GS1

SSCC:
006141411

Standard International Logistic Label - STILL

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1 Introduction & Acknowledgments

1.1 About this document

The purpose of this document is to give recommendation on the GS1 logistic label. It shows the different labels for transport and warehousing.

The Logistic Label Group created this report within the framework of GS1 Logistics Forum. The mission of the GS1 Logistics Forum (LF) is to harmonise, improve standards for Transport and Warehousing processes and to promote the implementation of these standards in order to enable the trading partners involved in these processes to achieve business benefits by improving the interoperability of their processes and systems.

Under no circumstances should this application guide be considered as stand alone document or a replacement for the GS1 General Specifications. To implement the GS1-system effectively these recommendations must always be used in conjunction with the mentioned guidelines.

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1.2 Contributors

GS1 GO would like to thank the members involved in the working group for their assistance in creation of this best practice guideline.

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2 Executive Summary

Logistic Services Providers and carriers play a significant role in today's Consumer Product Goods (CPG) supply chain in managing the internal and external goods flows for retailers, manufacturers and material suppliers. In many of these relationships, trading partners are faced with different business processes, different identification solutions, and as a result the usage of different formats of labels.

GS1 recommends global standard solutions, which make the different functions of capture and automatic information processing operations easier.

The aim of the Standard International Logistic Label (STILL) is to drive common approach to the identification and bar coding used on Transport and Logistic Labels on logistic units as a worldwide reference point.

STILL guideline has been designed to provide the best practices using GS1 Standards with further recommendations in the logistic and transport area.

The objective is to define the best contents for the label(s) within the framework of the relationship between logistic services client (retailer or supplier), carrier and logistic services provider.

The data content should be as much as need for efficient processes but as less as possible.

Notably:

- Have the **best practice guideline** on use of the GS1 Logistic Label in transport and warehousing based on recommendation in the general specifications and ELL (European Logistic Label);

- Give recommendation on common **transport information** and reduce it to a minimum on the GS1 logistic label;

- Harmonize requirements for transport identification to increase efficiency in the supply chain;

- Help ensure a systematic tracking and tracing to r**educe delivery time and an augment service levels**;

- Harmonize and simplify **procedures with carriers and logistic service providers** in the supply chain;

- Promote the use of GS1 solutions amongst all members of supply chain in **particular with carriers**;

- Give help for users in order to increase the international exchange of eCom communication between shippers, logistic service providers, carriers and consignees and drive utilization of common label in the cross-border trade and **transportation**.

3 Background

The context is following:

- Globalisation of international trade increases the number of participants in the supply chain.

- Participants prefer to keep their internal identification and communication solutions, and if possible use them with their partners.

- In order to ensure the product's traceability and a good reception the physical flow of goods should be linked with the electronic flow of information.

- Logistic Service Providers plays more and more important role in the operations.

- Logistic Service Providers are often forced to maintain the proprietary solutions of the customers, which creates complexity.

Use of proprietary and non standardised solution causes inefficiencies between the interfaces of consignors and consignees when the goods move through the supply chain and necessary links between IT systems have to be maintained to ensure uninterrupted data flow.

Shared identification and communication standards guarantee the reliability of traceability between independent partners.

The GS1 global open standards offer some following benefits:

- Standardized and unified way of identification and communication in the supply chain.

- Widely adopted solution for Logistic Service Provider sector: the GS1 Logistic Label and the set of EDI communication messages.

- Usage helps Logistics service client, Logistic service providers and carriers can meet their customer's requirements, comply with legal regulations and to ensure traceability across the supply chain.

Legal Regulation
Each mode of transport – road, rail, air, maritime uses its own data and information standards that are often linked to governmental regulations. Legal requirements always take precedent over voluntary standards.

4 Scope

It is very important to specify that this guideline follows rules from the GS1 General Specifications.

Moreover it recommends following rules from layout by the EUROPEAN LOGISTIC LABEL. This European guideline gives recommendation on identification and labelling logistic units across Europe and it focuses on the supplier section of the logistic label. The link to GS1 Europe is following: *www.gs1.eu* **>** *download*. **In particular all requirements related to the supplier section of the GS1 Logistic Label are referred to the European guideline.**

Whereas this publication provides recommendation on customer and carrier section of the GS1 Logistic Label.

It focuses on the relationship between logistic services client (retailer or supplier), carrier and logistic services provider.

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The scope includes:
Consumer Product Goods (CPG) sector and fresh produce (reference to the GS1 Logistics Forum Governance Charter) :

- Transport information on the GS1 Logistic Label both free text and bar coded firstly on road transport and secondly to others modes (rail, air and sea).

- Transport and Warehousing operations

This guideline does not include the electronic flow of information linked with the data contained in the GS1 Logistic Label.

The use of existing EDI messages (EANCOM and XML messages standards) is recommended as outlined in the documentation: **Logistics Interoperability Model (LIM) also created by GS1**.

5   Prerequisite

Data alignment: a prerequisite

The sharing of the data base information between trade partners (requesting party and logistic service providers) on both products and locations is an unavoidable prerequisite for the control of the operations in this complex environment of modern distribution and logistics (preparation; constitution of the pallets, of the boxes).

The processes as a whole, which provides correct and up-to-date data, is conventionally called **"master data synchronization"**. It results in an ideal state of information diffusion called "data adjustment".

In order to adjust the same product identification and description in the data base of the requesting party and the logistic service provider and to make accessible the data at the moment the user needs it; it is necessary that:

- The database is collected and published in a common language known by all the actors.

- The publication tools, which are conforming to this language, are extensively accessible.

- The access to the data via publication tools is easy.

- The publication and access conditions offer sufficient security and data privacy.

If the data base management is an internal necessity for the requesting party and the logistic service provider, the synchronization in real time needs collaboration between both parties. The synchronization has to manage the exchange standards and content as well as the means allowing and supporting this exchange.

GS1 has been chosen as common language as a logical consequence of the existing applications (codification, automatic identification and EDI).

This common language is GS1 EANCOM® messages or GS1 XML.

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6 Logistic label

BASED UPON AND FULLY COMPLIANT WITH THE GS1 GENERAL SPECIFICATIONS, the GS1 Logistic Label is a **Global standard for all actors in the supply chain.** It allows a **logistic traceability for the logistic units**.

This label avoids the successive relabelling of logistic units as they move through the supply chain and gives the advantage and benefit to use only one logistic label.

One of the most important efficiency measures in the trade and logistics relations is the possession of a common language between the different actors in the supply chain.

The GS1 Logistic Label has to substitute the proprietary label existing with numerous formats. The GS1 logistic label contains all information necessaries for usage during the transport of goods from the picking location to the delivery point.

The implementation of the GS1 Logistic Label answers to numerous needs expressed by partners in the supply chain.

It ensures the link, the synchronisation and the consistency between the physical flow of goods and the information flow.

The Logistic Label is designed to accommodate the information needs of all types of goods transported in open systems, where reloading can take place at one or more transport terminals.

6.1 SSCC for unique identification of logistic units

Logistic units are items made up for transport and distribution purposes, and pallets are one particular example. Using the GS1 Logistic Label allows users to identify logistic units uniquely so that they can be tracked and traced throughout the supply chain. The only compulsory requirement is that each logistic unit must be identified with a unique serial number, the Serial Shipping Container Code (SSCC). Scanning the SSCC bar coded on each logistic unit allows the physical movement of units to be matched with the electronic business messages that refer to them.

Using the SSCC to identify individual units opens up the opportunity to implement a wide range of applications such as cross docking, shipment routing, and automated receiving. Extra information, known as attribute data like Postal codes, Consignment numbers and GLNs can also be shown on the logistic label.

The SSCC is the only compulsory data on the logistic label, and normally it will be created by the company that is constructing the logistic unit. **The best practice is that the creator of logistic unit should use its own company prefix.**

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If the logistic unit is not marked with an SSCC when it is received, the subsequent party in the supply chain may allocate the SSCC. This party can be the:

- Shipper

- Carriers & freight forwarder

- Logistic service provider

- ...

For more details about the format and structure of the SSCC, please see GS1 General Specification.

Please note that GS1 offers a web based service called Gepir for information of the companies allocating SSCCs. On the following web-page, you can type in the SSCC, and will get a response if the SSCC is valid, and which company has allocated this code: ***http://directory.gs1.org/sscc***

Each logistic unit must be assigned its own unique SSCC. Please note that the logistic unit may carry one or more labels with the same SSCC. But under no circumstances there must be different SSCC on the same logistic unit simultaneously. An SSCC can be re-used a year after it was first created if this will not cause any problems. Some regulatory, industry organization-specific or traceability requirements may extend this period.

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SSCC:
006141411234567890

(00)006141411234567890

This example shows the general approach to construct for the label.

From
E Dantès

DE40219

135, rue du général Leclerc
FR-92131 Issy les Moulineaux

To
**Mustermann Gmbh
Immermannstrasse 156
DE-40219 Düsseldorf**

Carrier
Speed Transport Ltd   **Fresh Service**

Delivery Date (YYYY-MM-DD)	Order number	Gross Weight (kg)
2007-05-22	AC 239	430

Ship to post
27640219

SSCC
03453120000002527
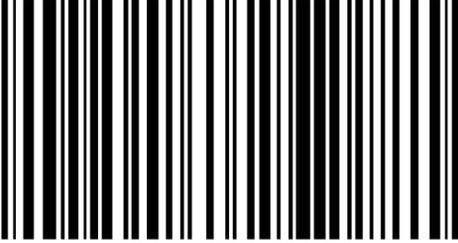
(421) 27640219

(00)03453120000002527

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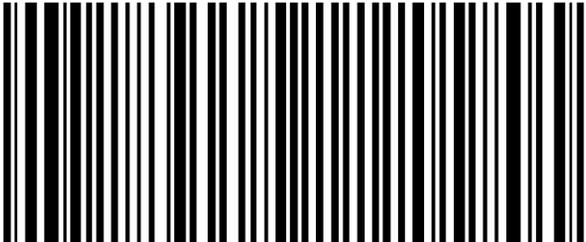
Main Benefits with the GS1 Logistic Label:
- **Unique worldwide identification** for the logistic unit;
- Significant **saving of time** thanks to the automatic data capture and checking of the shipment;
- Faster **information** more precise and reliable sent to the logistic service client during the receipt thanks to the scanning of the label;
- **Saving of time and cost** thanks to the elimination of labels successively applied by each actors in the supply chain;
- Enhanced **information reliability** thanks to the removal of multiple retranscriptions and data capture for the same information;
- **Linkage with the standard and international EDI messages** thanks to the information which is contained in the message;
- **Full traceability** all along the logistic chain, notably thanks to the full compatibility with the standard ISO/IEC 15459 often referred to as the 'ISO Licence Plate".

