
Provision of Vehicle Performance Data

INTRODUCTION

UIP regularly points out the high importance of vehicle performance data for Wagon Keepers and ECMs around Europe. It has previously formalised its general demand on vehicle performance data in its Position Paper on a European Strategy for an Efficient Exchange of Rolling Stock Data in Rail Freight (July 2013). UIP still believes that complete vehicle performance data in high quality is an important input to assure compliance of ECMs with highest standards of vehicle maintenance and to improve efficiency of vehicle maintenance systems.

Although legal requirements within both the TSI (TSI OPE 4.2.2.5) and the ECM Regulation exist, today's legal framework falls short of saying clearly which data should be exchanged and how. The attempts to use a contractual basis (such as the GCU) to ensure that all parties involved in the maintenance process exchange relevant information have failed due to complex authorization discussions over data access rights, a lack of standards for data quality and formats and a fear of loss of proprietary information related to traffic patterns. Only very few Railway Undertakings deliver vehicle performance data to Wagon Keepers/ECMs, and those who do, take no responsibility for data quality and completeness.

Furthermore, since 2012 and following the recommendations of the EC Task Force on Telematics Applications, limited progress has been made towards achieving a common European solution for the mileage calculation for Rolling Stock (see recommendation 12 of 08/57-DV61EN01, handled at RISC53).

UIP believes that the time has come to demand a revision of the legislation applying to data exchange in order to achieve a coherent and full territorial coverage of performance (input) data exchange for freight vehicles.

This paper formulates the following demands for the provision of vehicle performance data and addresses the European Commission, Rail Safety Authorities and Sector Organisations.

REQUIREMENTS ON VEHICLE PERFORMANCE DATA

It is a proven fact that wear and tear of a freight vehicle strongly depends on travelled mileage as well as on actual performance. Therefore, Wagon Keepers/ECMs need to consider both. Performance focuses, in addition to mileage, on the loading conditions of the vehicle, which is usually measured in ton-kilometres. A useful indication of the vehicle performance can be deducted from the split between travelled mileage when empty and travelled mileage when loaded.

The need for vehicle performance-based maintenance/inspection intervals and preventive maintenance activities is growing significantly. This is mainly due to increasing vehicle utilisation as

well as the use of innovative components such as composite brake blocks. Performance-based maintenance regimes enable a more effective maintenance planning and execution. Purely time-based regimes must consider abundant reserves and inevitably lead to more maintenance activities, higher vehicle downtimes and operating cost.

Maintenance planning is a safety sensitive area justifying the demand for (1) complete and (2) high quality data input.

- (1) Aggregated vehicle performance data across several RUs is as good as its weakest part. A recent UIP study identified a lack of willingness for voluntary cooperation to deliver vehicle performance data, as cooperation requests to support UIP's study were mostly denied. Therefore, it has to be assured that all Railway Undertakings operating freight trains in Europe deliver complete data. Even if only few Railway Undertakings are not able or not willing to provide data, the quality of the whole system suffers.
- (2) The same UIP study also shows that some vehicle mileage calculation methods that are currently used produce deviations of up to 27% when compared to actual vehicle mileage. It is inevitable that vehicle performance data need to meet a standardized quality benchmark. Therefore, an accuracy tolerance level has to be defined fulfilling the requirements of the Wagon Keepers/ECMs.

Several European countries have introduced mileage related funding systems for noise reduced freight vehicles. Such systems require national state (territory) mileage data from the keeper. A standardised approach to vehicle performance data should consider these requirements. Therefore, delivered vehicle performance data should be categorised by state. A side effect of such categorisation can be the allocation of specific travel conditions and/or topographical characteristics (with relevance to the wear and tear of vehicles) in such territories.

In view of the common responsibility of all sector partners for the safety of rail freight transport, the proven availability of vehicle movement input data in high quality from infrastructure managers and Railway Undertakings, and the common interest of all sector partners in improving the commercial performance of rail freight, expensive and operationally challenging vehicle-based odometer/telematics systems are viewed by UIP as second best option to making use of what already exists.

Comparable solutions for the delivery of good quality vehicle performance data by Railway Undertakings or Infrastructure Managers to Wagon Keepers/ECMs, already exist. The US "UMLA" and the UK "TOPS" system are examples of good practice.

UIP DEMANDS

UIP strongly demands the establishment of a legal framework, enabling Wagon Keepers/ECMs to receive the necessary performance data to support their compliance with ECM obligations and to improve the efficiency of vehicle maintenance systems.

To achieve this, UIP has developed three key conditions for implementation in regulatory frameworks:

1. Every Railway Undertaking or (alternatively) the respective Infrastructure Manager shall deliver vehicle performance data to Wagon Keepers and/or their ECMs; fulfilment of the data delivery obligation must become a pre-condition to operating freight trains.
2. Such data shall be made available free of charge in a standardised format.
3. A legal form of permanent authorization of Wagon Keepers/ECMs to access their vehicle performance data from Railway Undertakings/Infrastructure Managers is mandatory to avoid complex and permanently changing authorization processes.

UIP also demands from the Sector concerted action to develop standards for the calculation and delivery of consistent vehicle performance data.

To achieve this, UIP sees the need to address nine key areas of relevance:

1. Railway Undertakings (or alternatively) the respective Infrastructure Manager shall provide vehicle mileage data, split into vehicle mileage when loaded and vehicle mileage when empty.
2. A vehicle's gross ton-kilometres (transport performance, incl. wagon weight) should be provided in addition to distance travelled.
3. Performance Data must be categorised by State (country, territory).
4. Performance Data shall be delivered per trip or alternatively aggregated over a maximum period of one month. In case of aggregation, the data supplier must guarantee the accuracy of aggregated data.
5. The data delivery shall not be delayed by more than 15 days after the end of the trip or the aggregated period. This enables timely consideration of performance data for maintenance planning and implementation.
6. As a rule, average deviation of provided performance data must not deviate by more than +/-5% when compared to actual wagon mileage travelled.
7. Detailed and complete trip data (incl. location of origin and destination for validation of delivered performance data) shall be available at least for three months trailing the data delivery term.
8. A common European standard for the (electronic) exchange of vehicle performance data must be established (including data content/structure and application).
9. Finally, UIP recommends to establish a standardised calculation methodology for vehicle mileage and performance data, which will help to assure consistent data quality across numerous Railway Undertakings. UIP pilot studies show that the use of Infrastructure Manager train movement and network distance information support the generation of high quality data output.



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Founded in 1950, the UIP – International Union of Wagon Keepers, with its seat in Brussels, is the umbrella association of national associations from fourteen European countries, thus representing more than 250 keepers with approximately 180.000 freight wagons, performing 50 % of the rail freight tonne-kilometres throughout Europe. UIP represents the members' concerns at international level. By means of research, lobbying and focused cooperation with all stakeholders and organisations interested in rail freight transportation, the UIP wants to secure on the long term the future of rail freight transport. www.uiprail.org.
