



An Introduction to the Global Individual Asset Identifier (GIAI)

BarCodes and eCom™

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Executive Summary

For many years, manufacturers have marked individual products and their critical components with serial numbers to trace the genealogy of the item and to record manufacturing data. The Global Individual Asset Identifier (GIAI) is the pointer to the business critical information necessary to identify, manage, and track individual assets. This includes the ever-expanding library of information stored in electronic databases.

This GS1 System (formerly the EAN.UCC System) solution was designed to enable companies to eliminate duplication of asset numbers, provide tracing and tracking capabilities, facilitate maintenance, and provide item management and accountability. Each company or organization holding a GS1 Company Prefix may assign asset identifiers to the assets of their organization. This asset identifier is an invaluable messaging system for asset control. Now, various marking technologies [2D, bar code, Radio Frequency Identification (RFID)] can permit finished goods tracking throughout the world eliminating information confusion.

Key Benefits of the GIAI

The GIAI provides a format to encode both the GS1 Company Prefix and the individual asset number or serial number. The content and value of this information is shared throughout the supply chain. The customer can experience the following benefits:

- Establishes product ownership from creation to current date
- Provides a simple solution to asset management
- Employs the globally accepted GS1 System whose language is standardized, understood, and used by multiple industries
- Identifies assets with a number that is unique worldwide
- Leverages existing serial numbers
- Improves asset management
- Provides framework for item traceability
- Deters counterfeit items and parts

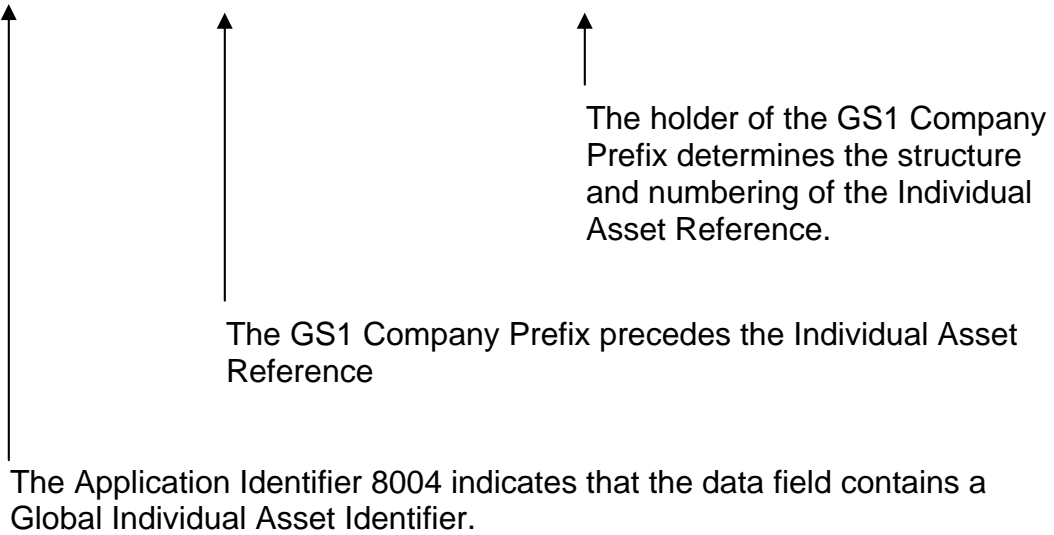
The GIAI provides usefulness and value in those areas, which specifically require solving complex asset management and tracking challenges across large enterprises. The GIAI is a simple method to address such challenges. The management and assignment of vast numbers and the obligation to identify the asset must ideally be the responsibility of the manufacturer.

Definition

A Global Individual Asset Identifier (GIAI) is used to uniquely identify an entity that is part of the fixed inventory of a company. The GIAI can be used to identify any fixed asset of an organization. Fixed assets are defined as: any property used in carrying on the operation of a business, which will not be consumed through use or sold to a trading partner.

GIAI Construction

Application Identifier	Global Individual Asset Identifier	
8004	GS1 Company Prefix	Individual Asset Reference
	$N_1 \dots N_i$	$X_{i+1} \dots$ variable length $X_{j(j \leq 30)}$



GS1 Company Prefix - The globally unique number assigned to a company by GS1 US™ or another GS1 Member Organization. GS1 Company Prefixes are assigned to companies in varying lengths. Some GS1 US BarCodes and eCom™ members may have a membership certificate that shows only a U.P.C. Company Prefix (formerly a UCC Company Prefix). A U.P.C. Company Prefix must be converted to a GS1 Company Prefix for use in the GIAI. This is accomplished by adding a zero to the front of the U.P.C. Company Prefix. The following table illustrates the conversion of a U.P.C. Company Prefix to a GS1 Company Prefix for use with GIAs.

U.P.C. Company Prefix	Converted to GS1 Company Prefix
801234	0801234
8412340	08412340
81123400	081123400

Individual Asset Reference – The number assigned by the holder of the GS1 Company Prefix to uniquely identify the asset. The holder of the GS1 Company Prefix determines the structure and numbering of the Individual Asset Reference. The Individual Asset Reference may be all numeric or alphanumeric. Note: The maximum combined length of the GS1 Company Prefix and Individual Asset Reference is 30 digits.

