Section 2.1:

Numbering and Symbol Marking of Trade Items

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2.1.1 Introduction

2.1.1.1 Definitions and Principles

A trade item is 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. This definition covers services and products, from raw materials through to end user products, all of which may have pre-defined characteristics.

The identification and bar code symbol marking of trade items enables the automation of the Point-of-Sale (through Price Look Up (PLU) files), of goods receiving, inventory management, automatic re-ordering, sales analysis, and a wide range of other business applications.

The EAN/UCC-8, UCC-12, EAN/UCC-13, and EAN/UCC-14 Identification Numbers are used to identify trade items. Each can be considered a Global Trade Item Number™ (GTIN™) when stored in the GTIN Format, a 14-digit reference field.

Figure 2.1.1.1 – 1

Data Structures	**Storage in the GTIN Format**													
	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
EAN/UCC-14	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}	N_{14}
EAN/UCC-13	0	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}
UCC-12	0	0	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}
EAN/UCC-8	0	0	0	0	0	0	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8

If the item is of variable measure, the respective measure or price information will often be of critical importance to business applications. Attributes relating to trade items (e.g., dates, lot number) are also available as standardised Element Strings.

Each trade item that is different from another in design and/or content is allocated a unique identification number, which remains the same as long as it is traded. The same identification number is given to all trade items sharing key characteristics. Such numbers must be treated in their entirety throughout the supply chain.

Basic principles for the identification of trade items include:

- Each trade item that is different from another must be allocated a separate, unique GTIN.
- The GTIN does not carry any information related to the trade item. The brand owner responsible for assigning the GTIN must communicate this information by Electronic Data Interchange (EDI) or other means to all business partners.
- An assigned GTIN must never be changed as long as the item is not modified so that it needs to be discriminated from the initial trade item for ordering, stocking, or billing. Exceptions to this rule may occur only when regulatory or legal requirements mandate a change.
- The serialised identification of trade items, which enables total connectivity of information and communication systems, is achieved through the use of AI (01) GTIN and AI (21) Serial Number (See Section 3.6 for full details).

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2.1.1.2 Types of Trade Items

Trade items cover a broad variety of things that may carry a bar code symbol and a GTIN™. Different standard solutions apply depending on the nature of the item and the scope of the users' applications. The following sections determine the identification and symbol marking rules applicable to a particular trade item.

2.1.1.2.1 Physical or Non-Physical Trade Items

Non-physical trade items are usually called services. Services may be identified with standard numbers for open trade applications or in restricted distribution environments.

2.1.1.2.2 Open or Restricted Distribution

The main benefit of the EAN.UCC System for trade items is that it provides a unique and unambiguous identification number for every trade item, which is applicable worldwide in open environments. In addition, the system provides for other number series that may be exclusively used for restricted distribution (e.g., national use, company internal use). Restricted distribution identification numbers are available to EAN Member Organisations and Uniform Code Council, Inc.® (UCC™) members to help them develop solutions applicable within their territory.

2.1.1.2.3 Fixed or Variable Measure

Fixed Measure Trade Items are those that are always produced in the same version and composition (e.g., type, size, weight, contents, design). Like a Fixed Measure Trade Item, a Variable Measure Trade Item is an entity with pre-defined characteristics, such as the nature of the product or its contents. Unlike a Fixed Measure Trade Item, a Variable Measure Trade Item has at least one characteristic that varies whilst other characteristics of the trade item remain the same. The variable characteristic may be weight, dimension, number of items contained, or volume information. The complete identification of a Variable Measure Trade Item consists of both an identification number and information about the variable data.

2.1.1.2.4 Retail or Non-Retail

Scanning at the Point-of-Sale is a major application of the EAN.UCC System, and trade items that are intended to cross a Point-of-Sale are subject to specific rules.

2.1.1.2.5 Books and Serial Publications

Published material (newspapers, magazines, and books) requires special consideration due to the following factors:

- A solution for published material should address the requirement to process returns (sorting and counting) to wholesalers and publishers. This implies the reading of a supplementary number that is not required for item identification.
- The international systems, ISSN and ISBN, already handle the numbering of publications and books.
- Because of the large number of titles involved and the problems of creating and updating Price Look Up (PLU) files, price may be encoded within the Global Trade Item Number™ (GTIN™).

2.1.1.2.6 Single Item or Grouping of Items

A trade item may be a single, non-breakable unit or a standard and stable grouping of a series of single items. Such groupings of items may be present in a wide variety of physical forms, such as a fibreboard case, a covered or banded pallet, a film wrapped tray, or a crate with bottles. Trade items consisting of a single unit are identified with a Global Trade Item Number™ (GTIN™). Standard groupings of identical or different units, each identified with a GTIN, are identified with a separate GTIN.

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2.1.1.2.7 Single Trade Items Composed of Several Physical Parts

Because of its physical nature, a trade item may be packed in separate physical parcels. For example, furniture equipment may be composed of several pieces (e.g., a sofa and two armchairs, which cannot be ordered or sold separately). A specific standard solution is available to identify and symbol mark each component of a trade item composed of several physical parts.

2.1.1.2.8 Quality of Substrate

The choice of the data carrier (bar code symbology) used to symbol mark a trade item depends on the nature of the item and on the environment in which the bar code symbol will be scanned. It also depends on the quality of the substrate on which the bar code symbol will be marked.

2.1.1.2.9 Size of the Package

The space available on a package to symbol mark a trade item may be limited. Standard solutions that emphasise strictly defined rules are available to handle these situations.

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2.1.2 Identification of Trade Items

2.1.2.1 Fixed Measure Trade Items

2.1.2.1.1 General Numbering and Symbol Marking Rules

Fixed Measure Trade Items are those that are always produced in the same version and composition (e.g., type, size, weight, contents, design). The identification number identifies the item unambiguously. Every trade item that is different from another in any respect is assigned a separate Global Trade Item Number™ (GTIN™). The EAN.UCC Prefixes 000 to 019, 030 to 039, 060 to 099, 100 to 139, 300 to 969, and 977 to 979 are used for all GTINs described in this section.

Figure 2.1.2.1.1 – 1 shows the options available when numbering and symbol marking Fixed Measure Trade Items.

Figure 2.1.2.1.1 – 1

Data Structure	Bar Code Symbol	Reference to Element Strings in Section 3.0	Comments
EAN/UCC-8	EAN-8	Section 3.3.1	Only for small items
UCC-12	UPC-E	Section 3.2.1	Only for small items
UCC-12	UPC-A	Section 3.2.1	For all items
EAN/UCC-13	EAN-13	Section 3.2.1	For all items
UCC-12	ITF-14	Section 3.5.1	Not for Point-of-Sale
EAN/UCC-13	ITF-14	Section 3.5.1	Not for Point-of-Sale
EAN/UCC-14	ITF-14	Section 3.5.2	Not for Point-of-Sale
UCC-12	UCC/EAN-128 (AI 01)	Section 3.6.2	Not for Point-of-Sale
EAN/UCC-13	UCC/EAN-128 (AI 01)	Section 3.6.2	Not for Point-of-Sale
EAN/UCC-14	UCC/EAN-128 (AI 01)	Section 3.6.2	Not for Point-of-Sale

Any bar code symbol that is intended for General Distribution Scanning (including unattended, fixed mount scanning environments, where items are scanned automatically as they pass by on a conveyor) should be a minimum of 32 mm (1.25 in.) in height and be printed at the higher end of the permissible X-dimension range.

2.1.2.1.2 Trade Items Scanned at the Point-of-Sale

A trade item that is intended to cross the Point-of-Sale in a retail outlet must carry a bar code symbol of the EAN/UPC Symbology family. Therefore, these trade items support only EAN/UCC-8, UCC-12, or EAN/UCC-13 Identification Numbers.

Some Point-of-Sale scanning systems may be able to handle symbologies other than the EAN/UPC Symbology. However in an open environment, it is not possible to predict the type of scanner that will be used. Therefore, items intended for scanning at a Point-of-Sale in a retail outlet must be marked with a bar code symbol of the EAN/UPC Symbology family.

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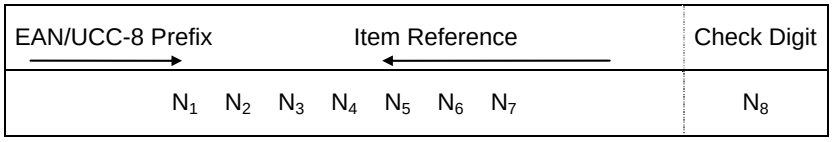
Although a sunrise date of January, 2005, has been set for the global use of the EAN/UCC-13 Identification Number, a UCC-12 (UPC) Identification Number carried by a UPC-A or UPC-E Bar Code Symbol is normally required for items sold at the Point-of-Sale in the United States and Canada. This is because many North American users cannot yet accommodate EAN/UCC-13 Identification Numbers in their [12-digit] database files.

2.1.2.1.3 When is an EAN/UCC-8 Identification Number Appropriate?

The EAN/UCC-8 Identification Number is available for items whose packaging does not include enough available space to permit the use an EAN-13 or UPC-A Symbol. EAN/UCC-8 Identification Numbers are individually assigned by EAN Member Organisations and the Uniform Code Council (UCC) on request (see Figure 2.1.2.1.3 – 1).

Figure 2.1.2.1.3 – 1

EAN/UCC-8 Data Structure



The following guidelines should be observed:

Before deciding to use an EAN/UCC-8 Identification Number as opposed to an EAN/UCC-13 ID Number or UCC-12 ID Number, companies, working jointly with their printer, should consider options such as:

- Whether the bar code can be reduced in size (e.g., printed at a lower X-dimension, taking into account the minimum bar code symbol print quality requirements (See Section 5.4))

- Whether the label or artwork can reasonably be changed to enable the printer's recommended size of a EAN-13 or UPC-A Bar Code Symbol to be included (e.g., redesigning the label increasing the label size, especially when the existing label is small in comparison with the pack area, or using an additional label). The label includes the total printed design surface, whether or not it is separately affixed.

- Whether a truncated bar code symbol can be used. A truncated bar code symbol (normal length, but reduced in height) may only be used if there is absolutely no possibility of printing a full size bar code symbol. Truncation removes the omni-directional scanning capability. A bar code symbol with excessive truncation will not be of any practical use. Users considering this option should consult their customers to see if an acceptable compromise can be reached.

Pack size constraints allow several possible options:

- The use of an EAN/UCC-8 Identification Number is authorised when the EAN-13 or UPC-A Bar Code Symbol in the size required as a result of print quality studies exceeds either 25% of the printed label area or 12.5% of the total printable area.

- The use of an EAN/UCC-8 Identification Number is authorised when either the largest side of the printed label is less than 40 cm^2 or the total printable area is less than 80 cm^2.

- The use of an EAN/UCC-8 Identification Number is authorised on cylindrical products with a diameter less than 3 cm.

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2.1.2.1.4 When is a UPC-E Bar Code Symbol Appropriate?

Only UCC Company Prefixes beginning with zero can be used to construct UPC-E Bar Code Symbols. Distribution of UCC Company Prefixes in this range is restricted to proven need only (e.g., for items whose packaging does not include enough available space to permit the use of any other bar code symbol). Companies with these prefixes are encouraged to manage their finite resource carefully.

