



Economic Commission for Europe**Inland Transport Committee****Working Party on Rail Transport****Sixty-eighth session**

Geneva, 13 (pm)–15 October 2024

Item 5 of the provisional agenda

**The Revision Committee to the Model Rules of the
Permanent Identification of Railway Rolling Stock****Summary of discussions during the workshop on integrating
the URVIS number into digital solutions****Note by the secretariat****I. Workshop overview**

1. The second workshop during the 2nd session of the Revisions Committee to the Model Rules on the Permanent Identification of Railway Rolling Stock (SC.2/RC.1) focused on the application of digital solutions to the marking of the URVIS (Unique Rail Vehicle Identification System) identifier, with a view to improving asset identification, tracking, and overall management, which in turn would strengthen creditor security and reduce financing costs.
2. The Group started the workshop by discussing briefly on various digital solutions available, ranging from digitalizing paperwork to Internet of Things (IoT)-enabled systems that provide real-time updates. IoT solutions in particular, where the asset itself is capable of sending real-time data about its location and status, was considered crucial in the digitalization framework. It could not only allow predictive maintenance and better utilization of railway asset, but also creditors to gain a better understanding of their status and usage, giving confidence to creditors to offer financing to the rail sector.
3. Historically, the rail sector relied heavily on borrower creditworthiness for financing, creating significant inequality in access to credit. While reputable and well-established organizations or government-backed railway companies could access credit more easily, smaller market players are often disadvantaged. The lack of access to credit poses as a significant barrier to entry, and it should be the aim of the Group to create a dynamic and competitive rail industry, similar to the aviation industry where leases of aircrafts are readily available.
4. To lower this barrier to entry, it was considered necessary to allow creditors to be able to provide financing based on the security of the asset instead of the debtor. In other words, creditors should be able to recover their collateral in the event of a default. In order to achieve

this, a five-step framework for integrating URVIS identifier into digital solutions was discussed, namely (i) the creation of legal rights in relation to the rail asset; (ii) the creation of the unique asset identifier URVIS; (iii) the creation of public registration of security interest against these assets; (iv) marking of rolling stock with URVIS identifier; and (v) enforcement of repossession rights in cases of default or insolvency with the assistance of digital tracing.

II. Digital tracking

5. The importance of digital tracking was discussed in depth. It would significantly enhance creditor's security by giving creditors greater control over their assets, reducing risks associated with default. Mechanisms such as geo-fencing allow creditors to monitor compliance with contracts (e.g., ensuring assets are not moved into restricted areas/territories). It also enables real-time monitoring of rolling stock, allowing for maintenance to be scheduled based on actual usage rather than arbitrary intervals. It also offers new opportunities for innovative financing models, such as rent-per-mile, where payments are based on asset usage rather than time.

6. The integration of digital tracking systems also ties into Basel IV regulations, which require banks to set aside more capital for their loans based on the size and risk of the lending. In the European Union, it is agreed that when the lender has strong security over the asset, the loan is considered less risky, leading to a lower capital requirement. The Rail Working Group noted that it would be important for this to be extended to assets covered by international treaties (such as the Luxembourg Rail Protocol for rolling stock and the Aircraft Protocol under the Cape Town Convention), which could help reduce the cost of credit for borrowers in the rail sector.

7. Several key challenges were discussed. First, it is crucial to define how and where data is collected, stored, and accessed. Ensuring the security of this data from tampering or unauthorized access is essential to protect both creditors and operators. Second, there were discussions about who should have access to real-time tracking data and its accuracy, including potential time lags of the tracking locations, mindful that much railway infrastructure also serves military purposes. Finally, the importance of creating technology-agnostic standards was emphasized. This would ensure the system can function across various technological platforms without being tied to a single vendor or solution.

III. Other potential benefits

8. The use of digital solutions in managing risks in both railway and maritime assets was also discussed. For instance, during the transport of dangerous goods such as lithium batteries, increased temperatures in containers and railcars could lead to dangerous situations. The adoption of IoT solutions with sensors installed onboard could help to mitigate this issue. In the event of a serious accident, it is also important to know the precise location and the contents of the cargo, which could expedite the rescue procedures. Digitalization could also reduce burdens on manual documentation and facilitate more efficient exchange of information between various stakeholders along the supply chain.

IV. Technological and operational gap to IoT Adoption

9. It was acknowledged during the discussion that the adoption of IoT and other digital solutions in the rail sector is slow and disperse, especially when comparing with other sectors. However, given the other potential benefits brought about by digitalisation, the return on investment of digitalisation could be substantial and would give incentives to the sector in

adopting the various digital technologies. For instance, initiatives such as digital automatic coupling was discussed as one of the driving forces behind the standardization of data sharing between wagons and locomotives. The digitalising of the URVIS identifier could potentially complement these systems, especially for new vehicles, although it would take time to integrate URVIS fully across the rail sector, considering the large number of rolling stock globally.

V. Cybersecurity and access to information

10. Participants also discussed that data collection and digitalization involve costs, and it is important to clearly define the use case for accessing and sharing data. The new Data Act in the European Union allows broader access to IoT data under certain conditions, ensuring that a wide range of actors can legally access the information they need.

VI. Integration of URVIS in IoT solutions

11. The importance of integrating the URVIS identifier into IoT solutions were discussed. This is considered essential for IoT tracking systems to provide real-time and accurate tracking data across the world, similar to those that are provided to the aviation industry.

12. The use of the European Vehicle Number (EVN) was also discussed. While the EVN could be used for a similar purpose, it only applies to certain types of rolling stock and operates within specific regions. The Luxembourg Rail Protocol and URVIS, on the other hand, applies to a wider range of railway equipment globally, including trams and non-EVN systems. While it was acknowledged that it will take time to implement URVIS across all existing and new equipment, participants expressed confidence that technological developments like geofencing, GPS tracking, and satellite monitoring will evolve to support the uptake of digitalisation. The URVIS number could serve as the foundation for IoT-based solutions, enabling real-time data sharing on rolling stock among operators, creditors, and other stakeholders.

VII. Informal Group of Experts

13. The Revision Committee thanked the speakers for their intervention and noted that this topic is of great importance to the work of the Model Rules. The Group agreed to establish an informal Group of Experts on the application of digital solutions to the marking of the URVIS identifier (RC.1/IGE.1) to take this discussion further. The agreed terms of reference document for RC.1/IGE.1 is set out in annex II to ECE/TRANS/SC.2/RC.1/2024/2.
