

General Specifications Change Notification (GSCN)

WR #	GSCN Name	Ratification Date
22-0246	GSMP Electronic health record patient demographics in GS1 barcodes	Aug 2024

Associated Work Request (WR) Number:

N/A

Background:

The work group has two phases, the initial near term phase one addresses the requirement for new application identifiers to be used to encode patient demographic identifiers as detailed in the BRAD, some background for this requirement: Over the last 18 months of the global pandemic, healthcare has seen unprecedented demand in the need for accurate identification of patients to deliver efficient and robust diagnosis and treatment. This increased complexity emphasises the requirement for a global standard to help positive patient identification using existing information held in the Electronic Health Record (EHR) to support patient safety, operational efficiencies and system interoperability.

The second phase will address the need for "implementation guidelines" to ensure the correct use of the newly created patient demographic identifiers along with existing GS1 identifiers that are used for "positive patient identification" to support community deployment these identifiers will also include the following existing identifiers:

- Global Service Relation Number (GSRN) AI 8018 GSRN RECIPIENT
- Global Service Relation Number (GSRN) AI 8017 GSRN PROVIDER
- Service Relation Instance Number (SRIN) AI 8019
- Version Control Number (VCN) AI 7242
- AIDC Media Type AI 7241

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Data carrier specification

Carrier choices

The GS1 data carriers that can be used to represent the GLN are:

- GS1-128
- GS1 DataMatrix
- GS1 QR Code
- EPC/RFID

Note: GS1's <u>EPC Tag Data Standard</u> (TDS) defines the PGLN as a Global Location Number (GLN) or a party. Examples of such parties include an economic operator or a cost centre. For more information on EPC carriers see the <u>EPC Tag Data Standard</u>.

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

See section <u>5.12.3.9</u>, GS1 symbol specification table 9.

Note: For location marking barcodes may be printed at a higher maximum X-dimension: GS1-128 at 1.016 mm (0.0400 inches), GS1 DataMatrix and GS1 QR Code at 1.520 mm (0.0600 inches).

Symbol placement

Not applicable

Unique application processing requirements

For a description of processing requirements, see section $\underline{7}$.

2.4.5 Parties in business processes

Application description

The following GS1 Application Identifiers enable the specification of a party on a label or document, relative to its role in a business process:

- AI (411) Bill to Invoice to
- AI (412) Purchased From
- AI (415) Invoicing Party
- AI (703*) Approval Number of processor (with ISO country code '999')

AI (411) Bill to - Invoice to

An element string with GS1 Application Identifier AI (411) represents the Global Location Number (GLN) of the addressee of an invoice. The GLN refers to the name and address of the business partner to which an entity shall be invoiced and includes accounting-related information that may be used wherever required.

AI (412) Purchased from

In business it is sometimes important to know from where a particular item was purchased. Applied on a trade item, an element string with GS1 Application Identifier AI (412) provides the Global Location Number (GLN) of the company from which the respective trade item has been purchased.

AI (415) Invoicing party

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An element string with GS1 Application Identifier AI (415) is used to indicate the Global Location Number (GLN) of the invoicing party. The GLN is mandatory information for the payment slip application (see section 2.6.6).

AI (703*) Number of processor

An element string with GS1 Application Identifier (703s) represents the ISO country code and approval number or GLN of the processor of a trade item. If '999' is entered as the ISO country code it signifies that the subsequent data is a Global Location Number (GLN), and not an 'approval number'.

As an attribute of a trade item the number of processor must be processed together with the GTIN of the trade item to which it relates. See section 3.8.17 for more information.

GS1 key

Required

GLN

Rules

All GLN rules described in section 4.5.

Attributes

Not applicable

Data carrier specification

If the GLN is carried in a barcode on a GS1 Logistic Label, the rules for logistic unit applications apply, see section 2.2.

If the GLN is carried in a barcode on a payment slip the rules for the payment slips application apply, see section 2.6.6.

Unique application processing requirements

For a description of processing requirements, see section \underline{Z} .

2.5 Service relationships

Application description

The Global Service Relation Number (GSRN) is a non-significant number used to identify the relationship between an organisation offering services and the individual entities providing or benefitting from the services. The GSRN provides unique and unambiguous identification. It is the key to accessing information, stored on computer systems, relevant to service(s) provided and received and in some cases, these services could be recurring. The GSRN may also be used for referencing information transferred via Electronic Data Interchange (EDI).

When using the GSRN, often two types of relationships may need to be captured in one transaction:

- 1. The relationship between the organisation offering the service and the actual recipient of the service.
- The relationship between the organisation offering the service and the actual provider of the service.

It should be noted that the GSRN is not meant to identify a single service as a trade item, neither is it used to identify a physical unit as a trade item. It may identify a physical unit for service purposes (e.g., a computer with a service agreement).

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2.5.1 Global Service Relation Number – Provider: AI (8017)

An element string with GS1 Application Identifier AI (8017) represents the Global Service Relation Number of a relationship between the organisation offering the service and the provider of the service. Some examples of how the GSRN can be used to identify the service relationships are:

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- A medical procedure, where it could be used to identify an individual medical provider by role. For identification of the individual provider of care, the hospital or the appropriate authority generates a GSRN with AI (8017) for each of its caregivers and encodes it in an appropriate GS1 Data carrier (barcode) symbol on the caregiver's ID card, work station, work order, etc. In this case, the GSRN would ensure non-significant identification management, securing identification uniqueness and also allowing linkage to local rule management systems.
- A service agreement, where it could be used to manage agreed upon services, such as maintenance services for a television or computer.
- A loyalty program required to identify the service relationship between the loyalty program and the service provider (i.e. company providing merchandise due to use of loyalty points).
- A hospital administration can identify the service relationship between hospital and the doctor, nurses, etc.

GS1 key

Required

GSRN

The GS1 Application Identifiers to indicate, Global Service Relation Number(GSRN) are AI (8017) and AI (8018) , see section 3.2

Rules

All GSRN rules described in section 4.6.

Attributes

Required

Not applicable

Optional

AI (8019) Service Relation Instance Number, section 3.2 AI (7241) AIDC media type, section 3.2 AI (7242) Version Control Number (VCN), section 3.2 AI (7253) Family name of person, section 3.2 AI (7254) Given name of person, section 3.2 AI (7255) Name suffix of person, section 3.2 AI (7256) Full name of person, section 3.2

AI (8030) Digital Signature (DigSig), section 3.2

Rules

Not applicable

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Data carrier specification

Carrier choices

The data carrier choices for this application are:

- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked
- GS1-128
- GS1 DataMatrix
- GS1 QR Code

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

See section 5.12.3.11, GS1 symbol specification table 11

Symbol placement

No standard placement is required.

Unique application processing requirements

For a description of processing requirements, see section $\underline{7}$.