Technical details for the UPC-E Bar Code Symbol and UCC-12 Identification Numbers are described in Section 3.A.2.

2.1.2.1.5 Books, Paperbacks, Serials, and Printed Sheet Music

2.1.2.1.5.1 General Principles Adopted in the Solutions Provided

When identifying books, paperbacks, serials, and printed sheet music, companies can choose between an existing international numbering system, such as ISBN, ISMN, or ISSN, and the EAN/UCC-13 Data Structure (or UCC-12 Data Structure in the United States and Canada). EAN International makes available, through these specifications, a general framework of solutions for books, paperbacks, serials, and printed sheet music, which should be considered by EAN Member Organisations working in liaison with publishers and trade associations.

The numbering and symbol marking rules for books, paperbacks, serials, and printed sheet music sold in the United States and Canada are available from the Uniform Code Council, Inc.® (UCC).

2.1.2.1.5.2 Identification of Books, Paperbacks, and Printed Sheet Music

When identifying books, paperbacks, and printed sheet music, a company should first attempt to identify them in the same manner as any other trade item: by use of the EAN/UCC-13 or UCC-12 Data Structure.

The second option is to use the ISBN or ISMN numbering systems. The EAN.UCC Prefix 978 is used to encode the ISBN number assigned to a particular item without its Check Digit. The EAN.UCC Prefix 979 is used for encoding either the ISBN or the ISMN of a particular item without its Check Digit.

Figure 2.1.2.1.5.2 – 1

EAN.UCC Prefix	ISBN (Without its Check Digit)	Check Digit
9 7 8	N_4 N_5 N_6 N_7 N_8 N_9 N_{10} N_{11} N_{12}	N_{13}

EAN.UCC Prefix	ISBN or ISMN (Without its Check Digit)	Check Digit
9 7 9	N_4 N_5 N_6 N_7 N_8 N_9 N_{10} N_{11} N_{12}	N_{13}

Note: For ISMN the N_4 (which is represented by "M" in the ISMN) takes the value 0 (zero). N_5 to N_{12} are the first eight digits of the ISMN number.

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2.1.2.1.5.3 Symbol Marking of Books, Paperbacks, and Printed Sheet Music

Books, paperbacks, and printed sheet music should be marked with an EAN-13, UPC-A, or UPC-E Bar Code Symbol that complies with the print quality specifications applicable to all EAN.UCC System bar code symbols. In addition, the main bar code symbols on books, paperbacks, and printed sheet music are subject to the following constraints:

- They must not be reduced in height.
- They must appear on the outside cover of the book (to facilitate payment) and inside the cover for books that are subject to return.

2.1.2.1.5.4 Supplementary Information for Books, Paperbacks, and Printed Sheet Music

Some publishers may wish to communicate additional information in a bar code symbol in order to meet their internal requirements. For example, publishers may wish to include an edition variant (e.g., unchanged reprint, price increase), which is not distinguished by the ISBN, ISMN, EAN/UCC-13 ID Number, or UCC-12 ID Number. The EAN.UCC System provides an additional two- or five-digit symbol, called an Add-On Symbol, can be included on the item just to the right of the main bar code symbol.

Add-On Symbols involve the following constraints:

- They should not contain information that must appear in the item's EAN/UCC-13 ID Number (or UCC-12 ID Number).
- The reading of the Add-On Symbol by the retailer's Point-of-Sale system is optional.
- The use of the Add-On Symbol is the responsibility of each publisher.

2.1.2.1.5.5 Identification of Serial Publications

When identifying serial publications, companies should first attempt to identify them in the same manner as any other trade item: using the EAN/UCC-13 or UCC-12 Data Structure.

The second option involves using a special EAN.UCC Company Prefix (assigned by an EAN Member Organisation within its territory), the publication number, and the price of the publication (provided that the national legislation allows this). With this option, the price is placed in clearly defined positions and is directly usable in the country of publication. However, as soon as the item leaves the country, the price has no direct significance and the GTIN must be interpreted in a general way, without being broken down internally.

The third option is to make use of the ISSN numbering system. The EAN.UCC Prefix 977 is used for encoding the ISSN number assigned to a particular item without its Check Digit.

Figure 2.1.2.1.5.5 – 1

EAN.UCC Prefix	ISSN (Without its Check Digit)	Variant	Check Digit
9 7 7	N_4 N_5 N_6 N_7 N_8 N_9 N_{10}	N_{11} N_{12}	N_{13}

The variant digits, N_{11} and N_{12} may be used to express variants of the same title for issues with a different price or to identify different issues of a daily within one week. Normal title takes value 00

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2.1.2.1.5.6 Two-Digit Add-On Symbol

Serial publications are identified using one of the three solutions previously described. A two-digit serial number encoded in a two-digit Add-On Symbol is also available. The system for assigning the serial number is at the discretion of each EAN Member Organisation or the Uniform Code Council, Inc.® (UCC™).

EAN International and the UCC recommend the use of the following number assignment:

- Dailies (or more generally publications with several issues a week): The publications of each day of the week are considered separate trade items that must be identified with a separate identification number represented in an Add-On Symbol. The two-digit serial number should only be used to represent the applicable week, which, together with the EAN/UCC-13 or UCC-12 ID Number, establishes the day within the year.
- Weeklies: Number of the week (01 – 53)
- Bi-weeklies: Number of the first week of the respective period (01 – 53)
- Monthlies: Number of the month (01 – 12)
- Bi-monthlies: Number of the first month of the respective period (01 – 12)
- Quarterlies: Number of the first month of the respective period (01 – 12)
- Seasonal period: First digit = last digit of the year; second digit = 1 spring, 2 summer, 3 autumn, 4 winter
- Bi-annual period: First digit = last digit of the year; second digit = number of the first season of the respective period
- Annuals: First digit = last digit of the year; second digit = 5
- Special intervals: Consecutively numbered from 01 to 99

The serial number is carried by a two-digit Add-On Symbol that is placed to the right of the symbol and parallel to it. The Add-On Symbol must comply with the print quality specifications applicable to all EAN.UCC System bar code symbols. For example, the X-dimension applied to the main bar code symbol must also be applied to the Add-On Symbol.

2.1.2.1.5.7 Five-Digit Serial Number

Serial publications can also use a five-digit serial number carried by a five-digit Add-On Symbol. The reading of the Add-On Symbol at a Point-of-Sale is optional. The Add-On Symbol must not be used to encode information that should be contained within the Global Trade Item Number™ (GTIN™). The Add-On Symbol provides additional information about a particular publication of a printed item, and it is the publisher's responsibility to define the numbering scheme. When using a five-digit Add-On Symbol, a two-digit Add-On Symbol cannot also be used.

Information that can be encoded in the five-digit Add-On Symbol includes the actual date of issue, in order to differentiate between successive issues.

The five-digit Add-On Symbol is placed to the right of the main bar code symbol and parallel to it. The Add-On Symbol must comply with the print quality specifications applicable to all EAN.UCC System bar code symbols. For example, the X-dimension applied to the main symbol also must be applied to the Add-On Symbol.

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2.1.2.1.6 Groupings of Trade Items Not Crossing a Point-of-Sale

2.1.2.1.6.1 General Identification Rules for Groupings of Trade Items

Every trade item that is different from another in any respect is assigned a unique Global Trade Item Number™ (GTIN™). This includes groupings of trade items, which are also considered a single trade item.

For example each of the packaging types in Figure 2.1.2.1.6.1 – 1, if traded, is assigned a separate GTIN.

Figure 2.1.2.1.6.1 – 1

Trade Item	Numbering Option to Construct a GTIN			
	EAN/UCC-8	**UCC-12**	**EAN/UCC-13**	**EAN/UCC-14**
Single Product A	X	X	X	
50 x Product A (standard case)		X	X	X
50 x Product A (display case)		X	X	X
100 x Product A (standard case)		X	X	X
Single Product B	X	X	X	
50 x Product A 50 x Product B		X	X	

2.1.2.1.6.2 Identification of Uniform Groupings of Trade Items

A uniform grouping of trade items is a standard and stable grouping of a series of identical units identified by an EAN/UCC-8, UCC-12, EAN/UCC-13, or EAN/UCC-14 Identification Number. If the grouping is itself a trade item, it must be identified with a UCC-12, EAN/UCC-13, or EAN/UCC-14 Identification Number.

2.1.2.1.6.3 Identification of Mixed Groupings of Trade Items

A mixed grouping of trade items is a standard and stable grouping of a series of different units identified by different Global Trade Item Numbers™ (GTINs™). If this mixed grouping is itself a trade item, it must be identified with either a UCC-12 or an EAN/UCC-13 Identification Number.

The EAN/UCC-14 Identification Number is valid for mixed groupings only when the mix is identified with a unique GTIN such as an EAN-8, UCC-12, or EAN-13 Identification Number that is subsequently put into a packaging configuration.

For example:

- GTIN A, GTIN B, and GTIN C (a mixed grouping) are identified by GTIN D.
- GTIN D could then be used to construct an EAN/UCC-14 Identification Number for a traded unit made up of a grouping of trade items identified by GTIN D.

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2.1.2.1.6.4 Symbol Marking Groupings of Trade Items

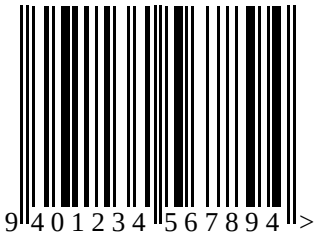
Symbols from the EAN/UPC Symbology family (UPC-A, UPC-E, and EAN-13 Bar Code Symbols) may be used to encode the UCC-12 or EAN/UCC-13 Identification Number of the trade item grouping.

ITF-14 Symbols may be used on groupings of trade items where printing conditions require the application of a less demanding symbology. ITF-14 Symbols can encode the UCC-12, EAN/UCC-13, or EAN/UCC-14 Identification Number of the item.

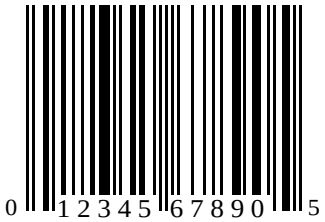
The UCC/EAN-128 Symbology with Application Identifier (01) may be used to encode a UCC-12, EAN/UCC-13, or EAN/UCC-14 Identification Number that identifies the trade item if the printing conditions allow. The choice of this symbology is particularly relevant if there is a need to encode attribute information in addition to the identification number.

