Introduction of the ILU-Code for swap-bodies and semi-trailers

The European Committee for Standardization (CEN) has adopted with a substantial majority the reworked standard EN13044 for the marking of intermodal loading units (ILUs). This will bring a fundamental modernisation in the codification of swap-bodies and semi-trailers used in continental Combined Transport.

The first chapter of the standard contains the new owner codification of loading units known as the ILU-Code, which is compatible with the worldwide known BIC-Code. Chapters 2 and 3 describe the new codification plates for the marking of swap-bodies and semi-trailers for railway operations.

CEN launched a working group (TC119) three years ago at the initiative of UIRR Operators and UIC railway undertakings (the Technical Committee of INTERUNIT) to rework the nine-year-old standard making it functional. Under the guise of the standards organisation every affected stakeholder of intermodal transport was involved: CT Operators and railway undertakings, road hauliers, short sea shipping operators and inland navigation companies, the manufacturers of vehicles and loading units, as well as the Bureau International des Containers of Paris, which issues the so called "BIC-Code" for containers used in worldwide traffic.

The present document summarises important facts and provides a background to explain the standard EN 13044.

The current codification

Combined Transport (CT), when putting loading units on wagons, nearly always exceed the normal loading gauge of rail transport and therefore would have to be treated as a special shipment. In order to carry out such kind of transport regularly, most of the main railway lines have been specially measured and have been codified. The CT loading units (swap-bodies, non-ISO containers[1] and semi-trailers) must also have a codification according to their dimensions. In order to be able to use a certain line, the gauge code of the loading unit must not exceed the gauge code of the line. The INTERUNIT railway gauge map, which can be found under www.uirr.com, shows an overview of the lines suited for Combined Transport services.

A logistics company owning swap-bodies has first to codify them before using them for Combined Transport involving rail. During the current procedure of codification, which has been introduced in the seventies, the competent railway undertaking or CT operator makes the required checks:

1. Whether a container is appropriate for rail operations, i.e. has been constructed according to the required standards[2].
2. Takes measurement of its dimensions as a basis for the code allocation.
3. Allocates a number for owner identification.

These three parameters remain unavoidable in the future as well.
But the new EN 13044 implies a new distribution of responsibilities incumbent upon the:

- to 1) manufacturers of loading units / certification authority
- to 2) manufacturer
- to 3) owner/ operator/ renter

It is little known that many swap-bodies are only used in pure road transport. The road carrier is thus enabled to leave a loading unit at the customer's place for unloading and return later to collect the laden loading units. This allows both the driver and the vehicle to work more productively.

[1] ISO containers do not need a codification as they are built according to internationally prescribed ISO standards. Their dimensions are predefined. As the width and height stay unchanged the different dimensions of length (20, 30 or 40 feet) can be easily distinguished.

[2] Appropriateness to rail operation according to UIC leaflet; in the meantime also considering the appropriateness to rail operation according to CEN standards.

Separation of codification and identification of owner

Access to Combined Transport using rail is simplified by means of the EN 13044 as standardized loading units are directly codified by the manufacturer for railway operations as well. The individual registration via railway undertakings or Combined Transport Operators, which has been the practice so far, was too expensive and complicated for many CT customers. Moreover, standardized devices used in other segments of the economy are typically registered by the manufacturer.

Until now when a codified swap-body or semi-trailer was sold it had to be codified once again, as the gauge code and the owner code was contained on the same label. With the separation of these two codes, the gauge code allocated by the manufacturer remains the same as being a codified description of the loading units' geometry. The seller himself is interested in removing his owner code from the loading unit and the new buyer can attach his new owner code and choose the further numbering according to his own criteria[3]. As this method functions well every day with millions of containers worldwide, it will also work well with swap-bodies and semi-trailers used in European continental traffic.

Imagine if the buyer of a TV set would have first to go to a certification bureau and be required to have his television set registered before switching it on! Or the buyer of a car if (s)he would have to seek certify the different components of his car to the applicable standards confirmed individually on his own in order to get the permission to drive. Everywhere in the world this task is the manufacturer's, who is liable to adhere to every applicable standard during the production process. The certification must relate to the respective product and remain so upon a change of ownership as well.