2.5.2 Global Service Relation Number – Recipient: AI (8018)

An element string with GS1 Application Identifier AI (8018) represents the Global Service Relation Number of a relationship between the organisation offering the service and the recipient of the service. Some examples of how the GSRN can be used to identify the service relationships are:

- A hospital admission, where it could be used to identify a subject of care globally and uniquely for AIDC purposes and establish an identification uniqueness that does not harm privacy. For identification of the subject of care (patient) the hospital generates a GSRN with AI (8018) for each of its patients and encodes it in an appropriate GS1 Data carrier (barcode) on the patient's wristband as well as his or her corresponding medical record, pathology samples, etc. The GSRN may then be used as the key to link multiple or specific instances of treatment, room charges, medical tests and patient charges.
- A membership in a frequent flyer programme, where it could be used to record awards, claims and preferences.
- A membership in a loyalty scheme, where it could be used to record visits, purchase value and awards.
- A membership in a club, where it could be used for recording entitlements, use of facilities and subscriptions.
- A loyalty program required to identify the service relationship between the loyalty program and the recipient of the loyalty program (the end user or customer who earns loyalty points).
- Patient admission to a hospital can identify the service relationship between the hospital and the patient.
- Utility networks, such as those providing electricity, gas or water, where it could be used to
 identify the relationship between network service providers and suppliers of utility products.
- A GSRN could be used to give students access to other libraries that have formed a cooperative lending agreement. A typical application is the identification of membership in a student library. The library would issue all members a card that includes a unique GSRN identifying the relationship between the library and a student. The library would then scan the GSRN whenever a book was lent or returned. The Electronic Message from the scanner would then be used to

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automatically update the library's stock management database. See the figure below for an example of how the service relationship identifier would appear on this membership card.





GS1 key

Required

GSRN

See section <u>3.2</u>, *Global Service Relation Number AI (8017) and AI (8018)* for the definition of the GS1 Application Identifier.

Rules

See section 4.6, GSRN rules.

Attributes

Required

Not applicable

Optional

AI (8019) Service Relation Instance Number, section <u>3.2</u> AI (7241) AIDC media type, section <u>3.2</u> AI (7242) Version Control Number, section <u>3.2</u> <u>AI (7250) Date of birth, section 3.2</u>

AI (7251) Date and time of birth, section 3.2

AI (7252) Biological sex, section 3.2

AI (7253) Family name of person, section 3.2

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AI (7254) Given name of person, section 3.2 AI (7255) Name suffix of person, section 3.2

AI (7256) Full name of person, section 3.2

AI (7257) Address of person, section 3.2

AI (7258) Baby birth sequence indicator, section 3.2

AI (7259) Baby of family name, section 3.2

AI (8030) Digital Signature (DigSig), section 3.2

Rules

Not applicable

Data carrier specification

Carrier choices

The data carrier choices for this application are:

- GS1 DataBar Expanded
- GS1 DataBar Expanded Stacked
- GS1-128
- GS1 DataMatrix
- GS1 QR Code

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

See section 5.12.3.11, GS1 symbol specification table 11

Symbol placement

No standard placement is required.

Unique application processing requirements

For a description of processing requirements, see section $\underline{7}$.

2.5.3 Service Relation Instance Number: AI (8019)

A service provider or a service recipient can be identified with a Global Service Relation Number (GSRN), using AI (8017) and (8018) respectively. If the service provider or recipient identification needs to, optionally, be made more granular with a sequence indicator corresponding to each encounter during the service relationship, attribute data in the form of a Service Relation Instance Number (SRIN AI (8019)), see section <u>3.2</u>), may be added.

For example, when a GSRN is encoded to a data carrier and applied to a patient wristband to identify the patient as a recipient of care, each SRIN linked to the patient's GSRN can correspond to a specific instance or encounter within an episode of care for that patient. For treatments which may require multiple instances of care and a record to be captured for each instance, such as for chemotherapies, the SRIN linked to the GSRN may be used. Furthermore, when a product or service is administered (e.g., a particular treatment is given) it can easily be associated with the patient and the corresponding instance of care, by scanning the Global Trade Item Number (GTIN) of the product or service, then associating it to the patient's GSRN and the related SRIN, as well as the caregiver's GSRN.

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Important: Prior to the development of the Version Control Number (VCN) AI (7242), the SRIN could also be optionally used with a GSRN as a sequence indicator for version control purposes. Use of the SRIN in this manner is only possible when there are no other requirements to further qualify and identify a specific instance of service. For new version control requirements, the VCN SHALL be used instead of the SRIN (see section <u>3.8.243-8.23</u>).

2.5.4 Use of demographic data to support verification or validation of personal identity

Application description

The use of demographic information is an additional mechanism to support the validation and verification of both the subject of care (patient) and provider of care (caregiver) in a consistent way. When used alongside both the Global Service Relation Number (GSRN) and optionally the Service Relation Instance Number (SRIN) as well this information provides greater surety of identity. Demographic information refers to all non-clinical data about a subject of care (patient) or provider of care (caregiver), including: family name, given name, date of birth, address, biological sex and more.

Subject of care (patient) and provider of care (caregiver) demographic data is typically stored in Electronic Health Record (EHR), Electronic Medical Record (EMR) or Electronic Patient Record (EPR) sytems within a hospital healthcare environment.

Important Patient Privacy Note: As GS1 does not allocate a globally unique identifier for patients and no patient or caregiver data is stored and maintained by GS1, patient and caregiver identification and privacy responsibility SHALL remain with the organisation delivering the care and identifying the relationship between its care providers and patients.

GS1 key

Required

GSRN

The GS1 Application Identifiers to indicate:

<u>Global Service Relation Number (GSRN) are AI (8017) for Provider of Care Identity Validation and AI (8018) for Subject of Care Identity Validation, see section 3.2</u>

<u>Rules</u>

All GSRN rules described in section 4.6.

Attributes

Required

Not applicable

Optional

Provider of Care Identity Validation

AI (8019) Service Relation Instance Number, section 3.2 AI (7241) AIDC media type, section 3.2 AI (7242) Version Control Number, section 3.2

AI (7253) Family name of person, section 3.2

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AI (7254) Given name of person, section 3.2 AI (7255) Name suffix of person, section 3.2 AI (7256) Full name of person, section 3.2

Subject of Care Identity Validation

AI (8019) Service Relation Instance Number, section 3.2 AI (7241) AIDC media type, section 3.2 AI (7242) Version Control Number, section 3.2 AI (7250) Date of birth, section 3.2 AI (7251) Date and time of birth, section 3.2 AI (7252) Biological sex, section 3.2 AI (7253) Family name of person, section 3.2 AI (7254) Given name of person, section 3.2 AI (7255) Name suffix of person, section 3.2 AI (7256) Full name of person, section 3.2 AI (7257) Address of person, section 3.2 AI (7258) Baby birth sequence indicator, section 3.2 AI (7259) Baby of family name, section 3.2

Rules

Not applicable

Data carrier specification

Carrier choices

The data carrier choice for this application are:

GS1 DataMatrix

GS1 QR Code

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

See section 5.12.3.11, GS1 symbol specification table 11

Symbol placement

No standard placement is required.

