



## General Specifications Change Notification (GSCN)

WR #	GSCN Name	Effective Date
19-281	2D in distribution	8- Oct - 2019

### Associated Work Request (WR) Number:

WR-18-265

### Background:

In 2018, WR18-265 (2D symbols on distribution units) was approved and GS1 standards allowed to use 2D symbol for trade items scanned in general distribution as an additional barcode. There are two sections about trade item scanned in general distribution on the GS1 General Specifications V19.1. 2.1.7 Fixed measure trade items scanned in general distribution (page 47-53) 2.1.10 Variable measure trade items scanned in general distribution (page 58-64).

However, 2D allowance is written on only section 2.1.7. When we discussed about WR18-265, its scope was not only fixed measure trade. Therefore, section 2.1.10 needs to be amended /updated.

### GS1 General Specification Change:

The changes has been targeted for the Gen Spec V2020 release.

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GSMP:

### 2.1.7 Fixed measure trade items scanned in general distribution

Every trade item that is different from another in any respect is assigned a unique Global Trade Item Number (GTIN). This includes trade item groupings of retail and non-retail trade items that are also trade items, and non-retail single units. For example, each of the packaging types in the figure below, if traded, is assigned a separate GTIN.

**Figure 2.1.7-1.** Example of GTIN numbering options

Trade item	GTIN numbering options			
	GTIN-8	GTIN-12	GTIN-13	GTIN-14
Single product A	X	X	X	
50 x product A (Trade item grouping)		X	X	X
50 x product A (Trade item grouping, e.g., display case)		X	X	X
100 x product A (Trade item grouping)		X	X	X
Single product B	X	X	X	
50 x product A 50 x product B		X	X	

If, at any time, the trade item is shipped or transported as an independent logistic unit, at the time of shipment it SHOULD additionally be identified with an SSCC. The combination of a GTIN and a serial number (also known as SGTIN) does not replace the SSCC as the identifier of a logistic unit.

#### 2.1.7.1 Identification of a trade item that is a single product

##### Application description

The manufacturer or supplier has the option of assigning a unique GTIN-8, GTIN-12, GTIN-13 or in the case of regulated healthcare trade items and trade items used in manufacturing and maintenance, repair & overhaul (MRO) processes, a GTIN-14 to a trade item that is a single product as shown in figure [2.1.7-1](#). Restricted Circulation Numbers (RCNs) SHALL NOT be used in this element string.

##### GS1 key

##### Required

The allowed key formats for this application are:

- GTIN-8
- GTIN-12
- GTIN-13
- For regulated healthcare trade items and trade items used in manufacturing and maintenance, repair & overhaul (MRO) processes: GTIN-14.

##### Rules

See the GTIN rules described in section [4](#).

##### Attributes

##### Required

For regulated healthcare consumer trade items the following levels of AIDC marking are specified.



**Figure 2.1.7.1-1.** Overview of required attributes

AIDC marking level for regulated healthcare trade items	Key	Batch/lot number - AI (10)	Expiration date - AI (17)	Serial number - AI (21)	Other
Minimum	GTIN-8, GTIN-12, GTIN-13, or GTIN-14	Yes	Yes	No	None
Enhanced	GTIN-8, GTIN-12, GTIN-13, or GTIN-14	Yes	Yes	No	None
Highest – Brand owner AIDC marking	GTIN-8, GTIN-12, GTIN-13, or GTIN-14	Yes	Yes	Yes	Potency AI (7004) for pharmaceutical, and for medical device kits with pharmaceutical (cases only for both situations)
Highest – Hospital AIDC marking of pharmaceutical	GTIN-8, GTIN-12, GTIN-13, or GTIN-14	No	AI (7003) for short-life products	Yes	None
Hospital AIDC marking of medical devices	No	No	No	No	None

To manage healthcare data requirements within EPC/RFID tags, see section [3.11](#) and the most recent version of the *EPC Tag Data Standard*.