Figure 2.1.2.1.6.4 – 1

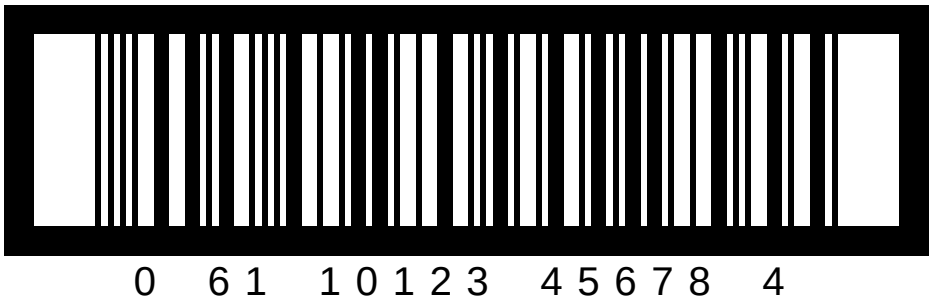
EAN-13



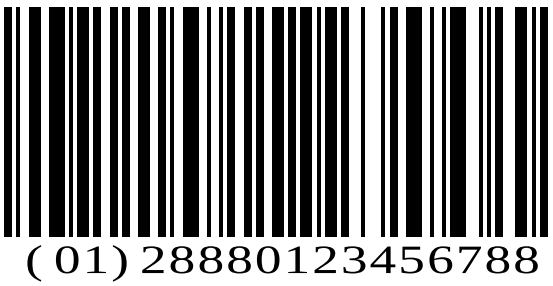
UPC-A



ITF-14



UCC/EAN-128 - AI (01)



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2.1.2.1.7 Identification of a Trade Item Composed of Several Parts

The EAN.UCC System provides for an Element String using Application Identifier (8006) (described in Section 3.6.52) to identify a trade item that does not cross a Point-of-Sale and which, due to its nature, is packed in several physical units. Each individual component is marked with a UCC/EAN-128 Bar Code Symbol carrying the Element String, which consists of the Global Trade Item Number™ (GTIN™) of the trade item, the sequence number of the particular component, and the total number of components of the trade item. If an attribute appears on more than one component, its value must be the same.

The use of the Element String AI (8006) to identify a trade item excludes the application of the Element String AI (01) on the same unit.

This solution is not applicable for trade items crossing a Point-of-Sale using slot scanners.

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2.1.2.2 Variable Measure Trade Items Not Crossing a Point-of-Sale

2.1.2.2.1 General Numbering and Symbol Marking Rules

This section concerns trade items not intended to be scanned at the Point-of-Sale.

Trade items may be of variable measure either because the production process does not guarantee consistency in weight, size, or length (e.g., carcasses of meat, whole cheeses) or because the items are created to meet a special order that states a quantity (e.g., textiles ordered by the metre, glass ordered by the square metre).

Only trade items that are sold, ordered, or produced in quantities, which can vary continuously, are covered by the rules outlined in this section. Trade items that are sold in discrete and pre-defined bands (e.g., as a nominal weight) are treated as Fixed Measure Trade Items.

A trade item must be considered to be variable measure if its measure is variable at any point in the supply chain. For example, a supplier may sell and invoice chickens in standardised cases of 15 kg each; therefore the quantity of contained chickens will vary. The customer, a retailer in this example, may need to know the exact number of chickens contained in each case in order to organise the distribution to his stores. In this example, the supplier should source mark the trade item by using a variable measure Global Trade Item Number™ (GTIN™) (see Figure 2.1.2.2.1 – 1) and the variable count Element String (see Section 3.6.20).

The options shown in Figure 2.1.2.2.1 – 1 are available to number and symbol mark Variable Measure Trade Items.

Figure 2.1.2.2.1 – 1

Data Structure	Bar Code Symbol	Reference to Element Strings in Section 3.0	Comments
EAN/UCC-14	ITF-14	Section 3.5.3	Not for Point-of-Sale
EAN/UCC-14	UCC/EAN-128 - AI (01)	Section 3.6.3	Not for Point-of-Sale

The EAN/UCC-14 Identification Number with the Indicator 9 is used to identify a Variable Measure Trade Item. The presence of the variable measure information is mandatory for the complete identification of a particular Variable Measure Trade Item. The digit 9 in the first position is an integral part of the GTIN.

2.1.2.2.2 Trade Measures Required to Complete the Identification of Variable Measure Trade Items

The EAN/UCC-14 Identification Number identifies a Variable Measure Trade Item with respect to its fixed attributes or characteristics. To complete the identification of a Variable Measure Trade Item, the presence of an Element String representing a trade measure is mandatory. Applicable trade measures depend on the nature of the product. They may be a quantity, a weight, or any dimension.

For details on Element Strings for trade measures, see Sections 3.6.20 and 3.6.21.

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2.1.2.2.2.1 Variable Count: AI (30)

This Element String is used if the variable measure of the trade item is the number of items contained. In order to generate a short bar code symbol, always enter an even number of digits in the data field count of items by inserting a leading zero. Concatenation of this Element String with the EAN/UCC-14 Identification Number of the item enhances the accuracy of the application.

Note: This Element String should never be used to indicate the quantity contained in a Fixed Measure Trade Item. However, if it appears on a Fixed Measure Trade Item, it should not invalidate the trade item identification.

2.1.2.2.2.2 Trade Measures: AI (31nn), (32nn), (35nn), (36nn)

These Element Strings are used if the variable measure of the respective trade item is weight, dimension, area, or volume. Only one Element String of a given unit of measure may be applied on a particular item. Several Element Strings containing trade measures are possible on a particular item if the item is available in either unit of measure and if the applicable unit of measure is not distinguished for ordering and billing. This might apply if weight must be expressed in kilograms and pounds.

Note: The fourth (and last) digit of the AI indicates the implied decimal point position. The value 0 means that the measurement is expressed in the basic unit of measure associated with the AI (e.g., kilograms). A value of 1 decreases the measurement by a factor of 10, a value of 2 by a factor of 100, and so on. For example, this enables metric weights to be represented from 999 kilograms to 1/1000 of a milligram.

2.1.2.2.2.3 Roll Products - Width, Length, Core Diameter, Direction, Splices: AI (8001)

The EAN/UCC-14 Identification Number can denote a basic roll product. The Element String AI (8001) contains the pre-defined variable fields of a roll product. It may be used for those variable roll products where the standard trade measures (AI (31nn), (32nn), (35nn), (36nn)) are not sufficient.

This Element String must never be used together with other Element Strings representing standard trade measures.

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2.1.2.2.3 Types of Variable Measure Items

Any trade item of a given composition where the quantity/measure information cannot be pre-determined for any reason is a Variable Measure Trade Item. The most frequent types are shown in Figure 2.1.2.2.3 – 1.

Figure 2.1.2.2.3 – 1

Type	Item Description
A	Items traded in bulk, neither portioned nor pre-packed for retail sale, ordered in any quantity, and that are delivered as non-standardised trade items (e.g., fish, fruit, vegetables, cables, carpets, timber, fabrics) The identification number denotes the item as a trade entity containing any quantity of the given product and, if applicable, the form of packaging. Weight or dimensions complete the identification of the individual unit.
B	Trade items ordered and delivered by piece (wrapped or unwrapped) and invoiced by weight or measure because weight or measure varies due to the nature of the product or due to the manufacturing process (e.g., whole cheese, sides of bacon, beef carcasses, fish, sausages, ham, chicken, cauliflower, motion picture films) The identification number denotes the item as a particular pre-defined entity and, if applicable, denotes the form of packaging. Price or weight or dimensions complete the identification of the individual item.
C	Portioned trade items, pre-packed for sale by weight to the consumer, not standardised in quantity. (e.g., meat, cheese, vegetables, fruit, fillets of fish, sliced poultry, cold cuts) The identification number denotes the item type according to business practice and the form in which it is packed. Price or weight completes the identification of the individual unit.
D	Standardised trade items with selectable dimensions where EAN.UCC System standard numbering does not make sense to cover the multiplicity of all variations (e.g., wooden planks, carpeting) The identification number denotes the pre-defined basic trade item. The applicable dimension(s) completes the identification of the individual unit.
E	Standardised composition of a fixed number of trade items that are Type B or Type C (e.g., a trade item containing 10 chickens (Type B) The identification number denotes the standardised trade item as an entity and, if applicable, its form of packaging. The total weight of all items contained completes the identification of the particular trade item.

2.1.2.2.4 Examples of Numbering and Symbol Marking of Variable Measure Trade Items

In the examples in the subsections that follow, the following factors apply:

- In order to be illustrative, all examples show the same presentation (e.g., price list, order, delivery, invoice, and recording in a data file).
- UCC/EAN-128 Bar Code Symbols are used.
- The examples are given to demonstrate the correct use of a given Application Identifier when used. When AI (02) is not used, information about the shipment must be received using Electronic Data Interchange (EDI) or other means prior to its physical receipt.

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2.1.2.2.4.1 Example 1: Traded by Piece

The following example shows the order and delivery of an item traded by piece and invoiced by weight.

- The supplier's catalogue contains one entry: one salami weighing ~ 500 g

- The order for 100 units is delivered in three boxes. Each box is marked with an SSCC and, optionally, with information on the content of the box, expressed as follows:

  - AI (02) indicates the variable measure Global Trade Item Number™ (GTIN™) of the units contained within the box.
  - AI (3101) indicates the total weight of the items contained within the box.
  - AI (37) indicates the count of items contained within the box

- The three boxes may be stored on a pallet that may itself be marked with an SSCC and, optionally, with information on the contents of the pallet, expressed as follows:

  - AI (02) indicates the variable measure GTIN of the units contained within the pallet.
  - AI (3101) indicates the total weight of the items contained within the pallet.
  - AI (37) indicates the count of items contained within the pallet

The invoice refers to the GTIN and quantity delivered and shows the total weight and the price per kilogram. The GTIN and quantity of the invoice match the GTIN and quantity of the order.

Figure 2.1.2.2.4.1 – 1

Process	Description	Element Strings Used / Symbol Marking of the Items
Supplier's catalogue	one Salami ~ 500 g	GTIN 97612345000018
Order	100 salamis	100 x 97612345000018
Delivery	three logistic units Unit 1 = 33 salamis, 16.7 kg Unit 2 = 33 salamis, 16.9 kg Unit 3 = 34 salamis, 17.1 kg	Unit 1: 00 376123450000010008 02 97612345000018 3101 000167 37 33 Unit 2: 00 376123450000010015 02 97612345000018 3101 000169 37 33 Unit 3: 00 376123450000010022 02 97612345000018 3101 000171 37 34
	If delivery is made on a pallet	Pallet: 00 376123450000010039 02 97612345000018 3101 000507 37 0100
Invoice	GTIN of items and the total weight (50.7 kg) + the price per kg	100 x 97612345000018; 50.7 kg x price per kg

Data File Logistic Units	Identification of Logistic Unit (SSCC)	GTIN of Contained Trade Items	Total Trade Weight of Content (grams.)	Number of Units Contained
Either pallet	376123450000010039	97612345000018	50700	100
or individual units	376123450000010008	97612345000018	16700	33
	376123450000010015	97612345000018	16900	33
	376123450000010022	97612345000018	17100	34

Data File Trade Items	GTIN of Trade Item	Total Trade Weight (grams)	Number of Trade Items
One record per identification number	97612345000018	50700	100

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2.1.2.2.4.2 Example 2: Traded by Standard Grouping

The following example shows the order and delivery of an item traded by standard grouping and invoiced by weight.

- The supplier's catalogue contains one entry: one case of 20 steaks weighing ~ 200 g each.
- The order is for three cases. Each case delivered is marked with the Global Trade Item Number™ (GTIN™) of a single case followed by the actual weight of the items contained.
- The three cases may be stored on a pallet that may itself be marked with an SSCC and, optionally, with information on the contents of the pallet, expressed as follows:
  - AI (02) indicates the variable measure GTIN of the units contained within the pallet.
  - AI (3102) indicates the total weight of the items contained within the pallet.
  - AI (37) indicates the count of cases contained within the pallet
- The invoice refers to the GTIN and quantity delivered and shows the total weight and the price per kilogram. The GTIN and quantity of the invoice match the GTIN and quantity of the order.