Unique application processing requirements

For a description of processing requirements, see section 7.

2.6 Special applications

2.6.1 Coupons

A coupon is a digital or paper-based voucher that can be redeemed at the point-of-sale for a cash value or free item. Coupon identification is organised at the local level. Determining the data structure

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3 GS1 Application Identifier definitions

3.1 Introduction

This section describes the meaning, structure and function of the GS1 system element strings so they can be correctly processed in users' application programmes. An element string is the combination of a GS1 Application Identifier and a GS1 Application Identifier data field. The allowable character set to be used for GS1 Application Identifier element strings is defined in section <u>7.11</u>. There are AIs that have additional syntax restrictions, e.g., numerical only; see below definition for each AI.

Automatic processing of element strings in business applications requires information about the type of transaction to which the transferred data refers. See section $\underline{7}$ for an explanation of this process. Element strings can be carried by GS1-128, GS1 DataBar symbology, GS1 Composite, GS1 DataMatrix and GS1 QR Code symbols. The rules for use and interrelationships between the GS1 Application Identifiers are contained in section 2 and 4.

When a predefined length GS1 key and attributes are encoded together, the GS1 key SHOULD appear before the attributes. In most cases predefined length element strings SHOULD be followed by non-predefined element strings. The sequence of predefined and non-predefined element strings should be at the discretion of the creator of the element strings.

3.2 GS1 Application Identifiers in numerical order

Figure 3.2-1. GS1 Application Identifiers

AI	Data Content	Format ⁽¹⁾	FNC1 required ⁽⁴⁾	Data title
00	Identification of a logistic unit (SSCC): AI (00)	N2+N18		SSCC
01	Identification of a trade item (GTIN): AI (01)	N2+N14		GTIN
02	Identification of trade items contained in a logistic unit: AI (02)	N2+N14		CONTENT
<u>03</u>	Identification of a Made-to-Order (MtO) trade item (GTIN): AI (03)	<u>N2+N14</u>		MTO GTIN
10	Batch or lot number: AI (10)	N2+X20	(FNC1)	BATCH/LOT
11 (2)	Production date: AI (11)	N2+N6		PROD DATE
12 (2)	Due date for amount on payment slip: AI (12)	N2+N6		DUE DATE
13 (2)	Packaging date: AI (13)	N2+N6		PACK DATE
15 (2)	Best before date: AI (15)	N2+N6		BEST BEFORE or BEST BY
16 (2)	Sell by date: AI (16)	N2+N6		SELL BY
17 (2)	Expiration date: AI (17)	N2+N6		USE BY or EXPIRY
20	Internal product variant: AI (20)	N2+N2		VARIANT
21	Serial number: AI (21)	N2+X20	(FNC1)	SERIAL
22	Consumer product variant: AI (22)	N2+X20	(FNC1)	CPV
235	Third Party Controlled, Serialised Extension of Global Trade Item Number (GTIN) (TPX): AI (235)	N3+X28	(FNC1)	ТРХ
240	Additional product identification assigned by the manufacturer: AI (240)	N3+X30	(FNC1)	ADDITIONAL ID
241	Customer part number: AI (241)	N3+X30	(FNC1)	CUST. PART No.
242	Made-to-Order variation number: AI (242)	N3+N6	(FNC1)	MTO VARIANT
243	Packaging component number: AI (243)	N3+X20	(FNC1)	PCN
250	Secondary serial number: AI (250)	N3+X30	(FNC1)	SECONDARY SERIAL

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AI	Data Content	Format ⁽¹⁾	FNC1 required ⁽⁴⁾	Data title	
703s ⁽⁶⁾	Number of processor with three-digit ISO country code: AI (703s)	N4+N3+X27	(FNC1)	PROCESSOR # s	
7040	GS1 UIC with Extension 1 and Importer index: AI (7040)	N4+N1+X3	(FNC1)	UIC+EXT	
<u>7041</u>	UN/CEFACT freight unit type: AI (7041)	<u>N4+X1X4</u>	(FNC1)	UFRGT UNIT TYPE	Commented [DM5]: WR23-272
710	National Healthcare Reimbursement Number (NHRN) – Germany PZN: AI (710)	N3+X20	(FNC1)	NHRN PZN	
711	National Healthcare Reimbursement Number (NHRN) – France CIP: AI 711)	N3+X20	(FNC1)	NHRN CIP	
712	National Healthcare Reimbursement Number (NHRN) – Spain CN: AI (712)	N3+X20	(FNC1)	NHRN CN	
713	National Healthcare Reimbursement Number (NHRN) – Brasil DRN: AI (713)	N3+X20	(FNC1)	NHRN DRN	
714	National Healthcare Reimbursement Number (NHRN) – Portugal AIM: AI (714)	N3+X20	(FNC1)	NHRN AIM	
715	National Healthcare Reimbursement Number (NHRN) – United States of America NDC: AI (715)	N3+X20	(FNC1)	NHRN NDC	
<u>716</u>	National Healthcare Reimbursement Number (NHRN) – Italy AIFA: AI (716)	<u>N3+X20</u>	(FNC1)	NHRN AIFA	Commented [DM6]: WR24-157
(5)	National Healthcare Reimbursement Number (NHRN) – Country "A" NHRN	N3+X20	(FNC1)	NHRN xxx	-
723s (6)	Certification reference: AI (723s)	N4+X2+X28	(FNC1)	CERT # s	-
7240	Protocol ID: AI (7240)	N4+X20	(FNC1)	PROTOCOL	
7241	AIDC media type: AI (7241)	N4+N2	(FNC1)	AIDC MEDIA TYPE	
7242	Version Control Number (VCN): AI (7242)	N4+X25	(FNC1)	VCN	-
7250	Date of birth: AI (7250)	<u>N4+N8</u>	<u>(FNC1)</u>	DOB	-
7251	Date and time of birth: AI (7251)	<u>N4+N12</u>	<u>(FNC1)</u>	DOB TIME	-
7252	Biological sex: AI (7252)	<u>N4+N1</u>	<u>(FNC1)</u>	BIO SEX	-
<u>7253</u>	Family name of person: AI (7253)	<u>N4+X40</u>	(FNC1)	FAMILY NAME	
7254	Given name of person: AI (7254)	<u>N4+X40</u>	<u>(FNC1)</u>	GIVEN NAME	-
7255	Name suffix of person: AI (7255)	<u>N4+X10</u>	(FNC1)	SUFFIX	
7256	Full name of person: AI (7256)	<u>N4+X90</u>	(FNC1)	FULL NAME	
7257	Address of person: AI (7257)	<u>N4+X70</u>	(FNC1)	PERSON ADDR	-
7258	Baby birth sequence indicator: AI (7258)	$N4+N_1+X_1+N_1$	<u>(FNC1)</u>	BIRTH SEQUENCE	-
7259	Baby of family name: AI (7259)	<u>N4+X40</u>	<u>(FNC1)</u>	BABY	-
8001	Roll products - width, length, core diameter, direction, splices: AI (8001)	N4+N14	(FNC1)	DIMENSIONS	-
8002	Cellular mobile telephone identifier: AI (8002)	N4+X20	(FNC1)	CMT No.	-
8003	Global Returnable Asset Identifier (GRAI): AI (8003)	N4+N14[+X16]	(FNC1)	GRAI	
8004	Global Individual Asset Identifier (GIAI): AI (8004)	N4+X30	(FNC1)	GIAI	-
8005	Price per unit of measure: AI (8005)	N4+N6	(FNC1)	PRICE PER UNIT	
8006	Identification of an individual trade item (ITIP) piece: AI (8006)	N4+N14+N2+N2	(FNC1)	ITIP	
8007	International Bank Account Number (IBAN): AI (8007)	N4+X34	(FNC1)	IBAN	
8008	Date and time of production: AI (8008)	N4+N8[+N4]	(FNC1)	PROD TIME	