Legal regulation

According to many legal regulations the one who offers the product on the market is responsible for its quality and safety. To offer on the market means to store and present goods to be sold to clients, to deliver them as well as any other way to introduce these goods to the market, with only exception of direct sale.

The creator of the label has to put information on the logistic label of goods subject to legal regulations.

The GS1 Logistic Label produced by the manufacturer or on his behalf should be considered as a part of the logistic unit. It should not be damaged or destroyed in any stage in the supply chain as long as the logistic unit remains.

6.2.   GS1 Logistic label Design – Three Sections

THREE SECTIONS: SUPPLIER, CUSTOMER, CARRIER

A section is a logical grouping of information that is generally known at a particular time. There could be three label sections on a GS1 Logistic Label, each representing a group of information.

These sections are:
- Supplier,
- Customer
  and
- Carrier.

Generally, the order of the sections, is supplier (this information is known first), then customer and carrier. In some cases this order may be different depending on the size of the logistic unit and the business process being served.

In theory, each section may have three blocks. Each block has a certain function. The lowest block contains the bar coded information, the middle block contains human readable information reflecting bar coded data (as a backup) and sometimes free text and the top block is usually used for logos, addresses etc. A detailed description follows.

Very often companies do not use all sections and/or combine data from different sections in one. So there are many possible label designs, as you can see in the different examples. The picture following gives an example how a company can design the label according to its own requirements and compliant with the GS1 General Specifications.

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For more examples please see chapter 6.4.4.

Full ZIP Code

Shipper information
- Name
- Address
- ZIP Code
- City
- Country

Consignee information
- Name
- Address
- ZIP Code
- City
- Country

Service requested
- Carrier
- Name & City

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DATA TITLES & HUMAN READABLE INTERPRETATION

BAR CODE SYMBOL

HUMAN READABLE INTERPRETATION

From
Mustermann Gmbh
Immermannstrasse 156
DE-40219 Düsseldorf

FR92131

To

E Dantès

135, rue du général Leclerc

FR-92131 Issy les Moulineaux

Carrier
Speed Transport Ltd

Fresh Service

Delivery Date (YYYY-MM-DD)
2007-05-22

Gross Weight (kg)
356

SSCC
03453120000002527

GTIN
4012345333336

Order number
123456789

Batch
123456

(01)04012345333336(400)123456789(10)123456

(00)03453120000002527

6.2.1   Detailed information on the 3 blocks

Each section can have three blocks.

TOP BLOCK

The top block contains free format information (**Plain/Free Text**) that has no bar code symbol equivalent and is entirely at the discretion of the labeller. This may include company-specific codes or any other type of information. Companies often put their company name in this block.

MIDDLE BLOCK

The middle block contains:

- **Human Readable Interpretation**
  Human Readable Interpretation is text designed to support manual operations and to facilitate key entry in menu driven systems. It is the equivalent of data elements represented in bar code symbols and is comprised of data titles and data content.
  The entire bar coded data must be given in Human Readable Interpretation
  The data content should be at least 7 mm in height.
  Application Identifiers (AIs) are not included in Human Readable Interpretation and are replaced by the data titles.

- **Data Titles**
  Data titles are the standard abbreviated descriptions of data fields used to denote the Human Readable Interpretation of encoded data.

  They are prefixes of the Human Readable Interpretation to support manual interpretation of data fields. They can also be used adjacent to other text or bar code symbols to clarify content, such as the word "from" adjacent to a sender's address.

  Data titles should be used in English as specified in the 'GS1 General Specifications'. In addition, data titles can be provided in the local language of the creator of the logistic unit if necessary.

- Other text information may be added that refers directly to the logistic unit.

LOWEST BLOCK (Bar Code Symbols & Human Readable Interpretation)

The bottom block contains the GS1-128 bar codes that represent data shown in the middle section. A verification process should be in place in order to maintain symbol quality.

Bar code symbols are represented in the lower part of each section.

- **Bar Code Symbols**
  GS1-128 Bar Code Symbols shall be used on the GS1 Logistic Label.

- **Human Readable Interpretation**
  As a backup key entry and diagnostic aid, a Human Readable Interpretation of each bar code symbol shall be provided. It includes Application Identifiers and data content.

  To facilitate key entry, Application Identifiers (AIs) should be set apart from the data by parentheses.

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This Human Readable Interpretation characters shall be no less than 3 mm high and clearly legible below the symbol.

→ **Note**: The parentheses never appear in the data encoded in the GS1-128 Bar Code Symbol itself

**Data Content – Please contact your local GS1 Members Organisation
In order to have address and phone number of your local GS1:**
www.gs1.org/contact

6.2.2 Sequence of application of data

Customer and Carrier Data are generally applied at the step of the preparation of the shipment. These data normally appear above the "supplier" section.

The sequence of application of different parts of the label depends on the availability of information.

- The data content in the supplier section is generally known at the step of the production;
- The data content in the customer section is generally known at the step of the order picking or before the despatch step;
- The data content in the carrier section is generally known at the step of the order picking or before the despatch step.

Consequently, the company can design the label according to data availability, for example:
- one label with the three type of data

Or
- first, one label with the supplier data and then the others.

The different data (SUPPLIER, CUSTOMER AND CARRIER) can be created, printed and applied at different times in one or several labels and when the information is available.

6.2.3 Party responsible for the content of the logistic label

In this document, the description assumes that it is the consignor of the goods that produces the logistic label and also applies it to the package. This may be the manufacturer or Logistics Service Provider. Responsibility for the correctness of all the information contained on the label is assumed to rest with the consignor.

If it is not the consignor but another party that attaches the transport information the latter is responsible for content and quality of the data. It may be understood that each party attaching data is responsible for its own data and its compliance with earlier data.

Data that can be applied directly after compiling the logistic unit (often a pallet) is the SSCC and if existent also GTIN, best before date, lot number, etc.

As soon as consignee and transport data are known these can be added.

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6.2.4   Supplier Section

The supplier section of the label contains information that is generally known at the time of packaging by the supplier.

The Serial Shipping Container Code (SSCC) is applied here as the unit identifier. The SSCC is the only mandatory information. Thanks to the automatic data capture of the SSCC, the carrier will ensure logistic traceability of the logistic units.

The supplier information is generally known at the step of production.

Table 1 Mandatory and optional data on the label

Status	Information	Application Identifier (AI)	Format	Data Title
O	*GTIN	01	n2 + n14	GTIN
O	*GTIN of trade items contained in a logistic unit	02 always with AI 37	n2 + n14	CONTENT
O	Count of Trade Items Contained in a Logistic Unit	37 always with AI 02	n2 + n..8	COUNT
O	Batch number	10	n2 + an..20	BATCH/LOT
O	*Best before date (YYMMDD)	15	n2 + n6	BEST BEFORE or SELL BY
O	*Expiration Date (YYMMDD)	17	n2 + n6	USE BY or EXPIRY
O	Product Variant	20	n2 + n2	VARIANT
	…			
M	Serial Shipping Container Code	00	n2+n18	SSCC

Status:

M	Mandatory
O	Optional (according needs)
AI	Application Identifier
n	Numeric
an	Alphanumeric

→ **Notes:**

- Only one Application Identifier can be used either AI (01) or AI (02) on one label.

- Only one Application Identifier should be used either AI (15) or AI (17).

- Other data can be used according to the product

SSCC is mandatory. It always must be shown in bar coded and human readable formats. See example **6.4.4.1.**

6.2.5   Customer section

The customer section of the label contains information that is generally known at the time of order and order processing by the supplier. Typical information includes the ship to location, ultimate consignee address, purchase order number...

If necessary (for example for cross-docking) in this step the Global Location Number (GLN) of the final consignee can be added.

> **The customer information is generally known at the step of order picking or at the step just before the despatch.**

Table 2 Recommended data which can be on the label (free text or bar coded)

Status	Information	Application Identifier (AI)	Format	Data Title
O	*GTIN	01	n2 + n14	GTIN
O	*GTIN of trade items contained in a logistic unit	02 always with AI 37	n2 + n14	CONTENT
O	Count of Trade Items Contained in a Logistic Unit	37 always with AI 02	n2 + n..8	COUNT
O	Batch number	10	n2 + an..20	BATCH/LOT

Status:

D   Dependant (of the context i.e.: if there is ultimate consignee, he should be indicated in the label)

O   Optional (according needs)
AI   Application Identifier
n   Numeric
an   Alphanumeric

See chapter **6.4.4.5**.

6.2.6 Carrier section

The transport information is generally known at the step of order picking or at the step just before the despatch.

The carrier section of the label contains information that is generally known at the time of shipment and is typically related to transport. Typical information includes ship to postal codes, AI (421), Consignment Numbers, AI (401), and carrier-specific routing and handling information as routing code AI (403).

That information allows the forwarding of goods.

This label should facilitate automatic data capture of package numbers when tracking packages and is also intended to be used for automatic sorting at transport terminals.

In this document, the description assumes that it is normally the consignor of the goods that produces the logistic label/carrier section and applies it to the unit.

According to different transport scenarios, some data can be omitted and the label will accordingly be simpler and smaller.

In cases of direct deliveries or when partners practice electronic data interchange at all stages of the supply chain a label with only the SSCC meets all information requirements. By scanning the SSCC they can get access to all necessary data in their databases and to data sent in advance, e.g. the despatch advice.

The ultimate goal is to use only the SSCC in the label for all partners. However, as the EDI is not yet used by all participants, it is still necessary to have other data on the label.

The recommendation is using the data (table 3) in the top block (see chapter **6.2.1**)

For further explanation on information in free text for transport and logistics purposes: See chapter **6.3**.