Figure 2.1.2.2.4.2 – 1

Process	Description	Element Strings Used / Symbol Marking of the Items
Supplier's catalogue	One case of 20 steaks ~ 200 g, vacuum packed	GTIN 97612345000117
Order	Three cases	3 x 97612345000117
Delivery	Three trade items Unit 1: weight = 4.150 kg Unit 2: weight = 4.070 kg Unit 3: weight = 3.980 kg	 Unit 1: 01 97612345000117 3102 000415 Unit 2: 01 97612345000117 3102 000407 Unit 3: 01 97612345000117 3102 000398
	If delivery is made on a pallet	Pallet: 00 376123450000010091 02 97612345000117 3102 001220 37 03
Invoice	GTIN of items and the total weight (12.20 kg) + the price per kg	3 x 97612345000117; 12.2 kg x price per kg

Data File Logistic Units	Identification of Logistic Unit (SSCC)	GTIN of Contained Trade Items	Total Trade Weight of Content (grams.)	Number of Units Contained
Pallet	376123450000010091	97612345000117	12200	3

Data File Trade Items	GTIN of Trade Item	Total Trade Weight	Number of Trade Items
One Record	97612345000018	12200	3

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2.1.2.2.4.3 Example 3: Traded in Bulk

The following example shows an order and delivery of an item traded in bulk.

- The supplier's catalogue contains one entry: cabbage unwrapped sold in bulk by kilogram.
- The order is for 100 kg. It is delivered in two cases. Each case is marked with the Global Trade Item Number™ (GTIN™) of the cabbage followed by the actual weight of the items contained.
- The two cases may be stored on a pallet that may itself be marked with an SSCC.
- The invoice refers to the GTIN as ordered and shows the total weight and the price per kilogram. The delivered weight may be verified as being close to the ordered quantity.

Figure 2.1.2.2.4.3 – 1

Process	Description	Element Strings Used / Symbol Marking of the Items
Supplier's catalogue	Cabbage unwrapped sold in bulk by kilogram	GTIN 97612345000049
Order	100 kg of cabbage	100 kg x 97612345000049
Delivery	Two trade items Unit 1: weight = 42.7 kg Unit 2: weight = 57.6 kg	 Unit 1: 01 97612345000049 3101 000427 Unit 2: 01 97612345000049 3101 000576
	If delivery is made on a pallet	Pallet: 00 376123450000010107
Invoice	GTIN of item and the total weight (100.3 kg) + the price per kg	97612345000049 100.3 kg x price per kg

Data File Logistic Units	Identification of Logistic Unit (SSCC)	GTIN of Contained Trade Items	Total Trade Weight of Content (grams)	Number of Units Contained
Pallet	376123450000010107	97612345000049	42700	1
		97612345000049	57600	1

Data File Trade Items	GTIN of Trade Item	Total Trade Weight (grams)	Number of Trade Items
One record per trade item	97612345000049	42700	1
	97612345000049	57600	1

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2.1.2.2.4.4 Example 4: Traded by Standard Grouping

The following example shows an order of standardised Variable Measure Trade Items by case that are invoiced by the number of pieces delivered.

- The supplier's catalogue contains one entry: one case of ~ 10 cabbages sold by piece.
- The order is for two cases. Each case delivered is marked with the Global Trade Item Number™ (GTIN™) of a single case followed by the actual count of the items contained.
- The two cases may be stored on a pallet that may itself be marked with an SSCC and, optionally, with information on the contents of the pallet, expressed as follows:

  AI (02) indicates the variable measure GTIN of the units contained within the pallet.
  AI (30) indicates the total count of the items contained within the pallet.
  AI (37) indicates the count of cases contained within the pallet
- The invoice refers to the GTIN as ordered and delivered and the total count of items.

Figure 2.1.2.2.4.4 – 1

Process	Description	Element Strings Used / Symbol Marking of the Items
Supplier's catalogue	Case containing ~10 cabbages sold by pieces	GTIN 97612345000285
Order	Two cases	2 x 97612345000285
Delivery	Unit 1: 11 pieces Unit 2: 12 pieces	Unit 1: 01 97612345000285 30 11 Unit 2: 01 97612345000285 30 12
	If delivery is made on a pallet	Pallet: 00 376123450000010138 02 97612345000285 30 23 37 02
Invoice	GTIN of the trade item and the total quantity	2 x 97612345000285 23 pieces x price per piece

Data File Logistic Units	Identification of Logistic Unit (SSCC)	GTIN of Contained Trade Items	Total Number of Pieces Contained in the Trade Item	Number of Units Contained
Pallet	376123450000010138	97612345000285	23	2

Data File Trade Items	GTIN of Trade Item	Total Number of Pieces	Number of Trade Items
One Record	97612345000285	23	2

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2.1.2.2.4.5 Example 5: Traded in Bulk

The following example shows a product that can be purchased from a supplier or sold to a customer by any length in metres.

- The supplier's catalogue contains one entry: cable T49 sold in metres.
- The order is for one length of cable of 150 metres. The delivered package is marked with the Global Trade Item Number™ (GTIN™) of the cable followed by the actual length of cable contained.
- The invoice refers to the GTIN as ordered and delivered and the total length.

Figure 2.1.2.2.4.5 – 1

Process	Description	Element Strings Used / Symbol Marking of the Items
Supplier's catalogue	Cable T49 sold in any length in metres	GTIN 97612345000063
Order	One trade item of 150 metres	97612345000063 x 150 metres
Delivery	One trade item, 150 metres	01 97612345000063 3110 000150
Invoice	GTIN of the trade item and the total quantity	1 x 97612345000063 150 x price per metre

Data File Trade Items	GTIN of Trade Item	Total Trade Length (meters)
One record	97612345000063	150

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2.1.2.3 Fixed Measure Trade Items - Restricted Distribution

2.1.2.3.1 Definition

This section describes applications where the item identification is defined only in a closed environment. Therefore, the distribution of trade items marked in this way is restricted to a given geographic region or for use within a company. However, within their closed environment these items may be processed along with trade items identified with Global Trade Item Numbers™ (GTINs™) defined for open trade.

Some regulations established by EAN Member Organisations for their country or assigned area should be observed for the allocation of identification numbers for restricted distribution.

When assigned to company internal use, the structure and management of the numbers represented in the Element Strings of this section are the responsibility of the user. Number changes and re-use of expired numbers must be managed by the user based on his requirements.

When centrally administrated within a geographic area, the relevant administration body determines the structure and manages number allocation based on user requirements.

2.1.2.3.2 Company Internal Numbering – EAN.UCC-8 Prefix 0 or 2

This Element String, described in Section 3.3.2, uses an EAN.UCC-8 Prefix of 0 or 2. It provides two million identification numbers, which can be assigned for internal use in a company. When the EAN/UCC-8 Prefix is 0, the Element String is sometimes called a Velocity Code because it is quicker to key enter.

Note 1: In addition to trade item identification, this Element String may be used for any purpose that is supported by the company's equipment supplier (see Section 2.6.4).

Note 2: In some environments where numbers may have to be key entered, the EAN-8 Bar Code Symbol carrying EAN/UCC-8 Identification Numbers (and the EAN.UCC-8 Prefix 0) may be confused with the numbers carried by a UPC-E Bar Code Symbol. If such a risk exists, it is preferable to use the EAN.UCC-8 Prefix 2 capacity for internal use.

2.1.2.3.3 Numbering in a Geographic Area Defined by the EAN Member Organisation – EAN.UCC Prefixes 20 to 29

The EAN.UCC Prefixes 20 to 29 are reserved for identification purposes within a restricted geographic area. Each EAN Member Organisation or UCC is entitled to assign the prefixes to be used for these Element Strings in its country or assigned area (see Section 3.2.2):

- For the central administration of the identification of Fixed Measure Trade Items within the country or assigned area of the EAN Member Organisation or UCC.

- For internal numbering of Fixed Measure Trade Items by a particular company within the country or assigned area of the EAN Member Organisation or UCC.

Note 1: Under the control of an individual EAN Member Organisation or the UCC, EAN.UCC Prefixes 20 to 29 may also be used for the identification of Variable Measure Trade Items for restricted geographic distribution and for any other company internal purpose.

Note 2: In addition to trade item identification, a company may use this data element for any other internal purpose (see Section 2.6.4).

Note 3: Suppliers manufacturing their own label products for several different customers should use unique EAN.UCC System numbering to distinguish their customers. If this is not done, the supplier will not be able to use Electronic Data Interchange (EDI) or electronic catalogues.

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2.1.2.3.4 Company Internal Numbering - EAN.UCC Prefix 04

Any company in the world may use this Element String for company internal trade item numbering. If the EAN.UCC Prefix 04 is being applied, the user company may structure the trade item number.

Note: In addition to trade item identification, a company may use this data element for any other internal purpose (see Section 2.6.4).

2.1.2.3.5 Company Internal Numbering - EAN.UCC Prefix 00 (LAC and RZSC)

The EAN.UCC Prefix 00 provides for company internal numbering, using Locally Assigned Codes (LACs) or Retailer Zero-Suppressed Codes (RZSCs), which are carried by a UPC-E Bar Code Symbol. EAN.UCC Company Prefixes 00 00000 and 00 01000 to 00 07999 are used in this feature. For details, see Section 3.A.2.

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2.1.2.4 Variable Measure Trade Items - Restricted Circulation

2.1.2.4.1 Definition

Variable Measure Trade Items are those sold in random quantity against a fixed price per unit quantity and intended to cross a Point-of-Sale (e.g., apples sold at a fixed price per kilogram).

These items are either marked in the store by the retailer or are marked at the source by the supplier. National solutions are available for this purpose.

EAN.UCC Prefixes 02 and 20 to 29 are available to EAN Member Organisations and UCC to devise rules for the marking of Variable Measure Trade Items in their territory. EAN Member Organisations should make part of this capacity available to user companies for company internal applications.

The data fields available after the relevant EAN.UCC Prefix (defined by the EAN Member Organisation or UCC for their territory) can be structured in a variety of ways to represent the product type, net weight, calculated price, or number of units. Equipment is commercially available for automatically weighing items, calculating an item price from the unit price, and printing the information as a bar code label. The scanning equipment can then be programmed to use the prefix as an instruction to decode the ensuing data fields according to the particular structure adopted.

2.1.2.4.2 Identification of Variable Measure Trade Items

EAN Member Organisations should assign one or several of the EAN.UCC Prefixes 02 and 20 through 29 for the identification of Variable Measure Trade Items.

Although each EAN Member Organisation and/or user is perfectly free to develop its solution for numbering Variable Measure Trade Items, the EAN.UCC System provides recommended structures aiming at some degree of equipment standardisation. These formats may include an Item Reference, the retail price of the item, and a price verifier-digit. The recommended structures are shown in Figure 2.1.2.4.2 – 1.

