

Global Individual Asset Identifier (GIAI) Implementation Guide

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 is the pointer to the business critical information necessary to identify and track individual assets. The GIAI has become a pointer to an ever-expanding library of information stored in electronic databases.

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 equipment configuration management and control. Each company or organization holding an EAN.UCC Company Prefix may assign asset identifiers to the assets of their organization. Since the adoption of Application Identifier (AI) 8004 by the Uniform Code Council, Inc.® in 1995, this symbol and the message contained within it have become the de facto standard for marking components within large operational asset clusters. With the adoption of this Application Identifier the Uniform Code Council, Inc. (UCC®) set in motion an invaluable industrial/commercial messaging system for product and material control. Now shared bar code labels can permit finished goods tracking throughout the world without fear of message confusion. As the complexity of tracking product grows the UCC created a means to address this demand; it is called the Global Individual Asset Identifier (GIAI).

Key Benefits

The GIAI provides a format to encode both the EAN.UCC 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
- In-service History
- Repair History
- Warranty Data
- Product Recall
- Performance Analysis
- Product Liability
- Depreciation
- Lot "one" Traceability
- Product Viable for Intended Service

- Direct Cost Accounting to Product
- Supplier Dependence
- In-House Cost Exchanges
- Elimination of Cross-Reference and Internal Tagging

The GIAI provides usefulness and value in those areas, which specifically require solving complex asset tracking challenges across large enterprises. This method offers simplicity and elegance to address such challenges. The management and assignment of vast numbers and the obligation of labeling must ideally be the responsibility of the manufacturer. In the event that the manufacturer does not assign the GIAI the "owner" of the asset should assign it.

Why Standards

Open, global standards:

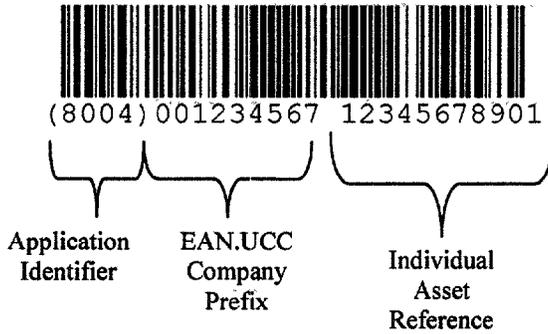
- Allow system-to-system interaction
- Speed processes by enabling end-to-end automation
- Lower costs, reduce errors
- Reduces the risk of system incompatibility
- Protects technology investments
- Enables the optimization of supply chain management practices
- Eliminate supply chain roadblocks and bottlenecks

In today's competitive global marketplace, speed and efficiency is critical to success - and survival. Producing a good product is no longer enough to keep a company competitive. Managing the physical flow of product with the electronic flow of business data is a major challenge in today's intensely competitive environment. The same time, attention and detail that goes in to designing and producing a quality product must also be evident in the transmission of that product's business data through the supply chain. A system, built with standardized processes and a common business language, is needed to monitor and manage the movement of product and information through every component along the supply chain.

Definition

Global Individual Asset Identifier (GIAI) 8004 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 converted into cash during the current fiscal period.

GIAI Data Structure



The Global Individual Asset Identifier is composed of an EAN.UCC Company Prefix and an Individual Asset Reference. The holder of the EAN.UCC Company Prefix determines the structure and numbering of the Individual Asset Reference.

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 Asset Identifier should be deleted.

Format of the element string 8004		
Application Identifier	Global Individual Asset Identifier	
8004	EAN.UCC Company Prefix	Individual Asset Reference
	$N_1 \dots N_i$	$X_{i+1} \dots$ variable length $X_{j(j \leq 30)}$

The holder of the EAN.UCC Company Prefix determines the structure and numbering of the Individual Asset Reference.

The individual asset number uses the EAN.UCC Company Prefix of the company assigning the asset reference.

The Application Identifier 8004 indicates that the data field contains a Global Individual Asset Identifier.

Business Use

Currently, many industries of high value products apply a serial number expressed in bar codes 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 then used for "next owner" component tracking is the solution to this problem.

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

How the GIAI Works

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. Examples of how identification is managed include:

Item Description	AI	Remarks
Video monitoring equipment including cameras, monitors, and recorders.	GIAI (8004)	All items are long lived and of high value.
Video tapes	GTIN	These are consumables since they are used only once and cost is low.
Heart rate monitor	GIAI (8004)	Very high cost and long lived.
Hospital bed	GIAI (8004)	High cost and long life
C-PAP Machine	GRAI (8003)	Patients as a sleep aid use these machines. As such they are either sold or rented to the patient.

