The Global Language of Business

WR #	GSCN Name	Effective Date
17-230	SSCC rules clarification	**20-Dec-2017**

Associated Work Request (WR) Number:

17-000230

Background:

The trend of using SSCCs for smaller units (packages) in some cases can lead to an overlap with GTIN, which will be marked on the package if it is a standard orderable trade item. In particular, when the GTIN is enhanced with a serial ID (forming the commonly called SGTIN), this leads to an apparent overlap between the use of the SGTIN and the use of the SSCC, since both enable serialised identification of the package. Rules are needed to explain how to deal with this overlap.

Another consequence of applying SSCCs on smaller units, is that these will often be bundled in larger units for part of their transport journey. Packages may for example be combined on a pallet, and be split into separate units at the final distribution point before delivery to the ultimate destination. In that scenario the pallet may need to be labelled with an SSCC as well, leading to two levels of SSCCs on the same physical unit. While such nesting is already supported in some GS1 standards and guidelines (notably the GS1 Logistics Label Guideline, GS1 EDI and EPCIS) the GS1 General Specification does not explicitly address the nesting scenario.

This work request aims to enhance the rules in the GS1 General Specifications in order to address these two topics.

GS1 General Specification Change:

The recommended changes are highlighted below, relative to GS1 General Specifications version 17.1.

Disclaimer

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

For compliance with a national/regional regulatory or industry requirement where the GTIN will not meet the need, a Regulated Healthcare Trade Item may be identified with GTIN and AI (710), AI (711), AI (712), AI (713), and AI (7143) National Healthcare Reimbursement Number. See section *3.8.17* for details on the use of AI (710), AI (711), AI (712), AI (713), and AI (7143).

Rules

National Healthcare Reimbursement Number AI (710), AI (711), AI (712), AI (713), and AI (7143) must always be used with the GTIN.

Data carrier specification

Carrier choices

See the "data carrier specification carrier choices" recommendations on preferred options, options in addition to the barcode and other acceptable options found at the end of section *2.1.6*.

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

For regulated healthcare consumer trade items scanned in retail pharmacy and general distribution or non-retail pharmacy and general distribution see section *5.5.2.7.8*, GS1 system symbol specification table 8.

For regulated healthcare retail consumer trade items not scanned in general distribution see section *5.5.2.7.10,* GS1 system symbol specification table 10.

Symbol placement

All the symbol placement guidelines defined in section 6.

Unique application processing requirements

For a description of processing requirements, see section 7.

2.1.8 Trade items intended for general distribution scanning only

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 2.1.8-1. 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.

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2.1.8.1 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, GTIN-14 to a trade item that is a single product as shown in figure 2.1.2.6-1. Restricted Circulation Numbers (RCNs) must not be used in this element string.

GS1 key

Definition

- The GTIN-8 is the 8-digit GS1 identification key composed of a GS1-8 Prefix, item reference, and check digit used to identify trade items.
- The GTIN-12 is the 12-digit GS1 identification key composed of a U.P.C. Company Prefix, item reference, and check digit used to identify trade items.
- The GTIN-13 is the 13-digit GS1 identification key composed of a GS1 Company Prefix, item reference, and check digit used to identify trade items.
- For regulated healthcare trade items and trade items used in manufacturing and maintenance, repair & overhaul (MRO) processes the GTIN-14 is the 14-digit GS1 identification key composed of an indicator digit (1-9), GS1 Company Prefix, item reference, and check digit used to identify trade items.

Rules

In addition to the GTIN rules described in section 4, the following guidelines should be observed: GTIN-8 can only be used when all other pack size constraints are met.

Before deciding to use a GTIN-8 as opposed to a GTIN-12, GTIN-13, or in the case of regulated healthcare trade items, GTIN-14, companies, working jointly with their printer, should consider options such as:

- Whether the barcode can be reduced in size (e.g., printed at a lower X-dimension, taking into account the minimum barcode print quality requirements (see section *5.5*).
- Whether the label or artwork can reasonably be changed to enable the inclusion of an EAN-13 or a UPC-A barcode or a symbol from the GS1 DataBar Retail POS family.
- For example, redesigning the label and increasing the label size may be an option, especially when the existing label is small in comparison with the pack area.
- Whether a truncated barcode can be used.

✅ **Note**: A truncated barcode (normal length, but reduced in height) may only be used if there is absolutely no possibility of printing a full size barcode. Truncation removes the omnidirectional scanning capability. A barcode 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

The use of a GTIN-8 is authorised when:

- The total printable area of the product packaging is less than 80 cm², or
- The area of the largest label for the item is less than 40 cm², or
- The product is cylindrical with a diameter less than 30 mm.

The brand owner makes available to its 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.