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Table 3 Recommended and optional data on the label (free text)

For detail information see chapter 6.3.

Status	Information		Comments
O	**Shipper Information**		See **6.3.2**
	r	Shipper name	
	o	Shipper address	
	r	Shipper zip code	
	r	Shipper city	
	r	Shipper country	
O	**Consignee Information – Ship to**		
	r	Consignee name	
	r	Consignee address	
	o	Consignee zip code	See chapter **6.3.1** Consignee information
	r	Consignee city	
	r	Consignee Country	
O	**Directional code**	Full zip code of the consignee or Routing code	See chapter **6.3.3** Directional code
O	**Name and city of the first carrier**		
O	**Requested date of delivery**		
O	**Date of departure/pick-up**		
O	**Transport related information**		
O	**Gross weight of the logistic unit (with asset)**		

Table 4 Recommended data which can be in bar coded format for this section.

Status	Information	Application Identifier (AI)	Format	Data Title
O	Consignee Identification – Ship to	410	n3+n13	SHIP TO LOC
O (Only one must be used)	Routing code OR	403	n3+an..30	ROUTE
	Zip code Postal code with ISO 3166 country code	421	n3+n3+an..9	SHIP TO POST
O	Consignment number OR Shipment Identification Number	401 or 402	n3+an...30 or n3+n17	CONSIGNMENT Or SHIPMENT NO.

Status:

R/r	Recommended
O	Optional (according needs)
AI	Application Identifier
n	Numeric
an	Alphanumeric

The three sections (SUPPLIER, CUSTOMER AND CARRIER) can be created, printed and applied at different times. They can be printed in one or several labels.

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6.3 Transport and logistics information for the GS1 logistic label

The information below is considered to be very useful for the functionality of the label and should be placed in free text of the label.

See example Chapter: **6.4.4.5**.

6.3.1 Consignee information
The consignee information is optional but strongly recommended.

This information is necessary for carriers in order to know the delivery location and to deliver the goods to the right consignee. This is the reason why it is strongly recommended to be printed this information in the carrier section.

- The consignee address must be the physical address to deliver goods; the postal address should be reserved to the postal transport companies;
- According to the country, the address can be expressed by one or several lines (for example to add the sub-country for US);
- The country code in human readable is based on the ISO 3166 (with alpha 2 code elements);
- The Zip code in plain/free text is strongly recommended with the consignee address in the label.

6.3.2 Shipper information
The shipper information is optional. But if this information is provided, follow the recommendation in table 3.

6.3.3 Directional code
The directional code could be either the routing code or the full zip code of the consignee.

The routing code and the full zip code represent the same functional need. They represent the most precise route in the network of the carrier. Generally the routing code is the most precise. Either the carrier needs this code in his process, or he will ask for the full zip code by default, or nothing. So a single code will be requested.

Routing code:
The routing code is an optional data. It can be either in free text in the label or in bar code and in that case, it must be also in clear.

The routing code is defined by the carrier and sent to the shipper in order to print it in the label.

Full zip code:
The structure of the full zip code is following:
- Country code (ISO 3166-1 alpha 2 code elements) with two digits followed by zip code.

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6.3.4 Name & city of the first carrier

This information is optional.

6.3.5 Dates

Recommendation about the format of dates given in plain/free text:
The recommendation is to add the format of the date in bracket.
For example, "3rd of April 2008", write: 2008-04-03 (yyyy-mm-dd).

Requested date of delivery

This information is optional.

Date of departure/pick up

This information is optional.

6.3.6 Transport related information. (e.g., how to treat dangerous goods, etc.)

This information is optional.

6.3.7 Ultimate consignee information

This information is dependent of the context. If the shipment is in a cross-docking scenario, this information is mandatory in the label.

To view the complete list of information that can be encoded in bar code (GS1-128) please refer to the GS1 General Specifications.

6.3.8 Information can be added (i.e. weight)

In some cases, this information is necessary to be compliant to local regulation.
Weight information concerns both the individual parcel and the total for the shipment.
To the extent possible, the parcel's weight indication out of the total gross weight of parcels in the shipment in the form of nnn/nnn is a useful piece of information when transiting through intermediate warehouses. Depending on the case, the label issuer may print:

- Weight: 50 / 300   the parcel weight and the shipment weight are known.
- Weight: – / 300   only the total weight of the shipment are known.
- Weight: 50 / –   only the weight of the parcel is known. Total weight is unknown.

In addition to the weight, the label issuer can print the risk for manual handling, with the following suggestion:

Symbol 1 (0 – 15 kg)   **Symbol 2** (>15-25 kg)   **Symbol 3** (>25 kg)

Minimum size 20x20 mm.
In the event of special handling, the instructions must be clearly visible.

6.4 Technical recommendations

6.4.1 Label Dimensions

The business requirements for most users of GS1 Logistic Labels are met by using one of following:

- A6 (105 mm x 148 mm) – 4 x 6 inch, which is particularly suitable when only the SSCC, or the SSCC and limited additional data, is encoded
  or
- A5 (148 mm x 210 mm) – 6 x 8 inch

However, the label can be any size that suits the labeller's requirements, but it must be large enough to carry all the information required together with the GS1-128 bar codes. Factors influencing label sizes include the amount and a type of data required the content and X-dimensions of the bar code symbols used, and the dimensions of the logistic unit to be labelled.

6.4.2 Bar codes on the logistic label

Concatenation is an effective means for presenting multiple Application Identifiers in a single bar code symbol and should be used to conserve label space and optimise scanning operations.

X-Dimension (Symbol Magnification)

The X-dimension is the specified width of the narrowest element in a bar code symbol.

The GS1 General Specifications allow for GS1-128 bar codes to be printed with an x-dimension range of 0.495 mm to 0.94 mm when they are used on logistics labels. This upper limit ensures that a GS1-128 bar code encoding an SSCC is no wider than 165 mm, the maximum allowed. For companies using A5 sized labels with a width of 148 mm, the practical maximum x-dimension for this bar code is 0.84 mm.

The target x-dimension for symbols used on the logistics label is 0.495 mm (0.0195 in.), and users may choose larger x-dimensions subject to the limits mentioned above. Scanning systems work more effectively if all the bar codes have similar X-dimensions.

Scanning systems work more effectively if all the bar codes have similar X-dimensions.

Careful consideration should be given to the likely scanning environment.
The target symbol height is 32 mm (1.25 in.) and does not include the Human Readable Interpretation.
For further details on print quality see the General Specifications V8
See the following picture for measurements

Orientation and placement

Horizontal orientation (picket fence orientation) of bar code symbols must be used on logistic units. In other words, the bars and spaces shall be perpendicular to the base on which the logistic unit stands.

Example with barcodes:

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From
Linden Gmbh
Stauderstr 196
50832 Köln

To
Muster Gmbh
Mustermannstraße 75
DE 12345 Musterhausen

SSCC
340123451234567895

GTIN
4012345 33333 6

Batch/Lot
972679

(01)04012345333336(10)972679

(00)340123451234567895

148 mm

min.
32 mm

min.
32 mm

Font height
min. 7mm -
(0.28 Inch)

Font height
min. 7mm -
(0.28 Inch)

X Dimension
min. 0.495mm
(0.195 Inch)

Font height
min. 3mm -
(0.12 Inch)

X Dimension
min. 0.495mm
(0.195 Inch)

Quiet zone, Ten X-dimension

105 mm

6.4.3   Symbol Placement of the Logistic Label

These recommendations apply for all logistic units such as pallets, parcels, envelopes...

Although at least one side of all General Distribution Items shall display the bar coded information, it is recommended that two (or more) sides of the item be bar coded with the exact same data when:
- The printing process makes this cost effective (e.g. Pre-Printed corrugated cartons)
- The Supply Chain requirement is that one symbol is always visible (e.g. pallets that are stored either long or short edge facing)

ON PALLETS

For all types of pallets, including full pallets containing individual trade items and single trade items, (such as a fridge or washing machine), the target height for the bottom of the bar code symbol is between 400 mm (16 inches) and 800 mm (32 inches) from the base of the pallet. For pallet less than 400 mm (16 inches) high, the bar code symbol should be placed as high as possible.

The symbol including its quiet zones should be at least 50 mm (2.0 inches) from any vertical edge to avoid damage.

Example:
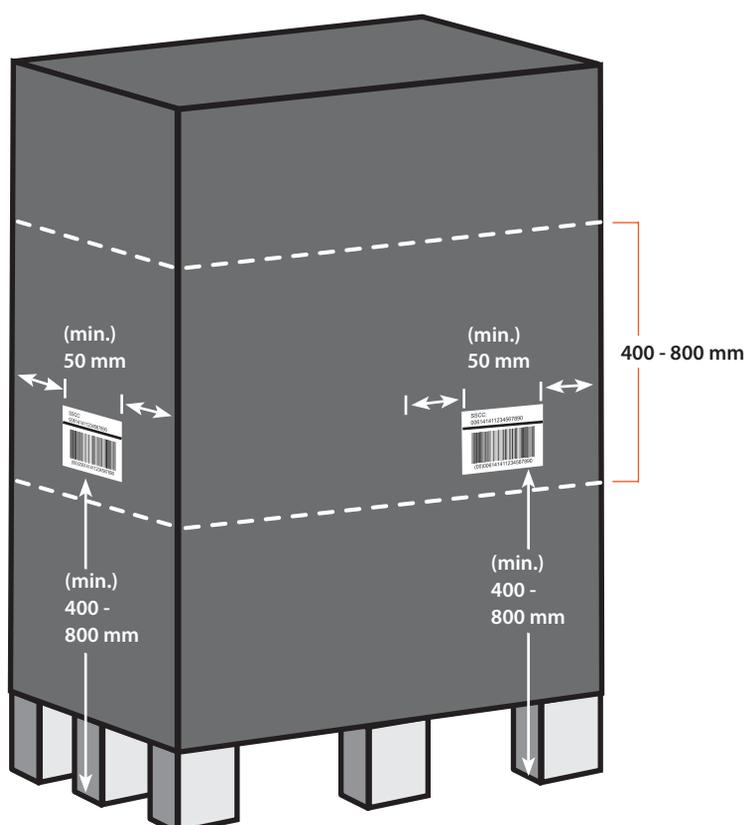
There is no regulation that specifies where the labels should be placed – to the left, in the middle, or to the right on these sides – but as most forklift operators are right-handed, the most ergonomically correct scanning is done when the labels are placed to the right of each side.

