



Position Paper

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Vehicle authorisation Conformity to type (CTT)

Vehicle authorisation – Conformity to type

A problem statement

This CER, AERRL, UIP position and problem statement provides return of experience from the application of the 4th Railway Package's Technical Pillar by the railway operating community. Concerning vehicle authorisation, this 4th Railway Package brought a couple of profound changes for the European railway sector. Whereas the sector regards most of the changes as improvements and appreciates in particular the centralised role of the European Union Agency for Railways (ERA) as authorising (& certifying) entity, the current EU provisions of the conformity to type authorisation especially in case of already authorised and operating vehicles is seen as a blocking point to boost interoperability, the renewal & modernisation of the railway rolling stock fleets and the accelerated deployment of ERTMS – in particular retrofitting ETCS onboard and radio based communication.

1. Legal background

The authorisation in conformity to type is identified as an authorisation case in Article 14 of the Commission Implementing Regulation (EU) 2018/545 of 4 April 2018 establishing practical arrangements for the railway vehicle authorisation and railway vehicle type authorisation process pursuant to Directive (EU) 2016/797 of the European Parliament and of the Council.

The authorisation in conformity to type (CTT) is an authorisation for placing on the market for vehicles conform to an already authorised and valid vehicle type on the basis of a declaration of conformity to that type, pursuant to Article 25(1) of Directive (EU) 2016/797.

2. Conformity to type from the Agency's point of view

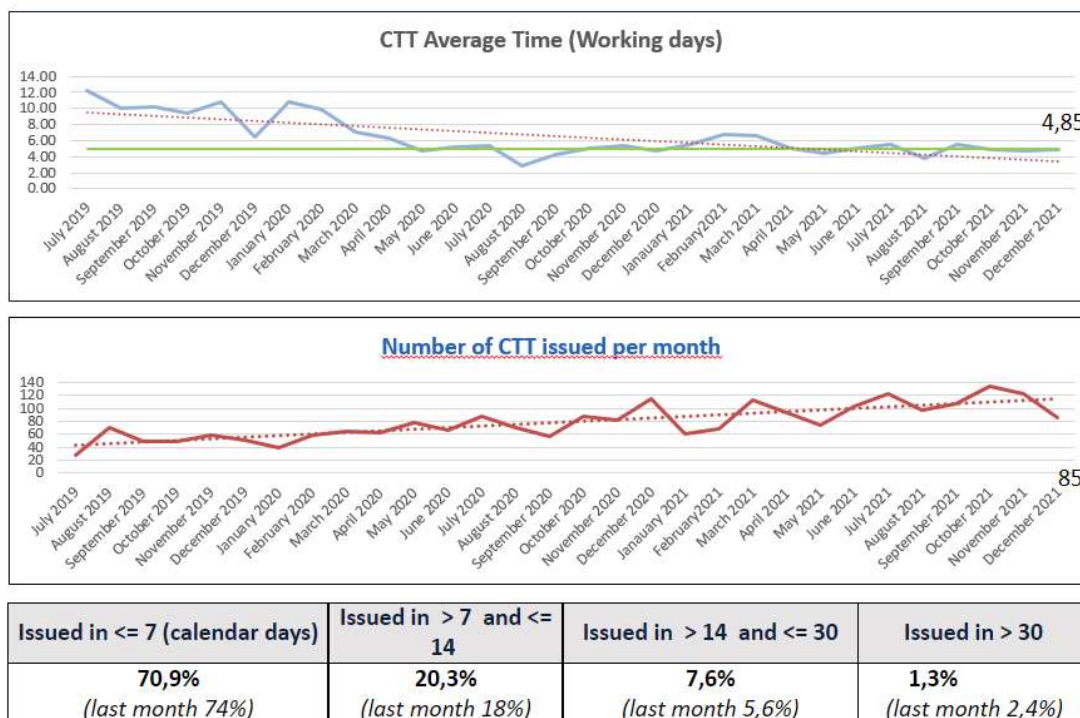
Time

According to the legal framework, the decision of the authorising entity shall be issued within one month following the date of receipt of the application in case of authorisation in conformity to type.

