

ECM: OPPORTUNITIES FOR RAIL VEHICLE OWNERS AND THE EUROPEAN RAIL NETWORK

RAILWAY SAFETY AND INTEROPERABILITY IN RAIL TRANSPORT
 THE IMPLEMENTING REGULATION (EU) 2019/779 - ALSO KNOWN AS THE ECM REGULATION - HAS PLAYED AN IMPORTANT ROLE FOR THE MAJORITY OF RAIL VEHICLE OWNERS AND WORKSHOPS FOR RAIL VEHICLES SINCE 2019 AT THE LATEST. IN FAVOUR OF RAIL SAFETY, THE PURPOSE OF THE REGULATION IS TO ENSURE REGULATED STANDARDS AND TRANSPARENCY FOR ENTITIES IN CHARGE OF MAINTENANCE (ECM). THUS, THE NEW DIRECTIVE CREATES NEW OPPORTUNITIES FOR EUROPE'S CROSS-BORDER RAIL TRAFFIC BUT ALSO FOR INDIVIDUAL ECM'S.

Challenges for agents acting in the European rail traffic sector

The requirements of the ECM Regulation are implemented at four levels and thus apply to all levels of asset and maintenance management for rail vehicles:

1. Requirements and evaluation criteria for the management function
2. Requirements and evaluation criteria for the maintenance development function
3. Requirements and evaluation criteria for the rolling stock maintenance management function
4. Requirements and evaluation criteria for the maintenance provision function

The ECM being responsible for level 1 can delegate the other three maintenance functions. In order to obtain certification according to ECM standards, this ECM is responsible for the implementation of a maintenance management system. Operational safety of the rail vehicles needs to be ensured in a documented manner and a permanent condition monitoring of the vehicles needs to be done.

Opportunities for operators and maintainers

The first challenge owners and maintainers of freight wagons and locomotives are confronted with is to implement the maintenance management system required by the regulation. This obligation leads to a large number of opportunities for the parties concerned as modern asset management systems for rail vehicles include many functions for the maintenance organization. This means that not only evidence required for ECM certification can be provided, but also higher-ranking maintenance objectives can be achieved.

Examples for such objectives would be:

- Increased reliability of vehicles
- Higher fleet availability
- Reduction of default risks
- Process transparency
- Automated and consequently faster and improved communication

The digitization of maintenance provides the optimal basis for implementing

corrective, preventive and predictive maintenance strategies. A digital vehicle history file and detailed component tracking are only possible with the right IT system. The same applies to checklist-based, mobile work on the train or the traceability of maintenance measures. The data in the system is available to authorized personnel at all times, considerably reducing the need for communication by phone and/or e-mail.

Predictive maintenance in particular would be inconceivable without using intelligent IT solutions. Only thanks to such solutions it is possible, for example, to forecast the wear of components (e.g., wheel sets) - and thus to prevent a sudden failure of the according vehicle. True to the motto «forewarned is forearmed».

Maintenance documentation with zedas® asset

zedas®asset is the integrated solution for the efficient management and maintenance of rail vehicle fleets. The



ECM modul of the software enables extended support in providing evidence of ECM-compliant workshop documentation. Thanks to this module, departments responsible for maintenance are optimally equipped for the planning and execution of maintenance measures.

Example: This is how the documentation of work orders in zedas®asset works

To ensure complete documentation of maintenance work done in the workshop (ECM 4), first of all information on personnel and equipment are managed in the system. Specific time-limited certificates and qualifications can be assigned to personnel. For operating equipment (e.g. measuring devices), clearly identifiable units (e.g. wheelset measuring device, serial number 2483) are created, to which a certificate/proof (e.g. last calibration) can be assigned. Validity and deadlines of certificates can be monitored.

If a workshop employee processes a work order, the equipment used and the personnel performing the work are entered in the job order completion in an audit-proof manner. This documents that the job order was executed by an authorized employee and that valid equipment was used.

Railroad safety and interoperability

The Implementing Regulation (EU) 2019/779 pursues two major objectives with its requirements for management and maintenance of rail vehicles:

1. Safety in rail traffic thanks to compliance with standards and legal requirements
2. Interoperability thanks to a uniform directive valid throughout the EU

Rail vehicle owners and rail workshops contribute to these goals by the implementation of a maintenance management system for their processes, which automatically meet the requirements of the ECM regulation.



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Ulrike Gollasch studied business administration with focus on marketing and started her career at ZEDAS as a marketing assistant in the business unit asset management. Today she is in charge of the entire corporate marketing of the company and supports the conception for international growth.



Railway-specific software for maintenance & logistics

Rail vehicles and railway infrastructure should always be available - because every standstill costs money. In addition, there are high requirements for ECM-compliant documentation in maintenance. In rail logistics, the focus is on profitable freight transport and an efficiently organised „last mile“.

ZEDAS offers field-tested solutions for the challenges of railway and transport companies. Even in its standard version, the software for technical asset management and logistics management digitally maps all relevant railway processes. The four specialised software products can be used independently and are ready for use comparatively quickly. The use of several products also offers unique synergy effects.

Maintenance of vehicles and infrastructure

All maintenance activities can be organised, planned, tracked and documented in zedas®asset. The appropriate maintenance strategy for each

object - whether corrective, preventive/condition-based or predictive - can be mapped in the system. The solution for efficient fleet management of light rail vehicles and standard-gauge railways digitalises and simplifies the processes in the workshop. zedas®asset for railway infrastructure supports infrastructure operators in ensuring the reliability and safety of their assets. The graphical visualisation of linear asset networks provides the full overview.

Highlights in zedas®asset

- Condition monitoring and digital life cycle file
- Detect weak points and forecast plant condition
- Integrated, forward-looking resource management and planning
- ECM-compliant documentation
- Integration of all measurement data
- Apps for mobile maintenance on the train or on the track
- Key figures for well-founded decisions and investment planning

Continuous processes in rail logistics

zedas®cargo for mainline traffic in rail freight transport enables international rail transport undertakings to plan, monitor and bill international transports efficiently and transparently. With zedas®cargo for shunting traffic, connecting, factory and port railways easily handle daily processes such as dispatching, train arrivals and departures and shunting itself.

Highlights in zedas®cargo

- Integrated resource and order management
- Customer portal for seamless collaboration (with ETA)
- Transparent, complete documentation and billing
- Standard interfaces (TAF TSI)
- Digital processing of all wagon and load data
- Modern apps, e.g. for wagon management and train control
- Comprehensive Management information

ASSET MANAGEMENT
FOR RAIL VEHICLES
AND RAIL INFRASTRUCTURE

LOGISTICS MANAGEMENT
FOR SHUNTING TRAFFIC AND
RAIL FREIGHT TRANSPORT



ECM-compliant documentation and
operational approval

On-Demand Webinar

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