



# Syntax, semantics and links

# Where it all began in 2013

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ref.gs1.org

<https://ref.gs1.org/docs/2014/gtin-plus-on-the-web/>

The Global Language of Business

# GTIN+ On The Web project

This is a small collection of archive documents related to the original GTIN+ On The Web project that began in 2014. It led to the development of what is now known as the [GS1 Web Vocabulary](#) and, later, [GS1 Digital Link](#).

- [Call to action](#) for the GTIN+ On The Web [MSWG](#) (March 2014)
- [MSWG charter](#)
- [HTTP Uniform Resource Identifiers to associate a web resource with a GS1 key and optional Application Identifiers](#) (Technical proposal as input to GTIN+ on the Web MSWG at GS1). Mark Harrison, Alexander Illic, Robert Beideman, Henri Barthel, Scott Gray, Ken Traub. 7th March 2014.
- [GTIN+ OTW GS1 Ontology Draft Standard Specification](#). Eric Kauz, 21 October 2014



# GS1 Web Vocabulary

Search by keyword

gs1:Product

Show all current terms

## Product

[gs1:Product](#)

<https://gs1.org/voc/Product>

Any item (product or service) upon which there is a need to retrieve pre-defined information and that may be priced, or ordered, or invoiced at any point in any supply chain.

Type: class


[Show all classes](#)

Subclasses: [gs1:FoodBeverageTobaccoProduct](#) [gs1:WearableProduct](#)

### ▼ Properties defined within gs1:Product

Property (CURIE)	Expected value type	Description / Definition
Has Additional Product Classification <a href="#">gs1:additionalProductClassification</a>	<a href="#">gs1:AdditionalProductClassificationDetails</a>	Relates to a set of additional product classification details

# Modernised hosting at ref.gs1.org/voc

 GS1 Web Vocabulary

'The Global Language of Business'

GS1 Web Vocabulary

Home Page

Show all current terms

## ► About the GS1 Web Vocabulary

## ► Licence information

## ▼ Machine-interpretable ontology datasets

- [GS1 Web Vocabulary v1.11 in JSON-LD](#)
- [GS1 Web Vocabulary v1.11 in RDF Turtle](#)
- [GS1 Web Vocabulary v1.11 link types in JSON](#)

Current version: 1.11

Last updated: 2024-05-28



[Archive](#)



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gs1.org/voc will still work for a long time

But yes, we'd like to move the namespace to [ref.gs1.org/voc](https://ref.gs1.org/voc)



# GS1 Digital Link is as simple as...

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<https://id.example.com/01/09506000134369>



# GS1 Digital Link is as simple as...

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<https://id.example.com/01/09506000134369>



# GS1 Application Identifiers

## GS1 Application Identifiers

English [en] ▾

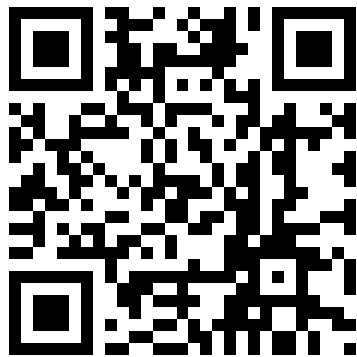
### ► What are GS1 Application Identifiers?

Search by numeric AI or by keyword:  X  ▾

AI	Description	Data title
00	Serial Shipping Container Code (SSCC)	SSCC
01	Global Trade Item Number (GTIN)	GTIN
02	Identification of trade items contained in a logistic unit	CONTENT
10	Batch or lot number	BATCH/LOT
11	Production date (YYMMDD)	PROD DATE
12	Due date for amount on payment slip (YYMMDD)	DUE DATE
13	Packaging date (YYMMDD)	PACK DATE

# An example GS1 Digital Link URI

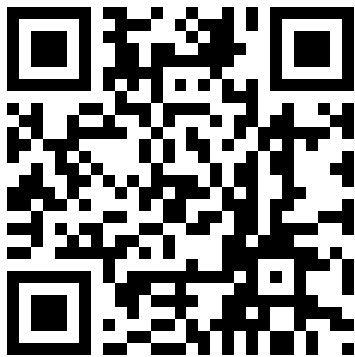
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(01)09506000134352

<https://id.dalgiardino.com/01/09506000134352>



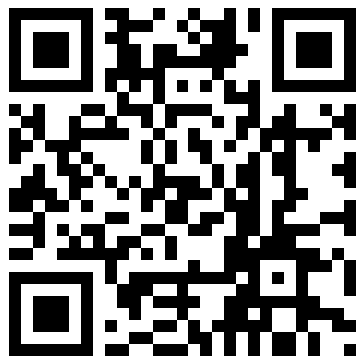


(01)09506000134352

GTIN: 09506000134352

No online lookup required!

