



4.1 Numbering Locations

On a daily basis information related to parties and locations is generated and communicated throughout the business world in vast quantities. Names and addresses are put on envelopes for the mail, the point to which a delivery is made is put on transport documentation, Electronic Data Interchange (EDI) network addresses are provided in EDI messages, etc. These are just a few examples of the many applications in existence today, which identify parties or locations in trade or other communications.

With the advent of electronic communication, and particularly EDI, the need for the identification of parties and locations has become acute. The use of numeric identification instead of full alphanumeric names and addresses is the key to the successful implementation of an EDI project.

The Global Location Number (GLN) makes possible the unique and unambiguous identification of:

- legal entities, such as registered companies
- physical entities, such as a door of a warehouse or a particular room in a building

Each company or organisation holding a GS1 Company Prefix may assign GLNs to its own locations. It is the responsibility of the company using the GLNs to keep business partners informed of all numbers issued as well as the company's name and address details. Special care is needed if ownership of the company changes.

Companies that are not members of GS1 Australia, who require a GLN, should contact GS1 Australia for further information.

4.1.1 Allocating Global Location Numbers (GLNs)

A GLN is a non-significant thirteen-digit number which is automatically assigned by GS1 Australia to the company when they join as a member. If the member company requires subsequent GLNs then they can create one using their own GS1 Company Prefix from their pool of numbers in the same way GTINs are allocated to retail trade items. For more information refer to chapter 2, section 2.2.2 Retail POS - Fixed Measure on page 21.

Note: If using a U.P.C Company Prefix please refer to chapter 2, section 2.2.2 Retail POS - Fixed Measure on page 21. Ensure that you add a filler zero to increase the twelve digit identification number to the required thirteen digits.

GLNs can be used to identify anything that can be addressed. Examples include companies, departments, rooms, factories, shelves, delivery points and EDI network addresses, etc. Once assigned at source - generally by the party owning the location - a GLN becomes a unique and universal reference, which can be used by all.

The exact method used to allocate a GLN is at the discretion of the issuing organisation. The GLN must be unique for each individual location being identified. Although there is no restriction on the allocation of the same GTIN-13 to a trade item and to a location, it is not recommended to do so. If choosing to allocate the same GTIN to a location as to a trade item, care must be taken to ensure there is no confusion.



4.1.2 When to Change a GLN

From time to time the details related to a GLN may change. The address identified by the GLN may change ownership or the address may close and the business carried out at that address may be transferred to a new address. The following are general cases on the use (and re-use) of GLNs due to a change in the circumstances in which the number was originally set up.

- If a company sells (possibly because of liquidation) a location to another party who may or may not be using GLNs, the GLN for the address which is associated with the previous owner should be closed. If the new owner of the address wishes to identify the location with a GLN, a new number needs to be assigned.
- If a company closes one address and opens up a similar operation at a new address, the company may either transfer the existing GLN to the new address or assign a new GLN for the new address. The reason for requesting a new GLN may be because the owner wants to maintain records on his computer files which show the performance of the old location. At a later date this performance may be compared with the performance of the new location.
- If a function identified by a GLN changes, the party responsible for the location number on the related computer file record should change the details associated with the GLN.

A GLN which is no longer being used should not be re-allocated for at least four years. The delay must allow time for reference of the old GLN to be removed from trading partners' files. When the GLN is re-used, the details relating to the new party and/or location must be retransmitted (e.g. using an EDI message).

For further information regarding GLN allocation and when to change a GLN please refer to www.gs1.org/glnrules/

4.1.3 GLNs and EDI

The use of GLNs is a pre-requisite for efficient eMessaging.

In all eMessaging exchanges there is a need to identify the sender and receiver of the electronic message. The GLN is an ideal way to identify parties at this level.

In EANCOM (based on UN/EDIFACT) the interchange header segment (UNB) is where this identification is required. In GS1 BMS, (based on XML) there is a Standard Business Document Header used to capture identification information.

Within electronic messages the identification of parties and locations is the primary application for GLNs. In EANCOM, there are segments used to identify different parties and their roles e.g. Buyer, Supplier.

At the beginning of a commercial relationship, trading partners would advise each other of their GLNs. The information is used to associate GLNs with location information and the related operational, administrative, commercial and financial data of the trading partner (such as name, address, contact person, financial accounts, etc). These details would be entered in the trading partners' application systems in readiness to send and receive electronic messages.



