WR #	GSCN Name	Ratification Date
22-250	Non-new identification rules / application standard	DRAFT

Associated Work Request (WR) Number:

Background:

Rules are needed to guide the use of the GS1 system of standards for the identification of non-new trade items (used, refurbished, repurposed, second life, etc.). The GS1 *GTIN Management Standard* addresses rules for assigning GTINs when a product is new to the market or an existing product is changed. The condition of a trade item is not always an attribute of a trade item and rules are needed to identify non-new trade items, particularly when they are sold within the same environment as new trade items. This GSCN details the components necessary to identify non-new trade items alongside new trade items.

Disclaimer:

2 Application standards

2.1 Trade items

2.1.1 Introduction

A trade item is any item (product or service) upon which there is a need to retrieve predefined 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 predefined characteristics.

The identification and marking of trade items enable 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.

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.

The serialised identification of trade items, which enables total connectivity of information and communication systems, is achieved through the use of GS1 Application Identifier AI (01) GTIN and AI (21) serial number.

Different standard solutions apply depending on the nature of the item and the scope of the user's applications. The following sections determine the identification and symbol marking rules applicable to a particular trade item.

2.1.1.1 Physical or non-physical trade items

Non-physical trade items are usually called services. Services may be identified with a unique GS1 identification key for use in open trade applications or in restricted distribution environments.

2.1.1.2 Open or restricted distribution

The main benefit of the GS1 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 Circulation Numbers are available to GS1 Member Organisations' members to help them develop solutions applicable within their territory.

2.1.1.3 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 and design). Like a fixed measure trade item, a variable measure trade item is an entity with predefined 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.

2.1.1.4 ~~General retail consumer trade item, regulated healthcare retail consumer trade item or non-retail trade item~~Types of trade items

Scanning at the point-of-sale (POS) is a major application of the GS1 system, and trade items that are intended to cross a point-of-sale are subject to specific rules. Scanning of trade items are broken into three groups based on the application and sector.

- **General retail consumer trade items** use omnidirectional linear barcodes that are read by high-volume omnidirectional retail POS scanners or linear hand-held scanners. This scanning environment cannot read 2D ~~matrix symbols~~barcodes.
- **Regulated healthcare retail consumer trade items** require a high capacity symbology, such as ~~2D matrix symbols~~GS1 DataMatrix, but these cannot be deployed for high-volume omnidirectional retail POS. Regulated healthcare retail consumer trade items marked with ~~2D matrix symbols~~ GS1 DataMatrix are intended to be read in lower-volume retail scenarios such as~~or~~ hospital pharmacies or in high volume applications such as retail POS and distribution centres.
- **Non-retail trade items** are any trade item that does not cross retail POS. Commonly, these trade items will appear in mixed scanning environments (laser, image-based, etc.) depending on the application and industry sector. Typical examples include trade item groupings, direct part marked items, etc.
- **Non-new trade items** are any trade item of the above types that are being made available for sale or use after the first use or consumer purchase (e.g., used, repurposed, refurbished, second life). For rules on identification of these types of trade items, see section 2.1.15.

  Note: Non-new trade items would not normally include trade items that have been returned in their original packaging for a refund.

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2.1.1.5 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, ISBN and ISMN, already handle the numbering of publications and books.

2.1.1.6 Single item or trade item grouping

A trade item may be a single, non-breakable unit or a predefined grouping of a series of single items.

Trade items that are single, non-breakable units may be comprised of items that are not uniquely identified on the package and are not marked for individual sale (e.g., a bag of individually wrapped candies or toothbrushes of varying colours), which were referred to as "Random assortments" in versions of the GS1 General Specifications prior to v.23.

Trade item groupings 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). Trade item groupings of identical or different units, each identified with a GTIN, are identified with a separate GTIN; the individual trade item GTIN, within any grouping, remains the same. Example: trade item A has the same GTIN whether it is sold as a single unit in a case of twelve or sold as a single unit in a case of twenty-four.

