



Guide to the GDSN attributes

Release 1.0, Approved, February 2024



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1 Introduction

This document defines a standard approach to follow for the upload of **variable measure trade items** into the **GS1 Global Data Synchronisation Network (GDSN)**.

The GS1 Global Data Synchronisation Network (GDSN) is the global standard, adopted by thousands of companies worldwide, for defining product attributes and the methods for communicating such information to benefit supply chain efficiency.

The GDSN is used in various sectors, from retail to healthcare, and is a constantly evolving standard to meet the B2B2C needs of all companies that adopt it. It enables the description of data useful for logistics, commercial management, as well as information intended for end consumers.

The GDSN can be accessed through [standard GDSN documentation](#) or the [GS1 GDSN Navigator](#) tool. For more information, please visit the [GDSN page](#) on the [gs1it.org](#) website.

2 Definition of variable measure trade item

A **variable measure trade item** is defined according to GS1 specifications as a **product for which at least one of its dimensions can vary**.

The variable characteristic can be any of the following:

- **Weight:** in this case, the product is a variable weight item, meaning products for which the packaging does not have a predetermined and constant weight, and the unit sale price varies according to the final weight. Typically, the product categories involved in this case are as follows: meat, fish, vegetables, cheese, cured meats, bread.
- **Dimensions.**
- The **number of units contained**.
- **Volume.**

Examples of variable measure products:

- Variable weight trade item: **cheese** with a net weight varying between 200 and 500 g.



- Variable weight and variable number of units trade item: **chicken drumsticks** with a weight varying from 600 to 1000 g, and a variable number of units.



- Variable weight and variable number of units trade item: a **box of watermelons** with a weight varying from 500 to 800 kg, and a variable number of units.



- Variable weight trade item: a **single watermelon** with a weight varying from 10 to 20 kg.

Note: It can be weighed and priced by the producer (in the Italian market, it is identified with a 13-digit variable weight code that starts with numbers from "22" to "29") or it can be weighed and priced at the point of sale (13-digit variable weight code that starts with "20" and "21").



- Variable weight trade item: a **slice of watermelon** with a weight varying from 0.8 to 10 kg.

Note: The slice of watermelon is generally not coded in the GDSN; it is packaged, weighed, and priced at the point of sale. Each distributor will assign it a 13-digit variable weight code that starts with "20" and "21".



3 Identification of a variable measure trade item

Consumer unit identification in GDSN:

08123456789014

Company prefix code

13 digits + initial 0 for GDSN entry, assigned by the company starting from the GS1 company prefix (e.g., 8123456) and **valid globally**.

The GTIN is mandatory for the entry of trade items into the GDSN: if only the variable measure code is present, then the GTIN must be assigned.

Identification of variable measure consumer units in Italy:

2223456000006

Variable measure code

13 digits, starting with a "2", generated from the 7-digit prefix (e.g., 2223456) assigned by GS1 Italy **for the Italian market**.

In the GDSN, the 13-digit code must be entered as follows:

- Variable measure code ["2" + 6 digits]: e.g., "2223456"
- Filler zeros [5 digits]: "00000"
- Check digit [1 digit]: e.g., "6"

2142770000007

Variable measure code for products portioned at the point of sale

13 digits, starting with "20" or "21", assigned by the retailer and reserved for products that are:

- Variable weight items sold in self-service;
- Packaged at the point of sale;
- Sold at the assisted counter.

These are codes that the retailer internally assigns to that product, so they are **valid only for the individual retailer**.

Identification of variable measure packaging units:

98123456789017

Pack GTIN

14 digits, assigned by the company starting from the company prefix and **valid globally**.

The GTIN will be entered in the GTIN field when creating the item.

For more information on coding variable measure trade items, we invite you to visit the website gs1it.org or contact GS1 Italy.

4 GDSN attributes for variable measure trade items

The following sections illustrate the standard approach adopted in the Italian market to be followed for loading **variable measure trade items into the GDSN**.

Specific instructions have been defined for each of the following relevant attributes:

BMS ID	Attribute name	Attribute technical name	Paragraph
67	GTIN (Global Trade Item Number)	gtin	4.1
3908	Variable Measure Indicator	isTradeItemAVariableUnit	4.2
3493	Is there a variable measure barcode on the trade item?	isBarCodeOnPackageVariableMeasureBarCode	4.3
68	Additional Product Identification	additionalTradeItemIdentification	4.4
69	Additional Product Identification Type Code	additionalTradeItemIdentification/ @additionalTradeItemIdentificationTypeCode	
3725	Height	height	4.5
3739	Width	width	
3721	Depth	depth	
3779	Net Weight	netWeight	
3777	Gross Weight	grossWeight	
3733	Net Content	netContent	
3517	Product Description	tradeItemDescription	4.6

4.1 GTIN

- BMS ID 67 – **GTIN**

The GTIN, **mandatory for entering trade items into the GDSN** and assigned by the company to identify their type, is a code of 8, 12, 13, or 14 digits **valid globally**. To enter a GTIN into the GDSN, initial zeros must be added until reaching **14 digits**.

