General Specifications Change Notification (GSCN)

WR #	GSCN Name	Ratification Date
WR 22-345	AIDC media type table and GS1 Application Identifier for Version Control Number (VCN)	Mar 2023

Associated Work Request (WR) Number:

WR 22-220 – New GS1 Application Identifier (AI) for Identity Location Value
WR 22-235 – New GS1 Application Identifier (AI) for Identity Version Number

Background:

Managing patient identity (and the identity of those providing care) are amongst the most challenging components as it needs to be maintained across complicated workflows and often needs to be associated not only with the physical patient themselves, but also with the various artefacts, documents and products that are used within their care.

Patient identity is most commonly found on a patient wristband, but it is also found on clinical notes, order forms, biological samples, patient specific products. Issues had been discovered where instead of identity being captured from the patient wristband whilst at the bedside it had been captured from patient notes away from the patient, breaking significant safety protocols. Additional issues also occur.

An existing standard has already been defined in a reference table as part of ISBT-128 standards (RT018) to enable the solution to the above safety issues. It is already being used with the Global Service Relation Number (GSRN) and Service Relation Instance Number (SRIN) within an ISO standard, but in a method which is inconsistent with GS1 standards, therefore introducing more risk.

The intention of the WR 22-220 is to allow a new GS1 Application Identifier to be created enabling this existing table to be used across all sectors not just healthcare and also allow the ISBT 128 Table – RT018 to also be used within the GS1 system.

In relation to facilitating the management of safety and security protocols, there is a need to differentiate or distinguish between identification that may be present multiple times, on the same type of object or artefact. For example, when patient wristbands containing a GSRN-recipient or staff ID cards containing a GSRN-provider need to re-printed due to being discarded, or misplaced, a Version Control Number(VCN) enables the distinction of the different versions produced, to ensure that only the latest version is valid. WR 22-235 seeks to define a new GS1 Application Identifier for a Version Control Number to enable this distinction.

As the two work requests have overlapping requirements, the GSCNs have been merged.

Disclaimer:

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 7.

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.
2. 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).

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:

- 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

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

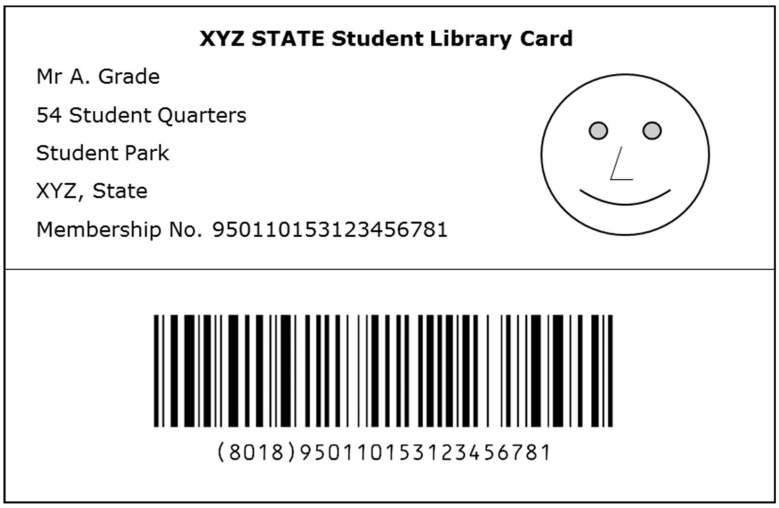
For a description of processing requirements, see section 7.

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 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.

Figure 2.5.2-1. Example of GSRN on a membership card



GS1 key

Required

GSRN

See section 3.2, *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, see section **3.2**.*

AI (7241) AIDC media type, section 3.2

AI (7242) Version Control Number, 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 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. ~~When a product or service is administered (e.g., a particular treatment is given) it can easily be associated with the patient by scanning the Global Trade Item Number (GTIN) of the product or service as well as the caregiver's GSRN (barcoded with AI (8017)) and the patient's GSRN (barcoded with AI (8018)).~~ If the ~~subject of care~~ service provider or recipient identification needs to, optionally, be made more granular with a sequence indicator corresponding to each encounter during the ~~episode of care~~service relationship, attribute data in the

form of a Service Relation Instance Number (SRIN ~~GS1 Application Identifier~~ AI (8019)), see section 3.2), may be added. ~~This would, for example, allow differentiation of subject of care identification captured from an identification band, both before and after its replacement (i.e. radiology examination). If the treatment plan requires different instances of care, such as chemotherapies, and when a record should be captured for each instance, the SRIN linked to the GSRN may be used.~~

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.

