

Yet more ERTMS challenges ahead

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NEVER before - at least not in my 30-odd years as a railway journalist - has a train control system aroused such passion and heated debate as ERTMS. So every time a conference is staged on the subject, you can be certain the attendance will be high and the debate lively. Global Transport Forum's launch conference on ERTMS held in Rome last month was no exception.

ERTMS is full of contradictions. The railways that have installed it are generally very happy with it, once the initial teething problems are resolved. This was confirmed during a technical visit to see the Level 2 installation on the Rome - Naples high-speed line. The system has been in service for five years without any back-up system, and the Italian Rail Network (RFI) staff in the Rome control centre confirmed that the system was very reliable.

On the other hand, railways that are still testing or considering the installation of ERTMS continue to be sceptical about it or, in some cases, hostile to its introduction. This was brought to the fore during the keynote debate which I chaired. Mr Klaus-Rüdiger Hase, German Rail's (DB) ETCS project leader, pointed to what he regarded as the very high cost of installing ERTMS equipment on-board trains: around €430,000 per train plus one-off engineering costs. Mr Maurizio Rosi, chairman of the Unisig consortium of ETCS equipment manufacturers, said that some railways are making costs higher by only ordering small quantities of equipment and enhancing their specifications, while Renfe, for example, has ordered equipment for Madrid suburban services for a unit cost of around €200,000.

Hase also raised the subject of Open ETCS, a DB initiative backed by operators in Britain, France, Italy and the Netherlands to adopt open-source software to reduce the cost of on-board equipment. Hase said DB has set itself a very tough unit target cost of €60,000.

Rosi disagreed with Hase's hypothesis saying Open ETCS would be a good way to increase costs if new software has to be developed. He also wondered who would develop it as most of the signalling safety software experts work for Unisig companies. One can't help wondering whether Open ETCS is a stalling tactic by DB or a genuine attempt to reduce costs.

Mr Pierre Messulam, director of ERTMS strategy with French National Railways (SNCF), pointed out that while ERTMS is a standard for signalling systems, it is not a standard for operating rules. He said SNCF will only use ERTMS where it does not have a choice. Hase said that it took 15 years for Germany to get back to having one signalling handbook following German reunification, so it is an illusion to try to have one set of operating rules for the whole of Europe. While harmonisation of operating rules is clearly desirable, is it a realistic or even necessary objective? RFI says it has successfully adapted ERTMS to its rules.

Messulam also raised the issue of how to cope with what will undoubtedly be a very long transition phase from existing signalling systems to ERTMS, requiring dual fitting of trains for many years to come. Again, one can't help feeling if some railways could put as much effort into trying to embrace ERTMS as they do in opposing it, they might discover solutions rather than obstacles.

As we report this month, the technical development of ETCS is continuing to make progress. The Swiss have completed the first tests with Level 1 Limited Supervision, a simplified version of Level 1 designed to ease the migration to ERTMS. As a result Switzerland plans to implement it across the network by 2017. As Mr Peter Winter from Swiss Federal Railways (SBB) said: "Limited Supervision is a medium-term solution which allows us to equip the fleet ahead of the infrastructure."

ETCS Regional is being tested in Sweden and will go live in October. This cab-signalling system reduces the amount of trackside equipment by eliminating signals and much cabling, as objects such as points are controlled by radio. Infrastructure savings of up to 30% are predicted.

ETCS Regional would allow moving block to be introduced paving the way to Level 3. Network Rail in Britain, with a looming debt crisis, is very keen to adopt Level 3 because of the large potential cost savings, but this may be a little premature as Level 3 is still under development.

For those railways dragging their feet over ERTMS, it is worth remembering that none of the leading signalling companies will continue to develop traditional signalling systems such as TVM 430 cab signalling and LZB, although they will obviously have to support them. ERTMS is the only credible choice for mainline railways in Europe for the foreseeable future.

Probably the most successful aspect of ERTMS has been the rapid and relatively trouble-free roll-out of GSM-R radio in Europe. But public GSM is approaching the end of its life, it has limited potential for capacity-hungry services such as live video transmission, and there is a limited number of vendors. A new all-IP high-speed broadband system called LTE has been selected by the major mobile operators, and this could be the way to go for rail in about five to seven years from now. Fortunately it should be possible to re-use the existing GSM-R sites.

Another contradiction of ERTMS is that there is more confidence in it outside Europe than within the continent. Around half the contracted ERTMS projects are outside Europe and China is the biggest customer. So perhaps the time has come to drop Europe from the name of a train control system whose application is becoming worldwide. How about using the word global instead, as in GRTMS and GTCS?