

## GOODS CODING IN LOGISTIC UNITS

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### *Abstract*

*The essence of this study was to present possibilities of logistics units using. The logistic label is one of the basic tools used to mark the cargo – logistic units – and monitor its flow. The logistic label with a bar code is adapted so as to facilitate the automation of the administrative operations related to shipment and handling. The information encoded as bar code on the transport label can serve as a key to a specific data base which contains detailed information on the transport unit. The logistic labels are commonly used in the European industry where many different standards co-exist, and every one of them is adapted to the needs of a certain sector.*

The identification of goods on the basis of the bar code applies not only to the commercial units but also to logistic units also called transport units. According PN-EN 1573 such unit can have any structure, and is intended to serve for transport or storage [ 12 ]. It has to be identified and monitored throughout the chain of deliveries. The units often go through various intermediate links: supplier, recipient, one or more intermediaries, customs services, etc., and that is why their identification and bar code marking is used in many applications of the individual users [ 11, 13 ].

Each of those parties has to be able to identify the logistic unit and associate it with specific data including: address, number of the order, contents of the unit, weight, supplier, etc.. Such information is often stored in computer systems and can be exchanged between the concerned parties by means of Electronic Data Interchange ( EDI ) [ 1, 3, 11 ].

The standard marking which identifies every logistic (transport) unit as unique, and which can be used by all the parties involved is the unique identifier called licence plate.

In accordance with the standard PN-EN 1572, that number guarantees a unique identification of any individual logistic unit globally [ 12 ]. The number is authorised by registration Authority ( RA ), which also determines its format. It contains up to 35 digits and characters from the upper part of the keyboard and commences with the code of a given RA institution, called issuing Agency Codes ( IAC ). The RA institutions register and receive an IAC code in the central secretariat of the European Committee for Standardization ( CEN ) or in Logistics and Warehousing – GS1 in Poznań [ 1, 2, 8, 10, 11 ].

The most often used identifier of logistic units is Serial Shipping Container Code ( SSCC ). Thanks to the scanning of the SSCC affixed on every logistic unit, it is possible to monitor individually the physically moved units, as a result of the combination of the physical movement of the units with the flow of the information related thereto. Many other applications may also be implemented such as assembly and repackaging, identifying the tracks of shipped lots, automated receipt of goods, etc. Using SSCC finds its best rationale when [ 1, 4, 8 ]:

- it is important to identify the individual logistic units,
- the data important for the carrier or recipient are to be associated with a given shipping in order to ensure suitable manner and conditions of transport or convey information (e.g. expiration date, number in the series),
- transport-related requirements pertain to a specific shipment (e.g. handling procedure),
- the contents of the recipients is variable or non-standard,

- additional or untypical transport requirements are to be ensured, so as to guarantee compliance with the pertinent regulations.

The logistic label is one of the basic tools used to mark the cargo – logistic units – and monitor its flow. The data figuring on the label are presented as text legible for the eye and in an encoded format, using the EAN-128 code. A standard logistic label is composed of three parts: the upper part contains the name or logo of the company, or any non-standard text; the central part contains the information legible for the eye; in the lower part the data provided in the central part are provided as bar code [ 1, 8, 10, 11].

The scope of information which can be conveyed using a logistic label is very large. The only compulsory element of the label is SSCC. That number is intended to serve as unique identifier of every transport packaging for a minimum period of one year, and then may be used again. The structure of the SSCC used in Poland is as follows [ 1, 8, 12, 13 ]:

- Issuing Agency Codes ( IAC ), which may change from 0 to 9,
- prefix EAN.UCC for Poland, set as 590,
- number of the coding unit, assigned by The Institute of Logistics and Warehousing depending on the needs of the concerned company,
- individual number of the logistic unit assigned by the company creating the unit in question, such company to guarantee that the number shall not be doubled within any one year.

The SSCC structure as valid in Poland is presented in the table 1.

**Table 1. The Serial Shipping Container Code (SSCC ) structure as valid in Poland**

Issuing Agency Codes ( 0-9 )	Prefix EAN.UCC	Number of the coding unit	Individual number of the logistic unit	Control number
IAC	590	P <sub>1</sub> P <sub>2</sub> P <sub>3</sub> P <sub>4</sub>	S <sub>1</sub> S <sub>2</sub> S <sub>3</sub> S <sub>4</sub> S <sub>5</sub> S <sub>6</sub> S <sub>7</sub> S <sub>8</sub> S <sub>9</sub>	K
IAC	590	P <sub>1</sub> P <sub>2</sub> P <sub>3</sub> P <sub>4</sub> P <sub>5</sub>	S <sub>1</sub> S <sub>2</sub> S <sub>3</sub> S <sub>4</sub> S <sub>5</sub> S <sub>6</sub> S <sub>7</sub> S <sub>8</sub>	K
IAC	590	P <sub>1</sub> P <sub>2</sub> P <sub>3</sub> P <sub>4</sub> P <sub>5</sub> P <sub>6</sub>	S <sub>1</sub> S <sub>2</sub> S <sub>3</sub> S <sub>4</sub> S <sub>5</sub> S <sub>6</sub> S <sub>7</sub>	K
IAC	590	P <sub>1</sub> P <sub>2</sub> P <sub>3</sub> P <sub>4</sub> P <sub>5</sub> P <sub>6</sub> P <sub>7</sub>	S <sub>1</sub> S <sub>2</sub> S <sub>3</sub> S <sub>4</sub> S <sub>5</sub> S <sub>6</sub>	K

Source: [ 1 ].

As a result of using SSCC to mark the shipped lots, the quantity of information needed to be supplied together with the order for the forwarder. The address information about the entity sending the lot figures in the computer system of the service provider, and the access thereto is possible on the basis of the SSCC number [ 3, 6, 8 ].

The Serial Shipping Container Code ( SSCC ) identifies separately every single parcel composing the shipped lot. The forwarding companies use also the shipped lot number. A shipped lot contains a determined number of physical units, collected for transport purposes. The shipped lot number is assigned by the forwarder so as to ensure the possibility to identify a set of physical units – parcels, composing one shipping lot. The logistic label may also contain [ 1, 5, 8 ]:

- information on the customer – number of the purchase order, location code, postal address and code,
- logistic dimensions,
- commercial dimensions,
- information about the product – number EAN-13, quantity of the product, serial number, production date, expiration date, number of the return packaging, price, country of origin.

The logistic label with a bar code is adapted so as to facilitate the automation of the administrative operations related to shipment and handling. The information encoded as bar code on the transport label can serve as a key to a specific data base which contains detailed information on the transport unit. The logistic labels are commonly used in the European industry where many different standards co-exist, and every one of them is adapted to the needs of a certain sector. It is believed that the transport label with a bar code and with the electronic exchange of data constitutes the basis for commercial applications of standard transport labels [ 5-7, 9 ].

From 01.01.2005 on EU market is obligatory Regulation ( EC ) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety [ 14 ]. This Regulation provides the basis for the assurance of a high level of protection of human health and consumers' interest in relation to food, taking into account in particular the diversity in the supply of food including traditional products, whilst ensuring the effective functioning of the internal market. It establishes principles and responsibilities, the means to provide a strong science base, efficient organisational arrangements and procedures to underpin decision-making in matters of food and feed safety. From this reasons on logistic units of food products the Global Location Number EAN.UPC. will be used.

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