According to information from the European Union Agency for Railways (ERA), the majority of CTT is issued in less than 7 calendar days. 70,9% of CTT issued in less than 7 calendar days and 20,3% between 7 and 14 calendar days.



VA in figures CTT (KPIs)



From the Agency's point of view, CTT is a legal necessity, the procedure is fast, safeguards legal compatibility, and has a very small negative impact on the sector.

Income

The Commission Implementing Regulation (EU) 2021/1903 of 29 October 2021 amending Implementing Regulation (EU) 2018/764 on the fees and charges payable to the European

Union Agency for Railways and their conditions of payment defines that the Agency shall levy fees

- for the submission of applications through the one-stop shop (OSS) to the Agency
- for the processing of applications submitted to the Agency
- where the Agency renews, restricts, amends or reviews a decision issued in accordance with Directive (EU) 2016/798 or Directive (EU) 2016/797.

with an hourly rate of EUR 239 and without limit for the total amount per authorisation.

The fees & charges payable by the applicant to the Agency constitute a major revenue for the Agency and hence a sustainable contribution to the Agency's overall budget.

3. Conformity to type from the applicants point of view

CTT has a negative impact on

- Standstill times of vehicles,
- Size of fleets
- Duration of project implementation.

After a vehicle has been retrofitted and the necessary documents have been transmitted to the Agency, the applicant has to wait several working days until receiving the Agency's decision. Meanwhile, there is no permission to use. This process has to be applied to all vehicles of a series, thus resulting in bigger fleets than absolutely necessary – in order to carry out and ensure railway operations to the planned extent (timetable/ legal obligations/PSO). As trains are operated at weekends, too, the Agency's indicator underestimates the standstill times of vehicles and consequently the amount of tied capital.

As there is no guarantee for receiving the Agency's decision after an agreed fixed period of time, keepers have to include a margin of additional working days into the planning when retrofitting a series of vehicles in order to be on the "safe" side. This has to be done to avoid that no or shorter trains are operated. Therefore, the length of the project implementation is extended, thus tying additional resources.

Today's CTT did not exist before 2019 and/or 2020 at Member State's level. Either a system of series authorisations or a simplified procedure was applied. Now, something similar is urgently needed as the number of CTT will increase in the years to come – among others due to political initiatives like Europe's Green Deal or the TSI Booster. Otherwise, the railway sector and its customers will have to continue paying the bill for an administrative burden.

Higher costs

Comparison 3rd RP vs 4th RP for single freight wagon VA:

Case: VA for freight wagon by one NSA valid across the Union

The comparison is based on the authorisation costs paid in the Netherlands (often chosen as authorising entity due to simple process and short-time delivery) and France.

Germany is not really comparable as the authorisation were based on the concept of "series".

New freight wagon type under the 3rd RP

NL: 5'000 - 6'000€

FR: 8'000 – 10'000€

New freight wagon type under the 4th RP

- 12'000 - 20'000€ (with extreme at 40'000€)

CTT under the 3rd RP

- NL: no costs, 68€/wagon for registration
- FR: no costs, 60€/wagon for registration

CTT under 4th RP

- 775 – 1'500 € per application, resulting in costs of up to 1'500€ per wagon if applying for one wagon only (often the case for chemical wagons)
- 60 - 70€ per wagon for the registration in NL or FR on top
- Result: between 835 – 1'570€ per wagon

Standstill times & Cost increase examples

The main problem is the time: 3rd RP: 8 weeks max. for a new type (in NL and in FR), today under 4th RP up to 12 weeks. As a result, manufacturers suffer:

- 1) Issue of treasury between 2 million € and 5 million € outstanding cash (due to the production of additional 30-40 freight wagons in the 4 additional weeks)
- 2) Issue of available sidings for parking "freight wagons" waiting for a paper to be delivered.

For freight wagons the authorisation costs are already almost doubled and there is an increase of 50% for the "delivery time" of the authorisation.