# An example GS1 Digital Link URI



(01)09506000134352

<https://id.dalgiardino.com/01/09506000134352>



Brand domain name



Product identifier  
(GTIN)



# An example GS1 Digital Link URI

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(01)09506000134352

<https://id.dalgiardino.com/01/09506000134352/10/ABC>



Brand domain name



Product identifier  
(GTIN)



Batch/lot

# An example GS1 Digital Link URI

---



(01)09506000134352

<https://id.dalgiardino.com/01/09506000134352/21/1234>



Brand domain name



Product identifier  
(GTIN)



Serial No.

# An example GS1 Digital Link URI

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(01)09506000134352

<https://id.dalgiardino.com/01/09506000134352?17=231225>



Brand domain name



Product identifier  
(GTIN)



Expires 2023-12-25





The Third Degree cc by nc nd

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# BCP 190

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## 2.3. URI Paths

Scheme definitions define the presence, format, and semantics of a path component in URIs, although these are often delegated to the Application(s) in a given deployment.

To avoid collisions, rigidity, and erroneous client assumptions, Specifications **MUST NOT** define a fixed prefix for their URI paths -- for example, "/myapp" -- unless allowed by the scheme definition.

One such exception to this requirement is registered "well-known" URIs, as specified by [RFC8615]. See that document for a description of the applicability of that mechanism.

Note that this does not apply to Applications defining a structure of a URI's path "under" a resource controlled by the server. Because the prefix is under control of the party deploying the Application, collisions and rigidity are avoided, and the risk of erroneous client assumptions is reduced.

For example, an Application might define "app\_root" as a deployment-controlled URI prefix. Application-defined resources might then be assumed to be present at "{app\_root}/foo" and "{app\_root}/bar".

Extensions **MUST NOT** define a structure within individual URI components (e.g., a prefix or suffix), again to avoid collisions and erroneous client assumptions.

<https://www.rfc-editor.org/info/bcp190>

# hasGS1DigitalLink

A Schema.org Property

*This term is in the "new" area - implementation feedback and adoption from applications and websites can help improve our definitions.*

Thing > Property :: identifier : [hasGS1DigitalLink](#)

[\[more...\]](#)

The **GS1 digital link** associated with the object. This URL should conform to the particular requirements of digital links. The link should only contain the Application Identifiers (AIs) that are relevant for the entity being annotated, for instance a **Product** or an **Organization**, and for the correct granularity. In particular, for products:

- A Digital Link that contains a serial number (AI 21) should only be present on instances of **IndividualProduct**
- A Digital Link that contains a lot number (AI 10) should be annotated as **SomeProduct** if only products from that lot are sold, or **IndividualProduct** if there is only a specific product.
- A Digital Link that contains a global model number (AI 8013) should be attached to a **Product** or a **ProductModel**.

Other item types should be adapted similarly.

## Values expected to be one of these types

- **URL**

## Used on these types

- **Offer**
- **Organization**
- **Place**
- **Product**

## Source

<https://github.com/schemaorg/schemaorg/issues/3475>

# If you see...

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.../01/\d{14}.\* it's *probably* a GS1 Digital Link URI and the sequence of 14 digits is *probably* a GTIN

Other GS1 identifiers are available, like

- 414 (a location)
- 417 (a company)
- 8004 (an asset)

...