2.1.1.7 Trade item assortments/bundles

Trade item assortments/bundles are combinations of trade items. Trade item assortments/bundles can be classified as follows:

- **Physical trade item assortments/bundles** are combinations of different trade items that are physically combined into a single trade item, thus creating a new trade item.

Note: Combinations of the same trade items are either trade item groupings for general distribution (see sections 2.1.1.6 and 2.1.1.7) or pre-pack/multi-pack/set pack for apparel and home fashion (see section 4.2.4.3.1).

parallel, the ID Issuer validates all other attributes of the Economic Operator ID (EOID) Request. Once validated, the ID Issuer UIC, GS1 UIC Extension 1 and Importer index are concatenated before the GLN to form the EOID. To identify parties, see sections 2.4.5 and 3.7.12 Identification of a party - Global Location Number: AI (417).

Rules

All the GLN rules described in section *4.6*.

Attributes

Required

GS1 UIC with Extension 1 and Importer index AI (7040)

Rules

Per section *4.6*.

Optional

Not applicable

Data carrier specification

Not applicable for EU 2018/574.

Unique application processing requirements

For a description of processing requirements, see section 7.

2.1.15 Identification of non-new trade items

Application description

Background

All new trade items that are identified using the GS1 system will have been issued a GTIN prior to their first use or consumer purchase. The GTIN is the same for all instances of the same trade item. In addition to the GTIN, some trade items have additional, more granular identification information, such as consumer product variant (CPV), a batch/lot number and/or a serial number. Each of these more granular GS1 identification key components are always associated to the GTIN. In most cases, the GTIN is present on the packaging of a new trade item and encoded in a barcode (see section 4.13.2).

Some new trade items have barcodes or RFID tags that include one or more pieces of more granular identification information in addition to the GTIN. For example, an RFID tag that is encoded with GS1 identification will include the GTIN and the serial number of a new trade item. Another example is -2D barcodes, such as a QR Code with a GS1 Digital Link URI, which can also include more granular GS1 identification key components in addition to the GTIN.

Trade item declarations and offer declarations

Trade item declarations

Any trade item has trade item declarations (see section 4.2.2.2) that is the set of all information that is on the label and in the original packaging. Trade item declarations are declared by the original GTIN allocator (the party that assigned the GTIN to the trade item before the first use or consumer purchase).

Offer declarations

Any trade item that is being listed for sale has a set of offer declarations, which is the set of all information declared (or agreed to) by the seller about the trade item (inclusive of price, availability, terms of sale, claims, condition of the item, shipping information, returns information, etc).

Non-new trade items

After the first use or consumer purchase, a trade item is considered non-new, noting that non-new trade items may not include trade items that have been returned for a refund. Non-new trade items include a wide range of products with varying levels of precision of existing identification, as explained above.

When deciding how to identify a non-new trade item, consideration SHOULD be given to several factors, including:

- Availability/knowledge of existing identification of the non-new trade item (e.g., the original GTIN and original serial number of the trade item that was assigned by the original GTIN allocator)
- Needs of downstream business processes (how do the non-new trade items need to be stocked, ordered, sold, fulfilled, etc.)
- Ability to scan, process and manage identification information at any level of precision beyond GTIN as it is expected that all systems can currently manage GTIN-level identification

Rules for identification of non-new trade items

Individual industries may have specific applications standards for managing identification of refurbished trade items, in which case those standards take precedence. For identification of refurbished components and parts for the rail industry, see the *Identification of Components and Parts in the Rail Industry – Application Standard*. For all other cases, the following rules apply:

1. If there is no need to identify new and non-new instances of the same trade item separately, and no need to identify each non-new instance of an item with a GTIN and serial number, then identification with the originally assigned GTIN is sufficient.