ON PARCELS

For parcels, symbol placement will vary slightly in practice; however the target placement for the bottom of the bar code symbol is 32 mm (1.25 inches) from the natural base of the item. The symbol including, its quiet zones, should be at least 19 mm (0.75 inches) from any vertical edge to avoid damage.

For smaller packages, which may be sorted automatically on a conveyor, the label should be placed on the largest surface.

Symbol placement:

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19 mm Minimum

32 mm Target

19 mm (min.)

SSCC

32 mm
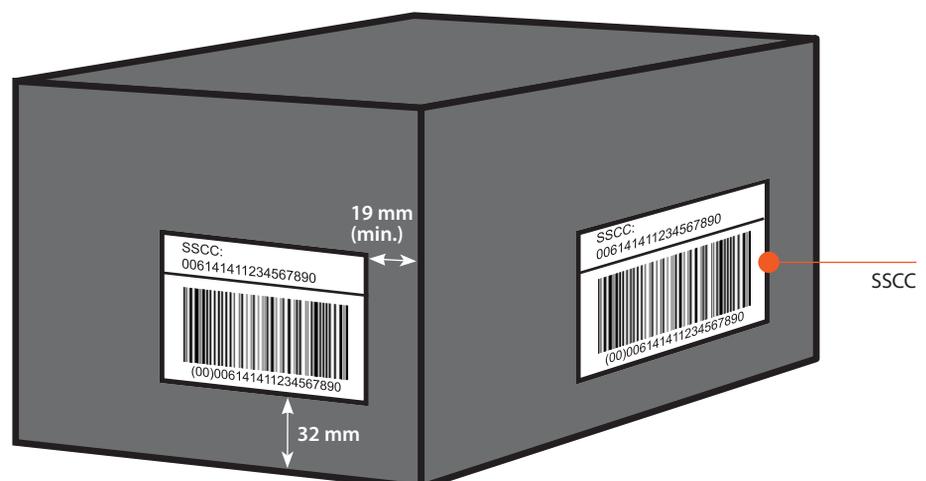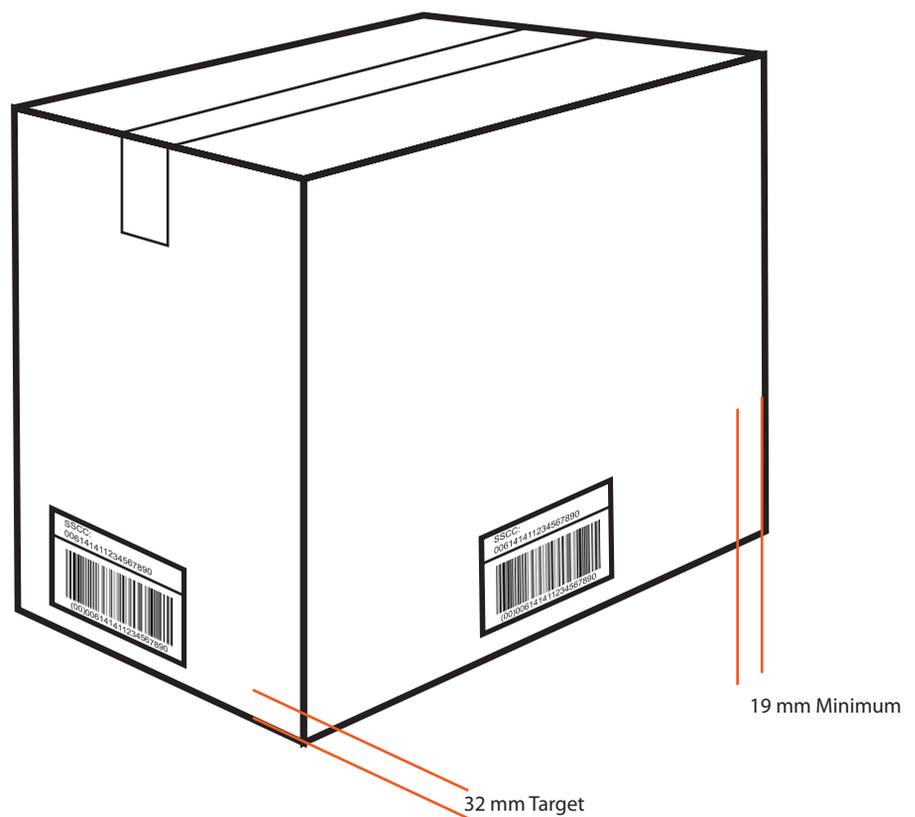
6.4.4 Examples of Logistic Label

6.4.4.1 Example: Logistic Label with Supplier Section for standard homogenous logistic units

Below you will find one example from the guideline European Logistic Label – ELL. For further information see the **chapter 4: Scope**.

The format used below for the logistic label is A5. We remind to users to respect dimensions and margin.

TOP BLOCK

Plain Text

MIDDLE BLOCK

Data Title

Human Readable Interpretation

LOWEST BLOCK

Bar Code Symbol

Human Readable Interpretation

From
Linden Gmbh
Stauderstr 196
50832 Köln

To
Muster Gmbh
Mustermannstraße 75
DE 12345 Musterhausen

SSCC
340123451234567895

GTIN
4012345 33333 6

Batch/Lot
972679

(01)04012345333336(10)972679

(00)340123451234567895
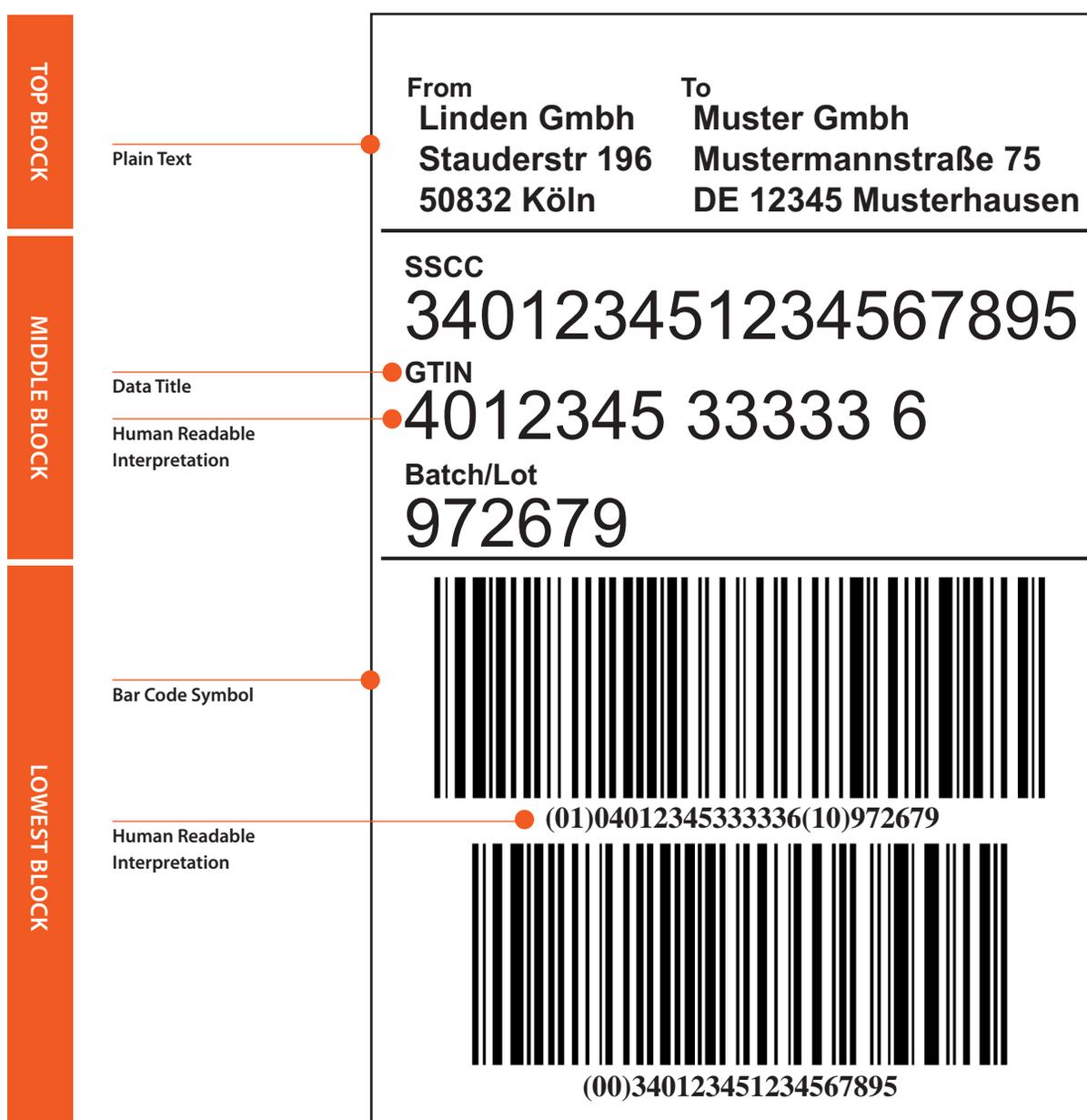
6.4.4.2 Example: Logistic Label with supplier section and carrier section in two physical labels

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From
E Dantès
135, rue de général Leclerc
FR-92131 Issy les Moulineaux

To

SUPEROUEST
Z.I. de la Grange
50 Rue Nationale
59000 LILLE FRANCE

Carrier
Transport Duval   **Fresh Produce**

Delivery Date (YYYY-MM-DD)	Depart Date (YYYY-MM-DD)	Gross Weight (kg)
2007-05-22	2007-05-21	

Order no
AX239   356

Route
621

(403)621

Carrier and Customer Section

SSCC
034531200000002534
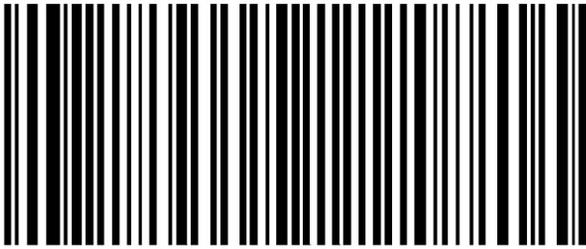
(00)034531200000002534

Supplier Section

6.4.4.3 Example: Logistic Label with supplier, customer and carrier section in one physical label with AI 421

In this example, the zip code is used with the Application Identifier: 421.