All EAN.UCC Keys

EAN.UCC keys identify:

- **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 goods of any kind that need to be tracked and traced individually in a supply chain (Serialized 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**).

Frequently Asked Questions

1. What is the difference between Inventory, Consumables and Assets?

Inventory – refers to items that exist in raw material format, in the “pipe line”, or storage that are ultimately intended for sale to consumers and 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 hence they 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 items, being long-lived, 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)?

An umbrella term used to describe the entire family of EAN.UCC data structures for trade item (product or services) identification.

Standard Reference

The UCC's *Solutions Center*[™] - your one-stop source for EAN.UCC System tools 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 EAN.UCC 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, *The Art of Producing Bar Codes* will guide you through the implementation process, giving you specific solutions and guidelines to properly mark products and logistics units for use within the EAN.UCC 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 can be seen at <http://www.uc-council.org/solutionscenter>.

Further Help

- E-mail: <mailto:info@uc-council.org>
- Phone: 937.435.3870
- Web site: <http://www.uc-council.org/>

UCC Glossary

Term	UCC Glossary Definition
Advance Ship Notice (ASN)	Notification of product due prior to receipt (see Ship Notice Manifest (856)).
AI	Abbreviation for Application Identifier.
Application Identifier (AI)	A two-, three-, or four-digit prefix used within UCC/EAN-128 Symbols to define the meaning of information that follows.
Asset Type	A number assigned by the owner of an asset to uniquely identify a type of asset.
Attribute	A piece of information reflecting a characteristic related to an identification number (e.g., GTIN, GRAI).
Bar code	A precise arrangement of parallel lines (bars) and spaces that vary in width to represent data.
Brand owner	The party that is responsible for allocating EAN/UCC numbering and bar coding on a given trade item. The administrator of an EAN.UCC Company Prefix.
Check Digit	A digit calculated from the other digits of an Element String, used to check that the data has been correctly composed. (See EAN.UCC Check Digit Calculation.)
Company Number	A number allocated by the UCC or an EAN International Numbering Organization that follows the EAN.UCC Prefix within the EAN.UCC Company Prefix. When combined with the EAN.UCC Prefix, the Company Number uniquely identifies a company.
Data carrier	A means to represent data in a machine readable form, used to enable automatic reading of the Element Strings.
Data Standard	The entirety of all EAN.UCC System data standardized in meaning and structure.
Data structure	The UCC and EAN numbering structures defined in the various lengths required for the different identification purposes which all share a hierarchical composition. Their composition blends the needs of international control with the needs of the users.
EAN	See EAN International.
EAN International	EAN International, based in Brussels, Belgium, is an organization of EAN Numbering Organizations that jointly manages the EAN.UCC System with the UCC.
EAN Member Organization	A member of EAN International that is responsible for administering the EAN.UCC System in its country (or assigned area) and for managing the correct use of the EAN.UCC System by its member companies.
EAN.UCC Company Prefix	Part of the international EAN.UCC Data Structures consisting of an EAN.UCC Prefix and a Company Number, both of which are allocated by either the UCC or an EAN International Numbering Organization.
EAN.UCC Prefix	An index number with two or more digits, co-administered by the UCC and EAN International, denoting the format and meaning of a particular Element String.
EAN.UCC System	The specifications, standards, and guidelines co-administered by the UCC and EAN International.
EDI	Electronic Data Interchange.
Electronic Commerce	The conduct of business communications and management through electronic methods, such as electronic data interchange and automated data collection systems.

