The Global Language of Business

General Specifications Change Notification (GSCN)

WR #	GSCN Name	Ratification Date
TBC	GSMP Electronic health record patient demographics in GS1 barcodes	DRAFT

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

Disclaimer:

GS1 General Specification Change:

Changes to the following sections:

2 Application standards

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

AI (8030) Digital Signature (DigSig), section ~~03.2~~

AI (DDDD) Family name of person (FAMILY NAME), section ~~03.2~~

AI (EEEE) Given name of person (GIVEN NAME), section ~~03.2~~

AI (FFFF) Name suffix of person (SUFFIX), section ~~03.2~~

AI (GGGG) Full name of person (FULL NAME), section ~~03.2~~

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

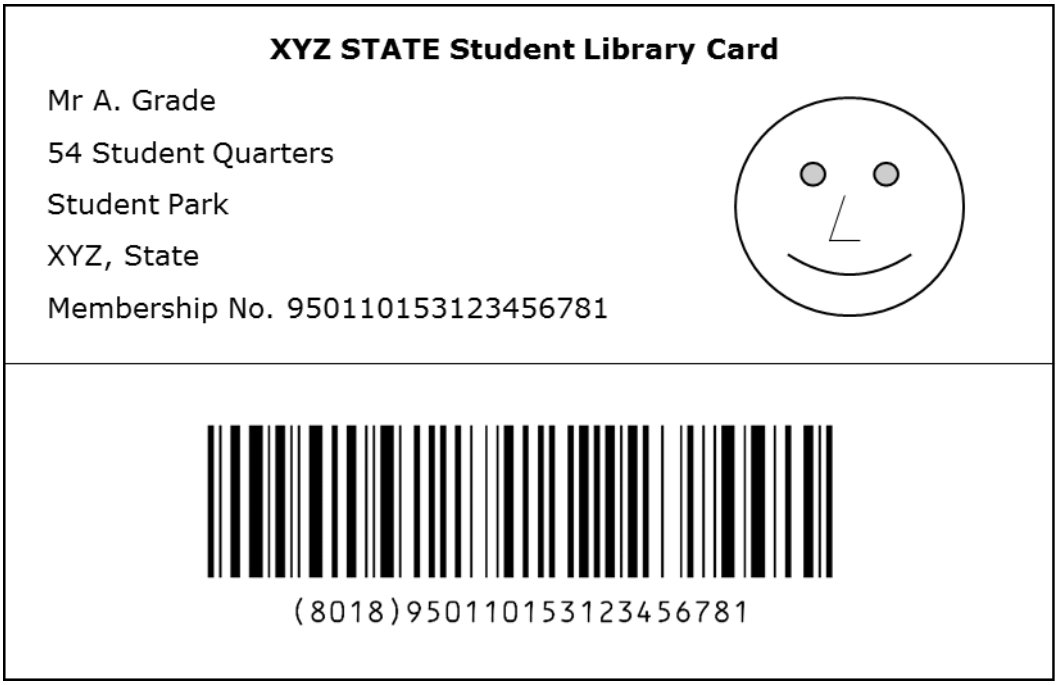
For a description of processing requirements, see section 7.

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*

AI (8030) Digital Signature (DigSig), section *~~03.2~~*

AI (AAAA) Date of birth (DOB), section *~~03.2~~*

AI (BBBB) Date and time of birth (DOB TIME), section *~~03.2~~*

AI (CCCC) Biological sex (BIO SEX), section *~~03.2~~*

AI (DDDD) Family name of person (FAMILY NAME), section *~~03.2~~*

AI (EEEE) Given name of person (GIVEN NAME), section ~~03.2~~

AI (FFFF) Name suffix of person (SUFFIX), section ~~03.2~~

AI (GGGG) Full name of person (FULL NAME), section ~~03.2~~

AI (HHHH) Address of person (PERSON ADDR), section ~~03.2~~

AI (JJJJ) Baby birth sequence indicator (BIRTH SEQUENCE), section ~~03.2~~

AI (KKKK) Baby of family name (BABY), section ~~03.2~~

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. 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 3.2), 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.

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).

2.5.4 Supporting 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. 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.