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 3.8.23).

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 of a coupon is, therefore, the responsibility of the GS1 Member Organisations for their area of jurisdiction.

The purpose of coupon numbering and symbol marking is to automate and speed up coupon handling procedures at the point-of-sale. Moreover, coupon issuers and retailers may be able to reduce the costs involved in sorting coupons, administering manufacturers' payments and producing reports on redemption.

All GS1 system coupon standards presented here allow for coupon validation (e.g., to check whether the item(s) covered by the coupon is within the customer's order).

If either validation or value look up is performed, manufacturers must advise their distributors and retailers of the impending issue of a coupon so that retailers' files can be updated to process the information at the point-of-sale.

A GS1 system coupon number is used for numbering promotional coupons for manufacturers and retailers as well as tokens with monetary value, such as gift tokens, book tokens, food stamps, luncheon vouchers and social security tokens.

The structure of GS1 system coupon numbers ensures uniqueness against all other GS1 system numbers only when used within the monetary area of the appropriate GS1 Member Organisation(s).

AI	Data Content	Format [1]	FNC1 required [4]	Data title
4317	Return-to country code: AI (4317)	N4+X2	(FNC1)	RTN TO COUNTRY
4318	Return-to postal code: AI (4318)	N4+X..20	(FNC1)	RTN TO POST
4319	Return-to telephone number: AI (4319)	N4+X..30	(FNC1)	RTN TO PHONE
4320	Service code description: AI (4320)	N4+X..35	(FNC1)	SRV DESCRIPTION
4321	Dangerous goods flag: AI (4321)	N4+N1	(FNC1)	DANGEROUS GOODS
4322	Authority to leave flag: AI (4322)	N4+N1	(FNC1)	AUTH LEAVE
4323	Signature required flag: AI (4323)	N4+N1	(FNC1)	SIG REQUIRED
4324	Not before delivery date/time: AI (4324)	N4+N10	(FNC1)	NBEF DEL DT
4325	Not after delivery date/time: AI (4325)	N4+N10	(FNC1)	NAFT DEL DT
4326	Release date: AI (4326)	N4+N6	(FNC1)	REL DATE
7001	NATO Stock Number (NSN): AI (7001)	N4+N13	(FNC1)	NSN
7002	UN/ECE meat carcasses and cuts classification: AI (7002)	N4+X..30	(FNC1)	MEAT CUT
7003	Expiration date and time: AI (7003)	N4+N10	(FNC1)	EXPIRY TIME
7004	Active potency: AI (7004)	N4+N..4	(FNC1)	ACTIVE POTENCY
7005	Catch area: AI (7005)	N4+X..12	(FNC1)	CATCH AREA
7006	First freeze date: AI (7006)	N4+N6	(FNC1)	FIRST FREEZE DATE
7007	Harvest date: AI (7007)	N4+N6[+N6]	(FNC1)	HARVEST DATE
7008	Species for fishery purposes: AI (7008)	N4+X..3	(FNC1)	AQUATIC SPECIES
7009	Fishing gear type: AI (7009)	N4+X..10	(FNC1)	FISHING GEAR TYPE
7010	Production method: AI (7010)	N4+X..2	(FNC1)	PROD METHOD
7011	Test by date: AI (7011)	N4+N6[+N4]	(FNC1)	TEST BY DATE
7020	Refurbishment lot ID: AI (7020)	N4+X..20	(FNC1)	REFURB LOT
7021	Functional status: AI (7021)	N4+X..20	(FNC1)	FUNC STAT
7022	Revision status: AI (7022)	N4+X..20	(FNC1)	REV STAT
7023	Global Individual Asset Identifier of an assembly: AI (7023)	N4+X..30	(FNC1)	GIAI – ASSEMBLY
703s [6]	Number of processor with three-digit ISO country code: AI (703s)	N4+N3+X..27	(FNC1)	PROCESSOR # s
7040	GS1 UIC with Extension 1 and Importer index: AI (7040)	N4+N1+X3	(FNC1)	UIC+EXT
710	National Healthcare Reimbursement Number (NHRN) – Germany PZN: AI (710)	N3+X..20	(FNC1)	NHRN PZN
711	National Healthcare Reimbursement Number (NHRN) – France CIP: AI 711)	N3+X..20	(FNC1)	NHRN CIP
712	National Healthcare Reimbursement Number (NHRN) – Spain CN: AI (712)	N3+X..20	(FNC1)	NHRN CN
713	National Healthcare Reimbursement Number (NHRN) – Brasil DRN: AI (713)	N3+X..20	(FNC1)	NHRN DRN
714	National Healthcare Reimbursement Number (NHRN) – Portugal AIM: AI (714)	N3+X..20	(FNC1)	NHRN AIM
715	National Healthcare Reimbursement Number (NHRN) – United States of America NDC: AI (715)	N3+X..20	(FNC1)	NHRN NDC
... [5]	National Healthcare Reimbursement Number (NHRN) – Country "A" NHRN	N3+X..20	(FNC1)	NHRN xxx
723s [6]	Certification reference: AI (723s)	N4+X2+X..28	(FNC1)	CERT # s
7240	Protocol ID: AI (7240)	N4+X..20	(FNC1)	PROTOCOL
7241	AIDC media type: AI (7241)	N4+N2	(FNC1)	AIDC MEDIA TYPE

