The Global Language of Business

GSMP:
General Specifications Change Notification (GSCN)

WR #	GSCN Name	Effective Date
WR 23-016	14-digit versions of GTIN to having all GTINs in a 14-digit format	Jun 2023

Associated Work Request (WR) Number:

WR 22-247 – Deprecation of convenience alphas from the GS1 Digital Link URI Syntax standard.

Background:

Currently, GS1 Digital Link URI syntax allows a GTIN to be encoded without padding it to the 14-digit format seen with AI (01) in GS1 element string syntax, in the GDSN, and other GS1 standards and applications. It has been noted that having multiple ways of encoding a GTIN in 2D barcodes and within the same syntax results in unnecessary complexity and may slow down processes without any clear gain. Removing the permissible variations prevents confusion and supports reliable, scaled implementations. This is similar to the request to remove the convenience versions of AIs in GS1 Digital Link URI syntax (e.g., allowing /gtin/ or /01/). Note that adding two padded zeros to a GTIN-12 to put it into the 14-digit version has not been found to increase the size of QR Code or Data Matrix.

This WR seeks to update all references to GTIN within a GS1 Digital Link URI syntax, to be expressed as a 14-digit format as mandatory. Changes will be required to the *GS1 General Specifications* and the *GS1 Digital Link URI Syntax* standard, at minimum.

Disclaimer:

Figure 2.1.12.2-3. Recommended data structures

GS1 Prefix	Recommended data structures (exact structure determined by GS1 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 – 2 9	I I I I I I P P P P	C
	I I I I I P P P P P	C

The GS1 Prefix is administered by each GS1 Member Organisation and denotes the format and meaning of a particular element string, where:

- **I..I** = Item reference.
- **V** = Price check digit calculated according to the algorithm specified in section 7.9.
- **P..P** = Price in local currency.
- **C** = Check digit calculated according to the standard algorithm in section 7.9.

Note: The price field may contain zero, one, or two implied decimal places depending on the monetary unit used. The decimal point, which is not included in the barcode, must nevertheless be taken into account by the marking equipment when printing the human readable interpretation on the label.

GS1 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 GS1 Member Organisations to manage the allocation of the item number at a national level.

GS1 key

Not applicable

Attributes

Not applicable

Data carrier specification

Carrier choices

- UPC-A (carrying RCN-12)
- EAN-13 (carrying RCN-13)

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

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

Symbol placement

Not applicable

Unique application processing requirements

Not applicable

~~2.1.14~~2.1.13 Trade item extended packaging applications

The information obtained from a consumer trade item's packaging can be extended when consumers using mobile devices scan barcodes on the package, which leads them to more information or an application. This standard provides a standardised packaging solution, which will lead to brand owner authorised information.

Independent of whether a trade item is retail or non-retail, fixed or variable measure, if it is sold to the end consumer and utilises GTIN-based identification, then it is within the scope of this application.

This application standard has three approaches to enable extended packaging applications,

- GS1 Digital Link URI syntax (2.1.13.1)
  - For new extended packaging applications, the GS1 Digital Link URI syntax is encoded in QR Code or Data Matrix.
- GS1 element string (AI-based) syntax (2.1.13.2)
  - Prior to the GS1 Digital Link standard, GS1 approved two approaches to reach extended packaging applications that were available within the GS1 system of standards.
    - An indirect mode of look-up via GTIN

      This relies upon mobile device applications (apps) to use the GTIN encoded in EAN/UPC, GS1 DataBar, GS1 DataMatrix, or GS1 QR Code. This approach remains valid, but its implementation is limited by the lack of support for attributes of GTIN and the need to conduct a look-up to find a Web-based resource (indirect mode).
    - A direct mode of look-up utilising GS1 element string (AI-based) syntax approach that relies upon AIs (01) and (8200) to produce a product URL

      This uses the GTIN and an additional GS1 Application Identifier (8200) to produce a product URL. This approach can be used to reach brand owner authorised information or applications via direct mode, but implementation has been limited at the global level by the need for an app to construct the URL from the decoded data.

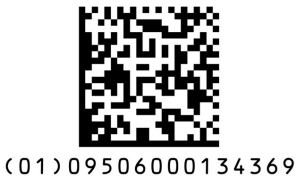
For a summary of all conformance requirements for this AIDC application standard, cross-application rules and related technical specifications, see section 8.5.

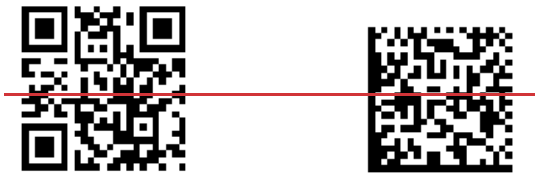
~~2.1.14.1~~2.1.13.1 GS1 Digital Link URI syntax for extended packaging applications for trade items

The GS1 Digital Link standard (DL) provides a packaging solution that can lead to brand owner authorised information. It uses a Web URI syntax to encode GS1 data, (e.g., GTIN and attribute data) in QR Code or Data Matrix barcodes. GTIN SHALL be expressed as 14 digits, with leading zeroes serving as filler digits, as defined by the *GS1 Digital Link Standard: URI Syntax*, and shown in the examples below. The *GS1 Digital Link Standard: URI syntax* is a ratified GS1 technical standard, see https://www.gs1.org/standards/gs1-digital-link.

Although the GS1 Digital Link standard offers a compressed form of the GS1 Digital Link URI syntax, this application SHALL use the uncompressed form. For example, GTIN 09506000134369 can be encoded in a QR Code or Data Matrix to form a GS1 DL URI https://example.com/01/09506000134369.

Figure 2.1.13.1-1. Examples of QR Code and Data Matrix with GS1 DL URI Syntax





Note: The example.com domain name (reserved in RFC 2606) is used in the example as a place holder for any domain name.

As the GS1 DL encodes GS1 data in barcodes using a Web URI syntax, it differs from previous 'direct' and 'indirect' approaches described in section 2.1.13.2 because it explicitly encodes a resolvable Web URI. The GS1 Digital Link URI syntax also differs from the previous approaches in that it supports all GTIN attributes and provides standardised concatenation of multiple element strings.

~~GS1 Digital Link: URI syntax is a ratified GS1 technical standard normatively referenced within the GS1 General Specifications. See https://www.gs1.org/standards/gs1-digital-link.~~

GS1 key

Required

The allowed key formats for this application are:

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

Rules

See the GTIN rules described in section 4.

Attributes

Required

Not Applicable

Optional

See section 3 for the overview of all GS1 Application Identifiers that may be used with trade items

Data carrier specification

Carrier choices

- QR Code
- Data Matrix

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

See 5.12.3.1, Symbol specification table 1 addendum 2 for GS1 Digital Link.

Symbol placement

For additional barcodes that carry GS1 DL URIs (i.e. QR Code and Data Matrix), see section 4.15.1.

Unique application processing requirements

For a description of processing steps, see section 7 and the GS1 Digital Link standard .