   If the brand owner assigned original GTIN of a trade item is not immediately known, effort SHALL be taken to discover and use this identifier to identify the non-new trade item. If the original GTIN cannot be recovered, a new GTIN SHALL be allocated according to the *GTIN Management Standard* or, for regulated healthcare products, the *GS1 Healthcare GTIN Allocation Rules Standard*.

2. If there is a need to identify new and non-new instances of the same trade item separately, then the following possibilities for the identification of non-new trade items are available:
   - When identification of a non-new trade item can be managed at a serialised instance level by all downstream parties, the following rule applies:
     - If the original GTIN and the original serial number associated with the GTIN are known, and the serial number has not been decommissioned, then they SHALL be used to identify a non-new trade item (for information on end of life see EPCIS Standard). To take advantage of this instance level identification for business processes such as inventory management and price look up, systems will need to be able to use serial number and GTIN in order to access price, condition and other elements of the offer.
   - When identification of a non-new trade item cannot be managed at a serialised instance level by some or all downstream parties:
     - When a party adapts, refurbishes or modifies trade items in a way that results in a new set of trade item declarations (see 4.2.2.2), a new GTIN SHALL be allocated. The party may be the original GTIN allocator or a downstream party. In this case, a

linkage between the new GTIN and the original GTIN SHALL be maintained and provided to downstream trading partners if requested.

- In certain instances, non-new trade items are made available for sale in restricted distribution applications, where identification with GTIN may not be necessary. Such closed supply chain environments may use trade item identification described in section 2.1.11. For such instances, consultation with your local GS1 Member Organisation is recommended.

Note: It is understood that some businesses use a proprietary combination of the original GTIN of a non-new trade item and other data (such as seller ID or another internal number) that may exist in their system to generate unique identification of a particular offer of a non-new trade item. Such non-standard approaches are not globally-interoperable and their use must be mutually agreed. The rules in section 2.1.15 are designed to ensure globally-interoperable identification of non-new trade items

GS1 key

Required

GTIN-12

GTIN-13

GTIN-8

Rules

All GTIN rules described in section 4.2.

Attributes

Required

Not applicable

Optional

For all the GS1 Application Identifiers (AI) that can be used with a GTIN, see section 3.

Data carrier specification

Carrier choices

- UPC-A barcode (carrying GTIN-12 or RCN-12)
- EAN-13 barcode (carrying GTIN-13 or RCN-13)
- UPC-E barcode
- EAN-8 barcode
- GS1 DataBar Retail POS family (carrying GTIN-12 or GTIN-13 represented in a fixed length data string of 14 digits by adding leading zeroes)
- EPC/RFID

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

See section 5.12.3.1, *GS1 symbol specification table 1.*

Unique application processing requirements

For a description of processing requirements, see section 7.

Symbol placement

All symbol placement guidelines are defined in section 6.9.

~~2.3~~2.2 Logistic units

A logistic unit is an item of any composition established for transport and/or storage that needs to be managed through the supply chain.

Tracking and tracing logistic units in the supply chain is a major application of the GS1 system. Scanning the standard identification number, marked on each logistic unit, allows the physical movement of units to be individually tracked and traced by providing a link between the physical movement of items and the associated information flow. It also opens up the opportunity to implement a wide range of applications, such as cross docking, shipment routing and automated receiving.

Logistic units are identified with a GS1 identification number called the SSCC (Serial Shipping Container Code). The SSCC is the only GS1 key that SHALL be used as the identifier of a logistic unit. The SSCC ensures that logistic units are identified with a number that is unique worldwide.

If, in addition to being a logistic unit, the item is regarded as a trade item by the brand owner, it MAY additionally be identified with a GTIN. The combination of a GTIN and a serial number SHALL NOT replace the SSCC as the identifier of a logistic unit.

If, in addition to being a logistic unit, the item is part of a consignment and or a shipment, it MAY also be associated with the GINC and / or the GSIN.

