

# Guiding document: Unique product identifier criteria

DRAFT 2

## Criteria

### Applicability

All product categories.

### Background

The criteria ensure that certified products are labeled with a data carrier connected to a unique product identifier. This facilitates circular value chains, enabling efficient and reliable identification of more sustainable products in the marketplace and preparing the product for upcoming EU directives on digital product passports.

### Mandate

**Part 1:** The certified product must have a Data carrier containing a Unique product identifier compatible with the GS1 digital link standard or equivalent.

**Part 2:** When the data carrier is scanned by a device, it must redirect to a website displaying unit-specific product information.

#### Submit the following to an approved verifier:

- Physical Sample of product equipped with data carrier. Or documentation showing that the product will be marked in the same way as a previously assessed and approved product.
- Sample URL (as encoded in the data carrier)
- Sample URL for the website displaying unit-specific product information.
- GTINs assigned for the product, using the UPI template
- A completed and signed product form (chapter 11.3).

#### The following is submitted to TCO Development:

A copy of the verification report(s) from a verifier approved by TCO Development.

#### The following is submitted to TCO Development and may be published:

The GTINs assigned with the product, either by range or specific id's.

### Definitions

**GTIN:** Global Trade Item Number

**Unique product identifier:** A unique string of characters for the identification of products that also enables a web link to a digital product passport.

**Digital product passport:** a set of data specific to a product accessible via electronic means through a data carrier.

**Data carrier:** a two-dimensional symbol or other automatic identification data capture medium that can be read by a device.

**Serial number:** Any alphanumeric string that functions as a persistent and unique identifier for an individual item.

### Clarification

The first time a brand applies for a TCO Certified Generation 10 certificate, A period of 12 months may be granted to implement functionality so that the scanning of the data carrier leads to a unit-specific website.

#### Unique product identifier specifications

The Unique Product Identifier must be encoded into the data carrier according to GS1 digital link URI syntax standard. The minimum required information to include is:

- Global Trade Identification Number(GTIN) as provided for in standard ISO/IEC 15459-6
- Product serial number

Example URL: <https://id.brand.com/01/09506001343376/21/4EEE2F46CA424>

Description of example URL: [https://subdomain.domain\\_name.com/gtin/serialnumber](https://subdomain.domain_name.com/gtin/serialnumber)

See Section 5 in GS1 Digital Link Standard: URI Syntax for more Examples of GS1 Digital Link URIs.

It is recommended, but not mandatory, to use the best practices guide from GS1 [GS1 Digital Link: Best practices for creating your QR Code powered by GS1](#)

#### Data carrier specifications

##### Accepted types of data carriers:

Qr-code or data matrix

##### To ensure data carrier quality, the following standards must be followed:

If data carrier is a QR-code: ISO/IEC 18004:2015  
If data carrier is a data matrix: ISO/IEC 16022:2006

##### Placement of data carrier on the product

- The data carrier must be placed on the outer casing or on the marking plate.
- The data carrier must be placed on a flat surface on the product..
- The data carrier must be accessible without using tools.
- The brand owner submits documentation or a sample that shows how the product will be marked with the data carrier to an approved verifier.

##### Products made up of multiple detachable parts:

The data carrier should be attached to at least one of the parts.

##### Data carrier on product packaging.

It is not required to label the product packaging with an additional copy of the data carrier with the unique product identifier, but it is allowed.

##### Data carrier Size

Use Section 5.12.3 GS1 symbol specification in GS1 General Specifications as a guide to select an appropriate label size to encode the Digital link URL domain name and product serial number.

## Implementation

### 1. Create unique product identifier ( UPI)

The Unique Product Identifier must be encoded into the data carrier according to GS1 digital link URI syntax standard.

The minimum required information to include is:

- Global Trade Identification Number(GTIN) as provided for in standard ISO/IEC 15459-6
- Product serial number