**Optional**

Not applicable

**Rules**

Not applicable

**Data carrier specification**

**Carrier choices**

- Symbols from the EAN/UPC symbology family (UPC-A, UPC-E, may be used to encode the GTIN-12, EAN-13 to encode the GTIN-13 and, if the size requirements are met, EAN-8 to encode the GTIN-8 of the trade item that is a single product).
- ITF-14 symbols may be used where printing conditions require the application of a less demanding symbology. ITF-14 symbols can encode the GTIN-12, or GTIN-13 of the item.
- A GS1-128 barcode or GS1 DataBar barcode with GS1 Application Identifier (01) may be used to encode a GTIN that identifies the trade item if the printing conditions allow. The choice of one of these symbologies is particularly relevant if there is a need to encode attribute information in addition to the identification number.

Some scanning systems may be able to handle 2D barcodes as well as ~~linear1D~~ barcodes. In these environments, [GS1 2D](#) symbols may be used in addition to linear symbols. For information on how to manage multiple barcodes see section [4.16](#).

For trade items used in manufacturing and maintenance, repair & overhaul (MRO) processes the following data carrier choices take precedence over the carrier choices above: GS1-128, GS1 DataMatrix, GS1 QR Code and EPC/RFID.

For healthcare, the following carrier selections take precedence over the carrier choices above and apply to all regulated healthcare retail consumer trade items.



**Figure 2.1.7.1-2. Healthcare carrier choices**

<b>Preferred option(s) (this is the long-term direction for AIDC marking)</b>	<p>First preference: GS1-128 symbology. After Jan 2010, GS1 DataBar is permitted for use on all trade items and therefore may be encountered in general distribution however use of GS1-128 is preferred as the scanners in the field today pervasively support it.</p> <p>Second preference: When one linear symbol cannot accommodate the field length of the data (exceeds 48 characters), two symbols should be used.</p> <p>Third option: Where the package or label size does not permit the use of the first two options, GS1 DataMatrix symbology are permitted but should be avoided wherever possible if the package could be scanned by a mounted conveyerised scanner.</p>
<b>Option in addition to the barcode</b>	See the "data carrier specification carrier choices" recommendations on options in addition to the barcode at the end of section <a href="#">2.1.5</a> .
<b>Other acceptable options (GS1 strongly supports existing options for symbol marking as a guiding principle and therefore supports all previous AIDC marking specifications)</b>	See the "data carrier specification carrier choices" recommendations on other acceptable options found at the end of section <a href="#">2.1.5</a> .

**Symbol X-dimensions, minimum symbol height, and minimum symbol quality**

For multi-sector use except for retail or regulated healthcare trade items see section [5.10.3.2](#), *GS1 symbol specification table 2*.

For regulated healthcare non-retail consumer trade items see section [5.10.3.8](#), *GS1 symbol specification table 8*.

For manufacturing and MRO processes see [5.10.3.4](#), *GS1 symbol specification table 4*.

**Symbol placement**

All the symbol placement guidelines defined in section [6](#).

**Unique application processing requirements**

For a description of processing requirements, see section [Z](#).

**2.1.7.2 Trade item groupings of identical trade items**

**Application description**

A trade item grouping that is a predefined grouping of identical trade items. The manufacturer or supplier has the option of either assigning a unique GTIN-13 or GTIN-12 to each trade item grouping or assigning a unique GTIN-14. These 14-digit GTINs incorporate the GTIN (less its check digit) of the trade item contained in each grouping. The check digit for each GTIN-14 is then recalculated.

The indicators have no meaning. The digits do not have to be used in sequential order, and some may not be used at all. The GTIN-14 structure for trade item groupings creates extra numbering capacity.