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ICCBBA - ISBT 128 - Table RT018 detailing their AIDC media type – definitions: www.isbt128.org/RT018

3.8.233.8.24 Version Control Number (VCN): AI (7242)

The GS1 Application Identifier (7242) indicates that the GS1 Application Identifier data field contains a Version Control Number (VCN).

VCN is used when there is a need to differentiate or distinguish between identification that may be present multiple times on the same AIDC media type. For example, when AIDC media such as an ID badge carrying the GSRN of a service provider (8017), or a patient wristband displaying the GSRN of a service recipient (8018) needs to be replaced due to being lost or discarded, the VCN enables distinction between the re-issued AIDC media and any previous versions.

The structure and content of the VCN is at the discretion of the organisation managing issuance and validation of the physical identification entity.

Figure 3.8.23-1. Format of the element string

GS1 Application Identifier	Version control number (VCN)
7242	X_1 ——variable length —— X_{25}

The data transmitted from the barcode reader means that the element string denoting Version Control Number has been captured. Since the VCN is an attribute of a service relation, it must be processed together with the GSRN of the service relation to which it relates (see section 4.13 Data relationships). When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **VCN**

0

Important: Prior to the development of the Version Control Number (VCN), the SRIN could also be optionally used with a GSRN as a sequence indicator for version control purposes. Use of the SRIN in this manner presents challenges when further requirements to qualify a service encounter are necessary, in addition to version control. For new version control requirements, the VCN SHALL be used instead of the SRIN.

3.8.25 Date of birth: AI (7250)

The GS1 Application Identifier (7250) indicates that the GS1 Application Identifier data field contains the date of birth, the date of birth structure is:

- Year: the thousands, the hundreds, the tens and units of the year (e.g., 2003 = 2003), which is mandatory. The use of thousands and hundreds for persons is based on life expectancy potentially exceeding 100 years.
- Month: the number of the month (e.g., January = 01), which is mandatory.

Day: the number of the day of the relevant month (e.g., second day = 02), which is mandatory.

Figure 3.8.25-1. Format of the element string

<u>GS1</u>	Date of birth			
Application Identifier	<u>Year</u>	<u>Month</u>	<u>Day</u>	
<u>7250</u>	$\underline{N_1 \ N_2 \ N_3 \ N_4}$	<u>N5 N6</u>	<u>N₇ N₈</u>	

The data transmitted from the barcode reader means that the element string denoting a date of birthRelease 24.0, Ratified, Jan 24© 2024 GS1 AISBLPage 215 of 534

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has been captured. As this element string is an attribute of a GSRN, it must be processed together with the GSRN to which it relates (see section 4.13 *Data relationships*).

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **DOB**

3.8.26 Date and time of birth: AI (7251)

The GS1 Application Identifier (7251) indicates that the GS1 Application Identifier data field contains a date and time of birth, the date and time of birth structure is:

- Year: the thousands, the hundreds, the tens and units of the year (e.g., 2003 = 2003), which is mandatory. The use of thousands and hundreds for persons is based on life expectancy potentially exceeding 100 years.
- Month: the number of the month (e.g., January = 01), which is mandatory.
- Day: the number of the day of the relevant month (e.g., second day = 02), which is mandatory.
- Hour: the number of the hour based on local 24-hour time (e.g., 2 p.m. = 14), which is mandatory.
- Minutes: the number of the minutes based on local time (e.g., 15 minutes = 15), which is mandatory.

Figure 3.8.26-1. Format of the element string

GS1 Application	Date and time of birth				
	<u>YYYY</u>	<u>MM</u>	DD	<u>HH</u>	<u>MM</u>
<u>7251</u>	$\underline{N_1}\underline{N_2}\underline{N_3}\underline{N_4}$	<u>N5 N6</u>	<u>N₇ N₈</u>	<u>N9 N10</u>	<u>N₁₁ N₁₂</u>

The data transmitted from the barcode reader means that the element string denoting a date and time of birth has been captured. As this element string is an attribute of a GSRN – RECIPIENT, it must be processed together with the GSRN – RECIPIENT to which it relates (see section 4.13 *Data relationships*).

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **DOB TIME**

Note: The use of the GS1 Application Identifier (7251) is used for the purposes of recording the date and time of birth of a baby within a maternity environment. When there is no business requirement to express the time of birth then the use of GS1 Application Identifier (7250) should be used.

3.8.27 Biological sex: AI (7252)

The GS1 Application Identifier (7252) indicates that the GS1 Application Identifier data field indicates the biological sex of the subject of care as defined and detailed in "ISO/IEC 5218:2022 Information technology — Codes for the representation of human sexes".

Figure 3.8.27-1. Format of the element string		
GS1 Application Identifier	Biological sex	
<u>7252</u>	<u>N</u> 1	

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The defined values currently in ISO 5218:2022 for biological sex are:

- 0 = Not known
- 1 = Male
- 2 = Female

9 = Not applicable

The data transmitted from the barcode reader means that the element string denoting the biological sex has been captured. As this element string is an attribute to a GSRN – RECIPIENT it must be processed together with GSRN - RECIPIENT (see section 4.13 *Data relationships*).

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **BIO SEX**

3.8.28 Family name of person: AI (7253)

The GS1 Application Identifier (7253) indicates that the GS1 Application Identifier data field contains family name of person information for the purpose of aiding positive patient identification.

