

WR #	GSCN Name	Effective Date
WR 23-249	Clarification of section 2.1.1.4 regarding HC scanning	Dec 2023

Associated Work Request (WR) Number:

Background:

Current text related to GS1 DataMatrix and healthcare items in high volume scanning environments needs clarified. Highlighted text shows the text that is proposed along with the deleted text for WR23-249. Other edits to this section are noted from WR22-250 and WR23-041.

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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 ~~retail~~ 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-four~~ groups based on the application and sector. ~~If a trade item falls within more~~

than one trade item category (listed below), the most restrictive rules apply, see the appropriate application standard.

- **General retail consumer trade items** are intended to be sold at retail point-of-sale identified with a GTIN-13, GTIN-12 or GTIN-8 utilising omnidirectional linear barcodes. During a transition period, 2D barcodes may be applied in addition to the linear barcode. For information on how to manage multiple barcodes see section 4.15. For a summary of all conformance requirements for this AIDC application standard, 2D barcodes, cross-application rules and related technical specifications, see section 8.2. 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.
- **Regulated healthcare retail consumer trade items** are sold to the end consumers at a retail point-of-sale outlet (i.e., pharmacies). They are identified with a GTIN-13, GTIN-12 or GTIN-8 utilising linear or GS1 DataMatrix that can be scanned by image-based scanners. require a high capacity symbology, such as 2D-matrix-symbols, but these cannot be deployed for high-volume omnidirectional retail-POS. Regulated healthcare retail consumer trade items marked with 2D matrix-symbols are intended to be read in lower-volume retail scenarios or hospital-pharmacies or in high-volume applications such as 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.



Term	Definition
digital signature	A digital signature is a compact fingerprint of data that supports tamper-detection and non-repudiation by the party who digitally signed the data. A digital signature is constructed by hashing the data then encrypting the hash using the private key. This enables independent verification by anyone, using the public key.
direct mode	Mobile device information retrieval function when the barcode contains either the address (URL) of the content or service, or the content itself, in-line.
direct part marking (DPM)	Direct part marking refers to the process of marking a symbol on an item using an intrusive or non-intrusive method.
direct print	A process in which the printing apparatus prints the symbol by making physical contact with a substrate (e.g., flexography, ink jet, dot peening).
document type	A component of a Global Document Type Identifier (GDTI) assigned by the document issuer to create a unique GDTI.
dynamic assortment	A trade item that comprises a variable composition of a fixed total count of two or more different trade items, each identified with a GTIN.
EAN/UPC symbology	A family of barcodes including EAN-8, EAN-13, UPC-A and UPC-E barcodes as well as the 2- and 5-digit add-ons. See also EAN-8 barcode, EAN-13 barcode, UPC-A barcode and UPC-E barcode.
EAN-13 barcode	A barcode of the EAN/UPC symbology that encodes GTIN-13 or RCN-13.
EAN-8 barcode	A barcode of the EAN/UPC symbology that encodes GTIN-8 or RCN-8.
economic operator (per EU 2018/574)	An economic operator is a business or other organisation which supplies goods, works or services within the context of market operations. Related to requirement for EOID for each country in which a party operates a facility.
Electronic Product Code (EPC)	An identification scheme for universally identifying physical objects (e.g., trade items, assets and locations) via RFID tags and other means. The standardised EPC data consists of an EPC (or EPC Identifier) that uniquely identifies an individual object, as well as an optional filter value when judged to be necessary to enable effective and efficient reading of the EPC tags.
element	A single bar or space of a linear barcode symbol.
EU 2018/574	A European Union Regulation on the traceability of tobacco products.
even parity	A characteristic of the encodation of a symbol character whereby the symbol character contains an even number of dark modules.
extended packaging	An approach to giving consumers access to additional information or services about trade items through their mobile device. It is the ability to retrieve additional information about the trade item through mobile devices or, in general, to link a trade item with trusted virtual information or services.
extension digit	The first digit within the Serial Shipping Container Code (SSCC) which is assigned by the company that constructs the logistic unit.
facility (per EU 2018/574)	Any location, building or vending machine where tobacco products are manufactured, stored or placed on the market.
fixed length	Term used to describe a data field in an element string with an established number of characters.
fixed measure trade item	An item always produced in the same predefined version (e.g., type, size, weight, contents, design) that may be sold at any point in the supply chain.
freight forwarder	The party that arranges the carriage of goods including connected services and/or associated formalities on behalf of the shipper (consignor) or consignee.
fresh foods	Trade items in the following product categories: fruits, vegetables, meats, seafood, bakery and ready to serve food such as cheeses, cold cooked or cured meats and salad, etc. Fresh foods are defined as food that is not preserved by canning, dehydration, freezing or smoking.
full string	The data transmitted by the barcode reader from reading a data carrier, including the symbology identifier as well as the encoded data.
Function 1 Symbol Character (FNC1)	A symbology character used in some GS1 data carriers for specific purposes.
general distribution scanning	Scanning environments that process barcoded trade items packaged for transport, logistic units, assets and location tags.
general retail consumer trade item	A trade item intended to be sold at retail point-of-sale identified with a GTIN-13, GTIN-12 or GTIN-8 utilising omnidirectional linear barcodes.
general retail products	All trade items that cross point-of-sale.