Links to tools at the end



<https://example.com/01/1234>

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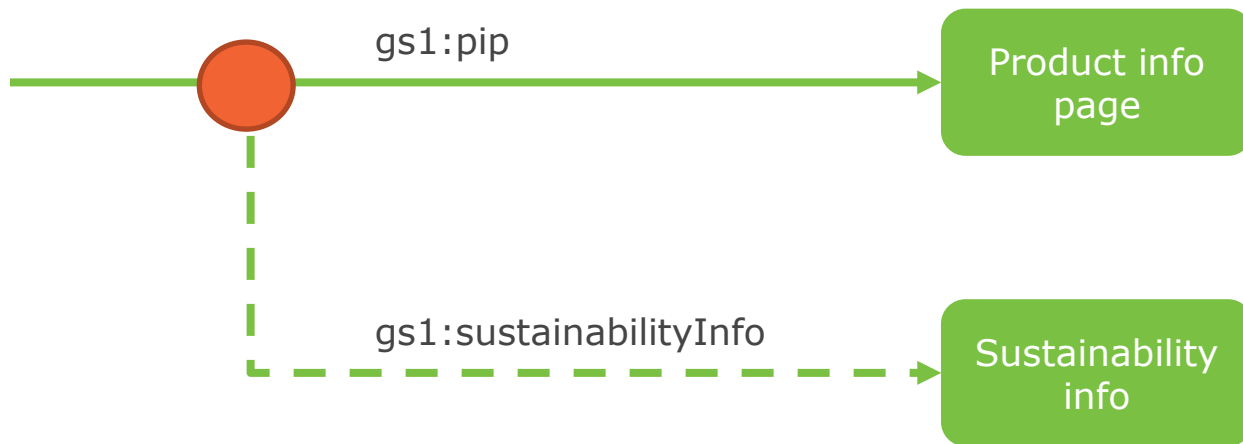


<https://example.com/01/1234?linkType=gs1:sustainabilityInfo>

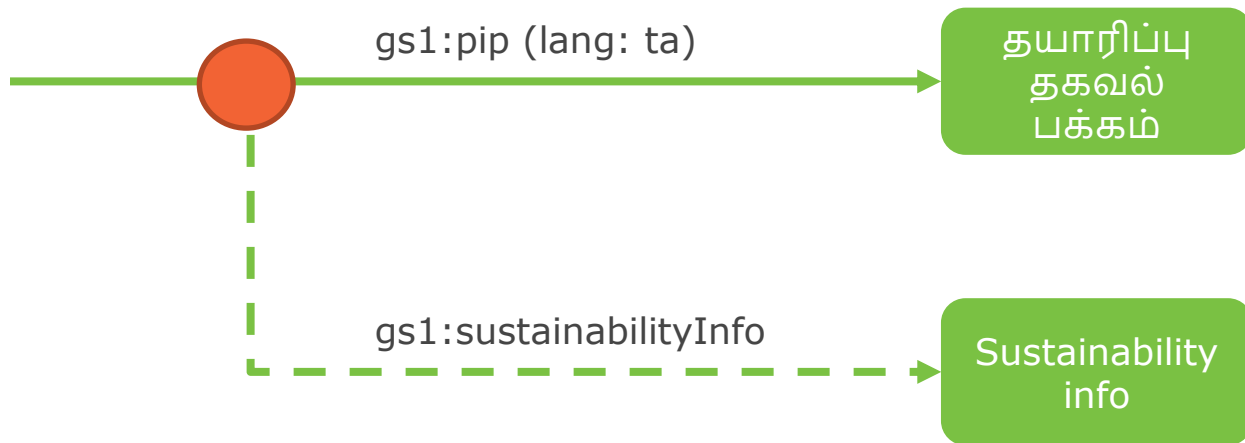
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<https://example.com/01/1234?linkType=gs1:pip>



<https://example.com/01/1234?linkType=gs1:pip>





```
{
  "linkset": [
    {
      "anchor": "https://id.gs1.org/01/09506000149301",
      "https://gs1.org/voc/pip": [
        {
          "href": "https://example.com/en/defaultPage",
          "hreflang": [
            "en"
          ],
          "type": "text/html",
          "title": "Product information"
        },
        {
          "href": "https://example.com/fr/defaultPage",
          "hreflang": [
            "fr"
          ],
          "title": "Information produit"
        }
      ],
      "https://gs1.org/voc/whatsInTheBox": [
        {
          "href": "https://example.com/en/packContents/GB",
          "hreflang": [
            "en"
          ],
          "title": "What's in the box?"
        }
      ]
    }
  ]
}
```