4.4 SSCC rules

4.4.1 Allocating Serial Shipping Container Codes

4.4.1.1 General rule

An individual Serial Shipping Container Code (SSCC) is a unique number, which remains the same for the life of the logistic unit to which it is assigned. When assigning an SSCC, the rule is that an individual SSCC number must not be reallocated within one year of the shipment date from the SSCC assignor to a trading partner. However, prevailing regulatory or industry organisation specific requirements may extend this period.

4.4.1.2 Responsibility

The Serial Shipping Container Code (SSCC) provides functionality to support the management (tracking, tracing, storage, etc.) of logistic units through the supply chain. To ensure global uniqueness and traceability, the physical builder of the logistic unit or the brand owner of the logistic unit is responsible for the allocation of the SSCC.

4.4.2 Aggregated/nested logistic units

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Logistic units may be aggregated or nested into other logistic units for part of the journey to the final destination. For example, parcels may be combined onto pallets. In that case the SSCC of the higher logistic unit may be used to track and trace the contained logistic units. GS1 EDI and EPCIS support the electronic communication of such aggregations or nestings by enabling to specify links between the child SSCCs and parent SSCC.

When dealing with aggregated/nested logistic units in AIDC applications, the following rules apply to ensure correct identification of the higher logistic unit:

■ Only the SSCC barcode of the higher logistic unit SHOULD be readable. The SSCC barcodes of the lower level logistic units should be obscured or otherwise prevented from being read (e.g. by instructing those scanning through a standard operating procedure).

■ When using EPC/RFID tags, the filter value used for the higher logistic unit SHALL be different from the filter value used for the lower logistic units.

✅ **Note (informative)**: See the *GS1 Logistics Label Guideline*[4] for examples of the way to deal with nested/aggregated logistic units.

4.5 Rules for GS1 asset identifiers

4.5.1 General rule

4.5.1.1 GS1 asset identifiers

GS1 asset identifiers can be used to identify any fixed assets of a company. It is left to the discretion of the issuer to determine whether the Global Returnable Asset Identifier (GRAI), AI

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[4] *https://www.gs1.org/docs/tl/GS1_Logistic_Label_Guideline.pdf*

(8003), or Global Individual Asset Identifier (GIAI), AI (8004), is more suitable for the application concerned.

4.5.1.2 Lead time in reusing GS1 asset identifiers

Asset identifiers must not be used for any other purpose and must remain unique for a period well beyond the lifetime of the relevant records. If a company assigns asset identifiers to trade items supplied to its customers, the company must ensure that the asset identifiers are never reused.

All issuers of asset identifiers must ensure that asset identifiers (GRAIs, GIAIs) allocated for medical devices/equipment used for treatment of a patient SHALL never be reused.

Also GIAIs that are marked directly on safety critical components and parts, such as used in rail, SHALL never be reused.

4.5.1.3 Responsibility

The asset owner or manager is responsible for the issuance and allocation of GS1 asset identifiers.

Note: The term 'asset manager' includes manufacturers that issue and allocate asset identifiers to be used during the full lifetime of the asset. Furthermore, best practices may dictate that the trade item manufacturer applies the asset identifiers issued by the asset owner or manager during the manufacturing process (see section *2.3*).

4.5.2 Allocating Global Returnable Asset Identifiers (GRAIs): AI (8003)

The structure of the element string for a Global Returnable Asset Identifier (GRAI) can include two parts: the mandatory identification of an asset type and an optional serial component, to distinguish individual assets within the same asset type (see section *2.3.1*)

Figure 4.5.1.3-1. Format of the element string

GS1 Application Identifier	Global Returnable Asset Identifier (GRAI)			
	GS1 Company Prefix ————→	Asset type ←————	Check digit	Serial component (optional)
8 0 0 3	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}	X_1 variable X_{16}

The exact method used to allocate the GRAI is left to the discretion of the issuing organisation. However, a unique number, the asset type, must be assigned for each type of asset being identified, and for ease of administration, the GS1 system recommends that numbers be allocated sequentially and not contain classifying elements.

When it is not possible to assign an asset type (e.g., for museum exhibits), or when the type of asset is not required by the application (e.g., when the item is only used for a single type of asset), then the Global Individual Asset Identifier (GIAI), AI (8004), SHOULD be used.

To encode the following examples of identification keys in a GS1-128 barcode a zero in the leftmost position must be added to generate the defined length for the 14-digit asset identification number field.

4.5.2.1 Identical assets identification

A single Global Returnable Asset Identifier (GRAI) SHOULD be assigned to a series of identical assets.

Figure 4.5.2.1-1. Examples of GRAI excluding serial number

Asset type	GRAI
50 litre aluminium beer keg	1234567890005
10 litre aluminium beer keg	1234567890012