The family name of person field is alphanumeric and may include all characters contained in figure 7.11-1

Note: A family name may also be known as a "Surname" or "Last Name".

Figure 3.8.28-1. Format of the element string

<u>7253</u>	X ₁ >variable length>X ₄₀

The data transmitted from the barcode reader means that the element string denoting family name of person has been captured. As this element string is an attribute to the GSRN, it must be processed together with the identification key to which it relates (see section *4.13 Data relationships*). As a free text field for positive patient information, non-Latin characters and a space character may be encoded.

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **FAMILY NAME**

 \bigcirc

Note: To encode non-Latin characters within the alphanumeric value, use percent-encoding as defined within RFC 3986. A space character should be encoded as a single plus symbol, +.

3.8.29 Given name of person: AI (7254)

The GS1 Application Identifier (7254) indicates that the GS1 Application Identifier data field contains given name information for the purpose of aiding positive patient identification.

The given name of person field is alphanumeric and may include all characters contained in figure 7.11-1



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Figure 3.8.29-1. Format of the element string			
	Given name of person		
<u>7254</u>	$X_{\underline{1}} \longrightarrow variable length \longrightarrow X_{\underline{40}}$		

The data transmitted from the barcode reader means that the element string denoting given name of person has been captured. As this element string is an attribute to the GSRN identification keys, it must be processed together with the identification key to which it relates (see section *4.13 Data relationships*). As a free text field for positive patient information, non-Latin characters and a space character may be encoded.

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **GIVEN NAME**

Note: To encode non-Latin characters within the alphanumeric value, use percent-encoding as defined within RFC 3986. A space character should be encoded as a single plus symbol, +.

3.8.30 Name suffix of person: AI (7255)

The GS1 Application Identifier (7255) indicates that the GS1 Application Identifier data field contains name suffix of person information for the purpose of aiding identification.

The name suffix of person field is alphanumeric and may include all characters contained in figure 7.11-1

Figure 3.8.30-1. Format of the element string

	Name suffix of person
<u>7255</u>	$X_{\underline{1}}$

The data transmitted from the barcode reader means that the element string denoting name suffix of person has been captured. As this element string is an attribute to the GSRN identification keys, it must be processed together with the identification key to which it relates (see section 4.13 Data relationships). When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **SUFFIX**

The following is a list of commonly used abbreviation examples. This list is not exhaustive, the decision as to whether to use the full name suffix or abbreviation is determined based on the maximum allowed field length:

Junior or Jr

- Senior or Sr
- First or I
- Second or II
 Third or III
- Fourth or IV
- Fifth or V

Note: Name suffix is an additional term used following a person's name to identify a subject of care or provider of care.

3.8.31 Full name of person: AI (7256)

The GS1 Application Identifier (7256) indicates that the GS1 Application Identifier data field contains full name of person information for the purpose of aiding positive patient identification. This field is a

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composite data element that is captured through the combination of Application Identifiers (7253) Family name of person, (7254) Given name of person and (7255) Name suffix of person.

The Full name of person field is alphanumeric and may include all characters contained in figure 7.11-1

Figure 3.8.31-1. Format of the element string

<u>7256</u>	X ₁ >variable length>X ₉₀

The data transmitted from the barcode reader means that the element string denoting full name of person has been captured. As a free text field for name identification information, non-Latin characters and a space character may be encoded. As this element string is an attribute to the GSRN identification keys, it must be processed together with the identification key to which it relates (see section 4.13 Data relationships).

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **FULL NAME**



Note: To encode non-Latin characters within the alphanumeric value, use percent-encoding as defined within RFC 3986. A space character should be encoded as a single plus symbol, +.

Note: When shown as non-HRI text, it is advised to capitalise the Family name of person field to ensure no confusion with other name fields.

Note: The order in which these identifiers are used, including their presence and use of a field delimiter, may be determined by regulatory or local user requirements. If a delimiter is required to separate different data fields within the "Full name of person" field then the comma character "," is recommended for use.

3.8.32 Address of person: AI (7257)

The GS1 Application Identifier (7257) indicates that the GS1 Application Identifier data field contains information about the address of a person for the purpose of aiding positive patient identification (e.g., House number / flat number, street details an example being "Av. Louise 326").

The address of person field is alphanumeric and may include all characters contained in figure 7.11-1

Figure 3.8.32-1. Format of the element string

<u>7257</u>	X_1 >variable length>X_{70}

The data transmitted from the barcode reader means that the element string denoting address of person has been captured. As a free text field for name identification information, non-Latin characters and a space character may be encoded. As this element string is an attribute to the GSRN identification keys, it must be processed together with the identification key to which it relates (see section 4.13 *Data relationships*).

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **PERSON ADDR**

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Note: To encode non-Latin characters within the alphanumeric value, use percent-encoding as defined within RFC 3986. A space character should be encoded as a single plus symbol, +.

3.8.33 Baby birth sequence indicator: AI (7258)

The GS1 Application Identifier (7258) indicates that the GS1 Application Identifier data field indicates the baby birth sequence indicator and is used to identify the sequence in which a baby was born and the total number of babies in the series.

	Baby birth sequence indicator			
	<u>Sequence of birth</u> of the baby	Sequence seperator using solidus character	<u>Total number of</u> <u>babies in the</u> <u>series</u>	
<u>7258</u>	<u>N</u> 1	<u>X</u> 1	<u>N</u> 1	

The first number is the sequence of birth of the baby within the series followed by a "solidus" followed by the second number which is the total number of babies in the series. For example:

- 1/1 One baby
- 1/2 First of two babies (twin 1)
- 2/2 Second of two babies (twin 2)
- 1/3 First of three babies (triplet 1)
- 2/3 Second of three babies (triplet 2)
- 3/3 Third of three babies (triplet 3)



Note: The second character used in this element string as detailed by X₁ shall be the <u>"solidus" character as represented as the "/" graphic symbol and detailed in Figure 7.11 1.</u> GS1 AI encodable character set 82.

The data transmitted from the barcode reader means that the element string denoting the baby birth sequence indicator has been captured. As this element string is an attribute to a GSRN – RECIPIENT it must be processed together with GSRN – RECIPIENT (see section 4.13 *Data relationships*).

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **BIRTH SEQUENCE**

3.8.34 Baby of family name: AI (7259)

The GS1 Application Identifier (7259) indicates that the GS1 Application Identifier data field contains Baby of family name information for the purpose of aiding positive patient identification. This field is a composite data element that is captured through the combination of the Application Identifier (7253) Family Name and free text indicating the identification of the specific "baby" being identified. As a free text field for name identification information, non-Latin characters and a space character may be encoded.