**GTIN**  
ISO/IEC 15459-6

**Serial number**

<https://id.brand.com/01/09506001343376/21/4EEE2F46>

### 2. Encode UPI into data carrier and place it on the product

#### QR Code

ISO/IEC 18004:2015



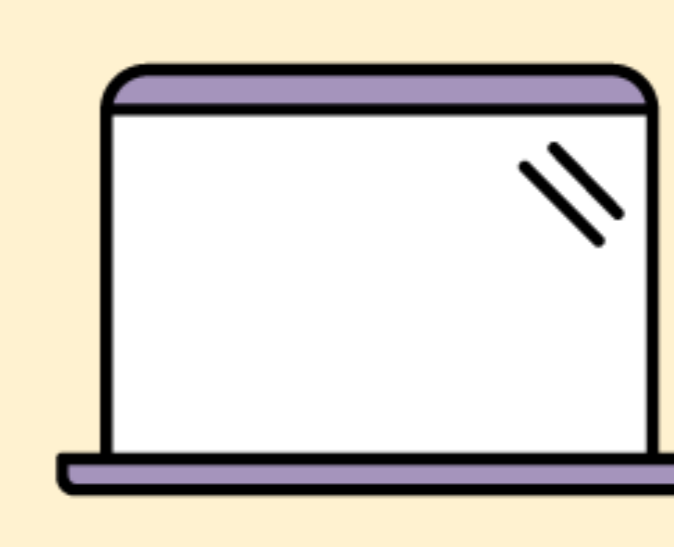
#### Data Matrix

ISO/IEC 16022:2006



Or

#### Place on Product



- On outer casing or on the marking plate.
- On a flat surface on the product.
- Must be accessible without using tools.

### 3. Set up Redirection (optional)

Using redirection is highly recommended, it enables several advantages such as:

- Ability to redirect to already existing URLs with unit specific product information, such as the product support page.
- Ability to change the destination URL without changing the URL encoded in the data carrier,
- Enables to use a URL with more characters without needing to increase the data carrier size.

#### Example

Url in datacarrier: <https://id.brand.com/01/09506001343376/21/4EEE2F46>

Redirect to any URL displaying unit specific product information, for example:

<https://pcsupport.brandname.com/us/en/products/laptops/product-series-laptops/serialname/modelname/abc123/xyz123/>

### 4. Set up website with product information on a unit level

#### Required data to display:

- Model name
- Serial number
- GTIN

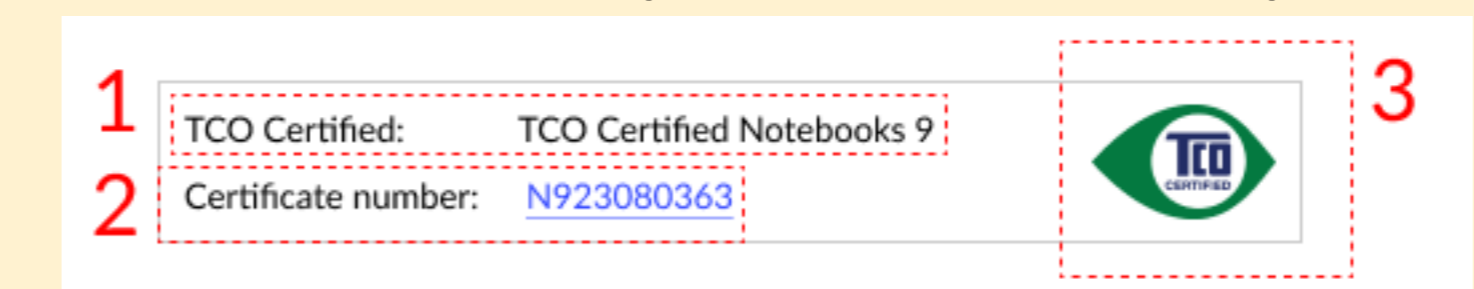
**NOTE:** The first time a brand applies for a TCO Certified Generation 10 certificate, A period of 12 months may be granted to implement functionality so that the scanning of the data carrier leads to a unit-specific website.