Important Patient Privacy Note: As GS1 does not provide 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:

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

Rules

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 (VCN), section *3.2*

AI (DDDD) Family name of person (FAMILY NAME), section *3.2*

AI (EEEE) Given name of person (GIVEN NAME), section *3.2*

AI (FFFF) Name suffix of person (SUFFIX), section *3.2*

AI (GGGG) Full name of person (FULL NAME), 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 (VCN), section *3.2*

AI (AAAA) Date of birth (DOB), section *3.2*

AI (BBBB) Date and time of birth (DOB TIME), section *3.2*

AI (CCCC) Biological sex (BIO SEX), section *3.2*

AI (DDDD) Family name of person (FAMILY NAME), section *3.2*

AI (EEEE) Given name of person (GIVEN NAME), section *3.2*

AI (FFFF) Name suffix of person (SUFFIX), section *3.2*

AI (GGGG) Full name of person (FULL NAME), section *3.2*

AI (HHHH) Address of person (PERSON ADDR), section *3.2*

AI (JJJJ) Baby birth sequence indicator (BIRTH SEQUENCE), section *3.2*

AI (KKKK) Baby of family name (BABY), section *3.2*

Rules

Not applicable

Data carrier specification

Carrier choices

The data carrier choices for this application are:

- GS1-128
- GS1 DataMatrix
- EPC/RFID

Note: The organisation implementing is cautioned regarding data capacity limitations of the GS1-128 barcode as the maximum number of data characters in a single symbol is 48.

Note: The use of EPC/ RFID is limited to provider of care identity validation

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.*

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 *7.11*. 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 *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
AAAA	Date of birth: AI (AAAA)	N4+N8	(FNC1)	DOB
BBBB	Date and time of birth: AI (BBBB)	N4+N12	(FNC1)	DOB TIME
CCCC	Biological sex: AI (CCCC)	N4+N1	(FNC1)	BIO SEX
DDDD	Family name of person: AI (DDDD)	N4+X..40	(FNC1)	FAMILY NAME
EEEE	Given name of person: AI (EEEE)	N4+X..40	(FNC1)	GIVEN NAME
FFFF	Name suffix of person: AI (FFFF)	N4+X..10	(FNC1)	SUFFIX
GGGG	Full name of person: AI (GGGG)	N4+X..90	(FNC1)	FULL NAME
HHHH	Address of person: AI (HHHH)	N4+X..70	(FNC1)	PERSON ADDR
JJJJ	Baby birth sequence indicator: AI (JJJJ)	N_1+X_1+N_1	(FNC1)	BIRTH SEQUENCE
KKKK	Baby of family name: AI (KKKK)	N4+X..90	(FNC1)	BABY

1.1.1 Date of birth: AI (AAAA)

The GS1 Application Identifier (AAAA) 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 XXXX. Format of the element string

GS1 Application Identifier	Date of birth		
	Year	Month	Day
AAAA	N_1 N_2 N_3 N_4	N_5 N_6	N_7 N_8

The data transmitted from the barcode reader means that the element string denoting a date of birth 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**

1.1.1 Date and time of birth: AI (BBBB)

The GS1 Application Identifier (BBBB) 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 XXXXX Format of the element string

GS1 Application Identifier	Date and time of birth				
	YYYY	MM	DD	HH	MM
BBBB	N_1 N_2 N_3 N_4	N_5 N_6	N_7 N_8	N_9 N_{10}	N_{11} N_{12}

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**

1.1.1 Biological sex: AI (CCCC)

The GS1 Application Identifier (CCCC) 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 XXXXX. Format of the element string

GS1 Application Identifier	Biological sex	Defined values
CCCC	N_1	0 = Not known 1 = Male 2 = Female 9 = Not applicable

The data transmitted from the barcode reader means that the element string denoting the biologicalsex 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**

1.1.1 Family name of person: AI (DDDD)

The GS1 Application Identifier (DDDD) 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 XXXXXX Format of the element string

GS1 Application Identifier	Family name of person
DDDD	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**

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, +

1.1.1 Given name of person: AI (EEEE)

The GS1 Application Identifier (EEEE) 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

Note: A given name may also be known as a first name, middle name, forename, second name, other given name or other given name/s.