6.4.4.4 Example: Logistic Label with supplier, customer and carrier section in one physical label with AI 403

In this example, the routing code is used with the Application Identifier: 403

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Carrier and Customer Section

From   E Dantès
135, rue du général Leclerc
FR-92131 Issy les Moulineaux

To **Mustermann Gmbh
Immermannstrasse 156
DE-40219 Düsseldorf**

Carrier
Speed Transport Ltd   **Fresh Service**

Delivery Date (YYYY-MM-DD)	**Depart Date (YYYY-MM-DD)**	
2007-05-22	2007-05-21	

Order number		**Gross Weight (kg)**
AC 239		356

SSCC
034531200000002527

Route
DE402621
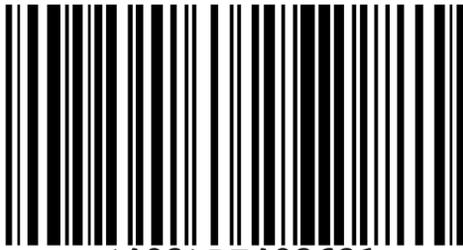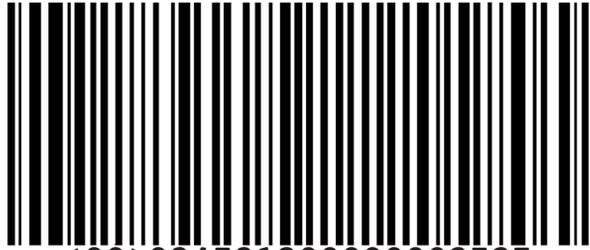
Data title & Human readable interpretation :
Routing code and SSCC

Routing code

(403)DE402621

SSCC

(00)034531200000002527

Customer and Supplier Section

6.4.4.5 Complex Example: Logistic Label with supplier, customer and carrier section in one physical label

Full Zip Code

Shipper information
• Name
• Address
• Zip Code
• City
• Country

Consignee information
• Name
• Address
• Zip Code
• City
• Country

Service requested
Carrier
Name & City

DATA TITLES & HUMAN READABLE INTERPRETATION

BAR CODE SYMBOL

HUMAN READABLE INTERPRETATION

From
E Dantès
135, rue du général Leclerc
FR-92131 Issy les Moulineaux

DE40219

To

**Mustermann Gmbh
Immermannstrasse 156
DE-40219 Düsseldorf**

Carrier
Speed Transport Ltd   **Fresh Service**

Gross Weight (kg)
356

Delivery Date (YYYY-MM-DD)
2007-05-22

SSCC
034531200000002527

GTIN
40123453333336

Order number
123456789

Batch/Lot
L123456

(01)040123453333336(400)123456789

(00)034531200000002527(10)L123456

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7   Business practices

7.1   Labelling and relabelling

The SSCC is the key to logistical traceability. Logistic units have to be identified in a standardised way using a SSCC. If logistic unit is not broken or merged, it is recommended to maintain the initial SSCC throughout the supply chain.

If logistic unit is broken and then reconstituted or merged, it is a new logistic unit. In that case, the party who create the new logistic unit has to create a new SSCC and has to record and manage link between the initial SSCCs and the new one(s).

7.1.1   Business Case

Referring to Chapter 6 the normal procedures for labelling logistic units are the following:
1. The manufacturer applies a label containing supplier information like SSCC, product description, GTIN, best-before-date, batch/lot etc.

2. When the buyer is known, customer information like Buyers Purchase Order number is put on an additional label on the logistic unit.

3. At last when the logistic unit is ready for shipment, carrier information like despatch address and delivery address is put on an additional label on the logistic unit.

Of course, if all information is known when the initial label is applied, all information may be labelled in one operation and in one label.

In real life, logistic units after reaching the destination may be forwarded to a new location after a short or longer period of storage. This is most likely to be the case if the destination point is a third party logistic provider, importer or a wholesaler. In such situations the shipping and delivery addresses on the logistic unit are changed but the original supplier information like SSCC, product description GTIN, etc. is still valid and should be kept on the logistic unit. This means that for subsequent transports some information on the label should be kept, and some information (like shipping and delivery address) has to be replaced.
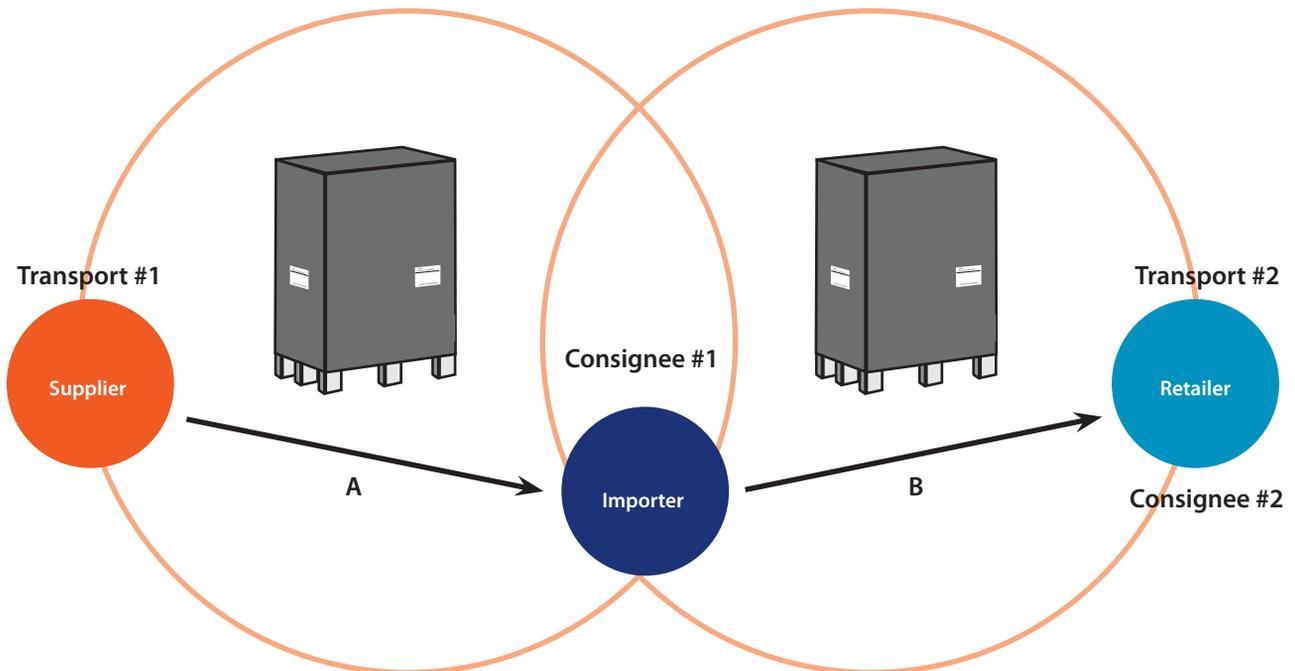
This figure shows an example consisting of two transport legs, Movement A and Movement B for a logistic unit. Movement A is from Supplier to importer where the Importer is Consignee #1 and Movement B is from Importer to Retailer and where the Retailer is Consignee #2. Transport #2 takes place after some intermediate storage at the Importer.

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In general, it is very important that all the parties involved in shipment and transport operations in the supply chain are aware of the complete transport scenarios for the logistic unit. This will affect the required information on the label and how this information should be organised on the label.

We strongly recommend applying the labelling structure as described in chapter **6.2.**

7.1.2   Keeping the SSCC through the supply chain

GS1 General Specifications V8. Chapter 2.2.1 paragraph 2 says:

"The SSCC Element String AI (00) is used for the identification of logistic units (see **Section 3.4.1 in the General Specifications**). Each individual logistic unit is allocated a unique number, which remains the same for the life of the logistic unit. When assigning an SSCC, the rule is that an individual SSCC number must not be reallocated within one year of the shipment date from the SSCC assignor to a trading partner. However, prevailing regulatory or industry organization specific requirements may extend this period."

The important point to note is that the SSCC should remain the same for the whole lifetime of a logistic unit. In practical life, the SSCC is allocated when the logistic unit is built. Example: Products are manufactured, assembled and stored on pallets in the production plant. Normally the pallet label included the SSCC is applied to the pallet at the end of the production line. The SSCC remains on the pallet unit until the pallet is split e.g. in a warehouse or at the retailer.

The logistic unit may contain one or more labels with the same SSCC. But under no circumstances there must be different SSCC on the same logistic units simultaneously.

From a traceability point of view, keeping the same SSCC on the logistic unit through the whole supply chain, gives all parties a common and unique reference back to the origin of the logistic unit who is responsible for the products.

This solution is cost efficient since the same label may be used without any cost of relabelling of the logistic units. Of course, the customer and carrier information may change through the supply chain, and some additional labelling must be done related to this information. Furthermore, using the same SSCC enables transparent EDI messages through the supply chain e.g. by use of despatch advice.

In the figure of chapter 7.1.1, the importer receives the logistic unit from the supplier with the original label and SSCC, and receives also a despatch advice containing the same SSCC and a specification of the products within the logistic unit. When shipping the logistic unit to the retailer, the importer can use the same supplier section of the logistic label, but have to add new customer and carrier information. He may also redirect the despatch advice related to the information of the logistic unit.