Every single day of standstill is a challenge for railway undertakings due to the:

- non-availability of rolling stock (operations & customer satisfaction)
- non-availability of rolling stock (contractual arrangements Rail Supply Industry (RSI) - Railway Operating Community (ROC))
- non-availability of rolling stock (contractual arrangements Passenger Service Obligations (PSO) contracting authority - ROC leading to penalties for the railway undertaking)
- Less reserve (fleet management)
- Need to have a larger fleet in order to cope with the limited availability of rolling stock (in particular when it comes to CTT process in the framework of fleet upgrade and renewal).

The situation is also very worrying for locomotives and vehicles for passenger transport.

Such vehicles are more complex than freight wagons and they are produced in smaller series and require very regular software and hardware upgrades with a limitation of fleet compatibility for multiple traction until the last vehicle receives its authorisation. These updates are carried out by Entities in Charge of Maintenance (ECM)/ manufactures/ RU, certified for their ability to carry out such updates on a daily basis while guaranteeing the traceability of operations and the integrity of the vehicle. These entities managing the change do not understand why a reliable declaration of conformity require an additional authorisation, after the ERA decision on the first vehicle.

For the locomotives, the destruction of value caused by the current vehicle authorization process has been assessed by the European lessors. This negative impact has a high degree of recurrence.

Number of days of standstill for the authorization of a locomotive: from 10 up to 20

Frequency average of authorisation process: every 3 years

Cost per month down time: 35.000 €

Number of locomotives concerned: 2455

Total value destruction per anno for the European lessors: 8,6 Mio € up to 20,6 Mio € (35.000/30 x 3 to 6 X 2455).

For about 90% of railway vehicles in operation that may need to be upgraded/ renewed in the coming years, it is necessary to define a "level of the existing authorisation" of these vehicles as reference for the authorisation of the changes to be made like DAC, ATO and ETCS. A huge number of existing vehicles were authorised under previous legal frameworks - before the 4th Railway Package entered into force. Hence the "qualitative and quantitative extent" of the documentation accompanying those authorisations is not in all cases at the same level as required by the 4th Railway Package for new authorisations. Nonetheless, daily railway operation by the railway undertakings and supervision results from the NSAs show that these vehicles are safe and interoperable. In this context, additional assessments and documentation only necessary to lift the existing authorisation on the level of the 4th Railway Package is a burden regarding cost and time. Consequently, the existing authorisation of vehicles in operation should be the reference for the new authorisation of the changes.

4. Potential negative impact on an accelerated ERTMS deployment

The European Rail Traffic Management System (ERTMS) offers the necessary conditions for uninterrupted, safe, efficient and fast railway services with significant investments needed for its broad deployment. ERTMS is the enabler for further digitisation of the railways. The deployment of ERTMS shall be boosted by a sectoral agreement between all railway stakeholders coordinated by ERA and comprising the needed measures for vehicle and trackside. An efficient authorisation process, avoiding that this element of the deployment becomes a bottleneck to any extent, is needed.

4.1. Infrastructure

47.890 km of the railway network considered as Core Network Corridors (CNC) of the 118.037 km long TEN-T (Trans-European Transport) Network shall be fully equipped with ERTMS until 2040 (N.B. 226.726 km is the total length of the EU's railway network).

In 2021, 6.713 km of the Core Network Corridors was in operation with ETCS, which is 43% of the European Deployment Plan (EDP) target for 2023. The EU deployment goal encounters some delays in the short-term. However, the medium and long-term outlook for trackside deployment is more promising.

4.2. Rolling Stock

By the end of 2019, around 5.700 vehicles were equipped with ERTMS. 40% of this volume are newly purchased vehicles and 60% are retrofitted railway vehicles. This volume represents only 12,5% of the European commercial railway fleet. Between 2015 and 2019, approximately 5.000 new vehicles had been put into operation in Europe.

Approximately 2.700 new vehicles were placed on the market without ERTMS during this period due to exemptions under the TSI CCS.

Almost 90% of the commercial European fleet operating on the Core Network could be renewed or retrofitted in the upcoming 30 years.

- Between 2021-2035 more than 20.000 vehicles are expected to be renewed or retrofitted.
- Between 2031-2050, an additional 11,000 vehicles are expected to be renewed or retrofitted.