Please note that GTINs do not start with 02.

Example:

GTIN

- BMS ID 67 – gtin = **08123456789014**

GTIN for variable measure packaging units

- BMS ID 67 – gtin = **98123456789017**

4.2 Variable Measure Indicator

- BMS ID 3908 – **isTradeItemAVariableUnit** (Variable Measure Indicator)

Since this is a variable measure unit, the attribute isTradeItemAVariableUnit (Variable Measure Indicator) must be set to **true**.

Variable Measure Indicator

- BMS ID 3908 – isTradeItemAVariableUnit = **TRUE**

4.3 Is there a variable measure barcode on the trade item?

- BMS ID 3493 – **isBarCodeOnPackageVariableMeasureBarCode** (Is there a variable measure barcode on the trade item?)

If the barcode printed on the packaging is a variable measure barcode, generated from a variable measure code (first digit "2"), set it to **true**.

Is there a variable measure barcode on the trade item?

- BMS ID 3493 – isBarCodeOnPackageVariableMeasureBarCode = **TRUE**

4.4 Additional Product Identification

If the attribute 3493 isBarCodeOnPackageVariableMeasureBarCode has been set to **true**, it is mandatory to communicate the **variable measure code** from which the codes on the packaging are generated.

If the code is not present on the packaging but has been assigned, it is recommended to enter it.

The variable measure code is a 7-digit number, with the first digit being a "2".

To include this number in the trade item data, two attributes must be filled out:"

- BMS ID 69 – **additionalTradeItemIdentificationTypeCode**
Set in the code list of the attribute the value:
"**FOR_INTERNAL_USE_1**" (this is the code reserved for the Italian market for the entry of variable measure codes).
- BMS ID 68 – **additionalTradeItemIdentification**
Populate the field with a 13-digit numeric value (example: 2990004000008), composed as follows:
 - Variable measure code ["2" + 6 digits]: e.g., "2990004"
 - Filler zeros [5 digits]: "00000"
 - Check digit [1 digit]: e.g., "8"



Example:

Additional Product Identification Type Code

- BMS ID 69 – **additionalTradeItemIdentificationTypeCode** = **FOR_INTERNAL_USE_1**

Additional Product Identification

- BMS ID 68 – **additionalTradeItemIdentification** = **2990004000008**

If a retailer requests the entry into the GDSN of the variable weight code that they assign internally to that product (13-digit codes, starting with "20" or "21," which the retailer assigns autonomously for the management of variable weight products sold in self-service, packaged at the point of sale, or sold at the assisted counter):

- Specific recipient: *Retailer X*
- BMS ID 69 – **additionalTradeItemIdentificationTypeCode**
Set in the code list of the attribute the value: "**DISTRIBUTOR_ASSIGNED**"
- BMS ID 68 – **additionalTradeItemIdentification**
Populate the field with the 13-digit code that starts with "20" or "21," specific to that retailer (example: 2142770000007), composed as follows:
 - Variable measure code ["2" + 6 digits]: e.g., "2142770"
 - Filler zeros [5 digits]: "00000"
 - Check digit [1 digit]: e.g., "7"

Example:

- Specific recipient: *Retailer 1*
- BMS ID 69 – **additionalTradeItemIdentificationTypeCode** = **DISTRIBUTOR_ASSIGNED**
- BMS ID 68 – **additionalTradeItemIdentification** = **2142770000007**
- Specific recipient: *Retailer 2*
- BMS ID 69 – **additionalTradeItemIdentificationTypeCode** = **DISTRIBUTOR_ASSIGNED**
- BMS ID 68 – **additionalTradeItemIdentification** = **2016020000006**

4.5 Product measures

- BMS ID 3725 – **height**
- BMS ID 3739 – **width**
- BMS ID 3721 – **depth**
- BMS ID 3779 – **netWeight**
- BMS ID 3777 – **grossWeight**
- BMS ID 3733 – **netContent**

These attributes must be **averages** (normally calculated from ten measurements) of the variable measures only. Therefore, by varying for example the gross weight, this data should be populated with the average value of the gross weight measurements of the various products measured.

4.6 Product description

- BMS ID 3517 – **tradeItemDescription** (Product Description)

The best practice for filling out this type of attribute in the GDSN would be to include in the descriptions the minimum and maximum values that the encoded unit can assume for its variable dimensions.

Example. For a product that **varies only in net/gross weight**, it would be advisable to write in the trade item description:

Product Description

- BMS ID 3517 – **tradeItemDescription** = **GS1 Italy Cheese 600-900g**

5 Examples

Below are some examples of filling out GDSN attributes specific to variable measure trade items.