**Figure 2.1.7.2-1. GTIN-14 data structures**

		Global Trade Item Number (GTIN)												
		GTIN of contained trade items (without check digit)											Check digit	
	Indicator													
GTIN-8 based	N <sub>1</sub>	0	0	0	0	0	N <sub>7</sub>	N <sub>8</sub>	N <sub>9</sub>	N <sub>10</sub>	N <sub>11</sub>	N <sub>12</sub>	N <sub>13</sub>	N <sub>14</sub>
GTIN-12 based	N <sub>1</sub>	0	N <sub>3</sub>	N <sub>4</sub>	N <sub>5</sub>	N <sub>6</sub>	N <sub>7</sub>	N <sub>8</sub>	N <sub>9</sub>	N <sub>10</sub>	N <sub>11</sub>	N <sub>12</sub>	N <sub>13</sub>	N <sub>14</sub>
GTIN-13 based	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	N <sub>5</sub>	N <sub>6</sub>	N <sub>7</sub>	N <sub>8</sub>	N <sub>9</sub>	N <sub>10</sub>	N <sub>11</sub>	N <sub>12</sub>	N <sub>13</sub>	N <sub>14</sub>

The indicator is a digit with a value of 1 to 8. It is assigned as required by the company that constructs the identification number. It can provide up to eight separate GTIN-14s to identify trade item groupings.


The check digit is explained in section 7.9. Its verification, usually carried out automatically by the barcode reader, ensures that the number is correctly composed.

**Figure 2.1.7.2-2. Different groupings of the same trade item**

Indicator	GTIN of trade item contained in the grouping, less its check digit	New check digit	Description	Quantity
	061414112345	2	Trade item	Single
1	061414112345	9	Trade item grouping	A grouping
...	...	...	...	...
8	061414112345	8	Trade item grouping	Another grouping

Indicators 1 to 8 may be used to create new GTIN-14s. When these eight indicators have been used, further groupings must be identified with either a GTIN-13 or GTIN-12. Indicator digit 9 is reserved for variable measure trade items, see section 2.1.10.

For packaging configuration hierarchies that include a retail consumer trade item identified with a GTIN-13, GTIN-12, or GTIN-8, this GTIN must always be one of the relevant levels of packaging contained, usually the lowest level (see note below related to GTIN-14 assignment on the primary packaging). Restricted Circulation Numbers must not be used in this element string.

 **Note:** For regulated healthcare trade items on the primary packaging, the phrase “usually the lowest level” SHALL be interpreted as allowing for the use of GTIN-14 on packaging configurations below the retail consumer trade item level, if one exists. This interpretation may not be applied to other trade item categories such as Do It Yourself (DIY) or Foodservice.

Any product package which will encounter scanning or product listing for sale at point-of-sale SHALL be identified according to retail point-of-sale specifications.

When a GTIN change at the retail consumer trade item level is required, the GTIN change must be made at all configuration levels above the retail consumer trade item level. Where there is an association between primary packaging and retail consumer trade item levels and GTIN-14 assignment is used on the primary packaging, the GTIN-14 assigned to the primary packaging is based on the retail level GTIN. There are three scenarios to consider for the relationship of these GTIN assignments:

- If changes to the primary packaging drive the change of the GTIN assigned to the retail consumer trade item level, the GTIN of the primary packaging will change.
- If changes to retail consumer trade item level GTIN are not caused by a change in primary packaging, the GTIN at the primary package level may or may not change per the discretion of the brand owner.
- If additional retail level package(s) are introduced beyond the original retail package or replace the original retail package, the GTIN-14 on the primary packaging may remain tied to the original retail level GTIN.

**GS1 key**

**Required**

The allowed key formats for this application are:

- GTIN-8
- GTIN-12
- GTIN-13
- GTIN-14



**Rules**

All the GTIN rules described in section 4.