Attribute information, such as a Global Identification Number for Consignment, AI (401), may be optionally encoded using internationally agreed data structures and a barcode symbology that allow unambiguous interpretation.

~~2.3.1~~2.2.1 Individual logistic units

Application description

A logistic unit is an item of any composition established for transport and/or storage that needs to be managed through the supply chain. The identification and symbol marking of logistic units enables a large number of user applications. In particular, the SSCC (Serial Shipping Container Code) provides a link between the physical logistic unit and information pertaining to the logistic unit that is communicated between trading partners using Electronic Data Interchange (EDI).

The SSCC element string AI (00) is used for the identification of logistic units (see section 3). Each individual logistic unit is allocated a unique number, which remains the same for the life of the logistic unit. When assigning an SSCC, the rule is that an individual SSCC number must not be reallocated within one year of the shipment date from the SSCC assignor to a trading partner. However, prevailing regulatory or industry organisation specific requirements may extend this period.

In principle, the SSCC provides a unique reference number that can be used as the key to access information regarding the logistic unit in computer files. However, attributes relating to the logistic unit (e.g., ship to information, logistic weights) are also available as standardised element strings.

GS1 key

Required

- SSCC

The GS1 Application Identifier for the SSCC is AI (00), see section 3.2.

Rules

All SSCC rules described in section 4.3.

Local, national or regional regulations may require more frequent GTIN changes. Such regulations have precedence over the rules provided within the GTIN Management Standard.

4.2.2.1 GTIN Management definitions

The following terms may be useful when reviewing the GTIN Management Standard that is published on https://www.gs1.org/1/gtinrules/en*:*

- **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 an SSCC (Serial Shipping Container Code).
- **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 GTIN-13, GTIN-12, or GTIN-8. (See section 2).
- **Retail consumer trade item variant** – A change to a retail consumer trade item (which may itself be a homogeneous or a physical trade item assortment/bundle of other retail consumer trade items) that does not require a new GTIN, but where identification of the variation may be required.
- **Trade item** – Any item (product or service) upon which there is a need to retrieve predefined information and that may be priced, ordered, or invoiced at any point in any supply chain.
- **Trade item grouping** – A grouping of retail consumer trade items that is not intended for point-of-sale scanning. It is identified with a unique GTIN-14, GTIN-13, or GTIN-12.

Note: The GTIN Management Standard is intended for global use. Exceptions may occur only when local regulatory or legal requirements mandate otherwise.

Note: The exchange of product data across global supply chains requires compliance with rules for product identity and data attribution. It is recommended that all retail consumer trade items are registered with GS1. For more information see your GS1 Member Organisation.

4.2.2.2 Trade item declarations

Trade item declarations are the set of all information about a trade item (e.g., manufacturer warranty, ingredients, instructions for use, specifications, contents, certifications). For a trade item, this is all of the information that is on the label and in the original packaging. It also includes relevant aspects of the extended packaging.

Although this list is not exhaustive, the basic trade items declarations are:

- The primary brand or, as may be defined by regulation, the product name and/or product description.
- The trade item type and variety.
- The net content of trade item and/or net weight, volume, or other dimension impacting trade.
- If the trade item presents a grouping, the number of elementary items contained and their subdivision in sub-packaging units.
- For a predefined trade item assortment/bundle, the composition of the trade item assortment/bundle.

A modification to any of the basic elements that characterise a trade item will usually lead to a change in the Global Trade Item Number (GTIN).

Note: These rules are intended for global use. Exceptions may occur only when local regulatory or legal requirements mandate otherwise. For example, in some industries, such as healthcare, regulations or other requirements may dictate that any trade item changes require a new GTIN.

Note: If a party adapts, refurbishes, or modifies trade items see section 2.1.15 for information on identifying non-new trade items.

