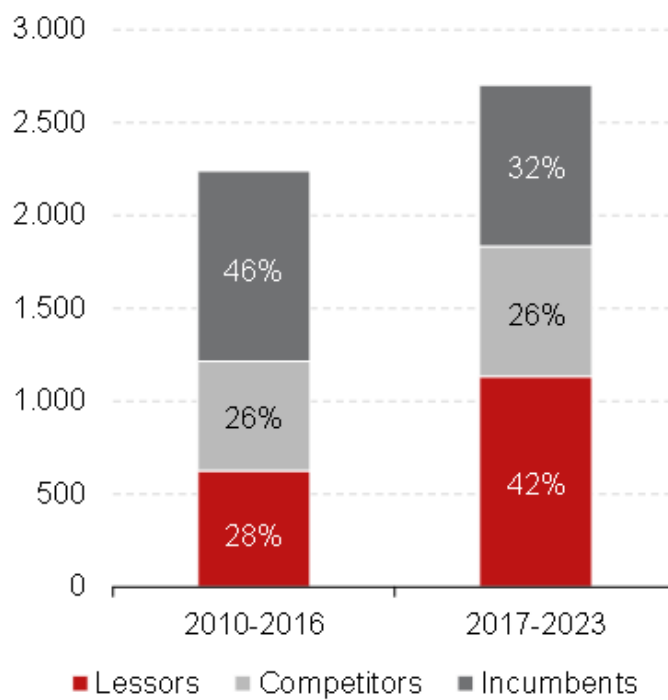


FRMCS as an opportunity to stop the ERTMS deployment chaos

Over the recent years, orders coming from European rolling stock leasing companies and independent freight and passenger operators represent approximately 2/3 of the European fleet of new locomotives, half of them equipped with ERTMS (European Rail Traffic Management System). As such, they express their dissatisfaction with the current European policies, which jeopardise the rapid deployment of innovative technologies and the overall development of rail traffic. The lack of coordination and the instability of technological regulation make the deployment of ERTMS counterproductive.

Owner classification of new locomotive deliveries in the EU + CH/NO (5,000 units)



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In the context of the decisions to be taken for FRMCS deployment (ERTMS is made of ETCS and GSM-R, and FRMCS is the successor of GSM-R), the ERTMS deployment crisis is even more visible. Lessors and independent freight and passenger operators want to turn the threat of an even more chaotic FRMCS deployment into an opportunity to design a coordinated deployment of both ETCS and FRMCS. Here, they put forward concrete proposals, calling for changes in policy and regulations in order to achieve industrialisation of production, stability and realistic planning in the regulation.



Context and solution to the ERTMS deployment crisis

Initially, ETCS (European Train Control System) and GSM-R (Global System for Mobile Communications – Railway) were to be deployed throughout the European network to replace the national safety systems, becoming obsolete and non-compatible with each other.

ERTMS aimed not only to protect trains against accidents but also to enable the transfer of data, making rail operations easier for operators and enabling more services for their customers.

Current Situation:

- GSM-R is largely (but not fully) deployed in Europe. ETCS is only deployed on 15% of the European infrastructure in a highly fragmented manner and as such, is a costly and unstable technology.

As a result:

- Locomotives crossing borders must be equipped with one or more national train protection systems plus ETCS.
- Locomotives that cross borders equipped with ETCS become obsolete every five years or must return to the workshop for costly modernisation, due to the instability of the regulatory framework and new ETCS versions.

Conclusion: The current situation is even worse than before the introduction of ETCS. The regulatory framework and the lack of coordinated trackside deployment have made ETCS so costly that its costs outweigh its advantages. The ongoing ERTMS crisis jeopardises profitability and, consequently, the competitiveness and development of the railway sector.

An alternative vision of ETCS Deployment: stabilise to industrialise

We are calling for a coordinated ETCS deployment plan, based on:

- **A single variant of ETCS for the whole of Europe:** the most stable and widely used technology today, called BL 3.4 (SV 2.0), which will remain valid for at least 10 years. This period should be used by infrastructure managers to finally deploy one homogenous set of requirements along the network and therefore putting an end to the need for locos to return to the workshop every five years. A strong decision that emphasises stability is the only way to bring about a real industrialisation of OBU (on-board unit) production, which the railways so desperately need. This will make the European network safer, more interoperable, greener and more affordable.
- The implementation of BL 3.4 is according to the current TSI regulations limited until 2029 and by then the next ETCS BL 3.6 (SV 2.1) will apply. The major difference between BL3.4 and 3.6 is a new radio standard (GPRS) which will become obsolete with the introduction of FRMCS starting a few years later.
- **Therefore, we strongly advocate for the extension of use for BL 3.4 until a solution for FRMCS is available and proven.**