**Attributes**

**Required**

For regulated healthcare consumer trade items the following levels of AIDC marking are specified:

**Figure 2.1.7.2-3. Required attributes**

AIDC marking level for regulated healthcare trade items	Key	Batch/lot number - AI (10)	Expiration date - AI (17)	Serial number - AI (21)	Other
Minimum	GTIN-8, GTIN-12, GTIN-13, or GTIN-14	Yes	Yes	No	None
Enhanced	GTIN-8, GTIN-12, GTIN-13, or GTIN-14	Yes	Yes	No	None
Highest – Brand owner AIDC marking	GTIN-8, GTIN-12, GTIN-13, or GTIN-14	Yes	Yes	Yes	Potency AI (7004) for pharmaceutical, and for medical device kits with pharmaceutical (cases only for both situations)
Highest – Hospital AIDC marking of pharmaceutical	GTIN-8, GTIN-12, GTIN-13, or GTIN-14	No	AI (7003) for short-life products	Yes	None
Hospital AIDC marking of medical devices	No	No	No	No	None

To manage healthcare data requirements within EPC/RFID tags, see section 3.11 and the most recent version of the *EPC Tag Data Standard*.

**Optional**

Not applicable

**Rules**

Not applicable

**Data carrier specification**

**Carrier choices**

- For multi-sector use symbols from the EAN/UPC symbology family (UPC-A, UPC-E, and EAN-13) may be used to encode the GTIN-12 or GTIN-13 of the trade item grouping. If used, the GTIN-8 is encoded in an EAN-8 barcode. GTIN-8 can only be used when all other pack size constraints are met, see section 4.3.7.
- ITF-14 symbols may be used on trade item groupings where printing conditions require the application of a less demanding symbology. ITF-14 symbols can encode the GTIN-12, GTIN-13, or GTIN-14 of the item.
- A GS1-128 barcode or GS1 DataBar barcode with GS1 Application Identifier (01) may be used to encode a GTIN-12, GTIN-13, or GTIN-14 that identifies the trade item if the printing conditions allow. The choice of one of these symbologies is particularly relevant if there is a need to encode attribute information in addition to the identification number.

Some scanning systems may be able to handle 2D barcodes as well as ~~linear1D~~ barcodes. In these environments, GS1 2D symbols may be used in addition to linear symbols. For information on how to manage multiple barcodes see section 4.16.

For trade items used in manufacturing and maintenance, repair & overhaul (MRO) processes the following data carrier choices take precedence over the carrier choices above: GS1-128, GS1 DataMatrix, GS1 QR Code and EPC/RFID.



For healthcare the carrier selections noted at the end of section 2.1.7.1 take precedence over the carrier choices above and apply to all regulated healthcare retail consumer trade items.

**Symbol X-dimensions, minimum symbol height, and minimum symbol quality**

For multi-sector use other than regulated healthcare trade items see section 5.10.3.2, GS1 symbol specification table 2.

For regulated healthcare non-retail consumer trade items see section 5.10.3.8, GS1 symbol specification table 8.

For manufacturing and MRO processes see 5.10.3.4, GS1 symbol specification table 4.

**Symbol placement**

All the symbol placement guidelines defined in section 6.

**Unique application processing requirements**

For a description of processing requirements, see section 7.

**2.1.7.3 Trade item groupings of mixed trade items**

**Application description**

A trade item grouping that is a predefined grouping of two or more different trade items.

For example:

- Product C is a grouping of Product A (GTIN 'A') and Product B (GTIN 'B'), and is identified with either a GTIN-12 or GTIN-13, GTIN 'C.'
- GTIN 'C' could then be used to construct a GTIN-14 for a trade item grouping comprised of Product C.

As shown in figure 2.1.7.3-1, the GTIN-12s 614141234561 and 614141345670 identify the two trade items in the assortment identified by the GTIN 614141456789.

**Figure 2.1.7.3-1.** Example of trade item grouping of mixed trade items

Indicator	GTIN of trade item less its check digit	Check digit	Description	Quantity
	061414123456 061414134567	1 0	Retail consumer trade item (Product A) Retail consumer trade item (Product B)	Single Single
	061414145678	9	Retail consumer trade item (Product C)	Assortment
1	061414145678	6	Trade item grouping	A grouping of the assortment
...	...	...	...	...
8	061414145678	5	Trade item grouping	Another grouping of the assortment

The indicators 1 to 8 may be used to create new GTIN-14s. When these eight indicators have been used, further groupings must be identified with either a GTIN-13 or GTIN-12. Indicator digit 9 is reserved for variable measure trade items, see section 2.1.10.