Link relation  
types

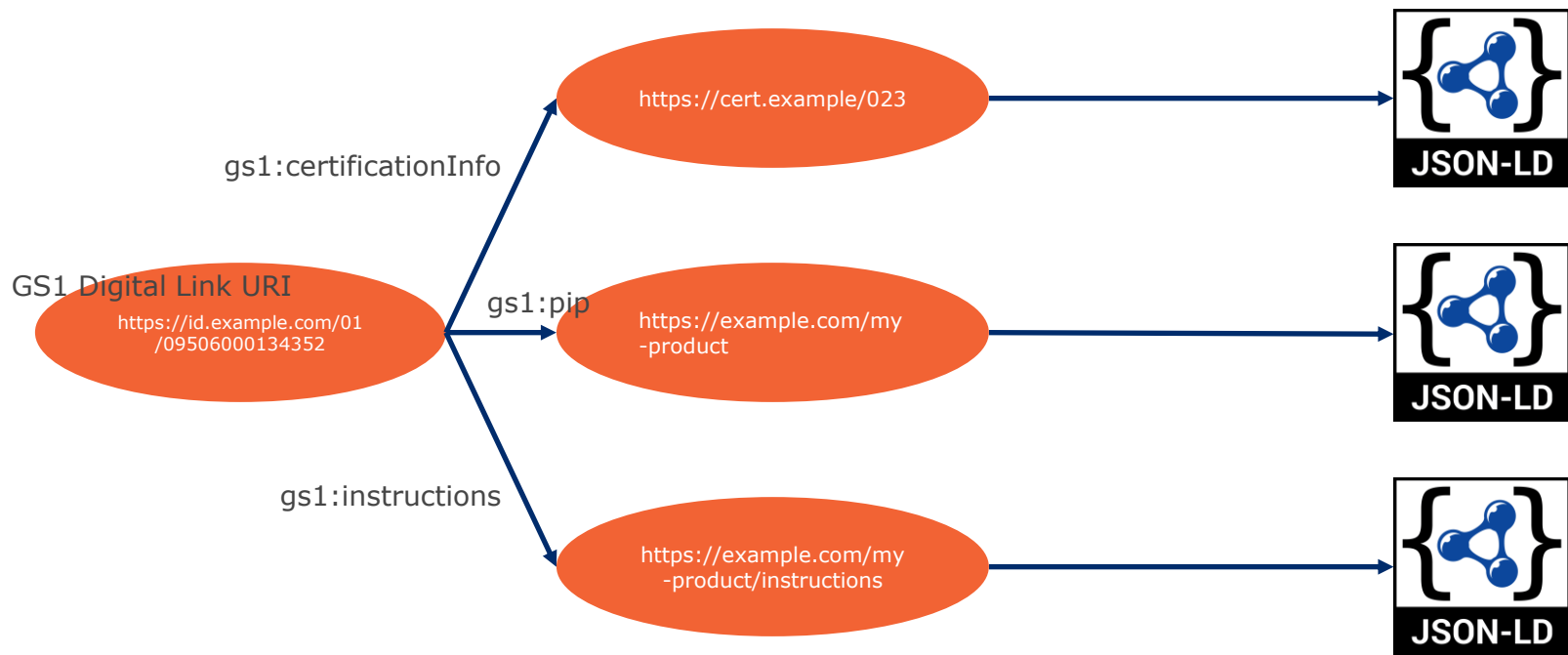
RFC 9264

# Look familiar?

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Product	Link type	Target URL
https://id.example.com/01/09506000134352	gs1:certificationInfo	https://cert.example/023
	gs1:pip	https://example.com/my-product
	gs1:instructions	https://example.com/my-product/instructions

# It's triples all the way...



# In summary

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## GS1 Digital Link makes 'barcodes' (GS1 identifiers) first class citizens in the web of data

### Links:

- [GS1 Digital Link URI syntax](#)
- [GS1-Conformant resolver](#)
- [GS1 Web Vocabulary](#)
- [Global Migration to 2D Programme website](#)
- [Business case for 2D video](#) (new on YouTube this week)
- [RFC 9264 Linkset](#)
- [Barcode Syntax Resource](#) (FOSS)
- [Module count tool](#) (QR code size tester)

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