AI	Data Content	Format (1)	FNC1 required (4)	Data title
7242	Version Control Number (VCN): AI (7242)	NX+X…25	(FNC1)	VCN
8001	Roll products - width, length, core diameter, direction, splices: AI (8001)	N4+N14	(FNC1)	DIMENSIONS
8002	Cellular mobile telephone identifier: AI (8002)	N4+X..20	(FNC1)	CMT No.
8003	Global Returnable Asset Identifier (GRAI): AI (8003)	N4+N14[+X..16]	(FNC1)	GRAI
8004	Global Individual Asset Identifier (GIAI): AI (8004)	N4+X..30	(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+X..34	(FNC1)	IBAN
8008	Date and time of production: AI (8008)	N4+N8[+N..4]	(FNC1)	PROD TIME
8009	Optically readable sensor indicator: AI (8009)	N4+X..50	(FNC1)	OPTSEN
8010	Component/Part Identifier (CPID): AI (8010)	N4+Y..30	(FNC1)	CPID
8011	Component/Part Identifier serial number: AI (8011)	N4+N..12	(FNC1)	CPID SERIAL
8012	Software version: AI (8012)	N4+X..20	(FNC1)	VERSION
8013	Global Model Number (GMN): AI (8013)	N4+X..25	(FNC1)	GMN
8017	Global Service Relation Number (GSRN) to identify the relationship between an organisation offering services and the provider of services: AI (8017)	N4+N18	(FNC1)	GSRN - PROVIDER
8018	Global Service Relation Number (GSRN) to identify the relationship between an organisation offering services and the recipient of services: AI (8018)	N4+N18	(FNC1)	GSRN - RECIPIENT
8019	Service Relation Instance Number (SRIN): AI (8019)	N4+N..10	(FNC1)	SRIN
8020	Payment slip reference number: AI (8020)	N4+X..25	(FNC1)	REF No.
8026	Identification of pieces of a trade item (ITIP) contained in a logistic unit: AI (8026)	N4+N14+N2+N2	(FNC1)	ITIP CONTENT
8110	Coupon code identification for use in North America (AI 8110)	N4+X..70	(FNC1)	-
8111	Loyalty points of a coupon: AI (8111)	N4+N4	(FNC1)	POINTS
8112	Positive offer file coupon code identification for use in North America: (AI 8112)	N4+X..70	(FNC1)	-
8200	Extended packaging URL: AI (8200)	N4+X..70	(FNC1)	PRODUCT URL
90	Information mutually agreed between trading partners: AI (90)	N2+X..30	(FNC1)	INTERNAL
91 to 99	Company internal information: AIs (91 - 99)	N2+X..90	(FNC1)	INTERNAL

NOTES:

(1): The first position indicates the length (number of digits) of the GS1 Application Identifier. The following value refers to the format of the data content. The following convention is applied:

- n implied decimal point position
- N numeric digit
- X any character in figure 7.11-1 for GS1 AI encodable character set 82
- Y any character in figure 7.11-2 for GS1 AI encodable character set 39
- N3 3 numeric digits, fixed length
- X3 3 characters, fixed length

As multiple certificates may be present, each with an individual certification reference, the fourth digit of the AI (s in the figure below) indicates the sequence of the certification references.

