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Working towards a global common identifier for Railway Rolling Stock

The Luxembourg Protocol to the Cape Town Convention is a new international treaty that introduces a global legal system to make it cheaper and easier for the private sector to finance railway rolling stock without the need for state guarantees or support.

The Protocol provides for the recognition and prioritisation of security interests held by creditors lending on, or leasing, all types of railway rolling stock (including passenger and freight locomotives and wagons, metro and light rail trains, trams and cable cars). This security will be registered in a new [international registry](#), in Luxembourg, which is searchable through the internet by the public 24/7.

The Protocol introduces, for the first time a new global common unique permanent identification system (URVIS) for rolling stock. The United Nations has separately introduced the [UN Model Rules on Permanent identification of railway rolling stock](#) setting a minimum standard for the permanent marking of the URVIS number onto railway rolling stock.

The Protocol entered into force in contracting states on **8th March 2024**. Currently ratified by 4 states (Spain, Luxembourg, Sweden and Gabon plus European Union in respect of its competences), South Africa and Paraguay are expected to ratify shortly. France, Germany, Italy, Mozambique, UK, and Switzerland have all signed but not yet ratified.

The Protocol is good for financiers, but it is also great news for Chinese operators. With its independent corporate structure it opens new opportunities for the China State Railway Group.

Why a new numbering system is needed

It is an essential requirement of the Protocol (and logical) that the rolling stock be uniquely identifiable. Only in this way is a creditor guaranteed rights in relation to

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financed equipment. 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 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. In some parts of the world this is allocated by a national or supra-national regulatory authority licensing or certifying rolling stock to operate on specific rail systems (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 and therefore a new solution is needed.

The URVIS number

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>

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 <https://www.railworkinggroup.org/wp-content/uploads/docs/R0556.pdf>



A preparatory commission has been mandated by the diplomatic conference which adopted the Luxembourg Rail Protocol in Luxembourg to pave the way for the implementation of the Protocol. It concluded that, for the purposes of the Protocol, a new identification number, known as the URVIS³ number, should be allocated to each asset and which will be permanent and unique both at the time of allocation 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. The numbers would be issued by the International Registry, at a nominal cost, and registrations of the creditor's International Interest are then made using the URVIS number. However, having an URVIS number for rolling stock has many other advantages for the industry, not least for location and status tracking, safety monitoring, maintenance and insurance.

With regard to vehicles registered in EU Member States, discussions are ongoing with the European Union Agency for Railways 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 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 to manufacturers, registered keepers or owners. Once it is issued, a number will never be repeated. The number will comprise 15 Arabic digits. Zeroes will be permitted in any position other than the first position and an automatically generated check digit shall form the sixteenth digit derived from the Luhn mod 10 algorithm.⁴ 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.⁵

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

³ Unique Rail Vehicle Identification System

⁴ See separate paper on this at <http://www.railworkinggroup.org/wp-content/uploads/docs/R0921.pdf>

⁵ So in fact the applicant can incorporate an initial works or running number if it so wishes.



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. However, identification could be by way more sophisticated equipment such as a passive RFID or NFC chip – which will open the way to real time status and location tracking of financed assets for creditors, operators and regulators through GPS or track side monitoring systems. Stamped numbers will need to be accessible for inspection and be readable for the entire useful life of the rolling stock. The UN Economic Commission for Europe has now set up a group of experts to advise on common standards for permanent marking of rolling stock with the URVIS number where, as much as possible, the standards will 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 technology⁶). 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 where ever it is in the world. However, such a step is not a requirement of the Protocol.

For more on the Luxembourg Rail Protocol, visit www.railworkinggroup.org., as well as the UNIDROIT website www.unidroit.org. Keep up to date with all the latest developments via the Rail Working Group's [LinkedIn group page](#).

⁶ This may be required for other “homeland security” reasons.