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Term	Definition
RCN-12	A 12-digit Restricted Circulation Number (see Restricted Circulation Number).
RCN-13	A 13-digit Restricted Circulation Number (see Restricted Circulation Number).
RCN-8	An 8-digit Restricted Circulation Number (see Restricted Circulation Number)
refund receipt	A voucher produced by equipment handling empty containers (i.e., bottles and crates).
regular expression	A sequence of characters that specifies a search pattern that is usually used by string-searching algorithms for search / find-and-replace operations on strings or for validation of string input.
regulated healthcare non-retail consumer trade item	A regulated healthcare trade item not intended for scanning at POS and identified with a GTIN-14, GTIN-13, GTIN-12 or GTIN-8 utilising linear or 2D matrix -barcodes that can be scanned by image-based scanners.
regulated healthcare retail consumer trade item	A regulated healthcare trade item to be sold to the end consumers at a regulated healthcare retail point-of-sale (i.e., pharmacies). They are identified with a GTIN-13, GTIN-12 or GTIN-8 utilising linear or 2D matrix -GS1 DataMatrix barcodes that can be scanned by image-based scanners.
regulated healthcare trade item	Pharmaceuticals or medical devices that are sold or dispensed in a controlled environment (e.g., retail pharmacy, hospital pharmacy).
responsible entity	The party responsible for the safety and effectiveness of the medical product at a moment in time in its life cycle, according to the approved regulatory file (including labelling) and regulatory/legal/professional obligations associated with the medical product. (e.g., brand owner, repackager, hospital pharmacy, etc.)
Restricted Circulation Number (RCN)	Signifies an identification number used for special applications in restricted environments, either defined by local GS1 Member Organisations (for regional applications such as variable measure product identification and, couponing) or by a company (for internal applications).
retail consumer trade item variant	A variation of change to a retail consumer trade item (which may itself be a homogeneous or predefined assortment of other retail consumer trade items) which does not require a new GTIN, but where identification of the variation may be required.
returnable asset	A reusable entity owned by a company that is used for transport and storage of goods. It is identified with a GRAI.
separator character	Special character(s) that are defined as part of GS1 symbologies and used to separate concatenated element strings, based on their positioning in the GS1 barcodes.
serial number	A code, numeric or alphanumeric, assigned to an individual instance of an entity for its lifetime. Example: a unique individual item may be identified with the combined Global Trade Item Number (GTIN) and serial number.
serial reference	A component of the Serial Shipping Container Code (SSCC) assigned by the physical builder or brand owner of the logistic unit to create a unique SSCC.
Serial Shipping Container Code (SSCC)	The GS1 identification key used to identify logistics units. The key comprises an extension digit, GS1 Company Prefix, serial reference and check digit.
service reference	A component of the Global Service Relation Number (GSRN) assigned by the issuing organisation to create a unique GSRN.
service relation instance number (SRIN)	An attribute to the GSRN which allows to distinguish different encounters during a service relationship.
shipment	A grouping of logistic and transport units assembled and identified by the seller (sender) of the goods travelling under one despatch advice and/or Bill of Lading to one customer (recipient).
short life items	An item, preparation or reconstituted product with limited use/shelf life.
single unit package/blister	A healthcare primary package that contains one discrete pharmaceutical dosage form, i.e. a tablet, a certain volume of a liquid or that is the immediate package for a medical device like a syringe. A number of single units attached to each other, but are easily separated through a perforation would be included.
sterile packaging system	A combination of the sterile barrier system (the minimum package that prevents ingress of microorganisms and allows aseptic presentation of the product at the point of use) and the protective packaging (configuration of materials designed to prevent damage to the sterile barrier system and its contents until the point of use).
subject of care	Any person who uses or is a potential user of a healthcare service, subjects of care may also be referred to as patients or healthcare consumers.
substrate	The material on which a barcode is printed or otherwise applied.