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Replace

Keep

From
E. Dantès
135 rue de général Leclerc
FR-92131 Issy les Moulineaux

To
SUPEROUEST
Z.I. de la Grange
50 Rue Nationale
59000 LILLE FRANCE

Carrier
Transport Duval   **Fresh Produce**

Delivery Date (YYYY-MM-DD)   Depart Date (YYYY-MM-DD)   Gross Weight (kg)
2007-05-22   2007-05-21

Order no
AX239   356

Route
621

(403)621

SSCC
03453120000002534

(00)03453120000002534

Based on GS1 General Specifications

From time to time, we may also experience reverse logistic in the supply chain, e.g. in case of food crises where recalls and withdrawals are necessary. In these kinds of situations it is much easier to keep track of the logistic unit when it has the same SSCC.

RETAILER　　　　　　　　　**SUPPLIER**
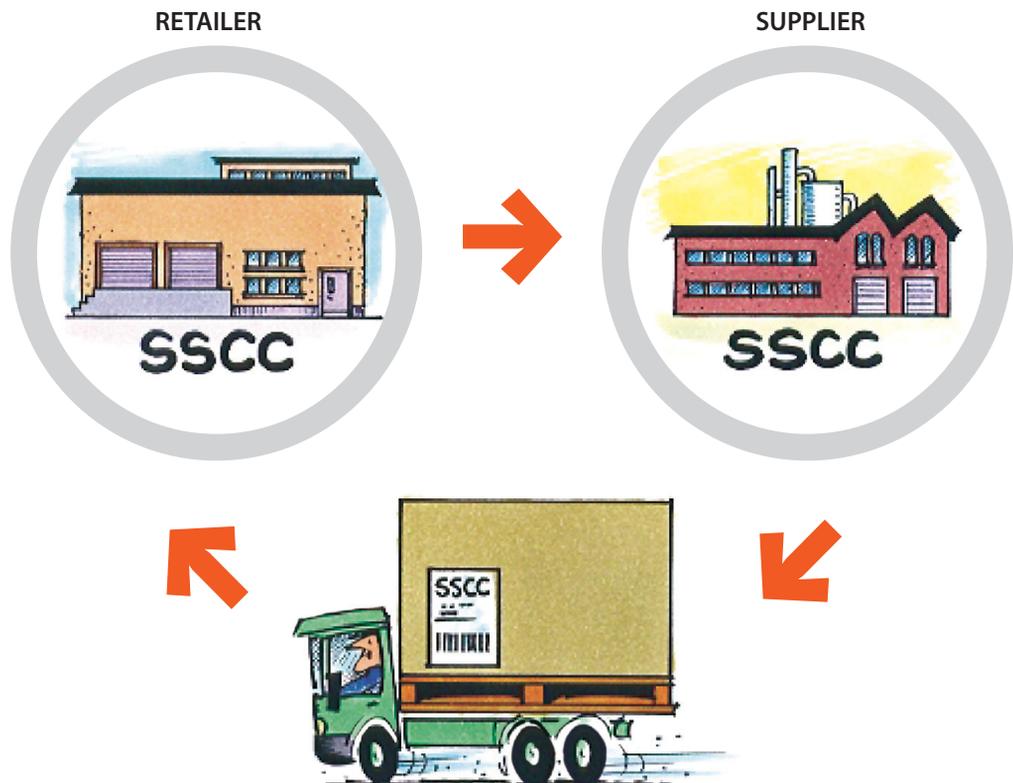
According to transporters and freight forwarders point of view, the SSCC is the basic identification system for logistic units. Their ERP-systems are constructed in a way that must prevent duplicates of the SSCC. Under no circumstances two different logistic units can have the same SSCC simultaneously.
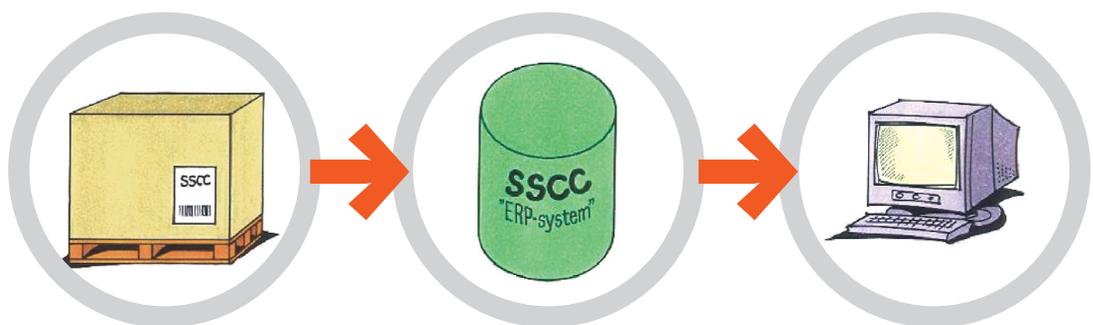
Appendix 1 – GS1-128

1.1 The GS1-128 symbology

The GS1-128 Bar Code Symbol has been carefully designed through joint co-operation between GS1 and the Association for Automatic Identification and Mobility, Inc. (AIM Global). Use of GS1-128 Bar Code Symbols provides a high degree of security and distinguishes GS1 System Element Strings from extraneous non-standard bar code symbols.

The GS1-128 Symbology is a subset of the more general Code 128 Symbology. As defined by ISO/IEC 15417, the use of the Function 1 symbol character (FNC1) in Code 128 Symbols in the first symbol character position following the Start Character has been reserved exclusively for the GS1 System.

This symbology is the only one to encode the Serial Shipping Container Code (SSCC).

The GS1-128 Symbology is used for GS1 Logistics Labels. This symbology, which is used exclusively for GS1 System defined data structures, is a highly refined, secure, and space efficient alphanumeric symbology. The data carried by GS1-128 symbols must be structured using GS1 Application Identifiers (AIs).

General structure of the GS1-128 is as follows:

S	F1	AI 1	Data 1	(F1)	AI 2	Data 2	C	E

With:

S	Start character
F1	Function 1 symbol character (FNC1)
AI	Application Identifier
C	Symbology check character
E	End character

The Start Characters

Start Characters A, B, and C define the corresponding code set to be used initially in the symbol.

- The Stop Character is common to all code sets.
- The decoder shall not transmit Start and Stop Characters

The Function 1 symbol character FNC1

The function 1 symbol character FNC1 is a symbology element used to form the double start pattern of a GS1-128 Bar Code Symbol. It is also used to separate certain concatenated Element Strings, dependent on their positioning in the bar code symbol.

GS1-128 Symbology uses the Function 1 symbol character (FNC1) in the position following the Start Character. This double start pattern is reserved for GS1 System applications worldwide. This makes it possible to distinguish GS1-128 Bar Code Symbols from extraneous non-standard bar code symbols.

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This special Start Character differentiates GS1-128 Bar Code Symbols from the more generalised Code 128 Symbols.

The Function 1 Symbol Character (FNC1) is a symbology element used to form the double start pattern of a GS1-128 Bar Code Symbol. It is also used to separate certain concatenated Element Strings, dependent on their positioning in the bar code symbol.

- Following the start character: This double start pattern (start character + FNC1) is reserved for GS1 System applications worldwide. This makes it possible to distinguish GS1-128 bar code symbols from other non-standard bar code symbols. This FNC1 is encoded in the bar code.

- As a separator: all elements strings not of pre-defined length must be followed by a Function 1 Symbol Character (FNC1) separator when followed by another element string in a single bar code symbol. An FNC1 is not required at the end of the last element string represented in a GS1-128 bar code symbol. This FNC1 corresponds to ASCII character 29 (<GS>).

The Application Identifiers
AI is the official abbreviation for "application identifier"

Each Application Identifier is a numeric code of two or more characters that uniquely defines its format and meaning.

Each data translated in GS1-128 has to have an Application Identifier, which determines the data, its format and its structure.

The symbol check character
The symbol generating software automatically calculates the symbol check character.

The Symbol Check Character shall be positioned immediately following the final data or special character and before the Stop Character.

→ **Note: The Symbol Check Character shall not be shown in the Human Readable Interpretation.**

Example of a GS1-128 symbol using AI (00) – Serial Shipping Container Code (SSCC).

(00)006141411234567890
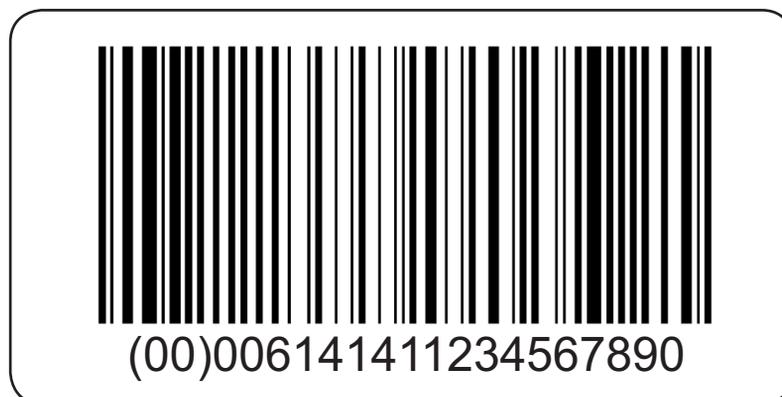
1.2   Dimensional Requirements

Please see the chapter **6.4**.

→ **For further information see the GS1 General Specification V.8.**
(See Section 5.4.4 Please contact your local GS1, *www.gs1.org > contact*)

→ **and the guideline European Logistic Label**
(See *www.gs1.eu > download*)

1.3   Quality test

To verify whether a symbol meets the specifications in the GS1 System, it shall be tested using the specification defined in ISO/IEC 15416, which details the conditions under which measurements should be made. The specification defines methods of determining an overall quality grade based on the attributes of the bar code symbol and determining its conformity with the system.

The test stages included in all verification are:

1. Check that the bar code has been put together correctly.

2. Bar code symbol test to examine the X-dimension, ratio and symbol height.

3. Quality test after simulated transport strains.

4. Visual control of the layout and information content against the specifications.

In some cases, it may be recommended to perform the tests for different goods handling environments.

In this context it must be stated that data and good printing quality are of high importance. Any faulty data or label that cannot be scanned is as good as no label and may lead to considerable irritation. There is no relevant legislation on this issue but usually any negligence is penalised by the market.