The Baby of Family Name field is alphanumeric and may include all characters contained in figure 7.11-1

Figure 3.8.34-1. Format of the element string

<u>7259</u>	X_1 \rightarrow variable length \rightarrow X_{40}

The data transmitted from the barcode reader means that the element string denoting baby of family name has been captured. As a free text field for positive patient information, non-Latin characters and a space character may be encoded. As this element string is an attribute to the GSRN - RECIPIENT identification key, it must be processed together with the identification key to which it relates (see section 4.13 Data relationships).

When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **BABY**

Note: To encode non-Latin characters within the alphanumeric value, use percent-encoding as defined within RFC 3986. A space character should be encoded as a single plus symbol, +.

Note: Baby of family name – In many countries it is common for a child to be born and initially not provided a "given name" by the mother, parents etc. Depending on the jurisdiction it then becomes a legal requirement to decide the "given name" within a defined period of time, for example in the UK it is 42 days and Norway it is 90 days.

Note: A family name may also be known as a "surname" or "last name".

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4.13 Data relationships

This section defines the rules for allowed combinations of element strings on the same physical entity, irrespective of the data carrier(s) applied to the entity. The rules are application-neutral, which means that they apply to all applications listed in section 2 and to any other application where multiple element strings are combined on the same physical entity.

The rules are presented in two tables:

- 1. Invalid pairs of element strings, indicating which combinations of element strings are not allowed on the same physical entity.
- 2. Mandatory pairs of element strings, indicating which element strings must occur in combination with one or more other element strings.



Note: In both tables, the GS1 Application Identifiers (AIs) are used to indicate the element string. But when evaluating the rule the complete element string, i.e. the AI and the data field, needs to be taken into account.



Note: GTINs encoded in an EAN/UPC and ITF-14 symbols are to be regarded as element strings prefixed by an inferred AI (01).



Note: Duplicate element strings (e.g., two serial numbers, two batch/lot numbers, two Extended Packaging URLs) MAY appear on the same physical entity (for example in multiple barcodes). In that case they SHALL have the same value in each occurrence on that entity.

4.13.1 Invalid pairs of element strings

This section defines the pairs of element strings that SHALL NOT appear together on the same physical entity. The table does not provide a finite list of all possible rules, only situations that have proven to pose difficulties in practice are included.

Some explanation on figure 4.13.1-1:

- The table is sorted by AI value, with the lowest AI value displayed in the first column.
- Multiple AIs may be listed in the first or third column, separated by commas. This means that the same rule applies to all listed AIs.
- The rules work in both directions, e.g., if it states AI (01) SHALL NOT be combined with AI (37) this implies that AI (37) SHALL NOT be combined with AI (01).
- For the purpose of this table Made-to-Stock (MtS) GTIN AI (01) and Made-to-Order (MtO GTIN AI (03) are simply referred to as GTIN.

Invalid pairs of element strings			Rule	
AI	Designation	AI	Designation	
01	GTIN	01	GTIN	All occurrences of GTIN SHALL have one value. It is for example not allowed to include GTINs of other packaging levels.
01	GTIN	02	GTIN of contained trade items	GTIN of contained trade items is intended to list the trade items contained in a logistic unit and SHALL NOT be used to identify the contents of a trade item.
<u>01</u>	GTIN	<u>03</u>	GTIN	The same GTIN value SHALL NOT be used with AI (01) and AI (03) and a trade item identified with (01) GTIN SHALL NOT be identified by a MtO GTIN with AI (03).
01 <u>, 03</u>	GTIN	37	Count of units contained	The count of units contained SHALL only be used with GTIN of contained trade items or trade item pieces.

Figure 4.13.1-1. Invalid pairs of element strings

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Invalid pairs of element strings			Rule	
AI	Designation	AI	Designation	
01	GTIN	255	Global Coupon Number	A trade item SHALL NOT also be identified as a coupon.
03	GTIN	02	<u>GTIN of contained</u> <u>trade items</u>	GTIN of contained trade items is intended to list the trade items contained in a logistic unit and SHALL NOT be used to identify the contents of a MtO trade item.
21	Serial Number	235	Third Party Controlled, Serialised Extension of GTIN	Only Serial Number or Third Party Controlled, Serialised Extension of GTIN SHALL be used with GTIN.
420	Ship to postal code, single postal authority	421	Ship to postal code with ISO country code	Only one ship to postal code SHALL be applied on the same physical entity.
421	Ship-to / Deliver- to postal code with three-digit ISO country code	4307	Ship-to / Deliver- to country code	Only one ship to country code SHALL be applied on the same physical entity.
422, 423, 424, 425	Country of origin, initial processing, processing, or disassembly	426	Country of full processing	Country of origin, initial processing, processing, or disassembly SHALL NOT be used in combination with country of full processing, since this would lead to ambiguous data.
390n	Amount payable – single monetary area	391n	Amount payable – with ISO currency code	Only one amount payable element string SHALL be applied on a payment slip.
390n	Coupon value	394n, 8111	Percentage discount of a coupon, Loyalty points of a coupon	The element strings coupon value, percentage discount of a coupon and loyalty points of a coupon SHALL NOT be applied in combination.
392n	Amount payable for a variable measure trade item – single monetary area	393n, 395n	Amount payable for a variable measure trade item and ISO currency code, Amount payable per unit of measure single monetary area (variable measure trade item)	Only one amount payable element string SHALL be applied on a variable measure trade item.
394n	Percentage discount of a coupon	8111	Loyalty points of a coupon	The element strings percentage discount of a coupon and loyalty points of a coupon SHALL NOT be applied in combination.
395n	Amount payable per unit of measure single monetary area (variable measure trade item)	8005	Price per unit of measure	The element strings Amount payable per unit of measure single monetary area (variable measure trade item) and Price per unit of measure SHALL NOT be applied in combination.
395n	Amount payable per unit of measure single monetary area (variable measure trade item)	392n, 393n	Applicable amount payable, single monetary area (variable measure trade item), Applicable amount payable with ISO currency code (variable measure trade item)	Only one amount payable element string SHALL be applied on a variable measure trade item.

1



Invalid pairs of element strings			Rule	
AI	Designation	AI	Designation	
4330	Maximum temperature in Fahrenheit	4331	Maximum temperature in Celsius	Only a single maximum temperature SHALL be used in combination with an SSCC
4332	Minimum temperature in Fahrenheit	4333	Minimum temperature in Celsius	Only a single minimum temperature SHALL be used in combination with an SSCC
<u>7250</u>	Date of birth	<u>7251</u>	Date and time of birth	Only one date of birth SHALL be used
7256	<u>Full name of</u> person	7253, 7254, 7255, 7259	Family name of person, given name of person and name suffix of person, baby of family name	Either full name of person or a combination of family name of person, given name of person and name suffix of person SHALL be used.
7259	Baby of family name	7253, 7254, 7255, 7256	Family name of person, given name of person, name suffix of person, full name of person	Where the recipient of care identified by a GSRN is a baby, the name of the baby SHALL either be provided through AI (7259) (possibly in conjunction with AI (7258), to handle situations of multiple births) or through the combination of one or more of AIs (7253), (7254), (7255), (7256).
8006	ITIP	01	GTIN	The GTIN SHALL NOT be used in combination with the identification of an individual trade item piece. The GTIN of the trade item to which the individual trade item piece belongs is contained in the element string.
8006	ITIP	37	Count of units contained	The count of units contained SHALL only be used with GTIN of contained trade items or trade item pieces.
8018	GSRN for the recipient	8017	GSRN for the provider	Only one Global Service Relation Number (recipient or provider) SHALL be applied at one time for identification of an individual in a given service relationship
8026	Identification of a trade item piece contained in a logistic unit	02, 8006	GTIN of contained trade items, Identification of an individual trade item piece	Identification of the trade item piece contained in a logistic unit SHALL NOT be used in combination with GTIN of contained trade items or identification of an individual trade item piece.