White frame 1 = BIC-Code
white frame 2 = codification plate in the picture above

Usually, ISO containers have born the BIC-Code and swap-bodies the codification label up to now.

Our example shows a non ISO container which is labelled twice: the BIC-Code on the top in order to identify the owner (GAVU 698176 3), and further down the yellow codification label (difficult to see from a distance) with the gauge code above (S22 C20) und the owner identification below (25 015 0176).

Enlargement of codification plate

[3] As six digits of the owner code can be chosen freely by the owner, he is in a position to allocate useful numbers to his loading units according to company-specific criteria. For example, he may reserve certain digits for containers used in country X or

BIC-Code for worldwide maritime transport

The 'BIC-Code' has made international container transport easier for decades. Up to now, the "Bureau International des Containers" located in Paris has allocated about 2000 owner codes enabling the identification of about 20 million containers.

Structure of the BIC- and ILU-Codes:

Key of the owner – registration number – check digit

ABCU 001234 3

Key of the owner:	Allocation by BIC or UIRR
Key of product group:	Fourth alpha character for type of loading unit[4]
Registration number:	Free allocation by owner
Check digit:	Given calculation procedure

Capacity of the BIC-Code and ILU-Code

The capacity of the BIC-Code for containers (with a 'U' on the fourth digit) permits the allocation of 17,000 codes. This would not be sufficient if all European entities owning loading units wanted to get such a code.
The five letters authorized on the fourth digit by CEN for the ILU-Code should be sufficient in the near future to ensure that all European Companies, owning loading units, can register an ILU-Code. If really need be then the CEN could make other letters available for the ILU-Code.

ILU-Code for continental transport

Companies carrying out worldwide container shipping should get a BIC-Code. According to ISO 6346, all freight containers can be marked using the BIC-Code. The EN 13044 standard offers a new, BIC-Code compatible solution for all other companies who own loading units that are used only within Europe: the ILU-Code.

It may be interesting to know that a corresponding code is allocated to transport companies by the National Motor Freight Traffic Association (NMFTA) in the USA called Standard Carrier Alpha Code, or SCAC. NMFTA agreed with BIC not to allocate owner codes with 'U', 'J' or 'Z' on the fourth place. A similar agreement has been put in place in case of the new ILU-Code, as these identifiers remain reserved for the worldwide accepted BIC-Code. Since the loading units marked with the SCAC, mostly semi-trailers, remain on the American continent, the European loading units can receive the similarly structured ILU-Code as they will be deployed exclusively within Europe.

[4] ISO 6346 requires 'U' on the last place for containers, 'J' for equipment fitted on the container and 'Z' for trailers and the chassis. The EN13044 requires a A, B, D, E or K for ILUs with restricted use for Europe.

Allocation of the ILU-Code

The ILU-Code will be allocated by the International Union of Combined Road-Rail Transport Companies (UIRR) in close collaboration with BIC. UIRR today comprises 18 CT Operators who organise two thirds of the total volume of Combined Transport shipments on rail coming from third parties. Over a thousand road carriers and forwarding agents as well as many railway undertakings hold shares of UIRR member companies. About 8,000 CT customers have already been registered in the European customer code data base which is managed by UIRR on behalf of its member companies. These stakeholders of Combined Transport will be interested in having an ILU-Code in the first place. UIRR, primarily financed by its members' fees, is in a position to allocate the ILU-Code with a relatively small additional effort. In addition to this, UIRR's supervision by CT Operators and its involvement with CT customers will prove to be the best guarantee for maximum efficiency of the ILU-Code's administration.

The initial allocation of the ILU-Code will cost EUR 250, while the renewal, due only every second year, EUR 100. Registration is required only once per owner and its cost is independent of the number of loading units he owns. In the future haulage companies will not have to pay for the codification plates for each swap body and cranable semi-trailer as most manufacturers assured that they would provide the loading units directly with a codification plate[5].

ILU-Code / EN 13044 European deployment plan

A modernization of the codification for Combined Transport and the introduction of the ILU-Code can only be possible if the most important actors agree on a deployment plan (in line for instance with the SEDP of TAF-TSI)[6]. The Railway undertakings and the CT Operators united in the Technical Committee of INTERUNIT[7] have already developed a system of codification of railway lines and loading units and thus provided a base for the success of Combined Transport. INTERUNIT's Technical Committee has been the engine behind the reworking of EN 13044 which has been adopted by CEN in October 2010.

