

ERTMS Current Position

ERTMS development and deployment will ultimately benefit the whole European railway industry and in particular will allow trains to operate over wider areas thus benefitting operators. Investment in trains will also be facilitated by the reduction in operational limitations. As such EPTTOLA supports the long term objectives of the ERTMS programme.

ERTMS has now reached a stage where there is a medium term roll out plan and its deployment is growing, however the system can still be considered to be in development – it does not yet provide interoperability and will need to be further modified. Furthermore, existing signalling systems will remain a requirement for many years to come and therefore ERTMS is, as yet, an additional requirement rather than an alternative –offering no advantage to operators.

The cost of on board ERTMS installation remains very high and subsequent upgrades are also extremely costly.

Under these circumstances it is impossible for Operating Lessors to make a commercial business case for investment in onboard installation.

Cost of Onboard Installations

The cost of train fitment remains high and it is generally accepted that the causes of this include the following:

- There is no cross acceptance, hence multiple costs (monetary and time) for introduction across networks
- Each approval is to the specific requirements and methodologies of the NSA concerned, usually requiring system testing rather than proving the train is compliant to the interface specification (for example the extensive Track Train Integration test required on Betuwe route comprising L2 and L1).
- No competitive supply base (therefore the market is still divided in accordance with legacy system suppliers)
- Extensive interfaces with vehicle systems which reduces scope for standardisation and increases approvals complexity.
- Legacy systems are still required, increasing complexity and cost

There are a number of workstreams underway, some led by the ERA to address certain of these cost drivers but it is likely to be many years before these have any material effect on the cost of onboard installations.

Benefits of onboard ERTMS installations

Under the present situation there are few benefits available from having ERTMS fitted and thus it is only likely to be fitted where it is unavoidable and required for a specific section of route. Where this happens the cost of train operation is increased. The key factors that restrict the benefits are:

- Any Interoperability achieved requires proving compatibility on a route by route basis at the cost and risk of the vehicle builder/owner, it does not come automatically.

- Onboard fitment would result in higher leasing rates that are not compensated by reduced track access charges or any other benefit therefore ERTMS fitted locomotives become uncompetitive (For example: freight operators going over the Lötschberg route in Switzerland instead of using the ERTMS fitted base tunnel)
- The ongoing specification changes result in very expensive upgrades (> €50k/vehicle) which further reduce the economic case for fitment.
- Locomotives are still required to have onboard legacy systems, even the scope of the planned corridors is not sufficient to allow commercial operation without the appropriate national system for diversionary routes and final destinations.

A further factor is that incumbent operators may be able to invest in on train fitment either as part of the infrastructure project or other form of local subsidy and therefore the actual cost of train fitment is “hidden”. This serves to disadvantage private operators, particularly starting new operations, which damages competition and ultimately the competitiveness of rail transport.

Public subsidy schemes have been used in the past and the EU is offering the opportunity of further subsidy to support onboard fitment of trains however it is not clear that this will be at a level that would make the unsubsidised cost affordable to owners and train operators.

Regulations are in place requiring all new cross border trains to be ERTMS fitted starting from 2012 but this has the risk of introducing mandatory cost increases without any significant advantages. Unless the current issues are fully resolved this is likely to be detrimental to the rail industry.

EPTTOLA objectives and proposals

EPTTOLA wishes to see the ERTMS system developed and become the benefit to the European rail system that it has the potential to be. Once this situation is clearly foreseeable then it should be a justifiable investment that can be paid for from the benefits to train operators. The key features of a mature and developed ERTMS system include:

- A stable, universal system where any ERTMS equipment fitted to a vehicle is compatible with any infrastructure equipment. Uniform European agreements on track-train data transfer, MMI & Data Entry procedures and braking curves without options for local variation.
- Onboard system fitment is approved by compliance to agreed interface specifications and standard testing.
- Automatic Cross Acceptance such that an authorisation in one country is accepted in all others without any further work.
- The TEN Corridors to include sufficient alternative back-up routes fitted with ERTMS in order that vehicles equipped only with ERTMS can be deployed economically (for example the Betuwe route and Dutch HSL-Zuid still using ATB EG on parts of the core route and also on deviation routes).

- Backward infrastructure compatibility so that vehicles equipped with ERTMS already can operate on the new lines (albeit with less functionality perhaps). Restriction or control of further upgrades i.e. SRS 3.x.x should be the last upgrade and remain compatible with all trackside installations. Any further system development must be fully funded.
- Open Source codes such that any company can use, develop and improve the standard solution this has been used in other industries.

Measures which could improve the situation and move towards the ERTMS status that is necessary could include:

- A funding mechanism for installation (and upgrades) which could be a combination of the following mechanisms:
 - i. Full public subsidy for installation of relevant trains with ERTMS
 - ii. Network Change: As it is the infrastructure manager (IM) that is instigating the change by fitting ERTMS to the infrastructure and gaining the benefits of the simpler system (e.g. no signals to maintain), the IM should pay for fitting trains or,
 - iii. Access Charges: As the IM gains the benefit of reduced costs, it should lower Access Charges for vehicles fitted with ERTMS. Then vehicle owners could invest in ERTMS equipment and charge the necessary premium leaving the operator at least no worse off.
- Good coordination between the NSAs and other national bodies to avoid local interpretation and on standards and to facilitate upgrade management.
- Open Source codes principally for the onboard kernel software such that any company can use, develop and improve the standard solution (similar to Linux perhaps). Open source and standardised kernel software could reduce the costs and improve the quality of installation and any upgrades.
- Inclusion of the lifetime of legacy systems in the European Deployment Plan (EDP) so that this information can be properly included in strategic fleet planning and associated investment.

EPTTOLA conclusions

ERTMS has made significant progress to reach a situation where it is possible for the EU and its agencies to set out deployment plans that will eventually bring significant benefits to efficient train operations in Europe. However the current state of technical development and the commercial structure do not yet make the system suitable for unsupported private investment. EPTTOLA has some suggestions to address these shortcomings and would welcome debate as to how these could be taken forward.