4.13.2 Mandatory association of element strings

This section defines the element strings that mandate the appearance of another element string on the same physical entity.

Note: This does not necessarily mean that the element strings need to appear in the same data carrier. For example, multiple GS1-128 barcode symbols may be used in combination on a GS1 Logistic Label.

The figure below reflects the use case requirements to date. Should future applications arise that require associations they will be added at that time.

Some explanation on figure 4.13.2-1:

- The table is sorted by AI value, with the AI that is the trigger for the rule displayed in the first column. This means that this table cannot be read in both directions. For example, a rule that states AI (17) must be used together with AI (01), does not imply that AI (01) can only be used together with AI (17), since it can also be used with other AIs.
- Multiple AIs may be listed in the first column, separated by commas. This means that the rule
 applies to all of the listed AIs (element strings).



- The same AI can occur in the first column multiple times, in different rows. This means that depending on the value of the element string different rules need to be applied.
- When multiple AIs are included in the third column, this is always done with an AND, OR or XOR logical operator between them:
 - AND means that all element strings SHALL appear on the physical entity
 - OR means that one or a combination of the element strings SHALL appear on the physical entity.
 - XOR means that one of the element strings SHALL appear on the physical entity and the other element string SHALL NOT.

If element s	element string Then mandatory Rule associated element string		Rule
AI	Designation	AI	
$01 \text{ with } N_1$ = 0	GTIN of a variable measure trade item scanned at POS	30 OR 3nnn*	The GTIN of a variable measure trade item scanned at POS SHALL occur in combination with: • variable count of items; or • a trade measure Note: Master data will be needed to determine whether the GTIN represents a variable measure trade item scanned at POS. Also can be note below this table
01 with N_1 = 9, 02 with N_1 = 9	GTIN of a variable measure trade item not scanned at POS	30 OR 3nnn* OR 8001	The GTIN of a variable measure trade item not scanned at POS SHALL occur in combination with: • variable count of items; or • a trade measure; or • the dimensions of a roll product. Note: The first position of the GTIN is "9" for such trade items. Also see the note below this table.
01 with N1 = 9 <u>or</u> <u>03</u>	GTIN of a custom trade item.Made to Order Variation Number AI (242)	242GTIN of a custom trade item per section 2.6.8 or Made- to-Order GTIN (03)	The GTIN of a custom trade item using AI (01) and indicator digit "9"_SHALL be used in combination with the Made-to-Order variation number. Note: The first position of the GTIN is "9" for such trade items. The Made-to-Order variation number MAY also be used with Made- to-Order GTIN using AI (03).
02	GTIN of contained trade items	00 AND 37	The GTIN of contained trade items SHALL occur in combination with an SSCC and the count of the trade items.
10	Batch/lot number	01 XOR 02 XOR 8006 XOR 8026 XOR 03 ***	Batch/lot number SHALL occur in combination with: a GTIN; or a GTIN of contained trade items; or Identification of a Made-to-Order (MtO) trade item (GTIN): or an ITIP; or an ITIP of contained trade item pieces
11, 13, 15, 16, 17	Production date, packaging date, best before date, sell by date, expiration date (of a trade item)	01 XOR 02 XOR 8006 XOR 8026 ***	These dates SHALL occur in combination with: • a GTIN; or • a GTIN of contained trade items; or • an ITIP • an ITIP of contained trade item pieces
12	Due date	8020 AND 415	The due date SHALL occur in combination with the payment slip reference number and the GLN of the invoicing party
17	Expiration date (of a coupon)	255	The expiration date of a coupon SHALL occur in combination with the GCN.

Figure 4.13.2-1. Mandatory association of element strings

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If element s	string	Then mandatory associated element string	Rule
AI	Designation	AI	
7240	Protocol ID	01 XOR 8006	The protocol ID SHALL occur in combination with a GTIN
7241	AIDC media type	8017 XOR 8018	The AIDC media type SHALL occur in combination with: • the GSRN for the provider; or • the GSRN for the recipient
7242	Version Control Number (VCN)	8017 XOR 8018	The Version Control Number SHALL occur in combination with: • the GSRN for the provider; or • the GSRN for the recipient
7250, 7251, 7252, 7257, 7259	Date of birth, date and time of birth, biological sex, address of person, baby of family name	<u>8018</u>	Date of birth, date and time of birth, biological sex, address of person and baby of family name SHALL occur in combination with a Global Service Relation Number – Recipient
7253, 7254, 7255, 7256	Family name of person, given name of person, name suffix of person, full name of person	8017 XOR 8018	Family name of person, Given name of person, Full name of person and Name suffix of person SHALL occur in combination with: • Global Service Relation Number – Provider; or • Global Service Relation Number – Recipient
7258	Baby birth sequence indicator	8018 AND 7259	Baby birth sequence indicator SHALL occur in combination with a Global Service Relation Number – Recipient and Baby of family name.
8001	Dimensions of roll products	01	Dimensions of roll products SHALL occur in combination with the GTIN. Note: The GTIN must relate to a variable measure trade item.
8005	Price per unit of measure	01 XOR 02	The price per unit of measure SHALL occur in combination with: • a GTIN; or • a GTIN of contained trade items. Note: The GTIN must relate to a variable measure trade item.
8007	International Bank Account Number	8020 AND 415	The International Bank Account Number SHALL occur in combination with the payment slip reference number and the GLN of the invoicing party.
8008	Date and time of production	01 XOR 02	The date and time of production SHALL occur in combination with: • a GTIN; or • a GTIN of contained trade items.
8009	Optically readable sensor indicator	01 OR 00	The Optically Readable Sensor Indicator Number SHALL occur in combination with the GTIN or SSCC. Note the two data elements may or may not appear in the same data carrier.
8011	CPID serial number	8010	The CPID serial number SHALL occur in combination with the CPID.
8012	Software Version	01 XOR 8006***	The software version SHALL occur in combination with: a GTIN; or an ITIP
8014	Highly Individualised Device Registration identifier (HIDRI)	01	Highly Individualised Device Registration Identifier SHALL occur in combination with: a GTIN with AI (01)
8019	Service Relation Instance Number	8017 XOR 8018	The Service Relation Instance Number SHALL occur in combination with: • the GSRN for the provider; or • the GSRN for the recipient.