The general structure of AI (723s) is:

- Certification scheme (2 characters) defined by GS1. The following code values are currently allowed:
  - "EM" (European Marine Equipment Directive). See http://eur-lex.europa.eu/legal-content/EN/AUTO/?uri=CELEX:32018R0608 for more information.
- Certification reference (28 characters)

Figure 3.8.20-1. Format of the element string

GS1 Application Identifier	Certification scheme	Certification reference
7 2 3 s	X_1 X_2	X_3 ——variable length——› X_{30}

The data transmitted from the barcode reader means that the element string denoting the certification reference has been captured. As this element string is an attribute of a trade item or an asset, it must be processed together with the GTIN of the trade item or the GIAI of the asset 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: **CERT # s**

3.8.21 Protocol ID: AI (7240)

The GS1 Application Identifier (7240) indicates that the GS1 Application Identifier data field contains the identifier of a clinical trial protocol. The data is alphanumeric and may include all characters listed in section 7.11.

Figure 3.8.21-1. Format of the element string

GS1 Application Identifier	Protocol ID
7 2 4 0	X_1 ——variable length——› X_{20}

The data transmitted from the barcode reader means that the element string denoting the protocol ID has been captured. As this element string is an attribute of a trade item, it must be processed together with the GTIN of the trade item to which it relates (see section 4.13.2).

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

3.8.22 AIDC media type: AI (7241)

The GS1 Application Identifier (7241) indicates that the GS1 Application Identifier data field contains an AIDC media type. The AIDC media type allows the differentiation of what type of object or entity the GS1 AIDC data carrier is displayed or carried on. For example, a GS1 AIDC data carrier encoded with a Global Service Relation Number (GSRN) may be displayed on an identity card or an order form.

The structure and content of the AIDC media type are defined in figure 3.8.22-1 and figure 3.8.22-3 to ensure the correct AIDC media type Value is referenced. An overview of the AIDC media type value ranges is provided in Figure 3.8.22-2.

Figure 3.8.22-1. Format of the element string

GS1 Application Identifier	AIDC media type - Value
7 2 4 1	N_1 N_2

The data transmitted from the barcode reader means that the element string denoting an AIDC media type has been captured. Since the AIDC media type is an attribute of a service relation, it must be processed 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: **AIDC MEDIA TYPE**

Figure 3.8.22-2. Overview of the AIDC media type table values

AIDC media type Table Values	
AIDC media type - value	AIDC media type – value range assignments
00	Not used
01 to 10	Current ICCBBA assignment
11 to 29	Reserved for ICCBBA future assignment
30 to 59	Reserved for GS1 assignment
60 to 79	Reserved for future capacity needs of ICCBBA or GS1 if the initial capacity of values for either organisation is exhausted
80 to 99	Reserved for local or national use

Figure 3.8.22-3. AIDC media type table values

AIDC media type table values		
AIDC media type value	AIDC media type	Defined by
00	Not used	ICCBBA
01	Wristband	ICCBBA
02	Order form	ICCBBA
03	Sample Tube	ICCBBA
04	Working list / Lab list / form	ICCBBA
05	Test report	ICCBBA
06	Delivery note / issue documentation	ICCBBA
07	Intended recipient label (attached to container)	ICCBBA
08	Label affixed to product	ICCBBA
09	Identity card	ICCBBA
10	Clinical or progress notes	ICCBBA
11-29	Reserved for ICCBBA future assignment	ICCBBA
30-59	Reserved for GS1 future assignment	GS1
60-79	Reserved for future capacity needs of ICCBBA	ICCBBA or GS1

	or GS1 if the initial capacity of values for either organisation is exhausted	
80-99	Reserved for local or national use	ICCBBA

Note: The values above are technical standards. Normative GS1 use of these values is established within application standards (e.g., management of biological samples could potentially use this AI on several AIDC media types, for example, a patient wristband, the sample tube itself, or a staff ID card).

Note: GS1 and ICCBBA independently, but collaboratively, administer AIDC media type value definitions and their normative use. For example, GS1 may or may not normatively use a media type defined by ICCBBA and vice versa. This independence could result in a duplicate value if both organisations were considering it at the same time. To avoid this, both organisations have agreed to notify the other when new values are being considered.

ICCBBA - www.isbt128.org - ICCBBA is an international non-profit organisation, based in the US, that manages, develops, and licenses ISBT 128, the international information standard for the terminology, coding and labelling of medical products of human origin. The acronym ICCBBA is derived from the International Council for Commonality in Blood Banking Automation.