Figure 2.1.2.4.2 – 1

EAN.UCC Prefix*	Recommended Data Structures (Exact Structure Determined by EAN Member Organisation)	Check Digit
0 2	I I I I I V P P P P	C
or	I I I I V P P P P P	C
2 0 - 29	I I I I I I P P P P	C
	I I I I I P P P P P	C

* The EAN.UCC Prefix is co-administered by EAN International and the UCC and denotes the format and meaning of a particular Element String.

Where: I..I = Item Reference
V = Price verifier-digit calculated according to the algorithm specified in Section 3.A.1
P..P = Price in local currency
C = Check Digit calculated according to the standard algorithm in Section 3.A.1

Note: The price field may contain 0, 1, or 2 implied decimal places depending on the monetary unit used. The decimal point, which is not included in the bar code symbol, must nevertheless be taken into account by the marking equipment when printing the Human Readable Interpretation on the label.

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EAN Member Organisations may choose to implement a national solution for Variable Measure Trade Items branded by the supplier for retail. Any national branded variable measure solution requires EAN Member Organisations to manage the allocation of the item number at a national level.

2.1.3 Attributes of Trade Items

2.1.3.1 General Considerations

2.1.3.1.1 Types of Trade Item Attributes

Trade item attributes are classified into three categories:

- Varying attributes, the use of which is determined by business practices
- Fixed attributes or characteristics of trade items are generally communicated between trading partners by Electronic Data Interchange (EDI) or other means and should thus not be marked on the goods. However, some fixed attributes have been made available for transitional use in order to provide temporary help for particular business applications.
- Varying attributes with restrictions have been established to fulfil special functions in particular applications. Their use makes sense for the issuing company or a within a specific user sector.

2.1.3.1.2 Symbol Marking of Trade Item Attributes

Attributes of trade items shall be symbol marked using a UCC/EAN-128 Bar Code Symbol. The only exceptions are the two- and five-digit Add-On Symbols, which are supplementary to the primary symbol.

2.1.3.2 Varying Trade Item Attributes

2.1.3.2.1 Batch or Lot Number: AI (10)

This Element String provides the batch or lot number of the trade item on which the Element String is applied. The Element String is used for tracking trade items with particular manufacturing characteristics wherever required. Complete tracking of the trade item must include the Global Trade Item Number™ (GTIN™).

Note: This Element String must not be used to express characteristics of a trade item that should be included in the GTIN. Use non-significant (shorter) data for batch or lot numbers leading to shorter Element Strings.

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2.1.3.2.2 Dates

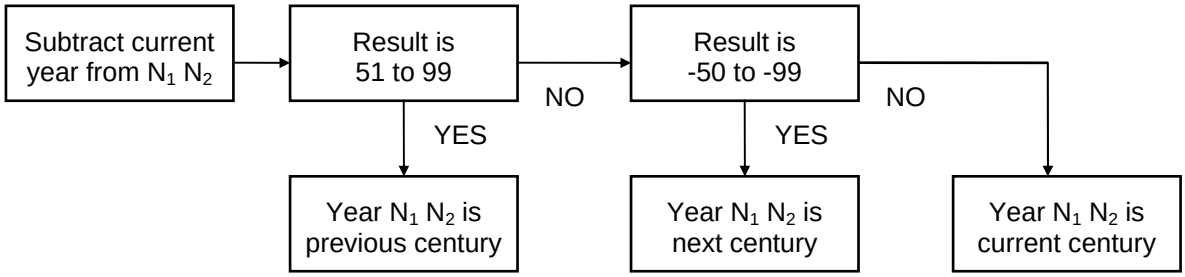
These Element Strings are used to differentiate identical trade items by date information where this is required for business practices. The following types of dates are available:

- Production date - AI (11)
- Packaging date - AI (13)
- Best Before Date - AI (15)
- Expiration Date - AI (17)
- Date and time of production - AI (8008)

It is left to the discretion of the user to interpret a particular date type most useful for his business practices. Such interpretation may change according to the product range for which a date is being applied

Since the data field year consists of two positions, the century is established by the procedure shown in Figure 2.1.3.2.2 – 1.

Figure 2.1.3.2.2 – 1



Note: The Element String can only specify a date in the range from 49 years in the past to 50 years in the future of the current year.

2.1.3.2.3 Serial Number: AI (21)

This Element String represents the serial number of a trade item. It is used for tracking a trade item with a particular serial number. Proper tracking must include the Global Trade Item Number™ (GTIN™).

2.1.3.2.4 Secondary Data for Specific Health Industry Products: AI (22)

This Element String is mainly used in the United States. It contains a special arrangement of supplementary data required for health industry products. AI (22) should not be taken as substitute for AI (21) Serial Number. For details, see Section 7.8.

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2.1.3.2.5 Secondary Serial Number: AI (250)

This Element String is used for tracking a particular component contained in a trade item and when used, Element String AI (21) must also appear on the trade item. The secondary serial number may refer to any of the components contained. It is an attribute of the Global Trade Item Number™ (GTIN™). For example, the secondary serial number may be placed on the chassis of a television set to mark its serial number. The company using this Element String should make clear to all business partners which component of a given trade item a secondary serial number relates.

2.1.3.2.6 Reference to Source Entity: AI (251)

Reference to source entity is an attribute of a trade item that refers back to the original item from which the trade item was derived. The issuer of the trade item must indicate through other means the source entity to which the data refers.

2.1.3.2.7 Logistic Measures for Variable Measure Trade Items: AI (33nn), (34nn), (35nn), (36nn)

Logistic measures for Fixed Measure Trade Items remain unchanged for each item. Consequently, they are considered as fixed characteristics and should not be symbol marked on the trade item. Logistic measures for Variable Measure Trade Items, however, can change according to the varying size or weight of the items. This Element String may be used to represent the logistic measure of a particular Variable Measure Trade Item.

2.1.3.2.8 Kilograms Per Square Metre: AI (337n)

This Element String is used to differentiate identical trade items by the effective weight per square metre. It is a varying attribute of the trade item and it is not a variable measure of the trade item concerned.

For example, depending upon the production conditions, the actual weight of standard paper expressed in grams per square metre may vary slightly. The Global Trade Item Number™ (GTIN™) remains unchanged, but it may be useful to mark the actual weight per square metre on the trade item.

2.1.3.2.9 Country of Origin of a Trade Item: AI (422)

This Element String may be used on a physical unit to denote the country of origin of the trade item, the identification number of which is represented in either AI (01) or AI (02).

2.1.3.2.10 Country of Initial Processing: AI (423)

This Element String may be used on a physical unit to denote the country of initial processing of the trade item, the identification number of which is represented in either AI (01) or AI (02).

2.1.3.2.11 Country of Processing: AI (424)

This Element String may be used on a physical unit to denote the country of processing of the trade item, the identification number of which is represented in either AI (01) or AI (02).

2.1.3.2.12 Country of Disassembly: AI (425)

This Element String may be used on a physical unit to denote the country of disassembly of the trade item, the identification number of which is represented in either AI (01) or AI (02).

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2.1.3.2.13 Country Covering Full Process Chain: AI (426)

This Element String may be used on a physical unit to denote the country covering full process chain of the trade item, the identification number of which is represented in either AI (01) or AI (02).

2.1.3.2.14 Approval Number of Processor: AI (703s)

In some countries, some products are required by law to be marked with an approval number allocated by a national authority. Where required the Application Identifiers in the series 703(s) are used to give the identification of approved location in supply chain. This identification could be an EAN.UCC Global Location Number (GLN) or another scheme endorsed by the national authority. This Element String may be used on a physical unit to denote the country and approval number of a trade item, the identification number of which is represented by a Global Trade Item Number™ (GTIN™).

As multiple approval numbers may be required, the fourth digit of the AI(s) indicates the sequence of the processors. An example from a meat supply chain would be:

> A bovine animal has been slaughtered in a German slaughterhouse (approval number GLN: 4012345000009), and the deboning was done by a Dutch deboning hall (approval number EGNL410).

The country and approval number for slaughtering is shown in Figure 2.1.3.2.14 – 1.

Figure 2.1.3.2.14 – 1

AI	ISO Country Code for Germany	Approval Number
7030	276	4012345000009

The country and approval number of the first processor (Dutch deboning hall) is shown in Figure 2.1.3.2.14 – 2.

Figure 2.1.3.2.14 – 2

AI	ISO Country Code for the Netherlands	Approval Number
7031	528	EGNL410

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2.1.3.3 Fixed Trade Item Attributes

2.1.3.3.1 Additional Product Identification Assigned by the Manufacturer: AI (240)

This Element String has been created to represent a company's existing (non-EAN.UCC System) trade item identification number.

The ID number may be marked on the same item together with the EAN.UCC Identification Number (AI (01)) in order to facilitate migration to the EAN.UCC System. There must be a one-to-one relationship between the contents of AI (240) and AI (01).

Note: The use of this Element String must be based on an agreement between the users concerned for a limited period. In no way should a company supply internal item identification of any other kind via AI (240), which would violate the EAN.UCC System's principles. It is not a substitute for the Global Trade Item Number™ (GTIN™).

2.1.3.3.2 Customer Part Number: AI (241)

This Element String has been created to facilitate the conversion from the business use of a customer assigned part number to a manufacturer's Global Trade Item Number™ (GTIN™).

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2.1.3.4 Varying Trade Item Attributes with Restrictions

2.1.3.4.1 Serial Number for Serial Publications - Two-Digit Add-On Symbol

The two-digit Add-On Symbol identifies each title of a serial publication. This bar code symbol, used to provide supplementary identification on serial publications, is not designed to be scanned at the Point-of-Sale. The Global Trade Item Number™ (GTIN™) provides the necessary data for correct price capture.

This bar code symbol is applied for the processing of returns of serial publications requiring additional identification beyond the level provided by the item identification number. When the two-digit Add-On Symbol is scanned, it is always processed together with the GTIN.

2.1.3.4.2 Supplementary Information for Books, Paperbacks, and Printed Sheet Music - Two-Digit and Five-Digit Add-On Symbol

The two-digit and five-digit Add-On Symbols can identify a title of a book or paperback. These bar code symbols are used to track a particular edition of a book, but not to carry information otherwise included in the Global Trade Item Number™ (GTIN™).

Note: The two-digit and five-digit Add-On Symbols must not be used to represent the price of the book for several reasons. First, the bar code symbol does not ensure the reading reliability needed for price capture. Secondly, there is no currency indicator available to prohibit price misinterpretation for imported or exported books. Thirdly, the system logic does not provide a means to distinguish whether the five-digit Add-On Symbol represents the price or the supplementary information of the particular book.

2.1.3.4.3 Product Variant: AI (20)

EAN.UCC System application rules clearly state that each trade item that is different from another must be assigned a unique Global Trade Item Number™ (GTIN™). However, there are cases where a difference is not significant outside the manufacturing company and, therefore, no separate identification number is required.

Element String AI (20) is a means to handle variations of trade items that are significant only for the producer of the item.

2.1.3.4.4 Price Per Unit of Measure: AI (8005)

This Element String is used to discriminate groupings of price marked Variable Measure Trade Items and to inform about the price per unit of measure marked on the individual units contained in the trade item. It should in no way be used for price marked Fixed Measure Trade Items, in which groupings of trade items not to be scanned at the Point-of-Sale require a unique EAN.UCC System identification number for each separate price or a product variant (AI (20)).

