



Baarerstrasse 98, PO Box 7262, 6302 Zug, Switzerland
Tel: +41 (0)41 760 28 88; Fax: +41 (0)41 760 29 09; email: info@railworkinggroup.org

Working towards a global common identifier for Railway Rolling Stock

The Luxembourg Rail Protocol will provide a new system of international security rights for creditors (secured lenders, lessors and vendors under a conditional sale) whose interests (each one of which is defined as an “International Interest”) will be registered, and searchable 24/7 through the internet. The international registry will be based in Luxembourg. For a creditor to secure its position by registering, and possibly enforcing, its International Interest against an item of railway rolling stock, the rolling stock must be uniquely identifiable. The problem is that there is currently no universal unique identification system, so we have had to invent one. This note looks at how the system should work in practice.

Why a new numbering system is needed

It is an essential requirement of the Protocol (and logical) that the rolling stock be uniquely identifiable. Moreover, the identifier must be not just currently unique but always so and the physical rolling stock must be identifiable by reference to such identifier. If this is achieved there are also other benefits for rail and finance stakeholders.¹

Article XIV of the Luxembourg Protocol states that there must be “a system for the allocation of identification numbers by the Registrar which enable the unique identification of items of railway rolling stock.” The identification number must be affixed to the item of railway rolling stock or associated in the international registry either with the manufacturer’s name and the manufacturer’s identification number or a national or regional identification number for the item so affixed.

There are several million locomotives and wagons in the world, produced by thousands of manufacturers in scores of countries. Many, but not all, number their products but there is every probability that these numbers will be duplicated, recycled or replicated

¹ For more on this see *Identifying railway rolling stock- it’s time for a world-wide system* at <http://railworkinggroup.org/wp-content/uploads/docs/r0480.pdf>

The Rail Working Group is a not-for-profit association constituted under Swiss law representing a broad cross section of the global railway community.

For a complete list of our members and more about us, please visit our website at www.railworkinggroup.org



by another manufacturer. So a manufacturer's number cannot be used as a universal identifier.

Most rolling stock is marked with a running number for use in day to day operations. This usually indicates that the rolling stock is authorised/accepted for operation in a rail system (immatriculation). But again these numbers can change. Moreover the systems for allocating running numbers in most parts of the world cannot work for the purposes of the Protocol because:

- (a) Running number systems are completely different from one region to another (but of course this does not exclude a running number being used in one part of the world being duplicated in another);
- (b) In certain cases the numbers can be replicated/recycled or altered since the number is often structured or partially constructed (i.e. an element of the number is descriptive of the equipment or operator and therefore could change if the equipment is reconstructed, technically upgraded/modified or the operator changes); and
- (c) The current systems do not apply to all types of rolling stock covered by the Protocol²

Neither of the existing systems of identifying equipment will satisfy the requirements of the Protocol therefore and we are forced to develop/establish a new system. We believe our proposed URVIS system meets the requirements.

The URVIS number

The Rail Working Group set up a task force to address this problem with technical experts and representatives of key rolling stock manufacturers. The group concluded that a new identification number, known as the URVIS³ number, must be allocated to each asset (in addition to other numbers allocated by the manufacturer and/or the registering authorities) and be permanent and unique both now and in the future. It would then be used alongside any running number similar to the way a car usually has an external number plate, which may change, and the chassis number, usually stamped on the chassis, which never does. Registrations of the creditor's International Interest are made using the URVIS number. But having a permanent unique URVIS number for rolling stock has many other advantages for the industry, not least for location tracking, safety monitoring, maintenance and insurance.

With regard to vehicles registered in EU Member States, discussions are ongoing with the European Railway Agency to explore how there can be technical links between the Luxembourg International Registry and the National Vehicle Registers in the EU Member States (immatriculation registry). Probably the best solution is for the URVIS

² Such as trams and cable cars – for more on this see *What Equipment is covered by the Luxembourg Protocol? More than you might think at*

<http://railworkinggroup.org.nova.ch-meta.net/wp-content/uploads/docs/r0556.pdf>

³ Unique Rail Vehicle Identification System



number to be recorded at the immatriculation registry with the running number and carried across by the immatriculation registry to any replacement running number.

Regulations for the operation of the International Registry will be issued before the Protocol comes into force. They will provide that the Registrar will, on request, issue URVIS numbers to applicants, usually either manufacturers, maintenance companies or operators. Once it is issued, a number will never be repeated. The number will comprise 16 Arabic digits. Zeroes will be permitted in any position other than the first position and an automatically generated check digit shall form the twentieth digit derived from the Luhn mod 10 algorithm. The URVIS identifier will be unstructured, i.e. it shall be allocated as determined by the Registrar although it will be possible to request specific numbers from the Registrar at a small additional cost.⁴

A voluntary system

The Luxembourg Protocol does not require that an URVIS number is allocated to every item of rolling stock. But once the Protocol is in force in a state, any lessor or other secured creditor will probably require that equipment financed subsequently where the debtor/lessee is in such state, will be given an URVIS number so that the creditor's security interest may be registered at the International Registry. That suggests that it may be sensible for manufacturers to ask for URVIS identifiers for all new vehicles but it is not mandatory.

In relation to existing rolling stock, there will be a transition period before pre-existing security interests will lose their priority against other creditors subsequently registering their security interest as an International Interest. So it is expected that during that transition period, an URVIS number will be requested for existing financed equipment and will also be added when equipment is refinanced. For operators owning their own rolling stock where it is not security for any debt (for example large state-owned railways) there will be no necessity to obtain an URVIS number. However if the rolling stock is actually or potentially moving across jurisdictional boundaries it may be useful for these operators to obtain a number and note its interest either through registering an International Interest, if there is an internal lease of financing, or a notice of sale relating to the original purchase of the rolling stock, thereby placing others on notice of the operator's interest.

Fixing the URVIS number on the rolling stock

The number issued by the rail registry must be permanently attached in a form that is resistant to wear and tear. This could be on the manufacturer's plate, a supplemental plate or could just be stamped on the chassis. We could also envisage more sophisticated equipment such as a passive RFID chip – which will open the way to real time tracking of financed assets for creditors (and even operators) but the vehicle's URVIS number will still need to be physically readable. In due course, the registrar will issue guidance notes on size and positioning. Probably any plate or other identification system will be required to be on both sides of the rolling stock for ease of identification manually or through satellite or other rail-side tracking systems. Stamped numbers will need to be accessible for inspection.

⁴ So in fact the applicant can incorporate an initial works or running number if it so wishes.



The Registrar will be advised by the Rail Working Group on the detailed protocols of how the identifier will be a permanent part of the rolling stock. The RWG will again involve its members and technical experts to ensure that, as much as possible these reflect current industry practice and can be implemented as easily, and cheaply, as possible. More likely this would be an evolving process, where there would be a simple system required, for example the URVIS number just being added to the plate [already] fixed on the side of the rolling stock and then empowering, but not requiring, the development of more intelligent identification systems (including RFID chips and tracking technology⁵). Manufacturers could decide just to add the URVIS number automatically onto its standard plates as new rolling stock comes out of the factory, as a service to its customers at a negligible cost, or it could wait to be asked by its customer to do so. It would be useful to add the URVIS number to any log book or maintenance record for the rolling stock; this would have the important advantage of allowing the maintenance record to be linked unambiguously to a vehicle. However, such a step is not a requirement of the Protocol.

For more information about the Luxembourg Rail Protocol, please go to www.railworkinggroup.org

⁵ This may be required for other “homeland security” reasons.