Tunnel Rail Link
West Coast Main Line
East Coast Main Line
Great Western Main Line

This has been followed by Directive 2001/16/EC which applies to the conventional (lower speed) network.

2. ERTMS can be implemented at three main Levels. Each level provides continuous ATP and has the same driver's cab display. The Programme Team has to date been examining in detail the implications of the first two. The Levels are:

Level 1 - The simplest configuration, consisting of trackside equipment which monitors individual signals and passes this information to the train via track-

mounted transponders. This enables an on-board computer to determine the train's limit of movement authority and supervise its speed within that. As a 'fixed block' system, each train runs within its own exclusive section of track, demarcated by lineside signals. The driver still has to observe and obey the lineside signals, but has the same information on his cab display.

Level 2 - Also a fixed block system. The difference is the use of radio to connect the on-train computer with signalling centres. A continuous exchange of data between train and trackside allows the train to reach its maximum permitted speed within its block while maintaining safe braking distances. Lineside signals can be removed if all trains on the line are Level 2 equipped, in which case drivers rely solely on in-cab displays. Track-based detection systems are maintained but can now be closer together to improve capacity.

Level 3 - Continuous position data is supplied to the control centre directly by the train itself. This allows track-based detection equipment to be minimised, and can enable the railway to operate at the highest possible capacity. The train driver views all speed and signalling information on in-cab displays. The system has been specified but is not yet under development anywhere in Europe and requires software development beyond that required by current industry focus on level 2.

4. Following the Uff / Cullen report, a pan industry ERTMS Programme Board (EPB) was set up to provide an industry response. Led by the SRA and Railway Safety, membership includes Railtrack, ATOC, ROSCOs, freight operators and the Railway Industry Association (RIA). Reporting to this group, the EPT was formed in May 2001 to produce an industry plan - delivered today - for ERTMS fitment in the UK. Observers to the EPB are the Health & Safety Executive, Office of the Rail Regulator, and DTLR

5. Work is already well advanced on the fitment of the Train Protection Warning System (TPWS) across the UK network by 2003. Less crash-resistant mark 1 (slam door) rolling stock on the London & South East networks is on schedule for replacement by new fleets of rolling stock by end of December 2004.

6. Today's report estimates the cost of fitting ERTMS is in the range of £3.5bn - £6.5bn depending on which option is introduced. The exact cost is unknown until an approved system has been fully developed. The SRA has earmarked funds for Early Deployment system funding. The location of such deployment has yet to be decided.

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