**GS1 key**

**Required**

The allowed key formats for this application are:

- GTIN-12
- GTIN-13
- GTIN-14

**Rules**

All the GTIN rules described in section [4](#); in addition, the GTIN-14 is valid for trade item groupings only when the trade item contained is a mixed assortment of two or more different trade items.

**Attributes**

Not applicable

**Data carrier specification****Carrier choices**

- Symbols from the EAN/UPC symbology family (UPC-A, UPC-E, and EAN-13) may be used to encode the GTIN-12 or GTIN-13 of the trade item grouping.
- ITF-14 symbols may be used on trade item groupings where printing conditions require the application of a less demanding symbology. ITF-14 symbols can encode the GTIN-12, GTIN-13, or GTIN-14 of the item.
- A GS1-128 barcode or GS1 DataBar barcode with GS1 Application Identifier (01) may be used to encode a GTIN-12, GTIN-13, or GTIN-14 that identifies the trade item if the printing conditions allow. The choice of one of these symbologies is particularly relevant if there is a need to encode attribute information in addition to the identification number.

Some scanning systems may be able to handle 2D barcodes as well as [linear1D](#) barcodes. In these environments, [GS1 2D](#) symbols may be used in addition to linear symbols. For information on how to manage multiple barcodes see section [4.16](#).

For trade items used in manufacturing and maintenance, repair & overhaul (MRO) processes the following data carrier choices take precedence over the carrier choices above: GS1-128, GS1 DataMatrix, GS1 QR Code and EPC/RFID.

For healthcare, the carrier selections noted at the end of section [2.1.7.1](#) take precedence over the carrier choices above and apply to all regulated healthcare retail consumer trade items.

**Symbol X-dimensions, minimum symbol height, and minimum symbol quality**

For multi-sector use other than regulated healthcare trade items see section [5.10.3.2](#), *GS1 symbol specification table 2*.

For regulated healthcare non-retail consumer trade items see section [5.10.3.8](#), *GS1 symbol specification table 8*.

For manufacturing and MRO processes see [5.10.3.4](#), *GS1 symbol specification table 4*.

**Symbol placement**

All the symbol placement guidelines defined in section [6](#).

**Unique application processing requirements**

For a description of processing requirements, see section [7](#).



### 2.1.10 Variable measure trade items scanned in general distribution

#### Application description

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 that can vary continuously, are covered by the rules outlined in this section. Trade items that are sold in discrete and predefined bands (e.g., as a nominal weight) are treated as fixed measure trade items.

A trade item must be considered a variable measure trade item if its measure is variable at any point in the supply chain. For example, a supplier may sell and invoice chickens in cases of 15 kilograms 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) and the variable count element string.

Variable measure trade items scanned in general distribution are identified with a GTIN-14 beginning with '9'. The digit 9 in the indicator position indicates that the item identified is a variable measure trade item that is not scanned at POS.

**Note:** See section 2.6.8 for the GTIN-14 beginning with a '9' in combination with AI (242) Made-to-Order variation number and its use in the manufacturing and maintenance, repair & overhaul (MRO) environment.

Unlike GTIN-14s beginning with indicator 1 to 8 which are used to identify fixed measure trade items (see section 2.1.7.2 *Trade item groupings of identical trade items*), this GTIN-14 is not derived from the GTIN (without check digit) of the contained trade items. The GTIN-14 must be processed in its entirety and not broken down into its constituent elements.

**Figure 2.1.10-1.** Format of the element string

Global Trade Item Number (GTIN)														
Indicator	GS1 Company Prefix										Item reference		Check digit	
(GTIN-14)	9	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	N <sub>5</sub>	N <sub>6</sub>	N <sub>7</sub>	N <sub>8</sub>	N <sub>9</sub>	N <sub>10</sub>	N <sub>11</sub>	N <sub>12</sub>	N <sub>13</sub>	N <sub>14</sub>

The check digit is explained in section 7.9. Its verification, usually carried out automatically by the barcode reader, ensures that the number is correctly composed.