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

3.8.23 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)
7 2 4 2	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 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**

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.

3.9 GS1 Application Identifiers starting with digit 8

3.9.1 Roll products - width, length, core diameter, direction, splices: AI (8001)

The GS1 Application Identifier (8001) indicates that the GS1 Application Identifier data fields contain the variable attributes of a roll product. Depending on the method of production, some roll products cannot be numbered according to standard criteria that have been determined in advance. They are, therefore, classified as variable items. For those products where the standard trade measures are not sufficient, the following guidelines should be used.

The identification of a roll product consists of the Global Trade Item Number (GTIN) and the variable attributes. The basic product (e.g., a certain type of paper) is included as data in the GTIN-14 ID number (see section 2.1.11), and the variables contain information about the special features of the particular item that has been produced. The variable values of a roll product, N1 to N14, consist of the following data:

- N1 to N4: slit width in millimetres (width of the roll)
- N5 to N9: actual length in metres
- N10 to N12: internal core diameter in millimetres
- N13: winding direction (face out 0, face in 1, undefined 9)
- N14: number of splices (0 to 8 = actual number, 9 = number unknown)

Figure 3.9.1-1. Format of the element string

GS1 Application Identifier	Variable values of a roll product													
8 0 0 1	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}	N_{14}

The data transmitted from the barcode reader means that the element string denoting the variable attributes of the identification of a roll product trade item have been captured. This element string must be processed together with the GTIN of the trade item 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: **DIMENSIONS**

3.9.2 Cellular mobile telephone identifier: AI (8002)

The GS1 Application Identifier (8002) indicates that the GS1 Application Identifier data field contains the serial number of a cellular mobile telephone.

The serial number field is alphanumeric and may contain all characters contained in figure 7.11-1. A national or pluri-national authority usually assigns the number. It uniquely identifies each mobile telephone within a given authority for special control purposes. It is not considered as an attribute of the identification of the telephone as a trade item.

Figure 3.9.2-1. Format of the element string

GS1 Application Identifier	Serial number
8 0 0 2	X_1 ———variable length ———› X_{20}

The data transmitted from the barcode reader means that the element string denoting an electronic serial identifier of a cellular mobile telephone has been captured. This element string is normally processed as stand-alone information.

When indicating the Basic UDI-DI (GMN) on documents or certificates, the following data title SHOULD be used: **GMN.** The Application Identifier (AI) 8013 SHALL be excluded in such documents and certificates.

For medical devices that fall under the EU regulations (see section 2.6.13).

3.9.14 Global Service Relation Number (GSRN): AIs (8017, 8018)

The GS1 Application Identifiers (8017, 8018) indicate that the GS1 Application Identifier data field contains a GSRN (Global Service Relation Number). The GSRN is used to identify either the recipient or individual provider of services in the context of a service relationship. In order to provide identification for both roles in a service relationship, recipient and provider, two GSRN AIs are available. The resultant element string provides a means for the service provider to store data relevant to services provided to the recipient and by the individual provider.

The GS1 Company Prefix is allocated by GS1 Member Organisations to the company that allocates the GSRN – here the organisation offering the service (see section 1.4.4). It makes the number unique worldwide.

The structure and content of the service reference is at the discretion of the organisation offering the service in order to uniquely identify each service relation.

The check digit is explained in section 7.9. Its verification, which must be carried out in the application software, ensures that the number is correctly composed.

The Global Service Relation Number – Provider (see figure below) identifies the relationship between an organisation offering services and the provider of services.

Figure 3.9.14-1. Format of the element string

GS1 Application Identifier	Global Service Relation Number (GSRN) - PROVIDER		
	GS1 Company Prefix →	← Service reference	Check digit
8 0 1 7	N_1 N_2 N_3 N_4 N_5 N_6 N_7 N_8 N_9 N_{10} N_{11} N_{12} N_{13} N_{14} N_{15} N_{16} N_{17}		N_{18}

The data transmitted from the barcode reader means that the element string denoting the Global Service Relation Number for the Provider has been captured.

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

The Global Service Relation Number – Recipient identifies the relationship between an organisation offering services and the recipient of services.