Note: For complex products, such as some medical devices, key consideration for GTIN allocation is the commercialisation of the product (e.g., different for pricing or ordering or invoicing). If the product is 'different' a 'different GTIN' is required. The figure below is a scenario to represent the difficulties in determining when a GTIN change is necessary for complex medical devices, depending upon how the device is viewed (i.e., from a commercial and/or form, fit, function perspective). Nominally the commercial aspects of an item determine a GTIN change, the objective is to recognise that other important factors reside which may not necessarily signify a commercialisation shift, but would impact the GTIN assignment – particularly in the healthcare industry. It is the brand owner's responsibility to manage appropriately the configuration of any complex device and its appropriate GTIN(s) assignment. The example shows major hardware components managed by GTIN and serial number combinations, recognising that within this complex medical device there are other potential parameters where configuration change must be managed; GTIN change may be dictated based on the manufacturers change management process. It is the brand owner that decides upon the identification requirement.

Figure 4.2.2-1. Example of the complexity of a medical device product with regard to GTIN allocation

Three component parts

1. GUI*
2. Primary unit
3. Battery

Independent serial numbers

Master serial number AI (21)

New GTIN?

Configuration	Commercial	Form, fit or function
1. Language	V	V
2. Country of use	V	V
3. Firmware revision	X	V
4. Software options	V	V Additional option GTINs
5. Hardware revision	X	V

* GUI: Graphical user interface

4.2.2.3 Trade item variants

4.2.2.3.1 Consumer product variants

Per brand owner discretion, a consumer product variant (CPV) if used, SHALL be used with GTIN on retail consumer trade items in the following conditions:

1. A CPV may be assigned by the brand owner to a variation of a retail consumer trade item, which SHALL NOT require a new GTIN per the GTIN Management Standard, but where communication regarding the variation may be required.
2. Each retail consumer trade item variation SHALL NOT have more than one CPV value.
3. CPV may be assigned to retail consumer trade items that contain a homogeneous quantity or predefined assortment of retail consumer trade items.

- At the primary packaging level for pharmaceutical products packaged with non-perforated blister cells, a barcode SHALL be placed once on the grouping of blister cells (e.g., blister card). The barcode may be placed anywhere on the blister card.
- If random printing (e.g., no one to one correlation between printing impression and blister cell position) is used, the symbol may be placed multiple times to ensure that the symbol remains scannable until each blister has been used.

6.8.2 Products requiring variable data on primary and secondary packaging

Where such marking is feasible from a production and marking standpoint, the barcode carrying variable data (e.g., batch/lot number or expiry date) SHALL be marked on the primary and secondary packaging.

- Placement:
  - The barcode SHALL be placed only on one side of the packaging, which may be either the face, side or end panel.

6.9 Symbol placement for non-new trade items

A non-new trade item may have a permanently affixed identifier, it may not have its original packaging, or the original packaging may not include the necessary identification. Figure 6.6.-1 details the actions to take depending on the state of the non-new trade item when it is offered for sale. For details on identifying non-new trade items see section 2.1.15.

Figure 6.6-1 Identify and placement for non-new trade items

State of non-new trade item	Identifier and placement*
Serialised GTIN encoded in a barcode permanently affixed to the non-new trade item	Use original barcode
Serialised identity encoded in an RFID tag permanently affixed to the non-new trade item	Use original RFID tag
Original packaging with GTIN change required	Use original packaging, assign a new GTIN, and obscure original GTIN barcode by label with a new barcode according to the barcode specifications used for the original GTIN.
New packaging when allocating a new GTIN but original GTIN is known	On new packaging include a new barcode with the new GTIN and follow appropriate symbol placement rules for the package type (section 6.4)
No packaging and original GTIN is known	Affix new barcode with GTIN allocated by GTIN allocator and follow symbol placement rules in section 6.
No packaging, no GTIN of original brand owner available, GTIN required	Affix new barcode with the third-party allocated GTIN encoded in a barcode appropriate to the application scope (e.g., for retail point-of-sale).