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 the figure below.

**Figure 2.1.10-2.** Main types of variable measure trade items

Type	Item description
<b>A</b>	Items traded in bulk, neither portioned nor pre-packed for retail sale, ordered in any quantity, and that are delivered as variable measure 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>B</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 predefined entity and, if applicable, denotes the form of packaging. Price or weight or dimensions complete the identification of the individual item.
<b>C</b>	Portioned trade items, pre-packed for sale by weight to the consumer, not fixed 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 weight or dimension completes the identification of the individual unit.



Type	Item description
<b>D</b>	Trade items with selectable dimensions where GS1 system standard numbering does not make sense to cover the multiplicity of all variations (e.g., wooden planks, carpeting) The identification number denotes the predefined basic trade item. The applicable dimension(s) completes the identification of the individual unit.
<b>E</b>	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 trade item grouping 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.
<b>F</b>	Trade items made to customer specifications, restricted in use to the Maintenance, Repairs and Operations industrial supply sector, and sold business-to-business. The identification number denotes a base custom item. The specific variation is identified by the Made-to-Order variation number. (See in section <a href="#">3.2</a> for the list of all GS1 Application Identifiers).

### GS1 key

#### Required

- GTIN-14 with indicator digit 9

#### Rules

The GTIN-14 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 variable measure trade item. The digit 9 in the first position is an integral part of the GTIN.

The GTIN-14 data structure beginning with indicator 9 is not used on an item intended to cross the retail point-of-sale. Numbering of variable measure fresh food trade items intended to cross retail point-of-sale is defined in section [2.1.12](#).

### Attributes

#### Required

The GTIN-14 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.

#### Optional

Applicable trade measures depend on the nature of the product. They may be a quantity, a weight, or any dimension.

- An element string with GS1 Application Identifier (30) is used if the variable measure of the trade item is the number of items contained. In order to generate a short barcode, always enter an even number of digits in the data field "variable count of items" by inserting a leading zero if necessary. Concatenation of this element string with the GTIN of the item enhances the accuracy of the application. See section [3.6.1](#), *Variable count of items: AI (30)*.
- An element string with GS1 Application Identifiers (31nn), (32nn), (35nn), and (36nn) is 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, see section [3.2](#), *Trade measures: AIs (31nn, 32nn, 35nn, 36nn)*.
- An element string with GS1 Application Identifier (8001) contains the predefined variable fields of a roll product and it may be used for those variable roll products where the trade measures AI (31nn), (32nn), (35nn), (36nn) are not sufficient. The GTIN-14 can denote a basic roll product.

#### Rules

An element string with GS1 Application Identifier (30) 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.



An element string with GS1 Application Identifier (8001) must never be used together with other element strings representing trade measures.

### Data carrier specification

#### Carrier choices

Variable measure trade items not crossing a point-of-sale SHOULD be marked with an ITF-14 barcode, GS1-128 barcode or GS1 DataBar barcode.

[Some scanning systems may be able to handle 2D barcodes as well as linear barcodes. In these environments, GS1 2D symbols may be used in addition to linear symbols. For information on how to manage multiple barcodes see section 4.16.](#)

#### Symbol X-dimensions, minimum symbol height, and minimum symbol quality

See section [5.10.3.2](#), *GS1 symbol specification table 2*.

#### Symbol placement

All the symbol placement guidelines defined in section [6](#).

### Unique application processing requirements

For a description of processing requirements, see section [7](#).

### Examples of variable measure trade item numbering and symbols

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).
- GS1-128 barcodes are used.
- The examples are given to demonstrate the correct use of a given GS1 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.

#### 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 grams
- The order for 100 units is delivered in three boxes. Each box is marked with an SSCC (Serial Shipping Container Code) 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.