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2.1.4 Allocating the Numbers

2.1.4.1 General rule

A Global Trade Item Number™ (GTIN™) is used to identify any item (trade item 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 separate unique GTIN is required whenever any of the pre-defined characteristics of an item are different in any way that is relevant to the trading process. The guiding principle is if the consumer is expected to distinguish a new trade item from an old trade item and purchase accordingly, a new GTIN should be assigned to the new trade item (product package and shelf edge label declarations should appear the same to the consumer). However, any law or regulation that contradicts these rules shall supercede these rules.

Specific rules that apply to prevalent industry practices have been endorsed by the Global Commerce Initiative Board, for the Fast Moving Consumer Goods (FMCG) industry. These rules covering many common business cases can be found in Appendix 2.1.A. While all EAN.UCC standards are voluntary, the rules are intended to drive normative practice within the FMCG sector

2.1.4.2 Responsibility

2.1.4.2.1 Branded items

The Brand Owner, the organisation that owns the specifications of the trade item regardless of where and by whom it is manufactured, is normally responsible for the allocation of the Global Trade Item Number™ (GTIN™). On joining an EAN Member Organisation or the UCC the Brand Owner receives an EAN.UCC Company Prefix which is for the sole use of the company to which it is assigned. The company prefix may not be sold, leased or given, in whole or in part, for use by any other company.

The Brand Owner is the organisation that owns the trade item specifications and may be:

The manufacturer or supplier - the company manufactures the trade item or has it manufactured, in any country, and sells it under its own brand name

The importer or wholesaler - the importer or wholesaler has the trade item manufactured, in any country, and sells it under its own brand name or the importer or wholesaler changes the trade item (for example by modifying the packaging of the trade item).

The retailer - the retailer has the trade item manufactured, in any country, and sells it under its own brand.

2.1.4.2.2 Exceptions and non branded items

There are some exceptions as follows:

Non-Branded Items - Items without a brand name and generic items – not private labels – are still assigned Global Trade Item Numbers™ (GTIN™) by their manufacturer. As different manufacturers may supply items that appear identical to the consumer, it is possible that items that are apparently the same have different GTINs. Companies that trade in these items need to organise their computer applications (replenishment programs for example) to cope with this eventuality. Examples of items that sometimes have no brand are apples, plasterboard, candles, drinking glasses etc.

Customer Specific Items - When a trade item is made specifically for one trade customer and is orderable only by this customer, it is permissible for a GTIN to be assigned by the customer. In this case the GTIN should be formed from the customer's EAN.UCC Company Prefix (see Section 2.6.6).

Other Exceptions - If the Brand Owner does not assign a GTIN, the importer or another intermediary can assign an item a *temporary* GTIN. This may be used until a GTIN is assigned in the normal way. Alternatively a retail organisation can assign an *internal* number, for use within its own stores only, to an item that does not yet have a GTIN assigned to it.

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2.1.4.3 Guidelines for Allocating Global Trade Item Number™ (GTIN™)

2.1.4.3.1 Management of Uniqueness

The Global Trade Item Numbers™ (GTIN™) must be allocated uniquely. It is recommended that the GTIN does not contain any intelligence or parsable strings. The embedding of internal codes is discouraged because it is often found that the rules for changing them differ from the rules for changing a GTIN.

2.1.4.3.2 Pre-defined characteristics

Although this list is not exhaustive, the basic pre-defined characteristics of a trade item are:

- The Product Name, Product Brand, and Product Description
- The trade item type and variety
- The net quantity of trade item (weight, volume, or other dimension impacting trade)
- If the trade item is a grouping, the number of elementary items contained, and their subdivision in sub-packaging units, the nature of the grouping (carton, pallet, box-pallet, flat-pallet…)

A modification to any of the basic elements that characterise a trade item will usually lead to a change in the GTIN.

Note: Price is not a relevant criteria for changing a GTIN except when the price is printed directly on the trade item.

Note: National, federal or local regulations may apply and take precedence over this rule. For example, in some industries such as healthcare, regulations or other requirements may dictate that any trade item changes require a new GTIN.

Typically the gross dimensions of a trade item communicated via the Item File that do not affect net trade item quantity or measure do not impact the GTIN assignment. However, as a general rule if any gross dimension (e.g. length, depth, weight, etc) changes by more than 20% a new GTIN is required. Changes below 20% may require a new GTIN at the discretion of the brand owner.

In all cases, if the GTIN for the trade item at the lowest level changes, GTINs for associated packaging at higher hierarchal levels must change.

2.1.4.3.3 Pre-priced merchandise

Pre-pricing is discouraged as a trade practice as it introduces complexity for trade item file maintenance through the supply chain. If however, the price that the consumer will pay (not the "Manufacturers Recommended Retail Price" which can be ignored) is marked on the item, the Global Trade Item Number™ (GTIN™) should be changed when the priced marked on the item changes.

Note: National, federal or local regulations may apply and take precedence over this guideline.

2.1.4.3.4 Promotional variants

A promotion is a temporary change to a trade item, which modifies the presentation of the trade item. It usually coexists with the standard trade item.

- Promotional variants of trade items that affect the net weight or volume of the trade item must be allocated a separate unique Global Trade Item Number™ (GTIN™). Examples: Attached free additional item, 10% extra free.

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- Promotional variants of trade items may impact the logistic weight or dimension of the trade item by more than 20%. In this case, the promotional variants must be allocated a separate unique Global Trade Item Number™ (GTIN™).

- Promotional variants of trade items where a price reduction is explicitly specified on the pack (flash packs) must be allocated a separate unique GTIN unless local trade practices or price marking legislation dictate otherwise. Examples: 10 cents off.

- Each seasonal promotion of a trade item should be allocated a separate unique GTIN. Example: chocolate especially over-wrapped for Easter.

- Other promotional variants should not be allocated a separate unique GTIN. Examples: Money off coupon, free gift inside (unless this causes an increase in gross weight by more than 20%), "send for" offer, competition offer, or samples sent directly to consumer bypassing retail Point-of-sale.

2.1.4.3.5 Trade item changes

Trade item changes are any change or improvement during the life of a trade item. The "new" trade item replaces the old one. Should the Brand Owner decide to create a variant (e.g., with different ingredients) in parallel with the standard trade item, then a separate unique Global Trade Item Number™ (GTIN™) has to be allocated.

- Minor trade item changes or improvements do not require the allocation of a different GTIN. Examples: label artwork redesign, minor trade item description changes that do not impact the supply chain, gross dimension change in any axis of less than 20% with content quantity or measure unchanged. This rule applies to retail consumer trade items (retail POS unit) and standard trade item groupings (orderable cases or pallets).

- If a trade item's quantity or measure changes or if the consumer will be expected to distinguish between an old and new brand name or product description, then a new GTIN must be allocated.

2.1.4.3.6 Variants for groupings

- Trade items which are a standard and stable grouping of smaller units identified by a Global Trade Item Number™ (GTIN™) must be allocated a separate GTIN whenever there is a change to the GTIN of any of the units contained.

- For trade items containing units which are themselves promotional variants or minor trade item variants of trade items whose GTINs remain unchanged, the rule is the following:

    - If the trade item has to be distinguished for effective ordering, handling and tracking, a separate GTIN must be allocated to the trade item. Examples: Promotions that are limited to certain geographical areas or date specific promotions.

    - If the identification of minor trade item variants is only relevant to the manufacturer, they should distinguish these variants by using the element string Product Variant (AI 20). Examples: Minor package design changes, side loading as opposed to top loading cases.

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2.1.4.4 Lead time in re-using a GTIN

A Global Trade Item Number™ (GTIN™) allocated to a trade item, which has become obsolete must not be re-used for another trade item until at least 48 months have elapsed from the date the original trade item was last supplied by the Brand Owner. In the case of clothing the minimum retention period is reduced to 30 months.

A longer period may be needed depending upon the type of goods. For example steel beams may be stored for many years before entering the supply chain. Brand owners should consider what would be a reasonable period of time for the trade item to remain in the supply chain cycle before re-using GTINs.

In addition, when contemplating the re-use of a GTIN, consideration should be given to the use of data associated with the original GTIN by trading partners for statistical analysis or service records, which may continue long after the original trade item was last supplied.

2.1.4.5 Data alignment

When a new Global Trade Item Number™ (GTIN™) is assigned to a trade item, it is essential that the Brand Owner provide the detailed information to trading partners about the item's characteristics. This information should be provided at as soon as possible before the trade item is actually traded.

2.1.4.5.1 Data Alignment Best Practice

A number of actions are vital to ensure that GTINs are accurately communicated within the Supply Chain. These ensure that the data associated with any scanned bar code can be associated with accurate, up to date, data. This is particularly essential for items scanned at the Point of Sale where the absence of accurate data may have legal implications.

The GTIN provides a Supply Chain solution for the identification of any item that is traded (priced or invoiced or ordered). Overall Supply Chain costs are minimised by all partners in the Supply Chain adhering to identical allocation rules (see Section 2.1.A.1.).

The following 'Best Practices' guideline is proposed for all items. It has been developed by manufacturers, distributors and retailers to help eliminate any confusion between product identification and product listing in the Retailers Database in the Supply Chain.

1. GTIN allocation, and the bar coding of the GTIN, is a technical process the rules for which are laid down elsewhere in these General EAN.UCC Specifications. Product listing is the act of adopting a new product in an assortment by a commercial organisation. Product listing is the result of commercial negotiations between purchaser and seller.

   Example: GTIN Allocation should be independent from Product Listing.

2. For management reasons, or to ensure that correct information is communicated to the final consumer, changes to an item may require a new GTIN. A new GTIN does not automatically imply a new listing.

   Example: If a change requiring a new GTIN is made to a listed product, this should not be an automatic trigger for a new Product Listing.

3. GTIN allocation and database listing are to be considered as two entirely autonomous decisions: GTIN allocation is not an object of negotiation.

4. The Brand Owner makes available to their client all information regarding the listed items, ideally with an EDI message or in an e-product catalogue no later than at the time of item listing. In case of time limited promotions or a product evolution, this information will be communicated largely beforehand, thus allowing the retailer to validate this information and to circulate it internally.

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2.1.A.1 FMCG GTIN Allocation Rules Appendix- Created based on the Input Endorsed by the Board of the Global Commerce Initiative (GCI) and submitted via GSMP Change Request 02-000062

The following terms have been included in this appendix, as they were found useful in explaining the column B and C headers.

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.

retail consumer trade item - The trade item intended to be sold to the end consumer at retail Point-of-Sale. They are identified with a unique EAN/UCC-13, UCC-12, or EAN/UCC-8 GTIN.

standard trade item grouping – A standard composition for a trade item(s) that is not intended for Point-of-Sale scanning. They are identified with a unique EAN/UCC-14, EAN/UCC-13, or UCC-12 GTIN.

Non-GTIN bundles – A packaging level for trade items where there is no trading partner requirement for GTIN identification. If a GTIN is required, then this item becomes a retail consumer trade item or standard trade item grouping.

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.