* Ensure that the barcode intended for scanning will be scanned by obscuring all barcodes that are being replaced. Section 6 contains complete information on symbol placement criteria to meet quality and ergonomic needs.

Term	Definition
National Trade Item Number (NTIN)	A coding scheme, administered in the healthcare sector by a national organisation for which a GS1 Prefix has been issued to permit its uniqueness within the GTIN pool but without assurance of full compatibility with GTIN functionality. The result is a product identification number assigned by a third party (not the brand owner or manufacturer). Example: the CIP (Club Inter Pharmaceutique) in France administered by the French Health Products Safety Agency (AFSSAPS).
non-human readable interpretation text (non-HRI)	Characters such as letters and numbers that can be read by persons and may or may not be encoded in GS1 AIDC data carriers and are not confined to a structure and format based on GS1 standards (e.g., a date code expressed in a national format that could be used to encode a date field in a GS1 AIDC data carrier, brand owner name, consumer declarations).
odd parity	A characteristic of the encodation of a symbol character whereby the symbol character contains an odd number of dark modules.
offer declarations	The set of all information declared (or agreed to) by the seller about the trade item (inclusive of price, availability, terms of sale, claims, condition, shipping information, returns information, etc).
omnidirectional linear barcode	A linear barcode symbology designed to be read in segments by suitably programmed laser point-of-sale (POS) scanners.
packaging component	Objects such as bottles, caps and labels to package a consumer trade item.
packaging component number	Global Trade Item Number (GTIN) attribute used to establish a relationship between a finished consumer trade item and packaging components.
payment slip	The end customer's notification of a demand for payment for a billable service (e.g., utility bill) comprising an amount payable and payment conditions.
physical trade item assortment/bundle	A combination of different trade items that are physically combined into a single trade item, thus creating a new trade item.
plain syntax	GS1 data structure containing GS1 identification key with no additional characters or syntactic features.
point-of-care (POC)	Location where dispensing or use of a non-retail, regulated healthcare pharmaceutical or medical device to or for a patient occurs.
point-of-sale (POS)	Refers to the retail checkout where omnidirectional linear barcodes must be used to support high-volume laser-based scanning or low volume checkout where linear barcodes (or for regulated healthcare trade items, GS1 DataMatrix) are used with image-based scanners.
predefined assortments	A trade item that comprises a fixed composition of two or more different trade items, each identified with a GTIN.
price verifier digit	A digit calculated from the price element in a Restricted Circulation Number (RCN) that is used to check that the data has been correctly composed.
product model	A base product design or specification from which a trade item is derived.
QR Code (GS1 Digital Link URI)	QR Code encoding data using the uncompressed form of GS1 Digital Link URI syntax.
QR Code symbology	A two-dimensional ~~matrix barcode~~ symbology consisting of square modules arranged in a square pattern. The symbology is characterised by a unique finder pattern located at three corners of the symbol. QR Code symbols are read by two-dimensional imaging scanners or vision systems.
Quiet Zone	A clear space which precedes the start character and follows the stop character of a linear barcode or surrounds a 2D ~~symbol~~barcode.
Quiet Zone Indicator	A greater than (>) or less than (<) character, printed in the human readable field of the barcode, with the tip aligned with the outer edge of the Quiet Zone.
radio frequency	Any frequency within the electromagnetic spectrum associated with radio wave propagation. When radio frequency power is supplied to an antenna, an electromagnetic field is created that then is able to propagate through space. A radio frequency signal that can be processed by a radio frequency receiver. Many wireless technologies are based on radio frequency field propagation.
radio frequency identification (RFID)	A technology that uses radio frequency electromagnetic fields or waves to automatically identify and track tags attached to objects. An RFID system consists of RFID tags and readers. When triggered by a radio frequency electromagnetic interrogation signal from a nearby RFID reader, the RFID tag transmits digital data, usually a unique identifier like an EPC, back to the reader.

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