Fundamentally all European standards are only recommended for use on a free-will basis. The railway undertakings and CT Operators – both members of INTERUNIT – agreed on a binding deployment plan defining procedures and deadlines for the transition from today's codification routine to codification by the manufacturers and the use of the ILU-Code:

1. UIRR will begin issuing ILU-(owner)codes on 1 July 2011, while railway undertakings and CT-Operators will start issuing the new code plates.
2. Following a three-year transition period (from 1 July 2014) railways and UIRR Operators will only accept ILUs marked with either a BIC- or an ILU-Code.
3. After a transition period of eight years (from 1 July 2019) no other operational marking may be contained on ILUs than the codification plates specified in EN13044.

[5] Today, the fees for codification amount to about 35 EUR per loading unit.

[6] SEDP: Strategic European Deployment Plan. Within the framework of a European project this deployment plan was supported by the European Commission. All important rail freight associations were involved: UIC, CER, UNIFE, UITP, EIM, RNE, ERFA, UIP, UIRR

[7] INTERUNIT: common platform founded by UIC railway undertakings and UIRR Operators in order to coordinate important questions of Combined Transport. Following the liberalization of rail freight market INTERUNIT became open to every interested railway undertaking and CT Operator.

Advantages of the ILU-Code

- ✓ The introduction of the ILU-Code as well as the codification of all containers by the manufacturer simplifies access to Combined Transport as all loading units are directly usable in CT in future.
- ✓ When selling/purchasing second hand loading units, no new codification is necessary.
- ✓ In future there will be only one uniform owner identification for all loading units: the BIC-Code will be valid worldwide for freight containers, while the compatible ILU-Code to European loading units. Standardization means simplification, i.e. reduced software and organization costs for forwarding agents and haulage companies.
- ✓ Logistics companies/road hauliers are in a position to number their fleet of vehicles according to own criteria: 6 digits of the BIC- or ILU-Codes are available for this purpose.
- ✓ Savings in work time are even more important for all companies involved in the transport chain: the EDP-adapted code reduces data input errors as 95% of possible type errors will be identified immediately through the check digit. Time and effort for correction of data input errors and transcription errors will thus be reduced considerably.
- ✓ All players of the transport chain as well as third parties, such as customs authorities, emergency services etc. are at any time in a position to trace the owner of a loading unit, as the owner code is published (on the websites of the BIC- and ILU-Codes[8]). This aspect is important for both controls at the external borders of the European Union and higher standard in the field of safety and security within the Community. In order to deal with the loading units more quickly, customs authorities go over to checking the container identity directly via a link with BIC. Similar goes for the Carnet-TIR number allocated by IRU. Should non-ISO containers, swap-bodies and semi-trailers be dealt with priority, they can meet the same requirements using the ILU-Code in future.
- ✓ The existing codification plates of the loading units are hardly recognisable by OCR systems[9], whereas the much bigger BIC/ILU-Code bearing a check digit is easily machine-readable. Systems already in use at maritime ports could thus also be put into service at continental transhipment terminals and contribute to enhancing their productivity.
- ✓ By means of TAF-TSI[10], the European Commission prescribed an EDP-based solution to aid rail freight transport after having found that in the past the sector has largely been incapable of effectively addressing these issues on its own. In this context, a number of European reference data or codes are also introduced in order to allow/simplify data exchange between the actors of the transport-chain. Among other things an operational database for wagon and intermodal loading units is required. The ILU-Code offers the possibility to conveniently settle this point of the initiative while upholding the interests of the stakeholders affected.

[8] http://www.bic-code.org and as from 1.7.2011 http://www.ilu-code.eu
[9] OCR: Optical Character Recognition
[10] TAF-TSI: Telematic Applications for Freight – Technical Specifications for Interchange COM 62/2006

Summary of the changes with EN 13044: The process of codification

The present codification procedure

The railway undertaking or the CT Operator:

1. Checks whether a container is appropriate for rail operations, i.e. have been constructed according to the standards[11].
2. Takes its dimensions as a basis for the gauge code allocation.
3. Allocates a number for owner identification.