Figure 3.9.14-2. Format of the element string

GS1 Application Identifier	Global Service Relation Number (GSRN) - RECIPIENT		
	GS1 Company Prefix →	← Service reference	Check digit
8 0 1 8	N_1 N_2 N_3 N_4 N_5 N_6 N_7 N_8 N_9 N_{10} N_{11} N_{12} N_{13} N_{14} N_{15} N_{16} N_{17}		N_{18}

The data transmitted from the barcode reader means that the element string denoting Global Service Relation Number for the Recipient has been captured. When indicating this element string in the non-HRI text section of a barcode label, the following data title SHOULD be used: **GSRN - RECIPIENT**

Note: AI (8017) and AI (8018) must not be used in combination, see section 4.13 *Data relationships*.

3.9.15 Service Relation Instance Number (SRIN): AI (8019)

The GS1 Application Identifier (8019) indicates that the GS1 Application Identifier data field contains a Service Relation Instance Number (SRIN). The SRIN is used when the Global Service Relation

Number (GSRN) of a service provider (8017) or service recipient (8018)~~identification of a "Subject of Care" Global Service Relation Number for the Service Recipient (GSRN - RECIPIENT)~~ needs to be further qualified with a sequence indicator corresponding to an encounter or an instance of a service.~~during the episode of care. The SRIN is further used when an identification (e.g., a badge) of a "Provider of Care" with Global Service Relation Number for the Service Provider (GSRN - PROVIDER) needs to be decommissioned and a replacement issued. The resultant element string provides a means for the organisation issuing badges to distinguish between badges with identical GSRNs.~~

The structure and content of the Service Relation Instance Number is at the discretion of the organisation offering the service, in order to uniquely identify each service relation instance.

Figure 3.9.15-1. Format of the element string

GS1 Application Identifier	Service Relation Instance Number
8 0 1 9	N_1 ——variable length——› N_{10}

The data transmitted from the barcode reader means that the element string denoting a Service Relation Instance Number has been captured. Since the SRIN is an attribute of a service relation, it must be processed 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, ~~one of~~ the following data title SHOULD be used ~~as appropriate~~: **SRIN**

3.9.16 Payment slip reference number: AI (8020)

The GS1 Application Identifier (8020) indicates that the GS1 Application Identifier data field contains a payment slip reference number.

The payment slip reference number, assigned by the invoicing party, identifies a payment slip within a given Global Location Number (GLN) of an invoicing party (see section 2.6.6). Together with the GLN of the invoicing party, the payment slip reference number uniquely identifies a payment slip. The data field is alphanumeric and may contain all characters contained in figure 7.11-1.

Figure 3.9.16-1. Format of the element string

GS1 Application Identifier	Payment slip reference number
8 0 2 0	X_1———variable length———› X_{25}

The data string transmitted from the barcode reader means that the element string denoting a payment slip reference number has been captured. Restrictions apply to the use of AI (8020) in combination with other AIs, 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: **REF No.**

3.9.17 Identification of pieces of a trade item (ITIP) contained in a logistic unit: AI (8026)

The GS1 Application Identifier (8026) indicates that the GS1 Application Identifier data field includes the ITIP of the contained pieces of a trade item. The ITIP is used to identify a piece of a trade item.

The GTIN that is included in this element string is the GTIN for the complete trade item.

The piece number identifies a piece of the trade item. The total count provides the total number of pieces of the trade item.

Figure 3.9.17-1. Format of the element string

GS1 Application Identifier	Global Trade Item Number (GTIN)	Piece number	Total count
8 0 2 6	N_1 N_2 N_3 ..... N_{12} N_{13} N_{14}	N_{15} N_{16}	N_{17} N_{18}

service; if not, the GSRN SHOULD be phased out and a new GSRN allocated using the new organisation's GS1 Company Prefix.

- If the range of services identified by a GSRN changes, the organisation that provides the service SHOULD change the details associated with the GSRN on the related computer file record. The assignment of a new GSRN is not required in this case.
- A GSRN used to identify a particular service relationship that has terminated SHOULD NOT be reallocated for a period well beyond the lifetime of the relevant records.

4.6.1.3 Recommendation for allocating Global Service Relation Numbers

The exact method used to allocate the Global Service Relation Number (GSRN) is left to the discretion of the issuing organisation. However, the GSRN must be unique for each individual service provider and for each individual service recipient and each must remain unique for a period well beyond the lifetime of the records relevant to the service relationship.