4.1.4 Bar Code

The only bar code used to represent the GLN is the GS1-128 Bar Code; refer to chapter 6, section 6.2.8 GS1-128 Symbol Specifications on page 163. When encoding the GLN, GS1-128 Bar Codes should be printed within the magnification range of 25% - 100% (X-dimension 0.25mm – 1.02mm). However, if the GLN is carried by a bar code on a logistics label please refer to chapter 3 Logistic Units on page 58.

The GS1-128 Bar Code allows information in addition to item identification to be represented. Application Identifiers effectively act as prefixes for this information and define the meaning and structure of the embedded data which follows. There are a number of different Application Identifiers used with GLNs to distinguish the context in which the GLN is being used. The table below indicates which Application Identifier to select.

Application Identifier	Description	Chapter and Page Number
410	Ship To - Deliver To GLN	Chapter 5 on page 117
411	Bill To - Invoice To GLN	Chapter 5 on page 118
412	Purchased from GLN	Chapter 5 on page 118
413	Ship For - Deliver for - Forward to GLN	Chapter 5 on page 119
414	Identification of Physical Location - GLN	Chapter 5 on page 119
415	GLN of the Invoicing Party	Chapter 5 on page 120
254	GLN Extension Component	Chapter 5 on page 103

TABLE 39 Application Identifiers used to identify a GLN



4.2 Numbering Assets

The GS1 System provides a method for the identification of assets. The object of asset identification is to identify a physical entity as an inventory item.

Each company holding a GS1 Company Prefix may assign asset identifiers to the assets or trade items supplied to their customers. Best practices may dictate that the trade item manufacturer applies the asset identifier during the manufacturing process. This number may then be used for ordering new assets of an identical type. The GS1 System asset identifiers act as keys to access the characteristics of an asset stored in a computer file and/or to record movements of assets.

Asset identifiers may be used for simple applications, such as the location and usership of a given fixed asset (e.g. a personal computer) or for complex applications, such as recording the characteristics of a returnable asset (e.g. a reusable beer keg), its movements, its life-cycle history, and any relevant data for accounting purposes.

GS1 System asset identifiers can be used to identify any fixed assets of a company. It is left to the discretion of the issuer to determine whether the Global Returnable Asset Identifier (GRAI), AI (8003), or Global Individual Asset Identifier (GIAI), AI (8004), is more suitable for the application concerned.

Asset identifiers must not be used for any other purpose and must remain unique for a period well beyond the lifetime of the relevant records.

If a company assigns asset identifiers to trade items supplied to its customers, the company must ensure that the asset identifiers are never re-used.

4.2.1 Global Returnable Asset Identifier (GRAI) - AI (8003)

A returnable asset is a reusable package or transport equipment of a certain value, such as a beer keg, a gas cylinder, a plastic pallet, or a crate. The GS1 Identification Key for a returnable asset, the Global Returnable Asset Identifier (GRAI), enables tracking as well as recording of all relevant data.

A typical application using a GRAI is in tracking returnable beer kegs. The owner of the beer keg applies a bar code carrying a GRAI to the keg using a permanent marking technique. This bar code is scanned whenever the keg is supplied full to a customer and scanned again when it is returned. This scanning operation allows the beer keg owner to automatically capture the life-cycle history of a given keg and to operate a deposit system, if desired.

Note: A GRAI identifies a physical entity as a returnable asset. When such a physical entity is used to transport or to contain a trade item, the element string AI (8003) must never be used to identify the transported or contained trade item.



Allocating a Global Returnable Asset Identifier (GRAI)

The structure of the data for a GRAI can include two parts: the mandatory GRAI and an optional serial number. The GRAI remains the same for all identical returnable assets. Although consecutive numbering is recommended, the structure is left to the discretion of the assigning company. The owner of the asset assigns the optional serial number. It denotes an Individual Asset within a given asset type. The field is alphanumeric and is used to distinguish individual assets with the same asset types.

How you allocate a GRAI depends on the length of your assigned GS1 Company Prefix. For GS1 Australia members this depends on whether you joined GS1 Australia prior to May 1996, in which case you were allocated a seven-digit GS1 Company Prefix or after May 1996 and were allocated a seven- to nine-digit GS1 Company Prefix.

