

Position Paper

A revised ERTMS implementation strategy

An approach with customer benefits is needed

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Create an implementation plan for ERTMS which increases rail's competitiveness – also in the near term

ERFA proposes a new, concerted effort for an ERTMS implementation strategy which reduces costs and risks and ensures improved competitiveness of rail services already from Day 1. The aim is to successfully develop and deploy ERTMS and make it become the EU-wide safety system platform. But as long as the cost and risk aspects are not properly considered, the ERTMS project is in jeopardy: RUs can only support ERTMS if the system becomes a positive business case.

ERTMS is an IT based safety system which can contribute to reducing operating costs for European rail services in general and for international rail freight in particular. However, without a business case for RUs covering the life cycle cost of ERTMS, including the initial costs of duplicate safety systems, enthusiasm and support for ERTMS cannot be expected. To the contrary, it is the obligation of RU managers to resist investments which are risky and which do not generate a good return. Thus, it is critical that key parties work together to create an implementation plan which offers the RUs and their customers a sufficient confidence in ERTMS, including strengthening rail's competitiveness already from the start. This paper elaborates further on these reflections.

ERTMS is an attractive vision

ERFA agrees that a common, IT based safety system is desirable for the EU. Such a standardized European Rail Traffic Management System platform has several benefits, e.g.

- To reduce the operating costs of IMs and RUs (albeit with only long term impact for RUs, which will not result in improved profitability due to competition)
- To increase the safety level of railway operations in several Member States
- To stimulate competition between system suppliers and between RUs, which can fuel further innovation and cost reductions
- To create a shared EU-wide platform for ambitious future technological development, e.g. "moving blocks" (to increase infrastructure capacity), automatic train operation, etc.

The key winners from more efficient railway operations will be EU consumers and citizens who can benefit from safer, more environmentally friendly and lower cost travel and freight transport. The positive effects of ERTMS for individual RUs will, in a competitive railway market, be transferred to their customers.

In addition to consumers, IMs with higher cost and less safe legacy systems are also key beneficiaries of ERTMS.

By extension of IMs, also EU taxpayers become winners due to IMs' lower operating costs, e.g. by avoiding line side signals, and IMs' lower investment costs for future capacity increases, e.g. through "moving blocks" (ERTMS Level 3).

Additional winners can be the EU signalling industry and its employees who may benefit from leading edge industrial developments and export revenues.

Lack of RU business case jeopardises ERTMS

The key challenge is, however, that the current implementation approach increases costs and risks for the RUs and their customers in the near term. Also longer term cost risks are significant.

We see at least five major, and largely interrelated, problems:

1. ERA has not yet defined a stable ERTMS standard or a migration strategy based on today's best knowledge of RU needs and available technologies (e.g. best possible braking curves, IP communication, moving blocks).
2. Even when ERA made intermediate specifications, IMs didn't install systems which were fully compliant with these. Sometimes even different varieties exist within a country.
3. Even if an (intermediate) standard has been set by ERA, the national safety authorities and NOBOs are responsible for authorisation procedures. This doubles time and costs.

4. The system suppliers don't offer life time functionality for rolling stock, exposing ROSCOs and RUs to potential costly upgrades with their chosen, in the future monopoly, suppliers. Many RUs are not in a position to negotiate reasonable guarantees for their future ERTMS costs.
5. The RUs with legacy systems will face higher cost and less competitive offering to their customers with ERTMS - even if one stable ERTMS system without upgrade costs becomes available. ERTMS will initially reduce the competitiveness of rail versus road unless a funding solution is found, which reflects the fact that RUs cannot via near term productivity increases or customer benefits cover the investment costs.
 - The funding principles for ERTMS must catch up with today's rail market, which has moved away from the integrated rail structures of the past, where the costs and benefits would occur within the same organisation.
 - With ERTMS, sophisticated parts of the command-control-systems of the railway are relocated from fixed infrastructure installations to the RU's locos. This asymmetrical cost/benefit situation should be addressed so that ERTMS savings by other parties, e.g. the IMs, can compensate for RUs' initial cost increases.
 - By recognizing ERTMS on-board as part of the infrastructure, public funding may be facilitated.

These five interrelated problems put the future benefits of ERTMS in jeopardy. For RUs, it has not necessarily been a disadvantage that incompatible national ERTMS versions and additional Maintenance Releases have caused serious ERTMS delays. Whereas continued delays may be beneficial to RUs in the short term, it may risk that ERTMS does not become the common EU-wide system platform, as better safety systems may emerge as technological developments continue.

Cooperate to strengthen competitiveness

Through cooperation with all key parties, the five problems above can be solved, making ERTMS an attractive proposition for RUs and their rail customers. RUs may then enthusiastically support DG MOVE and ERA in helping to overcome national obstacles and press on for rapid national roll outs.

ERFA highlights four fields of action that should be considered to create benefits to RUs and rail customers

1. Evaluate a “country-by-country”-strategy

Given that savings from ERTMS primarily arise for IMs by completely replacing more costly national safety systems in the infrastructure, potentially a “country-by-country” implementation strategy should be more strongly promoted than the current “corridor” strategy which generally leads to higher costs to RUs without much benefits to IMs. This is particularly relevant in countries where ERTMS offers a significantly higher safety level. Full country implementation may also lower ERTMS costs due to scale advantages, and may ultimately result in a faster European-wide conversion. And it will reduce the time period in with inefficiencies created by adding “safety system borders” within countries.

2. Incorporate RU cost as part of the overall investment

IMs should be encouraged to pass on sufficient of their savings to cover increasing RU costs for initial rolling stock conversions, which only account for about 10% of total ERTMS conversion costs. IMs and MSs should see this as part of the necessary investment to create more competitive rail

services in both the near and the longer term. The financing of the ERTMS conversion of locos must be efficient and transparent.

3. EU funding of international rolling stock conversion

Complement national funding of domestic rolling stock conversions with EU funding for converting rolling stock which are equipped with multiple safety systems. Such fleets are relatively small. And there may be a lack of interest from national governments in supporting cross-border freight traffic (e.g. as seen in Denmark where the IM pays for conversion of all passenger trains, whereas no financing is offered for freight services which are almost exclusively cross-border).

4. Innovative financing

Given a high initial cost for a long term benefit, additional financing approaches should be considered. The benefits captured by future consumers and IMs could pay for RUs' initial conversion costs with the "Toll Bridge Financing" model. With this model, the initial rolling stock conversion costs are repaid over 20 or 30 years by a financing charge/toll being paid by future rail users who will capture the benefit from ERTMS.

To conclude: ERFA proposes an ERTMS implementation approach which aims to allow RUs and rail users to gain confidence in ERTMS and overcome the initial and relatively speaking small implementation costs. It is in everybody's interest that all parties work together to overcome initial resistance and harvest the fundamental, longer term benefits of ERTMS.