All issuers of Global Service Relationship Numbers (GSRNs) must ensure that GSRNs allocated for healthcare service providers and service recipients SHALL never be reused.

For ease of administration, GS1 recommends that GSRNs be allocated sequentially and not contain classifying elements.

4.6.1.4 Information associated with a Global Service Relation Number

Global Service Relation Number (GSRN) may be used as a standalone element strings where all information required is established on a computer file using the individual GSRN as the key to access the information. The type of information stored is determined by the nature of the service relationship. Typical information includes the service recipient's or provider's full name, address and details of the services received or rendered.

If the identification of a ~~Global Service Relation Number for the service recipient (~~GSRN~~)~~ needs to be further qualified with a sequence indicator corresponding to specific encounters during a service relationship, a Service Relation Instance Number (SRIN), AI (8019) may be associated to the GSRN. ~~In a healthcare setting this could be used to allow for differentiation of "Subject of Care" identification capture from an identification band, both before and after its replacement (i.e. due to a radiology examination, etc.) or to allow differentiation between the issuance of identification badges for "Provider of Care".~~

When a GSRN is encoded to a data carrier and applied to AIDC media (e.g., membership card or patient wristband), a Version Control Number (VCN), AI (7242) may be associated to the GSRN to enable distinction between different versions of the same identification, displayed on one or more of the same AIDC media type. For example, when AIDC media is needed for access control purposes, this distinction between versions can facilitate processes managed with a service providers system to validate current versions and deactivate previously issued versions of the AIDC media.

4.7 GDTI rules

4.7.1 Allocating Global Document Type Identifiers

The Global Document Type Identifier (GDTI) is used to identify any document for document control purposes. A separate, unique GDTI is required whenever any of the characteristics of a document are different in any way that is relevant to the business process. As a guiding principle, if the end user is expected to distinguish between documents and process them accordingly, each document SHOULD be allocated its own GDTI.

The Global Document Type Identifier (GDTI) is assigned by the document issuer. The GDTI is used as a key to access database information (normally held by the issuing organisation).

The same document type is used for all document classes that are issued with an identical purpose. This can then be used to reference the main characteristics of the document, such as:

- The exact right or obligation the document imposes.
- The document purpose (e.g., insurance policy, governmental paper, product image).

If element string		Then mandatory associated element string	Rule
AI	Designation	AI	
710, 711, 712, 713, 714, 715	National Healthcare Reimbursement Number	01	National Healthcare Reimbursement Number(s) SHALL occur in combination with the GTIN.
7020	Refurbishment lot ID	(01 XOR 8006***) AND 416	The refurbishment lot ID SHALL occur in combination with the GLN of production/service location and: ▪ a GTIN; or ▪ an ITIP
7021	Functional status	01 XOR 8006***	The functional status SHALL occur in combination with: ▪ a GTIN; or ▪ an ITIP
7022	Revision status	(01 XOR 8006***) AND 7021	The revision status SHALL occur in combination with the functional status and: ▪ a GTIN; or ▪ an ITIP
723s	Certification reference	01 XOR 8004	Certification reference SHALL occur in combination with: ▪ a GTIN; or ▪ a GIAI
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
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
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.

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 www.gs1.org/glossary for the online version.

Term	Definition
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 tow-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.
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 (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).