	AI	GS1 Company Prefix	Asset Type	Check Digit	Serial Number (Optional)
Nine-Digit GS1 Company Prefix	8003	0 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	an ₁ -var.-an ₁₆
Seven-Digit GS1 Company Prefix	8003	0 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	an ₁ -var.-an ₁₆

TABLE 40 Global Returnable Asset Identifier (GRAI) Structure

The GS1 Company Prefix is the one allocated to the owner of the asset.

The GS1 Company Prefix should have one filler zero added as shown in the table above. If you have obtained a prefix to allocate twelve-digit GTINs, either directly from GS1 US, GS1 Canada or via GS1 Australia, you must add a second filler zero to the front of the prefix.

The Asset Type is a number assigned by the owner of the asset to uniquely identify each type of asset.

The Check Digit is mathematically calculated and ensures the whole number is correct. Correct calculation is essential for successful scanning of the bar code.

A Check Digit Calculator Program which will automatically calculate the Check Digit can be obtained from the GS1 Australia web site at www.gs1au.org.

For instruction on manually calculating the Check Digit please refer to chapter 2, section 2.4 Manual Check Digit Calculation on page 53.

Note: The AI (8003) is not part of the Check Digit calculation.

For either method of calculating the Check Digit use the GTIN-14 option.

The Serial Number (optional) is assigned by the owner of the asset. It identifies an individual asset within a given asset type. The field is alphanumeric and variable in length up to 16 characters.

When it is not possible to assign an asset type (e.g. for museum exhibit), or when the type of asset is not required by the application (e.g. when the item is only used for a single type of asset then AI (8004) - Global Individual Asset Identifier (GIAI), should be used.





4.2.2 Global Individual Asset Identifier (GIAI) - AI (8004)

In the GS1 System, an individual asset is considered a physical entity made up of any characteristics.

The Global Individual Asset Identifier (GIAI) is the GS1 Identification Key used to identify a particular physical entity as an asset. It must not be used for other purposes and must be unique for a period well beyond the lifetime of the relevant asset records. Whether or not the assigned GIAI may remain with the physical item when changing hands depends on the particular business application. If it remains with the physical item, then it must never be re-used.

This element string might, for example, be used to record the life-cycle history of aircraft parts. By symbol marking the GIAI, using AI (8004), on a given part, aircraft operators are able to automatically update their inventory database and track assets from acquisition until retirement.

Allocating a Global Individual Asset Identifier (GIAI)

How you allocate a GIAI depends on the length of your assigned GS1 Company Prefix. For GS1 Australia members this depends on whether you joined GS1 Australia prior to May 1996, in which case you were allocated a seven-digit GS1 Company Prefix or after May 1996 and were allocated a seven- to nine-digit GS1 Company Prefix.

	AI	GS1 Company Prefix	Individual Asset Reference
Nine-Digit GS1 Company Prefix	8004	n ₁ n ₂ n ₃ n ₄ n ₅ n ₆ n ₇ n ₈ n ₉	an ₁ – variable – an ₂₁
Seven-Digit GS1 Company Prefix	8004	n ₁ n ₂ n ₃ n ₄ n ₅ n ₆ n ₇	an ₁ – variable – an ₂₃

TABLE 41 Global Individual Asset Identifier (GIAI) Structure

The GS1 Company Prefix is the one allocated to the company assigning the Individual Asset Reference.

If you have obtained a prefix to allocate twelve-digit GTINs either directly from GS1 US , GS1 Canada or via GS1 Australia, you must add a filler zero to the front of the prefix after the Application Identifier.

The Individual Asset Reference is allocated and structured at the discretion of the holder of the GS1 Company Prefix. The data can be alphanumeric, and is of variable length, ensuring that the entire GIAI is not longer than 30 characters.

The exact method used to allocate the GIAI is left to the discretion of the issuing organisation. However, each GIAI must be unique for each individual asset being identified and, for ease of administration, the GS1 System recommends that GIAIs be allocated sequentially and not contain classifying elements.



4.2.3 Change of Asset Ownership

GS1 Asset Identification Numbers are used in a diverse range of business applications ranging from tracking the movements of re-usable packaging trays to recording the life-cycle history of aircraft parts. If a company sells an asset to another company then the asset identifier should ideally be replaced by another GIAI or GRAI or be removed. It is permissible for the asset identifier to remain on the item when the ownership changes if the new owner takes responsibility for the GS1 Company Prefix associated with the asset identifier.