- **A broad consultation bringing together all stakeholders who finance ETCS:** this should require the European Commission, Member States, and the owners of rolling stock, to develop this coordinated plan.
- **Alignment** that guarantees the coordinated deployment of infrastructure and the aligned deployment between countries along corridors and the locomotives that run on them.
- The commitment of all these stakeholders to **an entire network using the same technology**, to contribute to and to respect the next timing of migration to even more innovative technologies.

The key innovative technology called FRMCS and its transition from current GSM-R: a challenge

The Future Railway Mobile Communication System (FRMCS) will be part of ERTMS. GSM-R, based on 2G is obsolete and does not allow for the transfer of large volumes of data as required by new innovations benefiting railways and their customers.

FRMCS must be deployed in an efficient and coordinated way, based on stabilised technology, without compromising the deployment of ETCS. It is clear that GSM-R needs to be phased out but knowing that FRMCS will be deployed progressively throughout the European Union, we need our ETCS rolling stock to be able to communicate with FRMCS and GSM-R for a longer period.

Since lessors and independent freight and passenger operators bear the highest costs for international ETCS Onboard, there is a need to advocate for an affordable coordinated implementation of FRMCS that safeguards past and ongoing investment in ETCS BL 3 and use simplified homologation processes...

Even if it is not our **main** objective to stick to a specific technical solution, we propose that an **FRMCS adapter solution to ETCS BL 3.4 (SV 2.0)** be studied in greater depth, given the clear advantage it represents over any other solution. No one has demonstrated that such an adapter is technically impossible. The industry, with EU funding and oversight from the European Union Agency for Railways (ERA), could develop it in collaboration with radio manufacturers.

An “Adapter” solution would offer a significant advantage: it will be a **standardised element with an authorisation as a signed document** which will give certainty to all stakeholders involved. It will ensure that the integration of FRMCS will not create another “moving target” due to the parallel development paths of ERTMS and FRMCS.

Any other solution proposed until now will

- expose the lessors and independent freight and passenger operators to the risk of expensive authorisation processes,

and



- most likely will be an interim step leading to the elimination of any initial cost savings.

Essentials: financing and implementation of a realistic planning in TSI

AERRL, ALLRAIL and ERFA aim to promote a safe, sustainable, innovative and business-friendly railway system. A business-friendly system is a prerequisite for making transport affordable for rail customers. It means implementing administrative procedures only when necessary and enabling the most efficient management of assets wherever possible.

To achieve this objective, the Agency should give preference to solutions that reduce the administrative burden and should fully assume the missions assigned to it by its Regulation, including the following task:

The Agency shall develop and maintain the technical tools for managing the different versions of the ERTMS, with the aim of ensuring technical and operational compatibility between networks and vehicles fitted with different versions and of providing incentives for the swift and coordinated implementation of the versions in force. (Article 28 (3))

We fully support the ERA in its relentless efforts to reduce National Technical Rules (NTR) across the European Union, and to reduce the number of national testing procedures, so-called ESC-RSCs. However, this task should not lead the Agency to abandon its above-mentioned mission.

The current CCS TSI ETCS B4 should be amended and completed so that:

- The use of ETCS BL 3.4(SV 2.0) is guaranteed for the next 10 years, with no change to the ETCS software unless there is a compelling safety issue and a solution for FRMCS compatibility such as the adapter or a solution offering the same advantages (by 2035).
- ETCS BL 3.4 (SV 2.0) newly built rolling stock can continue to be delivered 5 years after the TSI CCS ETCS B4 is issued.
- The implementation of FRMCS by Infrastructure managers is encouraged but only if based on stabilized FRMCS specifications.
- There is full compatibility of OBU ETCS BL 3 (SV 2.0 and 2.1) with infrastructure fit with ETCS BL 4.

The risks of inaction

Lessors and independent freight and passenger operators are raising the alarm. It is time to learn from the past chaos of ETCS versions and implementation plans, it is time to oppose business-killing decisions. A fully business-driven approach is the only way to succeed on the long run. If we fail to do so, we risk a reverse modal shift.