Term	Definition
trade item declarations	The set of all information about a trade item (e.g., manufacturer warranty, ingredients, instructions for use, specifications, contents, certifications, predefined characteristics, and other information). For a trade item, this is all of the information that is on the label and in the original packaging. It also includes relevant aspects of the extended packaging.
trade item grouping	A predefined composition of trade item(s) that is not intended for point-of-sale scanning. It is identified with a GTIN-14, GTIN-13, or GTIN-12.
trade measures	Net measures of variable measure trade items as used for invoicing (billing) the trade item.
transport process information	A set of information relevant to the processing, delivery or return of a transport unit. For example, transport process information would include address details.
transport unit	A logistic unit within the context of transport processes.
truncation	Printing a symbol shorter than the symbology specification's minimum height recommendations. Truncation can make the symbol difficult for an operator to scan.
two-dimensional (2D) symbology	Optically readable symbols that must be examined both vertically and horizontally to read the entire message. Two-dimensional symbols may be one of two types: matrix symbols and multi-row symbols. Two-dimensional symbols have error detection and may include error correction features.
U.P.C. Company Prefix	A GS1 Company Prefix starting with a zero ('0') becomes a U.P.C. Company Prefix by removing the leading zero. A U.P.C. Company Prefix is used to issue and allocate GTIN-12.
U.P.C. Prefix	A GS1 Prefix starting with a zero ('0') becomes a U.P.C. Prefix by removing the leading zero. A U.P.C. Prefix is used to issue U.P.C. Company Prefixes or allocated to other specific areas.
Unique Device Identifier – Device Identifier (UDI-DI)	A unique identifier specific to a medical device trade item represented by a Global Trade Item Number (GTIN).
Unique Device Identifier – Production Identifier (UDI-PI)	A numeric or alphanumeric code that identifies the unit of device production. The different types of UDI-PIs include serial number, lot number, software identification and manufacturing or expiry date or both types of date.
Unique Device Identifier (UDI)	A series of numeric or alphanumeric characters that is created through a globally accepted device identification and coding standard. It allows the unambiguous identification of a specific medical device on the market. The UDI is comprised of the UDI-DI and the UDI-PI. The word 'Unique' does not imply serialisation of individual production units.
Unique Identification Code (UIC) (per EU 2018/574)	Identifier of an EU 2018/574 ID Issuer that begins with an ISO 15459 Issuing Agency Code.
unit of use	Refers to an individual unit package that is prescribed for or administered to a patient regardless whether it is packaged individually or, on the contrary, the smallest package contains more than one unit. May coincide with the single unit and the base unit.
Unit of Use UDI-DI (UoU UDI-DI)	Device identifier for the unit of use, meant to associate the use of a device with a patient. In cases where the unit of use coincides with another packaging level, that level's device identifier functions as a UoU UDI-DI, otherwise a separate device identifier has to be allocated. For example, three clips (which do not carry a physical UDI marking themselves) are contained in a cartridge which is packaged inside a container, which does carry a labelled UDI.
UPC-A barcode	A barcode of the EAN/UPC symbology that encodes GTIN-12 and RCN-12.
UPC-E barcode	A barcode of the EAN/UPC symbology representing a GTIN-12 in six explicitly encoded digits using zero-suppression.
variable measure trade item	A trade item which may be traded without a predefined measure, such as its weight or length.
version control	The management of different versions of the same entity.
Version Control Number (VCN)	A GS1 identification key attribute to facilitate version control, where differentiation is required for multiple occurrences of the same identification used on the same AIDC media type. For example, to ensure only the latest occurrence of access controlled AIDC media is valid upon scanning, where multiple occurrences could present risks (e.g., lost ID badge).
virtual trade item assortment/bundle	Combinations of multiple (same or different) trade items that are not physically combined into a single trade item, but that are presented in selling environments as offers of combinations of multiple trade items (e.g., products or services).
warranty	A guarantee or claim that a party makes.

Abbreviation	Term
GIAI	Global Individual Asset Identifier
GINC	Global Identification Number for Consignment
GLN	Global Location Number
GMN	Global Model Number
GRAI	Global Returnable Asset Identifier
GRCTI	General Retail Consumer Trade Item
GS1 DL URI	GS1 Digital Link Uniform Resource Identifier
GS1 key	GS1 identification key
GSIN	Global Shipment Identification Number
GSMP	Global Standards Management Process
GSRN	Global Service Relation Number
GS1 UIC EXT	GS1 UIC Extension
GTIN	Global Trade Item Number
HRI	Human Readable Interpretation
ISBN	International Standard Book Number
ISO	International Organization for Standardization
ISSN	International Standard Serial Number
ITIP	Identification of Trade Item Pieces
LAC	Local Assigned Code
NHRN	National Healthcare Reimbursement Number
NTIN	National Trade Item Number
RCN	Restricted Circulation Number
RFID	Radio Frequency Identification
RHTI	Regulated healthcare trade item
RSS	Reduced Space Symbology
SKU	Stock Keeping Unit
SRIN	Service Relation Instance Number
SSCC	Serial Shipping Container Code
TPX	Third Party Controlled, Serialised Extension of GTIN (restricted to EU 2018/574 regulatory use)
UIC	Unique Identification Code (per EU 2018/574)
upUI	unit pack Unique Identifier (per EU 2018/574)
UDI	Unique Device Identifier
UDI-DI	Unique Device Identifier – Device Identifier
UDI-PI	Unique Device Identifier – Production Identifier
UoM	Unit of Measure
UoU	Unit of Use
VCN	Version Control Number