Example of a GIAI in a GS1-128 bar code



Business Use

Currently, many industries offering high value products apply a serial number expressed in various marking technologies during assembly. However, there is no indication in the bar code to identify the owner. The GIAI provides the mechanism to identify the original owner and “next owner” component tracking.

This is particularly true within the computer and telecommunication industries. As these products become components within large operational systems, the GIAI provides an easy trace back to the details of the component.

The GIAI can be used to identify specific assets or types of assets within an asset register, and must not be used for any other purpose.

If a company sells an asset to another party the GIAI should be deleted.

How the GIAI Works

The following examples illustrate the use of the GIAI:

- The Department of Defense (DoD) has developed a policy which supports the identification and management of assets and items in an effort to effectively report inventory for property and assets.
- The DoD has mandated that all items and assets with value exceeding \$5,000 or mission critical must be identified with the manufacturer and serial number of the item. These items and assets will be identified using a 2D Data Matrix marking.
- The Department of Homeland Security (DHS) has developed a similar policy for identifying assets and items.
- DHS has mandated that all weapons (handguns) be identified using the GIAI. They have also identified the security equipment at airports with bar codes using the GIAI.
- A hospital sleep center provides testing and treatment for sleep disorders. To determine the patient's needs, the sleep center conducts "sleep studies" wherein the patient spends at least one night in the hospital lab. During the overnight stay the patient's sleep patterns are monitored and recorded. This chart shows how the equipment used in the sleep study is identified:

Item Description	AI	Remarks
Video monitoring equipment including cameras, monitors, and recorders.	GIAI (AI 8004)	All items are long lived and of high value.
Video tapes	Global Trade Item Number [®] (GTIN [®]) (AI 01)	These are consumables since they are used only once and cost is low.
Heart rate monitor	GIAI (AI 8004)	Very high cost and long lived.
Hospital bed	GIAI (AI 8004)	High cost and long life
C-PAP Machine	Global Returnable Asset Identifier (GRAI) (AI 8003)	A patient uses this machine as a sleep aid. It is rented to the patient.

Frequently Asked Questions

1. What is the difference between inventory, consumables, and assets?

- Inventory – Items that exist in raw material format, in the "pipeline" or storage. Ultimately intended for sale to consumers and to produce operating income.
- Consumables – Items that are used by an organization in the course of conducting operations. These items generally have a comparatively short life or are of relatively low cost and are charged to the cost of doing business in a particular fiscal year.
- Assets - Items used by the organization in the course of conducting operations. These are long-lived items and are charged to the cost of doing business over many fiscal periods.

2. What is the difference between fixed assets and returnable assets?

Fixed assets do not leave the immediate control of the asset owner. Returnable assets are delivered by the owner to the custody of another business entity, usually for a fee.

3. What is a Global Trade Item Number (GTIN)?

The GTIN is the foundation of the GS1 System. It is used for uniquely identifying trade items, which includes both products and services that are sold, delivered, and invoiced at any point in the supply chain.

4. Can the GIAI be used in place of a GTIN?

No, GTINs and GIAIs serve two distinctly different purposes. The GTIN is used to uniquely identify trade items during the data synchronization, order, deliver, and receiving processes. The GIAI is used to identify any fixed asset of an organization, which includes all property of a business that will not be consumed through use or sold to a trading partner. For example, the GIAI is used to identify long lived valuable assets such as office equipment, furniture, computers, and manufacturing equipment.

5. What can be identified using the GS1 Identification Numbers?

- **Trade items:** Products and services upon which there is a need to retrieve pre-defined information at any point in the supply chain (Global Trade Item Number[®]/**GTIN**[®]).
- **Logistic units:** Physical units established for transport and storage of products of any kind that need to be tracked and traced individually in a supply chain (Serial Shipping Container Code/**SSCC**).
- **Assets:** Fixed or returnable assets (Global Individual Asset Identifier/**GIAI**, Global Returnable Asset Identifier/**GRAI**).
- **Locations:** Physical, functional or legal entities requiring a permanent identification, such as a company, department, or warehouse (Global Location Number/**GLN**).
- **Service Relations:** Public or private service provider to track any entity's service requirements and needs over a continuing relationship (Global Service Relation Number/**GSRN**).

Note: All GS1 identifiers use the same GS1 Company Prefix assigned to the company or organization

Resources

Solutions Center

The Solutions Center is your one-stop source for GS1 System solutions to help you improve supply chain management and conduct business more productively. You will find the essential education and implementation resources you need to:

- Integrate and utilize the standards of the GS1 System in your business
- Guide you through the bar coding process
- Improve the efficiency of your electronic commerce activities
- Uniquely identify your company's products, assets, locations, and logistics units throughout the global supply chain

Specifically, *Bar Codes for Different Uses* will guide you through the implementation process, giving you specific solutions and guidelines to properly mark assets, products, and logistics units for use within the GS1 System. This easy-to-follow system will guide you through the essentials of the bar coding process to help you:

- Assess where you will use the bar code
- Determine the specific information to include in the bar code
- Prepare bar code specifications for those responsible for printing your bar codes

A preview of the Solutions Center can be seen at www.gs1us.org/solutionscenter.

GS1 US Glossary

www.gs1us.org/glossary

GS1 US Product Catalog

www.gs1us.org/productcatalog

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