→ **GS1 Member Organisation offer quality checks and services – Please contact your local GS1 organisation *www.gs1.org > contact***

1.4   Data in bar code GS1-128 with Application Identifier in the logistic label

The GS1-128 is the bar code used for the GS1 Logistic Label. The full technical specification are published in the GS1 General Specifications.

The use of attribute information on logistic units is optional. However, when used, attribute information should be processed with the SSCC that identifies the logistic unit.

1.4.1   The Serial Shipping Container Code – SSCC (AI 00)

The SSCC is the GS1 unique identification number specifically developed for the identification of logistic units – items of any composition such as pallets, containers and cases – going through the supply chain. SSCC is a subset of ISO/IEC 15459 standard.

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The SSCC is 18-digit numeric number.

The uniqueness of the data structure is ensured through the use of the GS1 Company Prefix, which is supplied by the GS1 Member Organisation to a company and the rules for allocating an SSCC. The SSCC acts as globally unique identifier or "license plate" and provides access to information stored in computer files, which are transferred through the EDI.

The format of SSCC is presented below:

Symbol Representation of Unique License Plate

SSCC (00) 0 00 98756 000000011 5

| GS1 Application Identifier | Extension Digit | GS1 Company Prefix | Serial Reference unique number | Check Digit Calculated on the Basis of the Preceding 17 Digits |
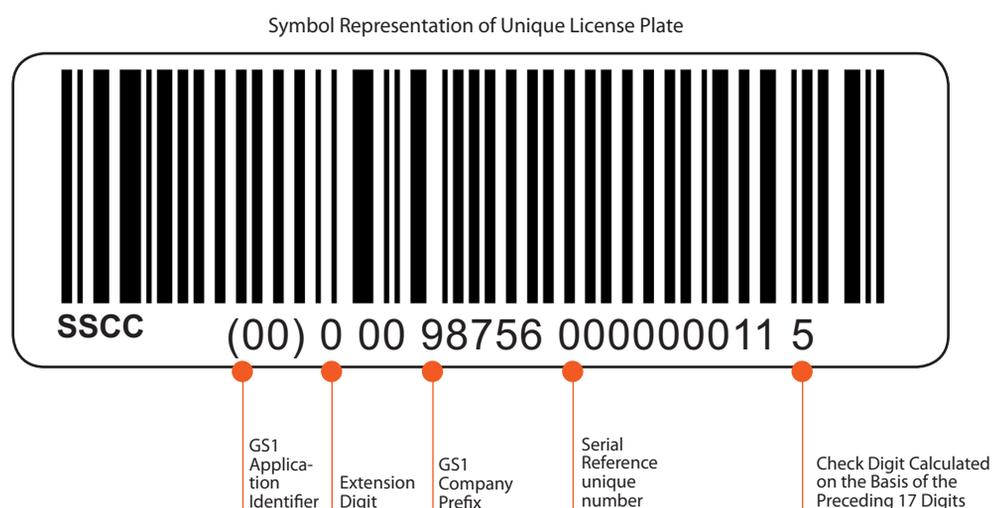
SSCC structure includes the following:

1. Extension Digit. The Extension digit is used to increase the capacity of the SSCC. It has the value 0 to 9 and has no meaning. It is allocated by the company.

2. GS1 Company Prefix. – is unique for each separate company. It consists of the GS1 Local Member Organisation (MO) Prefix and Company Number, which is assigned to each system user, company, by the GS1 MO.

3. Serial Reference unique number, allocated by a company to identify its shipments. The structure and content of the Serial Reference is at the discretion of the system user, company, responsible for its assignment.

4. The Check Digit is a number used to verify that the full identification number, SSCC in the case, is correctly composed. It is calculated based upon the preceding 17-digits.

The usage of SSCC in the supplier section is sufficient to guarantee the good progress of all operations in the transport.

The SSCC is a unique worldwide number for logistic unit. Complete numeric structure of the Serial Shipment Container Code (SSCC) improves security and reliability of data.

→ **Code 128 is fully described in "ISO/IEC 15417, Information Technology – Automatic Identification and Data Capture Techniques – Bar code Symbology Specification – Code 128.**

Application Identifier (AI)

GS1 System contains a number of identification keys, e.g. identification of items, companies, logistic units, etc. These can be encoded in bar codes.

In order for the system to recognise what identification is contained in the number, the AI is used to show this.

Application Identifier	Definition	Format of data
00	Serial Shipping Container Code (SSCC)	n2+n18

The Application Identifier (00) indicates that the data field contains an SSCC.

The SSCC as part of ISO 15459

A SSCC acts as a « License Plate » from the ISO standards. In fact, ISO defined this standard to give to each transport unit a unique identification worldwide. This standard allows every party in the supply chain to work with multiple sectors by ensuring that each transport unit has an unambiguous identification.

ISO 15459 Part1 specifies the general concept of ISO 15459-1 compliant numbers, which is a unique, non-significant number for logistic units.

ISO/IEC 15459-2 defines technical standards for unique identification of logistic units. It specifies a unique, non-significant, number for logistic units, represented in a bar code label or RFID tag attached to the logistic unit to meet these needs, known as the license plate number.

As logistic units are handled by several parties - the sender, the receiver, one or more carriers, customs authorities, etc, there is a need to identify the unit so that reference can be made to associated information such as address, order number, contents of the unit, weight, sender, etc.

The information is often held on computer systems, and may be exchanged between parties involved via EDI (Electronic Data Interchange).

There are considerable benefits if the identity of the unit is represented in bar code format, or other RFID tag, and is attached to the unit so that:

- It can be read electronically, thus minimising errors

- One identity can be used by all parties

- Each party can use the identity to look up its computer files to find the data associated with the unit

- The identify code is unique and cannot appear on any other item during the lifetime of the unit.

ISO/IEC 15459-2 defines the unique identification for logistic units represented in a bar code label; two-dimensional symbol, RFID tag, attached to the logistic unit meets these needs.

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1.4.2   Directional Codes

The shipper has two choices when using a directional code:

- if he knows the Routing Plan from his carriers, he is able to update his database and put the routing code in bar code ;

- If he does not know the Routing Plan, he put directly in bar code the postal code of the consignee in the international format.

Routing Code: AI (403)

The routing code is assigned by the carrier.
The routing code from the routing plan (AI 403)

Application Identifier	Definition	Format of data
403	Routing code	n3+an..30

The Application Identifier (403) indicates that the data field contains a routing code.

The routing code field is alphanumeric. Its content and structure are at the discretion of the carrier issuing the code. If carriers wish to enter co-operative agreements with other carriers, then a mutually agreed indicator is required to designate the structure of the routing code.

His content and structure is according to the choice of carrier. If some carriers wish cooperate together, they have to be agreeing on the structure of the routing code.

Ship to – Deliver to Postal Code with Three-Digit ISO Country Code: AI (421)

This Element String has been designed to allow the automatic sortation of logistic units using the postal code. As the postal code is prefixed by the ISO country code, it may be used internationally.

The postal code of the consignee (AI 421)

Application Identifier	Definition	Format of data
421	"Ship to" country code ISO + postal code	n3+n3+an..9

The Application Identifier (421) indicates that the data fields contain the postal code of the addressee (international format) for the receipt location of goods.
The ISO country code field contains the three-digit country number of the numerical international standard ISO 3166 that relates to the national postal code that follows.
The national postal code field contains the postal code of the addressee as defined by the appropriate postal authority. It is left justified and must not contain any fill characters.

1.4.3 The consignment and shipment

Consignment number: AI (401)

"A consignment is a separately identifiable collection of Consignment Items (available to be) transported from one consignor to one consignee via one or more modes of transport as specified in one single transport contract document."

$\rightarrow$ **Note: One consignment = One transport contract document, which may include one or more shipments, or a partial shipment.**

Definition above from UN/CEFACT.

Application Identifier	Definition	Format of data
401	The consignment number	n3+an..30

The Application Identifier (401) indicates that the data field contains a consignment number.

The consignment number is composed of the GS1 Company Prefix of the carrier and the actual consignment information. The structure of the consignment information following the GS1 Company Prefix is left to the discretion of the user of the Element String.

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Shipment number: AI (402)

"A shipment is an identifiable collection of one or more Trade Items (available to be) transported together from the Seller (Original Consignor/Shipper), to the Buyer (Final/Ultimate Consignee)."

Definition above from UN/CEFACT.

Application Identifier	Definition	Format of data
402	The shipment number	n3+n16 + n1

The Application Identifier (402) indicates that the data field contains a Shipment Identification Number.

1.4.4 The consignee identification

Application Identifier	Definition	Format of data
410	The consignee identification (GLN)	n3+n13

The Application Identifier (410) indicates that the data field contains the GS1 Global Location Number (GLN) of the consignee and that reflect the physical address to which logistic units should be delivered.

1.4.5   The ultimate consignee

Application Identifier	Definition	Format of data
413	The ultimate consignee identification	n3+n13

The Application Identifier (413) indicates that the data field contains the GS1 Global Location Number (GLN) of the internal or subsequent final destination and that reflect the final physical address to which logistic units should be delivered.

1.4.6   The customer purchase order number

Application Identifier	Definition	Format of data
400	Customer purchase order number	n3+an..30

The Application Identifier (400) indicates that the data field contains the customer's purchase order number, restricted for use between two trading partners.

It contains the number of the purchase order assigned by the company that issued the order. The composition and content of the order number is left to the discretion of the customer. For example, the purchase order number may include release and line numbers.