Note: These rules are intended for global use. Exceptions may occur only when local regulatory or legal requirements mandate otherwise.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
2.1.A.1 - 1 Market Variants (languages and traded quantities)				
1.1 New Language on a package sold in one Market/Country (single language label)	New GTIN (Brand Owner may use the same GTIN for different language packs if tracking movement occurs at grouping level)	New GTIN	Efficient shipping (at Retailer's Distribution Centre) requires distinction between non-substitutable trade item at the grouping level (Note: Differing languages on other wise identical trade items are non-substitutable). The release of a new language market/country pack requires compliance with local labelling laws (hence a new trade item and GTIN)	NOTE: The language change does not apply to the Brand Name. If the language change causes the Brand Name to change, then the GTIN at all levels must change.
1.2 Add additional language on a package sold in several Markets (multi language label)	Same GTIN	Same GTIN (a separate GTIN is required for each language cluster)	A re-cluster (adding an additional language at the retail level) does not impact existing markets. For example, if languages A, B and C appear on one pack, the addition of another language (D) has no impact on existing trading partners.	Unnecessary introduction of new GTINs.
1.3 Language Group Cluster Substitution	New GTIN (Brand Owner may use the same GTIN for different language packs if tracking movement occurs at Grouping level)	New GTIN	If languages A, B and C appear on one pack, and languages A, D and E on another, units cannot be substituted in all target markets and therefore must be identified uniquely.	Unable to identify trade item in supply chain.
1.4 Sample or Test Trade items	Retail consumer trade Item has a unique GTIN (if ever sold at retail)	Standard trade item grouping has a unique GTIN (if ever traded in supply chain)	If the trade item is released to market for POS use in any form it requires a GTIN. The GTIN used on the test/sample trade item can be maintained if the trade item test is	Unable to identify trade item in supply chain.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
			successful and becomes orderable.	
1.5 Groupings of same retail item containing different quantities	GTIN of retail consumer trade Item not impacted	Each standard trade item grouping has a unique GTIN	Different GTIN necessary to distinguish between the different pack sizes.	The GTIN identifies all aspects of the standard trade item grouping for ordering, stocking or billing systems. Using the same GTIN for the standard trade item grouping containing different quantities invalidates these systems.
2.1.A.1 - 2 Replacement of Standard Trade Items				
2.1 Minor Changes	*Minor changes are those which are not relevant to trading partners (e.g. neither the consumer declaration nor the ordering, billing or stocking information is impacted).* *Manufacturers may need to distinguish these minor changes in trade items variant (e.g. for tracking price impact).*			
2.1.1 Minor formulation change that will replace the existing trade item and does not involve any change in the Declaration to the consumer (e.g., is not covered by legislation), changes for cost reduction reasons without changing the trade item characteristics (e.g., taste, viscosity, minor ingredients change, etc.)"	No change	No change	The change has no impact on supply chain partners. Minor ingredient changes do not change the trade item description.	An explosion in the number of GTIN changes within the supply chain as any change relevant only to the manufacturer will have to be signalled by a new GTIN. This imposes unnecessary cost.
2.1.2 Minor artwork changes	No change	No change	Minor artwork changes, possibly associated with a trade item re-vamping or seasonal/ promotional flow through, that do not impact other GTIN Rules, should not cause a new GTIN to be assigned	GTIN assignment would be impractical to manage.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
2.1.3 Minor (not declared) change in net weight / count / volume (e.g. changes in manufacturing tolerances do not impact the declaration to the consumer).	No change	No change	The changes possibly associated with an improved product manufacturing or processing tolerance that do not impact other GTIN Rules, should not cause a new GTIN to be assigned.	GTIN assignment would be impractical to manage.
2.1.4 A minor change in the packaging, at the standard trade item grouping level, is made (e.g. optimisation of packaging material or changing supplier of the packaging material).	No change	No change	The change has no impact on supply chain partners. Manufacturer assigned Batch Numbers can be used to track changes not related to "trade".	An explosion in the number of GTIN changes within the supply chain as any change relevant only to the manufacturer will have to be signalled by a new GTIN. This imposes unnecessary cost.
2.1.5 Minor packaging material changes on the retail consumer trade item level (e.g. PET to HDPE) that do not affect trade item "facings" dimensions when on the retail shelf. As a general guideline the change should be considered "major" (and therefore require a new GTIN) if any logistic measure increase or decreases by more than 20%. Note: Any change in Net Declared Weight requires a new GTIN.	No change	No change	Trade item dimensions for both retail consumer and standard trade item grouping should be part of the Item File Master Data, which is best communicated between trading partners via electronic catalogues (e.g., SINFOS)	(Unnecessary) changes to the GTIN at the retail consumer trade item level increase supply chain cost. Historic sales data from the point of sale can be used to assess the impact of the change by keeping a track of the date. If a new GTIN is not assigned at the retail consumer trade item level, the required logistics information is not communicated to supply chain partners. The 20% rule meets the "reasonability" test- e.g., 0% is unacceptable to manufacturers, and 100% is unacceptable to retailers. In depth canvassing of GCI companies led to 20% being selected.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
2.1.6 Random Packs When a retail consumer trade item or standard trade item grouping contains a random mix of trade item (e.g. different colours/flavours of jellies) and the random mix is modified	No change	No change	If the mix is random the change to a new random mix has no impact on the consumer declaration or supply chain partners	An explosion in the number of GTIN changes - imposing unnecessary cost.
2.1.7 Seasonal recipe (new line proposal) For example "Yoghurt with seasonal fruit": fruit can change from one season to the next.	No change	No change	The consumer declaration remains the same whatever the season.	An explosion in the number of GTIN changes - imposing unnecessary cost.
2.1.8 Change in Brand graphics (e.g. graphic colour, size, font, etc.)	No change	No change	The change has no impact on supply chain partners. A Brand may be printed on packaging, but not used to describe and/or identify the product to the consumer (e.g. printed on a back panel in small text). In this circumstance, a change in text does not require a change in the shelf edge label, therefore no GTIN change required.	An explosion in the number of GTIN changes within the Supply Chain that imposes unnecessary cost.
2.1.9 Brand addition (e.g. a corporate brand name is added to the existing product brand on the package)	No change	No change	The change has no impact on supply chain partners.	An explosion in the number of GTIN changes within the Supply Chain that imposes unnecessary cost.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
2.2 Major change	*Major changes are those which require trading partners to distinguish, within their systems, between the "old" and "new" trade item (e.g., the consumer declaration has changed or the ordering, billing or stocking information is impacted).*			
2.2.1 Declared net weight, count: number of consumer usage items in the package changes (e.g. number of tablets in an aspirin bottle or number of diapers in a pack of disposable diapers or net volume to the consumer or a retail item of 400 grams in 4 helpings of 100 grams changed to 400 grams in 8 helpings of 50 grams)	New GTIN	New GTIN	The change leads to a change in the shelf edge label (consumer declaration). Failure to distinguish between "old" and "new" retail consumer trade item could lead to inaccurate unit pricing at the shelf leading to legal penalties	Failure to provide the consumer with accurate retail consumer trade item information (e.g., via the shelf edge label) may lead to legal penalties. All supply chain partners need to "phase in" and "phase out" the new and old trade item. Using separate GTINs does this most efficiently.
2.2.2 Formulation change - If the consumer is expected to distinguish the new from the old trade item and order accordingly / if regulations or other requirements dictate so (e.g., healthcare) / if changes alter the fundamental consumer benefit (e.g., new flavour, aroma)	New GTIN	New GTIN	The change leads to a change in the shelf edge label (consumer declaration).	Failure to provide the consumer with accurate retail consumer trade item information (e.g., via the shelf edge label) may be against the law. Without a "new" GTIN it would not be possible to uniquely distinguish the trade item (e.g., determine if Lemon or Lime flavour was selling best).
2.2.3 Major packaging changes - If the change affects the trade item name or brand or the trade item description (declaration to the consumer)	New GTIN	New GTIN	The change leads to a change in the shelf edge label (consumer declaration). Brand, or trade item, name changes must be clearly communicated and old stock phased out.	Brand, or trade item, name changes could not be registered effectively.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
2.2.4 Major packaging changes - any dimensional change of more than 20% in any axis	New GTIN	New GTIN	Shelf management software and logistic systems need to be updated to ensure optimal shelf space allocation.	The 20% rule meets the "reasonability" test (e.g., 0% is unacceptable to manufacturers, and 100% is unacceptable to retailers. In depth canvassing of GCI companies led to 20% being selected).
2.2.5 Changes in the configuration of grouping item assortments (e.g., an assortment contains 200 retail items with 4 different flavours (configuration: 30/50/80/40). The configuration is changed (e.g. new configuration: 40/60/40/60) but the total quantity remains the same (200 retail items).	No change (changes to configuration of the grouping are not applicable to the GTIN of lower packaging levels)	New GTIN	The standard trade item grouping is a new trade item for ordering purposes. (Note this is not a random change, but a permanent configuration switch).	
2.2.6 Major change in functionality - If the change introduces new features or functionality (e.g., new software Version, New features on electronic trade items, etc.)	New GTIN	New GTIN	It is recommended to assign a new GTIN at both the retail consumer and standard trade item grouping levels to ensure all supply chain partners are able to distinguish the "old" from the "new".	Unable to Phase In, Phase Out old stock.
2.2.7 Changes to the wording of existing product name, product brand, or product description that appear on the product and that will impact Supply Chain applications (this includes removal of existing branding used to describe the	New GTIN	New GTIN	The change leads to a change in the shelf edge label (consumer declaration). Brand, or product, name changes must be clearly communicated and old stock phased out.	Brand or product name changes could not be registered effectively. This potentially could lead to the failure to provide the consumer with accurate retail consumer trade item information (e.g. via the shelf edge label).