Please note that:

- The GTIN is mandatory for entering trade items into the GDSN. It is a code of 8, 12, 13, or 14 digits that does not start with "02"; to enter a GTIN into the GDSN, initial zeros must be added until reaching 14 digits.
- The variable measure code that starts with "2" (valid only in the Italian market), if assigned, must be entered in the corresponding GDSN attributes "Additional identification of the trade item".
- The variable measures to be indicated in the GDSN correspond to averages (usually calculated from ten measurements).
- The descriptive fields of the trade item contain indications regarding the variability of the variable measure.

VARIABLE MEASURE TRADE ITEM	IMAGE
<p>Cheese packaged by the producer with a net weight variable between 800 and 1000 g</p> <ul style="list-style-type: none"> • gtin: 08032089000147 • isTradeItemAVariableUnit: TRUE • isBarCodeOnPackageVariableMeasureBarCode: TRUE • additionalTradeItemIdentificationTypeCode: FOR_INTERNAL_USE_1 • additionalTradeItemIdentification: 2990004000008 • netContent: 900 g • netWeight: 900 g • grossWeight: 900,1 g • tradeItemDescription: GS1 Italy Cheese 800-1000g 	
<p>Chicken drumsticks packaged by the producer with a variable weight from 600 to 1000 g, and a variable number of units contained</p> <ul style="list-style-type: none"> • gtin: 08032089000147 • isTradeItemAVariableUnit: TRUE • isBarCodeOnPackageVariableMeasureBarCode: TRUE • additionalTradeItemIdentificationTypeCode: FOR_INTERNAL_USE_1 • additionalTradeItemIdentification: 2990004000008 • netContent: 800 g • netWeight: 800 g • grossWeight: 800,5 g • tradeItemDescription: GS1 Italy Chicken Drumsticks Maxi 600-1000 g, 4-8 units 	

VARIABLE MEASURE TRADE ITEM	IMAGE
<p>Box of watermelons with a variable weight from 500 to 800 kg, and a variable number of units contained</p> <ul style="list-style-type: none"> • gtin: 98123456789017 (variable weight packaging unit coding: 14-digit code that starts with 9) • isTradeItemAVariableUnit: TRUE • isBarcodeOnPackageVariableMeasureBarcode: FALSE • netContent: 500-800 kg • netWeight: 650 kg • grossWeight: 670 g • tradeItemDescription: GS1 Italy Watermelons 500-800 kg 	
<p>Single watermelon with a variable weight from 10 to 20 kg, weighed and priced by the producer</p> <ul style="list-style-type: none"> • gtin: 08032089000147 • isTradeItemAVariableUnit: TRUE • isBarcodeOnPackageVariableMeasureBarcode: TRUE • additionalTradeItemIdentificationTypeCode: FOR_INTERNAL_USE_1 • additionalTradeItemIdentification: 2990004000008 (13-digit code that starts with numbers from '22' to '29', valid only in the Italian market) • netContent: 15 kg • netWeight: 15 kg • grossWeight: 15 g • tradeItemDescription: GS1 Italy Watermelon 10-20 kg 	
<p>Slice of watermelon or single watermelon <u>packaged at the point of sale or sold in self-service</u></p> <p>If requested by the retailer, it is possible to enter in the base unit of the GDSN hierarchy the variable weight code that the retailer assigns internally to that product (a 13-digit code, starting with '20' or '21', which the retailer autonomously assigns for managing variable weight products sold in self-service, packaged at the point of sale, or sold at the assisted counter). This code is valid for the specific recipient (default client).</p> <ul style="list-style-type: none"> • Specific recipient: <i>Retailer 1</i> • additionalTradeItemIdentificationTypeCode: DISTRIBUTOR_ASSIGNED • additionalTradeItemIdentification: 2016020000006 (13-digit code, starting with '20' or '21', valid for the specific retailer) 	

Quelli del codice a barre, il linguaggio globale per la trasformazione digitale.

A partire dall'introduzione rivoluzionaria del codice a barre nel 1973, l'organizzazione non profit GS1 sviluppa gli standard più utilizzati al mondo per la comunicazione tra imprese. In Italia, GS1 Italy riunisce 40 mila imprese nei settori largo consumo, sanitario, bancario, della logistica, oltre che del foodservice e delle costruzioni.

Oggi più che mai le imprese devono garantire ai consumatori accesso immediato a informazioni complete e affidabili.

I sistemi standard, i processi condivisi ECR, i servizi e gli osservatori di ricerca che GS1 Italy mette a disposizione permettono alle aziende di creare esperienze gratificanti per il consumatore, aumentare la trasparenza, ridurre i costi e fare scelte sostenibili. In breve, con GS1 la trasformazione digitale è più semplice e più veloce.

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