The present marking

The yellow codification plate (difficult to see from a distance) with the gauge code above (S22 C20) und the owner identification below (25 015 0176).

The EN 13044-compliant procedure

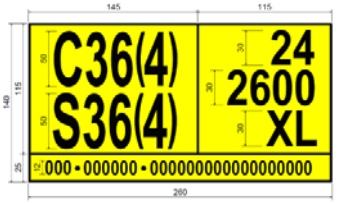
1. ***The manufacturer guarantees that the loading unit has been constructed according to the standards***

   The manufacturer guarantees compliance with the required standards, and thereby the suitability for railway operation, as he installs the codification plate discussed below. This capability is typically certified through an independent certification body; alternatively the manufacturer may possess a general certification.

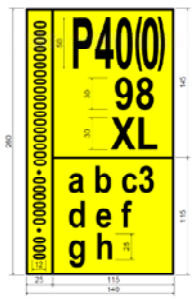
2. ***The manufacturer will attach the codification himself***

   The new codification plate can be horizontal or stand vertically, and contains every detail which is essential for railway operations:

   - Gauge in accordance with UIC-596-6 (“C36 S36” in the example)
   - A code for the length category (“24” translating to 7.82m)
   - Width in mm (“2600”)
   - “L” or “XL” relating to the compliance of the ILU’s rigidity with EN12642. “XL” refers to higher level of strength required by higher speed trains travelling at speeds of 140km/h or more.
   - The dossier number featured in the bottom row, which must not be readable from a distance, refers to: place of codification, application number, frame number of the swap-body.



Horizontally positioned codification plate



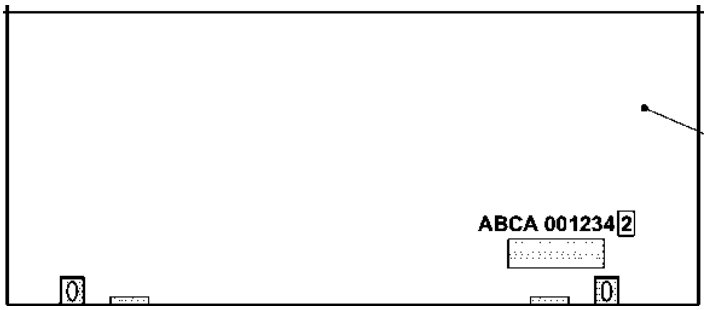
To the left is the codification plate for semi-trailers (which can also be positioned horizontally or vertically).
In the upper field the gauge code, height of the saddle and strength,
In the lower field features the compatibility-code with the various types of pocket wagons in line with UIC 596-5, and the compatibility code (“C3” in this case) for positioning of the scotch block.
These provide vital information effectively for the crane operator and the railway personnel to rapidly and securely load the semi-trailers onto the special pocket wagons.

[11] Appropriateness to rail operation according to UIC data sheets; in the meantime according to CEN standards also considering the

3. The owner/ operator/ renter will attach his owner identification himself

Those operators which have ISO-containers used in maritime traffic need the worldwide recognised BIC-Code, which they can also use to identify other freight containers.

For the companies which own swap-bodies, non-ISO containers and semi-trailers used only in intra-European transport-chains the ILU-Code will offer a suitable alternative.



Side of swap-body with ILU-Code and codification plate

Advantages of the ILU-Code for the various stakeholders	**Advantages in particular for:**			
	Haul	**OP**	**RU**	**Cust**
Simplified access to Combined Transport using rail	☑	☑	☑	
No re-codification necessary upon change of an ILU's ownership	☑			
Uniform owner codification of all loading units: the BIC-Code or ILU-Code.	☑			
Owners may number their loading units according to their own criteria	☑			
EDP-adapted code reduces data input errors	☑	☑	☑	☑
Suitable for OCR	☑	☑	☑	
Higher standard in the field of safety and security	☑	☑	☑	☑
Compatibility with TAF-TSI-based electronic data exchanges	☑	☑	☑	☑

Abbreviations:

Haul	Logistics company/road haulier	OP	CT Operator, terminal operator
RU	Railway undertaking	Cust	Customs and other authorities

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