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
product in the Supply Chain and to the consumer).				
2.2.8 Graduated change of the product brand or name (when old brand coexists with new one during a period with several stages)	New GTIN (the brand owner decides exactly when the new GTIN is assigned. This should take place when the old brand disappears from the product.)	New GTIN (timing identical to the GTIN change of the consumer Trade Item)	The change triggers a change in the supply chain (e.g. in the shelf edge label (consumer declaration)	Brand or product name changes could not be registered effectively. This potentially could lead to the failure to provide the consumer with accurate retail consumer trade item information (e.g. via the shelf edge label).
2.1.A.1 - 3 Parallel Trade Items				
3.1 Promotions				
3.1 1 Promotions that do not impact GTIN	*Promotions are (normally) short-term modifications to way a trade item is presented to the customer. This section highlights examples of promotions where GTIN at retail consumer trade item level stays the same.*			
3.1.1.1 Two or more retail consumer trade items near each other (not attached or banded together) both of which can be purchased separately. For example a gift-with-purchase or buy-two, get one free offers - These items are offered at no additional cost when the primary (regular) retail consumer trade item is purchased. The promotion is sold at the same price.	No change	No change unless the two retail consumer trade items are shipped together in one physical package when originally they were shipped individually	The change has no impact on supply chain partners. Promotions data can only be captured by knowing the date of the offer. The shelf management software is not impacted The consumer declaration is not impacted	An explosion in the number of GTIN changes within the supply chain as any change relevant only to the manufacturer will have to be signalled by a new GTIN. This imposes unnecessary cost.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
3.1.1.2 Two (or more) retail consumer trade items bound together, i.e. designed to promote the trial of the attachment (One-Order Trial Packs) where the geometry of the base package and the item net weight, count or volume is not impacted and the item is not intended to be reordered because the promotion period is limited.	No change	No change	The change has no impact on supply chain partners (e.g., diapers packaged with insert pouch of 5 baby wipes) Promotions data can only be captured by knowing the date of the offer. The shelf management software is not impacted and the consumer declaration is not impacted	An explosion in the number of GTIN changes within the supply chain as any change relevant only to the manufacturer will have to be signalled by a new GTIN. This imposes unnecessary cost.
3.1.1.3 Free Item Two retail consumer trade items, not attached or banded together where one item, which cannot be purchased, is free when the other is purchased (e.g. gift-with-purchase or purchase-with purchase items).	No change (as all the items have a GTIN for sales or inventory tracking)	No change (However, if the free item is shipped in the same physical container with the primary item, a separate GTIN should be assigned to identify the new standard trade item grouping.)	The change has no impact on original item.	An explosion in the number of GTIN changes within the supply chain as any change relevant only to the manufacturer will have to be signalled by a new GTIN. This imposes unnecessary cost.
3.1.1.4 Free Item in Retail Consumer Trade Item - A free item packed inside the primary retail consumer trade item package with no change in quantity of trade item and the promotion package is sold at the same price as the regular package. NOTE: If the free gift affects the amount of tax payable (e.g., a taxable music CD offered as a free promotion on an untaxed product	No change	No change	The change has no impact on supply chain partners.	An explosion in the number of GTIN changes - imposing unnecessary cost.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
such as a multipack of baby milk) then careful consideration should be given to the communication to trading partners.				
3.1.1.5 Reconfiguration of Consumer Pack - A consumer package reconfigured for promotional purposes (e.g. memorial edition coffee can), which contains the same quantity of trade item as the regular package and is sold at the same price.	No change (Where the retail consumer trade item footprint does not change more than 20% in any dimension)	No change	The change has no impact on supply chain partners. The consumer declaration is not changed The net weight is not affected.	An explosion in the number of GTIN changes - imposing unnecessary cost.
3.1.1.6 Price-Off Coupon - A retail consumer trade item may have a price-off coupon on or in the package. The price-off coupon could be for the same or any other retail item.	No change	No change (However, if the coupon is time critical it should be treated as 3.1.1.9)	The change has no impact on for pricing or ordering or invoicing If the retail consumer is given the choice between purchasing the trade item with or without consumer price-off coupons a separate GTIN is required.	Additional complexity (cost) in the management of trade item with or without coupon.
3.1.1.7 Mail in with Proof of Purchase - A retail consumer trade item may have a coupon or other identifiable printed matter that would offer proof of having purchased that item. The coupon would be returned by mail by the consumer for refund, for other items or for purchase of other items at a reduced price.	No change	No change (However, if the coupon is time critical it should be treated as 3.1.1.9)	The change has no impact on supply chain partners.	An explosion in the number of GTIN changes - imposing unnecessary cost.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
3.1.1.8 Merchandise Sold with Allowance - When items are purchased by the retailer at the regular price, additional items are furnished free of charge. When the quantity of retail consumer trade items in the case can be increased.	No change	New GTIN	New reference due to increased quantity contained. NOTE: If the quantity of regular cases is increased (e.g. buy ten cases and get one case free), there is no change in the standard trade item grouping GTIN. Replenishment is based on shipped cases (which are the correct and really delivered quantity) not on the ordered quantity, which would be too low. Therefore in this case, there is not a need to change the standard trade item grouping GTIN.	The physical flow of the goods needs to be managed throughout the supply chain - even if supplied for free.
3.1.1.9 Push promotion for a (time critical) event	No change	New GTIN (where First In First Out (FIFO) is inappropriate)	Certain time critical promotion (e.g., World Animal Day) where the promotion item has to be on display on a given day. In this instance normal FIFO rules cannot be effectively applied. Other, longer term, critical promotions (e.g., seasonal soft drink package versus shipment that may not arrive on the shelf until a movie is launched) require no change as normal FIFO rules can be applied Standard trade item grouping distinction required for efficient Phase In – Phase Out	Different retailers impose different rules on the same supplier causing unnecessary supply chain cost. Keeping the retail consumer trade item level GTIN allows historic data file referral.
3.1.2 Promotions that do impact GTIN.	*Promotions are (normally) short-term modifications to way a trade item is presented to the customer. This section highlights examples of promotions where a new GTIN is required at the one level.*			

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
3.1.2.1 If a retail consumer trade item, (not normally pre-priced with a special price statement incorporated into the label) is changed to a retail consumer trade item that has a pricing statement on the label.	New GTIN	New GTIN	The change requires supply chain partners to distinguish old and new stock.	Danger that the price declaration to the consumer (on the pack) is different to the price charged (price in the Item File look up table).
3.1.2.2 Price reduction is explicitly specified on the pack (flash packs), (e.g., 10 cents off)	New GTIN	New GTIN	The change requires supply chain partners to distinguish old and new stock.	Danger that the price declaration to the consumer (on the pack) is different to the price charged (price in the file look up table).
3.1.2.3 Bonus Pack: A bonus pack is an item that has increased quantity (net weight, count, volume) and is sold at the same price as the regular item.	New GTIN	New GTIN (standard trade item grouping net weight and case cube can change)	Quantity increase affect unit pricing and information found on shelf labels	Danger that the price declaration to the consumer (on the pack) is different to the price charged (price in the file look up table).
3.1.2.4 Combination Pack - Items, composed of two or more retail trade items normally sold separately, that are bound together	New GTIN - Obscure the symbol (GTIN) on all individual trade items	New GTIN	A new GTIN is required for the retail consumer trade item because it is a new and unique product. For all combination packs it is important to obscure any bar code symbol on a lower packaging level.	If more than one bar code symbol (carrying a GTIN) is visible, the operator is unsure which one to scan.
3.2 Prepriced Merchandise	*Prepricing is discouraged as a trade practice as it introduces complexity for retail consumer trade item and standard trade item grouping price file maintenance through the supply chain*			
3.2.1 Retail Consumer Trade Item with price label attached per specific retailer(s) requirements	No change	No change	Retail consumer trade item where multiple retailers require specific price labelling does not require individual GTIN assignment per each price label.	An explosion in the number of GTIN changes - imposing unnecessary cost.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
3.2.2 When the manufacturer includes prepricing as part of the package graphics, such as is normally done with a Manufacturer's Suggested Retail Price (MSRP), and the buyer has not requested the price to be marked on the item (in other words, the selling price of the buyer may or may not have anything to do with the selling price marked on the item). Event: change of MSRP.	New GTIN	New GTIN	The change requires supply chain partners to distinguish old and new stock.	Danger that the price declaration to the consumer (on the pack) is different to the price charged (price in the file look up table).
3.2.3 Any other marked price as part of the packaging. Selling price is the price marked on the packaging. Event: marked price change.	New GTIN	New GTIN	Newspapers, magazines and some books tend to be price marked. If the cover price changes, the GTIN should change. Pre-Pricing needs to comply to the law	Pricing legislation normally means that the price shown must equal (or be greater than) the price charged to the consumer. If the price is shown on the trade item (not recommended) this must be communicated to supply chain partners.
3.3 - 3.8 Other parallel trade items	*Other changes which could impact GTIN allocation.*			
3.3 Different Manufacturer for an (apparently) identical trade item made for a specific retailer.	No change (the retailer is the Brand Owner)	No change	The Retail Price is not relevant to the GTIN.	GTIN assignment would be impossible to manage.
3.4 Different Retail Price (e.g., for different regions in one country) and the price is not marked on the packaging	No change (exception if the trade item is prepriced)	No change	The retail price is not relevant to the GTIN unless it is pre-priced by the supplier on the package.	GTIN assignment would be impossible to manage if linked to retailers price files.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
3.5 Trade item produced in different locations	No change	No change	Different GTIN for the same trade item could cause serious problems for retailer (e.g. price lookup file, replenishment)	Global players supplying the same trade item, from factories in different countries, would have to use different GTINs even though no change to the consumer.
3.6 New / additional pallet layout to co-exist permanently with the original layout	No change	No change at the case level but (If pallet layout is important to the retailer, then retailer should order by the pallet. This would require a GTIN at the pallet level.)	The pallet pattern / layout does not impact the quantity of retail consumer trade items or cases contained. If two pallet layout configurations are supplied to a market in parallel, and can be ordered separately, a different GTIN is required for each pallet configuration. In effect the pallet then becomes the ordering unit.	Robotic picking requires a known (predetermined) pallet layout and stacking order. Efficient Logistics applications require pre-determined pallet configurations.
3.7 EAS (Electronic Article Surveillance) system (theft protection) Should the Retail Item be orderable with - no anti-theft device - an electromagnetic anti-theft system - a radio based system - etc	No change (same GTIN independent of anti-theft properties)	New GTIN (a different GTIN dependent upon the anti-theft properties of the retail unit and trading partner agreement)	Facilitate reorder within the retailer organisation and timely inventory rotation	Retailer Distribution Centre unable to distinguish between shipping to stores with theft protection systems.

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Type of Change to Trade item	GTIN for Retail Consumer Trade Item	GTIN for Standard Trade Item Grouping	Rationale	Consequence if rule not applied
3.8 The addition of an EPC Tag. NOTE: Where an item has an EPC Tag and Bar Code, the encoded GTIN must be identical.	No change	No change	The requirement to use EPC Tags is driven by trading partner agreement. Otherwise identical items, with and without an EPC Tag, must have the same GTIN to enable the smooth operation of the Supply Chain.	The introduction of EPC Tags to existing product lines would require reallocation of GTIN. This would add significant cost to the global supply chain and avoids the additional costs associated with an explosion of new GTINs.
2.1.A.1 - 4 Seasonals				
4.1 Trade items modified for seasonal reason (e.g. holiday pack, candy over-wrapped for Easter)	New GTIN Note Recurring Seasonals (e.g., White T-shirt sold each summertime or a cake supplied only during the Christmas period) should use the same GTIN each season.	New GTIN	Facilitates efficient pricing, invoicing, reordering and stock-management at the standard trade item grouping level and seamless trade item substitution at the retail consumer trade item level.	Additional complexity (cost) in the phase-in phase-out of seasonal trade items. Rate sale, re-order and (seasonal) promotions management more complex.
4.2 Same Brand - Trade item Vintage (e.g. Wine)	New GTIN (vintage impacts pricing or ordering or invoicing at any point in the supply chain) Same GTIN (vintage has no impact on pricing or ordering or invoicing at any point in the supply chain)	Same as for Retail Unit.	*An assigned GTIN must never be changed as long as the item is not modified so that it needs to be discriminated from the initial trade item for ordering, stocking or billing. The example of "wine" clearly highlights the grey area within this definition. For exactly the same "brand" of wine, the price of top quality vintage varies enormously by year. For other "brands" of wine, the year is of no consequence. Therefore it is ultimately for the Brand Owner (whoever markets the wine) to decide GTIN allocation rules.*	The Brand Owner is ultimately responsible for the correct GTIN assignment to their trade items. The GTIN assignment impacts how their trade items are traded. Failure to use the Brand Owners identification scheme means that all benefit of source numbering is lost.

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