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Appendix 2 – Glossary of terms

AI- Abbreviation for Application Identifier	Definition
AIDC	Abbreviation for Automatic Identification and Data Capture. A technology used to automatically capture data. AIDC technologies include barcode symbols, smart cards, biometrics and RFID.
AI	Application Identifier.
alphanumeric (an)	Describes a character set that contains alphabetic characters (letters), numeric digits (numbers), and other characters, such as punctuation marks.
Application Identifier	The field of two or more characters at the beginning of an Element String that uniquely defines its format and meaning.
Batch / Lot	The batch or lot number associates an item with information the manufacturer considers relevant for traceability of the trade item. The data may refer to the trade item itself or to items contained.
Carrier	Party undertaking the transportation of goods from one point to another. The party that provides freight transportation services or a physical or electronic mechanism that carries data.
Carrier/forwarder	The carrier is the party undertaking the transport of goods from one point to another. The freight forwarder is the party arranging the carriage of goods including connected services and/or associated formalities on behalf of a shipper or consignee.
Check Digit	A digit calculated from the other digits of an Element String, used to check that the data has been correctly composed (see GS1 Check Digit Calculation).
Company Number	A component of the GS1 Company Prefix. GS1 Local Member Organisations assign GS1 Company Prefixes to entities that administer the allocation of GS1 System identification numbers. These entities may be, for example, commercial companies, not for profit organisations, governmental agencies, and business units within organisations. Criteria to qualify for the Assignment of a GS1 Company Prefix are set by the GS1 Local Member Organisations.
Concatenation	The representation of several Application Identifiers in one bar code symbol.
Consignee	The party by whom the goods, cargo or containers are meant to be received. The actual physical receipt can take place by another party.
Consignor	The party by whom the goods, cargo or containers are sent. The physical dispatch can be done by another party. Synonym: Shipper.
Consolidation	The grouping together of individual consignments of goods into a combined consignment for carriage.
CPG	See FMCG definition.

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AI- Abbreviation for Application Identifier	Definition
Cross-Docking	Cross docking (Quay to Quay or Flow Through Distribution) is a distribution system, which does not store but prepares the received goods in a distribution centre or in a hub for the immediate reshipment to shops. The preparations per store are done by the supplier and/or retailer. Cross docking can be applied in several different ways: • Pre-packed cross docking or allotment done by the manufacturer: the preparation of logistic units (cases, pallets…) for shops is made by the supplier upfront. Afterwards, these logistic units are received and stored on the quay of the distribution centre or the hub. Then they are regrouped with other logistic units arriving from other manufacturer in order to be routed without any further manipulation towards the shops, their final shipment point. • In this precise case, it is the supplier who places the logistic labels (including among others the final consignee's location information) on the logistic unit • Intermediate handling cross docking: the preparation for shops is done in the hub. The logistic units (cases, pallets...) are received, split up and re-packed in another logistic unit, despatch by the hub and delivered to the shop. These new logistic units are regrouped by destination point with those of other manufacturers. In this case it is the hub that places the logistic labels on the newly regrouped logistic units.
Data titles	Data titles are the abbreviated descriptions of data fields, which are used to support manual interpretation of bar codes.
Despatch advice	Document by means of which the seller or consignor informs the consignee or buyer about the dispatch of goods.
FMCG (CPG)	**Fast Moving Consumer Goods** (FMCG), also known as Consumer Packaged Goods (CPG), are products that have a quick turnover, and relatively low cost. Consumers generally put less thought into the purchase of FMCG than they do for other products. Though the absolute profit made on FMCG products is relatively small, they generally sell in large numbers and so the cumulative profit on such products can be large. Examples of FMCG generally includes a wide range of frequently purchased consumer products such as toiletries, soap, cosmetics, teeth cleaning products, shaving products and detergents, as well as other non-durables such as glassware, bulbs, batteries, paper products and plastic goods. FMCG may also include pharmaceuticals, consumer electronics, packaged food products and drinks, although these are often categorised separately. FMCG products can be thought of in contrast with consumer durables, which are generally replaced less than once a year (e.g. kitchen appliances).
Full container load (FCL)	For operational purposes a full container load (FCL) is considered a container into which no cargo can be added during the time it is transported under FCL conditions. The container is stuffed or stripped under the responsibility and for account of the shipper or the consignee.
Full trailer load (FTL)	For operational purposes a full trailer load (FTL) is considered a trailer into which no cargo can be added during the time it is transported.
Function 1 symbol character (FNC1)	A symbology element used to form the double start pattern of a GS1-128 Bar Code Symbol. It is also used to separate certain concatenated Element Strings, dependent on their positioning in the bar code symbol.
Global Location Number GLN	The GS1 Identification Key used to identify physical locations or legal entities. The key is comprised of a GS1 Company Prefix, Location Reference and Check Digit.
Global Trade Item Number GTIN®	Identification of a trade item, which is defined as any item (product or service) upon, which there is a need to retrieve pre-defined information and that may be priced or ordered or invoiced at any point in any supply chain. A Global Trade Item Number® may use the GTIN-8, GTIN-12, GTIN-13, or GTIN-14 Data Structure.

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AI- Abbreviation for Application Identifier	Definition
GLN	Abbreviation for the Global Location Number.
GS1 Check Digit Calculation	A GS1 System algorithm for the calculation of a Check Digit to verify accuracy of data. (e.g.: Mod 10, Price check digit).
GS1 Company Prefix	Part of the GS1 System identification number consisting of a GS1 Prefix and a Company Number, both of which are allocated by GS1 Member Organisations.
GS1 General Specifications	Defines the GS1 System data and application standards related to the marking and automatic identification of trade items, locations, logistic units, assets, and more using bar code, RFID, and GS1 Identification Keys.
GS1-128 Bar Code Symbol	A subset of the Code 128 that is utilised exclusively for GS1 System data structures.
GS1 Logistic Label	Standardised format of the label, which has been defined by GS1. This label is appropriate for all logistic units.
GTIN°	Abbreviation for the Global Trade Item Number°.
ISO/IEC 15417	Bar code symbology, Specification, code 128
ISO/IEC 15459-1	Unique Identifier for transport unit. Also known as ISO License Plate.
Less than container load (LCL)	The container is emptied and loaded under the responsibility of the logistic service provider. For operational purposes a less than container load (LCL) container is considered a container in which multiple consignments or parts thereof are shipped.
Less than trailer load (LTL)	For operational purposes a less than trailer load (LTL) is considered a trailer which multiple consignments or part thereof are shipped.
Logistic service provider	Party providing logistic services such as warehousing, re-packing products, distribution and assembly.
Logistic unit	An item of any composition established for transport and/or storage that needs to be managed through the supply chain. It is identified with SSCC.
Mode of transport	The method of transport used for the conveyance of goods or persons, e.g. by rail, by road, by sea.
Multi-modal transport	The carriage of goods and or equipment despatches at least two different modes of transport.
Quiet Zone	A clear space containing no machine-readable marks, which precedes the Start Character of a bar code symbol and follows the Stop Character. Formerly referred to as "Clear Area" or "Light Margin".
SSCC	Term used for the Serial Shipping Container Code. This GS1 Identification Key used to identify logistics units. The key is using an 18-digit data structure comprising Extension digit, GS1 Company Prefix, Serial Reference, and Check Digit.
Trade item	Any item (product or service) upon which there is a need to retrieve pre-defined information and that may be priced, or ordered, or invoiced at any point in any supply chain.
Ultimate Consignee	Party who is the final recipient of a consignment.
Warehouse	A place specially designed for receipt, storage, material handling, reconditioning and shipping of products.
X-dimension	The specified width of the narrow element in a bar code symbol.

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Appendix 3 – FAQ

1. Who decides the content of the SSCC?

It is the creator of the logistic unit who allocates the SSCC. The recipient may not impose the structure of the SSCC on the supplier. The SSCC and the GTIN are separate numbering systems with their own rules for number allocation.

2. Is the extension digit in SSCC always '3'?

No, the extension digit may vary from 0 to 9 and its use is left at the discretion of the company generating logistic labels – does not have to be '3'.

3. Are the brackets presented in the GS1-128 barcode?

No, the brackets containing AI's are not presented in GS1-128 barcode. The brackets are only used in human readable text under the barcode to differentiate separate data elements. GS1-128 software recognises different information on the basis of the standardized AI format.

4. What is an FNC1? What is it used for?

The Function 1 Symbol Character (FNC1) is a symbology element used to form the double start pattern of a GS1-128 Bar Code Symbol. It is also used to separate certain concatenated Element Strings, dependent on their positioning in the bar code symbol.

- Following the start character: This double start pattern (start character + FNC1) is reserved for GS1 System applications worldwide. This makes it possible to distinguish GS1-128 bar code symbols from other non-standard bar code symbols. This FNC1 is encoded in the bar code.

- As a separator: all elements strings not of pre-defined length must be followed by a Function 1 Symbol Character (FNC1) separator when followed by another element string in a single bar code symbol. An FNC1 is not required at the end of the last element string represented in a GS1-128 bar code symbol. This FNC1 corresponds to ASCII character 29 (<GS>).

5. Which subset must preferably be used in the GS1-128 bar code? A, B or C?

Start character set C should always be used when the data inclusive of the AI begins with four or more numeric characters. Character set C is preferred as it encodes data with a double density. This way the length of the bar code is optimised. A and B do not have this double density characteristic. A and B should only be used when alphanumeric characters are encoded or when at the end of the bar code odd-numbered positions occur. For example, when using character set C and further on in the barcode an alpha-numeric character appears, then a shift must be made from character set C to A or B. Whether to use A or B depends on the type of data that follows.

6. Where extra human readable information should be placed?

Where human readable information is legally required (e.g., dangerous goods, maximum temperature for frozen goods) in some countries the law requires food 'NOT FOR HUMAN CONSUMPTION' to be clearly marked as such must follow the local legal requirements. These legal requirements may include font size, the location of the information, the exact wording, etc. Such information is perhaps best suited to a separate informational label.

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However, if the labeler so wishes (e.g. to avoid the extra cost of an additional label) and it is in line legal requirements, the content of this section is free and the content is provided at their discretion.

7. Which recommendations regarding affixing the pallet label should be taken into consideration in order to obtain a maximum readability?

- For film wrapped pallets, affix the label above the film, not under the film, otherwise reflection will disturb the scanning.
- On pallets containing fresh/frozen products, apply labels that are resistant to humidity.
- On pallets that are stored outside/ exposed to bad weather circumstances, apply labels that are resistant to these environments.
- Use a label sticker. If you are obliged to use a label card or a loose paper (e.g. when the pallet is not film wrapped), make sure that it is well affixed to the pallet content.
- Different types of adhesives exist according to the type of surface (cartons, plastics, film…). Before affixing labels, contact your label supplier to receive the correct information.

8. What factors influence the choice of the format A6 or A5?

The factors influences are:
- Amount of data
- Availability of data
- Reading environment
- Business requirements
- Unit dimensions
- Processing situation

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