#### (Optional)

To fulfil: 1.1.1 B - labeling of the product and packaging

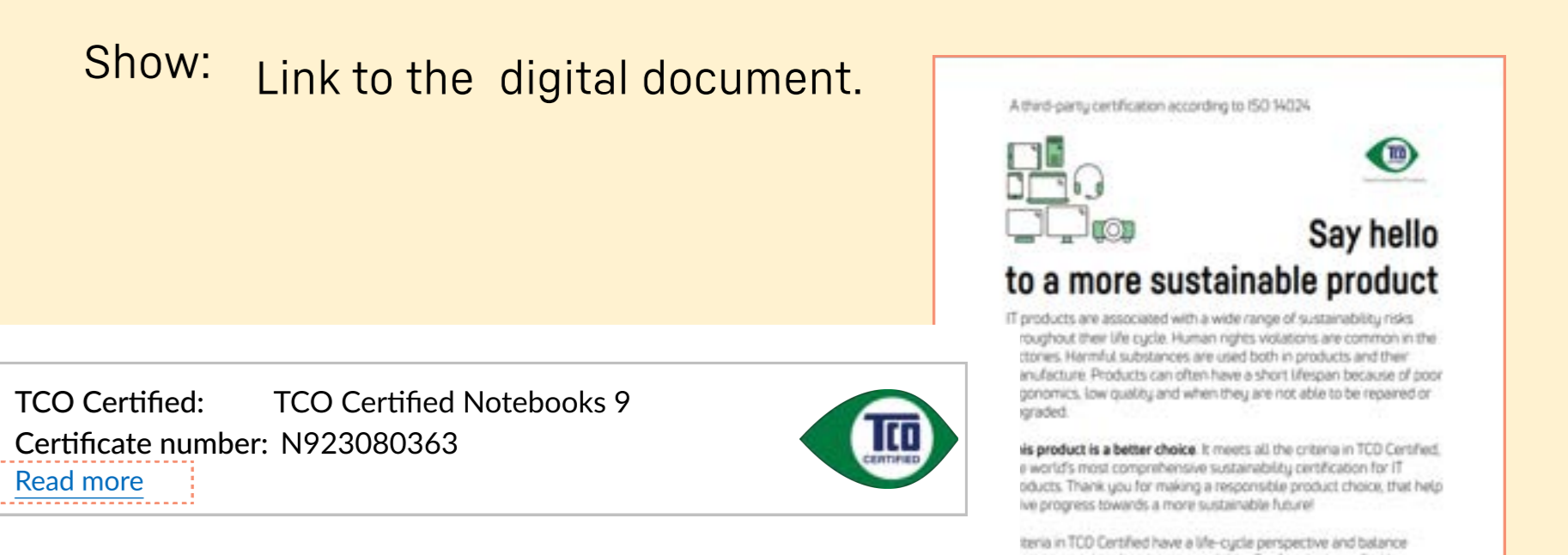
Show:

- Version and generation of TCO Certified
- Certificate nr, that is a link to the product page in TCO Certified Product finder.
- An Image of the TCO Certified Logo



To fulfil: 1.1.1 A - information document for end users

Show: Link to the digital document.



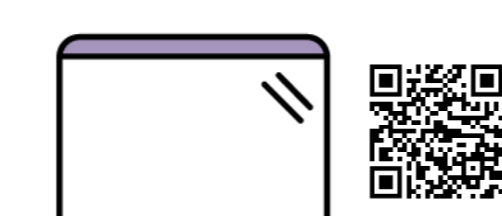
## Process

### Part 1: Data carrier and Unique product identifier

#### Submission

##### 1. Physical Sample of product with data carrier

Or documentation showing that the product will be marked in the same way as a previously assessed and approved product.



##### 2. Sample URL (as encoded in the datacarrier)

Submit a sample URL as the ones that will be encoded into the data carrier.

Example:

<https://id.brand.com/01/09506001343376/21/4EEE2F46>

##### 3. Filled in UPI Template

There is two ways to submit GTINs for the certified product model in the UPI template. Either by providing a list of all GTINs for the product, or by describing the range of GTINs assigned for the product

GTIN list	GTIN range
5397184504918	Company prefix: 5397184
5397184504913	Item ref 1st digit: 2
5397184504914	Item ref 2nd digit: 0
5397184504925	Item ref 3rd digit: 4
-	Item ref 4rd digit: 0 to 9
-	Item ref 5rd digit: 0 to 9
5397184504927	Item ref 6rd digit: -

### Part 2: Website displaying unit specific product information

#### Submission

##### 4. URL to website displaying unit specific product information

If redirection is used (which is recommended) the URL that is the destination of the redirect must be submitted.  
If redirection is **not** used, no additional URL needs to be submitted

Example:

<https://pcsupport.brandname.com/us/en/products/laptops/product-series-laptops/serialname/modelname/abc123/xyz123/>

## Sources & additional material

#### GS1

GS1 Digital Link Standard: URI Syntax <https://ref.gs1.org/standards/digital-link/uri-syntax/>  
The How and Why of GS1 Digital Link [The How and Why of GS1 Digital Link](#)  
Best practices [Best practices for creating your QR Code powered by GS1](#)  
GS1 Digital Link Standard: URI Syntax [GS1 Digital Link Standard: URI Syntax](#)  
Application identifiers [Application identifiers](#) » [GS1 Sweden](#)

#### ISO

ISO/IEC 15459-6:2014 - Automatic identification and data capture techniques, Unique identification Part 6: Groupings <https://www.iso.org/standard/54786.html>

ISO/IEC 18004:2015 - Information technology, Automatic identification and data capture techniques, QR Code bar code symbology specification  
<https://www.iso.org/standard/62021.html>

ISO/IEC 16022:2006 - Information technology, Automatic identification and data capture techniques, Data Matrix bar code symbology specification  
<https://www.iso.org/standard/44230.html>

#### EU and EU related

Annex III in [Proposal for Ecodesign for Sustainable Products Regulation](#)