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9 GS1 Standards glossary of terms

9.1 GS1 glossary of terms and definitions

The glossary lists the terms and definitions that are applied in this document. Please refer to the $\underline{www.gs1.org/glossary}$ for the online version.

Term	Demition
acceptance criteria	An allowance for a small measurement variation between commercial verifiers or operators during barcode verification testing.
add-on symbol	A barcode used to encode information supplementary to that in the main EAN/UPC barcode.
aggregated packaging (per EU 2018/574)	Any packaging containing more than one unit packet of tobacco products. For GS1, this may be either a trade item grouping or logistics unit.
AIDC media	The specific form of object/entity where a GS1 AIDC data carrier is displayed.
AIDC media type	The code list for objects/entities (e.g., patient wristband or staff ID card) that displays or carries a GS1 AIDC data carrier.
AIDC media type value	A predefined two-digit numeric code list value used to signify the AIDC media type (e.g., $ID = 10$, patient wristband = 01).
AIM DotCode	A two-dimensional barcode symbology rendered by printing dots per the AIM DotCode Specification.
allocation	The association of an issued GS1 Prefix, GS1 Company Prefix, or GS1 identification key to its corresponding entity or object in accordance with the GS1 rules and policies.
alphanumeric	A character set that contains alphabetic characters (letters), numeric digits (numbers) and other characters, such as punctuation marks.
aperture	A physical opening that is part of the optical path in a device such as a scanner, photometer, or camera. Most apertures are circular, but they may be rectangular or elliptical.
Application Standard Profile	A template that records conformance requirements of existing and any future AIDC application standards, the normative decisions (MSWG, ISO, Regulation,), maintains centralisation of cross-application rules and related technical specifications.
asset type	A component of the Global Returnable Asset Identifier (GRAI), assigned by the asset owner or manager, in order to create a unique GRAI.
attribute	Additional information about an entity identified with a GS1 identification key.
autodiscrimination	The capability of a reader to automatically recognise and decode multiple barcode symbologies.
automatic identification and data capture (AIDC)	A technology used to automatically capture data. AIDC technologies include barcodes, smart cards, biometrics and RFID.
auxiliary patterns	Components of the EAN/UPC symbology. The centre guard bar pattern, the left guard bar pattern and the right guard bar pattern are examples of these.
bar gain/loss	The increase/decrease in bar width due to effects of the reproduction and printing processes.
barcode	A symbol that encodes data into a machine readable pattern of adjacent, varying width, parallel, rectangular or square dark and light spaces. The term barcode is inclusive of all linear and two-dimensional (2D) versions.
barcode verification	The assessment of the printed quality of a barcode based on ISO/IEC standards using ISO/IEC compliant barcode verifiers.
base unit	In a hierarchy of trade item groupings, the consumer trade item level or unit of use.
Basic Unique Device Identifier – Device Identifier (<u>Basic</u> UDI-DI)	The Basic UDI - DI is a unique identifier specific to a medical device product family. It is represented by GS1's Global Model Number (GMN).
batch/lot	Associates an item with information the manufacturer considers relevant for traceability of the trade item.
bearer bars	Bar abutting the tops and bottoms of the bars in a barcode or a frame surrounding the entire symbol, intended to equalise the pressure exerted by the printing plate over the entire surface of the symbol and/or to prevent a partial scan by the barcode reader.
brand owner	The organisation that owns the specifications of a trade item, regardless of where and by whom it is manufactured. The brand owner is normally responsible for the management of the Global Trade Item Number (GTIN).

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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 Health Record (EHR)	Information relevant to the wellness, health and healthcare of an individual, in computer- processable form and represented according to a standardized information model.	-
	ISO 18308:2011 Health informatics — Requirements for an electronic health record architecture - https://www.iso.org/standard/52823.html	
Electronic Medical Record (EMR)	A computerised system containing a collection of data and information related to the care rendered to an individual within a single healthcare organisation. EMR is often used interchangeably with EPR. Data contained within an EMR may be shared into an Electronic Health Record (EHR) as part of maintaining a complete record of care provided to an individual.	
Electronic Patient Record (EPR)	A computerised system containing a collection of data and information related to the care rendered to an individual within a single healthcare organisation. EPR is often used interchangeably with EMR. Data contained within an EPR may be shared into an Electronic Health Record (EHR) as part of maintaining a complete record of care provided to an individual.	-
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.	_
EUDAMED	European database on medical devices (EUDAMED)	
	https://ec.europa.eu/health/medical-devices-eudamed/overview_en	Commented [DM12]: WR
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.	

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Term	Definition
wide-to-narrow ratio	The ratio between the wide elements and the narrow elements in a barcode symbology such as ITF-14 that has two different element widths.
X-dimension	The specified width of the narrowest element of a barcode (see module).

9.2 Legacy (retired) terms

When terms are replaced or retired by GS1, they are maintained within this section for a minimum of five years. The legacy terms are supplied to point GS1 stakeholders to new terminology. The period of five years ensures harmonisation with external standards bodies whose standards make normative reference to the *GS1 General Specifications*.

Legacy term	Current term
Coupon-12	See RCN-12
Coupon-13	See RCN-13
GCTIN	ITIP
Interleaved 2 of 5	ITF-14 Symbol
Magnification	See X-dimension
Number System Character	See U.P.C. Prefix
print gain/loss	bar gain/loss
Reduced Space Symbology (RSS)	GS1 DataBar Symbology
SCC-14	Global Trade Item Number
Symbol Control Character	symbology element
variable measure number (VMN)	See restricted circulation number (RCN)
VMN-12	See RCN-12
VMN-13	See RCN-13

9.3 GS1 abbreviations

Abbreviation	Term
ADC	Automatic Data Capture
AI	GS1 Application Identifier
AIDC	Automatic Identification and Data Capture
ASP	Application Standard Profile
aUI	aggregate Unique Identifier (per EU 2018/574)
BUDI-DI	Basic UDI - Device Identifier
DPM	Direct Part Marking
DL	GS1 Digital Link
EAN	EAN International, now called GS1
EDI	Electronic Data Interchange
<u>EHR</u>	Electronic Health Record
EMR	Electronic Medical Record
EOID	Economic Operator Identifier (per EU 2018/574)
EPC	Electronic Product Code
<u>EPR</u>	Electronic Patient Record
EU	European Union
FID	Facility Identifier (per EU 2018/574)
FNC1	Function 1 Symbol Character
GCN	Global Coupon Number
GCP	GS1 Company Prefix

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