4.3. Outlook

The European demand for retrofitting / renewal of the fleet is expected to peak between 2024 and 2028 (EDP). Foreseen upgrades (Baseline 2 to Baseline 3) and upgrade cycles of every 10 years (due to the Future Railway Mobile Communication System (FRMCS), Automatic train operation (ATO) Level 3, incompatible CR's etc.) are at this moment excluded from the analysis of the EC and can be expected starting around 2027-2028, which will likely cause additional volumes during these peak years.

CER, AERRL, UIP believe that ERTMS deployment shall and will be boosted. CER, AERRL, UIP believe that European legislation (including TSI CCS chapter 7) should simplify authorisation processes without prejudice to safety and interoperability. Reauthorisation in conformity to a type or generic systems already certified and authorised for serial vehicles or for a trackside subsystem (e.g. duplication or extension of a authorised trackside or on-board subsystem without adding new functions) must not lead to any unnecessary "standstill time".

5. Potential negative impact on a DAC deployment

The Digital Automatic Coupling (DAC) is an innovative component to automatically couple and decouple the rolling stock in a freight train both physically (the mechanical connection and the brake pipes) as well as electrically and digitally. The DAC is key to enable the needed increase in efficiency and transparency of rail freight.

The railway operating community and the Agency are currently working on a low administrative burden for the authorisation of retrofitted freight vehicles. This target, however, will not be achievable for all vehicles. Certain types of locomotives and freight wagons without for instance UIC pocket will probably have to undergo larger retrofits, resulting in new type authorisations and CTT cases. To cope with the workload, the Agency is well advised to set up a fast lane for these cases. Otherwise, DAC migration will be hampered by red tape.

This potential negative impact is also to be expected for ERTMS Level 4 with DAC and other modifications as Train Integrity for example.

6. Potential negative impact on boosting interoperability & TSI deployment

A major focus area for railway operators and fleet owners is to determine how to maintain their fleet in order to fulfil the demands for operational reliability whilst at the same time keeping maintenance costs down and ensure market uptake. Like for ETCS & radio retrofitting, CER, AERRL, UIP believe that European legislation should simplify authorisation processes without prejudice to ensure safety and interoperability. Our

members aim to strive towards a safe and fully interoperable railway system as Single European Railway System. The objective is to build a high-capacity integrated European railway system by eliminating barriers to interoperability. That should exploit the huge potential for digitisation and automation to reduce rail's costs, increase its capacity and enhance its flexibility and reliability, and should be based upon a solid reference functional system architecture. A burdensome authorisation framework for railway rolling stock would inevitably hamper in particular upgrade and renewal of the fleet.

7. Conclusion and proposal

Against the background of more traffic on rail and a faster implementation of the Technical Specifications for Interoperability, the number of CTT cases will increase in the years to come. Under the current legal framework, this will lead to longer standstill times, bigger fleets than necessary and more resources tied up for project implementation. Therefore, CER, AERRL, UIP demand a significant improvement for the current vehicle authorisation process (CTT).

According to this concept, the first vehicle of a type (new or upgraded) receives a type authorisation including an ERATV registration. Afterwards its holder should have the right to place further vehicles of the same type on the market without an additional authorisation per vehicle. This procedure would lead to a significant reduction of standstill times, size of fleets and duration of project implementation.

The vehicle type authorisation holder has to ensure and prove, by a mature and reliable quality system, that every vehicle, is conform to its vehicle type. This applies in particular to consistency of documentation and traceability of changes. They need to be ensured by the quality management system of the applicant.

If necessary, a prequalification regime and appropriate supervision of vehicle type authorisation holders should be considered for applicants except ECM or holder of a safety certificate. In analogy to the requirements for conformity assessment bodies, or to the requirements for certification of entities in charge of maintenance or safety certificate, the authorising entities should carry out such prequalification and supervision for applicants except ECM or holder of a safety certificate. The role of the NSAs in this regard could also be considered, while ensuring a balanced proposal.

This approach would therefore fulfil the objective of the implementing Regulation 545/2018 to ensure conformity of the vehicle with the authorised type, so that the vehicle can be used safely in the area of use.