Figure XXXXXX Format of the element string

GS1 Application Identifier	Given name of person
EEEE	X_1——————›variable length ——————›X_{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, +

1.1.1 Name suffix of person: AI (FFFF)

The GS1 Application Identifier (FFFF) 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 XXXXXX Format of the element string

GS1 Application Identifier	Name suffix of person
FFFF	X_1——————›variable length ——————›X_{10}

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**

Figure XXXXXX Overview of suffix defined values

GS1 Application Identifier	Name 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.
FFFF	X_1 to X_{10}	Name Suffix – Abbreviation Junior - Jr Senior - Sr First - I Second - II Third - III Fourth - IV Fifth - V

1.1.1 Full name of person: AI (GGGG)

The GS1 Application Identifier (GGGG) 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 composite data element that is captured through the combination of Application Identifiers (DDDD) Family name of person, (EEEE) Given name of person and (FFFF) Name suffix of person.

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

Figure XXXXXX Format of the element string

GS1 Application Identifier	Full name of person
GGGG	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 detemined 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.

1.1.1 Address of person: AI (HHHH)

The GS1 Application Identifier (HHHH) indicates that the GS1 Application Identifier data field contains address of person information 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 XXXXXX Format of the element string

GS1 Application Identifier	Address of person
HHHH	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**

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, +

1.1.1 Baby birth sequence indicator: AI (JJJJ)

The GS1 Application Identifier (JJJJ) 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.

Figure XXXXX Format of the element string

GS1 Application Identifier	Baby birth sequence indicator		
	Sequence of birth of the baby	Sequence seperator using solidus character	Total number of babies in the series
JJJJ	N_1	X_1	N_1

Figure XXXXX Overview of defined values

GS1 Application Identifier	Baby birth sequence indicator	The allowed values as defined below:
JJJJ	$N_1+X_1+N_1$	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 X_1 shall be the "solidus" character as represented as the "/" graphic symbol and detailed in Figure 7.11 1. 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**

1.1.1 Baby of family name: AI (KKKK)

The GS1 Application Identifier (KKKK) 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 (DDDD) 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 XXXXXX Format of the element string

GS1 Application Identifier	Baby of family name
KKKK	X_1——————→variable length ——————→X_{90}

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 initally 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.

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).

Figure 4.13.1-1. Invalid pairs of element strings

Invalid pairs of element strings				Rule
AI	Designation	AI	Designation	
GGGG	Full name of person	DDDD, EEEE, FFFF, KKKK	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.
AAAA	Date of birth	BBBB	Data and time of birth	Only one date of birth format SHALL be used.
KKKK	Baby of family name	DDDD, EEEE, FFFF, GGGG	Full name of person, Family name of person, Given name of person, Name suffix of person	Only Baby of family name SHALL be used and no other name format is allowed.

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 aries 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.

Figure 4.13.2-1. Mandatory association of element strings

If element string		Then mandatory associated element string	Rule
AI	Designation	AI	
DDDD, EEEE, FFFF, GGGG, HHHH	Family name of person, Given name of person, Name suffix of person, Full name of person	8017	Family name of person, Given name of person, Full name of person, Address of person and Name suffix of person SHALL occur in combination with one of the following: ▪ Global Service Relation Number - Provider
AAAA, DDDD, EEEE, FFFF, GGGG, HHHH	Date of birth, Family name of person, Given name of person, Name suffix of person, Full name of person	8018	Date of birth, Family name of person, Given name of person, Full name of person, Address of person and Name suffix of person SHALL occur in combination with one of the following: ▪ Global Service Relation Number – Recipient
BBBB, CCCC	Date and time of birth, Biological sex	8018	Date and time of birth and Biological sex SHALL occur in combination with a Global Service Relation Number – Recipient
JJJJ	Baby birth sequence indicator	8018 KKKK	Baby birth sequence indicator SHALL occur in combination with a Global Service Relation Number – Recipient and Baby of family name.
KKKK	Baby of family name	8018 AND JJJJ	Baby of family name SHALL occur in combination with: ▪ Global Service Relation Number – Recipient ▪ Baby birth sequence indicator

9 Glossary of business 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	Description
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.

9.3 GS1 abbreviations

Abbreviation	Term
EHR	Electronic Health Record
EMR	Electronic Medical Record
EPR	Electronic Patient Record