Electronic Data Interchange (EDI)	The computer to computer transmission of business information using a public standard format.
Electronic Message	A composition of Element Strings from scanned data and transaction information assembled for data validation and unambiguous processing in a user application.
Extension digit	A digit, allocated by the user, used to increase the capacity of the Serial Reference within the SSCC. <i>When used within the term "Extension digit," the word "digit" is never capitalized.</i>
GIAI	Shorthand term for the EAN.UCC Global Individual Asset Identifier.
GLN	Shorthand term for the EAN.UCC Global Location Number using the EAN/UCC-13 Data Structure to identify physical, functional, or legal entities.
Global Positioning Unit (GPU)	A navigational tool that assists travelers whether traveling by car, boat, plane or foot. These devices provide information pertaining to state and country boundaries, lakes, rivers, interstate highways even exit information for the federal interstate highway system. The GPU can locate services such as food, lodging and gas stations.
GRAI	Shorthand term for the EAN.UCC Global Returnable Asset Identifier.
GSRN	Shorthand term for the EAN.UCC Global Service Relation Number.
GTIN	Shorthand term for the EAN.UCC Global Trade Item Number. A GTIN may use the EAN/UCC-8, UCC-12, EAN/UCC-13, or EAN/UCC-14 Data Structure.
GTIN Format	The format in which GTINs must be represented in a 14-digit reference field (key) in computer files to ensure uniqueness of the identification numbers.
Identification Number (ID)	A numerical name for something in the supply chain to provide unique identification for it. ID numbers are used to retrieve information previously exchanged between trading partners and stored in their computer database files.
Individual Asset	An entity which is part of the inventory of given company. <i>(see Returnable Asset)</i>
Individual Asset Reference	A number within a GIAI assigned by the holder of an EAN.UCC Company Prefix to an Individual Asset.
Item Number	See Item Reference.
Item Reference	The part of the data structures allocated by the user to identify a trade item for a given EAN.UCC Company Prefix.
Location Number	See GLN.
Location Reference	A number within a GLN assigned by various parties to identify a different entity.
Logistic Unit	Any "container" that permits the physical grouping and identification of goods for shipping. It could be a carton, a plastic wrap, a pallet, or a trailer, depending upon the industry or goods.
Logistic Unit Identifier	Identification of an item of any composition established for transport and/or storage that needs to be managed through the supply chain.
Manufacturer's Number	See EAN.UCC Company Prefix.
Manufacturer's ID	See EAN.UCC Company Prefix.
Point-of-Sale	The point where a customer purchases a product(s) within a retail store. This purchase is typically facilitated by a "check-out" lane or counter where bar code scanning equipment is located.
POS (Point-of-Sale)	Point-of-Sale. Refers to the retail type checkout where EAN/UPC Bar Code Symbols are normally scanned.
Returnable Asset	A reusable entity owned by a company, used for transport and storage of goods.

Serial Reference	The part of the data structure allocated by the user in conjunction with the Extension digit that establishes a unique SSCC for a given EAN.UCC Company Prefix.
Serial Shipping Container Code	See SSCC.
Service Reference	A number assigned by the service provider to identify the recipient of services in the context of a service relationship.
SSCC	The unique identification of a Logistic Unit using an 18-digit data structure. Formerly known as the Serial Shipping Container Code.
SSCC Serial Number	See Serial Reference.
Symbol	The combination of symbol characters and features required by a particular symbology, including Quiet Zone, start and stop characters, data characters, and other auxiliary patterns, which together form a complete scannable entity; an instance of a symbology and a data structure.
Symbol character	A group of bars and spaces in a symbol which is decoded as a single unit. It may represent an individual digit, letter, punctuation mark, control indicator, or even multiple data characters.
Trade item	Any item (product or service) upon which there is a need to retrieve pre-defined information and that may be priced or ordered or invoiced at any point in any supply chain.
Trading partner	A party to transactions in the supply chain, such as a supplier (seller) or a customer (buyer).
UCC Company Prefix	Part of the UCC-12 Data Structure consisting of a UCC Prefix and a Company Number allocated by the UCC.
UCC/EAN-128 Bar Code Symbol	A subset of the Code 128 Bar Code Symbol that is utilized exclusively for UCC.EAN defined data structures. UCC/EAN-128 Symbols can be printed as stand-alone linear symbols or as a composite symbol with an accompanying 2D Composite Component™ printed directly above the UCC/EAN-128 linear component.
Uniform Code Council, Inc. (UCC)	The Uniform Code Council, Inc., based in the United States, is a membership organization that jointly manages the EAN.UCC System with EAN International. The UCC also administers the EAN.UCC System in the United States and Canada.
Universal Product Code (U.P.C.)	See UCC-12 Identification Number.
U.P.C. Symbol	A bar code symbol that encodes the twelve-digit UCC-12 (U.P.C.)
Variable Measure Trade Item	An item always produced in the same pre-defined version (type, design, packaging, etc.) that may be sold at any point in the supply chain, which either may vary in weight/size by its nature or which may be traded without a pre-defined weight/size/length.